

ITEM 203 ROADWAY EXCAVATION AND EMBANKMENT

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203.01 Description. This work consists of preparing areas upon which embankments are to be placed; excavating for the roadways and channels, including the removal of all material encountered not being removed under another item; constructing embankments with the excavated material and material from other approved sources as necessary to complete the planned embankments; furnishing and incorporating all water required for compacting embankment; disposing of unsuitable and surplus material and finishing shoulders, slopes, and ditches.

All excavation is considered unclassified excavation. If the excavation contains regulated materials such as garbage, solid waste, and hazardous waste or material, the Contract Documents will detail the removal for these items.

Use removed or excavated materials in the Work when the material conforms to the specifications; if not, then recycle or dispose of the material according to 105.16 and 105.19.

203.02 Material Definitions.

- A. Asphalt Concrete.** Reclaimed asphalt concrete pavement (RACP) that is blended to meet the requirements in 703.16.
- B. Base.** Selected material of planned thickness placed on the subgrade as a foundation for other bases, or asphalt or concrete pavements. The base is a part of the pavement structure.
- C. Borrow.** Material obtained from approved sources, located outside the construction limits that are required for the construction of the embankment. When borrow is specified or used, use suitable materials that conform to 203.02.R.
- D. Compaction Testing.** The City will perform the compaction testing of embankment and subgrade according to Supplemental Specification 1501.
- E. Embankment.** A structure consisting of suitable materials conforming to 203.02.R and constructed in lifts to a predetermined elevation and cross-section.
- F. Excavation.** The excavation and disposal of all materials required by the Contract Documents.
- G. Maximum Dry Density.** The maximum dry density is determined according to AASHTO T 99, AASHTO T 272, or Supplemental Specification 1501. The City will use this maximum dry density for compaction acceptance.

203.03

H. Natural Granular Materials. Natural granular materials include broken or crushed rock, gravel, sand, durable siltstone, and durable sandstone that can be placed in an 8-inch (200 mm) loose lift.

I. Natural Soil. All natural earth materials, organic or inorganic, resulting from natural processes such as weathering, decay, and chemical action.

J. Optimum Moisture. The water content at which the maximum dry density is produced in an embankment material. The optimum moisture is determined according to AASHTO T 99, AASHTO T 272, or Supplemental Specification 1501.

K. Petroleum Contaminated Soil (PCS). Petroleum contaminated soil (PCS) that is regulated under OAC-1301:7-9-16.

L. Random Material. Mixtures of suitable materials that can be placed in 8-inch (200 mm) loose lifts.

M. Recycled Portland Cement Concrete. Recycled portland cement concrete (RPCC) that is blended to meet the requirements in 703.16.

N. Recycled Materials. Fly ash, bottom ash, foundry sand, recycled glass, tire shreds, or other materials or manufacturing bi-products not specifically named as suitable materials in 203.02.R.

O. Rock. Sandstone, limestone, dolomite, glacial boulders, brick, siltstone, and RPCC too large to be placed in an 8-inch (200 mm) loose lift.

P. Shale. Laminated material with a finely stratified structure formed by the natural consolidation of soil. For the purpose of this specification, the following bedrock types are also considered as shale: mudstone, claystone, and clay bedrock.

Q. Slag Materials. Slag materials include air cooled blast furnace (ACBF) slag, granulated slag (GS), open hearth (OH) slag, basic oxygen furnace (BOF) slag, and electric arc furnace (EAF) slag meeting the requirements in 703.16.

R. Suitable Materials. All suitable materials are restricted in 203.03. Furnish soil or embankment material conforming to 703.16, when Item 203 Embankment is specified. Furnish material that conforms to 703.16.B or 703.16.C when Item 203 Granular Embankment is specified. Furnish material that conforms to 703.16.C when Item 203 Granular Material Types A, B, C, D, E or F are specified. Do not use recycled materials unless specifically allowed by the Supplemental Specifications.

203.03 Restrictions on the Use of Embankment Materials. Suitable materials are further restricted as follows:

A. Use silt identified as ODOT Group Classification A-4b and RACP only if placed at least 3 feet (1 m) below the surface of the subgrade.

B. Do not place RPCC and RACP in any location where it would inhibit the growth of vegetation.

C. Do not use any suitable material that cannot be incorporated in an 8-inch (200 mm) lift in the top 2 feet (0.6 m) of the embankment.

- D. Do not use shale in the top 2 feet (0.6 m) of the embankment that is not completely compacted and pulverized into a soil with 100 percent of the material passing the No. 4 (4.75 mm) sieve, except for hard shale.
- E. If using RPCC, OH slag, EAF slag, BOF slags, or blends of these materials, place these materials at least 1 foot (0.3 m) below the flow line of the underdrains.
- F. Do not use RPCC, OH slag, EAF slag, BOF slags, granulated slag, or blends of these materials for underwater applications.
- G. Do not use materials that cannot be satisfactorily placed and compacted to a stable and durable condition.
- H. Material excavated in the work that contains excessive moisture is unsuitable for embankment construction unless dried. Dry or aerate such material before incorporating in the work. The Contractor may elect to waste this material, instead of drying it.
- I. If Granular Material Type E in 703.16.C is allowed or specified, use a geotextile fabric conforming to 712.09, Type D on the top, bottom, and around the Type E material to prevent piping of the material into the Type E material.
- J. If electing to use PCS, submit the information stated below in a suitable format at least 10 workdays before the intended usage.

1. Have an independent consultant, that is ODOT pre-qualified in remedial design environmental site assessment, review the proposed usage. The consultant shall provide all documentation used to ensure that the proposed usage obeys all Ohio EPA regulations. The consultant shall coordinate all EPA required meetings, documentation, and testing requirements. The consultant shall randomly monitor the construction to ensure that the environmental requirements are carried out on the project. The consultant shall report any discrepancies to the City and the Contractor. The consultant shall certify the report or reports to the City.

2. Use PCS that conforms to all current environmental policies, rules, and regulations and the following:

a. Use PCS material that does not exceed the petroleum constituent concentrations stated below:

Benzene (B)	35 parts per million
Toluene (T)	109 parts per million
Ethyl benzene (E)	32 parts per million
Total Xylenes (X)	165 parts per million

b. Include test results from BTEX testing by using U.S. EPA test method SW 846, method 8020, or equivalent method.

c. Perform the tests on every 100 tons (90 metric tons) of PCS used.

203.04 General. Perform the required clearing and grubbing before starting the excavation, grading, and embankment operations.

Coordinate the amount of and limit the areas of the project that are cleared and grubbed with the quantity of erosion controls that are placed according to Item 207.

Remove all existing pavement and underdrains before the embankment construction.

203.04

Temporarily discontinue operations when the excavating operations encounter remains of prehistoric archaeological sites, historical archaeological sites, or human remains. Contact the Engineer and provide notice as required in Section 104.03. The Engineer will contact the appropriate authorities to determine the disposition thereof. Preserve the artifacts or other archeological items or human remains until a determination as to what the disposition and/or removal of such items is made by the Director. Such excavation is considered Extra Work.

If the Contractor encounters any abnormal material such as, but not limited to, drums, tanks, or stained earth or any unusual odors during construction operations, the Contractor shall temporarily discontinue the work in this area, leave equipment in place, cordon off the area, and notify the Engineer. The area is considered to contain hazardous waste or material and must be handled according to ODOT's *Construction Inspection Manual of Procedures*. Upon notification by the Engineer to resume work, the Contractor may file for an extension of time according to 108.06.

A. Drainage and Maintenance of the Work. Maintain a well drained embankment and excavation operation. If trenching for narrow widening and in other areas of the embankment construction, construct ditches of an adequate depth and at frequent intervals across the berm or embankment to maintain drainage. Deepen side ditches when necessary to ensure thorough embankment or subgrade drainage.

Construct the embankment with sufficient cross-slope to drain in case of rain.

If precipitation saturates the embankment construction, stay off the embankment construction until the embankment dries or stabilizes. Expedite the construction by removing the saturated embankment or dry the embankment by scarifying, plowing, disking, and recompacting the embankment.

Throughout the embankment construction operation and at the end of each day's operation, shape to drain, compact, and re-compact the work area to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

If using embankment construction or cut areas to haul on, continuously move the hauling equipment around on the area to take advantage of the compactive effort. Continually re-grade and compact the haul roads and maintain the construction according to 105.14.

Plug and cover the upstream ends of all pipe lines encountered during earthwork operations.

B. Rock or Shale Blasting Operations. Conform to Item 208 in the ODOT CMS when blasting.

C. Slides and Breakages. Remove all slides and breakages beyond the limits of the planned finished work when caused by improper excavation methods.

D. Shoulders, Slopes, and Ditches. When specified, place the topsoil in areas to be seeded or sodded according to Item 659. Build shoulders to the lines shown on the plans and to the tolerances specified in 203.08. Reshape shoulders, slopes, and ditches that have been damaged by erosion during construction.

Keep new and existing pavement, and the paved area of the berm clear of earth stockpiles or other berm materials.

E. Pavement Widening Construction. Locate sound pavement edges, and cut and trim pavement to a neat line. Repair and restore damage caused by the equipment or methods. Include the cost of cutting, trimming, and disposal under Item 203 Excavation.

F. Borrow. Unless otherwise designated in the Contract, make arrangements for obtaining borrow and pay all costs involved. If borrow is specified, use all suitable excavated material in the work prior to using the borrow material.

Place borrow used as embankment according to all the requirements for constructing embankment.

Blade and leave all borrow areas in such shape as to allow accurate measurements after the excavation has been completed.

Notify the Engineer sufficiently in advance of opening any borrow areas so that cross-section elevations and measurements of the ground surface after stripping may be taken.

Construct borrow areas that conform to 105.16; clean up the borrow areas according to 104.07.

G. Staged Construction and Waiting Periods. If specified in the Contract Documents, control the rate of fill accordingly. Adhere to the rate of fill and to the waiting periods during the work.

203.05 Embankment Construction Methods. Embankment construction includes preparing areas upon which embankments are to be placed; placing and compacting approved material within roadway areas where unsuitable material has been removed; and placing and compacting approved material in holes, pits, and other depressions within the roadway.

If scalping is required, scarify, plow, disk, and compact the existing embankment foundation. Compact the top 8 inches (200 mm) of the foundation to 95 percent of the maximum dry density or to a maximum test section dry density according to Supplemental Specification 1501. If the foundation cannot be compacted, the City will design replacement material or the Engineer may increase the lift thickness of the next layer of embankment.

The Engineer may increase the lift thickness of the next embankment layer to bridge the soft or wet foundation areas that will not support the weight of the trucks or hauling equipment. Dump successive loads of rock, hard shale, or granular material in a uniform lift. Do not exceed the thickness required to support the equipment placing the material. Manipulate, blade, distribute, level, and doze the material in place until the area is stabilized and material is above the normal water elevation. Once the bridging has been accomplished, construct the remaining lifts according to 203.06.

If the existing slope is steeper than 8:1, bench into the existing slope as follows:

- A. Scalp the existing slope according to Item 201.
- B. Cut horizontal benches in the existing slope to a sufficient width to blend the new embankment with the existing embankment and to accommodate the placement, and compaction operations and equipment.

203.06

- C. Bench the slope as the embankment is placed, and compact into layers.
- D. Begin each bench at the intersection of the existing slope and the vertical cut of the previous bench. Recompact the cut materials along with the new embankment.

If constructing embankment on only one side of abutments, wing walls, piers, or culvert headwalls, construct the embankment so that the area immediately adjacent to the structure is not compacted in a manner that causes overturning of or excessive pressure against the structure. If constructing embankment on both sides of a concrete wall, pipe, or box type structure, construct the embankment so that the elevation on both sides of the structure is always approximately the same.

203.06 Spreading and Compacting. Do not construct frozen embankment material or place embankment material on frozen ground.

Spread all embankment material, except for rock in 203.06.C and RPCC in 203.06.D, in successive horizontal loose lifts, not to exceed 8 inches (200 mm) in thickness. Compact all embankment material lifts, except for Type D granular material, Type E granular material, rock and hard shale, to the specified density and moisture controls in 203.07.

When a minimum weight requirement is specified in 203.06 or 203.07, the Contractor may use a roller with an equivalent centrifugal force. In all cases, submit documentation proving the minimum weight requirements are met.

The Engineer may reduce the minimum passes if the passes are detrimental to compaction.

A. Soil and Granular Embankment. For soil or granular material, when a test section is used, use a minimum compactive effort of eight passes with a steel wheel roller having a minimum weight of 10 tons (9 metric tons).

Compact Type D and Type E granular material using at least ten passes of a steel wheeled vibratory roller having a minimum weight of 10 tons (9 metric tons). Add water to Type D granular material as needed or directed by the Engineer.

B. Shale. The Engineer will test for soft shale according to 703.16, to determine if compaction testing is required. For soft shale, when a test section is used, use a minimum compactive effort of ten passes with a tamping foot roller having a minimum weight of 15 tons (14 metric tons) or with rollers meeting the requirements of 703.16.D.

Use water to aid in breaking down large particles and to bring the shale to at least 2 percent above optimum moisture content.

Compact hard shale, as defined in 703.16, with a minimum compactive effort of ten passes of a tamping foot roller having a minimum weight of 15 tons (14 metric tons) or with rollers meeting the requirements of 703.16.D. When the hard shale is mixed with fine material, use fine material that is at least 2 percent above optimum moisture content. No density testing will be required. If shale mixture contains large particles of shale, break down the particles during placement until the voids are filled.

Place and compact shale and rock mixtures using the same procedure as for shale. Reduce rock size in a shale-rock mixture to less than or equal to 8 inches (200 mm), or separate rock greater than 8 inches (200 mm) from the mixture and use as rock fill. Use

the construction methods for rock when the shale-rock mixture contains less than 15 percent shale.

C. Rock. Reduce the rock until it is small enough to be incorporated into the following horizontal lift thickness: Place rock in a maximum loose lift thickness 6 inches larger than the largest diameter of the rock pieces or 3 feet (1 m), which ever results in the smaller lift thickness. When placing rock fill within a length of six times the height of the fill at an abutment, place rock fill in loose lifts not to exceed 18 inches (0.5 m). [For example, if the fill height is 20 feet (6 m), then the rock fill within 120 feet (36 m) of the abutment is placed in less than 18-inch (0.5 m) loose lifts.]

Do not dump the rock, but distribute and place the full width of the lift by blading or dozing to ensure proper placement. Evenly distribute the larger rocks, and reduce the voids, pockets, and bridging to ensure minimum deformation. Incorporate smaller rock pieces in the upper portions of each rock lift to fill the voids during this manipulation.

When placing embankment material other than rock on top of the rock lift, level and smooth the rock surface using suitable leveling equipment and evenly distribute the smaller rock, rock spalls, or finer rock fragments.

Water and roll all rock lift surfaces and lifts made up principally of rock smaller than 8 inches (200 mm) with eight passes with a vibratory steel wheel roller having a minimum weight of 10 tons (9 metric tons).

When constructing rock and other embankment materials at approximately the same time, perform the following:

1. Use the rock at the base of the embankment.
2. Use rock in the outer portions of the embankment.
3. Use the larger rocks on the outside side slopes.
4. Use the other embankment material in the inner portion of the fill.
5. Keep the top of the other embankment materials higher than the rock.
6. Construct the other embankment materials to a sufficient width to allow the specified compaction.
7. When rock is placed on top of other embankment material, construct the other embankment material at a center-to-side slope grade of approximately 4 percent.

D. Random Materials. Reduce the random material until it is small enough to incorporate into an 8-inch (200 mm) lift, except for RPCC in 203.06.D.1 through 203.06.D.4.

When using a uniformly graded mixture, use material with a moisture content less than 2 percent below optimum to obtain compaction. When large pieces are incorporated in the lifts, use fine material with a moisture content less than 2 percent below optimum to obtain compaction.

Compact natural soil and natural granular material blends with RACP or RPCC to the same requirements as a granular embankment in 203.06.

203.07

When using RPCC slabs or large RPCC pieces in the embankment construction, conform to the following:

1. Use natural soil or natural granular material that is less than 2 percent below optimum moisture in the blend. Reduce the slabs or pieces to less than 3 × 3 feet (1 × 1 m) in size and place the blend in a maximum loose lift thickness of 12 inches (300 mm).
2. Manipulate, level, and distribute the mixture by blading or dozing to fill the voids and pockets, and reduce bridging.
3. Compact the natural soil or natural granular embankment to the compaction and moisture requirements in 203.07.
4. When the RPCC slabs or large RPCC pieces consists of more than 50 percent of the embankment lift, place the blended material in maximum loose lifts of 18 inches (0.5 m). Do not place one slab directly on the other. Compact, manipulate, level, and distribute as stated in 203.06.D.1 through 203.06.D.3.

E. Areas Inaccessible to Rollers. For areas inaccessible to rollers, such as adjacent to culverts, retaining walls, or other structures, construct the embankment in 6-inch (150 mm) horizontal loose lifts.

203.07 Compaction and Moisture Requirements. Construct all embankments, except rock and hard shale, using moisture and density controls. Unless otherwise specified in the Contract Documents, the Engineer will perform all compaction tests according to Supplemental Specification 1501.

A. Moisture Controls. Sprinkle enough water on embankment material that contains too little moisture to wet it to a moisture content needed to meet the density requirements. Apply the water using tank trucks equipped with suitable sprinkling devices. Thoroughly incorporate the water into the material by using discs, plows, or other approved equipment. Continue to water and to manipulate until the required moisture is uniformly distributed throughout the lift.

Before or during compaction, allow the embankment material that contains excess moisture to dry to a moisture content needed to meet the density requirements. Continue drying until the required moisture is uniform throughout the lift. However, for material that displays pronounced elasticity or deformation under the action of loaded rubber tire construction equipment or other equipment, reduce the moisture content to secure stability. Expedite and manipulate the embankment material by drying the wet embankment material by using plows or discs; by adding dry material, lime, or cement; or by other methods.

Do not mix shale in the lifts to reduce the moisture content of the embankment material.

B. Compaction Requirements. Compact all embankment materials, except for rock and hard shale, in horizontal lifts to a dry density greater than the percentage of maximum dry density in Table 203.07-1, or to 98 percent of the maximum dry density determined by the test section methods specified in Supplemental Specification 1501.

TABLE 203.07-1 EMBANKMENT COMPACTION REQUIREMENTS

Maximum Dry Density [lb/ft³ (kg/m³)]	Minimum Compaction Requirements in Percent of Maximum Dry Density
90 to 104.9 (1440 to 1680)	102
105 to 119.9 (1681 to 1920)	100
120 and more (1921 and more)	98

If needed for compaction acceptance, construct a test section using the following:

1. Use at least the same number of passes and compactive effort used to construct the test section to construct the production embankment areas.
2. Construct a new test section when the material, supporting foundation, or embankment changes.
3. Reduce the moisture content if the material becomes unstable.

203.08 Earthwork Construction Tolerances. Finish the completed excavation and embankment to the cross-sections shown on the plans. Check the excavation and embankment work with templates, slope boards, electronic methods, or other methods specified in Item 623. The Engineer will allow occasional deviations in the work within the following tolerances:

- A. When topsoil is specified, use the following:
 1. In fill areas, construct the embankment to the bottom of the topsoil depth.
 2. In cut areas, construct the cut an additional depth for the topsoil.
 3. For cuts or fills, the cross-sections show the finished grade, which is the top of the topsoil.
- B. For the backslopes (cut slopes), from the back of the ditch to the existing ground, and for the foreslopes (fill slopes), from the edge of the graded shoulder to the bottom of the ditch, do not allow deviations greater than 1 foot (0.3 m) as measured in the horizontal plane.
- C. Do not construct shoulders and ditches less than the horizontal measurement from the centerline or to a higher elevation than shown on the plans. However, the cross-section may vary below the plan grades by less than ½ inch (15 mm) at the pavement edge and by less than 2 inches (50 mm) elsewhere.
- D. Construct or fine grade the subgrade to within 1/2 inch (15 mm) of the plan elevation at any location. Construct or fine grade the subgrade to within 1/2 inch (15 mm) of the plan grade as measured with a 10-foot (3 m) straightedge applied to the surface parallel to the centerline of the pavement.
- E. For all rock or shale cut slopes that do not require control blasting techniques, rake excavate, hoe, ram, or mechanically shape these slopes to obtain a neat and smooth appearance.

203.09

203.09 Method of Measurement. The City will measure Excavation by the number of cubic yards (cubic meters) of material in the original position, acceptably excavated, using the average end area method.

The City will measure Embankment; Rock; Granular Embankment; and Granular Material, Type ___ by the number of cubic yards (cubic meters) of material in the final position, acceptably placed, using the average end area method.

Measurement will include overbreakage or slides not attributable to carelessness of the Contractor, embankment settlement caused by soft embankment foundation, unsuitable materials excavated and removed to obtain proper stability in cut sections and in foundation areas for fill sections.

The City may use three-dimensional measurements where it is impractical to measure material by the cross-section method due to the erratic location of isolated deposits.

The City will not measure excavation or embankment outside plan limits.

The City will measure Borrow by the cubic yard (cubic meter) or ton (metric ton) as specified in the Contract Documents.

When in-place density tests are needed, the City will perform the tests according to Supplemental Specification 1501.

The Contract Documents will specify borrow only when the measurement of the material in its final location by volume is impractical. For example, this would apply when the borrow material is to be placed in locations that are under water or in locations with extremely soft foundations. In addition, the City may specify borrow when additional material is needed and when Item 209 is specified. In this case, the City will pay for borrow for under 209 Borrow.

The City will measure the volume of borrow material in a natural formation either by the average end area method or by weight.

Where measurement is by the average end area, the City will take cross-sections after the surface has been cleared and scalped and again after the borrow area excavation has been completed. The cross-sections determine the volume for payment.

Where the total weight is measured and converted to volume, the City will determine material density in pounds per cubic yard (kilograms per cubic meters) in its original position by a series of representative field measurements made after clearing and scalping have been performed, and as the excavation exposes the borrow material. Weigh the acceptable material, minus excess moisture, excavated from the borrow area for incorporation into the embankment, and furnish the City with load slips. The City will determine the cubic yards (cubic meters) for payment by dividing the total weight of the borrow material by the average weight per cubic yard (cubic meter) of the undisturbed material. If the moistures of the in-place borrow site density test material is not within 2 percent of the accepted delivered material, the City will calculate volume based on the dry densities and weights.

The City will calculate the volume of borrow from sources other than natural in-place formations, such as processed slag, sand, stone or gravel, and quarry material as follows: Determine the material in-place compacted density in pounds per cubic yard (kilograms per cubic meter). The volume paid will be the total weight of the material furnished,

minus excess moisture, divided by 95 percent of the average embankment density. If the moistures of the accepted in-place density test material is not within 2 percent of the delivered material, the City will calculate volume based on the dry densities and weights. Where measurements show that completed embankment exists outside the plan cross-sections or outside the allowable tolerances, the City will multiply the quantity outside plan lines by a shrinkage factor to determine the quantity deducted from the measured borrow quantity. The shrinkage factor is determined by dividing the volume or weight of the material excavated or used as borrow by the volume or weight of the material compacted in place.

When the measurement is by weight, the City will accept the material based on the freight bills and weight and volume evidence according to 109.

203.10 Basis of Payment. If the Contract does not include 201 Clearing and Grubbing or an estimated quantity for 201 Tree Removed or 201 Stump Removed, or an estimated quantity for the pay items under Item 202, the City will not pay for this work directly but will consider it incidental to pay items under Item 203.

The City will not pay for additional wasting cost of material excavated in the work that was wasted instead of being dried as detailed in 203.03.H.

If the Contractor elects to use PCS, the City will not pay for additional work necessary to comply with the requirements specified in 203.03.J.

If during excavation the Contractor encounters remains of prehistoric archaeological sites, historical archaeological sites, or human remains, the City will pay for such excavation according to 109.05.

If during excavation the Contractor encounters hazardous material or waste, the City will pay according to 109.05.

If necessary during the construction in 203.03.H, 203.04.A, or 203.07.A, the City will not pay for removing the saturated embankment or drying the embankment.

If caused by improper excavation methods, the City will not pay for removing slides and breakages beyond the limits of the planned finished work. The City will pay for the removal of slides and breakages beyond the limits of the planned finished work according to 109.05, when there is no Contractor fault or neglect.

If caused by the lack of implementing erosion controls, the City will not pay for reshaping shoulders, slopes, and ditches damaged by erosion during construction.

If caused by the Contractor's equipment or methods, the City will not pay for repairing or restoring damaged areas designated for salvage.

The City will adjust earthwork quantities for changes resulting from the following: undercutting, foundation settlement, changes to grades or slopes, and removing slides. The City will not adjust earthwork quantities when the volume between two consecutive cross-sections differs by less than 5 percent from the plan quantity. For quantity differences greater than 5 percent, submit supporting documentation to the Engineer.

For quantities measured for payment, the City will use the plan cross-sections, corrected for errors, as the original field cross-sections. Additional cross-sections may be interpolated from the plans at points necessary to more accurately determine quantities.

203.10

The City will pay according to 109.05 for changes or extra work that increases the haul distance more than 1/2 mile (1 km) to the work detailed in the Contract Documents. The City will pay for additional quantities that increase the haul distance 1/2 mile (1 km) or less at the unit bid price.

When specified, the payment for borrow includes all work to complete the embankment construction to the cross-sections shown on the plans. The City will not make additional payment for the embankment construction of the borrow material. When borrow is not specified, all work is included in the excavation or embankment pay items.

The City will pay for accepted quantities at the contract prices as follows:

Item	Unit	Description
203	Cubic Yard (Cubic Meter)	Excavation
203	Cubic Yard (Cubic Meter)	Embankment
203	Cubic Yard or Ton (Cubic Meter or Metric Ton)	Granular Embankment
203	Cubic Yard or Ton (Cubic Meter or Metric Ton)	Granular Material, Type ____
203	Cubic Yard or Ton (Cubic Meter or Metric Ton)	Borrow
203	Cubic Yard or Ton (Cubic Meter or Metric Ton)	Rock