

SPECIAL NOTE FOR EXCAVATION AND EMBANKMENT

This Special Note replaces Sections 204 and 206 of the Department's 2008 Standard Specifications for Road and Bridge Construction and will apply where indicated on the plans or in the proposal. Section references herein are to the Department's 2008 Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. Remove and dispose of all materials taken from within limits of the work contracted, meaning the calculated material lying between the original groundline and the excavation limits established or approved by the Engineer as shown on the final cross sections, and form embankments with materials from sources specified in the Plans or from other approved sources.

2.0 MATERIALS AND EQUIPMENT. Use water conforming to Section 803.

3.0 CONSTRUCTION.

3.1 Excavation. Excavate for cuts and roadbeds, embankment foundation benches, embankment subgrades, under-cutting subgrades in cut sections, shoulders, slopes, ditches, waterways, intersections, approaches, balance excavation, inlet and outlet ditches, and channel changes, all as specified in the Contract.

Remove and dispose of miscellaneous structures from within the limits of the typical section according to Section 203.

Protect and preserve all existing culverts, pipelines, conduits, subdrains, or parts thereof that may continue to be used without any change. Repair or replace any culvert, pipeline, conduit, or subdrain damaged from operations or negligence during the life of the Contract.

During construction, ensure that the roadway is well drained at all times.

3.1.1 Classification. Without regard to the materials encountered, all roadway and drainage excavation is unclassified and the Department will consider it Roadway Excavation. Any reference to rock, earth, or any other material on the Plans or cross sections, whether in numbers, words, letters, or lines, is solely for the Department's information and is not an indication of classified excavation or the quantity of either rock, earth, or any other material involved. The bidder must draw his own conclusions as to the conditions to be encountered, including any shrinkage and swell of materials. The Department does not give any guarantee as to the accuracy of the data and will not consider any claim for additional compensation when the materials encountered are not in accord with the classification shown.

3.1.2 Slopes. Do not remove or loosen any material outside of the required slopes. Leave all rock cut slopes with a uniform surface, and remove all loose or overhanging rock. Do not gouge or dig holes in back slopes or in embankment slopes.

The Engineer may vary the slopes in cuts during construction, depending upon the material encountered in excavation to secure sufficient material for the formation of embankment and shoulders, to prevent landslides, to improve sight distance, or for any other reasons widening or variations are deemed to be to the best advantage of the work. When making a cut on any section of the roadway in any material that may slide, excavate to the slope lines as specified in the Plans or as the Engineer directs. Do not form vertical slopes during the

process of excavation of such cuts, except in stage construction when leaving material in cuts for future shoulder construction.

- 3.1.3 Serrated Slopes.** When the Plans designate locations to construct serrated slopes and when soft rock or shale are encountered at the designated locations, excavate these materials by bulldozing or ripping, without drilling and blasting, in a manner that serrates the cut faces to a stepped pattern.

Round all soil overburden and talus material above the serrated slopes to blend with the original ground. Construct the top half step tread of a serrated slope just below the surface where the soil overburden contacts the soft rock or shale and continue the steps to the bottom of the cut slope, unless hard rock or hard shale formations are encountered which indicate that the lower limits of the rock disintegration zone have been reached. When hard rock or hard shale formations which must be blasted are encountered within the cuts being serrated, end the steps of the serrated slope by blending them into the hard rock or shale. Construct the step risers in the serrated slopes to the height specified in the Plans with the approximate width of the step treads being the height of the risers multiplied by the designated cut slope ratio. Make the midpoints of treads of the steps coincide approximately with the staked slope lines. Blend the first and last steps of a serrated slope into the staked slope line. Construct the first and last steps of a serrated slope to a width of approximately one-half the normal step tread width. Construct the step treads approximately level rather than parallel to the ditch line grades. When the steps extend throughout the length of a cut, round the ends of the steps and blend them into the adjacent ground.

The Engineer will not require thorough final dressing of the serrated slopes. However, remove large pieces of rock or other dangerous material which might fall from the steps and create safety hazards or maintenance problems. Seed and protect the serrated slopes according to the Plans and Section 212.

- 3.1.4 Presplitting.** Presplit all rock and shale formations within the roadway excavation limits that are conducive to excavation by drilling and blasting at the designated slope lines. Perform the presplitting before blasting and excavating the interior portion of the specified cross section at any location.

Perform presplitting to obtain smooth faces in the rock and shale formations. Develop presplit faces that are free of all loose or crushed pieces and do not deviate more than 6 inches inwardly from the designated slope lines or offset drill holes, nor more than one foot outwardly, except where seams, broken formations, or earth pockets may cause unavoidable irregularities. The Engineer may stop the presplitting when he determines that materials have become unsuitable for presplitting. The Department will measure for payment material lying outside the typical section that must be removed due to seams, broken formations, or earth pockets, including any earth overburden removed with this material.

- 3.1.5 Ditches.** Ditches include channel changes, inlet and outlet ditches, side ditches, surface ditches, wing ditches, and such other required ditches.

Construct side ditches draining from cuts toward embankments to avoid erosion damage to embankments by directing water coming from cuts away from fills.

Do not place material removed in cleaning or opening of ditches on cut

slopes.

Excavate special ditches and channel changes before constructing adjacent embankment areas.

Remove all debris from ditches before requesting formal acceptance.

3.1.6 Use of Excavated Materials. Use all suitable excavated material in the formation of embankments, subgrade, or shoulders; as backfill for structures; or for other purposes specified in the Contract.

Remove and dispose of all sod and soft or spongy material. Do not use such materials in the construction of the grade, except as provided in Part 3.2 of this note.

Take ownership and dispose of any coal excavated from the project within the typical section, or as directed. Do not use coal in embankments except in small quantities and then only when thoroughly mixed with other materials.

Do not waste excavated material without permission. When approved, waste excess material adjacent to the embankment or incorporate it in the normal embankment construction within the right-of-way limits. Do not perform irregular or partial widening of embankments. Do not waste excess material between cut slopes and the right-of-way limits, except for the purpose of filling depressions, gullies, and other cavities; and, when so wasted, shape the material to conform with the adjacent ground.

A) Channel Lining, Class IV. Prepare broken stone from formations consisting primarily of limestone, or if specified in the Plans, durable sandstone or durable shale (SDI equal to or greater than 95 according to KM 64-513) that are encountered in roadway excavation or obtained from borrow excavation.

Provide stone so that at least 80 percent, by volume, of individual stones range in size from 1/4 to 1 1/2 cubic foot. Use smaller sized stones for filling voids in the upper surface and dressing to the proper slope. The Engineer will accept the size and gradation of the material based on visual inspection. The Engineer may allow material not conforming to the specified size and gradation when it is acceptable for the intended use.

Shape ditches and channels as specified to receive the channel lining. Unless solid rock is encountered, begin the channel lining in a trench 2 feet below the natural ground or 2 feet below the channel flowline when the flowline is not lined. Where encountering solid rock, end the slope protection at the solid rock line.

Construct Channel Lining, Class IV to the minimum thickness specified in the Plans. Place the stone in a manner to produce a surface not varying more than 6 inches from a true plane.

B) Spreading Stockpiled Topsoil. If the Contract includes Spreading Stockpiled Topsoil as a bid item, or when otherwise specified in the Contract, salvage topsoil from within the limits of the slope lines and store it in stockpiles. Before removing the topsoil, clear the areas of all weeds, brush, stumps, stones, and other debris. Remove the topsoil only from areas and to depths specified in the Plans or as the Engineer directs. Avoid mixing subsoil or other unsuitable material with the topsoil. Place sod removed from embankment areas according to Subsection 206.03 in the topsoil stockpiles. Place the stockpiles along the project at approved locations. Neatly dress each stockpile, when completed. Perform

temporary or permanent seeding on the stockpiles.

When Spreading Stockpiled Topsoil is a bid item, the Department will allow the topsoil to be spread directly on the areas designated to receive the topsoil, without stockpiling, provided that seeding and protection operations are ready to begin.

3.1.7 Roadbed. In addition to the limits of the roadbed as defined in Subsection 101.03, extend the roadway excavation to the ditch lines in cuts. Conduct roadway excavation operations to make available a sufficient quantity of selected materials to complete the roadbed.

Remove all rock between ditch lines to a depth below the required grade as specified in the Plans or as staked. Leave the final surface of the rock to provide complete drainage. Construct the refill over this surface with select material having no stone or spalls larger than 4 inches. Place all refill in lifts not exceeding one foot in depth, loose measurement, and compact according to Part 3.2 of this note. The Engineer will make no allowance for excavation and refill material to a greater depth below the required grade than as specified in the Plans or as staked.

When encountering unsuitable material at subgrade elevation, remove the material to the depths specified in the Plans or as directed. Dry and use material that is unstable due to excessive moisture but otherwise suitable. Waste the material or use the material as refill or in embankments as the Engineer directs. Refill with suitable material.

A) Rock Roadbed. Conduct roadway blasting and excavation operations to make available a sufficient quantity of rock to complete the roadbed.

Prepare rock from formations consisting primarily of limestone, durable sandstone, or durable shale (SDI equal to or greater than 95 according to KM 64-513) that are encountered in the roadway excavation or that are obtained from borrow excavation. Do not use rock fragments exceeding one foot.

Excavate all cuts to a minimum of 2 feet below the final subgrade elevation and refill with the broken stone in 2 lifts, each approximately one foot thick. Leave the excavated surface to provide complete drainage. If excavation is deeper than 2 feet below subgrade, construct the top 2 feet in 2 lifts, each approximately one foot thick and the remaining in lifts not exceeding one foot using rock conforming to this section.

Construct rock roadbed from ditch line to ditch line in cuts, from shoulder to shoulder in fills, and throughout the entire project including mainline, ramps, and approach roads.

Perform all handling, stockpiling, or hauling manipulations, including overhauling, necessary to provide for the proper distribution of the broken stone.

In all instances, dump, spread, and smooth each one-foot lift, and compact each lift by vibratory rollers weighing at least 5 tons to minimize voids and bridging.

B) Chemically Stabilized Roadbed. Construct according to Section 208.

3.2 Embankment.

3.2.1 Embankment Foundations. Remove sod from all embankment areas to a

depth of approximately 3 inches. The Engineer will not require the removal of sod when constructing embankments over marshy areas.

Remove unsuitable material, including frozen material, encountered in embankment areas before placing any embankment material thereon.

When the height of the embankment, at subgrade elevation, is to be greater than 3 feet above existing concrete pavement, either break the pavement until no fragments have a dimension greater than 3 feet or remove the pavement. When the height of the embankment, at subgrade elevation, is to be 3 feet or less above existing concrete pavement, remove the pavement.

When placing embankment above existing asphalt pavement, break up to destroy all cleavage planes or remove as the Engineer directs.

Cut benches with horizontal and vertical faces into the original ground of embankment foundations as required. When practical, benches should be into rock. Compact the horizontal face. Provide subsurface drainage as specified in the Plans or as the Engineer directs.

When the Contract designates original material as unsuitable for the embankment foundation, the Department will designate areas of Special Excavation and/or treatment and will give instructions about the removal and disposal of unsuitable foundation material in the Plans.

When a bid item of special excavation has not been included in the Contract and the original ground is specified in the Plans as suitable to serve as the embankment foundation but the Engineer subsequently determines the material is unsuitable to remain in its original position, excavate and dispose of the unsuitable foundation material as directed. Incorporate the excavated material into embankments when manipulations such as spreading thin layers or drying the material make it acceptable for use as embankment-in-place. When excavated material cannot be used in embankments, waste the material.

3.2.2 Placing and Compacting. Use only acceptable materials from sources permitted in the Contract. Do not place frozen material, stumps, logs, roots, sod, or other perishable materials in any embankment. Do not place any stone or masonry fragment greater than 4 inches in any dimension within one foot of the finished subgrade elevation, unless rock roadbed is specified.

The Department may allow concrete rubble, without protruding reinforcement, to be placed in embankment provided that no fragment is larger than one foot in any dimension or is placed within 2 feet of the subgrade.

When crossing marshy or otherwise unstable areas, the Department may allow the first lift to exceed one-foot loose depth. Use rock or granular material in the first lift, when available, and construct by placing material behind the leading edge of the layer and blading into place to avoid unnecessary disturbance to the original ground.

Drain, clean out, and fill ponds lying within the staked construction limits.

Construct the upper one foot of the embankment with selected material placed in lifts not exceeding one foot loose thickness.

When rock roadbed is specified, construct the upper 2 feet of the embankment according to Part 3.1.7 of this note.

A) Embankments of Earth, Friable Sandstone, Weathered Rock, Waste Crushed Aggregate, Bank Gravel, Creek Gravel, or Similar Materials. Construct in lifts not exceeding one foot in thickness, loose depth, to the full width of the cross section, and compact the material.

Shape the upper surface of the embankment to provide complete drainage of surface water at all times. Do not form ruts.

- B) **Embankments Principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.** Construct in lifts not exceeding 3 feet. Ensure that the maximum dimensions of boulders or large rocks placed in the embankment do not exceed 3 feet vertically and 4.5 feet horizontally. Place rocks having any dimension greater than 2 feet at least 2 feet below subgrade elevation. Do not dump rock into final position. Distribute the rock to minimize voids, pockets, and bridging. The Engineer will not require rolling in the construction of rock embankment. Do not construct the rock embankment to an elevation higher than one foot below subgrade elevation.
- C) **Embankment of Rock/Shale/Soil Combination.** Construct in lifts not exceeding one foot in thickness; however, when the thickness of the rock exceeds one foot, the Department may allow the thickness of the embankment lifts to increase, as necessary, due to the nature of the material, up to 2 feet. Apply a sufficient amount of water to induce slaking when mixtures contain 50 percent or more non-durable shale. Do not dump the mixture into final position. Distribute the mixture in a manner that minimizes voids, pockets, and bridging.
- D) **Embankments Principally of Non-Durable Shale (SDI less than 95 according to KM 64-513).** Remove or break down rock fragments or limestone slabs having thickness greater than 4 inches or having any dimension greater than 1 1/2 feet before incorporating them into the lift. Construct in loose lifts not exceeding 8 inches in thickness. Apply water to accelerate slaking. Uniformly incorporate the water throughout the lift using a multiple gang disk with a minimum disk diameter of 2 feet or other suitable equipment the Engineer approves. Compact with 30-ton static tamping foot rollers in conjunction with vibratory tamping foot rollers that produce a minimum compactive effort of 27 tons and direct hauling equipment over the full width of the lift to aid in compaction. When questions arise regarding the durability of shale, use KM 64-514 to estimate the durability of the material in the field.

Compact the embankment foundations and embankment to a density of at least 95 percent of maximum density as determined according to KM 64-511. The Engineer will check density according to KM 64-412.

During compaction, maintain the moisture content of embankment or subgrade material within ± 2 percent of the optimum moisture content as determined according to KM 64-511.

Compact each lift as required before depositing material for the next lift. Provide equipment that will satisfy the density requirements at all times. Run the hauling equipment, as much as possible, along the full width of the cross section.

3.2.3 Embankment Adjacent to Structures. Construct according to Subsection 603.03.04 for backfill.

3.3 Construction Tolerances. Make every reasonable effort to construct the project uniformly within the following allowable tolerances and in a manner that will minimize the field measurements and computations required to determine if the work is satisfactory.

The Department will allow the following tolerances before making payment for any decreases in the quantity or before requiring the rework of the constructed item:

- 1) Do not deviate the distance from centerline to the ditch lines in cuts and the shoulder lines in fills more than one foot from the dimension specified in the Plans. Ensure that the total width of the roadbed is not deficient by more than one foot at any location.
- 2) Ensure that the sloped surfaces between the ditch lines or shoulder lines and the original ground are not inside the specified slope limits more than 6 inches or outside the specified slope limits more than one foot, both measured horizontally.
- 3) Excavate cut benches to within one foot above or below the bench elevation specified in the Plans or established by the Engineer.
- 4) The Department will not make payment for any earthwork performed outside the limits specified by the neat lines of the cross sections on the Plans or by the Engineer. Do not remove or place any extra material more than one foot outside of these limits without permission, except as provided in Parts 3.1.4 and 3.2 of this note.
- 5) On grade and drain projects where surfacing is not included, complete the subgrade to within ± 0.1 foot of the designated grade at the time of final acceptance, except that when rock roadbed is specified, complete it to within ± 0.2 foot.
- 6) Ensure that all subgrades being prepared for base or surface courses, except traffic bound courses, are within $\pm 1/2$ inch of the specified crown section, except that when rock roadbed is specified, complete it to within ± 0.2 foot. Uniformly construct these subgrades so the subsequent base and surface courses can be constructed within their specified tolerances.

3.4 Landslides. When directed, remove and dispose of all landslides. The Department will measure landslides in place, by the cross section method, before removal of material. Obtain the Engineer's approval for use of slide material.

3.5 Disposal of Wasted Material. Obtain approved sites for wasting material off the right-of-way. Place material to avoid an unsightly appearance. Place all waste to avoid the obstruction of drainage. Seed and protect the wasted material and all temporary haul roads.

Submit for approval drawings of proposed waste areas, showing the configuration of the original ground and the anticipated configuration of the area upon completion of the waste operation; any preparatory work such as benching; provisions for surface and subsurface drainage of the area after wasting is completed; and any other necessary information. The Department will pay for the geotechnical investigation and analysis of the proposed waste area when one is requested by the Engineer. Ensure all work is performed by a pre-qualified geotechnical consultant and according to the Department's Geotechnical Manual.

Furnish cross sections and hydraulic computations for waste area sites situated in the flood plain of any stream. For these computations, define this flood plain as that area required to pass the 100 year flood. Indicate with the computations the effect that the waste site will have on both the design flood and the 100 year flood.

Furnish copies of a written agreement with the property owner, approval of the owner(s) of utilities of any nature existing within the proposed waste area, and approvals from all applicable regulatory agencies including the Natural Resources and Environmental Protection Cabinet, US Forest Service, US Army Corp of Engineers, US

Fish and Wildlife, Kentucky Division of Water, and Planning and Zoning Commissions.

When encountering unanticipated waste material resulting from landslides or approved slope changes, waste it within the right-of-way at sites designated by the Engineer, or dispose of it off the right-of-way at sites acquired or approved by the Department.

4.0 MEASUREMENT.

4.1 Payment for Design Quantities. Unless the Contract provides for payment based on field measurements of material excavated, the Department will not measure Excavation or Embankment quantities but will make final payment at the Contract unit price for the design quantity specified within the neat lines of the cross sections on the Plans, increased or decreased by authorized adjustments.

The Department will not consider any quantity specified in the Plans for contingencies to be part of the design quantity. The Department will include only the portion of the contingency quantity actually used, as determined by the Engineer's measurements.

4.2 Authorized Adjustments. The Department will only make adjustments to the design quantities of Excavation or Embankment authorized by the Engineer for the following reasons:

- 1) Changes in the quantity of work due to benching, undercutting, changing slopes or grades, removing slides, and any other required procedures.
- 2) Decreases in the quantity because of acceptable work not conforming to established tolerances.
- 3) Corrections of major errors on the Plans. Major errors are defined as individual mistakes of 5 percent or more in the quantity of earthwork between 2 consecutive cross sections, for omissions, duplications, or other errors in the survey or on the Plans, but not for minor discrepancies in the plotting of cross sections, in the planimetry of cross sections, and in the resulting computation of the volume of earthwork. When errors in the lines or grades specified in the Plans cause major errors in earthwork quantities, the Department will correct the earthwork quantities throughout the entire span of the errors. The Department will not adjust earthwork quantities when errors in the lines or grades do not cause major errors in the earthwork quantities.
- 4) Arithmetical mistakes.

4.3 Serrated Slopes. The Department will not measure this work for payment and will consider it incidental to either Excavation or Embankment, as applicable.

The Department will not measure for payment any breakage of the soft rock or other material outside the staked slope line.

4.4 Presplitting. The Department will not measure this work for payment and will consider it incidental to Excavation. However, if the Engineer directs in writing slope changes, then the Department will pay for the second presplitting operation as Extra Work.

The Department will not measure for payment any extra material excavated because of the drill holes being offset outside the designated slope lines.

The Department will not measure for payment any material including any earth overburden necessary to be removed due to the Contractor's faulty blasting practices.

4.5 Rock Roadbed. The Department will measure the quantity in cubic yards as Embankment. The Department will not measure any special work necessary to perform rock roadbed construction for payment and will consider it incidental to the Embankment bid item.

The Department will measure the removal of unsuitable material as Excavation. The Department will measure any additional material necessary for refill as Embankment, at its origin. The Department will not measure for payment rock refill exceeding 2 feet. When the material is removed from the roadbed and wasted without the Engineer's permission, the Department will not measure for payment any required refill material.

4.6 Landslides. The Department will measure the removal quantity in cubic yards as Excavation and will make equal measurement as Embankment when placed outside the plan's neat lines or wasted. When placed within the neat lines, the Department will consider the equal measurement of Embankment incidental to the Embankment design quantity. When the material is placed outside the plan's neat lines or wasted without the Engineer's permission, the Department will not consider the equal measurement of Embankment for payment.

The Department will not measure for payment the removal and disposal of landslides resulting from faulty operations.

Whenever a landslide extends beyond the right-of-way in wooded areas, and the Engineer directs trees and stumps be removed, the Department will measure for payment clearing of the additional area under Clearing and Grubbing or Removing Trees and Stumps, as provided in the original Contract.

4.7 Ditches. When Ditching or Ditching and Shouldering are listed as a bid item, the Department will measure this according to Subsection 209.04. When Ditching or Ditching and Shouldering are not listed as a bid item, the Department will not measure this work for payment and will consider it incidental to either Excavation or Embankment, as applicable.

4.8 Excavation. The Department will measure the quantity in cubic yards based on design quantities with authorized adjustments. The Department will base the measurement of the Excavation quantities at locations where serrated slopes are constructed on the areas and volumes defined by the staked slope lines. The Department will not measure for payment any excavated material used for any purpose other than that the Plans specify or the Engineer approves.

When the Contract provides for payment based on field measurements of the material excavated, the Department will measure the excavation in its original position by taking cross sections before the work starts and after it is entirely completed. The Department will compute the volume by the average end-area method. The Department will include in its measurement all unavoidable slides and authorized excavation of any material below the subgrade.

Where material has been excavated beyond the slope line and wasted, without being authorized, the Department will measure the wasted material and deduct it from the excavated quantities.

In determining the amount of waste material to be deducted as the result of excavation beyond the slope lines set by the Engineer, and wasted, the Department will consider only that portion outside of one foot additional width of embankment on each side, widened uniformly. The Department will measure the volume and deduct it from the excavation quantities without regard to swell or shrinkage factors.

4.9 Benches. The Department will measure excavation of benches as Excavation

and will make equal payment as Embankment.

4.10 Embankment. The Department will measure the quantity in cubic yards as the design quantity shown within the neat lines of the cross sections on the Plans, increased or decreased by authorized adjustments according to Part 4.2 of this note.

The Department will consider removing sod 3 inches or less in depth; removing and/or scarifying of existing pavements in embankment areas; and the addition of water to aid compaction incidental to Embankment.

When undercutting embankment foundations, regardless of whether the excavated material is used as embankment or is wasted, the Department will measure the removal of unsuitable materials as Excavation or Special Excavation.

When the Engineer directs that the excavated material be wasted, then the Department will measure the material used to replace the wasted material as the same quantity as the excavated volume, and will pay for the material as Embankment. When the excavated material is used in embankment, the Department will make no separate payment for the material necessary to replace the excavated material.

The Department will not measure borrow excavation used to construct the embankment for payment and will consider it incidental to the construction of Embankment.

4.11 Special Excavation. The Department will measure the quantity in cubic yards as the design quantity shown within the neat lines of the cross sections on the Plans, increased or decreased by authorized adjustments as specified in Parts 4.1 and 4.2 of this note.

The Department will not measure overhaul of material and will consider it incidental to Special Excavation.

4.12 Waste. The Department will consider acquiring a waste site, disposing of waste, and providing erosion control for the site and haul roads incidental to Excavation and Embankment.

If the waste material is due to authorized adjustments, the Department will measure the quantity of unanticipated waste resulting from the authorized adjustments in place before excavation; make provisions for a waste site; and measure erosion control work for payment according to Subsection 212.04. The Department will include the quantity of approved unanticipated waste under Embankment.

4.13 Overhaul. The Department will measure the quantity only for excavation and embankment added due to authorized adjustments. For all other excavation quantities, the Department will not measure this work for payment and will consider it incidental to either Excavation or Embankment, as applicable.

The Department will measure the quantity by the Cubic Yard Station. A Cubic Yard Station is the product of the volume of material hauled in cubic yards and the distance that the material is hauled, in excess of the 2,000 feet of free haul, in stations of 100 feet, as determined by the Mass Diagram Method or by analytical methods.

4.14 Channel Lining, Class IV. The Department will measure the quantity in cubic yards.

4.15 Water. The Department will not measure for payment water used to provide sufficient moisture for compaction.

5.0 PAYMENT. The Department will make payment for the completed and accepted

quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
21554EN10Z	Excavation	Cubic Yard
----	Overhaul	Cubic Yard Station
02488	Channel Lining, Class IV	Cubic Yard
05998	Spreading Stockpiled Topsoil	Cubic Yard
21553EN10Z	Embankment	Cubic Yard
02204	Special Excavation	Cubic Yard

The Department will pay for Overhaul at 2 percent of the Contract unit price for both Excavation and Embankment for each Cubic Yard Station.

The Department will consider payment as full compensation for all work required under this section.

January 1, 2008