

## **Section 204**

### **Temporary Erosion Control**

**204.01 DESCRIPTION.** This work consists of constructing and maintaining temporary erosion control features shown on the plans or as directed. Coordinate installation of temporary erosion control features with construction of permanent erosion control features to the extent necessary to ensure economical, effective and continuous control of erosion and water pollution throughout the life of the contract.

Develop and comply with a Storm Water Pollution Prevention Plan (SWPPP) approved by the Department in accordance with the Department's Notice of Intent (NOI), and retain it at the site of the project for review during inspections. The SWPPP shall include the erosion control features as shown on the plans, or as directed, in addition to other required components of the SWPPP specified by the U. S. Environmental Protection Agency (EPA) and the Louisiana Department of Environmental Quality (LDEQ). The plan shall indicate the use of contract items and the coordination of this work with the scheduling of clearing and earthwork.

Quality assurance requirements shall be as specified in the latest edition of the Department's publication titled *Application of Quality Assurance Specifications for Embankment and Base Course*.

#### **204.02 CONTROL OF ERODIBLE SOIL.**

**204.02.1 General:** Prevent the transmission of soil particles into streams, canals, lakes, reservoirs, or other waterways.

Except as necessary for construction, do not deposit excavated material into streams or impoundments or in a position close enough to be washed into waterways by high water or runoff.

Do not disturb lands or waters outside the limits of construction, except as authorized.

**204.02.2 Adjacent to Waterways:** Keep stream banks in their natural state. Do not unnecessarily strip protective vegetation in the vicinity of stream banks. Conduct operations without damage to banks. Do not excavate banks except as shown on the plans or as otherwise approved in writing. Work roads requiring bank cuts shall be approved by the project engineer prior to making such cuts. Restore the banks to the satisfaction of the project engineer.

**204.02.3 Adjacent to Property:** The location of, and method of operation in, borrow pits, material pits, and disposal areas obtained by the

contractor for waste material from the project (other than commercially operated sources) shall be the contractor's responsibility.

**204.03 MATERIALS.** Materials not covered by project specifications shall meet commercial grade standards and shall be approved before being incorporated into the project. Acceptance of temporary erosion control materials will be in accordance with the materials sampling manual.

**204.03.1 Mulches:** Mulch shall comply with 1004.04.

**204.03.2 Seed:** Seed shall comply with 1004.03. Grass shall be an approved quick-growing species suitable to the area, providing a temporary cover which will not compete with permanent grasses.

**204.03.3 Slope Drains:** Slope drains may be constructed of pipe, fiber mats, rubble, portland cement concrete, asphalt concrete, plastic sheets, or other acceptable material.

**204.03.4 Fertilizer:** Fertilizer shall comply with 1004.01.

**204.03.5 Silt Retention Systems:**

**204.03.5.1 Silt Fences:** Silt fencing shall be wire-supported or self-supported systems. Other silt fencing systems may be used when approved. Silt fencing shall comply with 1018.15. Geotextile fabric shall comply with Section 1019.

**204.03.5.2 Other Retention Systems:** Other silt retention systems may be used if approved by the Materials Engineer Administrator.

**204.03.6 Lime:** Agricultural lime shall comply with 1004.02.

**204.03.7 Temporary Construction Entrance:** Temporary construction entrances shall consist of stone or recycled portland cement concrete complying with gradation as required in 711.02, 2 pound class placed on geotextile fabric complying with Section 1019, Class D.

**204.03.8 Hay Bales:** Hay or straw bales shall be rectangular bales, acceptable to the project engineer. The average length of bales shall be 34 inches minimum.

**204.04 EXPOSURE OF ERODIBLE EARTH.** The engineer may direct the contractor to provide immediate permanent or temporary erosion or pollution control measures to prevent contamination of streams, lakes, tidal waters, reservoirs, canals or other impoundments or prevent detrimental effects on property outside the right-of-way and damage to the project. Limitations of areas in which excavation and embankment operations are underway shall be commensurate with the contractor's capability and progress in keeping finish grading, temporary erosion control, and

permanent erosion control measures in accordance with the accepted schedule.

#### **204.05 INCORPORATION OF EROSION CONTROL FEATURES.**

Incorporate permanent erosion control features into the project at the earliest practical time. Use of temporary erosion control features will be authorized to correct unforeseen conditions that develop during construction; to control erosion prior to the time it is practical to construct permanent control features; or to provide immediate temporary control of erosion that develops during normal construction operations but is not associated with permanent erosion control features.

Use temporary erosion control features as directed in areas where stage construction or other conditions not under control of the contractor preclude completion of a section of roadway in a continuous manner, or where subsequent construction operations will cause damage to permanent erosion control features.

#### **204.06 CONSTRUCTION REQUIREMENTS.**

Temporary erosion control features consist of, but are not limited to, temporary seeding, temporary mulching, sandbagging, slope drains, sediment basins, sediment check dams, erosion checks, artificial coverings, berms, and temporary construction entrances. The engineer may direct use of temporary erosion control features or methods other than those included in the original contract. Remove eroded sediment deposits outside the right-of-way immediately and repair the surface at no direct pay. When temporary erosion and pollution control measures are required due to the contractor's negligence or failure to install permanent controls, such work shall be performed at no expense to the department. The engineer may direct the contractor to discontinue operations until eroded sediment deposits have been cleared and the area restored.

When erosion control devices have been properly maintained and exceeded their useful life, they may be replaced with approval and paid for under appropriate pay items as directed.

**204.06.1 Temporary Seeding:** Seed in accordance with Section 717 or 739, except that ground preparation will be limited to blading the area. Apply lime or fertilizer in accordance with Section 718; however, lime or fertilizer may be omitted or the application rate reduced as directed.

**204.06.2 Temporary Mulching:** Furnish and apply mulch in accordance with Section 716. Mulch may be omitted or the application rate

reduced as directed. When permanent seeding operations begin, disc temporary mulch materials during ground preparation.

**204.06.3 Sandbagging:** Place sandbags as shown on the plans or as directed.

**204.06.4 Baled Straw of Hay:** Place baled straw or hay as directed to form checks or dams to control erosion and siltation. Properly stake or secure bales as shown on the plans, or as directed. Bury the bales as necessary to prevent scour under the bales. Drive a minimum of 2 stakes through each bale into the ground to hold in place.

**204.06.5 Slope Drains:** Construct slope drains in accordance with plan details or as directed, to prevent scour. Stabilize or protect the discharge area with temporary riprap. Cost of discharge area protection will be included under the slope drain item.

**204.06.6 Sediment Basins:** Construct sediment basins in accordance with plan details or as directed.

**204.06.7 Sediment Check Drains:** Construct check dams at locations shown on the plans or as directed. Construct check dams before clearing and grubbing or grading in the area is begun unless otherwise directed.

**204.06.8 Silt Retention Systems:** Furnish and construct silt retention systems at designated locations or other locations, as directed by the engineer. Posts for silt fencing shall be installed to a depth necessary to maintain the integrity of the system.

**204.06.9 Berms:** Construct earth berms as directed to divert the flow of water from erodible surfaces.

**204.06.10 Temporary Construction Entrance:** Construct temporary construction entrance(s) in the plans or as directed. Place a geotextile fabric underliner at the locations designated for temporary construction entrances before aggregate material is placed. Place and compact aggregate material to the required thickness as directed. This work also includes additional measures required to remove mud from truck tires, such as wash racks, etc.

**204.06.11 Unforeseen Conditions:** When unforeseen conditions are encountered, the engineer may direct the contractor to construct such temporary devices as required to control erosion during construction. Details may be developed jointly by the engineer and the contractor.

**204.06.12 Maintenance of Erosion Control Features:** Inspect temporary erosion control features at least once every 14 calendar days and within 24 hours after a rainfall event of 0.5 inch or greater. Documentation of these inspections must be maintained in the field office and provided to

the Department for review. Repair and maintain temporary erosion control features within seven calendar days after being instructed to do so by the engineer. Maintain the features as described below or replace as directed at no direct pay.

Repair damaged hay bales, “end runs” and undercutting beneath bales.

Remove sediment deposits when the deposits reach one-half the height of check dams. Ensure that the center of the check dam is lower than the edges. Correct erosion around the edges immediately.

Remove sediment deposits before they reach one-half the height of the silt retention systems, or as directed. If the fabric on the silt fence decomposes or becomes ineffective, promptly replace the fabric.

Maintain the construction entrance to allow for removal of mud from tires. Remove the sediment from the wash rack runoff once the wash rack is no longer performing as intended.

#### **204.06.13 Removal of Temporary Erosion Control Features:**

Remove temporary erosion control features existing at the time of construction of permanent erosion control features or incorporate into the soil in such manner that no detrimental effect will result. The engineer may direct that temporary features be left in place. Remove sediment in sediment basins, silt fences, check dams, and other catchment areas. Reconstruct areas as necessary with acceptable soils in accordance with Section 203 at no direct pay.

#### **204.07 PROTECTION DURING SUSPENSION OF OPERATIONS.**

Prior to the suspension of operations, shape the top of the earthwork in such manner as to permit runoff of rainwater and construct earth berms along the top edges of embankments to intercept runoff water. Provide temporary slope drains in the earth berm to carry runoff. When such preventive measures fail, immediately take other action as necessary to prevent erosion and siltation. The engineer may direct the contractor to perform other erosion control work during suspensions of contract time.

**204.08 MEASUREMENT.** When separate items for temporary erosion control devices are included in the contract, and the work is directed by the engineer, the quantities to be measured for temporary mulching and temporary seeding will be in accordance with Sections 716 and 717, respectively. Measure sandbagging by volume in cubic yards (cu m) with the measurement of sand being made in a batch box or other satisfactory means. Measure the number of hay bales placed; the length in feet of temporary slope drains measured along the ground surface; and silt fencing

measured along ground surface; the number of sediment basins and sediment check dams; and the number of construction entrances.

When temporary erosion control work is directed and is not covered by contract items, perform the work as extra work in accordance with 109.04.

The construction of temporary earth berms along edges of the roadway to prevent erosion during grading and subsequent operations will not be measured for payment.

In case of failure of the contractor to control erosion, or siltation, the engineer may employ outside assistance or use his own forces to provide the necessary corrective measures, and the cost thereof will be deducted from payments due the contractor for the work. Partial payments will be withheld until satisfactory temporary erosion control is established.

**204.09 PAYMENT.** Payment for temporary erosion control items that are included as contract items will be made at the contract unit prices. Payment for temporary mulching, and seeding will be made under Sections 716 or 717. Temporary erosion control work not covered by contract items that is ordered will be paid for in accordance with 109.04.

Temporary Sandbagging and Baled Hay will be paid for directly when used other than in construction of Temporary Slope Drains, Temporary Sediment Basins and Temporary Sediment Check Dams. When sandbags or baled hay are used in construction of slope drains, sediment basins and sediment check dams, payment will be made under these items.

Payment for devices used to correct unforeseen conditions will be made at the contract unit price for similar devices shown on the plans, or as extra work if plan details are not applicable.

Payment will be made under:

<b>Item No.</b>	<b>Pay Item</b>	<b>Pay Unit</b>
204-01	Temporary Sandbagging	Cubic Yard
204-02	Temporary Hay Bales	Each
204-03	Temporary Slope Drains	Linear Foot
204-04	Temporary Sediment Basins	Each
204-05	Temporary Sediment Check Dams	Each
204-06	Temporary Silt Retention Systems	Linear Foot
204-07	Temporary Stone Construction Entrance	Each

