ITEM 207 TEMPORARY SEDIMENT AND EROSION CONTROLS

207.01 Description. This work consists of constructing temporary sediment and erosion control items as detailed in the plans and in compliance with the Division of Sewerage and Drainage (DOSD) Erosion and Sediment Control Regulation (adopted June 1, 1994) or ordered by the Engineer during the life of the Project to control soil erosion and sedimentation. Control items include, but are not limited to: stabilized construction entrances, filter fabric fence, straw wattles, catch basin and curb inlet protection, sediment traps, basins and dams, sediment riser pipes, straw bales, slope drains, coarse aggregate, mulches, grasses, filter fabrics, ditch checks and linings, composition berms, geotextiles and other erosion control devises and methods.

To the extent practical, coordinate temporary sediment and erosion control items with permanent control provisions contained in the Contract to ensure continuous erosion control throughout the construction and post-construction periods.

Provide temporary sediment and erosion controls according to Item 207 for construction work outside of the construction limits, such as borrow pit operations, haul roads, equipment and material storage sites, waste areas, and temporary plant sites, at no additional cost to the City.

207.02 Materials. Furnish commercial fertilizer, seed, and mulch materials conforming to Item 659.

Furnish filter fabric ditch checks, rock checks, inlet protection, perimeter filter fabric fence, straw wattles, bale filter dikes, sediment basins and dams, dikes, slope drains, and rock channel protection materials as specified on the standard construction drawings.

Furnish construction ditch and slope protection conforming to the requirements of Item 670. The seeding and mulching of the mats is not required.

Furnish geotextiles conforming to 712.09.

207.03 Construction Requirements. The Storm Water Pollution Prevention Plan (SWPPP) details the placement, location, and description of the temporary and permanent erosion control items. Use the SWPPP along with Item 207 to rearrange and modify the SWPPP and Contract Document quantities to meet the field conditions and to adhere to the National Pollutant Discharge Elimination System (NPDES) permit and the City of Columbus Stormwater Drainage Manual (latest edition).

As a reference for erosion and sediment control Best Management Practices (BMP's), use the current version of the Ohio Department of Natural Resources (ODNR) – Rainwater and Land Development notebook on sediment and erosion control. Ensure that the SWPPP complies with all current provisions of the Ohio Water Pollution

Control Act (OWPCA) (ORC Chapter 6111) and the NPDES permit. These requirements apply to areas that do and do not require an NPDES permits.

In the event of conflict between these requirements and pollution control laws, rules, or regulations of other Federal, State, or local agencies, adhere to the more restrictive laws, rules, or regulations.

A. Clearing and Grubbing. Limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, and borrow and fill operations by the amount of erosion control items capable of being placed according to the requirements of this specification. Where attainable, preserve existing vegetation. The Engineer may require construction phasing on large-scale developments.

Within 7 days following clearing and grubbing operations, stabilize all inactive cleared and grubbed areas that are scheduled to remain idle for more than 21 days with construction seed and mulch. At a minimum, use construction seed and mulch on all cuts and fills greater than 20 feet (6 m) high within 7 days of inactivity. The 20-foot (6 m) requirement applies when the total inactive acreage exceeds 5 acres (2.0 ha).

If an area is within 50 feet (15 m) of any water body (i.e., stream, river, pond, etc.) and is scheduled to remain idle for more than 21 days, then stabilize the area with construction seed and mulch within 2 days following the clearing and grubbing operations.

B. Installation of Sediment and Erosion Control Items. Install temporary sediment and erosion control items as detailed and according to the following requirements. Keep the sediment and erosion control items functional until the upper slope drainage areas are fully stabilized.

Construct items 1, 2, and 4 through 7 below according to detailed drawings in the Contract Documents.

1. Perimeter Controls. Use perimeter filter fabric fence to protect the project from sheet flow runoff from off Right-of-Way and off construction limit locations. Use perimeter filter fabric fence to protect the following project items from sheet flow runoff: water bodies, wetlands, or other significant items shown on the plans.

Use dikes to prevent sediment flow from coming on to the project and to non-vegetated barren areas on the project.

Install perimeter filter fabric fence and dikes concurrent with clearing and grubbing operations.

2. Inlet Protection. Construct the inlet protection for the existing inlets at the beginning of construction and for the new inlets immediately after completing the inlet.

3. Construction Seeding and Mulching. Apply seed and mulch materials according to Item 659 as modified below. When straw mulch is used, apply at a rate of 2 tons per acre (0.5 metric ton/1000 m^2). Seed and mulch during and after construction, and before or during winter shut down to stabilize the areas according to 207.03.A. Fertilize construction seeding areas at one-half the application rate specified in Item 659. If project conditions prevent fertilizing the soil and preparing the seed bed, then the fertilizing and preparation requirements of Item 659 may be waived. Do not place construction seed on frozen ground.

4. Slope Protection. Place dikes, install slope drains, and construct ditches to divert water from bare non-vegetated areas and to protect cut and fill slopes. Place dikes at the top of fill slopes to protect the side slopes from erosion.

For fill slopes, if no filling activity occurs for 3 or more weeks and if slope height is steeper than 8 feet (2.5 m), install dikes and slope drains.

Before cutting the slope, construct a ditch at the top of cut slopes to reduce runoff coming on the slope.

Place the construction slope protection at the locations shown on the plans as the slopes are constructed. Construct according to Item 670.

5. Ditch Checks and Ditch Protection. Place filter fabric ditch checks or rock checks across a ditch and perpendicular to the flow to protect the ditch from erosion and to filter sediment from the flowing water.

Place ditch checks as soon as the ditch is cut. While working on a ditch, place the ditch checks by the end of the day's work.

Install filter fabric ditch checks in ditches for drainage areas less than or equal to 2 acres (0.8 ha). Install rock checks in ditches for drainage areas between 2 to 5 acres (0.8 to 2.0 ha).

Install ditch checks in conjunction with sediment basins and dams.

Place the construction ditch protection at the locations shown on the plans as the ditches are cut. Construct according to Item 670.

6. Bale Filter Dike. Install fortified bale filter dike as specified in the Contract Documents, to filter and direct sediment to an appropriate control item before the runoff enters a water body on or off the Project limits.

Use the bale filter dike to collect sediment from:

a. Areas less than 1/4 acre (0.1 ha) for each sediment pit.

b. Slopes with a length of less than 100 feet (30 m) and having a maximum 2:1 slope.

Use a sediment pit every 100 feet (30 m) for a 2:1 slope for every 1/4 acre (0.1 ha). Use a greater spacing of the sediment pit for flatter slopes.

Begin constructing bale filter dikes within 7 days of commencing grubbing operations. Complete the construction of the bale filter dike before starting the grading operations.

7. Sediment Basins and Dams. Construct basins and dams at concentrated and critical flow locations to settle out sediment before the water leaves the project. Use basins at the bottom of a ravine, at a culvert inlet, or outlet, along or at the end of a ditch and at any concentrated water exit point of the project. Construct basins to retain 67 cubic yards (125 m^3) of water for every acre (0.1 ha) of drainage area. Use a series of smaller basins or dams as a substitute for a larger basin or dam.

Begin constructing sediment basins and dams within 7 days of commencing grubbing operations. Complete the construction of the sediment basins and dams before starting the grading operations.

When specified, construct construction fence around the Sediment Basins or Dams

8. River, Stream, and Water Body Protection. Protect all streams or water bodies passing through or on the project using perimeter filter fabric fence or bale filter dikes to line the water edge. Divert project water flow using dikes and slope protection. The Contractor may use a combination of items listed in one through seven above and other sediment and erosion control items, as approved by the Engineer.

a. Stream Relocation. Fully stabilize the new stream channel with erosion control mats, or 70 percent grass growth before diverting flow into the new channel. This also applies to ditches that incorporate stream flow.

b. Stream and River Crossings (Causeways). Fording is not allowed. Provide a crossing for construction equipment that does not erode stream banks or allow sediment deposits in the channel. Plan and locate crossings well in advance of needing them. Minimize disturbance to water bodies during construction, maintenance and removal of the stream crossing. Construct the crossings as narrow as practical. Make crossings in shallow areas rather than deep pools where possible. Minimize clearing, grubbing, and excavation of stream banks, bed, and approach sections. Where utility lines cross streams, use dams and bypass pumping.

Construct the stream crossings to a water elevation at least 1 foot (0.3 m) above the normal water elevation. If the stream crossing fills more than one-third the width of the stream, then use culvert pipes to allow the movement of aquatic life.

The following minimum requirements apply where culverts are used. Place culverts on the existing stream bed to avoid a drop in water elevation at the downstream end of the pipe. Furnish culverts with a diameter at least two times the depth of normal stream flow measured at the crossing centerline or with a minimum diameter of 18 inches (0.5 m) whichever is greater. Furnish a sufficient number of culverts to completely cross the channel from stream bank to stream bank with no more than 10 feet (3 m) between each culvert.

For all fill and surface material placed in the channel, around the culverts, or on the surface of the crossing, provide clean nontoxic dumped rock fill, Type B, C, or D, as specified in 703.19.B. Extend rock fill up slope from original stream bank for 50 feet (10 m) to catch and remove erodible material from equipment.

When the causeway is removed, the Contractor may elect to leave the dumped rock fill used around the pipe. Avoid impoundment or a restriction to fish passage when the rock remains. Remove all pipe when the causeway is removed.

207.04 Maintenance. Properly maintain temporary erosion control items with the Engineer's approval. Dispose of silt removed from erosion control items according to Federal, State and local regulations.

The NPDES permit holder or co-permit holders will check temporary and permanent erosion control items every 7 days or within 24 hours after a rainfall of more than 1/2 inch (10 mm).

A. Perimeter Filter Fabric Fence, Filter Fabric Ditch Checks, Rock Checks, Inlet Protection, Dikes, Designated Concrete Washouts, and Bale Filter Dikes. Remove trapped sediment when it reaches half the height of the lowest section. Make appropriate corrections when the erosion control items become nonfunctional. Maintain

the erosion control items until the up-slope permanent grass coverage is 70 percent or better. At this stage, remove the erosion control items.

B. Sediment Basins and Dams. Remove deposited sediment when sediments reduce the initial volume of the sediment basin or dam by one-half. Make appropriate corrections when these erosion control items fail. Remove dams and basins no sooner than 3 days before placing the permanent seed and mulch on the entire project.

C. Temporary Erosion Control. Remove all temporary erosion control items before the project is accepted. Dispose of the removed materials according to Federal, State and local regulations.

D. Street Cleaning. As directed by the Engineer on an as needed basis, weekly, and on occasion, daily street cleaning may be required on many construction projects. This includes maintenance of stabilized construction entrances, sweeping and manual removal of dirt or mud in the street gutters. The flushing of sediment, mud or any other non-stormwater liquids or materials into the storm conveyance system is illegal.

207.05 Performance. For private work, the City holds the Property Owner responsible for the proper installation, maintenance and removal of soil erosion and sediment control items. If the Owner or the Contractor representing the Owner fails to provide proper soil erosion and sedimentation controls, penalties include but are not limited to: holding of sewer permits and inspections, issuance of notices of violation, criminal prosecution and administrative fines.

With the Engineer's concurrence, install additional erosion control items and make adjustments to meet the field conditions and anticipated future work or corrections based on the City's weekly storm water inspections. All erosion and sediment control practices are subject to field modification at the discretion of the City of Columbus and/or the Ohio EPA.

The City will withhold progress payments if proper sediment and erosion controls are not provided and will continue to withhold progress payments until proper erosion controls are placed.

Comply with all applicable Federal, State, and local laws in the conduct of the work. The Contractor represents and warrants that the erosion control items under this item will be performed so as to be in compliance with the requirements of the Clean Water Act, 33 USC Section 1251 *et seq.* and the OWPCA, ORC 6111.01 *et seq.* and related rules. The Contractor warrants and agrees that it is equipped to limit water pollution for its activity according to applicable Federal and State standards.

Provide personnel, equipment, and other services necessary to comply with this requirement and include costs for the same in the bid.

The Contractor further agrees to indemnify and hold harmless the City, and shall reimburse the City for the actual cost of any liability, damage judgment or finding, fine, penalty, or expense as a result of a violation of the above noted laws arising out of the activity of the Contractor in its performance of the Contract.

The Contractor shall reimburse the City within 10 Calendar Days of the amount of the assessment, damage judgment or finding, fine, penalty, or expense, or the City may withhold this amount from the Contractor's next pay estimate and deliver that sum to the

permitting agencies issuing the assessment, damage judgment or finding, fine, or penalty.

These assessments are not to be construed as a penalty but are actual damages to recover the costs assessed against the City due to the Contractor's refusal or failure to comply with the above requirements.

These above provisions survive the completion and/or termination of the Contract.

207.06 Method of Measurement. The City will measure fertilizer by the number of tons (metric tons) under 659 Commercial Fertilizer.

The City will measure Construction Seeding and Mulching by the number of square yards (square meters).

The City will measure Slope Drains by the number of feet (meters).

The City will measure Sediment Basins and Dams by the number of cubic yards (cubic meters) of excavation and embankment.

The City will measure Perimeter Filter Fabric Fence, Bale Filter Dike and Construction Fence by the number of feet (meters).

The City will measure Filter Fabric Ditch Check by the number of feet (meters).

The City will measure Inlet Protection by the number of inlets protected (each).

The City will measure Dikes by the number of cubic yards (cubic meters) of excavation and embankment.

The City will measure Construction Ditch Protection and Construction Slope Protection by the number of square yards (square meters).

The City will measure Rock Channel Protection, Type C or D (with or without) filter by the number of cubic yards (cubic meters).

The City will measure Sediment Removal by the cubic yards (cubic meters).

207.07 Basis of Payment. The City will not pay if temporary erosion and sediment control items are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled; install such temporary work at no expense to the City.

The City will not pay for stream crossing work specified in 207.03.B.8.b.

If erosion control items in the Contract are properly placed according to the Contract Documents, the City will pay to maintain or replace erosion control items at the unit bid prices or according to 109.05.

The City will pay for sediment removed from dams, basins, inlet protection, ditch checks, rock checks, perimeter filter fabric fence, bale filter dikes, and all other types of filter fabrics, straw or hay bales, or any other temporary sediment control items under 207 Sediment Removal.

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

Item	Unit	Description
207	Square Yard (Square Meter)	Construction Seeding and Mulching
207	Foot (Meter)	Slope Drains
207	Cubic Yard (Cubic Meter)	Sediment Basins and Dams
207	Foot (Meter)	Perimeter Filter Fabric Fence
207	Foot (Meter)	Bale Filter Dike
207	Foot (Meter)	Filter Fabric Ditch Check
207	Each	Inlet Protection
207	Cubic Yard (Cubic Meter)	Dikes
207	Square Yard (Square Meter)	Construction Ditch Protection
207	Square Yard (Square Meter)	Construction Slope Protection
207	Cubic Yard (Cubic Meter)	Rock Channel Protection Type C or D with Filter
207	Cubic Yard (Cubic Meter)	Rock Channel Protection Type C or D without Filter
207	Cubic Yard (Cubic Meter)	Sediment Removal
207	Foot (Meter)	Construction Fence
207	Square Yard (Square Meter)	Geo-textiles