Stormwater Erosion Prevention and Sediment Control Requirements:

To be put on Drainage and Grading sheets:

- Erosion and sediment control measures shall be designed to control the rainfall and runoff from a 2 year, 24 hour storm, as a minimum.
- Erosion prevention and sediment controls must be inspected **once a week** and 24 hours before a rain event after a.25 inch rain event and documented on the inspection site checklist.
- Sediment that has escaped the construction site and has collected in the street or drainage structures **must immediately be physically removed**.
- Stabilization measures must be performed within **seven (7) days** in portions of the site where construction activities have temporarily or permanently ceased, and within **fifteen (15) days after final grading**. This is a cover crop with at least 75% coverage.
- During non-germinating periods, mulch must be applied at the specified rates.

Temporary Stabilization & Permanent Stabilization

- Straw mulch must be applied at 3.0 tons per acre.

- Straw mulch with mulch control netting or erosion control blankets must be installed on all slopes 3:1 and steeper."

- Straw mulch shall be applied in long strands, not chopped or finely broken.

- Excavated topsoil to be reused must be stockpiled and encircled with silt fencing. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 or flatter. Stockpiles which have not been used for 14 calendar days shall be stabilized through the application of sod, seed and anchored straw mulch, or other approved stabilization measures.

- Off-site spoil or borrow areas must have approved sediment control plans.

- A 25 foot undisturbed **streamside buffer** zone will be left from top of bank on both sides for the entire length of streams that TDEC determines to be a perennial or intermittent stream. The streamside buffer shall be fenced off where there is no encroachment. Buffer means a vegetated area, including trees and shrubs that exists or is established to protect a stream system, lake, or reservoir area. This buffer also applies to other sensitive areas such as springs, wetlands and sinkholes. TDEC requires a 60 foot construction buffer on some streams.

- An orange construction fence is required to designate the buffer area before clearing or tree removal has begun.

- This streamside buffer will be left in undisturbed or enhanced (when required by the city) and will be part of open space and recognized on covenants with restrictions of how it is to be maintained by homeowner association or nonresidential property owner. If more than regular maintenance is ever needed, i.e. removal of small brush or trees that have fallen, a landscape plan and a tree cutting permit is required.

- All sediment basins, trap embankments, swales, perimeter dikes, and permanent slopes steeper or equal to 3:1 shall be stabilized with sod, seed and anchored straw mulch or other approved stabilization measures, within seven (7) calendar days of establishment. All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance must be performed as necessary to ensure continued stabilization. Restabilization or overseeding will be required, if necessary.

- Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.

- Construct and stabilize **Sediment Pond and conveyances first. Stabilize means**:
  a.) a uniform (e. g,, evenly distributed, without large bare areas) perennial vegetative cover with a density of a minimum of **75 percent of the native background vegetative cover** for the area established on all unpaved areas and areas not covered by permanent structures, or
  b.) equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextile) have been employed with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

- If there is a gravel envelope in front of the outlet orifice, it will be removed as soon as the site is stabilized and before bonds are released.

- Include a forebay in any detention pond to facilitate easier maintenance.

- With earthen walls, place an antiseep collar (or collars) around the outlet pipe.

Sediment Fence

Sediment fences or other sediment barriers, has been installed properly along topographical contours downslope of the area to be disturbed prior to any grading, clearing and/or any other construction activity.

Sediment Fences:

Use principally in areas where sheet flow occurs.

Install along a level contour, so water does not pond more than 1.5 feet (0.5 m) at any point.

The maximum slope perpendicular to the fence line should be 1:1. No more than 0.25 acre (0.1 ha) per 100 ft. (31.4 m), or 0.5 cfs (1.4 x 10-2 m3/s) of concentrated flow should drain to any point along the silt fence.

Turn ends of fence uphill to prevent scour from wash around. Intermittently, turn fence uphill.

Provide area behind the fence for runoff to pond and sediment to settle (Approx. 1200 sq. ft. (111.5 m2) per acre (0.4 ha) draining to the silt fence).

Select filter fabric that retains 85% of the soil, by weight, based on sieve analysis, but is not finer than an equivalent opening size of 70.

- **Straw/Hay Bales (ARE NOT RECOMMENDED)** Silt fences, sand bag barriers, and rock filters (especially continuous berms) are preferred over straw/hay bales because sediment removal efficiencies, durability, and maintenance requirements are far less desirable in straw/hay bales.
- **Inlet Protection**: Where applicable, inlet protections for nearby storm sewer curb and drop inlets have been installed.
- **Identify Storm drain Protection**: Where applicable, protections for nearby **storm sewer curb** and **drop inlets** have been installed.
  Sand bag barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets.
  Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap.
  Gutterbuddy type protection: Used to create a small water ponding area to settle sediment out before water enters storm drain.

  (excerpt from Franklin Best Management Practice Manual)
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  - The maximum slope perpendicular to the fence line should be 1:1.
  - No more than 0.25 acre (0.1 ha) per 100 ft. (31.4 m), or 0.5 cfs (1.4×10^{-2} m^3/s) of concentrated flow should drain to any point along the silt fence.
  - Turn ends of fence uphill to prevent scour from wash around.
  - Provide area behind the fence for runoff to pond and sediment to settle (Approx. 1200 sq. ft. (111.5 m^2) per acre (0.4 ha) draining to the silt fence).
  - Select filter fabric that retains 85% of the soil, by weight, based on sieve analysis, but is not finer than an equivalent opening size of 70.

- Sediment must be removed from sediment barriers, ponds and other sediment controls when design capacity had been reduced by 33%. All EP&SC devices are to remain in place until the site has been stabilized and a good stand of grass has been established.

- **When a <u>sediment fence's</u> capacity has been reduced 33%, it shall be replaced.**

- Erosions prevention and sediment control devices, EP&SC, shall be maintained throughout the construction period; generally considered to be through the completion of restoration. A copy of your EP&SC plan along with an inspection checklist and Stormwater Permit, if applicable, must be at the project site at all times. The inspection checklist shall have a record of dates EP&SC devices are inspected and any correction action taken or major observations.

- Excavated topsoil to be reused must be stockpiled and encircled with silt fencing.

- **Construction Entrance:** This site shall contain a **temporary stone construction entrance** that conforms to the City of Franklin's Stormwater Ordinance and Best Management Practice Manual. It must be installed within 24 hours of grading or the permit will be revoked. The use of filter cloth beneath construction entrance is required. Stones should be 3 inch crushed, washed, and well graded rock to at least a 6-inch (15.2) deep and shall be kept clean by adding stone as needed. It shall be 20 feet wide. **See detail TCP-03 for specific construction entrance details.** **See http://www.franklin-gov.com/engineering/STORMWATER/bmp/tcp/tcp-03.pdf**

• A qualified person who has taken an approved erosion and sedimentation course must inspect BMPs.

- Where applicable, inlet protections for nearby storm sewer curb and drop inlets have been installed.

- Where applicable, existing vegetation and Buffer will be maintained and temporary cover crops will be used.

- Sediment that has escaped the construction site and has collected in the street or drainage structures must immediately be physically removed.

- Building and waste materials, and non-storm water discharges, such as concrete, paint washwater, or machinery leakage or spillage must be managed to prevent them from entering the stormwater system, ground water or nearby water body.

- EP&SC and stormwater controls shall be installed and maintained according to Franklin's BMP Manual. You can find a copy of it at: http://www.franklin-gov.com/engineering/STORMWATER/index.htm

- Stormwater detention/retention and sediment ponds will be installed at the beginning of the project.

- Large construction sites shall be built in phases.

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Dewatering: Sediment trap/basin dewatering for cleanout or repair may only be done with the City of Franklin inspector's permission. The inspector must approve the dewatering method for each application. The following methods may be considered:
A. Pump discharge may be directed to another on-site sediment trap or basin, provided it is of sufficient volume and the pump intake is floated to prevent agitation or suction of deposited sediments; or
B. the pump intake may utilize a Removable Pumping Station and must discharge into an undisturbed area through a non-erosive outlet; or
C. the pump intake may be floated and discharge into a Dirt Bag (12 oz. nonwoven fabric), or approved equivalent, located in an undisturbed buffer area.
D. All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.
• Any request for changes to the approved sediment control plan or sequence of construction must be submitted to the Sediment Control Inspector and approved before implementing changes. Major changes will require a plan revision.
• The Permittee shall protect all points of construction ingress and egress to prevent the deposition of materials onto traversed public thoroughfare(s). All materials deposited onto public thoroughfare(s) shall be removed immediately.
• Obtaining of any permits is the responsibility of the stormwater management permit holder or developer.
• Permittees shall maintain a rain gauge and daily rainfall records at the site, or use a reference site for a record of daily amount of precipitation.

STORMWATER PONDS AND WATER QUALITY MAINTENANCE NOTES

- Check outlet regularly for clogging and remove any debris.
- Check banks and bottom surface of basin for erosion and correct as necessary.
- Check at least annually and after each extreme storm event, the facility should be cleaned of accumulated debris. The banks of surface ponds should be checked and areas of erosion repaired. Remove nuisance wetland species and take appropriate measures to control mosquitoes.
- This maintenance typically includes sediment, floatable, and debris removal from inlets, outlets and skimmers
- Pond vegetation needs to be trimmed or harvested as appropriate, grassy areas frequently mowed.
- The outlet structure filter shall be checked regularly for clogging and shall be cleaned and repaired as necessary.
- Remove sediment when accumulation reached 6 inches, or if re-suspension is observed or probable. Sediment may be permitted to accumulate deeper than 6 inches if there is a permanent marker indicating depth where sediment needs to be removed, and that mark has not been met.
- Some sediment may contain contaminants or which the Tennessee Department of Environment and Conservation (TDEC) requires special disposal procedure. If there is any uncertainty about what the sediment contains or it is known to contain contaminants, then TDEC should be consulted and their disposal recommendations followed. The TDEC Division of Water Pollution Control should be contacted at (615) 532-0625. Generally, special attention or sampling should be given to sediment accumulated in facilities serving industrial, manufacturing or heavy commercial sites, fueling cents or automotive maintenance areas, large parking areas, ir other areas where pollutants (other than clean soil) are suspected to accumulate and be conveyed by storm runoff.

Some sediment collected my be innocuous (free of pollutants) and can be used as fill material, cover or land spreading. It is important that this material not be placed in any way that will promote or allow re-suspension in storm runoff.

ENHANCED SWALE INSPECTION AND MAINTENANCE NOTES

Activity	Schedule
□ For dry swales, mow grass to maintain a height of 4 to 6 inches. Remove grass clippings.	As needed (frequent/seasonally)
□ Inspect grass along side slopes for erosion and formation of rills or gullies and correct.	Annually (Semi-annually the first year)
□ Remove trash and debris accumulated in the inflow forebay.	
□ Inspect and correct erosion problems in the sand/soil bed of dry swales.	
□ Based on inspection, plant an alternative grass species if the original grass cover has not been successfully established.	
□ Replant wetland species (for wet swale) if not sufficiently established.	
□ Inspect pea gravel diaphragm for clogging and correct the problem.	
□ Roto-till or cultivate the surface of the sand/soil bed of dry swales if the swale does not draw down within 48 hours.	As needed
□ Remove sediment build-up within the bottom of the swale once it has accumulated to 25% of the original design volume.	

Stormwater Infrastructure "As builts": Franklin Code Section 16-706 (2)(gg): As new development construction is completed, an **"as-built"** plan, certified by a licensed professional engineer, must be submitted upon completion of the stormwater management facilities included in the approved construction plans The licensed professional shall certify that: the facilities have been constructed as shown on the "asbuilt" plan, and facilities meet the approved stormwater management plan and specifications, or achieve the function for which they were designed. Coordinate data shall be presented in the State of Tennessee Plane system with the North American Datum 1983 (NAD83) and North American Vertical Datum (NAVD) of 1988.
Electronic and 2 paper copies (per city requirements) are required.
(See web site http://www.franklin-gov.com/pdf/asbuiltrequirements.)