

Erosion and Sedimentation Control - SWPPP Guide Specifications

Section 312500-2

SECTION 312500 – STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. All Division 31 specification sections, drawings and general provisions of the contract apply to work in this section, as do other documents referred to in this section. The following documents comprise the SWPPP:
 - 1. Specification Section 312500
 - 2. Best Management Practices (BMP) Plan
 - 3. Notice of Intent (NOI)
 - 4. Notice of Termination (NOT)
 - 5. Contractors BMP implementation schedule
 - 6. Operation and Maintenance Plan Checklist

1.2 SUBMITTALS

- A. Notice of Intent: A minimum of 48 hours prior to beginning work, the Contractor shall submit a Notice of Intent (NOI) for a General Permit to the Kentucky Division of Water. A copy shall be sent to the Design Professional and the Division of Engineering and Contract Administration Project Manager. A copy of the NOI is included in the end of this section.
- B. Contractors BMP implementation schedule: Prior to mobilizing on the site, the Contractor shall submit a detailed schedule to the design professional outlining the sequence of major activities that includes the installation of all controls, earth disturbing activities and stabilization activities. This implementation schedule will become part of the SWPPP.
- C. Notice of Termination (NOT): Upon final stabilization of the construction site and removal of all temporary erosion and sediment control measures, the Contractor shall submit a NOT to the Kentucky Division of Water. A copy shall be sent to the Design Professional and the Division of Engineering and Contract Administration Project Manager. A copy of the NOT is included in the end of this section.

1.3 QUALITY ASSURANCE

- A. Inspections: The Contractor shall employ qualified personnel to inspect all storm water control measures as outlined in the KPDES Storm Water General Permit.
- B. The SWPPP implementation and methods of construction shall comply with the following standards:
 - 1. KPDES General Permit No.: KYR10, General KPDES Permit for Storm Water Point Source Discharges Construction Activities.
 - 2. EPA 832-R-92-005: Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.4 PROJECT DESCRIPTION EXAMPLE (Edit to be specific to the Project site.)

- A. General: The proposed development and land disturbance activity is located in Brewer County at the intersection of Farley Lane and Lakeview Drive. The property is being developed by the Commonwealth of Kentucky for a 2,800 s.f. Widget Museum with associated drives and parking. The property is surrounded by green fields to the east, south and west. North of the subject property is Lake Elizabeth. The total property area is 10 acres. During construction there will be approximately 4.1 acres affected. The pre-construction runoff coefficient is 0.35 and the post-construction runoff coefficient is 0.43. The latitude and longitude are 37°3'45" and 88°5'15" respectively.
- B. Soils: The soils at the site primarily consist of the Baxter Hammond Association, characterized by deep, steep to sloping, well drained soils formed in cherty limestone residuum or in shallow loess and cherty limestone residuum; on uplands. The depth of the soils range up to 95 inches, available water capacity is high, and permeability is moderate. These soils, especially on steeper slopes (+10%) have a severe erosion potential.
- C. Site Conditions: The topography of the site is rolling upland with low relief. The site exhibits the deep dendritic dissection of gently dipping sedimentary bedrock terrain within the Mississippi Plateau region. Lake Elizabeth is the most significant water feature potentially affected by the land disturbance activities. All drainage from the site reaches the lake via the 36" C.M.P. on the north side of the site and through natural flow beneath the General Chandler Bridge.
- D. Critical Areas:
 - 1. Lakeview Drive: It is crucial for the motoring public to prevent mud and debris from entering the roadway.
 - 2. Lake Elizabeth: Sediment controls must be in place prior to land disturbance activities to prevent sediment laden runoff from reaching the receiving water.

1.5 MATERIAL INVENTORY

- A. The material or substances listed below are expected to be present onsite during construction. The Contractor shall amend this list as appropriate as part of the overall SWPPP.
 - 1. Concrete
 - 2. Detergents
 - 3. Paints (enamel and latex)
 - 4. Metal studs
 - 5. Tar
 - 6. Metal roofing
 - 7. Fertilizers
 - 8. Masonry Block
 - 9. Wood
 - 10. Petroleum products

PART 2 - CONTROLS

2.1 EROSION AND SEDIMENT CONTROL MEASURES

- A. The erosion and sediment control measures will be typical of a small scale earth moving site including:
1. Construction entrance
 2. Dust and pollutant control
 3. Fertilizer application control
 4. Mulching-permanent and temporary
 5. Silt traps
 6. Hay bale silt control
 7. Silt fence silt control
 8. Land grading
 9. Permanent seeding
 10. Inlet protection
 11. Sediment basin

2.2 STABILIZATION PRACTICES

- A. Temporary Stabilization: Top soil stockpiles and disturbed portions of the site where construction activity is anticipated to temporarily cease for at least 21 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in that area. The temporary seed shall be Rye (grain) applied at 120 pounds per acre. After seeding, each area shall be mulched with 4,000 pounds of straw per acre.
- B. Permanent Stabilization-Disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed or sodded no later than 14 days after the last construction activity. The permanent seed mix shall consist of 180-lbs/acre tall fescue (*Festuca arundinacea*) blend of minimum three (3) cultivars and 20lbs/acre annual rye. Prior to seeding, ground agricultural limestone at rate specified by soil test and 220 lbs/acre of 20-26-6 fertilizer shall be applied to each acre stabilized. After seeding, each area shall be mulched with 200 lbs/acre of straw or fiber mulch per acre. Straw mulch to be tacked in place with disk with blades straight or with tackifier. Follow specs for post fertilization and maintenance for watering, etc.
- C. Storm water management: The development of the site will result in increased runoff during construction while the areas are graded and denuded. The contractor shall conduct all operations responsibly to prevent off-site sedimentation. Curb and gutter, catch basins, yard drains, and trench drain and piping will provide storm water capture and controls. Roof drains will be piped underground to the storm drain system to prevent surface splash and erosion. The structural control measures detailed on the Erosion Control Plan are proposed to minimize the impact of erosion.

- D. The contractor shall also manage the site as needed according to the following checklist:
1. Manage the site to infiltrate stormwater into the ground and keep sediment out of storm drains.
 2. Minimize the amount of exposed soil on site at any one time to the extent possible.
 3. Plan the project in stages to minimize the amount of area that is bare and subject to erosion.
 4. Vegetate disturbed areas with permanent or temporary seeding immediately upon reaching final grade.
 5. Vegetate or cover stockpiles that will not be used immediately.
 6. Reduce the velocity of stormwater both onto and away from the project area.
 7. Use interceptors, diversions, vegetated buffers, and check dams to slow down stormwater as it travels across and away from the project site.
 8. Construct temporary diversion measures to direct flow away from exposed areas toward stable portions of the site.
 9. Protect defined channels immediately with measures adequate to handle the storm flows expected.
 10. Use sod, geotextile, natural fiber, riprap, or other stabilization measures to allow channels to carry water without causing erosion.
 11. Maintain all BMPs to ensure their effectiveness during the life of the project.
 12. Maintain fences that protect sensitive areas, silt fences, diversion structures, and other BMPs.

2.3 OTHER CONTROLS

- A. **Waste Materials:** All waste materials will be collected and stored in a securely lidded metal dumpster rented from a licensed waste management company. Dumpster shall meet all local and state solid waste regulations. All trash and construction debris will be deposited in the dumpster. The dumpster will be emptied when 90% full and trash hauled to the respective approved landfill. No construction waste will be buried on site. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted at the office trailer and the site superintendent will be responsible for seeing that these procedures are followed.
- B. **Hazardous Waste:** The use of any hazardous material is not anticipated at this site. But in such an event, all hazardous waste materials will be disposed of in a manner specified by local or state regulation and by manufacturer. Site personnel will be instructed in these practices, and the site superintendent will be responsible for seeing that these practices are followed.
- C. **Sanitary Waste:** All sanitary waste will be collected from portable units at a minimum of one time per week by a licensed sanitary waste contractor as required by local regulation.

- D. Offsite vehicle tracking: Stabilized construction entrances shall be provided to help reduce vehicle tracking of sediments at the primary points of entry to the site. The adjacent paved street will be swept to remove any excess mud, dirt or rock tracked from site. Dump trucks hauling material from the site will be covered with a tarpaulin.
- E. Non-Storm Water Discharges: It is expected that the following non-storm water discharges could occur from the site during the construction period:
 1. Water from water line sterilization/flushing. All water to be treated, neutralized, and handled per Kentucky Division of Water regulations.
 2. Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
 3. Uncontaminated ground water (from dewatering excavation as applicable).

2.4 SEQUENCE OF MAJOR ACTIVITIES (Coordinate with BMP Plan Sheet)

- A. The Contractor shall prepare his BMP implementation schedule based on the following outline of major activities.

Construction Activity	Schedule Consideration
Construction Access-entrance to site, construction routes, equipment parking areas	This is the first land disturbing activity. As soon as construction begins, stabilize any bare areas with gravel and temporary vegetation.
Sediment traps and sediment fences	After construction site is accessed, principal sediment fence barriers, as applicable, should be installed, with addition of temporary traps and barriers as needed during grading operation.
Runoff control-diversions, perimeter dikes, water bars, outlet protection	Key practices should be installed after the installation of principal sediment traps and before land grading. Additional runoff control measures may be installed during grading as required.
Land clearing and grading-site preparation (topsoil strip, excavation, fill placement, grading, sediment traps, barriers, diversions, drains, surface roughening)	Implement major clearing and grading after installation of principal sediment and run off control measures, and install additional control measures as grading continues. Clear borrow and disposal areas as required, and mark tree and buffers for preservation. Clearing will be kept to a minimum.
Surface stabilization-temporary and permanent seeding, mulching, sodding, riprap	Temporary or permanent stabilizing measure should be applied immediately to any disturbed areas where work has been either completed or delayed 21 days. Land disturbance will be scheduled to limit exposure of bare soils to erosive elements to the extent possible.

Building construction-buildings, utilities, storm piping, curb and gutter, paving	During construction, install any erosion and sediment control measures that are needed per the attached specific sediment control plan and according to local regulatory agency, i.e., additional inlet control, etc. Install gravel areas for building material lay down and for vehicular traffic.
Landscaping and final stabilization-backfilling, topsoil replacement, trees, shrubs, permanent seeding, sodding, riprap	Last construction phase. Vegetation and mulch will be applied to applicable areas immediately after final grading is completed. Stabilize all open areas, including borrow and fill areas, remove and stabilize temporary control measures as prescribed on the accompanying erosion control plan sheets.

- B. Timing of controls/measures: As indicated on the Sequence of Major Activities, silt fences and construction entrances will be constructed prior to clearing or grading on other portions of the site. Areas where construction activity is anticipated to cease for more than 21 days will be stabilized with temporary seed and mulch within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch or sod as specified. After the entire site is stabilized, the accumulated sediment will be removed from the trap or basin and the berms removed as applicable.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.

2.5 SPILL PREVENTION

- A. Good Housekeeping: The following are material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.
 - 1. An effort will be made to store only enough product to do the job.
 - 2. All materials will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
 - 3. Products will be kept in their original containers with original manufacturer's label.
 - 4. Substances will not be mixed with one another unless recommended by manufacturer.
 - 5. Whenever possible, all of a product will be used up before disposing of the container.
 - 6. Manufacturers' recommendations for proper use and disposal will be followed.
 - 7. The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.

- B. Hazardous Products: Hazardous materials are not expected to be brought to the site, if they are required then the guidelines below should be followed.
1. Product will be kept in original containers unless they are not re-sealable.
 2. Original labels and Material Safety Data Sheets will be retained for product information.
 3. If surplus product must be disposed of, manufacturer's, local government, and state recommended methods for proper disposal shall be followed.
- C. Petroleum Products: All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chances of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Portable equipment fuel tanks will be located as far away from surface water bodies as possible. Fuel tanks will be situated in a containment vessel to prevent spillage in case of a leak. All oils drained from equipment will be captured in pans or other suitable equipment and placed in drums for removal from site for disposal at an approved off-site location.
- D. Fertilizers: If used, fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.
- E. Paints: All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system, but will be properly disposed of according to manufacturers' instructions and State and local regulations.
- F. Concrete trucks will be required to wash out or discharge surplus concrete or drum wash water into a wash out pit that will be selected by the site superintendent. The wash out pit shall be designated in an area that does not receive significant runoff and does not drain into a storm network. Upon the completion of the project, this area would be cleared of the concrete and the site restored.
- G. Any asphalt substances used onsite will be applied according to the manufacturers' recommendations.
- H. Spill Control Practices: In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup.
1. Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
 2. Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically designed for this purpose.
 3. All spills will be cleaned up immediately after discovery.

4. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
 5. Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of size.
 6. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill is there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
 7. The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area in the office trailer onsite.
- I. Spill Notification: In the event of a spill, the appropriate notification(s) must be made consistent with the following procedures:
1. Any spill of gasoline greater than 25 gallons in a 24-hour period or spill of diesel fuel greater than 75 gallons in a 24-hour period must be reported to the Kentucky Environmental Response Team at (800) 928-2380.
 2. Any spill of oil that a) violates water quality standards, b) produces a "sheen" on a surface water, or c) causes a sludge or emulsion must be reported to the Kentucky Environmental Response Team at (800) 928-2380.
 3. Any spill of oil or hazardous substance to waters of the Commonwealth must be reported immediately by telephone to the (*List State agency and phone number here*).
 4. Any release of a hazardous substance that may be a threat to human health or the environment must be reported to the (*List State agency and phone number here*) immediately upon discovery.

PART 3 - CERTIFICATION

3.1 CONTRACTORS AND SUBCONTRACTORS (Edit for specific project)

- A. As part of the BMP implementation schedule, the Contractor shall clearly state the Contractor or Subcontractor that will implement each control measure identified on the BMP plan.
- B. All Contractors and Subcontractors identified in the BMP plan must sign a copy of the following certification statement before conducting any professional service at the site.

1. General Contractor

"I certify under penalty of law that I understand the terms and conditions of the general National Pollution Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

_____	_____
Company Name, Address and Phone	Name
_____	_____
_____	Title
_____	_____
	Site Address

2. Earthwork Subcontractor

"I certify under penalty of law that I understand the terms and conditions of the general National Pollution Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

_____	_____
Company Name, Address and Phone	Name
_____	_____
_____	Title
_____	_____
	Site Address

3. Storm Sewer Subcontractor

"I certify under penalty of law that I understand the terms and conditions of the general National Pollution Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

_____	_____
Company Name, Address and Phone	Name
_____	_____
_____	Title
_____	_____
	Site Address

4. Site Utility Subcontractor

"I certify under penalty of law that I understand the terms and conditions of the general National Pollution Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

Company Name, Address and Phone

Name

Title

Site Address

END OF SECTION 312500