

Rule 5 - Erosion Control

STORM WATER RUN-OFF ASSOCIATED WITH CONSTRUCTION ACTIVITY

The requirements of Rule 5 (**327 IAC 15-5**) apply to all persons who are involved in construction activity (which includes clearing, grading, excavation and other land disturbing activities) that results in the disturbance of **one (1) acre** or more of total land area. If the land disturbing activity results in the disturbance of less than 1 acres of total land area, but is part of a larger project, it is still subject to storm water permitting. Linear projects, such as shoulder work, impacting only minor amounts of vegetation adjacent to the roadway usually are not subject to storm water permitting. Contractors disturbing more than one acre of land from a non-commercial borrow site are also required to comply with rule 5. Contact IDEM for guidance concerning these types of projects.

Since the NPDES general permit for storm water runoff associated with construction activity is a permit-by-rule, **you will not be receiving an actual permit.** You will receive either a Notice of Sufficiency or a Notice of Deficiency. If you receive a Notice of Deficiency, an amended NOI must be submitted to the Indiana Department of Environmental Management before the initiation of land disturbing activities.

The following requirements must be met in order to comply with Rule 5:

1. Prepare an erosion control plan that contains the required elements in 327 IAC 15-5-7. Include the standards and specifications for the erosion control plan;
2. Submit the plan to the **Soil and Water Conservation District (SWCD)** office in the county where the construction activity will take place, or if within an urban area submit to the MS4 (Municipal Agency) and to any appropriate state, county, and local erosion control authority. The SWCD will review and comment on the plan.
3. Prepare and submit a complete Notice of Intent Letter (NOI) [**see NOI Form-attached**] to the IDEM, Office of Water Management, Permits Section. Send a copy of the NOI to IDNR. All of the requirements in **327 IAC 15-3-2** and **327 IAC 15-5-5** must be included in the NOI letter to be considered complete. INDOT is responsible for signing the NOI. **Do not send a copy of the erosion control plan to IDEM.**
4. Pay the NOI letter fee of \$100.00 made payable to IDEM. Send fee with NOI letter.

5. Be sure that the personnel responsible for implementing the erosion control plan are trained in erosion control practices
6. Construction can begin immediately after fulfilling the requirements of 327 IAC 15.
7. Notify IDEM upon completion of the construction activity.

Work associated with **outstanding state resource water** or **exceptional use streams** are excluded from the following procedure. **Individual NPDES permits must be obtained for these projects.** See Appendix A (attached) for a list of these streams. The individual application utilizes the same format as the NOI form, except the heading of the letter should denote that the submittal is an “Individual Application for Construction Activity”. **An individual application must be submitted at least 180 days prior to the initiation of land disturbance.** A soil erosion control plan must also be submitted to the county SWCD Office. The INDOT Project Engineer should notify the contractor when the NOI and erosion control plan have been submitted.

The contractor is responsible for implementing the erosion control plan at the construction site. If IDEM, IDNR or the SWCD suggest changes to the erosion control plan, or if INDOT or the contractor determine that changes need to be made, then those changes should be implemented at the construction site as soon as possible. Assistance in developing the erosion control plan is available from the local SWCD, or from the IDNR-Division of Soil Conservation. Often erosion control is a condition of various permits. These conditions must be carried out in accordance with 327 IAC 15-5-11. **This includes following a schedule of inspection of the control measures - after each storm event as well as on a weekly basis, at a minimum.** All construction activity at the site must be complete before a notice of termination may be submitted to IDEM.

TEN GENERAL PRINCIPLES OF EROSION AND SEDIMENT CONTROL

Soil erosion and sedimentation increase dramatically when land is disturbed at a construction site. The following general principles should be the basis for an erosion and sediment control plan.

- 1. Fit the project to the existing terrain and soil.**
 - * Assess the physical characteristics of the site, including topography, soils, and drainage, to determine how best to develop it with minimal environmental harm.
 - * Utilize the existing topography to minimize grading.
 - * Utilize the natural drainage patterns where possible.
 - * Preserve any existing wetland in accordance with the law.
- 2. Develop an erosion and sediment control plan before land-disturbing activity begins, then follow it.**
 - * Identify areas where erosion and sedimentation problems are apt to occur on the construction site and specify the measures to reduce those problems. Information is available from local SWCDs, the USDA Soil Conservation Service, and IDNR Soil Conservation.

- * Obtain all local, state, or federal permits that may apply to the construction activity.
 - * Make sure that all land-disturbing activities on the site are carried out in accordance with the erosion/sediment control plan.
- 3. Retain existing vegetation on the construction site wherever possible.**
 - * If existing vegetation must be cleared, retain and protect it until the area must be disturbed.
 - * Maintain a buffer strip of existing vegetation around the perimeter of the site to reduce off-site erosion and sedimentation.
 - 4. Minimize the extent and duration that bare soil is exposed to erosion by wind and water.**
 - * Use staged clearing and grading (sequencing) to reduce the amount of disturbed area to the absolute minimum needed for immediate construction activities.
 - 5. Keep sediment confined to the construction site as much as possible.**
 - * Retain sediment from unavoidable on-site erosion by trapping it with sediment basins or by filtering it out of runoff with vegetative or man-made barriers.
 - * Install any needed sediment traps and basins before construction activities begin.
 - 6. If possible, divert off-site runoff away from disturbed areas.**
 - * Use diversions, perimeter dikes, and water-ways to intercept off-site runoff and divert it away from the construction site.
 - * Install these measures before clearing and grading to reduce the potential for erosion.
 - 7. Minimize the length and steepness of slopes.**
 - * Use stair-step grading, diversions, and sediment barriers to break up long, steep slopes.
 - * Design measures to slow runoff and allow deposition of sediment.
 - 8. Stabilize disturbed areas as soon as possible.**
 - * Use stabilizing measures, such as seeding temporary or permanent vegetation, sodding, mulching, sediment basins, erosion control blankets, or other protective practices within seven days after the land has been disturbed.
 - * Consider possible future repair and maintenance needs of the measures selected.
 - 9. Keep velocity of runoff leaving the site low.**
 - * Reduce runoff velocity by maintaining existing vegetative cover, preserving a vegetated buffer strip around the lower perimeter of the land disturbance, and installing perimeter controls, such as sediment barriers, silt fences, filters, dikes, or sediment basins or traps.
 - * Depending on local ordinances and site conditions, either

(a) discharge concentrated storm water runoff into a well-defined, adequately protected natural or man-made channel or a pipe large enough to handle the expected maximum storm;

or

(b) detain the storm water runoff on-site in a retention/detention facility.

10. Inspect and maintain erosion control measures regularly.

- * Assign someone the responsibility for routine, end-of-day inspection/maintenance checks of all erosion and sediment control measures.
- * Inspect all measures for damage after each storm event.
- * Repair any damaged measure, since it may cause more damage than it prevents if not properly maintained.
- * Consider consequences of the failure of a control measure when deciding which one to use. (Failure of a practice may be hazardous or damaging to people and/or property).
- * When construction is completed and the area stabilized, remove erosion control measures no longer needed in a manner that minimizes site disturbance, and seed immediately.

CONTENTS OF AN EROSION AND SEDIMENT CONTROL PLAN

The purpose of a site erosion and sediment control plan (E/SCP) is to establish clearly which control practices are intended to prevent erosion and off-site sedimentation. It serves as a blueprint for the location, installation, and maintenance of these practices. The approved E/SCP, which shows location, design, and construction schedule for all practices, should be part of the general construction contract.

This section, intended as a guide for preparing a construction project erosion/sediment control plan, is divided into three parts:

I. GENERAL GUIDELINES - contains basic information including criteria for plan format and content, and ideas for improved planning effectiveness.

II. STEP-BY-STEP PLAN DEVELOPMENT PROCEDURE - outlines and describes a recommended step-by-step procedure for developing the E/SCP from data collection to the finished product.

III. ELEMENTS TO INCLUDE IN THE SITE PLAN AND PLAN NARRATIVE - presents the elements to be included in preparation of both the site plan and the plan narrative.

GENERAL GUIDELINES

What an Erosion/Sediment Control Plan Is

It is a document that (a) describes the potential for erosion and sedimentation problems on a construction site and (b) explains and illustrates the measures that will be taken to control those problems.

The E/SCP should be an essential component of the site grading plan. While it's a good idea to include erosion and sediment control standards and specifications in contract documents, the E/SCP itself should be a working document included with the grading plan.

Importance of the Narrative Portion

A narrative is a written statement that explains both the erosion and sediment control decisions made for a particular project and the justification for those decisions.

The narrative should contain concise information concerning the nature and purpose of the proposed project, existing site conditions, proposed erosion and sedimentation control measures, construction schedules, and other pertinent items not in a typical site plan. The designer must keep in mind that the plan reviewing authority has probably not seen the site and is unfamiliar with the project.

The narrative is also important to the project engineer/supervisor, who is responsible to implement the plan. It provides a report describing where and when the various erosion and sediment control practices should be installed.

What Constitutes an "Adequate" Plan

An E/SCP must meet the criteria set forth in the following **Step-by-Step Plan Development Procedure** section. Its length and complexity depends on the size of the project, severity of site conditions, and the potential for off-site damage. A plan for a project undertaken on flat terrain will likely be less complicated than one for a project constructed on sloping terrain where erosion potential is higher. The greatest level of planning and detail should be evident on plans for projects directly adjacent to watercourses, in dense population centers, or on high-value properties where damage may be particularly costly or detrimental.

The step-by-step procedure is recommended for the development of all plans. The site plan and narrative preparation checklists will be especially beneficial to site planners and plan reviewers.

Practice Standards and Specifications

Standards and specifications for the practices used to meet minimum requirements for erosion and sedimentation control are found in Section 3 of the **INDIANA HANDBOOK FOR EROSION CONTROL IN DEVELOPING AREAS**. Detail drawings and other design requirements accompany the standards.

Comprehensive Site Planning

Erosion and sediment control planning should be an integral part of the site planning process, not an afterthought. The potential for soil erosion should be a significant consideration when deciding on the layout of facilities. Erosion and sediment control measures can be minimized if the site design is adapted to existing site conditions and good conservation principles are applied.

Responsibility for Planning/Implementation

INDOT is responsible for plan preparation and implementation. Although may designate someone else to prepare the plan, INDOT retains the ultimate responsibility.

STEP-BY-STEP PLAN DEVELOPMENT PROCEDURE

The steps in preparing an erosion and sediment control plan include: data collection, data analysis, site plan development, E/SCP formulation, and E/SCP completion. Following is what each step entails.

Step 1. Collecting the Data

Inventory the existing site conditions to gather information that will help you develop the most effective E/SCP. That information, which should be plotted on a site map and explained in the narrative portion of the plan, includes:

- * **Topography.** Prepare a topographic map of the site to show the existing contour elevations at intervals of two feet.
- * **Drainage patterns.** On the topographic map, locate and clearly mark all existing drainage swales, watershed boundaries,, unstable (eroding) stream reaches, and known flood marks.
- * **Soils.** Determine and show on a site map or overlay the major soils type(s) associated with the site. Indicate critical or highly erodible soils that should be left undisturbed; also note critical areas, such as steep slopes, eroding areas, rock outcroppings, and seepage zones; and identify any unique or noteworthy landscape features to be protected when they appear on the site. Soils information can be obtained from a detailed county soil survey. Such information should be plotted directly onto a site map or an overlay of the same scale for ease of interpretation.
- * **Ground cover.** On a site map or overlay, show existing vegetation, including tree clusters, grassy areas, and unique vegetation. Also indicate denuded or exposed soil areas.
- * **Adjacent areas.** On the topographic map, delineate areas adjacent to the site, including such features as streams, roads, houses, or other buildings, and wooded areas. Streams and ponds that will receive runoff from the site should be surveyed to determine their carrying capacity and sensitivity to sedimentation and flooding.

Step 2. Analyzing the Data

When the data collected in Step 1 are considered together, a picture of the site's potentials and limitations will begin to emerge. You should be able to determine those areas that may have critical erosion hazards. The following are some important points to consider in site analysis:

- * **Topography.** The primary topographic considerations are slope steepness and slope length. When the percent of slope has been determined, outline the areas of similar steepness. Slope gradients can be grouped into three general ranges of soil erodibility:

0-6% - - Low to Moderate erosion hazard
6-12% - - Moderate to high erosion hazard

Over 12% - - Severe erosion hazard

Within these slope gradient ranges, the greater the slope length, the greater the erosion hazard. Therefore, in determining potential critical areas, you should be aware of excessively long slopes. As a general rule, the erosion hazard will become critical if slope lengths exceed the following values:

0-6% - - - 200 feet

6-12% - - - 100 feet

Over 12% - 50 feet

- * **Natural drainage.** Natural drainage patterns exist on the land and include overland flow swales and depressions and natural watercourses. Identify those critical areas where water flow may concentrate. Where possible, use natural drainage ways to convey runoff from the site. Man-made ditches and waterways will contribute to erosion problems if not properly stabilized. Take care to ensure that increased runoff from the site will not erode or flood the existing natural drainage system. Sites for storm water detention should be determined at this point in the planning process.
- * **Soils.** Soils should be considered when laying out building lots, roads, storm sewers, etc. Conditions such as depth to bedrock, depth to seasonal water table, permeability, shrink-swell potential, texture, and erodibility will exert a strong influence on land development decisions.
- * **Ground cover.** Ground cover is the most important factor in terms of preventing erosion; therefore, save any existing cover, if possible. Trees and other vegetation protect the soil. If the existing vegetation cannot be saved, consider staging construction or mulching and temporary seeding. Staging of construction involves stabilizing one part of the site before disturbing another, which minimizes the time soil is exposed. Mulching and temporary seeding involve mulching and seeding areas that would otherwise lie exposed for long periods of time, thus reducing the erosion hazard.
- * **Adjacent areas.** An analysis of adjacent properties should focus on areas downslope from the construction project. Of major concern should be watercourses and water bodies that will receive direct runoff from the site. You must consider their potential for sediment pollution and for downstream channel erosion due to increased volume, velocity, and storm water flow from the site. Also analyze the potential for sediment deposition due to sheet and rill erosion so that appropriate sediment trapping can be planned.

Step 3. Developing the Site Plan

After analyzing the site and mapping those areas to be preserved, site planning can begin. Good site planning and development standards do much to avoid increased runoff, erosion, and sedimentation problems. The following goals can serve as a guide to site planning. If met, the adverse impacts on runoff and water quality could be markedly reduced.

- A. **Reproduce pre-project hydrological conditions.** The focus of storm water management is on minimizing the frequency and severity of flooding, chiefly by reducing peak discharges. To accomplish this means designing for infiltration

- opportunities to restore pre-project runoff volumes, and using vegetated swales as much as possible to try to match pre-project runoff velocities.
- B. Confine construction activities.** Use the slope, soil, and vegetation data collected and analyzed in Steps 1 and 2 to map those areas that should be entirely avoided by construction if possible (e.g., steep and long slopes, areas of erodible soils, fragile vegetation, etc.).

Step 4. Formulating the E/SCP

When the layout of the site has been decided upon, the E/SCP can then be formulated. It must contain sufficient information to describe the site development and the system intended to control erosion and prevent off-site damage from sedimentation. The following general procedure is recommended for erosion and sediment control planning:

- A. Determine limits of clearing and grading.** Decide exactly which areas must be disturbed in order to accommodate the proposed construction, paying special attention to the critical areas that must not be disturbed.
- B. Divide the site into drainage areas.** Determine how runoff will travel over the site to identify the various drainage areas, then consider how erosion and sediment action can be controlled in each small area before looking at the entire site. Remember, it's easier to control erosion than to contend with sediment after it has been carried downstream.
- C. Select the appropriate erosion and sediment control practices.** These can be divided into three broad categories - vegetative controls, structural controls, and management measures.

Vegetative controls are the first line of defense against erosion. The best way to protect the soil surface is to preserve the existing ground cover. Where land disturbance is necessary, seeding and mulching can be used to stabilize the area.

Structural controls, although generally more costly, are often necessary on disturbed areas that cannot be protected with vegetation. They are usually the second or third line of defense to capture sediment before leaving the site.

Management measures include:

- (1) staging construction on large projects so that one area can be stabilized before another is disturbed;
 - (2) delegating responsibility for implementing the E/SCP to one individual;
 - (3) ensuring that workers understand the major provisions of the E/SCP;
 - (4) physically marking off limits of land disturbance on the site with tape, signs, etc. so workers can see areas to be protected; and
 - (5) developing and carrying out a regular maintenance schedule for erosion and sediment control practices.
- D. Plan for storm water management.** Where increased runoff will cause the carrying capacity of a receiving channel to be exceeded, select appropriate storm water management measures.

Step 5. Completing the E/SCP

With the necessary planning work done (Steps 1-4), the final step is to consolidate this information into a specific E/SCP for the project. It consists of two parts - a narrative

and a site plan. The narrative explains site problems and their solutions with all necessary documentation. The site plan is one or a series of maps and drawings that “show” the information explained in the narrative, including all applicable construction schedules, location of erosion and sediment control measures, and construction drawings and specifications for the project.

ELEMENTS TO INCLUDE IN THE SITE PLAN AND PLAN NARRATIVE

Following are the items that should be included on the site plan map(s) and in a narrative accompanying the site plan. They provide a quick reference to the major elements included in the erosion and sediment control plan. All of these items must be considered for every plan, regardless of the extent of earth disturbance. Keep in mind, however, that factors addressed in one plan do not necessarily have to be addressed in another.

Elements in the Site Plan

- A. Location map with north indicated.** Provide a small map locating the site in relation to the direction north and to the surrounding areas.
- * *The location map may be an insert on the topographic map or a separate sheet in the narrative report. A copy of part of a 7½ -min. USGS quadrangle map is recommended for this purpose; if used, include the name of the USGS map on the location map.*
- * *The map must include the location of the project with respect to roadways, municipalities, streams, watercourses, existing structures, and other identifiable landmarks.*
- B. Scale.** Indicate scale, using a graduated line, which represents the drawn dimensions in relation to actual size of the project site.
- * *The scale of the map must be large enough to clearly depict the topographic features, and the contours must be at an interval that will adequately describe the topography of the site. Scales of 1 in. = 100 ft. or less, with 2-ft. maximum contour intervals, are recommended.*
- C. Benchmark.** Show an established elevation affixed to a permanent object that can be used to check grade.
- D. Plan drawings.** Provide drawings of the project site that include:
- 1. Map(s) of existing site conditions.**
 - a. Contours.** Show existing contours of the site. They must extend a minimum of 200 ft. beyond property boundaries and should be on 2-ft. intervals.
 - b. Vegetation.** Indicate existing tree lines, grassy areas, or unique vegetation.
 - c. Soils.** Show boundaries of the different soil types, as delineated in the SCS detailed county soil survey or as determined by a certified professional soil scientist.
 - d. Property boundaries and lot lines.** Show boundaries of the property, lot lines, section lines, and adjacent plats.
 - e. Drainage.** Indicate dividing lines, approximate dimensions or size, and the direction of flow for the different drainage areas. The map must include enough of the surrounding area so that watercourses receiving runoff from the project site can be identified and evaluated for resistance to erosion. If runoff from upstream watershed areas is included in the storm water calculations, such drainage areas must also be shown. Also show any lakes, ponds, wetlands, 100-yr. floodplains, floodway fringes, and floodways.
 - f. Groundwater recharge areas.** Indicate areas of potential groundwater recharge.
 - g. Critical erosion areas.** Indicate areas with potentially serious erosion problems.
 - h. Physical structures and infrastructures.** Show locations and approximate dimensions of utilities, structures, roads, highways, etc.

2. **Map of final site conditions.** (On same scale as the existing site conditions map.)
 - a. *Contours.* Show changes to the existing contours.
 - b. *Elevation and grade.* Show corner elevations, road grades, natural high elevations and high water level (HWL) of ponds, wetlands, and lakes, elevation of storm sewer inlets and outlets, and elevations of proposed structures.
 - c. *Infrastructures.* Indicate locations of roads, paved areas, and utilities in the proposed project area.
 3. **Site plan construction map.** (The following also apply to all off-site disposal or borrow areas that are part of the project.)
 - a. *Limit of clearing and grading.* Show locations and approximate dimensions of all areas to be cleared and graded.
 - b. *Location of soil stockpiles.* Show areas where soil stockpiles may be located.
 - c. *Location of erosion and sediment control practices.* Indicate locations of all erosion and sediment control and storm water management practices used on the site.
 4. **Detailed drawing of practices.** (Provide a drawing of each erosion/sediment control and storm water management practice to be used on the site, including construction details and specifications.)
- E. **Construction schedule.** Provide a schedule of anticipated starting and completion dates for each land-disturbing activity and practice installation (i.e., dates disturbed and stabilized).
- F. **Plan preparer and responsible individual.** Include the signatures, addresses, and telephone numbers of the person or agency that prepared the E/SCP and the one responsible for implementation and maintenance of practices.

Elements of the Plan Narrative

- A. **Project description.** Describe the nature and purpose of each land-disturbing activity and the amount of grading involved.
- B. **Phasing of construction.** Describe the proposed stages of grading, utilities, and construction from initial site clearing through final stabilization. Include anticipated beginning and completion dates for each land-disturbing activity, schedule of installation of facilities and erosion control measures as they relate to the various phases of earth-moving activities, and time of year they will occur.
- C. **Existing site conditions.** Describe the existing topography, vegetation, and drainage.
- D. **Adjacent areas.** Describe neighboring areas (streams, lakes, residential areas, roads, etc.) that might be affected by the land disturbance.
- E. **Soils.** Describe the soils on the site, including soil name, mapping unit name, structure, permeability, depth, texture, and suitability for intended use. This information is available in SCS detailed county soil survey reports available from local SCS/SWCD offices.
- F. **Critical areas.** Describe areas on the site that have potential for serious erosion problems.

- G. Erosion/sediment control measures.** Describe the type, purpose, and design computation of each practice that will be used to control erosion and sedimentation on the site. Also provide design information for watercourse channel stabilization, including drainage area, anticipated flow rate, velocity, and proposed stabilization methods, such as vegetation, rock lining, etc.
- H. Permanent stabilization.** Describe type, purpose, specifications, and installation date of each permanent stabilization practice to be installed after construction is completed.
- I. Storm water management considerations.** If the project could increase peak rates of runoff or result in flooding or channel degradation downstream, consider storm water control structures on the site.

** Diversion terraces and other channels must be designed to convey the discharge from their contributing drainage areas. Of the various methods for computing peak discharges, the two most popular are the USDA Technical Release 55 (preferred) and the Rational. To obtain TR-55, Urban Hydrology for Small Watersheds, as a publication alone or with a computer program, contact the National Technical Information Service (NTIS), U.S. Department of Commerce, Springfield, VA. 22161 (phone 703-487-4650).*

** The narrative portion of an E/SCP must contain the computations used to determine design capacities for the various practices included in the plan. The computation methods must be clearly identified and all factors used in the computations clearly tabulated. Also included must be (1) an analysis of the impact that runoff from the project site will have on the downstream watercourses' resistance to erosion and (2) design computations of any protective measures for those downstream watercourses.*

- J. Maintenance.** Provide a schedule of regular inspections and the repair of erosion and sediment control structures.

** The maintenance narrative includes: a schedule of inspection of the control measure (after each storm event as well as on a weekly basis, at a minimum); type of maintenance (e.g., cleanout, repair, replacement, regrading, reseeding, etc.), and site and method of disposal of materials removed from the control measure or project area. If sediment basins are installed, the elevation corresponding to top of sediment storage level must be specified as well as the means of identifying elevation.*

- K. Calculations.** Show any calculations made for the design of such items as sediment basins, diversions, waterways, and runoff and storm water detention basins.

DEVELOPING AND USING A CONSTRUCTION SEQUENCE SCHEDULE TO ENHANCE EROSION AND SEDIMENT CONTROL

A construction sequence schedule is a chronological listing of construction activities to be performed and the accompanying erosion and sediment control practices to be installed ahead of or concurrent to these activities. The purpose of such a schedule is to minimize on-site erosion and off-site sedimentation during and after construction. It also helps make field personnel more aware of the possibilities of erosion prevention through construction management.

A construction sequence schedule is created by

- 1) listing those land-disturbing activities needed to complete the project,

- 2) listing the practices need to control erosion and sedimentation on the site, then
- 3) combining the two lists into a logical sequence. Such a schedule helps establish the timetable for installing the erosion/sediment control practices and shows their likely compatibility with the general construction schedule.

Following is the general sequence of development site construction activities and erosion/sediment control practices that should accompany them. These activities will not always occur consecutively; and any schedule developed will likely be affected by weather and other unpredictable factors. Nevertheless, a proposed construction sequence should be formulated and included in your erosion/sediment control plan, as well as the overall construction plans for the entire project.

Suggested Sequence of Construction Site Erosion and Sediment Control Measures

- * Before opening up the site, first evaluate, mark, and protect important trees and associated root zones, unique areas to be preserved (i.e. wetlands), or existing vegetation suitable for use as filter strips (especially in perimeter areas).
- * Before clearing and grading, install sediment basins or traps around the perimeter of the site and diversions above the site. The intent is to direct water from undisturbed areas away from the sediment traps while conveying sediment-laden runoff from disturbed areas to the traps.
- * Also before clearing and grading, install the main runoff conveyance system with inlet and outlet protection devices to convey storm runoff through the site without creating gullies and to prevent damage to the receiving waters.
- * As soon as the storm drain system is functional, install drain inlet protections, which trap sediment on-site in shallow pools while allowing high water flows to enter the system.
- * Install stream bank stabilization practices (including necessary stream crossings) independently and ahead of other construction activities. The reason is that increased storm runoff resulting from subsequent site clearing and construction makes stream bank stabilization work more difficult and costly.
- * Once erosion and sediment control measures are in place, begin land clearing followed immediately by grading. Do not leave large areas unprotected for more than 7 days. Adjoining areas planned for clearing should be left undisturbed as long as possible to serve as natural buffer zones.
- * As grading is done, install additional traps, silt fences, slope drains, temporary diversions, and other runoff control measures at appropriate locations to keep sediment contained in-site.
- * Immediately after grading, apply surface stabilization practices on all graded areas, using permanent measures in accordance with your erosion/sediment control plan. However, if weather delays permanent stabilization, temporary seeding and/or mulching may be necessary as a stopgap measure. Also stabilize (using temporary seeding/mulching or other suitable means) any disturbed area where active construction will not take place for 30 working days.
- * After construction and final grading, landscape and permanently stabilize all disturbed sites, including borrow and disposal areas. Also remove temporary

runoff control structures and any unstable sediment around them, and vegetate those areas.

Additional Construction Sequence Schedule Suggestions

1. Assign an on-site person with the daily responsibility and authority to ensure that erosion/sediment control practices are installed according to the sequence schedule.
2. Determine to follow the planned sequence throughout the development period.
3. If construction activities must be changed, amend the schedule to reflect those changes.
4. Be prepared to use construction techniques that are not scheduled but, because of timeliness, can greatly reduce erosion potential at a site (i.e., re-shaping earthen fills periodically to prevent overflows or constructing temporary diversions ahead of anticipated storms).

Summary of Considerations in Construction Sequence Scheduling

Construction phase (specific activities or erosion control practices)* considerations

Pre-construction actions - Evaluation and protection of important site characteristics

Construction access - Construction entrances, construction routes, equipment parking areas

Sediment barriers and traps - Basin traps, silt fences, outlet protections

Runoff control - Diversions, perimeter dikes, water bars, outlet protections

Runoff conveyance system - Stabilized stream-banks, storm drains, inlet and outlet protections, channels

Construction schedule

Before construction, evaluate, mark and protect important trees and associated rooting zones, unique areas (wetlands) to be preserved, and vegetation suitable for filter strips, especially in perimeter areas.

Stabilize bare areas immediately w/ gravel and temporary vegetation as work takes place.

Install principal basins after construction site is assessed. Install additional traps and barriers as needed during grading.

Install practices after principal sediment traps installed but before land grading.
Install additional runoff control measures during grading as needed.

Where necessary, stabilize stream banks as early as possible. Install principal conveyance system with runoff control measures.

	Install remainder of system after grading.
<i>Land clearing and grading</i> - Cutting/filling/grading, drains, sediment traps, barriers, diversions, surface roughening)	Begin major clearing and grading after installing the key sediment and runoff measures. Clear borrow and disposal areas as needed. Install additional control measures as grading progresses.
Surface stabilization - Temporary and permanent seeding, mulching, sodding, riprap)	Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or completed.
Construction - utilities, paving	Install necessary erosion and sediment control practices as work takes place.
Landscaping and final stabilization - Topsoil, trees and shrubs, permanent seeding, mulching, sodding, riprap stabilize.	Stabilize all open areas, including borrow and spoil areas. Remove temporary control measures and
maintenance	1) inspect practices at least once a week, and 2) make repairs immediately after periods of rainfall.



Indiana Department of Environmental Management
Notice of Intent (NOI)
Storm Water Runoff Associated with Construction Activity
NPDES General Permit Rule 327 IAC 15-5 (Rule 5)

Submission of this Notice of Intent letter constitutes notice that the operator is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity (see 327 IAC 15-2-5 (c) for definition of operator). Permitted operators are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).

Construction Project:

Name: _____ County: _____

SIC Code or Description of Project: _____

Location: _____

Operator Name: _____ Phone: _____

Company Name: _____

Complete Address: _____

Contact Person (if different from above): _____

_____ Phone: _____

Affiliation with operator: _____

Ownership Status: (check one) Federal _____ State _____ Public (other than Federal or State) _____

Private _____ Other _____

Location: Latitude & Longitude _____ Or Quarter _____ Section _____

_____ Township _____ Range _____

Name of Receiving Water (and if applicable, name of municipal operator of storm sewer):

Please note: Even if a retention pond is present on the property, the name of the nearest possible receiving water is required.

Acreage: Total acreage: _____ Acreage to be Disturbed: _____

Timetable: Start Date: _____ Estimated End Date for all
Land Disturbing Activity: _____

Please note: The operator is responsible for all construction activities within the boundaries of the project until all construction is complete. If individual lots are to be sold within a subdivision or commercial park, the operator should consider developing contractual agreements to bind lot buyers and builders to compliance with the Soil Erosion Control Plan established by the operator, and to indemnify the operator for any violations. An example of a contractual clause of this nature may be obtained by contacting IDEM, Office of Water Management, Rule 5 Desk at 317/232-8760.

State Form 47487 (R/7-96)

(Continued on Reverse Side)

Exclusions From Coverage Under this General Permit:

1. Storm water discharges excluded by any provision of 327 IAC 15-2-3.
2. Storm water discharges to waters designated as outstanding state resources listed in 327 IAC 2-1-2(3) or waters designated for exceptional use listed in 327 IAC 2-1-11(b).

Soil Erosion Control Plan Certification:

By signing this Notice of Intent letter, I, the operator, certify the following:

- A. The erosion control measures included in the Soil Erosion Control Plan comply with the requirements of 327 IAC 15-5-7 and 15-5-9 and the plan complies with applicable state, county, and local erosion control requirements;
- B. The erosion control measures will be implemented in accordance with the plan;
- C. The appropriate state, county, or local erosion control authority **and** the county Soil and Water Conservation District (SWCD) office have been sent a copy of the erosion control plan for review; and
- D. Implementation of the erosion control measures will be conducted by personnel trained in erosion control practices.

Operator Responsibility Statement:

By signing this Notice of Intent letter, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Operator _____ Date _____

In Addition to this Form, Completed in Full, Please Submit the Following:

_____ Proof of publication in a newspaper of general circulation in the affected area notifying the public that a construction activity is to commence, including the start date, end date, and location of the project, and the name and address or phone number of the contact person;

_____ \$100 check or money order payable to the Indiana Department of Environmental Management

Mail to: Indiana Department of Environmental Management

Office of Water Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015
Attention: Permits Section, Storm Water Group

Questions regarding Soil Erosion Control Plan development or implementation may be directed to your local SWCD or Department of Natural Resources office. Questions regarding the Notice of Intent may be directed to the Rule 5 contact person at 317/232-8760 or 800/451-6027. The NOI should be submitted only after your Soil Erosion Control Plan has been submitted to your local SWCD. Any person initiating earth disturbing activity before submittal of the Soil Erosion Control Plan, the NOI, and the \$100 filing fee is operating without a permit and is subject to enforcement and penalty under IC 13-30.

RULE 5: STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY

The purpose of 327 IAC 15-5 (Rule 5) is to reduce pollutants, principally sediment as a result of soil erosion, in storm water discharges into surface waters of the state. The requirements of Rule 5 apply to all persons who are involved in construction activity (which includes clearing, grading, excavation and other land disturbing activities) that results in the disturbance of one (1) acre or more of total land area. If the land disturbing activity results in the disturbance of less than one (1) acre of total land area, but is part of a *larger common plan of development or sale* (such as the development of a subdivision or industrial park), it is still subject to storm water permitting.

A “larger common plan of development or sale” is a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan. For example, if a developer buys a 20-acre lot and builds roads, installs pipes and runs electricity with the intention of construction homes or other structures sometime in the near future, this would be considered a common plan of development or sale. If the land is parceled off or sold, and the construction occurs on plots that are less than one acre by separate, independent builders, this activity still would be subject to storm water permitting requirements.

Neither soil erosion control plans nor blueprints of any type are to be submitted to this office. All soil erosion control plans are to be submitted to your county Soil & Water Conservation District (SWCD) Office. One (1) Notice of Intent letter (NOI) is required for every soil erosion plan that is submitted to the local SWCD. Projects that have all sections incorporated into one (1) soil erosion control plan may submit one (1) NOI for the entire project.

Since the NPDES general permit for storm water runoff associated with construction activity is a permit-by-rule, you will not be receiving an actual permit. The permit requirements are contained in the General Permit Rule (Rule 5). You will receive either a Notice of Sufficiency or a Notice of Deficiency. If you receive a Notice of Deficiency, an amended NOI must be submitted to the Indiana Department of Environmental Management before the initiation of land disturbing activities.

NOTE: If you answer yes to any of the questions below, you may be required to submit an individual application for those discharges. An individual application must be submitted at least 180 days prior to initiation of land disturbing activities. If you are required to obtain an individual permit, please notify the contact person listed below for assistance.

- ▼ Are any of the receiving waters for your project classified as outstanding state resource or exceptional use waters (see Appendix A)?

- ▼ Are any of the point source discharges already covered by an individual NPDES permit?
- ▼ Are any of the point source discharges comprised of anything other than storm water? If so please contact this office for further instructions.

Questions regarding Rule 5 requirements may be directed to Ms. Anne Burget at 317/233-1864.

(Rev. 2/96)

**HOW TO COMPLY WITH THE GENERAL PERMIT RULE FOR
STORM WATER RUN-OFF ASSOCIATED WITH CONSTRUCTION ACTIVITY
327 IAC 15-5 (RULE 5)**

Requirements:

1. Prepare and submit a complete Notice of Intent (NOI) letter to:

Indiana Department of Environmental Management
Office of Water Management
Permits Section, Storm Water Desk
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

All of the content requirements in 327 IAC 15-3-2 and 327 IAC 15-5-5 must be included in the NOI letter to be considered complete.

A fee of \$100.00 must be submitted with the NOI. Checks should be made payable to the Indiana Department of Environmental Management.

2. Prepare a soil erosion control plan that contains the required elements in 327 IAC 15-5-7.

Send the plan to the Soil and Water Conservation District (SWCD) office in the county where the construction activity will take place, and to any appropriate state, county or local soil erosion control authority. The SWCD will review the plan and make recommendations when necessary. Do not send a copy of the soil erosion control plan to IDEM.

Be sure that the personnel responsible for installing and maintaining the soil erosion control measures are trained in erosion control practices.

Construction may begin only after fulfilling all of the requirements mentioned above.

3. Notify IDEM upon completion of the construction activity in accordance with 327 IAC 15-5-11. All construction activity, including home building, must be complete before a notice of termination may be submitted.

APPENDIX A

LIST OF RECEIVING STREAMS TO WHICH DISCHARGE UNDER THE GENERAL PERMIT RULES FOR STORM WATER IS PROHIBITED

327 IAC 2-1-2 (3):

The following waters of high quality, as defined in subsection (2), are designated by the board to be an outstanding state resource and shall be maintained in their present high quality without degradation:

- (A) The Blue River in Washington, Crawford, and Harrison Counties, from river mile 57.0 to river mile 11.5.
- (B) Cedar Creek in Allen and DeKalb Counties, from river mile 13.7 to its confluence with the St. Joseph River.
- (c) The North Fork of Wildcat Creek in Carroll and Tippecanoe Counties, from river mile 43.11 to river mile 4.82.
- (D) The South Fork of Wildcat Creek in Tippecanoe County, from river mile 10.21 to river mile 0.00.
- (E) The Indiana portion of Lake Michigan.
- (F) All waters incorporated in the Indiana Dunes National Lakeshore.

327 IAC 2-1-11(b):

The following waters of the state are designated for exceptional use pursuant to 327 IAC 2-1-3(a)(6):

- (1) Big Pine Creek in Warren County downstream of the S.R. 55 bridge near the Town of Pine Village to its confluence with the Wabash River.
- (2) Mud Pine Creek in Warren County from the bridge on the County Road between Brisco and Rainsville to its confluence with Big Pine Creek.
- (3) Fall Creek in Warren County from the old C.R. 119 bridge in the NW quarter of Section 21, Township 22 N, Range 8 W downstream to its confluence with Big Pine Creek.
- (4) Indian Creek in Montgomery County from the C.R. 650 bridge downstream to its confluence with Sugar Creek.
- (5) Clifty Creek in Montgomery County within the boundaries of Pine Hills Nature Preserve.
- (6) Bear Creek in Fountain County from the bridge on C.R. 450 North to its confluence with the Wabash River.
- (7) Rattlesnake Creek in Fountain County from the bridge on C.R. 450 North to its confluence with Bear Creek.
- (8) The small tributary to Bear Creek in Fountain County within the Portland Arch Nature Preserve which enters Bear Creek at the sharpest bend and has formed the small natural bridge called Portland Arch.
- (9) Blue River from the confluence of the West and Middle Forks of the Blue River in Washington County downstream to its confluence with the Ohio River.

- (10) The South Fork of the Blue River in Washington County from the Horner's Chapel Road bridge downstream to its confluence with Blue River.
- (11) Lost River and all surface and underground tributaries upstream from the Orangeville Rise (T2N, R1W, Section 6) and the Rise of Lost River (T2N, R1W, Section 7) and the mainstem of the Lost River from the Orangeville Rise downstream to its confluence with the East Fork of the White River.

**EROSION AND SEDIMENT CONTROL PLAN
TECHNICAL REVIEW AND COMMENT**

County Soil and Water Conservation District

PROJECT NAME: _____
SUBMITTED BY: _____

PHONE: _____

REVIEWED BY: _____

PLAN REVIEW PROCEDURE: Site Visit Date _____ Plan Review Date: _____
LOCATION: _____
LEGAL _____ DESCRIPTION: _____

TOWNSHIP: _____ RANGE: _____ CIVIL TOWNSHIP: _____
SOIL SURVEY MAP SHEET: _____

The technical review and comments are intended to evaluate the completeness of the erosion and sediment control plan for the project. The erosion and sediment control plan submitted was not reviewed for the adequacy of the engineering design. All practices included in the plan, as well as those recommended in the comments should be evaluated as to their feasibility by a qualified individual with structural practices designed by a qualified engineer. The plan has not been reviewed for local, state, or federal permits that may be required to proceed with this project. Additional information, including design calculation may be requested to further evaluate the erosion and sediment control plan.

The erosion and sediment control plan has been reviewed and it has been determined that the plan:

- ☐ Satisfies the minimum requirements and intent of 327 IAC 15-5 (Rule 5). Notification will be forwarded to the Indiana Department of Environmental Management.
- ☐ Refer to the comments section for additional information
- ☐ Does not satisfy the minimum requirements and intent of 327 IAC 15-5 (Rule 5); deficiencies are noted in the checklist and in the comments section. Deficiencies constitute potential violations of the rule and must be adequately addressed for compliance. The information necessary to satisfy the deficiencies

must be submitted _____. **Revisions should be mailed to:**

Revised

9/97

Proper implementation of the erosion and sediment control plan and inspections of the construction site by the developer or a representative are necessary to minimize off-site sedimentation. The developer should be aware that unforeseen construction activities and weather conditions may affect the performance of a practice or the erosion and sediment control plan. The plan must be a flexible document, with provisions to modify or substitute practices as necessary.

PROJECT: _____, _____ County, Reviewed _____

Page _____

ARE THE FOLLOWING ITEMS ADEQUATELY ADDRESSED ON THE PLANS?

(All Plans Must Include Appropriate Legends, Scales, and North Arrow)

(Items that are Not Applicable to this Project are designated by NA)

Yes	No		
☐	☐	PROJECT INFORMATION	
☐	☐	1A	Project Location Map <i>(Show project in relation to other areas of the country)</i>
☐	☐	1B	Narrative Describing the Nature and Purpose of the Project
☐	☐	1C	Location of Planned and/or existing Roads, Utilities, Structures, Highways, etc.
☐	☐	1D	Lot and/or Building Locations
☐	☐	1E	Land use of Adjacent Areas <i>(Show the Entire Upstream Watershed and Adjacent Areas Within 500 Feet of the Property Lines)</i>
☐	☐		
☐	☐	TOPOGRAPHIC, DRAINAGE, AND GENERAL SITE FEATURES	
☐	☐	2A	Existing Vegetation <i>(Identify and Delineate)</i>
☐	☐	2B	Location/Name of All Wetlands, Lakes and Water Courses On and Adjacent to Site
☐	☐	2C	100 Year Floodplains, Floodway Fringes, and Floodways <i>(Not if None)</i>
☐	☐	2D	Soils Information <i>(If hydric soils are present, it is the responsibility of the owner/developer to investigate the existence of wetlands and to obtain permits from appropriate government agencies.)</i>
☐	☐	2E	Existing/Planned Contours at Interval Appropriate to Indicate Drainage Patterns
☐	☐	2F	Locations of Specific Points Where Storm water Discharge Will Leave the site
☐	☐	2G	Identify all Receiving Waters <i>(If Discharge is to a Separate Municipal Storm Sewer, Identify the Name of the Municipal Operator and the Ultimate Receiving Water)</i>
☐	☐	2H	Potential Areas Where Storm Water May Enter Groundwater <i>(Note if None)</i>
☐	☐	2I	Location of Storm water System <i>(Include Culverts, Storm Sewers, Channels, and Swales)</i>
☐	☐		
☐	☐	LAND DISTURBING ACTIVITIES	
☐	☐	3A	Location and Approximate Dimensions of All Disturbed Areas <i>[i.e., Construction Limits] (Areas Where Vegetation Cover Will be Preserved Should be Clearly Designated)</i>
☐	☐	3B	Soil Stockpiles and/or Borrow Areas <i>(Show Location or Note if None)</i>
☐	☐		
☐	☐	EROSION AND SEDIMENT CONTROL MEASURES	
☐	☐	4A	Sequence of Each Measure to be Implemented <i>(Relative to Earth Disturbing Activities)</i>
☐	☐	4B	Monitoring and Maintenance Guidelines for <u>Each Measure</u>
☐	☐	4C	Perimeter Sediment Control Measures <i>(Location, Construction Detail, Dimensions, Specifications)</i>
☐	☐	4D	Temporary Seeding <i>(Specifications, Including Seed Mix, Fertilizer, Lime and Mulch Rates)</i>
☐	☐	4E	Temporary Erosion and Sediment Control Measures <i>(Location, Construction Detail, Dimensions, Specifications)</i>
☐	☐	4F	Permanent Erosion and Sediment Control Measures <i>(Location, Construction Detail, Dimensions, Specifications)</i>
☐	☐	4G	Storm Drain Inlet Protection <i>(Location, Construction Detail, Dimensions, Specifications)</i>
☐	☐	4H	Storm Drain Outlet Protection <i>(Location, Construction Detail, Dimensions, Specifications)</i>
☐	☐	4I	Stable Contraction Entrance <i>(Location, Construction Detail, Dimensions, Specifications)</i>
☐	☐	4J	Erosion and Sediment Control on Individual Building Lots <i>(Specifications)</i>
☐	☐	4K	Permanent Seeding <i>(Specifications including Seed Mix, Fertilizer, Lime, and Mulch Rates)</i>

EROSION AND SEDIMENT CONTROL PLAN

TECHNICAL REVIEW

COMMENTS

PROJECT: _____, _____ County, Reviewed _____

Page _____

Note: All erosion and sediment control measures shown on the plans and referenced in this review must meet the design criteria, standards, and specifications outlined in the "Indiana Handbook for Erosion Control in Developing Areas" from the Indiana Department of Natural Resources, Division of Soil Conservation or similar Guideline Documents.

...