



TOWN OF DEWEY-HUMBOLDT
 "Arizona's Country Town"

**Grading Permit
 Application**
 Community Development
 P.O. Box 69
 Humboldt, AZ 86329

www.dhaz.gov Phone: (928) 632-8643, Fax: (928) 632-7365

Date: _____ Permit #: _____ Parcel #: _____

Enclosed is a: Plot Plan Grading Plan Grading Plan (Subdivision)

Project Address: _____

Project Description: _____

Owners Name: _____ Phone #: _____

Address: _____

Contractor Name: _____ Phone #: _____

Address: _____

ROC License #: _____ Phone: _____ FAX: _____

Civil Engineer: _____ License #: _____

Soils Engineer: _____ License #: _____

Total area of Site Disturbance: _____

Excavation: Depth of Cut: _____ (Est. Cu. Yards): _____

Fill: Depth of Fill: _____ (Est. Cu. Yards): _____

If surplus materials exists (unbalanced site), where will it be disposed of? _____

Is there any diversion of water to adjoining property? Yes No

Is a Silt Fence required? Yes No

If yes, please note nature and type: _____

Will a fence be required for public safety?

Yes No

Any known archeological sites?

Yes No

Give a brief description as to how work may relate to adjoining property; regarding drainage, erosion, spill, seepage, retaining walls, public health and safety. _____

NOTE: ALL WORK SHALL COMPLY WITH THE MUNICIPAL CODE

Permit Fee: \$ _____
 Plan Review: \$ _____
 Admin. Fee: \$ _____
 Deposit: \$ _____
 Total: \$ _____

AFFIDAVIT

I hereby agree to develop, implement and enforce a program to ensure controls are in place that will prevent or minimize water quality impacts from storm water runoff from the construction site subject to this permit.

I hereby agree to save, indemnify and hold harmless the Town of Dewey-Humboldt and it's officers, employees and agents against all liability, judgments, costs and expenses which may in any way accrue against the Town of Dewey-Humboldt in consideration of this application, and will in all things strictly comply with the conditions of this permit, regulations and ordinances of the Town of Dewey-Humboldt and the laws of the State of Arizona.

SIGNED: _____ DATE: _____
Applicant

APPROVED: _____ DATE: _____

----- **Area below is for Town use only** -----

MAP SUBMITTED:

Up to 2,000 cubic yards requires a map showing existing and proposed elevations, drainage structures, trees or other topographic features.

Over 2,000 cubic yards or within hillside development requires preparation by a licensed Civil Engineer, and a soils and/or geology report.

- | | | |
|----------------------------------|-----------------------------------|---------------------------------------|
| Soils Engineering Report: | <input type="checkbox"/> Required | <input type="checkbox"/> Not Required |
| Engineering Geology Report: | <input type="checkbox"/> Required | <input type="checkbox"/> Not Required |
| Environmental Impact Assessment: | <input type="checkbox"/> Required | <input type="checkbox"/> Not Required |
| Final Soils Report: | <input type="checkbox"/> Required | <input type="checkbox"/> Not Required |
| Final Compaction Test Required: | <input type="checkbox"/> Required | <input type="checkbox"/> Not Required |

Fees Due: \$ _____

Receipt #: _____

Date Paid: _____

Town of Dewey-Humboldt

Directions to Site

Instructions: An actual detailed line map is needed, not written instructions, adding any significant buildings, land marks, main highway, street names, and north arrows. If the map is not adequate it could cause a delay in issuing your permit.

Assessor's Parcel Number _____ Address _____



TOWN OF DEWEY-HUMBOLDT

“Arizona’s Country Town”

Grading Plan Requirements

Community Development

P.O. Box 69

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For quantities under 2000 C.Y. If over 2000 C.Y. Plans must be done by a Civil Engineer in Arizona.

Each application for a grading permit shall be accompanied by three (3) sets of plans of sufficient clarity to indicate the nature and extent of the work (minimum size 18” x 24” with one (1) 8½” x 11” Plot Plan).

The plan shall include the following information:

1. *Digital photographs of the site.*
2. *A soils classification and/or a soils report may be required for all grading of any single family residence or commercial project, when indicated by the elements of the grading plan and/or site inspection, to include a plot plan to show the locations and depth from which the samples are taken.*
3. *Estimated cubic yards of material to be excavated and/or filled.*
4. *General vicinity of the proposed grading site as located on a detailed plot plan.*
5. *Property limits and accurate contours of existing ground and details of terrain and area drainage. Grading cannot be closer than 2 feet to the property line.*
6. *Limiting dimensions, set back lines, finish floor and pad elevations, or finish contours to be achieved by the grading, and proposed drainage channels and related construction.*
7. *Detailed plans are to be provided of all surface and subsurface drainage devices, walls, cribbing, dams and other protective devices to be constructed. Detailed plans are to include as a part of, the proposed work, a map showing the drainage area and the estimated runoff of the area served by any drains.*
8. *Location of any buildings or structures on the property and the location of any buildings or structures on land of adjacent owners that are within fifteen feet (15’) of the property line(s) that may be affected by the proposed grading operations.*
9. *Type, source, and soil classification of fill material*
10. *When required, a soil investigation report and an engineered fill report attesting to fill adequacy to support the structure, shall be submitted for all fills regardless of depth or extent used to support the foundations of any building or structure.*
11. *The following notes are required on the plans:*
 - A. *The ground surface shall be prepared to receive fill by removing vegetation, non-complying fill, and other unsuitable materials. All such materials are to be hauled away.*
 - B. *No rock or similar irreducible material with a maximum dimension greater than eight inches (8”) shall be allowed in fills in the absence of a soils report and inspection by a soils engineer.*
 - C. *All fills shall be compacted to a minimum of 90% of maximum density as determined by ASTD1557 test procedures and verified by an engineered fill compaction report when supporting a structure.*
 - D. *All native slopes greater than 5 to 1 (H:V) and underlying engineered fill zones shall be benched to form horizontal surfaces.*
12. *A Storm Water Pollution Plan (SWPP) may be required.*

Note:

- A. *A fill area of less than 2 feet in depth do not require a permit. However. All footing bases will then be placed below native ground surface rather than finished pad surface.*
- B. *The faces of cut and fill slopes shall be prepared and maintained to control erosion. This control may consist of effective planting.*
- C. *All fills over 2 feet in depth require compaction.*
- D. *Maximum slope for driveways shall be 15% for an unpaved surface and 20% for a paved surface.*

Applies to all Grading plans:

REQUIREMENTS FOR COMPACTION OF FILL MATERIAL

Per Section R506.2.1 of the 2006 IRC regarding requirements for fill material used for concrete slab-on-ground floors; "Fill material shall be free of vegetation and foreign material. The fill shall be compacted to assure uniform support of the slab, and except where approved, the fill depths shall not exceed twenty-four (24") inches for clean sand or gravel and eight (8") inches for earth" also, Section R401.2 "Fill soils that support footings and foundations shall be designed, installed and tested in accordance with accepted engineering practice" to yield an "Engineered fill zone". In addition, the Dewey-Humboldt Code 150.09 - Grading, Section 110 states "Detrimental amounts of organic material shall not be permitted in fills. NO rock or similar irreducible material with a maximum dimension greater than twelve (12") inches shall be buried or placed in fills."

The following requirements shall be met for submittals of "engineered fill" compaction reports for fill materials, either for footing placement on fill material, or fill inside the foundation walls of a residential structure when the foundation wall exceeds two (2') feet in height and the area to be filled is fifty percent (50%) or more of the entire floor area. These compaction reports shall be *submitted* by an Arizona licensed engineering firm:

1. Engineered fill reports shall accurately reflect the placement of fill in maximum twelve (12") inch lifts with compaction tests performed on each lift, under the direction of a soils engineer.
2. Engineered fill reports shall include dates, times, number of tests, specific locations of the tests in relation to the structure to be built on the site, and the results of the tests including any failure notifications. Subsequent reports should reflect actions taken to resolve any failures.
3. Engineered fill reports shall be written on forms showing the authorized agency along with the name of the individual performing the tests. If requested by Building Safety, the individual or firm performing the test may be required to submit copies of their credentials to Dewey-Humboldt, Building Safety Unit.
4. Engineered fill reports shall include a cover letter from the firm performing the tests certifying that the fills are placed in accordance with the specifications of the project, and will afford adequate support of the structure.
5. Approval of any foundation or slab grade inspection will be given only after the compaction reports have been received, reviewed and approved by either the building inspector or the building official.

REQUIREMENTS FOR ENGINEERED FILL REPORT

1. Address and legal description of the site, and the grading permit under which the work is authorized, *and the grading contractor.*
2. Plot plan with:
 - a. north arrow and scale
 - b. showing location limits of fill
 - c. showing depth of fill at various locations of the site
 - d. location *and depth* of in-place density tests
 - e. location of retaining walls and their subdrains
 - f. property boundaries and streets
 - g. building footprints and adjacent structures/sidewalks, etc.
 - h. toe and top of slopes
3. On engineered grading plans a statement that inspection and approval by soils engineer of:
 - a. *cleaning and grubbing of the site*
 - b. the bottom of excavation (and slope benching where required) before placing the fill
 - c. sub drains before placing gravel backfill
4. Statement of purpose and use of fill: (primary structural for supporting footings *and/or floor slabs*, secondary structural for supporting walkways/paving, non-structural for landscaping, etc.)
5. Description of each of the following:
 - a. Materials encountered at the bottom of the excavation.
 - b. Preparation of the bottom prior to placement of fill
 - c. Fill-backfill placement, and preparation
 - d. Method of mechanical compaction

- e. Identify fill material used with Unified Soil Classification System, maximum dry density, and optimum moisture
 - f. Moisture content control method and results
 - g. Thickness of the uncompacted fill lifts (typically 8-10 inches).
6. Results of all density tests with applicable ASTM or IBC standard designation numbers, compaction standard, and depths.
 7. Description of removal and recompaction of the unacceptable fill and its retesting shall be included.
 8. Expansion index *or swell test* shall be provided or recommendations for special design for highly expansive soil.



TOWN OF DEWEY-HUMBOLDT
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Grading Plan
Submittal Checklist

Community Development
P.O. Box 69
Humboldt, AZ 86329

www.dhaz.gov

Phone: (928) 632-8643, Fax: (928) 632-7365

Project Applicant: _____

Address: _____

Parcel #: _____

Does the plan contain:

- Plan drawn to Engineering Scale, such as 1"= 20' with dimensions
- North arrow
- Vicinity Map
- Name and phone number of person responsible for plan
- Stamp of registered Engineer responsible for plan (if over 2000 CY)
- Soils report
- Original contours of entire parcel
- Contours of proposed grading
- Quantities of cut and fill
- Location of all structures, wells, septic systems with dimensions

Plans will not be accepted for plan check unless all of the above (where applicable) is submitted.

Guide to Residential Grading

Why Grading is a Concern

Grading means to remove or deposit soil (cut or fill). It is usually done to construct a building pad or a driveway. Grading is regulated because it can cause serious problems when not done properly:

- Newly exposed soil can erode easily, moving from areas where you want it (e.g., up against your home, in a street or creek, or on a neighbor's property).
- If soil placed under a building is not dense enough or if the density varies too much, the building may settle and suffer damage.
- Excessive grading causes loss of natural vegetation and damages other natural resources for years to come.
- Even minor grading can change the way water drains across your property, which can cause erosion problems for a neighbor (and liability for you).

Grading permits are required for all but the smallest earth-moving operations so that these problems can be prevented. Even when a permit isn't required, you should still use great care in grading to preserve your own property and to protect adjoining properties and public roads.

Grading Requirements for your Project

If your project includes grading for a driveway and/or a building pad, **you should determine how much grading will be done before you apply for your house permit.** This means you need to design your driveway, decide how your house will sit on the lot, and determine how much soil will be moved. As a rule of thumb, a permit is required to move over 50 cubic yards (or enough to fill a medium-size bedroom).

To Obtain a Grading Permit

To apply for a grading permit, you must submit an application and two sets of plans. If complicated, the plans may need to be prepared by a licensed engineer (call our grading plans examiner at 632-8643 for more information on plans). Your permit will be issued once your plans have been approved and land use requirements have been met. **Grading on slopes of 10% or more is reviewed for its impact on the environment.** This may involve additional processing time and extra requirements (mitigation measures) for your project.

Before you Start Grading

In most cases, grading projects require a report from a licensed engineer verifying that the grading work was done correctly. To do this, the engineer must inspect certain grading operations and perform soils tests. Therefore, **you need to engage an engineer before you start grading.** Be sure the engineer knows that his/her report must verify all of the following:

- The grading was done according to the approved plans, including the location and extent of grading, and the finish slopes of cuts and fills.
- Areas where fill is placed have been properly prepared (vegetation removed, keying and benching where required).
- The fill has achieved at least 90% relative compaction throughout its depth.
- Where a building pad is created, a pad is “suitable for its intended use” (i.e. to support a residential structure). This is particularly important when the building is partly on cut and partly on fill. **You must submit this written statement before you can pour your foundation.**

On minor grading projects, a building inspector may inspect slope preparation before fill placement.

As-Built Grading

To get a permit for grading that is already complete (“as-built”), you follow the same procedure as for all other grading projects. However, you may have to pay violation fees in addition to permit fees. And, if your plans are approved, you must then excavate, remove and /or replace soil as directed by your engineer. This will allow the engineer to evaluate the grading and ensure that it meets all Town requirements. You will also need to perform all mitigation measures required by land use and environmental regulations. If for some reason your plans cannot be approved, you may need to partially or completely restore the site to its original state.

Final Grading Approval

As mentioned above, a county inspector or your engineer must inspect your project before any fill is placed. Your engineer will tell you what other observations and tests are necessary during grading operations. You must also schedule a final inspection with our department. A building inspector will check all of the following:

- Grading must be complete and meet the approved plans.
- Areas where soil was exposed must be revegetated.
- Mitigation measures and other special requirements listed on your permit must be complete.
- The engineer's final report must provide all required information (see "Before you Start Grading" above).

Grading During the "Rainy Season"

During Monsoon season grading is particularly vulnerable to erosion. Therefore, to grade during that time, you are required to install special protective measures to minimize damage. You must submit erosion and sedimentation control plans prepared by a licensed civil engineer with your grading plans. You must install the erosion control features shown on your plans and have them inspected by a building inspector.

Installing Best Management Practices

- Follow your Stormwater Pollution Prevention Plan
- Install the Best Management Practice in the order specified in the Stormwater Pollution Prevention Plans sequence of major activities
- Follow the engineer's or manufacturer's specifications when installing the Best Management Practices.

Options for Controlling Pollutants at Small Construction Sites

Sediment and Erosion Control

To prevent erosion through soil protection and preservation

- Plant or seed temporary or permanent
- Apply mulch or geotextile ground cover
- Apply sod stabilization
- Use vegetative buffer strips

Structural Practices

To divert store or limit runoff

- Silt Fences
- Earthen dikes
- Drainage swales
- Check dams
- Sediment traps
- Storm drain inlet protection

Stormwater Management

To reduce pollutant discharges after construction activities cease

- On-site filtration
- Flow attenuation by vegetation or natural depressions
- Retention structures/artificial wetlands

Housekeeping Best Management Practices

To prevent pollution discharges from equipment and construction materials

- Proper waste management
- Control of wastewater

Submit Notice of Termination Form

<http://www.azdeg.gov/envirom/water/permits/download/constnot.pdf>

The Notice of Termination is the official form to notify ADEQ that you want to terminate construction General Permit coverage.

Stormwater Compliance at a Glance

1. Prepare a Stormwater Pollution Prevention Plan
2. Certify the Stormwater Pollution Prevention Plan
3. Submit a Notice of Intent
4. Retain the Notice of Intent and the Stormwater Pollution Prevention Plan at the project site.
5. Implement the Stormwater Pollution Prevention Plan
6. Inspect and maintain pollution controls, improving as necessary
7. Submit Notice of Termination
8. Retain records after the project is complete for a minimum of three years

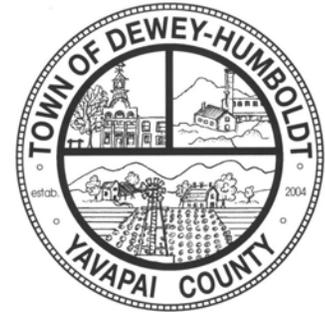
Further Information

Yavapai County Development Services
Flood Control District
500 S. Marina Street
Prescott, AZ 86303
Room 25
(928) 771-3197

See Stormwater Management Program and Drainage Criteria Manual:

<http://www.co.yavapai.az.us/DevServ.aspx>

ADEQ: www.azdeg.gov



STORMWATER QUALITY MANAGEMENT FOR THE CONSTRUCTION INDUSTRY

**AZPDES GENERAL PERMIT
FOR
STORMWATER
DISCHARGES
FROM
LARGE AND SMALL
CONSTRUCTION ACTIVITY**

HOW TO COMPLY

Permit number: AZG2003-001
Permit term: Feb 28, 2003 to Feb 28, 2008

Who Must Apply?

This guidance pamphlet has been developed in order to help operators of construction sites in the Town of Dewey-Humboldt to understand and comply with the stormwater management requirements of the Arizona Department of Environmental Quality (ADEQ). ADEQ regulates stormwater discharges from construction sites under the Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit.

A Permit from ADEQ is required for all construction sites that disturb an area greater than one acre. The Permit contains requirements such as submittal of the Notice of Intent at least two days prior to commencement of construction and development of a Stormwater Pollution Prevention Plan specific to each construction site. Permit coverage for each construction site greater than one acre is required from commencement of construction until the site has been stabilized as defined in the Permit.

Details of the Permit, ADEQ's website:
<http://azdeq.gov/environ/water/permits/stormwater.html#const>

Does my Construction Project Need Permit Coverage?

Yes, if any of the following are true:

- My project disturbs more than one acre
- My project disturbs less than one acre but is part of a larger plan on development

In addition to a stormwater permit, you may need other permits from local, state, or federal agencies. For example, you may need:

- Town of Dewey-Humboldt Grading Permit
- Flood Control District Development Permit
- U.S. Army Corps of Engineers 404 Permit

Contact the Town of Dewey-Humboldt Building Department for assistance, or:
<http://www.azdeq.gov/function/permits/download/delegation/yavapai.pdf>

How do I Obtain Permit Coverage?

Notice of Intent website:
<http://www.azdeq.gov/environ/water/permits/download/supp204.pdf>

The operator for the project must submit a Notice of Intent, the official form for notifying ADEQ of the operator's intention to discharge stormwater under the Construction General Permit. When the operator signs the Notice of Intent, he or she certifies that a Stormwater Pollution Prevention Plan for the project has been completed and is in place, and that the operator will comply with the terms and conditions of the Construction General Permit. ADWQ now has an online SMART Notice of Intent system (<http://az.gov/adeq/noi>) which allows the operator to complete and submit a Notice of Intent electronically.

The Notice of Intent and Stormwater Pollution Prevention Plan must be submitted to Town of Dewey-Humboldt for review and approval.

What information do I need to Include in My Notice of Intent?

Information that needs to be provided with the Notice of Intent includes:

- Operator name and contact information
- Project information (project name, location, size, estimated construction dates, etc.)
- Receiving waters
- Location of Stormwater Pollution Prevention Plan

When Should I Submit My Notice of Intent?

Typically, permit coverage is available within two business days of ADEQ's receipt of the Notice of Intent. However, there are two circumstances in which permit coverage may be delayed.

- If the project is within ¼ mile of a unique or impaired water.
- If the project is within an area that ADEQ and the U.S. Fish and Wildlife Service has determined may support animals or plants protected under the Endangered Species Act.

In either case, ADEQ will issue a letter to the applicant noting that permit coverage is being delayed 32 business days while ADEQ reviews the potential impacts of the project. In the case of unique or impaired waters, ADEQ requires that the Stormwater Pollution Prevention Plan be submitted along with the Notice of Intent.

What's in a Stormwater Pollution Prevention Plan?

The Stormwater Pollution Prevention Plan is a public document that:

- Identifies potential sources of pollution in discharges from a construction site.
- Identifies Best Management Practices that will be used to reduce pollution in stormwater
- Assures compliance with the terms and conditions of the Construction General Permit, and
- Identifies the responsible parties for onsite activities

SMALL SITE EROSION AND SEDIMENT CONTROL GUIDANCE

Soil erosion and resulting sedimentation are a leading cause of water quality problems in Indiana. Although erosion has long been associated with farming activities, it is also a major concern at construction sites, if the disturbed land is left unprotected. Every phase of a construction project has the potential of contributing significant quantities of sediment-laden runoff. Therefore, as a site is developed, all who are associated with the project must do their part to control erosion.

This pamphlet deals with erosion/sediment control on an individual building lot. First it looks at some consequences of construction site erosion and presents four principles important for control. Next it addresses the issue of proper lot drainage. Then it presents the seven steps within a construction sequence that should result in effective erosion control. Also included are installation instructions for five commonly used building site control practices as well as suggested reference materials and sources of further assistance.

PRIMARY CONCERNS RELATED TO EROSION AND SEDIMENTATION

Water quality. Sediment is the number one pollutant, by volume, of surface water in the state of Indiana. It impacts water quality by degrading the habitat of aquatic organisms and fish, by decreasing recreational value, and by promoting the growth of nuisance weeds and algae.

Local taxes. Sediment that finds its way into streets, storm sewers, and ditches results in additional maintenance costs for local government.

Flooding. Sediment accumulation in streams, lakes, and rivers reduces their capacity, which can result in increased flooding.

Property values. Sediment deposits not only impair water quality but also damage property, thus reducing its use and value.

PRINCIPLES FOR CONTROLLING BUILDING SITE EROSION AND SEDIMENTATION

Erosion control is important on any building site regardless of its size. Usually, the principles and methods for controlling erosion and reducing off-site sedimentation are relatively simple and inexpensive. Here are four basics to be followed when developing a building site.

Evaluate the site. Inventory and evaluate the resources on the lot before building.

Location of structures should be based, in large part, on the lot's natural features. Identify trees that you want to save and vegetation that will remain during construction. Also identify areas where you want to limit construction traffic. Wherever possible, preserve existing vegetation to help control erosion and off-site sedimentation.

Select and install erosion/sediment control practices. Determine the specific ones needed, and install them before clearing the site. Among the more commonly used practices are vegetative filter strips, silt fence, gravel drives, and runoff inlet protection.

Develop a practice maintenance program. Maintenance of all practices is essential for them to function properly. They should be inspected twice a week and after each rainfall event. When a problem is identified, repair the practice immediately. Also, any sediment that is tracked onto the street should be scraped and deposited in a stable area. *Do not flush sediment from the street with*

water.

Revegetate the site. Do so as soon as possible. A well-maintained lot has a higher sale potential.

BUILDING LOT DRAINAGE

The best time to provide for adequate lot drainage is before construction begins. With proper planning, most drainage problems can be avoided. And that's important because correcting a problem after it occurs is usually much more difficult and costly. Here's what it takes to ensure good lot surface and subsurface drainage.

Surface Drainage

Position the structure a minimum of 18 inches above street level.

Divert stormwater runoff away from the structure by grading the lawn to provide at least 6 inches of vertical fall in the first 10 feet of horizontal distance.

Construct side and rear yard swales to take surface water away from the structure.

Avoid filling in existing drainage channels and roadside ditches, since that could result in wetness problems on someone else's property and/or damage to adjacent road surfaces.

Subsurface Drainage

Provide an outlet for foundation or footer drains and for general lot drainage by using storm sewers (where allowed), OR obtain drainage easements if you must cross adjoining properties.

If you accidentally cut through an existing field tile, assume that it carries water even if currently dry; therefore, re-route it (using the same size tile) around the structure or septic field; then reconnect it.

STEP 1. EVALUATE THE SITE.

Before construction, evaluate the entire site, marking for protection any important trees and associated rooting zones, unique areas to be preserved, on-site septic system absorption fields, and vegetation suitable for filter strips, especially in perimeter areas.

Identify Vegetation To Be Saved.

Select and identify the trees, shrubs, and other vegetation that you want to save (*see "Vegetative Filter Strips" under Step 2 below*).

Protect Trees and Sensitive Areas.

To prevent root damage, do no grade, burn, place soil piles, or park vehicles near trees or in areas marked for preservation.

Place plastic mesh or snow fence barriers around the tree's dripline to protect the area below their branches.

Place a physical barrier, such as plastic fencing, around the area designated for a septic system absorption field (if applicable).

STEP 2. INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS.

Identify the areas where sediment-laden runoff could leave the construction site, and install perimeter controls to minimize the potential for off-site sedimentation. It's important that perimeter controls are in place before any other earth-moving activities begin.

Protect Down-Slope Areas:

With Vegetative Filter Strips

On slopes of less than 6 percent, preserve a 20- to 30-foot wide vegetative buffer strip

around the perimeter of the property, and use it as a filter strip for trapping sediment. Do not mow filter strip vegetation shorter than 4 inches.

With Silt Fence

Use silt fencing along the perimeter of the lot's downslope side(s) to trap sediment (*see Exhibit #3*)

Install Gravel Drive.

Restrict all lot access to this drive to prevent vehicles from tracking mud onto roadways (*see Exhibit #4*).

Protect Storm Sewer Inlets.

Protect nearby storm sewer curb inlets with stone-filled or gravel-filled geotextile bags (*see Exhibit #1*) or equivalent measures before disturbing soil.

Protect on-site storm sewer drop inlets with silt fence material (*see Exhibit #2*), straw bales, or equivalent measures before disturbing soil.

Construction Sequence for Building Site Erosion Control Practices

Sample Erosion/Sediment Control Practice Plan for a Typical One or Two Family Dwelling Under Construction

STEP 3. PREPARE THE SITE FOR CONSTRUCTION.

Prepare the site for construction and for installation of utilities. Make sure all contractors (especially the excavating contractor) are aware of areas to be protected.

Salvage and Stockpile the Topsoil/subsoil.

Remove topsoil (typically the upper 4 to 6 inches of soil material) and stockpile.

Remove subsoil and stockpile separately from the topsoil.

Locate the stockpiles away from any downslope street, driveway, stream, lake, wetland, ditch, or drainageway.

Immediately after stockpiling, temporarily seed the stockpiles with annual rye or winter wheat and/or place sediment barriers around the perimeter of the piles.

STEP 4. BUILD THE STRUCTURE(S) AND INSTALL THE UTILITIES.

Construct the home and install the utilities; also install the sewage disposal system and drill the water well (if applicable); then consider the following.

Install Downspout Extenders.

Although not required, downspout extenders are highly recommended as a means of preventing lot erosion from roof runoff.

Add the extenders as soon as the gutters and downspouts are installed (*see Exhibit #5*).

Be sure the extenders have a stable outlet, such as the street, sidewalk, or a well vegetated area.

STEP 5. MAINTAIN THE CONTROL PRACTICES.

Maintain all erosion and sediment control practices until construction is completed and the lot is stabilized.

Inspect the control practices a minimum of twice a week and after each storm event, making any needed repairs immediately.

Toward the end of each work day, sweep or scrape up any soil tracked onto roadways. *Do not flush area with water.*

By the end of the next work day after a storm event, clean up any soil washed off-site.

STEP 6. REVEGETATE THE BUILDING SITE.

Immediately after all outside construction activities are completed, stabilize the lot with sod, seed, and/or mulch.

Redistribute the Stockpiled Subsoil and Topsoil.

Spread the stockpiled subsoil to rough grade.

Spread the stockpiled topsoil to a depth of 4 to 6 inches over rough-graded areas.

Fertilize and lime according to soil test results or recommendations of a seed supplier or a professional landscaping contractor.

Mulch Newly Seeded Areas.

Spread straw mulch on newly seeded areas, using 12 to 2 bales of straw per 1,000 square feet.

On flat or gently sloping land, anchor the mulch by crimping it 2 to 4 inches into the soil. On steep slopes, anchor the mulch with netting or tackifiers. An alternative to anchored mulch would be the use of erosion control blankets.

STEP 7. REMOVE REMAINING TEMPORARY CONTROL MEASURES.

Once the sod and/or vegetation is well established, remove any remaining temporary erosion and sediment control practices, such as:

Downspout extenders. (Or shorten to outlet onto the vegetated areas, allowing for maximum infiltration).

Storm sewer inlet protection measures.

REFERENCE MATERIALS

Every building site is unique and poses its own restraints and potential erosion hazards. In many instances, additional or alternative methods are necessary if your lot is:

Adjacent to a creek, lake, or wetland.

Has slopes in excess of 6 percent.

Receives runoff from adjacent areas.

Has more than one acre of disturbed ground.

This pamphlet provides installation instruction on five of the more commonly used building site erosion and sediment control practices. For information on other related practices, see the *Indiana Handbook for Erosion Control in Developing Areas*, available from the Division of Soil Conservation, Indiana Department of Natural Resources, 402 West Washington Street, Indianapolis, IN 46204-2748. For an order form, call the Division office at 317-233-3870.

Another valuable reference when building a home is your county's detailed soil survey report, which contains information about soil hazards and limitations (such as wetness) that may need to be addressed at the time of construction. Single copies of the soil survey are available at your local Soil and Water Conservation District (SWCD) office.

SWCDs also provide free technical assistance regarding the management of soil and water resources.

LOCAL EROSION CONTROL ORDINANCES

It is the responsibility of property owners and contractors to see that they are in compliance with state laws and local and county ordinances regarding construction site erosion and sediment control.

Five Common Erosion/Sediment Control Practices

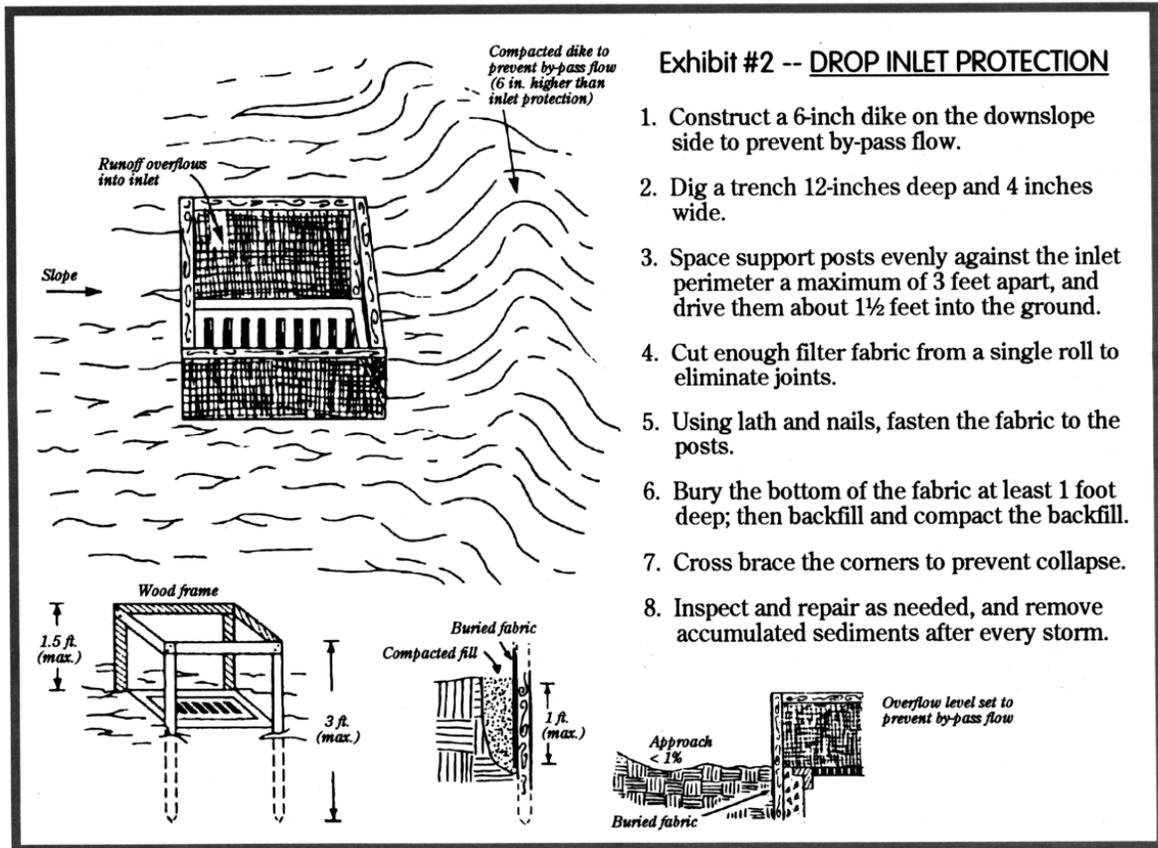


Exhibit #2 -- DROP INLET PROTECTION

1. Construct a 6-inch dike on the downslope side to prevent by-pass flow.
2. Dig a trench 12-inches deep and 4 inches wide.
3. Space support posts evenly against the inlet perimeter a maximum of 3 feet apart, and drive them about 1½ feet into the ground.
4. Cut enough filter fabric from a single roll to eliminate joints.
5. Using lath and nails, fasten the fabric to the posts.
6. Bury the bottom of the fabric at least 1 foot deep; then backfill and compact the backfill.
7. Cross brace the corners to prevent collapse.
8. Inspect and repair as needed, and remove accumulated sediments after every storm.

Drop Inlet Protection

Exhibit #3 -- SILT FENCE

1. Install parallel to the contour of the land.
2. Extend ends upslope enough to allow water to pond behind the fence.
3. Excavate a trench 8 inches deep and 4 inches wide.
4. Install fence with stakes on the downslope side.
5. Bury 12 inches of fabric in the trench, extending the bottom 4 inches toward the upslope side.
6. Backfill trench with soil material, and compact.
7. Join silt fence sections by overlapping sections and nailing with lath to the nearest post.
8. Inspect twice a week and after each storm event. Repair as needed, and remove sediment deposits when they reach one-half the fence height.

(NOTE: Silt fence has a life expectancy of 6 months to 1 year, whereas straw bale barriers have a limited life of 3 months or less.)

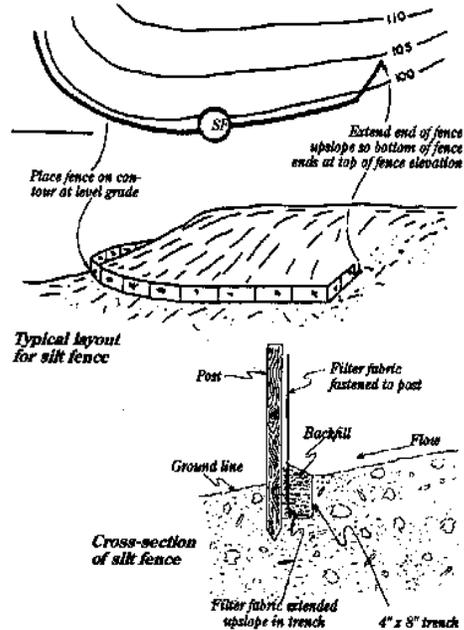


Exhibit #4 -- GRAVEL ENTRANCE

1. Place 6 inches of coarse aggregate (IN-DOT CA No. 2) over a stable subgrade.
2. Construct the drive at least 12 feet wide and 50 feet long or the distance to the foundation.
3. Add stone as needed to maintain 6 inches of clean depth.
4. To improve stability or if wet conditions are anticipated, place geotextile fabric on the graded foundation.

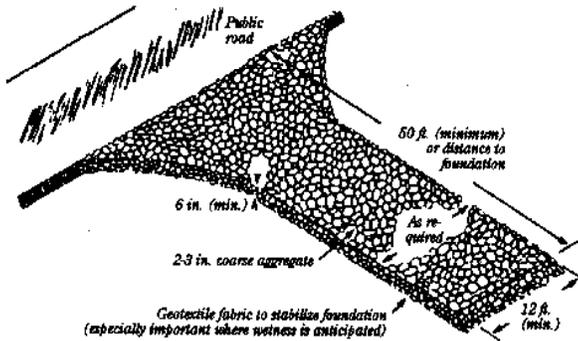
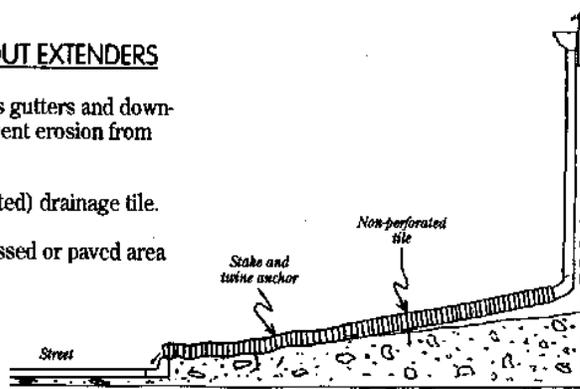


Exhibit #5 -- DOWNSPOUT EXTENDERS

1. Install extenders as soon as gutters and downspouts are installed to prevent erosion from roof runoff.
2. Use non-perforated (unslotted) drainage tile.
3. Route water to a stable grassed or paved area or to the storm sewer.



Silt Fence, Gravel Entrance, Downspout Extenders