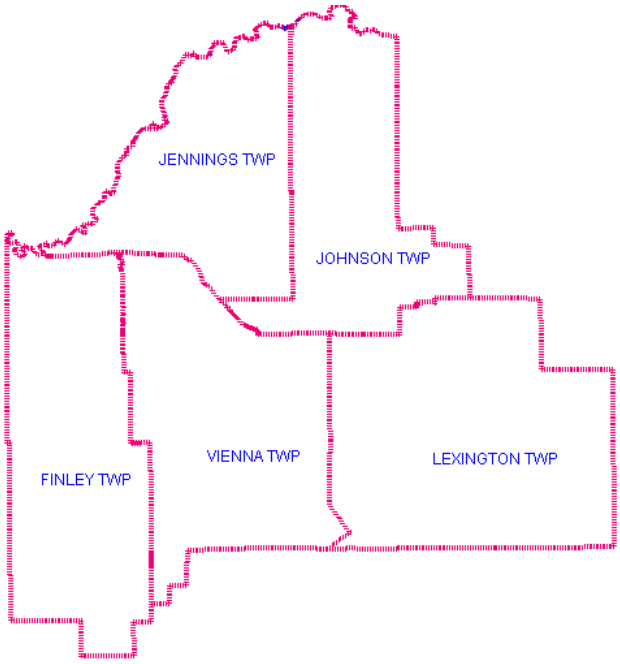

Subdivision Drainage Ordinance of Scott County Indiana

Revision:
December 7, 2005

Drainage Ordinance of Scott County, Indiana

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ORDINANCE NO. 2006-__ Scott County, Indiana

Article 1. General

A. Title

This Ordinance shall be known as, referred to, and cited as the Subdivision Drainage Ordinance of Scott County, Indiana, and hereinafter referred to as "this Ordinance."

B. Defined Words

Words used in a special sense in this Ordinance are defined in Article 5

C. Authority

This Drainage Ordinance is adopted under the authority of IC 36-9-27 of the Indiana Code and any amendments thereto.

D. General

The characteristics of the topography, geology, soils and hydrology of Scott County Indiana are such that development and land use must be managed responsibly to maintain natural drainage systems and create, enhance or expand drainage infrastructure.

The Commissioners of Scott County recognize that the development of any land may have adverse impacts on the drainage of the surrounding area and on the property neighboring the development and those both upstream and down stream from that site. For these reasons this ordinance requires that a person who lays out a subdivision of lots or lands must submit plans and specifications for the drainage of the subdivision.

The Scott County Subdivision Ordinance classifies subdivisions as Basic (up to four (4) lots created with no new roads or easements), Minor (up to four (4) lots created with new roads or easements) and Major (five (5) or more lots created) and requires Drainage Board approval for Minor and Major Subdivisions prior to application for primary Subdivision Approval.

This ordinance sets forth the authority, duties and procedures of the Scott County Drainage Board

E. Purpose:

This Ordinance is adopted for the following purposes: Securing convenience of access, and safety from flood; and lessening or avoiding property damage resulting from changes in drainage systems;

F. Jurisdiction

The Scott County Drainage Board shall have jurisdiction in the unincorporated areas of the County unless jurisdiction is extended by intergovernmental agreement. Within its area of jurisdiction the Drainage Board will review and approve drainage plans for Minor and Major Subdivisions and new construction projects on property zoned for business or industrial land use.

G. Compliance

No Minor or Major subdivision application shall be accepted for Primary Subdivision Approval without a duly approved drainage plan complying with this Ordinance

H. Severability

If any Court of competent jurisdiction rules any provision of this Ordinance invalid, that ruling shall not affect any provision not specifically included in the judgment. If any Court of competent jurisdiction rules invalid the application of any provision of this Ordinance to a particular property, building, or other structure, or use, that ruling shall not affect the application of the Ordinance provisions to any property, building, other structure, or use not specifically included in the judgment.

I. Interpretation

The provisions of this Ordinance are the minimum requirements necessary for the protection of the safety, comfort and general welfare of the people at large as relates to flood control and drainage issues. The provisions are also designed to establish and maintain reasonable community standards for the physical environment.

J. Ordinance Jurisdiction

The provisions of this Ordinance shall apply to all structures, lands *and* waters located in all unincorporated portions of Scott County, including land owned by local, city, county, state, or federal agencies, to the extent allowed by law. Jurisdiction may be extended by intergovernmental agreement. See Appendix A.

K. Conflicting Provisions

When the provisions of this Ordinance are inconsistent with one another, or when the provisions of this Ordinance conflict with provisions found in other ordinances, codes, or regulations adopted by Scott County or the City of Scottsburg, the more restrictive provision shall govern unless the terms of the provisions specify otherwise.

L. Relationship with Third-Party Agreements, Covenants and Restrictions

This Ordinance is not intended to interfere with or abrogate any easements, covenants, or agreements between parties, provided that wherever this Ordinance proposes a greater restriction than those that are imposed or required by such easements,

covenants, or agreements between parties, the provision of this Ordinance shall govern. In no case shall the City or County be obligated to enforce the provisions of any easements, covenants, or agreements between parties.

M. Saving Provision

This Ordinance shall not be construed as eliminating or reducing any action now pending under, or by virtue of, an existing law or previous zoning ordinance. Also, this Ordinance shall not be construed as discontinuing, reducing, modifying, or altering any penalty accruing or about to accrue. Any violation under previous ordinances repealed by this Ordinance shall continue to be a violation under this Ordinance and be subject to penalties and enforcement under this Ordinance, unless the use, development, construction, or other activity complies with the provisions of this Ordinance.

N. Repealer

The Scott County Drainage Ordinance –2003-and its associated amendments are hereby repealed

O. Transition Rules

1. Any application for a Drainage Plan Approval that has been filed with the Scott County Drainage Board, prior to the effective date of this Ordinance, shall be regulated by the terms and conditions of the Drainage Ordinance that was in place at the time of filing. However, all administrative procedures and penalties shall follow those set forth by this Ordinance.

Article 2. Administration

A. Planning

Scott County Drainage Board is authorized to plan, develop and draft a Drainage Ordinance for Scott County, Indiana to be submitted to the Board of Commissioners for review and adoption.

The Drainage Board shall cooperate and coordinate with any other land use planning activities currently authorized by the Board of Commissioners or any of its agencies or boards and shall utilize, when appropriate and available, professional services already under contract.

The Drainage Board is to review existing ordinances from time to time and to recommend to the Commissioners amendments and other changes as necessary.

B. User Fund

1. There is hereby established the Scott County Drainage Board User Fee Fund to be maintained by the Scott County Auditor.
2. The user fee shall be paid by all persons making application to the Scott County Drainage Board for the approval of the drainage portion of any Subdivision Plan or the approval of any separate Drainage Plan.
    a. Application fees (the "User Fee").shall be as follows;
        1) New Construction on property zoned for business or industrial land use. $2,000.
        2) Minor Subdivision $700
        3) Major Subdivision $1,000 plus a sum equal to $100 per lot for each lot within a proposed Subdivision Plat or for each lot in a development covered by a Drainage Plan is hereby established
3. The fee shall be paid at the time plans are submitted to the Drainage Board for review and shall be paid before the Drainage Board review any plan.
4. All user fees shall be deposited to the Scott County Drainage Board User Fee Fund.
5. All user fees are non-refundable.
6. The User Fee Fund shall be subject to appropriation by the Scott County Council and may be used for any approved budget category of the Scott

County Drainage Board. The Drainage Board User Fee Fund is not a part of the County General Fund.

C. Technical Assistance

1. The Scott County Drainage Board shall refer drainage plans to the Staff Engineer for review.
2. The Drainage Board is authorized to hire an engineer or other professional deemed necessary to provide technical assistance and advise to the Drainage Board, on such terms and conditions as the Drainage Board shall negotiate.
3. The terms and conditions of such engagement shall be reduced in writing and subject to approval by the Board of Commissioners.
4. The County Drainage Board may approve a drainage plan with conditions that must be met prior to Secondary Subdivision Approval by the Area Plan Commission.

D. Submitting an Application

1. The Drainage Board shall adopt an application form to be submitted by developers with each Drainage Plan. See Appendix B.
2. Any person or entity desiring to obtain approval of the Scott County Drainage Board shall file with the County Surveyor an application and complete set of plans to be reviewed at least fifteen (15) business days before any regularly scheduled meeting of the Scott County Drainage Board.
3. The user fee provided for herein shall be payable to the Auditor of Scott County, Indiana and shall be tendered at the time of filing the application and plans.

E. Notice To affected Landowners

1. The applicant shall give notice to all owners of real property located within six hundred (600) feet of the tract or parcel which is the subject of the Drainage Board inquiry by certified mail at least ten days prior to the scheduled Board hearing.
2. Public Notice of public hearings to be held by the Board shall be advertised in the newspaper of record at least 10 days prior to the scheduled Board

hearing and posted on the front door of the County Courthouse at least 3 days in advance of the hearing with the agenda of the hearing.

3. The applicant shall provide to the Board at the time of the hearing, proof that
   a. the notice was put in the paper,
   b. that it was posted on the door of the courthouse,
   c. that adjoining land owners were notified. This could be in the form of an affidavit by the developer or engineer that this provision has been complied with.

F. General

1. The applicant must submit, to the Drainage Board, drainage calculations detailing runoff before and after the proposed project is constructed, which demonstrate compliance with this ordinance. In addition, the applicant must submit two (2) sets of: a Drainage Plan of sufficient detail and clarity to allow the Drainage Board to evaluate project compliance with this ordinance. The maximum sheet size is 24"x 36" and as much information as possible should be shown on as few sheets as possible. The plans must be prepared under the supervision of and certified by a registered land surveyor or a professional engineer licensed by the State of Indiana.
2. Minor Subdivisions
   a. Drainage Plans for Minor Subdivisions shall include the following:
      1) A drawing of the proposed subdivision of land will be provided
      2) A subdivision drawing showing topographic elevations of the site and adjoining properties within 300 feet, the proposed location of driveways, culverts, ditches, existing County roads and ditches that to which connections will be made will be submitted
      3) Cross section drawings showing the thickness and elevations of roads or driveways, excavation of ditches and installation of ditches shall be provided.
      4) A drawing of the proposed subdivision showing existing natural and man made drains entering or exiting the property shall be provided.

   b. A drainage plan and specifications for a Minor Subdivision submitted for approval under this Ordinance must comply with the following standards:

1) The plan must maintain the amount of drainage through the tract that existed when the tract was created. If any tiles are cut, broken down, or rendered useless during the construction activity on the tract, the landowner will be responsible for the repair, replacement, or relocation of the tile.
2) The plan may not change the locations where surface water enters the tract and exits the tract from the locations that existed when the tract was created.
3) Water which sheds off of a new structure, especially when the new structure is elevated or near a property line, or both, must exit the tract in the same location where it did prior to the proposed subdivision

3. Major Subdivisions

a. All Drainage Plans for Major Subdivisions shall comply with the provisions of IC 36-9-27-69.5 as it presently exists or any subsequent modification or re-codification of such statute.

b. All Drainage Plans shall be reviewed with regard to the impact upon such plans of a "100 year storm".

c. The county drainage board must approve the drainage plan before the person may proceed with Subdivision Primary Approval under the Scott County Subdivision Control Ordinance.

d. A drainage plan and specifications for a Major Subdivision submitted for approval under this Ordinance must comply with the following standards:

1) The plan must maintain the amount of drainage through the tract that existed when the tract was created. If any tiles are cut, broken down, or rendered useless during the construction activity on the tract, the developer will be responsible for the repair, replacement, or relocation of the tile.
2) The plan may not change the locations where surface water enters the tract and exits the tract from the locations prior to the proposed subdivision
3) Water which sheds off of a new structure, especially when the new structure is elevated or near a property line, or both, must exit the tract in the same location where it did prior to the proposed subdivision

4. Submittal and Consideration of Plans

All applications must be submitted at least fifteen (15) days before the Drainage Board meeting at which the application is to be considered. All applications must include all required documents. For projects that require approval through the Drainage Board, such as subdivisions and business or industrial projects, applicants must submit preliminary and final plans to the Drainage Board pursuant to this ordinance. The professional who prepared the plans included with the application should attend any Drainage Board meeting at which the application is considered.

The Drainage Board will give notice of its decision to the applicant. The Drainage Board must approve or disapprove the plans within forty-five (45) days of submission unless the case is continued. All approvals and disapprovals, with written reasons therefore, must be incorporated into the Board minutes.

The failure of the Board to act within forty-five (45) days, except if the case is continued, shall constitute a denial of the application and plan.

Article 3. Design Standards

A. General

1. Storm water release rate

The storm water release rate of a one hundred (100) year storm event from development, redevelopment, and new construction must not exceed the storm water runoff from a ten (10) year storm event from the land area prior to the new development, redevelopment, or new construction or the capacity of its drainage outlet, whichever is more restrictive. There may be certain circumstances where detention is not justified or may be detrimental to the overall drainage basin. The Scott County Drainage Board may waive detention requirements in these cases.

2. Wetlands

Landowners and/or developers must notify and make applications to all appropriate state and federal agencies with authority for wetland protection. In cases where federal or state jurisdictional wetlands have been determined to exist, those wetland areas and boundaries must be indicated on preliminary and final drainage plans.

The Board will not make determinations of the accuracy of delineation or extent of jurisdictional wetlands. Approvals required by this ordinance may be deferred until wetland-related approvals have been obtained.

3. Adequate Drainage Outlets

All projects subject to this ordinance must provide drainage outlets, whose adequacy is based upon the following standards:

- **a.** Use of the outlet will not increase the velocity or rate of outflow above that allowed by this ordinance;
- **b.** The outlet must be approved by all involved regulatory agencies; and
- **c.** Use of the outlet will not cause hardship or compound existing problems.
- **d.** The following outlets will generally not be deemed to be adequate:
  1) An outlet that is not legally and physically accessible and maintainable;
  2) Overland flow that is not a watercourse as defined by this ordinance;
  3) Existing or future roadside ditches, unless specifically approved;
  4) Agricultural field tiles for surface water, and
  5) Railroad side ditches without adequate improvements, unless specifically approved.

4. Drainage control Plan Requirements

The plans submitted must include the following information:

a. Existing Conditions:

1) Project name, developer, project engineer or surveyor, their addresses and telephone numbers, legal description, date of plans and any revisions, scale of plan, and north point;

2) Area Vicinity Map detailing project environs, current zoning, adjoining property owners, and street lines within one thousand (600) feet of the project boundaries. County roads will be shown to the nearest intersection;

3) Topography based on mean sea level elevation at a minimum one (5) foot interval for the project site and any adjoining areas whose topography may effect project drainage;

4) If the drainage area is extensive, an additional map of sufficient clarity must be provided; The location of existing streams, lakes, ponds, watercourses, and other flood water runoff channels, the extent of the floodplain at the established one hundred (100) year flood elevation, and the limits of the floodway, all properly identified;

5) The existing location of surface and subsurface drains, inlets, and outfalls, easements that are visible or of record, existing seeps, springs, and wells that are visible or of record;

6) Existing storm and sanitary sewers, inlets, or outfalls, existing septic tank systems, and treatment plant outlets and utilities;

7) Existing structures;

8) Identification of jurisdiction wetlands;

9) Boundary and acreage of project site indicated by a heavy solid line based on a traverse with angular and linear dimensions; and

10) Other significant conditions of the area proposed to be improved.

b. Site Improvements:

1) Proposed changes in streams, lakes, swamps, detention basins, watercourses and flood water runoff channels, floodplains, and the limits of the floodway, all properly identified,

2) Proposed location of surface and subsurface drains, inlets, outfalls, and easements;

3) Proposed location, materials, and gradients of storm and sanitary sewers, inlets and outfalls, on-site sanitary effluent disposal systems, and location of affected utilities;

4) Structures to be removed or relocated on the project site;

5) The location and design of proposed streets, roads, sidewalks, culverts, bridges, parking lots, hard surfaced areas, including depressed pavements and used to convey or temporarily store overflow from heavier rainstorms, and outlets for such overflow;

6) The cross section of existing streams and floodplains to be maintained or changed and new channels to be constructed, where changes are proposed or discharge into receiving streams is altered; and

c. Determination of Runoff Quantities

Runoff quantities must be computed for the watershed within the parcel under development. The quantity of runoff which is generated as the result of a given rainfall intensity may be calculated as follows:

1) For areas up to and including two hundred (200) acres, the Rational Method may be used: The peak rate of runoff (Q) in cubic feet per second is computed as Q = CIA; C = runoff coefficient, representing the characteristics of the drainage area and defined as the ratio of runoff to rainfall; I = average intensity of rainfall in inches per hour for a duration equal to the time of concentration (tc) for a selected rainfall frequency; and A = tributary drainage area in acres.

2) Guidance for selection of the runoff coefficients is to be found in appropriate design manuals. Rainfall intensity must be determined from the rainfall frequency curves found in standard design manuals for this region or from data shown. The time of concentration (tc) to be used must be the sum of the inlet time and flow time in the drainage facility from the most remote part of the drainage area to the point under consideration. The flow time in the storm sewers may be estimated by the distance in feet divided by velocity of flow in feet per second. The Manning Formula must be used to determine the velocity.

3) Other methods of determining runoff may be used upon approval of the Board. Computer programs may be used and computer printouts submitted for drainage calculations provided details of the program and the assumption made by that program are submitted with the calculations and approved by the Drainage Board. The Drainage Board may require other methods of determining runoff.

d. Amount of Runoff to be Accommodated by Various Parts of Drainage Facility

Various parts of a drainage facility must accommodate runoff water as follows:

1) The drainage facilities, including but not limited to, inlets, catch basins, street gutters, component swales, storm sewers and small channels, which collect storm water must accommodate peak runoff from at least a ten (10) year return period storm. The allowable spread of water on collector streets is limited to maintaining two (2) clear ten (10) foot moving lanes of traffic. One (1) lane is to be maintained on local roads and subdivisions streets.

2) For rainfall heavier than a ten (10) year storm, these minimum requirements must be satisfied:

i. Open channels carrying peak flows greater than thirty (30) cubic feet per second must be capable of accommodating peak runoff for a fifty (50) year return period storm within the drainage easement;

ii. New culverts must be capable of accommodating peak runoff from a fifty (50) year return period storm when crossing under a road which is part of the Indiana Department of Transportation functional classification system and is classified as principal or minor arterial, or major or minor collector road; and

iii. Drainage facilities must have adequate capacity to convey the storm water runoff from all upstream tributary areas through the development under consideration for a storm of one hundred (100) year design return period calculated on the basis of the upstream land in its present state of development. An allowance, equivalent to the reduction in flow rate detention and release rate may be allowed for projects in the drainage area that have previously been approved by the Drainage Board and evidence of satisfactory construction can be shown.

e. Drainage Easements

Drainage easements must be provided to cover all elements of the drainage Facility and must be designed:

1) To be adequate to install and maintain the drainage facilities;

2) To minimize conflicts with utility easements;

3) To maintain a sufficient buildable area on each lot or parcel;

4) To be at least fifteen (15) feet wide.

5) No building, fence, trees or shrubs may be placed within the drainage easement.

f. Storm Sewer Design Standards

All storm sewers, whether public or private and whether constructed on public or private property, must conform to the design standards and other requirements contained in this ordinance.

g. Hydraulic Capacity

The hydraulic capacity of a storm sewer must be determined using Manning's Equation.

h. Minimum Size

The minimum diameter of a storm sewer must be twelve (12) inches. An orifice plate or other device must control rate of release for detention storage, subject to approval of the Drainage Board, where the twelve (12) inch pipe will not limit the rate of release as required.

i. Grade

The minimum and maximum allowable sewer gradients are those capable of producing velocities of two (2) and fifteen (15) feet per second, respectively, when the sewer is flowing full. A minimum of two (2) feet cover is to be maintained over the top of the pipe. Pipe cover less than the minimum may be used with approval of the DRAINAGE BOARD. Uniform slopes must be maintained between structures. A final grade must be set with full consideration of the capacity required, sedimentation problems, and other design parameters.

j. Alignment

In general, a storm sewer must be straight between structures. The DRAINAGE BOARD may allow curved sewers at its discretion under certain conditions.

k. Manholes

Structures must be installed to provide access to continuous underground storm sewers for the purpose of inspection and maintenance. Manholes must be provided at the following locations:

1) Where two (2) or more storm sewer converge;

2) Where pipe size changes;

3) Where a change in alignment occurs;

4) Where a change in grade occurs;

5) At suitable intervals in straight sections of sewer; and

6) Where pipe materials change.

The maximum distance between storm sewer manholes must be as Follows:

Size of Pipe (inches)	Maximum Distance (feet)
12 thru 42	400
48 and larger	600

l. Inlets

Inlets or drainage structures must be utilized to collect surface water through Grated openings and convey it to storm sewers, channels, or culverts. The inlet grated opening provided must be adequate to pass the design ten (10) year flow with fifty (50) percent of sag inlet grate open areas clogged. An overload channel from sag inlets to a suitable outlet or basin must be provided.

m. Workmanship

The specifications for the constructions of storm sewers cannot be less stringent than those set forth in the latest revision of the Indiana Department of Transportation's "Standard Specifications".

n. Materials

Storm sewer manholes and inlets must be constructed of cast in place concrete or pre-cast reinforced concrete. Material and construction must conform to Indiana Department of Transportation's "Standard Specifications", Section 720. Pipe and fittings used in storm sewer construction must be reinforced concrete pipe (ASTM C-76). Smooth-walled PVC pipe and smooth walled corrugated polyethylene pipe may be used only in areas specially approved by the Drainage Board. Smooth walled PVC pipe and smooth walled corrugated polyethylene pipe cannot be used under streets or as driveway culverts. Other types of inlets, end treatments, pipes and fittings may be used only when specifically authorized by the Drainage Board. Pipe joints must be flexible and soil tight and must conform to the requirements of Section 715.02 Materials, of the latest edition of the Indiana Department of Transportation's "Standard Specifications". Pipe end treatments must be metal end sections for plastic pipes and concrete end sections for concrete pipes.

o. Pipe Bedding, Backfill and Surface Restoration

1) All pipe must be bedded on four (4) inches and covered by twelve (12) inches of Indiana No. 57 crushed limestone.
2) Where pipe is installed in earth areas, not immediately adjacent to a street or road, the remainder of the trench must be backfilled with selected earth materials, humped over the trench to allow for settling.
3) Where pipe is installed in a graveled area, the remainder of the trench must be backfilled with Bank Run sand to a point eight (8) inches below original grade and then filled with Indiana No. 73 crushed limestone to original grade.

4) Where pipe is installed in an asphalt street, driveway, or parking area, the remainder of the trench must be backfilled with Bank Run sand to a point nine (9) inches below original grade. The trench must then be trimmed back six (6) inches on each side and filled with 3000 psi concrete. After all construction is completed, the trench must be cleaned, primed and paved with a one (1) inch compacted thickness of INDOT HAC Surface to be flush with the surrounding area. All patch seams can only be saw cut, cut smooth, straight and tarred.

5) Where pipe is installed in a concrete area, the remainder of the trench must be backfilled with Bank Run sand to a point nine (9) inches below original grade. The trench must then be trimmed back six (6) inches along each side and filled with 3000 psi concrete flush with original grade. All patch seams must be saw cut only, smooth and straight.

6) All cutting of trenches in existing asphalt or concrete pavements must be done with a saw only to provide a straight, smooth joint when new paving Is done.

p. Special Hydraulic Structures

1) Special hydraulic structures such as siphons, stilling basins, or other special structures required to control the flow of water in storm drainage facilities, must be limited to those locations justified by prudent planning and designed with careful and thorough hydraulic engineering analysis.

q. Open Channel Design Standards

All open channels, whether constructed on public or private property, must conform to the design standards and other requirements contained in this Ordinance.

r. Channel Cross Section and Grade

The required channel cross section and grade are determined by the design capacity based on Manning's Equation, the material in which the channel is to be constructed, and the requirements for maintenance. A minimum depth may be required to provide adequate outlets for subsurface drains, storm sewer pipes, tributary ditches or streams. The channel grade must be such that the velocity in the channel is high enough to prevent erosion. Channel lining materials must be justified by the project engineer in the final drainage design.

s. Side Slopes

Side slopes of earthen channels must be no steeper than three to one (3:1), justified by local materials and approved by the Drainage Board. Flatter slopes may be required to prevent erosion and for ease of maintenance. Where channels will be lined

side slopes provision must be for weep holes. Side slopes steeper than one and one/half to one (1½:1) may be used for lined channels provided that the side lining and structural retaining wall are designed and constructed with provisions for live and dead load surcharges.

t. Channel Stability

1) A stable channel does not vary design gradient and cross section from acceptable limits;

2) Channel stability must be determined for a aged condition. The velocity must be based on the design flow or the bank full flow, whichever is greater, using "n" values for various channel linings; and

3) Channel stability must be checked using conditions immediately after construction for justification of erosion control measures. See Chapter Seven, "Soil Erosion and Sedimentation Control", for erosion control standards.

u. Drainage of Open Channels

Vegetated channels with gradient of less than one percent (1.0%) or that are subject to low flows of long duration where wet conditions prevail must be drained with a tile system or by other means such as paved gutters. Tile lines may be outletted through a drop structure at the end of the channels or through a standard tile outlet. Tiles must be bedded in granular materials that will not pass through tile openings. Tiles must be installed with a minimum of six (6) inches of cover over the top of the tile and must be offset from the centerline of the channel.

v. Appurtenant Structures

The channel design will include the design of all structures required for the proper functioning of the channel, the laterals, and the maintenance ways.

w. Disposition of Spoil Material

Spoil material resulting from clearing, grubbing, and channel excavation must be disposed of in a manner that will minimize erosion and other adverse effects to easements, surface drainage, and rights-of-way. Disposal must be done in a manner that will also improve the aesthetic appearance of the site.

x. Materials

Materials acceptable for use as channel lining are concrete, gabions, pegged rod erosion control blankets, and netting. Other lining materials require specific approval of the Drainage Board. All channel materials must comply with the latest edition of the Indiana Department of Transportation's "Standard Specifications". Interconnected tires are not acceptable material.

y. Storm Water Detention

The following governs the design of any improvement with respect to the detention of storm water runoff.

z. Acceptable Detention Methods

The increased storm water runoff from a proposed development must be detained onsite by appropriate wet or dry bottom reservoirs, by storage on flat roofs, parking lots, streets, lawns or other acceptable techniques. Measures that retard the rate of overland flow and the velocity in runoff channels may also be used to control the runoff rate.

aa. Detention Facility Design

Storm water facilities must be designed to store the excess flows from a post development one hundred (100) year return interval storm. The release rate must be that of a ten (10) year return interval storm on the site in its pre-developed state or the capacity of the receiving stream, whichever is less. The developer's engineer is responsible for determining the hydraulic capacity of the receiving stream.

bb. Allocation of Detention

In the case of an existing limiting restriction that cannot be realistically removed, the allowable release rate from any one detention basin must be in direct proportion to the ratio of its drainage area to the drainage area of the entire water shed upstream of the limiting restriction. The total runoff must not exceed the capacity of the restriction and each development must be responsible for its proportionate share of the storage requirement.

cc. Determination of Storage Volume – Rational Method

For areas of two hundred (200) acres or less the Rational Method may be used to determine the required volume of storm water storage, as outlined in the County Storm Drainage Manual of the Highway Extension and Research Project for Indiana Counties and Cities (HERPICC).

dd. Determination of Storage Volume- Other Methods

Methods for determining runoff and routing of storm water other than the Rational Method may be used to determine the storage volume required to control storm water runoff. The procedures or methods used must receive the prior approval of the Drainage Board. The TR-20 and TR-55 models are approved for appropriate use in analysis of the runoff and routing of storm water.

ee. General Detention Basin Design Requirements

Basins must be constructed to temporarily detain the storm water runoff that exceeds the peak flow rate authorized by this ordinance. The following minimum standards must be observed:

1) The maximum volume of water stored and subsequently released at the design release rate must not result in a storage duration in

2) All storm water detention facilities must be separated by not less than twenty-five (25) feet from any building or structure to be occupied, and the lowest floor of any building or structure must be at least two (2) feet above the one-hundred (100) year storm water elevation of detention facilities;

3) Safety grates may be required on all outlet control structures. Grates must retain a sphere greater than six (6) inches in diameter and must have a screen area at least six (6) times the end area of the outlet control structure;

4) Danger signs must be mounted at appropriate locations to warn of deep water, possible flooding conditions during storm periods and other dangers that exist. Fencing must be provided if deemed necessary by the Drainage Board**.** The Drainage Board must approve design and locations.

5) Outlet control structures must be designed to operate as simply as possible and must require little or no maintenance and attention for proper operation;

6) Emergency overflow facilities such as a weir or spillway must be provided for the release of exceptional storm runoffs or in emergency conditions such as the normal discharge devices becoming totally or partially inoperative. The overflow facility must be of such design that its operation is automatic and does not require manual attention; and

7) Side slopes must be in compliance with Section (A.3.s.) above.

ff. Dry Bottom Detention Basin Design Requirements

Dry Bottom Detention Basin must comply with the following additional requirements:

1) Provisions must be incorporated to facilitate complete interior drainage of dry bottom detention basins. Acceptable methods include natural grades to outlet structures, longitudinal or transverse grades to perimeter drains, paved gutters, or subsurface drains. Dry bottom detention basins with less that one percent (1%) gradient must be provided with subsurface drainage or paved gutters;

2) Recreational facilities, aesthetic qualities, open space or other secondary use must be considered in planning the detention facility; and

3) The maximum planned depth of storm water stored without a permanent pool must not exceed four (4) feet.

gg. Wet Bottom Retention Basin Design Requirements

Where part of a detention basin, excluding wetlands, will contain a permanent pool of water, the following requirements apply:

1) If fish are to be maintained, a pond must have a water area of at least one/half (1/2) acre and minimum depth of approximately ten (10) feet must be maintained over at least twenty-five (25) percent of the pond area. The remaining pond area must not have extensive shallow areas, except as required by subsection (3) below;
2) If fish are not to be maintained, a minimum depth of eight (8) feet must be maintained over at least twenty-five (25) percent of the pond at permanent water level. Where a limiting layer prevents excavation to that depth, a minimum of six (6) feet over at least fifty (50) percent of the area is required;
3) In excavated ponds, the underwater side slopes in the pond must be stable. In the case of valley storage, natural slopes may be considered to be stable;
4) A safety ledge a minimum of six (6) feet in width and a 10:1 slope is required and must be installed in all ponds approximately thirty (30) inches below the permanent water level; and
5) Erosion control measures must be installed to prevent erosion from wave action and wet-dry cycles;
6) Chain-link fencing must be provided around the perimeter of the wet bottom retention basin. The minimum fence height must be six (6) feet.

hh. Rooftop Storage

If rooftop detention is proposed, details of such designs are to be included in the application and must include the depth and volume of storage, details of outlet devices and down drains, and elevations of emergency overflow provisions. Rooftop detention is not recommended.

ii. Parking Lot Storage

Paved parking lots may be designed to provide temporary detention storage of storm water. Ponding should, in general, be confined to those positions of the parking lots farthest from the area served. Ponding areas must not conflict with handicapped parking and access routes. Such ponding areas should be exposed to sunlight in winter months to minimize icing. Storage depth must be limited so as not to conflict with parking lot use. Any detention facility utilizing a parking lot must take resurfacing and other parking lot maintenance activities into consideration during design.

jj. Facility Maintenance Responsibility

Maintenance of drainage facilities during construction must be the responsibility of the land developer. Maintenance responsibilities must be documented by appropriate restrictive covenants to property deeds prior to final drainage plan approval. Perpetual maintenance is the developer's responsibility.

kk. Joint Development of Control Systems

Storm water control systems may be planned and constructed jointly by two (2) or more developers as long as compliance with this ordinance is maintained.

ll. Allowance for Sedimentation

Dry bottom detention basins and wet bottom retention basins must be designed with an additional six percent (6%) of available capacity to allow for sediment accumulation resulting from development and to permit the pond to function for reasonable periods between cleanings. Basins should be designed to collect sediment and debris in specific locations so that removal costs are kept to a minimum.

mm. Detention Facilities in a Flood Plain

If detention storage is provided within a floodplain, only the net increase in storage volume above that which naturally existed in the floodplain must be credited to the development. No credit will be granted for volumes below the elevation of the regulatory flood at the location unless compensatory storage is also provided.

nn. Sump Pumps

Sump pumps installed to receive and discharge ground waters or other storm water must be connected to a storm sewer, a subsurface drain or a designated storm discharge channel. Floor drain flow or other sanitary sewage must be connected to the sanitary sewers or septic systems and must not discharge to storm sewers or surface outlets.

oo. Down Spouts

All down spouts or roof drains must discharge onto the ground or be connected directly to the storm sewer pipe. Down spouts or roof drains must not be connected to the sanitary sewers or subsurface drains.

pp. Footing Drains

Footing drains must be connected to a storm sewer, subsurface drain or designated storm drainage channel. Footing drains or drainage tile must not be connected to the sanitary sewer or septic system.

qq. Basement Floor Drains

Basement floor drains must not be connected to the sanitary sewers or septic system. Basement drains must be connected to sump pumps that discharge to storm sewers.

5. "As Built Drawings"

a. Certification Required

After completion of the project and before final acceptance will be made, five (5) professionally prepared and certified sets of "Record Drawings" must be submitted to the Drainage Board for review. These plans shall include all pertinent data relevant to the completed storm drainage and erosion systems and shall include:

1) All pipe sizes and pipe material;
2) All invert elevations
3) All top rim elevations;
4) All structures and pipe lengths;
5) All permanent sediment basins and their maintenance provisions;
6) Data and calculation showing detention basin storage volume; and
7) A certified statement on the plans stating the completed storm
8) Drain facility substantially complies with construction plans as
9) Approved by the Drainage Board. If during preparation of these "As Built Drawings" it is found that the storm drainage facility does not substantially comply with the construction plans as approved by the Drainage Board, the applicant must obtain re-approval. The Drainage Board must review all "Record Drawings" for compliance within thirty (30) days after their submission to the Drainage Board. If notice of noncompliance is not given within thirty (30) days of the submission plan, the plans will be construed as approved.

b. Changes in Plans

Any revisions, significant change or deviation in the detailed plans and specifications after formal approval by the Drainage Board must be filed with and approved by the Drainage Board prior to implementation of the revision or change. Copies of the revisions or changes, if approved, must be attached to the original plans and specifications.

Article 4. Variance Procedures

The Drainage Board may grant a variance from the provisions and standards of this Ordinance as will not be contrary to the public interest, where owing to extraordinary conditions, fully demonstrated by the applicant on the basis of facts presented, strict compliance with the provisions and standards of this Ordinance will result in practical difficulties or misuse of property. It is the intent of this Ordinance that this authority will be used sparingly and only when the applicant has clearly demonstrated that all criteria in A. below are met. The burden of proof is on the applicant.

In the exercise of its authority under this section, the Commission shall grant a variance only upon finding that all of the following criteria are met:

1. The variance will not be detrimental to the public health, safety, or general welfare;
2. The variance will not adversely affect adjacent property;
3. The variance is justified because of exceptional topographic or other physical conditions unique to the property involved and is not the result of mere inconvenience or financial disadvantage;
4. The conditions upon which the variance is based are unique to the property for which the relief is sought and are not applicable generally to other property;
5. The variance is consistent with the intent and purposes of this ordinance;
6. The condition(s) necessitating the variance were not created by the owner or applicant;

In granting a variance, the Board may impose such conditions or restrictions as will, in its judgment secure substantially the purposes of this Ordinance.

A request for a variance from the terms of this Ordinance shall be submitted in writing at the time when the drainage plan is filed with the Board.

A request for a variance must specifically identify the provision(s) or standard(s) of the Drainage Ordinance from which the applicant is seeking a variance, state the reasons or conditions that exist that the applicant believes justify the granting of a variance.

The request for a variance must be included in any Notice required to published or posted by the applicant and mailed to adjacent landowners as required by Article 2(E)

No variance shall be granted for which public notice has not been given as required by paragraph 5 above, even though the applicant has otherwise given required notice of the public hearing on applicant's drainage plan.

Article 5. Definitions

1. Interpretation of Terms or Words

For the purpose of this ordinance, certain terms or words are defined. The words and terms used must be interpreted as follows:

2. The word "person" includes a firm, association, organization, partnership, trust, company, corporation, or other legal entity, as well as an individual;
3. The present tense includes the future tense, the singular number includes the plural, and the plural number includes the singular;
4. The word "must" is a mandatory requirement; the word "may" is a
5. Permissive requirement; the word "should" is a preferred requirement;
6. The words "used" or "occupied" include the words "intended, designed, constructed, converted, altered, or arranged to be used or occupied";
7. The word "lot" includes the words "tract, plot or parcel"; and
8. Any word or term not defined herein must be given a meaning found in a standard English dictionary.

B. Definitions

For the purpose of this ordinance, the following definitions apply:

1. **AS BUILT DRAWING**: Drawings, plans or blue prints that record the details of the project as it has been built.
2. **DRAINAGE BOARD:** The Scott County Drainage Board
3. **CHANNEL:** A natural or artificial watercourse which periodically or continuously contains moving water or which forms a connecting link between two (2) bodies of water. It has a defined bed and banks, which serve to confine the water.
4. **COMPENSATORY STORAGE:** An artificial volume of storage within a floodplain used to balance the loss of natural flood storage capacity when artificial fill or structures are placed within the floodplain.
5. **CULVERT:** A closed conduit used for the passage of surface drainage water under a roadway, railroad, canal or other impediment.
6. **DETENTION STORAGE:** The temporary detaining or storage of storm water in storage basins, under predetermined and controlled conditions.
7. **DRAINAGE AREA:** The area from which drains to a point of consideration.
8. **DRY BOTTOM DETENTION BASIN:** A drainage facility constricted to restrict the runoff of stormwater to a prescribed maximum rate, and to detain for a specified period of time the excess waters that accumulate

upstream from the outlet. The facility is designed to be completely dewatered after having provided its planned detention of runoff during a storm event.

9. **EROSION:** The detachment and movement of soil, sediment or rock fragments by water, wind, ice or gravity.
10. **EROSION AND SEDIMENT CONTROL MEASURE:** A practice or a combination of practices to control erosion and resulting off-site sedimentation.
11. **EROSION AND SEDIMENT CONTROL PLAN:** A written description and drawings of pertinent information concerning erosion and sediment control measures designed to meet the requirements of this ordinance.
12. **FLOOD ELEVATION:** The maximum level of high waters for a flood of a given return period and rainfall duration.
13. **FLOOD OR FLOODWATER:** Water that overflows the banks of a lake or watercourse.
14. **FLOOD HAZARD AREA:** Any floodplain, floodway, floodway fringe, or any combination which is subject to inundation by the regulatory flood elevation or any floodplain as delineated by Zone A on the current Flood Hazard Boundary Map of the Federal Emergency Management Agency.
15. **FLOODPLAIN:** The area adjoining the river or stream that has been or may be covered by floodwaters. It consists of both the floodway and the floodway fringe.
16. **FLOOD PROTECTION GRADE:** An elevation that is a specific distance above the regulatory flood elevation as established by agencies having jurisdiction.
17. **FLOODWAY:** See Regulatory Floodway.
18. **FLOODWAY FRINGE:** That portion of the floodplain lying outside the floodway that is inundated by the regulatory flood.
19. **FOOTING DRAIN:** A drain pipe installed around the exterior of a basement wall or foundation or located in a crawl space to prevent water from entering a basement or crawl space.
20. **GRADIENT:** The inclination or slope of a channel, conduit or natural ground surface expressed as a ratio of the vertical rise or fall to the corresponding horizontal distance.
21. **IMPROVEMENT LOCATION PERMIT:** A permit stating that the proposed erection, construction, enlargement or moving of a building or structure complies with the provisions of the Scott County Unified Zoning Ordinance.

22. **INLET:** An opening into a storm sewer system for the entrance of surface storm water runoff, more completely described as a storm sewer inlet.
23. **LAND-DISTURBING ACTIVITY:** Any man-made change of the land surface including removing vegetative cover, excavating, filling, transporting, and grading. It includes any activity requiring an Improvement Location Permit.
24. **MANHOLE:** Storm sewer structure through which a person may enter to gain access to a storm sewer or enclosed structure. A manhole may also be an inlet for the storm sewer system.
25. **OUTFALL:** The point or location where storm runoff discharges from a sewer, channel or detention facility.
26. **PEAK FLOW:** The maximum rate of flow of water at a given point in a channel or conduit resulting from a specified storm or flood of a given return period or duration.
27. **PERIMETER DRAIN:** A tile drain located around an absorption field.
28. **POND:** See Wet Bottom Retention Basin.
29. **RAINFALL INTENSITY:** The rate of rainfall expressed as the amount of rain occurring within a given duration, normally expressed in inches per hour.
30. **REGULATED AREA:** All of the land under the jurisdiction of the DRAINAGE BOARD.
31. **REGULATORY FLOOD:** A flood with a peak having a probability of occurrence of one (1) percent in any given year, which is commonly referred to as one hundred (100) year flood as calculated by a method and procedure which is acceptable to the DRAINAGE BOARD. If a permit for construction in the floodway is required by the Indiana Department of Natural Resources, the regulatory peak discharge must be calculated by the method and procedure acceptable to the DRAINAGE BOARD and the Indiana Department of Natural Resources.
32. **REGULATORY FLOODWAY:** The channel of a river or stream and those portions of the floodplain adjoining the channel which are reasonably required to carry and discharge the peak flow of the regulatory flood of any river or stream.
33. **RELEASE RATE:** The amount of water released from a drainage facility per unit of time.
34. **RETURN PERIOD:** The average interval of time within which a given rainfall event will be equaled or exceeded once. A flood having a return

period of one hundred (100) years has a one (1) percent probability of being equaled or exceeded in any one (1) year.

35. **RUNOFF:** The portion of precipitation from such sources as rainfall, snow melt, or irrigation water that flows over or under the ground's surface and arrives at the point of consideration as surface water.
36. **RUNOFF COEFFICIENT:** A factor in the rational formula that relates the ratio of peak runoff to rainfall and considers such factors as ground cover, soil types, and watershed configuration.
37. **SEDIMENT:** Material of soil and rock origin transported, carried, or deposited by water.
38. **SIPHON:** A closed conduit, a portion of which lies above the hydraulic grade line resulting in a pressure less than atmospheric and requiring a vacuum within the conduit to start flow. An inverted siphon is used to carry flow under an obstruction.
39. **SITE:** The entire area included in the legal description of the land on which the land-disturbing activity is proposed in the permit application.
40. **SPILLWAY:** A waterway in or about a hydraulic structure for the escape of the excess water.
41. **STILLING BASIN:** A structure used to dissipate the energy and/or velocity of flowing water.
42. **STORAGE DURATION:** The length of time that water may be stored in any drainage facility.
43. **STORM SEWER:** A closed conduit for conveying collected storm water.
44. **SUBSURFACE DRAIN:** A tile drain installed for the purpose of lowering the ground water table.
45. **WATERCOURSE:** Any natural or man-made drainage way having a defined channel and banks into which storm water runoff or floodwaters flow either regularly or intermittently.
46. **WATERSHED:** See Drainage Area.
47. **WET BOTTOM RETENTION BASIN:** A basin designed to retain a permanent pool of water plus capacity to detain and release excess runoff.
48. **WETLANDS:** Those areas which have hydric soils and that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that, under normal circumstances, do support a prevalence to vegetation typically adapted for life in saturated soil condition. Wetlands generally include swamps, marshes, bogs, and similar areas.

Article 6. Adoption And Effective Date

This Ordinance is forwarded with a recommendation of approval to the Board of Commissioners of Scott County, Indiana this 7th day of December, 2005.

_____	_____
County Surveyor	President of The Scott County Drainage Board

ADOPTION (Continued)

This Ordinance shall be in force and effect from and after adoption by the respective legislative bodies, after being published once each week for two (2) consecutive weeks and after being recorded by the County Recorder. The Drainage Ordinance of Scott County, Indiana is whereby adopted by The Board of Commissioners of Scott County, Indiana this _____ day of January, 2006.

THE BOARD COMMISSIONERS
COUNTY OF SCOTT, STATE OF INDIANA

_____
Mark Hays

_____
Robert C. Tobias

_____
Larry Blevins

ATTEST:

_____
IVA GASAWAY, Auditor