ORDINANCE NO. 07-19

STORMWATER AND SEDIMENT CONTROL

AN ORDINANCE OF THE MADISON COUNTY FISCAL COURT, KENTUCKY UPDATING A SECTION OF THE SUBDIVISION REGULATIONS, ORDINANCE NO. 00-02 OF THE MADISON COUNTY OFFICE OF PLANNING AND DEVELOPMENT.

WHEREAS, the Madison County Comprehensive Plan outlines goals and objectives prescribed to evaluate the watersheds of Madison County, identify and quanitify the magnitude of problems and make recommendations for their solution;

WHEREAS, the Madison County Comprehensive Plan identifies the major water resources of Madison County and the need to protect those resources;

WHEREAS, the Madison County Fiscal Court has identified the need to enhance the Stormwater and Sediment Control sections of the current Subdivision Regulations, Section 310

WHEREAS, this ordinance requires all developments design the stormwater and sediment controls in accordance with these standards and the Federal Clean Water Act;

NOW, THEREFORE, be it ordained by the Fiscal Court of the County of Madison, Commonwealth of Kentucky, as follows:

Severability.

If any word, phrase, sentence, part, section, subsection, or other portion of this Ordinance or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the proscribed Application thereof, shall be severable, and the remaining provisions of this Ordinance, and all applications thereof, not having been declared void, unconstitutional, or invalid, shall remain in full force and effect.

SEE THE ATTACHED AS IT WILL READ IN THE REGULATIONS...

Section 8. Effective Date.

This Ordinance shall be effective immediately upon passage, pursuant to applicable legal and procedural requirements.

Section 9. Authority.

This Local Ordinance is enacted pursuant to applicable authority granted by the Commonwealth and federal government.

That the County Clerk cause this ordinance to be published in accordance with the appropriate Kentucky Revised Statues.

This Ordinance No. shall become effective on the date of the second reading and adoption.

DATE OF FIRST READING: July 24, 2007

MOTION BY: William Tudor

SECONDED BY: Harold Botner Jr.

VOTE:	**YES**	**NO**
JUDGE, KENT CLARK	✓	
MAGISTRATE LARRY COMBS	absent	
MAGISTRATE ROGER BARGER	✓	
MAGISTRATE WILLIAM TUDOR	✓	
MAGISTRATE HAROLD K. BOTNER	✓	

DATE OF SECOND READING: August 14, 2007

MOTION BY: Larry Combs

SECONDED BY: William Tudor

VOTE:	**YES**	**NO**
JUDGE, KENT CLARK	✓	
MAGISTRATE LARRY COMBS	✓	
MAGISTRATE ROGER BARGER		✓
MAGISTRATE WILLIAM TUDOR	✓	
MAGISTRATE HAROLD K. BOTNER		✓

MADISON COUNTY JUDGE EXECUTIVE

Attest:

William E. [illegible] by Beth Anderson pc

MADISON COUNTY CLERK

310 STORMWATER AND SEDIMENT CONTROL

Storm Water Management

These regulations affect all subdivision and development of land within Madison County as well as developments that occur within the corporate limits of the City of Richmond and Berea where one or more of the following occur:

1. Storm water collected from developments located within the Corporate limits of the City of Richmond or the City of Berea will deposit or discharge into storm drain facilities, basins, retention areas or other storm drain facilities within the County Fiscal Court's authority;
2. Developments within the City of Richmond or the City of Berea where access to the development is obtained from roads owned and maintained by the Madison County Fiscal Court;

Storm sewer systems are designed to collect and convey storm water runoff from street inlets, runoff control structures, and other locations where the accumulation of storm water is undesirable.

The objective is to remove runoff from an area fast enough to avoid unacceptable amounts of ponding damage and inconvenience. In general, the amount of storm water runoff should be equal in terms of pre-development and post-development given the design of the storm water system. Storm water runoff from a site or subdivision shall not adversely impact natural drainage from an uphill drainage basin or to a downhill drainage basin or adjacent properties. The property owner shall be responsible for storm water drainage facilities located on private property where runoff will be collected within that property and be minimally discharged over a larger area before the storm water naturally drains on adjacent properties unless a large drainage basin exists or is being planned. Storm water drainage easements shall be required if storm water is discharging directly from a pipe to an adjoining property and being dispersed on the property. No storm sewer construction shall occur until permission has been granted by the appropriate agency. All stormwater infrastructure components shall be inspected and certified by the owner/developer's professional engineer.

In addition, the Madison County Fiscal Court operates under the requirements of the Kentucky Pollutant Discharge Elimination System (KPDES), under which the County must develop, implement, and enforce a program to reduce pollutants from any storm water runoff resulting from construction activities that result in a land disturbance greater than or equal to one (1) acre. Accordingly, all construction/site development of one (1) acre or more must provide the following information before commencement of construction activities:

1. Provide the County Codes and Planning Office with a signed copy of the completed Notice of Intent (NOI) form, KPDES Form NOI-SW within forty eight (48) hours prior to the initiation of site work and/or for review by the County Planning Commission and the Development Review Team on all major development plans and plats.
2. Provide a completed copy of the site-specific Best Management Practices Plan at a scale not greater than 1"=50 feet to the County Code and Planning Office at the time of request

for a development plan review by the Planning Commission and the development Review Team.

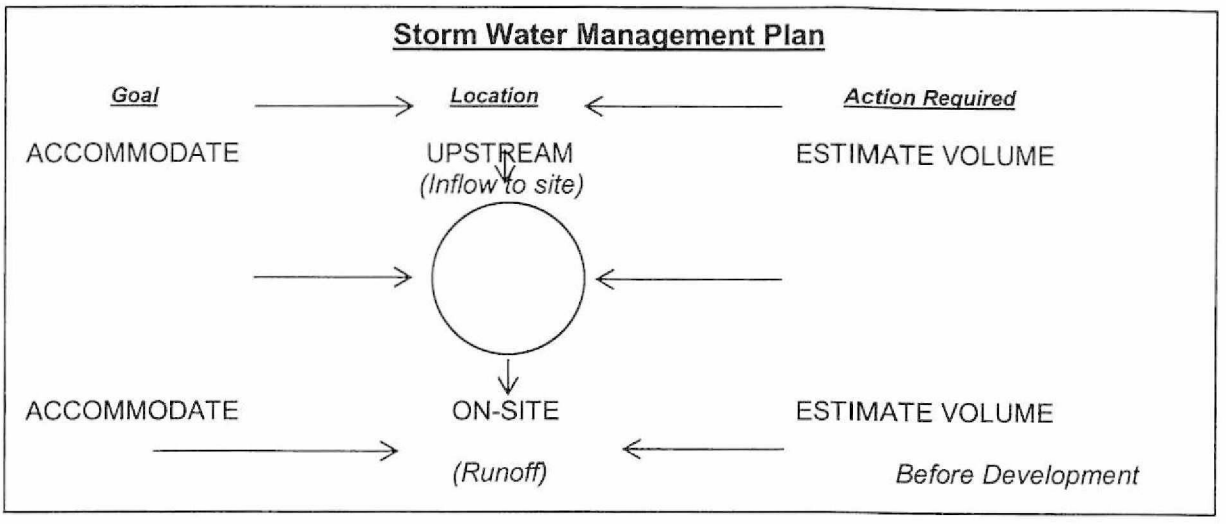
3. Provide the County with any updates to the Best Management Practices Plan made during the actual construction process, within twenty-four (24) hours of final design.
4. Provide the County with a signed copy of the Notice of Termination (NOT) within forty-eight (48) hours of submittal to the state.

As provided for within this Ordinance, the County has the right to;

1. Enter and inspect construction sites with any land disturbances for the presence of properly installed and functioning sediment control Best Management Practices and to assure compliance with the BMP site specific plan,
2. To review the records of the permittee and/or his contractor at both on-site and off-site locations that pertain to the development, installation, maintenance, and operation of the BMP Plan, and
3. To require modification to the BMP Plan along with the correlating physical placement of the modifications at the site, when in the opinion of the County the current BMPs are not functioning to the degree necessary to prevent or minimize erosion or to provide proper sediment control. All expense for modifications required by the County shall be borne by the permittee and/or his contractor. No expense for proper maintenance or operation shall be borne by the County.

Where the permittee and/or his contractor is found to be in non-compliance, each non-compliance item shall be corrected within five (5) working days of notification. The first occurrence of noncompliance shall result in an issue of Notice of Violation and an order to stop work until compliance is attained; the second and all subsequent occurrences or continued non-compliance shall result in a five hundred dollar ($500) fine per calendar day of non-compliance along with a filing of a complaint with the Kentucky Division of Water. The County has the right to take civil action against any permittee and/or contractor that consistently and persistently fails to comply with the requirements of all applicable ordinances and regulations adopted by the Madison County Fiscal Court.

The proposed system shall be subject to the review and approval of a representative from the local Natural Resources and Conservation Service (NRCS) office.
Drain boxes shall be constructed in accordance with specifications provided by the county. Any culvert pipe buried six (6) feet or more in depth shall either be reinforced concrete or double coated (inside and out) corrugated metal.



310.2 Disposal Beyond Subdivisions

Where an adequate public storm sewer is available at the subdivision boundary, the developer shall construct the storm sewer system to connect with such storm sewer line. If such a system is not available, the developer may be required by the Planning Commission to provide for the construction of necessary storm drainage facilities as may be required beyond the immediate boundaries of the subdivision in order to conduct runoff to an acceptable point of disposal. The Engineer shall certify on the final plat that all drainage, detention basins and erosion control measures have been properly installed in accordance with the design and approval.

310.3 Oversized Facilities - When it is determined necessary, the developer may be required to install drainage structures in excess of those required to serve the subdivision. In these cases, the County may reimburse the developer for the difference in cost between the drainage facilities actually needed in the subdivision and the cost of facilities necessary to provide for future planned development.

310.4 Ditches (Swales) – When runoff from an area reaches a site as overland flow, it must be intercepted and collected. This can be accomplished with ditches. As with sewers, the amount of runoff determines the design of the ditch. The cross section of the ditch must be designed to fit the circumstances and accommodate the flow. A "V" ditch is most economical to build. If the ditch is located where people are likely to step in it, a shallow, flat-bottomed, or curved ditch is better. If the ditch is to carry a large volume of runoff, a trapezoidal ditch is more efficient. To determine the required cross-sectional area of the ditch, use the following equation:

$$A_R = \frac{Q}{V}$$

$$V = \frac{1.486}{n} R_H^{2/3} S^{1/2}$$

Where A_R = cross-sectional area required (ft^2)
Q = quantity (cfs)
V = velocity (fps)

Where n = coefficient of friction
R_H = hydraulic radius, $\frac{\text{area}}{\text{wetted perimeter}}$ or $\frac{a}{p}$
S = slope (ft/ft)

Types of ditches: a) trapezoidal ditch, b) "V" ditch, c) flat-bottomed ditch, d) curved ditch

(a) (b) (c) (d)

General Requirements

All earth disturbing activities covered by these regulations shall conform to the following:

1. All surface water shall be provided drainage ditch outlets, of a temporary nature during construction and shall be approved by the County Road Supervisor. No exposed areas that pond water overnight will be permitted.
2. No more than 30% of the total area of any phase of development shall be exposed at any one time during construction.
3. No area shall be exposed any longer than necessary to re-contour. Temporary vegetation and/or mulching shall be then applied for protection during the development.
4. No area shall be allowed to go into the winter season without vegetative cover on critical areas as determined by the County Planning Office. Said areas shall be seeded by October 1st.
5. Sediment basins (debris basins, desilting basins or silt traps) shall be installed and maintained to remove sediment from run-off waters for land undergoing development.

6. Permanent final vegetation and drainage structures shall be installed as soon as grading is completed.
7. The development shall be fitted to the topography and soils so as to create the least erosion potential.
8. Whenever feasible, natural vegetation shall be retained and protected.
9. In areas where the slope exceeds 15% no vegetation may be removed.

Basic Design Criteria

A. Degree of Protection Required - The storm drainage system shall be adequate to handle the runoff from storms having various frequencies of occurrence for various degrees of site development, in accord with the following general categories:

Conservation, agricultural, residential, industrial, and concentrated high value areas	25 year frequency commercial,
Flood control facilities	100 year frequency

*The runoff computed from these storm frequencies shall be from the area within the subdivision and all other areas draining thereto.

B. Determination of Quantity of Runoff for Design of Storm Water Collection Systems- Each portion of the storm water drainage collection system shall be capable of handling the peak flow of runoff. For drainage areas less than 200 acres, the method that shall be used is the "Rational Method." For areas greater than 200 acres, either the "Soil Conservation Service (SCS) Method or the "Rational Method" of the Kentucky Transportation Cabinet, Bureau of Highways shall be used:

1. "Rational Method"

Where Q= CIA Q = peak runoff quantity in cubic feet per sound; C = runoff coefficient varying with perviousness and other characteristics of the drainage area; I = average intensity of precipitation in inches per hour, varying with frequency of storm occurrence, duration or concentration time, and area of the tributary watershed; A = area in acres of tributary watershed.

A. Runoff Coefficients: The runoff coefficient is the portion of the precipitation expressed as a decimal, that will reach a given storm water facility. Each lot within a subdivision contributes runoff from the roof, driveway, sidewalk, and street. Generally the smaller the lot width, the less impervious area. As the lot increases in width so does the impervious area.

Weighted coefficients shall be used with the impervious areas C = 0.95, and all other areas C = 0.40. Residential developments shall be calculated using lot impervious areas follows:

Runoff Coefficients/Land Use Imperviousness		
Land Use Average	**% Impervious**	**Hard Surface Area**
Previous and/or existing pre-developed areas		
	Varies	**Varies**
Residential Uses, Average Lot Size/Width:		
3 acres/300 feet	**6**	**8000**
2 acres/200 feet	**7**	**6750**
1 acre/100 feet	**12**	**5500**
1/2 acre/100 feet	**23**	**5500**
12500s.f./80 feet	**34**	**5000**
9000s.f./70 feet	**42**	**4500**
7500s.f./60 feet	**44**	**4000**
6000s.f./50 feet	**48**	**3500**
Multi-family residential	**75**	**tbc***
Commercial/Office	**85**	**tbc***
Industrial	**72**	**tbc***
Impervious areas including Streets, roofs, flatwork	**72**	**tbc***

*** tbc (to be calculated)**

B. Intensity of Precipitation: The "point" values of average precipitation intensity in inches per hour, at Richmond can be extrapolated from Exhibit # 2-504.5 Kentucky Bureau of Highways "Rainfall Intensity-Duration-Frequency Curves" for Lexington. For any given storm duration (concentration time to runoff) the curves show the average precipitation intensity of storms having 2, 5, 10, 25, 50, and 100 year frequencies.

C. Concentration Time (TC): The time of concentration (TC) in minutes, is the estimated time it will take the storm runoff from the most remote part of the area to reach the point of the storm drainage system under consideration. This includes the time for water to flow over roofs, through roof gutters and downspouts, over ground, turfed areas, streets, through street gutters to the nearest inlet of the drainage system plus the time of flow in sewer pipes to the point under consideration. Unless otherwise determined by overland flow charts or nomographs, the Time of Concentration (TC) for inlets of storm water collection systems may be used as follows:

Characteristics Concentration time		
	Flat	**Steep**
For residential and undeveloped areas	**15 min.**	**10 min.**
Residential on 1 acre or larger lots	**10 min.**	**8 min.**

At no time shall the Time of Concentration be greater than 30 minutes for design of storm inlets.

2. **SCS Method** - all formulas, constants, and data shall be used with regard to current manual from the U.S. Natural Resources Conservation Service.
3. **Regional Method of Bureau of Highways** - all formulas, constants, and data shall be used with regard to the "Regional Method" from the Current Manual of Instruction of Drainage and Design, Ky. Transportation Cabinet, Bureau of Highways.
4. **Flow Times** - Flow times in sewers or conduits to the point of design may be determined from the hydraulic properties of the sewers upstream of that point, assuming average flow-full velocity at the proposed sewer slopes.
5. **Pipe Capacities** - Public storm sewer pipes shall be designed to carry peak flows as determined by the methods previously described. At the design storm the drainage system shall be designed as open channel (non-surcharged) flow. Sizes shall be determined by Manning's Formula. For roughness coefficients see the KYTC Drainage Manual.
6. **Minimum Pipe Size** - The minimum diameter for public storm sewer pipe shall be fifteen (15) inches.
7. **Minimum and Maximum Velocities** - Velocities in public storm sewer pipes, when flowing full at average peak flows, shall not be less than two (2) feet per sound. Velocities shall not exceed fifteen (15) feet per sound at the flow's re-entrance into the natural stream, unless approved by the Planning Commission's Engineer. The outlet velocities of all headwalls shall be shown on the profiles of the storm water system.
8. **Gradients of Pipe** - The sewer pipe shall be laid on gradients so that the velocity (flowing fully) shall be kept within the foregoing stated minimum and maximum unless other special provisions are made. Pipe sizes should be so selected as to avoid large differences in velocities between consecutive reaches.
9. **Hydraulic Grades** - To insure against surface ponding or street flooding due to surcharging, the hydraulic grade line (HGL) in any inlet or manhole may not be higher than the inlet grade. The HGL shall be shown on all profiles of the storm water system. Design of all public storm sewer appurtenances shall consider the balance of energy plus the loss due to entrance in all structures having a critical change in horizontal or vertical alignment. In no case shall the difference in invert elevations be less than the result of equal crowns when a smaller pipe empties into a larger one. In no case shall storm sewer pipe sizes be reduced more than one standard increment of pipe diameter due to an increase in invert gradient after balancing the energy losses within the structure.

10. Manholes (Junction Boxes) - Manholes shall be constructed in accordance with standards as shown in the current Standard Drawings, Ky. Dept. of Highways Manual. Drop manholes may be required to reduce the slope of any sewer that has a velocity that exceeds twenty (20) feet per sound. Pipes shall not extend more than two (2) inches into the side of the manhole, and the invert of the outlet pipe shall be at the bottom.

11. Inlets (Catch Basins) Capacity - The capacity of the grate on the inlet should not be less than the quantity of flow tributary to the inlet. Inlets at low points or sags should have extra capacity as a safeguard for street flooding from flows overtopping the street curb. A safety swale designed for the one hundred (100) year storm shall be placed at the low points or sags. Curb openings on combination inlets should be used for overflows in the event that the grate is clogged. Special inlets may be required for streets with steep gradients to provide the extra capacity such situations require. *All curb inlets are to be a minimum of five (5) foot open throat boxes and ten (10) foot where needed.* Pipes shall not extend more than two (2) inches into the side of the manhole, and the invert of the outlet pipe shall be at the bottom. Inlet spacing shall be based upon gutter and inlet capacity, street slope and contributing drainage area. The spacing of inlets should insure that street drainage generated along continuous grades or sags will not damage and flood private properties. For the design storm, no more than five (5) cfs shall enter any grade inlet; no more than eight (8) cfs shall enter any sump inlet; and no more than two and a Half (2.5) cfs is permitted to flow in side yards between houses. Along continuous grades (less than two (2) percent- 400 feet maximum;

Along continuous grades (two (2) percent and over)-600 feet maximum
At sag locations (draining less then two (2) percent grades)-
400 feet maximum between inlets or from a high point;
At sag locations (draining two (2) percent and more grades)-
600 feet maximum between inlets or from high point *inlets may be required when drainage areas and /or street slopes are excessive.*

12. Intersections - Storm water runoff crossing the intersection of a street shall be kept to a minimum and must be approved by the Planning Commission's Engineer.

13. Outfalls - When storm sewer system outfalls into a flood plain of any major water course, the outfall must not be subject to frequent floods or backwaters. Standard headwalls and/or headwalls with wing-walls including rock channel protection as aprons for erosion control, shall be constructed for all outfalls. Suitable baffles or other energy dissipaters shall be provided if maximum velocities are exceeded. The invert of the first storm sewer appurtenance upstream of the outfall structure shall be above the elevation of the calculated one hundred (100) year flood plain for all channels with a drainage area of more than fifty (50) acres within the project shall be shown on the Improvement Plan.

14. Culverts and Bridges - Culverts and bridges shall be designed in accordance with the methods given in the Kentucky Dept. of Highways Manual of Location and Design, except that storm water quantities to be handled by the culverts and bridges shall be determined on the basis described in these standards. The allowable headwater (AHW) shall not be greater than HW/D=2.+.

15. Headwalls - Standard headwalls for pipe sizes *15 inch* through 24 inch and headwalls including wing-walls and aprons for pipes larger than 24 inches shall be constructed at the outfall of all storm sewers in accordance with Standard Construction Drawings as provided in the current KYTC Standards Drawings Manual.

16. **Other Drainage Improvement Measures** - Other drainage improvement measures may be undertaken to provide the necessary hydraulic characteristics required for adequate drainage. These other measures include stream bed clearing, removal of obstructions, stabilization of banks of areas to eliminate erosion, widening, deepening or realignment of streams, construction of ponds behind dams, or other measures for adequate drainage.

17. **Specifications for Construction and Materials** - See Street and Storm Drainage Construction Specifications.

18. **Lot Grading** - Within the limits of the public right-of-way adjacent to street pavements, all final grading for grass strip, sidewalks, and yards shall comply with minimum and maximum grades in accord with typical sections for streets as shown in the current County street specifications. For lots that drain toward the street, the areas between the right-of-way line and the curb shall be graded so that water drains to the street at a minimum grade of one (1) inch per foot (approximately 8 percent) except where sidewalks are required (see typical sections). All grading behind the street shall be done in a fashion that does not allow ponding of water adjacent to the paved street. For lots that drain away from the street, the area between the right-of-way and the curb shall be graded so that water drains away from the street at a minimum of 1/2 inch per foot (approximately 4 percent) except where sidewalks are required

19. **Top Soil:** If grading results in the stripping of top soil, top soil shall be uniformly spread over the lots as grading is finished. Temporary silt barriers should be installed around stockpiled topsoil in order to control erosion.

20. **Trees:** All development projects should provide for retention of any existing tree that can be utilized in the final development plan, and the grading should be adjusted to the existing grade of the trees where practical.

21. **Swales:** Swales carry surface runoff from roofs, yards, and other areas to the rear of lots or along common property lines to streets or other drainage areas to prevent ponding of water near buildings or other portions of the lot. Surface drainage swales shall have a minimum grade of two (2) percent and shall be constructed so that the surface water will drain onto a street, storm inlet, or natural drainage area. Swales for handling lot drainage shall be constructed as a part of final lot grading and be seeded and mulched or sodded as soon as possible to prevent erosion.

22. **Roof and Subsurface Drains:** roof downspouts, footing or foundation drains shall be discharged onto the same parcel of land from which the water is generated. Roof downspouts shall be piped to natural drainage areas away from the street or onto concrete splash blocks, which direct water away from the building into swales, or other natural drainage areas. Downspouts constructed toward the street shall be discharged on the surface as far back onto the lot as possible and in no case be closer than twenty (20) feet back from the nearest edge of the right-of-way line. All subsurface drains shall be constructed toward the rear of the lot or connected into the storm sewer system. Any connection into a storm sewer system must be approved by the inspector. Outlets for roof drains shall have erosion controls in place at the outlet areas to minimize erosion on site.

C. Erosion Controls

1. **General** - In order to minimize runoff damage to downstream properties, sediment pollution of public and private waters and hydraulic overloading of existing drainage facilities, the storm water runoff from a subdivision or development site shall not exceed the predevelopment discharge from that subdivision or development site, calculated by using an undeveloped runoff coefficient C= (0.40).

2. **Drainage Channels** - Erosion controls for drainage channels shall be provided to control runoff velocities as follows:
Velocities of less than two (2) fps. Design velocities should generally be greater than 1.5 fps to avoid excessive deposition of sediments. When flat slopes are unavoidable, concrete paving should be used to accelerate runoff. Velocities between one and one-half (1.5) and four (4) fps. The bottom and sides of the earth channel shall be seeded, mulched, and fertilized to an elevation of three (3) feet above the design water surface. Seeding shall be a perennial or annual mixture of grass seeds. At a rate of seventy five (75) pounds per acre. Acceptable whole fertilizer shall be applied at a rate of seventy-five (75) pounds per one thousand (1000) feet. On slopes of over five (5) percent, the bottom and sides of the earth channel shall be sodded and pegged to remain in place. Where seeding or sodding is required and the soil is not capable of supporting vegetation, appropriate action shall be taken to bring the soil to an acceptable condition, which will support the growth of seed or sod. Velocities over four (4) fps. The bottom and sides of the earth channel shall be protected from erosion with an application of stone rip-rap, coarse aggregate and/or dumped rock channel linings. The type of application thickness and quantities shall be designed by the engineer to insure maintenance free permanent stabilization. Reinforced concrete pavement at least four (4) inches thick may also be used at bends, changes in alignment, junctions with other ditches, and at other locations where erosion is likely to occur. On slopes over ten (10) percent, consideration should be given to the construction of larger sized channel linings, gabions (wire boxes) or paved channels with energy blocks or dissipaters to reduce excessive velocities and damage to receiving streams. Consideration should be given for the construction of other methods of lining for erosion control including check dams, drop structures, gabions, etc. subject to approval by the Planning Commission's engineer.

3. **Detention/Retention Basins** - Detention/Retention Basins shall be provided for all subdivisions and developments. These basins may be designed for each individual lot, but regional basins are encouraged to be provided throughout the development. Such facilities shall be designed so that no standing water will remain in detention basins during dry weather, or the design of retention basins that will not allow standing water to stagnate and present health hazards. In certain cases, other non-basin detention/retention techniques such as underground vault storage may be utilized when approved by the Commission. Individual site storm water management shall be reviewed under the current regulations. The amount of water to be detained shall be determined by the method described in the "Basic Design Criteria" section of these regulations. Such facilities shall be constructed in such a way that failure of the structure will not result in loss of life, damage to homes, or any interruption of public utility use or service. *Addition of trash racks and/or rip-rap around outlet structures in detention/retention areas shall be installed by the owner/developer.*

Storage Requirements - The amount of detention/retention required for a subdivision or development shall be the amount determined from the inflow-outflow hydrograph based on the twenty-five (25) year storm frequency. If the Modified rational Method is used by computer program, the storm duration used shall be the one that produces the maximum storage. If calculating by hand, the duration shall be greater than the time of concentration.

Discharge From Basins - The discharge from the detention/retention basin shall be controlled by a multi-stage release structure and not be greater than a pre-developed runoff rate based on two (2), and twenty-five (25) year storm frequency at that particular storage point where the discharge occurs. The routing of an emergency spillway shall be shown based on the one hundred (100) year storm frequency. Trash racks shall be installed on the low inflow outlet in detention basins.

Maintenance of Basins - Unless dedicated to and accepted by the County, the owner of each lot and/or the developer of each subdivision shall be responsible for properly maintaining each retention/detention basin in order for such facility to function according to its design and purpose. Maintenance for the detention/retention areas shall be noted on the plat/development plan, including access roads. If publicly dedicated, the area shall be included within the right-of-way and shown on the final plat/development plan. The area of the pond or lake shall be owned and maintained by the adjoining residents. This shall include maintaining the shoreline and removing sedimentation, and shall be included in the subdivision's restrictive covenants.

D. Drainage Channel or Water Course Relocations - In order to minimize hillside slippage near relocated drainage channels or water courses due to drainage channel depth or character of the earth in the drainage channel fill and side slopes, precautions shall be taken to compact the fill and side slopes, provision of under drainage, bank protection of reinforcing or other measures. Additional easement width shall be provided at such possible slide areas.

E. Best Management Practices - All subdivisions developments shall have a Best Management Practices (BMP) document prepared and submitted with the plat or development plan. This document shall meet the minimum requirements as stated in the current Kentucky Best Management Practices For Construction Activities prepared by the Ky. Division of Water. Three (3) copies of the document shall be submitted and a copy shall be on site at all times. All graded areas are to be maintained at all times to prevent erosion and excessive runoff. Several methods used to prevent soil erosion during development are included in the current County street specifications such as drainage swales, silt checks, temporary retention dams, etc., and are to be used during the grading operation. All slopes and graded areas are to be seeded as soon as practical after the grading operation has been completed and/or building development has been finished. Additional erosion control measures to prevent erosion and excessive runoff may be required if the developer or builder has not accomplished it.

F. Mud and Debris - Until all lot and street improvements in the subdivision have been completed, the developer/contractor *and or builder* shall take such measures as are necessary to prevent erosion of graded surfaces, and to prevent the deposit of soil and debris from graded surfaces onto public streets, into drainage channels or sewers, or onto adjoining land.

G. Specifications for Construction and Materials - In all other respects, the design, materials, and construction shall be as specified in Sections 206,212, 601, 610, 703, and 710 of the Ky. Standard Specifications for Road and Bridge Construction.

H. Equipment on Streets - At any time equipment without rubber tires use any existing pavements, all necessary precautions shall be taken to insure that the street surface, gutters, and curbs, receive no damage.

SOIL SEDIMENT POLLUTION REGULATIONS

Criteria Requiring Plan Submittal

No person shall cause or allow earth-disturbing activities on a development area except in compliance with the standards and criteria set out in the applicable item (a) or (b) below:

(a) When a proposed development area consists of one or more contiguous acres, and earth-disturbing activities are proposed for the whole area, or any part thereof, the responsible person shall develop and submit for review an erosion and sediment control plan. Such a plan shall contain sufficient information, drawings, and notes, to describe how soil erosion and off-site sedimentation will be kept to a minimum, both during and after construction. No earth-disturbing activities shall commence prior to approval of the erosion and sediment control plan by the Approving Agency, and the issuance of a permit from the Kentucky Division of Water. The erosion sediment control plan shall be certified by a Professional Engineer, registered in the Commonwealth of Kentucky. No earth disturbing activities shall commence prior to the issuance of a permit from the Kentucky Environmental Protection Agency, if required.

(b) When a proposed development area involves less than 1 acre, it is not necessary to submit a sediment control plan; however, the responsible person must comply with the other provisions of this ordinance. No earth disturbing activities shall commence prior to the issuance of a permit from the Kentucky Environmental Protection Agency, if required. Submittal of specific information may be required to determine compliance.

Exceptions

Any person seeking approval to construct a single-family residence shall be exempt from having to prepare a sediment control plan, provided they:

A. Construct upon one lot or parcel at a time, and there is no other construction occurring simultaneously on land or property within five hundred feet (500')
B. Do not disrupt, alter, or expose more than ten thousand (10,000') square feet of the existing natural surface of the total development site at a time; and

Exemption under this section of any person for the preparation and submission of a sediment control plan does not, however, exempt them from complying with the other provisions of this resolution. The Approving Agency may require the responsible person to submit information deemed necessary to determine compliance.

No sediment plan shall be required to be submitted to the Madison County Code & Planning Office for public road, highway, other transportation, or drainage improvement, or maintenance thereof, undertaken by a government agency or entity unless otherwise specifically requested by the Madison County Fiscal Court.

Sediment Control Plan Content and Filing

Every person required to submit a sediment control plan pursuant to these Regulations shall submit the required number of such plan to the Madison County Codes & Planning Office as required with all other plans and plats as outlined in the Madison County Subdivision Regulations and obtain the authorizations required by these Regulations prior to entering into any earth–disturbing activity.

Filing Location –

(a) Plans filed in conjunction with a proposed subdivision, shall be filed within the submittal deadlines set forth by the Madison County Codes & Planning Office. This plan shall be submitted to the office of the Madison County Codes & Planning, located at 321 North Madison Avenue, Richmond, Kentucky 40475.

Such plans shall include the following information:

A) A map or maps of the proposed development area or areas, drawn to scale of one inch (1") equals on hundred feet (100').

B) Location of the area and its relation to its general surroundings including, but not limited to:

1) Off-site areas susceptible to sediment deposits or to erosion caused by accelerated run-off.

2) Off-site areas affecting potential accelerated runoff and erosion control;

C) Existing topography of the developmental area and adjacent land within one hundred feet (100') of the boundaries. The topographic map shall contain existing contours at an interval of not greater than five feet (5') if the slope of the ground is twelve percent (12%) or less, and not greater than ten feet (10') where the slope is more than twelve percent (12%) to clearly portray the conformation and drainage pattern of the area;

D) The location of existing buildings, structures, utilities, waterbodies, drainage facilities, vegetative cover, sink holes, paved areas (roads, streets, driveways, sidewalks, etc.,) and other significant natural or man-made features on the development area and adjacent land within one hundred feet (100') of the boundaries;

E) A general description of the predominant soil types, their location, and their limitations for the proposed use (refer to the Soil Survey of Madison County, KY, latest edition);

F) Proposed use of the development area including present development and ultimate utilization with detail on soil cover, both vegetative and impervious;

G) All proposed earth disturbance including:

1) Areas of excavation, grading, and filling;

2) The finished grade, stated in feet horizontal to feet vertical, of cut and fill slopes;

3) Kinds of utilities and proposed areas of installation;

4) Proposed paved and covered areas in square feet, or to scale on a plan map;

5) Makeup of proposed surface soil (upper six inches) on areas not covered by buildings, structures, or pavement. Description shall be in such terms as: original surface soil, subsoil, sandy, heavy clay, stony, etc.

6) Proposed kind of cover on areas not covered by buildings, structures, or pavement. Description shall be in such terms as: lawn, turfgrass, shrubbery, trees, forest cover, rip-rap, mulch, etc.

H) Provisions for temporary and permanent erosion control:

I) Provisions for the management of stormwater, derived both on-site, and from upper watershed areas, including the control of accelerated on-site runoff, to a stable receiving outlet.

J) Provisions for maintenance of control facilities, including easements, or agreements to insure short-term, as well as long-term erosion and sediment pollution control, and stormwater management.

K) Proposed construction sequence – a time schedule for all earth disturbing activities and installation of provisions for erosion and stormwater management;

L) Design computations and applicable assumptions for all structural measures for erosion and sediment pollution control and water management. Volume and velocity of flow must be given for all surface water conveyance. This information shall also be provided for surface water outlets;

M) Seeding mixtures and rates, lime and fertilizer application rates, and kind and quantity of mulching for both temporary and permanent vegetative control measures.

N) Estimate of cost of erosion and sediment control, and water management structures;

O) Title, written and graphic scale, direction, legend, and date of all plan maps:

P) Names and address of the person(s) preparing the plan, the owner(s), and the person responsible for the development area;

Q) Certification that all earth disturbance, construction, and development will be done pursuant to the plan;

R) Certification by a Professional Engineer.

The Madison County Planning Commission may waive specific requirements for plan detail, or may require additional information to show that work will conform to basic requirements of this ordinance.

The Madison County Codes & Planning Office shall transmit copies thereof to the Madison County Soil and Water Conservation District for their comments regarding the plan submitted.

As-Built Plan/Plat Submittal Requirements

Upon completion of the construction and installation of all stormwater and sediment controls required by these regulations, and submitted in conjunction with the Final Development Plan or Subdivision Plat, the engineer shall submit "As-Built Drawings" of all stormwater and sediment controls constructed and installed, as well as the "Storm Sewer Infrastructure Construction And Functionality Inspection Form" referenced in Section 310 of these regulations.

Plan Review

The Madison County Planning Commission shall review the sediment control plan at a scheduled meeting and indicate its status of compliance or non-compliance to the person who filed the plan. Indication of non-compliance shall include the plan deficiencies, and the procedures for filing a revised plan. Pending preparation and determination of status of compliance of a revised plan, earth-disturbing activities shall proceed only in accordance with conditions outlined by the Madison County Planning Commission.

Plans Review Fees

Review fees are applicable for all drainage and erosion control plans submitted in compliance with these regulations. Please refer to the Planning and Development Fee Schedule for the review fees associated with Drainage and Erosion Control Plans.

Inspection to Ensure Compliance

The Madison County Codes & Planning Office shall inspect development areas to determine compliance with these Regulations. If it is determined that a violation of these Regulations exists, the owner or his appointed representative shall be notified of the deficiencies or non-compliance by the Madison County Codes & Planning Office in writing, by certified mail. If within two (2) weeks after receipt of such letter, the deficiency or non-compliance has not been corrected, or plans have not been approved by the Madison County Codes & Planning Office for its correction, said deficiency or non compliance shall be reported to the Madison County Planning Commission, and shall proceed with the necessary legal proceedings as outlined by law to include but not be limited to seeking an injunction or other appropriate relief to abate excessive erosion or sedimentation and secure compliance with these Regulations. In granting relief, the court may order the construction of sediment control improvements or implementation or other control measures and/or impose the fines and penalties as set forth in the Madison County Subdivision Regulations.

A final inspection shall be made to determine if the criteria of these Regulations have been satisfied prior to the approval of any final subdivision plat or the issuance of a Certificate of Occupancy for any building or structure within the development.