

***Geauga Soil and Water  
Conservation District***

14269 Claridon Troy Road  
PO Box 410  
Burton, OH 44021

Phone (440) 834-1122  
Fax (440) 834-0316  
[www.geaugaswcd.com](http://www.geaugaswcd.com)

---

# ***Geauga County Water Management and Sediment Control Regulations***

---

Amended 2009

---

*Adopted June 30, 2009 by the Geauga County Board of Commissioners*

# ***Table of Contents***

Section 1: General Provisions .....	3
Section 2: Definitions .....	6
Section 3: Applicability .....	11
Section 4: Water Management and Sediment Control Plan Content .....	12
Section 5: Abbreviated Water Management and Sediment Control Plan Content .....	25
Section 6: Submittal and Review .....	27
Section 7: Performance and Design Standards .....	29
Section 8: Administrative .....	38

**Section**

**1**

**General Provisions**

**SECTION 1.01 TITLE**

These regulations shall be cited as the Geauga County Water Management and Sediment Control Regulations and are hereinafter referred to as "these regulations."

**SECTION 1.02 STATUTORY AUTHORIZATION**

These regulations of Geauga County are promulgated pursuant to the Ohio Revised Code (O.R.C.) 307.79 and thereafter as amended, whereby a board of county commissioners may adopt rules to abate soil erosion and water pollution by soil sediment by land development.

**SECTION 1.03 ADMINISTRATION**

The Geauga Soil and Water Conservation District (hereinafter referred to as "Gauga SWCD"), acting as the Geauga County Board of Commissioner's duly authorized representative, shall administer these regulations. Geauga Soil and Water Conservation District Board of Supervisors authorizes its staff on behalf of the Geauga County Board of Commissioners to determine compliance with these regulations and shall issue such notices and orders as may be necessary.

**SECTION 1.04 PURPOSE**

The Geauga County Board of Commissioners, hereinafter referred to as "Commissioners," adopts these Water Management and Sediment Control Regulations to establish technically feasible and economically reasonable standards to achieve a level of management and conservation practices that will abate water erosion of the soil or abate the degradation of the Waters of the State by soil sediment in conjunction with land grading, excavating, filling, or other soil disturbing activities on land used or being developed for nonfarm commercial, industrial, residential or other nonfarm purposes. The Commissioners additionally adopt these regulations to establish criteria for determination of the acceptability of such management and conservation practices, and to implement Phase II of the storm water program of the National Pollutant Discharge Elimination System (NPDES) established in 40 CFR Part 122.

These regulations further intend, but are not limited to:

- A) Permit development while keeping downstream flooding, erosion, and sedimentation at existing levels.
- B) Reduce damage to receiving watercourses that may be caused by increases in the quantity and/or rate of water discharged, and impairment of their capacity that may be caused by sedimentation.

- C) Establish a basis for the design of all storm drainage systems that will preserve the rights and options of both the dominant and servient property owners and help assure the long-term adequacy of storm drainage systems.

**SECTION 1.05      SCOPE**

These regulations shall require persons to file plans governing erosion control, sediment control, and water management and receive a permit for soil-disturbing activities on land used or being developed for nonfarm commercial, industrial, residential or other nonfarm uses as additionally regulated by the Ohio EPA, including, but not limited to, individual or multiple lots, subdivisions, multi-family developments, commercial and industrial developments, recreational projects, general clearing and grading projects, underground utilities, private highways, other building activities on any lands, redevelopment of urban areas and all other uses unless expressly excluded as follows:

- A) Land being used in a strip mining operation as defined in O.R.C. 1513.01;
- B) Land being used in a surface mining operation as defined in O.R.C. 1514.01; or
- C) Activities related to the production and/or cultivation of agricultural crops or silviculture operations whose activities are regulated under the Agricultural Pollution Abatement Rules & Standards (Ohio Administrative Code 1501:15)
- D) Public highways, transportation, and drainage improvements or maintenance thereof undertaken by a government agency or political subdivision provided that its standard sediment control policies have been approved by the Geauga County Board of Commissioners, or by the Chief of the ODNR Division of Soil and Water Conservation, and that the applicable sediment control policies are no less restrictive than these regulations.

**SECTION 1.06      DISCLAIMER OF LIABILITY**

Neither submission of a plan under provisions of these regulations, nor compliance with provisions of these regulations, shall relieve any person or other entity from responsibility for damage to any person or property otherwise imposed by law; nor shall it create a duty by the Commissioners, or by the Geauga SWCD, to those damaged by soil sediment pollution.

**SECTION 1.07      SEVERABILITY**

If any clause, section, or provision of these regulations is declared invalid or unconstitutional by a court of competent jurisdiction, validity of the remainder shall not be affected thereby.

**SECTION 1.08      NUISANCES**

These regulations shall not be construed as authorizing any person to maintain a private or public nuisance on his property, and compliance with the provisions of these regulations shall not be a defense in any action to abate such a nuisance.

**SECTION 1.09      RESPONSIBILITY**

Failure of the Geauga SWCD to observe or recognize hazardous or unsightly conditions or to recommend corrective measures shall not relieve the owner from the responsibility for the condition or damage resulting therefrom, and shall not result in the Commissioners or Geauga SWCD, its officers, employees, or agents being responsible from any conditions or damage resulting therefrom.

**SECTION 1.10      EFFECTIVE DATE**

These regulations shall replace the existing regulations on the 31st day after adoption by the Geauga County Board of Commissioners.

**Section**

**2**

**Definitions**

**SECTION 2.01 INTERPRETATION OF TERMS AND WORDS**

For the purpose of these regulations certain rules or word usage apply to the text as follows:

- A) Words used in the present tense include the future tense, and the singular includes the plural, unless the context clearly indicates the contrary.
- B) The term "shall" is always mandatory and not discretionary; the word "may" is permissive. The term "should" is permissive, but indicates strong suggestion.
- C) The word or term not interpreted or defined by this Section shall be construed according to the rules of grammar and common usage so as to give these regulations their most reasonable application.

**SECTION 2.02 WORDS AND TERMS DEFINED**

ACRE: A measurement of area equaling 43,560 square feet.

APPROVED: Compliant with these regulations.

BEST MANAGEMENT PRACTICES (BMP's): Structural or nonstructural facilities or activities that control soil erosion and/or storm water runoff at a development site. This includes treatment requirements, operating and maintenance procedures, and other practices to control site runoff, leaks, or waste disposal.

CHANNEL: A manmade bed that conveys water; a ditch excavated for the flow of water a non-stream, a non-watercourse.

WATER QUALITY VOLUME  $WQ_v$ : Volume of storm water runoff that must be captured and treated before discharge from the developed site after construction is complete.  $WQ_v$  is based on the expected runoff generated by the mean storm precipitation volume from post-construction site conditions at which rapidly diminishing returns in the number of runoff events captured begins to occur.

CRITICAL STORM: That storm which is calculated by means of the percentage increase in volume of runoff by a proposed development. The critical storm is used to calculate the maximum allowable storm water discharge rate from a developed site.

CUT: An excavation that reduces an existing elevation, as in road or foundation construction.

DETENTION STRUCTURE: A permanent storm water management facility for the temporary storage of runoff, which is designed to delay and attenuate flow.

DEVELOPMENT AREA: A lot or contiguous lots owned by one person or persons, or operated as one development unit, and used or being developed for commercial, industrial,

residential, institutional, or other non-farm construction or alternative that changes runoff characteristics, upon which soil-disturbing activities occur.

**DEVELOPMENT DRAINAGE AREA:** A combination of each hydraulically unique drainage area with individual outlet points on the development area.

**DISTURBED AREA:** An area of land subject to erosion due to the removal of vegetative cover and/or soil disturbing activities.

**DITCH:** A manmade channel for the purpose of drainage or irrigation with intermittent flow.

**DRAINAGE:** The removal of excess surface water or groundwater from land by surface or subsurface drains.

**DRAINAGE IMPROVEMENT:** As defined in O.R.C. 6131.01 (C), and/or conservation works of improvement, O.R.C. 1511 and 1515.

**ENGINEER:** A Professional Engineer registered in the State of Ohio.

**EROSION:** The process by which the land surface is worn away by the action of wind, water, ice, gravity, or any combination of those forces.

**EROSION AND SEDIMENT CONTROL:** The control of soil material, both mineral and organic, to minimize the removal of soil material from the land surface and to prevent its transport out of a disturbed area by means of wind, water, ice, gravity, or any combination of those forces.

**FARM:** Land, water, or buildings primarily devoted to growing and/or cultivating crops in connection with any of the following: 1) Raising or harvesting of an agricultural, horticultural or viticultural commodity and 2) Raising, shearing, feeding, caring for, training, and management of livestock and poultry.

**FINAL STABILIZATION:** All soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of at least 80% cover for the area has been established or equivalent stabilization measures, such as the use of mulches, geotextiles, have been employed.

**FLOOD PLAIN:** The designated areas shown on the flood hazard boundary maps of the county, prepared by the United States Department of Housing and Urban Development, Federal Insurance Administration, and the Federal Emergency Management Agency; which are subject to periodic flooding from a 100-year frequency storm.

**HYDRIC SOILS:** Soils that are saturated, flooded, or ponded for a long enough time period during the growing season that anaerobic conditions develop in the upper part of the soil. Soils that are considered "wetland" soils.

**HYDROPHYTIC VEGETATION:** Plants that are found in wetland areas. These plants have been classified by their frequency of occurrence in wetlands.

**IMPERVIOUS:** Not allowing infiltration which means any paved, hardened or structural surface regardless of its composition including (but not limited to) buildings, roads, driveways, parking lots, loading/unloading spaces, decks, patios, and swimming pools.

**LANDSCAPE ARCHITECT:** A Professional Landscape Architect registered in the State of Ohio.

**LARGER COMMON PLAN OF DEVELOPMENT:** A contiguous area where multiple separate and distinct construction activities may take place at different times on different schedules under one development area.

**LOT:** A tract of land occupied or intended to be occupied by a use, building, or group of buildings and their accessory uses and buildings as a unit, together with such open spaces and driveways as are provided and required. A lot may contain more than one contiguous lot.

**MAJOR SUBDIVISION:** As defined in the most current version of the Subdivision Regulations of Geauga County.

**MAXIMUM EXTENT PRACTICABLE:** The level of pollutant reduction that site owners of small municipal separate storm sewer systems regulated under 50 C.F.R. Parts 9, 122, 123, and 124, referred to as NPDES Storm Water Phase II, must meet.

**MS4: Municipal Separate Storm Sewer System.** A conveyance or system of conveyances (including roadside ditches, catch basins, curbs, gutters, storm sewers) that are:

1. Owned or operated by the federal government, state, municipality, township, county, district(s) or other public body (created by or pursuant to state or federal law) including special districts under state law such as a sewer district, flood control district or drainage districts or similar entity or a designated and approved management agency under section 208 of the act that discharges into surface water of the State; and
2. Designed or used for collecting or conveying solely storm water, which is not a combined sewer and is not a part of a publicly owned treatment works.

**MULTI-FAMILY DEVELOPMENT:** Apartments, condominiums, townhouses, duplexes, or other similar buildings housing more than one family.

**NON-FARM:** Land, water or buildings that are not primarily devoted to the uses specified in the definition of "farm" herein.

**NPDES:** National Pollutant Discharge Elimination System. A regulatory program in the Federal Clean Water Act that prohibits the discharge of pollutants into surface water of the United States without a permit.

**NOI:** Notice of Intent obtained from the Ohio EPA under the NPDES Phase 2 Program

**NOT:** Notice of Termination obtained from the Ohio EPA under NPDES Phase 2 Program

**OHIO EPA:** Ohio Environmental Protection Agency

**ODNR-DSWC:** Ohio Department of Natural Resources, Division of Soil and Water Conservation.

**PERSON:** Any individual, corporation, firm, trust, commission, board, public or private partnership, joint venture, agency, unincorporated association, municipal corporation, county or state agency, the federal government, other legal entity, or an agent or combination thereof.

**PHASING:** Clearing/grubbing/excavating a parcel of land in distinct sections, with the stabilization of each section occurring before clearing the next.

**PUD:** Planned Unit Development

**RAINWATER AND LAND DEVELOPMENT MANUAL:** Ohio's standards developed by ODNR-DSWC for storm water management, land development, and urban watercourse protection. The most current edition of these standards shall be used with this regulation.

**RETENTION STRUCTURE:** A permanent storm water management facility that provides for the permanent storage of runoff and is only released through percolation, evaporation, transpiration or through an emergency overflow.

**RIPARIAN SETBACK:** An area of naturally vegetated land adjacent to designated watercourses that, if appropriately sized, helps to stabilize stream banks, limit erosion, reduce flood size flows and/or filter and settle out runoff pollutants. This area shall be a designated distance from a watercourse as set by applicable local or county regulations.

**RUNOFF:** The portion of rainfall, melted snow, or irrigation water that flows across the ground surface and is eventually returned to groundwater, streams, watercourses, ponds, lakes or wetlands.

**SEDIMENT:** Soils or other surface materials that are or have been transported or deposited by the action of wind, water, ice, gravity, or any combination of those forces, as a product of erosion.

**SEDIMENTATION:** The deposition or settling of sediment.

**SEDIMENT BASIN:** A barrier or other suitable retention structure built across an area of water flow to intercept runoff and allow transported sediment to settle and be retained, prior to discharge into waters of the state.

**SEDIMENT POLLUTION:** Degradation of waters of the state by sediment as a result of failure to apply management or conservation practices to abate wind or water soil erosion, specifically in conjunction with soil-disturbing activities on land used or being developed for commercial, institutional, industrial, residential, or other non-farm purposes.

**SOIL AND WATER CONSERVATION DISTRICT:** An entity organized under Chapter 1515 of the Ohio Revised Code; referring either to the Soil and Water Conservation District Board, or its designated employee(s), hereinafter referred to as the Geauga SWCD.

**SOIL DISTURBING ACTIVITIES:** Clearing, grubbing, grading, excavating, filling, or other alteration of the earth's surface where natural or human made ground cover is destroyed and which may result in, or contribute to erosion and sediment pollution. This may also include construction of buildings, structures, utilities, roadways, parking areas, and septic systems that will involve soil disturbance or altering of the existing ground cover.

**SOIL LOSS:** Soil moved from a given site by the forces of erosion, measured using the Revised Soil Loss Equation "RUSLE".

**STABILIZATION:** The use of Best Management Practices, such as seeding and mulching, that reduce or prevent soil erosion by water, wind, ice, gravity, or a combination of those forces.

**STORM WATER:** Storm water runoff, snowmelt, surface runoff, and drainage.

**STORM WATER MANAGEMENT:** Runoff water safely conveyed or temporarily stored and released at an allowable rate to minimize erosion and flooding.

**STREAM:** see definition for "watercourse".

**SUBSOIL:** That portion of the soil below the topsoil or plow layer, typically beginning 6-12" below the surface, but can also extend to 48" or deeper in the case of prime farmland soils, down to bedrock parent material.

**SWP3:** Storm Water Pollution Prevention Plan as defined and required by the Ohio EPA.

**TEMPORARY SOIL STABILIZATION:** Establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation and other techniques capable of quickly establishing cover over disturbed areas to provide erosion control between construction operations.

**TOPSOIL:** The upper layer of soil that is usually darker in color and richer in organic matter and nutrients than the subsoil.

**WATERCOURSE:** A natural channel with defined bed and banks within which concentrated water flows, either continuously or intermittently, (e.g. brooks, creeks, rivers or streams).

**WATER MANAGEMENT AND SEDIMENT CONTROL (WMSC) PLAN:** A plan prepared, designed, and approved in accordance with the specific requirements as contained in these regulations. This plan will provide for storm water management to address the increase in storm water created by the proposed development as well as illustrating the means and methods to minimize erosion and prevent off-site sedimentation by containing sediment on-site, or by-passing sediment-laden runoff through a sediment control measure. Equivalent to a SWP3.

**WATERSHED:** The total drainage area contributing runoff to a single point.

**WETLAND:** Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and contain a predominance of hydric soils, and that under normal circumstances do support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas (40 CFR 232, as amended).

## Section

# 3

# APPLICABILITY

### **SECTION 3.01 GENERAL APPLICABILITY CRITERIA FOR STORM WATER MANAGEMENT AND SEDIMENT CONTROL**

No person shall cause or allow soil disturbing activities to occur on a contiguous development area without full compliance with the criteria established by these regulations.

- A) A Water Management and Sediment Control Plan, in accordance with these regulations, must be submitted to, and approved by, the Geauga SWCD when soil disturbing activities are proposed that will disturb one (1) acre or more, or less than one (1) acre and part of a larger common plan of development.
- B) An Abbreviated Water Management and Sediment Control Plan, in accordance with these regulations, is recommended to be developed and approved by the Geauga SWCD when soil disturbing activities are proposed that will disturb less than one (1) acre and not part of a larger common plan of development.
- C) A Clearing Plan must be submitted if a landowner desires to begin parcel clearing operations by mechanized means prior to receiving approval of a WMSC Plan for soil-disturbing activities for the site by the Geauga SWCD. The Clearing Plan submittal shall minimally consist of the requirements of an Abbreviated Water Management and Sediment Control Plan and appropriate fees as listed in Section 6.02.
- D) Specific Site Conditions (i.e. date original development was built, centralized stormwater management, additions, residential lot construction, redevelopment, etc.) may dictate the requirement of different components to be included on the WMSC plan as indicated in Section 4 of these Regulations
- E) All soil-disturbing activities must comply with the intent and all other provisions of these regulations even if a Water Management and Sediment Control Plan may not be required to be submitted for approval.
- F) Submittal of a Water Management and Sediment Control Plan or an Abbreviated Water Management and Sediment Control Plan that has been approved by the Geauga SWCD does not relieve the owner from complying with the full requirements of the Ohio EPA NPDES #OHC000003 Authorization for Storm Water Discharges Associated with Construction Activities Under the National Pollutant Discharge Elimination System if applicable for the site.
- G) A Water Management and Sediment Control Plan less the requirements of Section 4.04, in accordance with these regulations, must be submitted to, and approved by, the Geauga SWCD when soil disturbing activities are proposed that will disturb one (1) acre or more, or less than one (1) acre and part of a larger common plan of development for a utility line project.

**Section**

**4 WATER MANAGEMENT AND  
SEDIMENT CONTROL PLAN  
CONTENT**

**SECTION 4.01 GENERAL REQUIREMENTS**

- A) The Water Management and Sediment Control Plan shall incorporate measures as recommended by the most current edition of the Rainwater and Land Development Manual or approved equal (i.e., Virginia Storm Water Management Handbook, Virginia Erosion and Sediment Control Handbook, Maryland Storm Water Design Manual, Vermont Storm Water Management Manual, Georgia Storm Water Management Manual, New York State Storm Water Management Design Manual and New York Erosion and Sediment Control Handbook) in addition to the following items as listed in these regulations.
- B) A Registered Professional Engineer must certify storm water and sediment & erosion control calculations, designs, and plan sheets. To the extent necessary, a Registered Professional Surveyor may be required to certify boundary lines, measurements, or land surfaces.
- C) A Registered Professional Engineer, Registered Professional Surveyor, Registered Landscape Architect, or Certified Professional Erosion and Sediment Control Specialist (CPESC), or other qualified person may select BMPs for sediment and erosion control that do not require designs or the exercise of professional judgment, such as, locating silt fence at land disturbance boundaries, limiting the area of project disturbance, seeding and mulching or similar, and are also within the following soil disturbance types and acreage limits:
  - 1. All soil disturbing activities related to single-family residential development on individual lots; or
  - 2. All soil disturbing activities on parcels less than one (1) acres and part of a larger common plan of development..

**SECTION 4.02 APPLICATION, NARRATIVE AND SITE DESCRIPTION**

The WMSC Plan must contain an application, narrative report and site description with the below listed information provided. For soil disturbing activities related to single-family residential development on individual lots, only items B, K, L, N & Q of this section are required to be submitted and approved.

- A) Site Type (i.e. residential, commercial, subdivision, industrial, institutional, multi-family, apartment, condominium, mobile home park, or manufactured home park) number of sublots, and phase number, if applicable;
- B) Total acreage of entire site, total acreage of soil disturbance (including areas were clearing, grubbing, excavating, filling, grading, including of-site borrow areas will occur), and percentage of soil disturbance in relation to the entire site;
- C) An estimate of the impervious area and percent imperviousness created by the soil-disturbing activity;
- D) Summary of storm water information as calculated and required in Section 4.04 of these regulations including;
  - 1. Pre and Post developed drainage maps clearly identifying the time of concentration routes on each.
  - 2. Critical Storm calculations.
  - 3. Storm water runoff estimations and calculations (including runoff coefficients) for Pre- and Post-Development.
  - 4. Summary of pre, allowable and post development peak discharges.
  - 5. Calculations and summary of the water quality volume and drawdown time;
- E) Description of soils and, if available, the quality of any discharge from the site;
- F) A description of prior land uses at the site;
- G) An implementation schedule which describes in detail the sequence of major construction operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion, sediment and storm water management practices or facilities to be employed during each operation of the sequence;
- H) The name and/or location of the immediate and first subsequent receiving stream or surface water(s) and the description of any wetlands (including area and Ohio EPA category if on site) or other special aquatic sites at or near the site that will be disturbed or will receive discharges from the disturbed areas of the project. For discharges to an MS4, the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a stream or surface water of the State must be identified. If a FEMA designated 100-year flood plain exists on any watercourses, this shall additionally be listed;
- I) For subdivided developments where the WMSC Plan does not call for a centralized sediment control capable of controlling multiple individual lots, a detail drawing of a typical individual lot showing standard erosion and sediment control practice including designation of specific erosion and sediment control practices for critical areas such as steep slopes, watercourse banks, channels and riparian setbacks;
- J) Location and description of any storm water discharges associated with dedicated asphalt and dedicated concrete plants covered by this permit and the best management practices to address pollutants in these storm water discharges;

- K) Ohio EPA NPDES Permit Number and/or a copy of the applicable Ohio EPA Notice of Intent (NOI) for Construction Activities, as applicable for the site;
- L) Cover page that includes the following:
1. Name and Location of the site – including address and subplot number if applicable.
  2. Name and Contact information (individual name, address and phone number) of the owner of the site and any other owner of project if different from the site owner.
  3. Name and contact information (individual name, address and phone number) for Professional Engineer certifying the plans and/or other preparer of the Erosion and Sediment Control portion of the submittal. The Professional Engineer must additionally sign, seal and date all plans and calculations.
  4. Preparation date of WMSC plan.
  5. Estimated dates that construction will commence and be completed.
  6. Watershed where project is located (i.e. Chagrin, Grand, Cuyahoga, Mahoning).
  7. Geographic Coordinates (i.e. latitude and longitude) for site and each stormwater management facility for the project;
- M) A log documenting grading and stabilization activities as well as amendments to the WMSC, which occur after construction activities commence;
- N) List of any conservation easements or other restrictive uses of the property on record;
- O) An inspection and maintenance agreement binding the owner and all subsequent owners of lands where a storm water management facility is to be constructed. Such agreements/deed restrictions/restrictive covenants shall designate and minimally provide the following and be recorded with the deed of the property: 1) Identify the party(s) responsible for long-term maintenance including repairs as necessary for all storm water facilities; 2) Prohibit unauthorized alteration of all storm water facilities without prior written approval from the Geauga SWCD; 3) Allow the Geauga SWCD access to the storm water management facilities and any riparian setback areas, if applicable, at reasonable times for inspections to document the facilities condition and ensure its originally designed function; 4) For each type of storm water facility, list the maintenance and frequency of such required; 5) Identify the funding source for the above listed party to perform maintenance of, and repairs to, storm water facility; and 6) Specify that any pollutants collected in the storm water facility are disposed of in accordance with local, state, and federal regulations. The Geauga SWCD reserves the right to require additional notes and/or restrictions and may require these to be listed on the plat, if necessary.

Alterations to these stipulations or termination of any of these requirements are prohibited in the document and must run with the land. The document must clearly identify each facility and its location. The owner may provide a draft for review as part of the submittal. Once the draft is approved, a recorded copy of the entire document must be submitted to Geauga SWCD to receive final inspection approval of the site;

- P) Prior to construction commencing or before the pre-construction meeting, the following must additionally be provided:
1. Primary operator or contractors name, address and phone that is responsible for the development area.
  2. List of all contractors/subcontractors contact information involved in the implementation of the WMSC Plan including a written document containing signatures of all parties as proof of acknowledgement that they reviewed and understand the requirements and responsibilities of the WMSC Plan;
- Q) If disturbance of streams or wetlands is anticipated, appropriate documentation as listed in Section 4.05 must additionally provided as applicable; and

### **SECTION 4.03      SITE CONSTRUCTION PLANS, DRAWINGS & DETAILS**

The Water Management and Sediment Control Plan shall include construction plan sheets containing drainage, erosion and sediment control measures, and storm water control for proper management of the site during and after construction. For soil disturbing activities related to single-family residential development on individual lots, only items B, C1, C3, C4, C6, C7, C8, C9, C10, C11, C13, C14, and C17 of this section are required to be submitted and approved. A detail listing of the components required for all other sites are as follows:

- A) Vicinity Map: A map should be shown on the plans indicating the site in relation to the surrounding area;
- B) Contact and Site Information Page with duplicate information as indicated in Section 4.02 A, B, C, & L;
- C) Site Plan: A plan sheet indicating all temporary and permanent BMP's proposed to be used during all phases of construction shall be provided. It is preferred that the entire site be contained on one sheet if possible to permit an entire view of the site for analysis. If a smaller scale is used to permit inclusion of the entire site on one sheet, separate sheets providing an enlarged view of areas on individual sheets should be additionally provided. The following items shall be provided within the plans and follow the applicable performance and design standards as outlined in Section 7 of these regulations:
1. The limits of clearing, grading, excavation, or any other soil disturbing activities, including off site spoil and borrow areas that are not addressed by a separate NOI and associated WMSC.
  2. Soil types and their boundaries, including locations of unstable or highly erodible soils.
  3. Existing and proposed two (2) foot contours with both labeled accordingly. A delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed, in acres.
  4. Surface water locations including springs, wetlands, watercourses, lakes, water wells, etc., on or within 200 feet of the site, including the boundaries of wetlands or watercourses and first subsequent named receiving water(s) the applicant intends to fill or relocate for which the applicant is seeking approval from the U.S. Army Corps of Engineers and/or Ohio EPA.

5. Sediment ponds and or sediment traps, including their dimensions, calculation of the available sediment settling volume, drawdown time, and the contributing drainage area.
6. Location of all erosion and sediment control practices, including location of areas likely to require temporary stabilization during the course of site development.
7. Areas designated for the storage or disposal of solid and liquid wastes, including dumpster areas, areas designed for cement truck washout and vehicle fueling.
8. The location of designated construction entrances where vehicles will access the construction site.
9. The location of any activities in watercourses including watercourse crossings.
10. The location and dimensions of riparian setbacks that may be applicable through local zoning or subdivision regulations.
11. Existing and planned location of buildings, roads, parking facilities, and utilities.
12. Detail drawings of all permanent and temporary structural storm water management practices that will be used to control pollutants in storm water before and after construction operations have been completed.
13. Detail drawings of all erosion control methods to be utilized.
14. Description and specifications for stabilization of all disturbed areas of the site and guidance to which method of stabilization should be employed for any time of the year shall be provided. Such practices may include: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing of construction operations, the use of construction entrances, and the use of alternative ground cover.
15. The plan must make use of non-structural practices that preserve the existing natural condition to the maximum extent practicable. Such practices should include preserving riparian setbacks, preserving existing vegetation and vegetative buffer strips, phasing construction operation in order to minimize the amount of disturbed land at any one time, and designation of tree preservation areas or other protective clearing or grubbing practices.
16. Construction schedule clearly identifying the appropriate erosion, sediment or storm water control method and the general sequence during the construction process when each specific method will be implemented.
17. General Notes must be provided to clearly indicate the methods, timing and implementation of all temporary and permanent storm water management, erosion and sediment control items. The following notes, or similar but not less restrictive, shall minimally be provided:
  - a. "Minimize tracking of sediments by vehicles by utilizing the construction entrance as the only entrance for vehicles. Maintain this entrance with stone as needed to

prevent dirt and mud from tracking onto the roadway. Regular sweeping of the roadway may be necessary to ensure roadway does not build up with sediments.”

- b. “The owner of record must provide regular inspection and maintenance for all erosion and sediment control practices. Permanent records of all maintenance and inspections must be kept throughout the construction period. Inspection must be made a minimum of once every seven (7) days and immediately after storm events greater than 0.5 inches of rain within a 24-hour period. The name of owner’s designated inspector, major observations, date of inspections and corrective measures taken must be noted on all inspections.”
- c. “Other erosion and sediment control items may be necessary due to environmental conditions and may be required at the discretion of the Geauga Soil and Water Conservation District or its representatives.”
- d. “Sediment/storm water ponds and erosion and sediment controls shall be implemented as the first step of grading and within 7 days from the start of grubbing. Upon completion of construction of ponds, seeding and mulching of entire constructed pond area shall immediately follow to aid in the stabilization and minimize erosion and sediment transport of the soil before water leaves the pond. All erosion and sediment controls shall continue to function until disturbed areas are fully restabilized.”
- e. “No solid or liquid waste shall be discharged into storm water runoff. (This includes washing out of cement trucks.) Designated wash pit areas are shown on the plans and are preset for this purpose away from areas of storm water runoff.”
- f. “Site stabilization either permanent or temporary must follow the requirements as applicable on the following tables.”

<b><i>Area requiring permanent stabilization</i></b>	<b><i>Time frame to apply erosion controls</i></b>
Any area that will lie dormant for one year or more.	Within 7 days of the most recent disturbance.
Any area within 50 feet of a watercourse and at final grade.	Within 2 days of reaching final grade.
Any area at final grade.	Within 7 days of reaching final grade within that area.

<b><i>Area requiring temporary stabilization</i></b>	<b><i>Time frame to apply erosion controls</i></b>
Any disturbed area within 50 feet of a watercourse and not at final grade.	Within 2 days of the most recent disturbance, if that area will remain idle for more than 21 days.
For all construction activities, any disturbed area, including soil stockpiles, that will be dormant for more than 21 days but less than one year, and not within 50 feet of a watercourse.	Within 7 days of the most recent disturbance within the area.
Disturbed areas that will be idle over the winter.	Prior to November 1.

NOTE: Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. These techniques may include mulching, erosion matting, or placement of stone.

#### **SECTION 4.04 POST-CONSTRUCTION STORM WATER CONTROL METHODS**

To prevent pollution of public waters by soil sediment and protect the integrity of watercourses from erosion caused by the effects of accelerated storm water runoff from development areas, the increased peak rates and volumes of runoff shall be controlled and meet the below itemized criteria.

Construction activities shall be exempt from the requirements of this section if the proposed activities do not include the installation of any impervious surface, it can be demonstrated that the post-construction storm water management requirements of this section have been provided as part of a larger common plan of development, or they are addressed in a regional or local storm water management plan. Non-residential construction activities where soil disturbing activities of less than 1 acre are proposed and are part of a larger common plan of development (including additions and additional buildings on developed lots) that were built prior to 2003 shall be exempt from providing the  $WQ_v$  component of the post-construction storm water management requirements.

- A) The peak discharge rate of runoff from the critical storm and all more frequent storms occurring under post-development conditions does not exceed the peak discharge rate of runoff from a one (1)-year frequency, 24-hour storm occurring on the same development drainage area under pre-development conditions. In some instances, where multiple drainage areas drain to the same watercourse course, it may be allowable to compare the post-developed combined net outflow from these drainage areas to meet the pre-developed outflow from a one (1)-year frequency, 24-hour storm. The engineer must provide valid reasons on why this method may be applicable.
- B) Storms of less frequent occurrence (longer return periods) than the critical storm up to the 100-year storm have peak runoff discharge rates no greater than the peak runoff rates from equivalent size storms under pre-development conditions. Consideration of the 1, 2, 5, 10, 25, 50 and 100-year storms will be considered adequate in designing and developing to meet this standard.
- C) The critical storm for a specific development drainage area is determined as follows:
  - 1. Use the SCS TR-20 Hydrologic Analysis Model<sup>1</sup> or other appropriate and approved hydrologic simulation model along with rainfall data obtained from Huff & Angel<sup>2</sup> or latest data available from NOAA (National Oceanic and Atmospheric Administration) Atlas 14, to determine the total volume (acre-feet) of runoff from a one (1)-year, 24-hour storm occurring on the development drainage area before and after development. Include clearly in your calculations the lot coverage assumptions used for full build out of the proposed condition. Curve numbers for the pre-development

<sup>1</sup> U.S. Department of Agriculture Soil Conservation Service. May 1983. *TR-20: Computer Program for project formulation hydrology*.

<sup>2</sup> Floyd A. Huff & James R. Angel. 1992. *Rainfall Frequency Atlas of the Midwest*. NOAA National Weather Service Midwest Climate Center Research Report 92-03. (Bulletin 71)

condition must reflect the average type of land use over the past 10 years and not only the current land use. To account for unknown future cosmetic improvements to a construction site, an assumption of an impervious surface such as asphalt or concrete must be utilized for all parking areas or driveways, even if stone/gravel is to be utilized in construction. Curve numbers used in runoff calculations for the post-developed condition must reflect a more severe hydrologic soil group due to the resulting compaction of the soil during construction. For example, if a pre-development grass covered area has a curve number within the hydrologic soil group C and the post-development condition for the same area would remain grass covered but will be disturbed, a curve number within the hydrologic soil group D shall be utilized in design calculations. If the pre-development condition in an area is a hydrologic soil group D, the post-development condition may also remain a D. The more severe soil group shall also be utilized in the routing calculations and computing of the peak discharge.

2. From the volumes determined in (a) above, determine the percent increase in volume of runoff due to development. Using this percentage, select the 24 hour critical storm from the following table:

**TABLE 1: CRITICAL STORM DETERMINATION TABLE**

IF THE PERCENTAGE OF INCREASE IN VOLUME OF RUNOFF IS:		THE CRITICAL STORM WILL BE:
EQUAL TO OR GREATER THAN:	LESS THAN:	
--	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	--	100 year

(For example, if the percent increase between the pre-development and post-development runoff volume for a 1-year storm is 35%, the critical storm is a 5-year storm. The peak discharge rate of runoff for all storms up to this frequency shall be controlled so as not to exceed the peak discharge rate from the 1-year frequency storm under pre-development conditions in the development drainage area. The post-development runoff from all less frequent storms need only be controlled to meet the pre-development peak discharge rate for each of those same storms.)

- D) The structural BMP selected must be additionally sized for protection of watercourses from erosion and to treat the water quality volume to reduce sediment pollution. The volume,  $WQ_v$ , shall be equivalent to the volume of runoff from a 0.75-inch rainfall and shall be determined according to one of the two following methods:

1. Through a site hydrologic study approved by the Geauga SWCD that uses continuous hydrologic simulation and local long-term hourly precipitation records; or
2. Using the following equation:  $WQ_v = C * P * A/12$

Where:

- $WQ_v$  = water quality volume in acre-feet
- C = runoff coefficient appropriate for storm less than 1 inch (See Table 2)
- P = 0.75 inch precipitation depth
- A = area draining into the BMP in acres

3. The runoff coefficient ,C, in the above equation may also be computed using the following formula:  
 $C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04$   
 where i is a fraction of the post-construction impervious surface

(For example if a project is creating 20% impervious surface a value of 0.2 would be utilized for the “i” value.)

**TABLE 2: RUNOFF COEFFECIENTS BASED ON TYPE OF LAND USE FOR WQ<sub>v</sub> CALCULATION**

<i>Land Use</i>	<i>Runoff Coefficient</i>
Industrial & Commercial	0.8
High Density Residential (>8 dwellings/acre)	0.5
Medium Density Residential (4 to 8 dwellings/acre)	0.4
Low Density Residential (<4 dwellings/acre)	0.3
Open Space and Recreational Areas	0.2

Where the land use will be mixed, the runoff coefficient should be calculated using a weighted average. For example, if 60% of the contributing drainage area to the storm water treatment structure is Low Density Residential, 30% is High Density Residential, and 10% is Open Space, the runoff coefficient is calculated as follows  $(0.6)(0.3) + (0.3)(0.5) + (0.1)(0.2) = 0.35$

4. An additional volume equal to 20 percent of the WQ<sub>v</sub> shall be incorporated into the WQ<sub>v</sub> BMP for sediment storage and/or reduced infiltration capacity post construction.
5. The WQ<sub>v</sub> BMP designed must treat each unique drainage area and the entire area draining into the WQ<sub>v</sub> BMP regardless if whether or not it is part of the proposed project. To avoid treating offsite drainage, rerouting around WQ<sub>v</sub> BMP may be utilized.
6. WQ<sub>v</sub> BMP's shall be designed such that the drain time is long enough to provide treatment, but short enough to provide storage available for successive rain events as described in Table 3 below. The outlet structure for the post-construction WQ<sub>v</sub> BMP must not discharge more than the first half of the WQ<sub>v</sub> or extended detention volume in less than one-third of the drain time.

**TABLE 3: TARGET DRAW DOWN (DRAIN) TIMES FOR STRUCTURAL POST-CONSTRUCTION TREATMENT CONTROL PRACTICES**

<i>Best Management Practice (BMP)</i>	<i>Drain Time of WQ<sub>v</sub></i>
Infiltration Basin <sup>^</sup>	24 - 48 hours
Enhanced Water Quality Swale	24 hours
Dry Extended Detention Basin <sup>*</sup>	48 hours
Wet Extended Detention Basin <sup>**</sup>	24 hours
Constructed Wetland (above permanent pool) <sup>+</sup>	24 hours
Sand & Other Media Filtration	40 hours
Bioretention Cell <sup>^</sup>	40 hours
Pocket Wetland <sup>#</sup>	24 hours
Vegetated Filter Strip	24 hours

<sup>\*</sup>Dry basins must include forebay and micropool each sized at 10% of the WQ<sub>v</sub>.

<sup>\*\*</sup> Provide both a permanent pool and an extended detention volume above the permanent pool, each sized at 0.75 \* WQ<sub>v</sub>.

<sup>+</sup> Extended detention shall be provided for the full WQ<sub>v</sub> above the permanent water pool.

<sup>^</sup> The WQ<sub>v</sub> shall completely infiltrate within 48 hours so there is no standing or residual water in the BMP.

<sup>#</sup> Pocket wetlands must have a wet pool equal to the WQ<sub>v</sub>, with 25% of the WQ<sub>v</sub> in a pool and 75% in marshes. The extended detention volume above the permanent pool must be equal to the WQ<sub>v</sub>.

- E) Methods for controlling the rate, volume, and quality of storm water runoff may include, but are not limited to, the following:
1. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and function are maintained and protected (e.g., no significant change in the hydrological regime of the receiving water). (For example, using grass-lined road ditches, rather than paved street gutters where practical, and discharging roof water to vegetated areas, or grass and rock lined drainage channels.)
  2. Grading and construction of terraces or diversions to slow runoff by diffusion, or use of grade control structures, such as check dams, to provide a level of control in flow paths and/or existing channels.
  3. Induced infiltration of increased storm water runoff into the soil where practical. (For example, constructing special infiltration areas where soils are suitable, retaining topsoil for all areas to be revegetated, or providing good infiltration areas with proper emergency overflow facilities.)

4. Provisions for detention and retention of storm water, with properly designed retention basins being preferred. For example, utilizing permanent ponds and lakes as storm water basins that provide multiple use areas for storm water detention, recreation, wildlife, fire protection, and aesthetics. Constructed wetlands, extended dry detention basins, or subsurface storage areas are other options.
  5. Use of Low Impact Design methods such as bioretention areas, bio-swales, rain gardens, and infiltration trenches.
  6. Such practices may include, but are not limited to: storm water detention structures (including extended dry basins); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite; re-creation of floodplains; and sequential systems (which combine several practices). The use of separate practices for treatment of water quality and quantity should be considered for a more effective design where contributing drainage areas are small.
  7. The use of vegetated buffer/filter strips or stream/wetland buffers protected by permanent conservation easements may be considered for runoff generated from small drainage areas for which it is not practical or possible to capture in the larger storm water management system for the site. An example of this would be a subdivision where runoff generated by the building of the home would drain off the back of a lot. The designer must include documentation to support the use of this method and why no other method can be utilized or is practical. If this method is utilized the designer must over-detain the water quantity in another part of the site that would drain to the same area.
  8. If a BMP is chosen for controlling the WQ, not listed in Table 3 for construction sites with soil disturbing activities over 5 acres, the applicant must provide a letter from the Ohio EPA authorizing its approval. For all other construction sites, the Geauga SWCD shall minimally evaluate the BMP utilizing the criteria set in the Ohio EPA Permit OHC000003 - Authorization for Storm Water Discharges Associated with Construction Activities Under the National Pollutant Discharge Elimination System among other site specific criteria.
  9. All concentrated storm water runoff from a post-construction BMP that flows to natural wetlands shall be converted to diffuse flow before the runoff enters the wetlands.
- F) A description of the post-construction BMP's for the site that will be installed during construction and the rationale for their selection in protection of watercourses from erosion and pollution prevention from sediment deposition must be provided.
- G) All pond designs must meet or contain the following:
1. A minimum one-foot of freeboard above the 100-year design flow elevation;
  2. An emergency spillway;
  3. Inlet to outlet path designed to prevent short-circuiting;
  4. Low maintenance orifices (ex. install reverse flow pipes and/or inverted elbows to minimize orifice obstruction);

5. Access to the structures for maintenance;
  6. Orifices less than 3" generally will not be permitted unless a low maintenance outlet can be provided;
  7. Storm water structures must include an underdrain, as applicable, to allow complete dewatering of pond;
  8. Design factors for the pond shall include benching or minimum side slopes of 3:1;
  9. All wet ponds shall have a pond drain provided to allow the pond to be dewatered for long-term maintenance if necessary; and
  10. Storm water ponds shall not be located in-line with a stream.
- H) Maintenance plans shall be provided for all post –construction BMP's. Maintenance plans shall be provided by the permittee to the post-construction operator of the site upon completion of construction activities and shall be included in the Inspection and Maintenance Agreement that is recorded with the deed as required in Section 8.04. All storm water management facilities shall be cleaned and maintained such that the full water quality volume is available and that the facility functions as designed.
- I) Permanent post-construction storm water quality structures shall not be installed until 80% vegetation has been established and all temporary sedimentation control devices have been removed. Upon final site stabilization, all storm water basins must have all post-construction flow control devices installed.
- J) For redevelopment projects (i.e. developments on previously developed property), post construction storm water quality practices shall either ensure a 20% net reduction of the site's impervious area, provide for treatment of at least 20% of the  $WQ_v$ , or a combination of the two. Draindown times cannot be reduced by 20% only the total volume to be treated can be reduced by 20%. If choosing to treat 20% of the  $WQ_v$ , the designer may choose to treat 20% of the total  $WQ_v$ , or treat 100% of  $WQ_v$  for 20% of the site using the average runoff coefficient for the entire site. A redevelopment projects consists of a project where the composite runoff coefficient on the new land will not increase. If the composite runoff coefficient increases, it will be considered a new development project.
- K) For soil-disturbing activities that will disturb one (1) acre of land or greater and are not directly connected to commercial, industrial or subdivision construction , a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed must be included in the WMSC Plan. Structural measures should be placed on upland soils to the degree attainable. Such measures may include, but are not limited to rain gardens, vegetated swales, rain barrels and infiltration trenches.

#### **SECTION 4.05 COMPLIANCE WITH STATE AND FEDERAL REGULATIONS**

Approvals issued in accordance with this regulation do not relieve the applicant of responsibility for obtaining all other necessary permits and/or approvals from the Ohio EPA, the US Army Corps of Engineers, and/or other federal, state, and/or county agencies not listed herein, nor does it imply that the applicant has met the requirements of those agencies. If requirements vary, the most restrictive requirement shall prevail. These permits may include

but are not limited to those listed below. Proof of compliance with these state and federal regulations is required to be submitted with the Water Management and Sediment Control Plan or Abbreviated Water Management and Sediment Control Plan before the Geauga SWCD will approve or recommend approval. The owner must address each of the items listed below by submitting proof of compliance as specified or an explanation of why the permit, certification, or determination is not required or applicable. The authorizing agencies listed below are responsible for ensuring compliance with their respective permits.

- A) Ohio EPA NPDES Permits authorizing storm water discharges associated with construction activity or the most current version thereof: Proof of compliance with these requirements shall be a copy of the Ohio EPA Director's Authorization Letter for the NPDES Permit, Ohio EPA NPDES Permit Number for the project, or a letter from the site owner explaining why the NPDES Permit is not applicable.
  
- B) If there is any indication or reasonable evidence that disturbance of an existing watercourse, or potential wetland might occur, one or all of the following may be required depending on the extent and type of disturbance.
  - 1. Jurisdictional Determination: Proof of compliance shall be a copy of the Jurisdictional Determination from the U.S. Army Corps of Engineers affirming the findings of a qualified professional's survey and report of the site.
  
  - 2. Section 404 of the Clean Water Act: Proof of compliance shall be a copy of the U.S. Army Corps of Engineers Individual Permit application, if an Individual Permit is required for the development project, public notice, or project approval. If an Individual Permit is not required, the site owner shall submit proof of compliance with the U.S. Army Corps of Engineers' Nationwide Permit Program. Proof of compliance with the Nationwide Permit Program shall be a copy of the U.S. Army Corps of Engineers' Nationwide Permit application, or project approval letter.
  
  - 3. If a Section 404 Permit or Jurisdictional Determination is not required because wetlands or watercourses are not present on the property and there is no indication or reasonable evidence that disturbance will occur, a letter from the site owner must be provided verifying that a qualified professional has surveyed the site and found no waters of the United States must be provided.
  
  - 4. Ohio EPA Isolated Wetland Permit: Proof of compliance shall be a copy of Ohio EPA's Isolated Wetland Permit application, public notice, or project approval, or a letter from the site owner verifying that a qualified professional has surveyed the site and found no waters of the State. Isolated wetlands shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time of application of this regulation.
  
  - 5. Section 401 of the Clean Water Act: Proof of compliance shall be a copy of the Ohio EPA Water Quality Certification application, public notice, or project approval, or a letter from the site owner verifying that a qualified professional has surveyed the site and found no waters of the United States. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the U.S. Army Corps of Engineers at the time of application of this regulation.

- C) Ohio Dam Safety Law: Proof of compliance shall be a copy of the ODNR Division of Water permit application, a copy of the project approval letter from the ODNR Division of Water, or a letter from the site owner explaining why the Ohio Dam Safety Law is not applicable.

**Section**

**5**

**ABBREVIATED WATER  
MANAGEMENT AND  
SEDIMENT CONTROL PLAN  
CONTENT**

**SECTION 5.01 GENERAL REQUIREMENTS**

The Abbreviated Water Management and Sediment Control Plan shall incorporate measures listed below as recommended by the most current edition of the Rainwater and Land Development Manual or approved equal. All BMP's required and shown on the plans shall have the appropriate construction detail and notes provided on the submitted plan.

**SECTION 5.02 PLAN COMPONENTS**

The Abbreviated WMSC Plan shall include a minimum of the following BMP's and associated details as applicable.

- A) CONTACT AND SITE INFORMATION: A page with information as indicated in Section 4.02 A, B, C, & L must be provided.
- B) CONSTRUCTION ENTRANCES. Construction entrances shall be built and shall serve as the only permitted points of ingress and egress to the development area. These entrances shall be built of a stabilized pad of aggregate stone or recycled concrete or cement sized greater than 2" in diameter, placed over a geotextile fabric.
- C) STREET SWEEPING. Streets directly adjacent to construction entrances and receiving traffic from the development area shall be cleaned daily to remove sediment tracked off-site. If applicable, the catch basins on these streets nearest to the construction entrances shall be cleaned weekly.
- D) PROTECTION OF ADJACENT PROPERTIES. An appropriate BMP (i.e. silt fence, diversion dike/ditch, sediment trap, etc.) shall be provided where sediment deposition can occur offsite or where sediment may be transported offsite via a watercourse or wetland. An adequate undisturbed vegetative/forested buffer between the proposed soil disturbance and adjacent properties, watercourses or wetlands may additionally be specified. If this method is employed, indicate the length of the buffer and average slope on the plans.
- E) INLET PROTECTION. Erosion and sediment control practices, such as boxed inlet protection, shall be installed to minimize sediment-laden water entering active storm drain systems. Straw or hay bales are not acceptable forms of inlet protection.

- F) ON-SITE CHANNELS/DITCHES. If channels or ditches will be created on site with a slope greater than 2%, turf reinforcement matting must be provided along the bottom to stabilize the channel from the erosive flow of stormwater.
- G) STREAM CROSSINGS. Any watercourses that will be crossed by construction equipment shall have a temporary crossing specified. The temporary crossing utilized shall consist of a culvert, bridge, or a ford utilizing backfill consisting entirely of stone, rock, or clean recycled concrete.
- H) STABILIZATION. The development area shall be stabilized as detailed in Table 4 below.

**TABLE 4: STABILIZATION – SMALL LOTS**

<b><i>Area requiring stabilization</i></b>	<b><i>Time frame to apply erosion controls</i></b>
Any disturbed area within 50 feet of a watercourse and not at final grade.	Within 2 days of the most recent disturbance, if that area will remain idle for more than 21 days.
For all construction activities, any disturbed area, including soil stockpiles, that will be dormant for more than 21 days but less than one year, and not within 50 feet of a watercourse.	Within 7 days of the most recent disturbance within the area.
Disturbed areas that will be idle over the winter.	Prior to November 1
Any disturbed area at final grade	Within 7 days of reaching final grade.
NOTE: Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. These techniques may include mulching, erosion matting, or placement of stone.	

- H) INTERNAL INSPECTION AND MAINTENANCE. All controls on the development area shall be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half (0.5) inch of rain per 24 hour period by the owner. Maintenance shall occur as detailed below:
  1. When practices require repair or maintenance. If the internal inspection reveals that a control practice is in need of repair or maintenance, with the exception of a sediment-settling pond, it must be repaired or maintained within three (3) days of the inspection. Sediment settling ponds must be repaired or maintained within ten (10) days of the inspection.
  2. When practices fail to provide their intended function. If the internal inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the Abbreviated WMSC Plan must be amended and the new control practice must be installed within ten (10) days of the inspection.
  3. When practices depicted on the Abbreviated WMSC Plan are not installed. If the internal inspection reveals that a control practice has not been implemented in accordance with the schedule, the control practice must be implemented within ten (10) days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.

**Section**

**6**

**SUBMITTAL & REVIEW**

**SECTION 6.01 WMSC PLAN SUBMITTAL & REVIEW**

- A) When a Water Management and Sediment Control (WMSC) Plan is required or recommended two (2) copies of all plans and calculations shall be submitted to Geauga SWCD along with the applicable fee. When an Abbreviated Water Management and Sediment Control Plan is recommended one (1) copy of all plans and calculations shall be submitted to Geauga SWCD along with the applicable fees. All plans shall be submitted in 11"x17" format or smaller. If a larger plan is needed, the Geauga SWCD will request it.
  
- B) For a proposed major subdivision, a WMSC Plan shall be submitted to the Geauga SWCD after the approval of the preliminary plan by the Geauga County Planning Commission, and concurrently with the submittal of construction drawings to the Geauga County Engineer. Approval of the WMSC Plan by the Geauga SWCD must occur two weeks prior to the regularly scheduled Planning Commission meeting and the approval shall be a condition precedent to final plat approval by the Geauga County Planning Commission and final approval of the construction drawings by the Geauga County Engineer and County Commissioners. (Any WMSC Plan submitted for review and approval by the Geauga SWCD less than 30 days before the next regularly scheduled meeting of the Planning Commission may not be approved in time to meet deadlines required for review of the final plat at that Planning Commission Meeting.) No construction shall commence until the final plat has been approved by the Planning Commission.
  
- C) Within thirty (30) days of receipt of a complete WMSC or Abbreviated WMSC Plan including required fees, the Geauga SWCD shall indicate its status of compliance or non-compliance to the owner, or to his appointed representative. Indication of non-compliance shall include specific plan deficiencies and the procedures for filing a revised plan.
  
- D) At the time of submission of the revised plan, another 30-Day period begins. During the review process, if in the opinion of the Geauga SWCD a plan has been revised to the extent that the original design of the storm water management facilities has changed (i.e. new location, different type of structure) the project will be considered new and another review fee will be required to be submitted. Plans found in compliance with these regulations shall remain effective and valid for 2 years from date of approval unless renewed. Renewal is accomplished by the submission of another plan and review fee.

**SECTION 6.02 WMSC PLAN REVIEW, FILING AND INSPECTION FEE SCHEDULE**

The WMSC and Abbreviated WMSC plan review, filing, and inspection fee is part of the complete "Plan" Submittal and is required to be submitted to the Geauga SWCD before the review process begins. All checks shall be made payable to "Gaugua SWCD."

<b>FEE SCHEDULE</b>			
<b>Type of Site</b>	<b>Area of Disturbance</b>	<b>% of Disturbed Area to the Entire Lot(s)</b>	<b>Fee</b>
All building lots except single-family residential lots	1 acre or more	<5%	\$ 350.00
		5-10%	\$ 550.00
		11-20%	\$ 800.00
		21-30%	\$ 1,200.00
		Over 31%	\$ 1,800.00
All building lots except single-family residential lots	< 1 acre & part of a larger common plan of development	<5%	\$ 75.00
		5-10%	\$ 150.00
		11-20%	\$ 225.00
		21-30%	\$ 300.00
		Over 31%	\$ 375.00
All building lots except single-family residential lots	< 1 acre and NOT part of a larger common plan of development (due to Township Zoning or City of Chardon requirement)	N/A	\$200.00
Utility Line Construction	Any	N/A	\$300.00
Single-Family Residential lot	N/A	N/A	\$60.00
Clearing Plan	N/A	N/A	\$100.00
<b>Type of Site</b>	<b># of Sublots/Units</b>	<b>Fee</b>	
Subdivision (Commercial, industrial, condominium, PUD, or residential)  ** Phased Subdivisions shall be charged per phase unless multiple phases will be under construction simultaneously.	<5	\$ 1,750.00	
	6-10	\$ 2,000.00	
	11-15	\$ 2,250.00	
	16-20	\$ 2,500.00	
	>21	\$ 2,750.00	

**Section**

**7**

**PERFORMANCE AND DESIGN  
STANDARDS**

**SECTION 7.01 GENERAL REQUIREMENTS & NOTIFICATION**

A Water Management and Sediment Control Plan must be reviewed and found in compliance with these regulations by the Geauga SWCD prior to the commencement of any soil-disturbing activities. Specifications for performance standards required within this section shall conform, as a minimum, to those set forth in the most recent edition of the *Rainwater and Land Development Manual* from the Ohio Department of Natural Resources Division of Soil and Water Conservation and the requirements of the most current Ohio Environmental Protection Agency General Construction Permit. Any non-adherence to these performance and design standards may result in a Notice of Violation, subsequent Stop Work Orders and daily fines as outlined in Section 8.01 of these Regulations.

The owner of a site with this approved WMSC Plan must notify the Geauga SWCD within 48 hours before initiating any soil-disturbing activities. The Geauga SWCD shall also be notified upon project completion to grant final site approval of the project as well as to ensure an "as-built" drawing and associated long-term maintenance agreement has been submitted and recorded for any storm water management facilities required and built for the project.

**SECTION 7.02 PROTECTION OF ADJACENT PROPERTIES**

- A) Properties adjacent to the site including public land and waters of the State shall be protected from sediment deposition resulting from land disturbance during construction. This may be accomplished by preserving a well-vegetated buffer strip around the lower perimeter of the land disturbance, by installing perimeter controls such as sediment barriers, filters or dikes, or sediment basins, or by a combination of such measures.
- B) When water must be pumped for the purposes of dewatering such as culvert construction, storm sewer construction, pond maintenance/construction or footer/basement construction, this water must pass through a filtering device or onto well-vegetated soil on the property where construction is occurring before entering adjacent properties, streams or channels.

**SECTION 7.03 SOIL STABILIZATION**

- A) PERMANENT SOIL STABILIZATION. All areas at final grade must be permanently stabilized within 7 days of reaching final grade. This is usually accomplished by using seed and mulch, but special measures are sometimes required. Permanent stabilization must be specified and performed as listed in Table 5 below.

**TABLE 5: PERMANENT STABILIZATION**

<b>Area requiring permanent stabilization</b>	<b>Time frame to apply erosion controls</b>
Any area that will lie dormant for one year or more.	Within 7 days of the most recent disturbance.
Any area within 50 feet of a watercourse and at final grade.	Within 2 days of reaching final grade.
Any area at final grade.	Within 7 days of reaching final grade within that area.

1. For slopes steeper than 3:1, turf reinforcement matting, erosion control netting, placement of seed and mulch with tackifier, retaining walls, and/or other comparable method shall be utilized as appropriate.
2. Permanent stabilization must be shown for all channels to prevent erosive flows. Measures may include erosion control matting, sodding, or rock riprap and shall follow the design standards of the most current version of the Ohio Department of Transportation's "Location and Design Manual, Volume Two Drainage Design" Section 1102. All on-site storm water conveyance shall be minimally designed and constructed to withstand the expected velocity of flow from a 5-year, 24-hour frequency storm without erosion. All channels, including roadside ditches, shall minimally have turf reinforcement matting specified and used when the shear stresses exceed 1 psf. The shear stress can be calculated using the following:

$$\tau = 62.4 (D)(S)$$

where:

- D = Water surface depth (ft)  
(as determined from a 5-year, 24-hour frequency storm)
- S = Slope of the channel (ft/ft)
- $\tau$  = Actual shear stress

Typically channels with slopes 2% or greater will minimally require turf reinforcement matting. All turf reinforcement matting shall be installed at a minimum width of 7.5 feet. Roadway ditches shall additionally be designed according to the regulations adopted by the Commissioners pursuant to R.C. 711.101 and any standard specifications required by the Geauga County Engineer. If failures occur within any stormwater channels, a revised design, additional stabilization and immediate repair is required. If failures occur within these created channels, immediate repair and/or revised design is required.

3. Soil stabilization measures should be selected to be appropriate for the time of year and site conditions, and estimated length of use should include the use of the addition of topsoil, erosion control matting, rock riprap, and/or retaining walls. Permanent seeding should be done between March 1 and September 30. Dormant seeding can be done from November 20 to March 15 and must include a mulch cover and a seeding rate increase of 50% from non-dormant seeding standards. At all other times of the year, the area should be temporarily stabilized until a permanent seeding can be applied.
4. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established

until an 80% ground cover is achieved that is mature enough to control soil erosion satisfactorily and to survive severe weather conditions.

- B) TEMPORARY SOIL STABILIZATION. Temporary soil stabilization is the most effective BMP during construction. The goal of temporary stabilization is to provide cover quickly. This is accomplished by seeding with fast growing grasses then covering with straw mulch. Apply only mulch between November 1 and March 31. To minimize costs of temporary stabilization, leave natural cover in place for as long as possible. Only disturb areas where work is anticipated within the next 21 days. Temporary soil stabilization is required and NOT an option. Temporary stabilization must be specified and performed as listed in Table 6 below.

**TABLE 6: TEMPORARY STABILIZATION**

<b><i>Area requiring temporary stabilization</i></b>	<b><i>Time frame to apply erosion controls</i></b>
Any disturbed area within 50 feet of a watercourse and not at final grade.	Within 2 days of the most recent disturbance, if that area will remain idle for more than 21 days.
For all construction activities, any disturbed area, including soil stockpiles, that will be dormant for more than 21 days but less than one year, and not within 50 feet of a watercourse.	Within 7 days of the most recent disturbance within the area.
Disturbed areas that will be idle over the winter.	Prior to November 1.
NOTE: Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. These techniques may include mulching, erosion matting, or placement of stone.	

1. To receive authorization from the Geauga County Engineer to commence proof rolling and/or cement stabilization activities within a subdivision, between September 15 and April 15, all denuded areas except the roadway but including the roadside ditches must be temporarily seeded and mulched and all drainage ditches including roadside ditches must have excelsior matting installed. During all other times of the year, commencement of proof rolling and/or cement stabilization activities may occur when all denuded areas have been temporarily seeded and mulched and all drainage ditches have excelsior matting installed outside of the road right of way.
- C) SOIL STOCKPILES. Soil stockpiles shall be stabilized with temporary seed and mulch or have perimeter silt fencing placed to prevent soil loss. All stockpiles shall be located at least one hundred (100) feet from all watercourses, drainage ways, wetlands and site drainage exit points.

**SECTION 7.04 STORM WATER RUNOFF CONTROLS**

- A) Runoff control practices and associated details must be provided to control the flow of runoff from disturbed areas to prevent erosion. Such practices may include rock check dams, pipe slope drains, and diversions to direct flow away from exposed soil and protective grading practices. These practices shall divert runoff away from the disturbed areas and steep slopes where practicable. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow

velocity from the structure to a watercourse so the natural physical and biological characteristics and functions are maintained and protected.

- B) Control of storm water runoff requires the use of grassed/vegetated areas, or sedimentation basins, to remove sediment and/or contaminants.
  - 1. Vegetated filter strips, a minimum of 30' feet in width, can be utilized when sheet or overland flow is planned (storm water is not collected). If at any time it is found that a vegetated filter strip alone is ineffective in stopping sediment movement onto adjacent property, additional perimeter controls shall be provided.
  - 2. Grassed swales can be utilized for treatment if the development site is not conducive to more diffuse overland flow. A minimum ratio of 100 linear feet of grassed swale per acre of impervious area is required. When possible, swales should be designed to minimize the velocity of runoff to less than 2 feet per second from a 10-year, 24-hour storm. If failures occur within these swales, immediate repair and/or revised design is required.
  - 3. A thirty (30) foot vegetated buffer strip is required to be retained or re-established immediately along all existing disturbed water and drainage ways. Construction will not be permitted in these areas between October 1<sup>st</sup> thru May 1<sup>st</sup> due to the inability of an immediate reestablishment of vegetation.

## **SECTION 7.05      SEDIMENT BASINS/TRAPS**

- A) Sediment control practices and construction details of these practices must be provided for all structural practices that shall store runoff, allowing sediments to settle and/or diverting flows away from exposed soils or otherwise limit runoff from exposed areas.
- B) Sediment basins shall not directly discharge into a stream or other water body or be located in-line with a stream.
- C) A sediment settling pond is required when any one of the following conditions will exist:
  - a. Concentrated storm water runoff (storm sewer, pipe or ditch);
  - b. Runoff from drainage areas that exceed the design capacity of silt fence, inlet protection or other sediment barriers; and
  - c. Runoff from drainage areas of 10 acres or more.
- D) A temporary sediment trap may only be utilized when the contributing drainage area is 5 acres or less. When the contributing drainage area is larger than 5 acres, but less than 100 acres, a sediment basin must be utilized. If the contributing drainage area is larger than 100 acres, a combination of Best Management Practices must be utilized to divide the acreage into manageable units.
- E) Structural practices shall be used to control erosion and trap sediment from a site that will remain disturbed for more than 14 days. Such practices may include among others: sediment settling ponds, and earth diversion dikes or channels which direct runoff to a sediment-settling pond. All sediment control practices must be capable of ponding runoff in order to be considered functional. All sediment basins and/or traps must provide, at

minimum, a storage volume for the dewatering zone of 67 cubic yards per acre of total contributing drainage area with a minimum 48-hour drawdown time. The volume of the sediment storage zone shall be calculated by one of the following methods:

Method 1: The volume of the sediment storage zone shall be 1000 cubic feet per disturbed acre within the areas draining to the settling pond; or

Method 2: The volume of the sediment storage zone shall be the volume necessary to store sediment as calculated with RUSLE (Revised Universal Soil Loss Equation) or a similar generally accepted erosion prediction model.

The use of a de-watering device must be provided on the outlet structure to allow dewatering of the facility and ensure adequate time for sediment settlement. When determining the total contributing drainage area, off-site areas and areas which remain undisturbed by construction activity must be included unless runoff from these areas is diverted away from the sediment settling pond and is not co-mingled with sediment-laden runoff. The depth of the dewatering zone must be less than or equal to five feet. The configuration between inlets and outlet of the basin must provide at least two units of length for each one unit of width (>2:1 length: width ratio), however, a length to width ration of 4:1 is recommended. Maintenance of the sediment-settling pond must be performed to remove sediment when the design capacity has been reduced by 40 percent. A stake shall be placed in the sediment pond pre-marked with this depth so it can be easily determined in the field when the sediment has reached this depth. (This is typically reached when sediment occupies one-half of the basin depth). Any dredged sediments placed on site must be immediately seeded and mulched or hauled off site to an appropriate location. When designing sediment-settling ponds, the applicant must consider public safety as a design factor for the sediment basin and alternative sediment controls must be used where site limitations would preclude a safe design. The use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal is encouraged.

- F) The Geauga SWCD may require sediment settling basins or traps for smaller disturbed areas where deemed necessary. Sediment settling basins or traps whether permanent or temporary must be provided and continue to function until final stabilization of the site is achieved. Temporary sediment settling basins or traps may be removed following final stabilization of the site.
- G) The maximum allowable limit of Total Suspended Solids (TSS) discharged from a sediment basin during construction is 45 mg/l. Geauga SWCD reserves the right to obtain a random grab sample of the outflow and have it analyzed to ensure this standard is being met. If it is found that the TSS exceeds 45 mg/l the owner must pay for the original test, correct the installation to meet this TSS performance standard and pay the Geauga SWCD for subsequent sample and tests, as needed, until the sediment basin meets this TSS performance standard.

## **SECTION 7.06      INSTALLATION OF SEDIMENT CONTROLS**

Sediment basins and traps, diversion dikes, sediment barriers, and other measures intended to trap sediment on-site shall be constructed as a first step in grading and be made functional before upslope land disturbance takes place. Earthen structures whether permanent or temporary such as dams, dikes, sediment basins, storm water basins and diversions shall be seeded and mulched within seven (7) days after installation is complete.

## **SECTION 7.07      STORM SEWER INLET PROTECTION**

Storm sewer inlet protection must be provided to minimize sediment-laden water from entering storm drain systems, unless the storm drain system drains to a sediment-settling pond. All storm sewer inlets/catch basins that are made operable during construction shall be protected so that sediment-laden water will not enter the conveyance system without first being filtered or otherwise treated to remove sediment. Provisions shall be made for these inlets/catch basins to operate and be maintained before, during and after the final surface is applied around it such as concrete, asphalt or grass. This may require a provision for an alternate method of inlet protection such as the use of a "Dandy Bag" or approved equal. Water should pond around the inlet when it rains. Silt fence alone cannot be utilized as inlet protection. A sturdy frame must be constructed such as wood 2x4's to support silt fence around inlets. The storm sewer inlet/catch basin protection should encircle the entire basin and be properly entrenched if silt fence is to be utilized. Sediment must be removed on a regular basis around the inlet and properly spread, seeded and mulched or disposed of appropriately off-site.

## **SECTION 7.08      CUT AND FILL SLOPES**

- A) Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Consideration should be given to the length and steepness of the slope, the soil type, upslope drainage area, groundwater conditions, and other applicable factors. Slopes should be no steeper than 2:1 and preferably 3:1 or less. Slopes that are found to be eroding excessively during the first year after construction shall be provided with additional slope stabilizing measures by the developer until the problem is corrected. The following guidelines are provided to aid in developing an adequate design:
1. Roughened soil surfaces are generally preferred to smooth surfaces on slopes. Tracking should be done perpendicular to the direction of flow to retard runoff.
  2. Diversions should be constructed at the top of long steep slopes that have significant drainage areas above the slope. Diversions or terraces may also be used to reduce slope length.
  3. Concentrated storm water should not be allowed to flow down cut or fill slopes unless contained within an adequate channel, flume, or slope drain structure.
  4. Wherever a slope face crosses a water seepage plane that endangers the stability of the slope, adequate drainage or other protection should be provided.

## **SECTION 7.09      STABILIZATION OF OUTLETS**

All culvert, pipe and storm sewer outlets must have rock channel protection placed immediately following construction.

## **SECTION 7.10      WORKING IN OR CROSSING WATERCOURSES**

- A) Working in and/or crossing watercourses must be done in compliance with applicable County and/or local riparian management regulations. Proof of this compliance must be shown to the Geauga SWCD and may include a copy of the approved variance allowing specific impacts to the riparian area.

- B) Construction vehicles should be kept out of watercourses to the extent possible. Where in-stream work is necessary, precautions shall be taken to stabilize the work area during construction to minimize erosion. The stream (including bed and banks) shall always be restabilized immediately after in stream work is completed. An Ohio EPA 401 Permit and/or a U.S. Army Corps Section 404 Permit may be necessary to perform projects within watercourses.
- C) Where an active (wet) watercourse will be crossed by construction vehicles regularly during construction, a temporary vehicular watercourse crossing shall be provided. Temporary crossings, such as a bridge, culvert, or fording and backfilling entirely with stone, rock, or clean recycled concrete shall be implemented.
- D) If construction activities will disturb areas adjacent to watercourses, structural practices shall be designed and implemented on site to protect all adjacent watercourses from the impacts of sediment runoff. No structural sediment controls (e.g. the installation of silt fence or a sediment settling pond in watercourses) shall be used in a watercourse. For all construction activities immediately adjacent to surface waters of the state, it is recommended that a riparian setback of at least 25-feet, as measured from the ordinary high water mark of the surface water, be maintained in its natural state as a permanent buffer.

### **SECTION 7.11 MAINTENANCE OF TEMPORARY MEASURES**

All temporary and permanent erosion and sediment control practices shall be maintained and repaired as needed to assure continued performance of their intended function throughout the course of soil-disturbing activities and until any up slope development area is restabilized. As construction progresses and the topography is altered, appropriate controls must be constructed or existing controls altered to address the changing drainage patterns. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the applicant must replace or modify the control for site conditions. Other erosion and sediment control items may be necessary due to environmental conditions and may be required at the discretion of the Geauga SWCD or its representatives. The owner will be responsible for such maintenance until final inspection approval by the Geauga SWCD.

### **SECTION 7.12 DISPOSITION OF TEMPORARY MEASURES**

All temporary erosion and sediment control measures shall be disposed of within 30 days after final stabilization of the site is achieved and approved by the Geauga SWCD or after the temporary measures are no longer needed, unless otherwise authorized by the Geauga SWCD. Trapped sediment and other disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sediment accumulation.

### **SECTION 7.13 CONSTRUCTION ENTRANCES**

Good housekeeping practices must be implemented to ensure sediment is not tracked off-site. Construction entrances shall be installed and maintained to minimize off-site tracking of sediments. These entrances shall be built of a stabilized pad of aggregate stone (ODOT #2) or recycled concrete sized greater than 2" in diameter and placed over a geotextile fabric. A stone access drive should be installed at every point where vehicles enter or exit the site. Maintenance of the stone access drive with additional stone throughout construction to ensure

mud is not tracked out onto the roadway is required. The length of the construction stone entrance must be at least 70 feet (30 feet for an individual subplot).

**SECTION 7.14 OTHER POLLUTANT CONTROLS**

No solid (other than sediment) or liquid waste, including building materials, shall be discharged in storm water runoff. Wash pit areas must be constructed in pre-designated areas as shown on the plans. The applicant must implement all necessary BMP's to prevent the discharge of non-sediment pollutants to the drainage system of the site or surface waters of the state. Under no circumstance shall concrete trucks wash out directly into a drainage channel, storm sewer or surface waters of the state. No exposure of storm water to waste materials is recommended.

**SECTION 7.15 SILT FENCE AND DIVERSIONS**

Sheet flow runoff from denuded areas shall be intercepted by silt fence or diversions to protect adjacent properties and water resources from sediment transported via sheet flow.

Where intended to provide sediment control, silt fence shall be placed on a level contour and not placed where concentrated flow is directed toward it. Silt fence shall be pulled tight and trenched at least 4" to 6" into the ground and backfilled to prevent runoff from cutting underneath the fence. Sections of silt fence shall be joined so there are no gaps in the fence. The ends of the silt fence shall be brought upslope of the rest of the fence to prevent runoff from going around the ends. Silt fence shall not control drainage areas larger than 5 acres. The relationship between the maximum drainage area to silt fence for a particular slope range is shown in the table below.

**TABLE 7: MAXIMUM DRAINAGE AREA TO SILT FENCE**

<i>Maximum drainage area (in acres) to 100 linear feet of silt fence</i>	<i>Range of slope for a particular drainage area (in percent)</i>
0.5	< 2%
0.25	≥2% but <20%
0.125	≥20% but <50%

The use of a combination barrier constructed of silt fence supported by straw bales or silt fence embedded within rock check dams may be effective for use in roadside ditches and on-site diversion swales and ditches. Placing silt fence in a parallel series does not extend the size of the drainage area. Storm water diversion practices shall be used to keep runoff away from disturbed areas and steep slopes where practicable. Such devices, which include swales, dikes or berms, may receive storm water runoff from areas up to 10 acres.

**SECTION 7.16 COMPLIANCE WITH OTHER REQUIREMENTS**

The WMSC plan shall be consistent with applicable State and/or local waste disposal, sanitary sewer or septic system regulations, including provisions prohibiting waste disposal by open

burning and shall provide for the proper disposal of contaminated soils to the extent these are located within the permitted area.

**SECTION 7.17 TRENCH AND GROUND WATER CONTROL**

There shall be no turbid discharges to surface waters of the state resulting from dewatering activities. If ground water or a trench contains sediment, it must pass through a sediment-settling pond or equally effective sediment control device prior to being discharged from the construction site. Alternately, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice. Ground water dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.

**SECTION 7.18 COMPLIANCE WITH GEAUGA SWCD APPROVED PLANS**

All storm water controls and BMPs on the construction site must follow and be installed per the approved WMSC plan. The Geauga SWCD may request a revised set of plans and/or calculations be submitted within 10 days to document and support the field change if a substantial variation is occurring or is proposed during construction.

**SECTION 7.19 STORM WATER BASIN CONSTRUCTION**

Storm water basins will not be considered complete or final until the basin has been finish graded, all excess sediment removed, outlet control structures installed, and temporary sediment dewatering structures removed.

**Section**

**8**

**ADMINISTRATIVE**

**SECTION 8.01 INSPECTION AND COMPLIANCE**

- A) The Geauga SWCD will make regular inspections of development areas to determine compliance with these rules and regulations and a report of the site's compliance status sent to the owner or his appointed representative. All soil-disturbing activities, including installation of permanent storm water facilities, will be constructed and maintained in conformity with approved WMSC plans and these regulations. If it appears that a violation of these regulations has occurred, Geauga SWCD shall issue the first Notice of Violation to the owner or his appointed representative and copy to the Commissioners indicating the deficiencies or items of non-compliance. If the deficiencies or items of non-compliance have not been corrected within a period of not less than thirty (30) days of the issuance of the first Notice of Violation, the Geauga SWCD shall issue a second Notice of Violation to the owner or his representative and a copy to the Commissioners indicating the deficiencies or items of non-compliance. If the deficiencies, or items of non-compliance have not been corrected within a period of not less than fifteen (15) days of the issuance of the second Notice of Violation, and the violation continues, the Geauga SWCD shall request in writing the opinion from the Prosecuting Attorney of Geauga County to determine if the violation is egregious. If, in the opinion of the Prosecuting Attorney, the violation is egregious, the Geauga SWCD shall receive written approval from the Prosecuting Attorney, to proceed with issuance of a Stop Work Order.
- B) Notwithstanding Section 8.01A, of these regulations, if at any time, the Commissioners determine that a violation exists and that imminent degradation of water quality to any water resource or severe damage to any property is occurring, the Commissioners may make a request to the Prosecuting Attorney of Geauga County in writing to seek an injunction or other appropriate relief in the court of common pleas 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 of other control measures and may assess a civil fine of not less than one hundred or more than five hundred dollars. Each day of violation of these regulations shall be considered a separate violation subject to a civil fine.
- C) Notwithstanding Section 8.01A of these regulations, if the owner fails to submit and receive approval of a WMSC Plan or fails to obtain the appropriate federal or state permits necessary for soil-disturbing activities, the Geauga SWCD may issue an immediate Stop Work Order.
- D) After issuance of a Stop Work Order by the Geauga SWCD, or determination of a violation by the Commissioners, the Geauga SWCD or the Commissioners shall request in writing from the Prosecuting Attorney to seek an injunction or other appropriate relief in the court of common pleas to abate excessive erosion and sedimentation and secure compliance with these regulations. The court of common pleas may order the construction of necessary measures to gain compliance and may also assess a civil fine of not less than one hundred (\$100) or more than five hundred (\$500) dollars. Each day of violation of a

rule or stop work order is issued it shall be considered a separate violation subject to this fine.

## **SECTION 8.02      VARIANCE**

- A) The Commissioners may grant a variance to these regulations where the owner or his appointed representative can show that a hardship exists whereby compliance with these regulations is not appropriate, based upon all of the following:
  - 1. That exceptional topographic or other physical conditions exist that are peculiar to the particular parcel of land.
  - 2. That the peculiar condition in (A) above did not result from previous actions by the owner.
  - 3. That a literal interpretation of these regulations would deprive the owner of rights enjoyed by other property owners.
- B) Adverse economic conditions shall not be considered as a valid reason or hardship for a variance request to be granted. No variances will be granted where activities occur that will defeat the purposes of these regulations.
- C) The request for a variance shall be submitted to the Geauga SWCD in writing and shall state the specific variances sought and include sufficient data to justify the granting of a variance. The request shall be reviewed by both the Geauga SWCD and Commissioners and may be either 1) Approved; 2) Approved with modifications; or 3) Disapproved within twenty (20) working days.

## **SECTION 8.03      APPEALS**

Any person aggrieved by any order, requirement, determination, or any other action or inaction by the Commissioners in relation to these regulations may appeal to the court of common pleas. Such an appeal shall be made in conformity with Chapters 2505 and 2506 of the Revised Code. Written notice of appeal shall be served on the clerk of the Geauga County Board of Commissioners and the office of the Geauga SWCD.

## **SECTION 8.04      MAINTENANCE & FINAL INSPECTION APPROVAL**

- A) To receive final inspection and acceptance of any project the following must be provided or completed:
  - 1. Disposition of all temporary erosion and sediment control measures.
  - 2. Final stabilization and all permanent erosion and sediment control measures must be established.
  - 3. Permanent storm water management facilities must be installed and made functional per the WMSC Plan as submitted and approved by the Geauga SWCD. An "as-built" plan must be certified (sealed, signed and dated) by a Professional Engineer with a statement certifying that the storm water facilities installed in the field meet the design standards, including, elevation and dimensions of the WMSC plans originally

approved by the Geauga SWCD. This may include a submittal of a revised set of storm water facility calculations if the design was altered significantly when constructed. The "as-built" plan must minimally provide the location, dimension, and elevations of all structures and reference the entity or individual (s) responsible for long-term maintenance. A sample certification document is available from the Geauga SWCD website at [http://www.geaugaswcd.construction\\_sites.htm](http://www.geaugaswcd.construction_sites.htm).

A copy of the complete inspection and maintenance agreement as specified in Section 4.02(O) must be provided as recorded with the Geauga County Recorder.

A landowner may alter an existing stormwater basin only upon written approval of the Geauga SWCD when the below process is followed in addition to submittal of appropriate WMSC Plan and subsequent plan review, filing and inspection fee as specified in these regulations:

- a. Stormwater Basin Modification Request process
  - i. Confirm ownership of basin
  - ii. Submit construction drawing of modification proposal showing:
    1. Surface area of disturbance
    2. Depth of excavation
    3. Details of changes or modification to outlet structure or appurtenances
    4. Statement from a registered professional engineer that alterations will not adversely affect the original design of the stormwater basin functionality
  - iii. Obtain written approval from Geauga SWCD
  - iv. Submit construction schedule specifying start and end dates
  - v. Provide Geauga SWCD 48-hour notification prior to start of construction
  - vi. Provide name, address and telephone number of contractor/excavator
  - vii. Upon completion of construction provide an as-built" plan and revised stormwater calculations of the modified basin as specified in Section 8.04, A, 4 above
- B) The above listed items must be received by the Geauga SWCD prior to receiving approval from the Geauga County Engineer's for the maintenance period inspection for subdivisions and prior to receiving final inspection approval of all other construction sites by the Geauga SWCD.
- C) As an alternative, the owner/responsible party may petition the County Commissioners for permanent maintenance of storm water control structures and/or facilities when the benefiting area involves two or more property owners, through the Ohio Drainage Law, R.C. 6131, or R.C. 1515. The County may require alternate designs of facilities to reduce maintenance costs.
- D) When construction is complete, the owner should file a Notice of Termination (NOT) with the Ohio EPA, notifying the Ohio EPA that the site is complete and no longer active. A copy of NOT form should be forwarded to the Geauga SWCD.