Geauga Soil and Water Conservation District

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Geauga County Water Management and Sediment Control Regulations

Amended 2025

Adopted January 28, 2025, by the Geauga County Board of Commissioners

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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 from land development.

SECTION 1.03 ADMINISTRATION

The Geauga Soil and Water Conservation District (hereinafter referred to as "Geauga SWCD"), acting as the Geauga County Board of Commissioner's duly authorized representative, shall administer these Regulations. Geauga SWCD 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 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 continue to implement Phase II of the stormwater 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 ensure 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 by any of the following:

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

C) Activities related to the production and/or cultivation of agricultural crops and related activities whose activities are regulated under the Agricultural Pollution Abatement Rules and Standards (Ohio Administrative Code 901:13)

D) Activities related to silviculture operations whose activities are regulated under Agricultural Pollution Abatement Rules and Standards (Ohio Administrative Code 1501:3)

E) Maintenance and construction of public highways, transportation, or drainage projects undertaken by a government agency or political subdivision provided that its standard sediment control policies are compliant with the latest Ohio EPA NPDES Construction General Permit and/or have been approved by the Commissioners 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 water or 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 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) Any 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

ABBREVIATED WATER MANAGEMENT AND SEDIMENT CONTROL (WMSC) PLAN: A plan prepared, designed, and approved in accordance with the specific requirements as contained in these Regulations, Section 5. This plan will provide for erosion and sediment control and management of construction debris and pollutants by utilizing BMPs to minimize erosion and prevent off-site sedimentation by containing sediment on site, or bypassing sediment-laden runoff through a sediment control measure and properly contain non-sediment debris during construction.

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

APPROVED: Compliant with these Regulations.

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

CONSTRUCTION ACTIVITIES: Equivalent to the definition of Soil Disturbing Activities

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 stormwater discharge rate from a developed site.

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

DETENTION STRUCTURE: A permanent stormwater 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 a person or persons, or operated as one development unit, and used or being developed for commercial, industrial, residential,

institutional, or other nonfarm construction or alternative that changes runoff characteristics, upon which soil disturbing activities occur.

DEVELOPMENT DRAINAGE AREA: A combination of each hydraulically unique drainage areas 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 by means of clearing, grading, excavating, filling, or other land surface alteration that exposes underlying soil.

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, pursuant to 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 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 (i.e. evenly distributed without large bare areas) with a density of at least 80% cover for the area has been established on all unpaved areas not covered by a permanent structure, or aggregate or equivalent stabilization measures, such as the use of mulches or geotextiles, have been employed.

FLOODPLAIN: 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 or soils that are considered “wetland” soils.

HYDROPHYTIC VEGETATION: Plants that are found in wetland areas. These plants are 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 OR SALE: A contiguous area of land where multiple separate and distinct construction activities may take place at different times on different schedules under one development area or sale by one owner

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.

LOW IMPACT DEVELOPMENT TECHNIQUE: An alternative site design strategy that uses or mimics natural and engineered processes that result in infiltration, evapotranspiration, and storage techniques to control stormwater where it is generated. The objective is to disperse these techniques as a network uniformly across a site to minimize runoff.

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 Stormwater 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:

A) 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, drainage district or similar entity, or a designated and approved management agency under section 208 of the act that discharges into surface waters of the state; and
B) Designed or used for collecting or conveying solely stormwater, 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.

NONFARM: 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 Unites 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.

PERMANENT SOIL 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 or geotextiles, have been employed.

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 stormwater management, land development, and urban watercourse protection. The most current edition of these standards shall be used with this regulation.

RETENTION STRUCTURE: A permanent stormwater management facility that provides for the storage of stormwater runoff while maintaining a permanent pool of water. These facilities are designed to delay and may have the ability to remove sediments and other pollutants.

RIPARIAN SETBACK: An area of naturally vegetated land adjacent to designated watercourses that, if appropriately sized, helps to stabilize streambanks, limit erosion, reduce flood sized flows, and/or filters and settles 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.

RUNOFF REDUCTION: Reduce the increase in runoff using management practices that effectively reduce runoff volume through practices such as infiltration, extended filtration, soil amendments, rainwater harvesting and reuse, evapotranspiration, etc.

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 nonfarm purposes.

SOIL AND WATER CONSERVATION DISTRICT: An entity organized under Chapter 940 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 SWCD.

SOIL DISTURBING ACTIVITIES: Clearing, grubbing, grading, excavating, filling, dumping, stripping, 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 also includes construction of buildings, structures, utilities, roadways, parking areas, and septic systems that will involve soil disturbance or alteration of the existing ground cover.

SOIL LOSS: Soil moved from a given site by the forces of erosion, measured using the Revised Universal 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.

STORMWATER: Stormwater runoff, snowmelt, surface runoff, and drainage.

STORMWATER MANAGEMENT: A system of structural and nonstructural practices used to safely convey, temporarily store, improve quality, release at an allowable rate, and/or minimize erosion and flooding from stormwater runoff.

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: Stormwater 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 Section 4 of these Regulations. This plan will provide for stormwater management to address the increase in stormwater 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 utilizing a sediment control measure. Equivalent to a SWP3.

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

WETLAND: Those areas that are inundated or saturated by surface or groundwater 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).

WQv (Water Quality Volume): The volume of stormwater runoff which must be captured and treated prior to discharge from the developed site after construction is complete. WQv 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.

Section 3 APPLICABILITY

SECTION 3.01 GENERAL APPLICABILITY CRITERIA FOR STORMWATER 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 (WMSC) 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 but are part of a larger common plan of development or sale that will ultimately disturb one (1) or more acres of land.

B) An Abbreviated WMSC 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 less than one (1) acre and are part of or within a larger common plan of development or sale.

C) An Abbreviated WMSC 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.

D) A clearing plan must be submitted if a landowner desires to begin parcel clearing operations by mechanized means prior to impending construction and 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 for an Abbreviated Water Management and Sediment Control Plan and appropriate fees as listed in Section 6.02.

E) Specific site conditions (e.g., 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.

F) All soil disturbing activities must comply with the intent and all other provisions of these Regulations even if a WMSC Plan may not be required to be submitted for approval.

G) Submittal of a WMSC Plan or an Abbreviated WMSC Plan that has been approved by the Geauga SWCD does not relieve the owner from complying with the full requirements of the most recent version of the Ohio EPA General Permit Authorization for Stormwater Discharges Associated with Construction Activity Under the National Pollutant Discharge Elimination System if applicable for the site.

H) A WMSC Plan that does not include 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 where no impervious areas will be constructed.

I) Any proposed construction that is not within the applicability of these Regulations as listed above, but stormwater runoff generated due to the proposed construction is directed toward an existing stormwater quality and/or quantity management facility, applicant must provide engineering documentation to ensure the facility can accommodate the additional runoff and still meet its original intended volumes and drawdowns for water quantity and quality management.

Section 4 WATER MANAGEMENT AND SEDIMENT CONTROL PLAN CONTENT

SECTION 4.01 GENERAL REQUIREMENTS

A) The WMSC Plan shall incorporate measures as recommended by the most current edition of the Rainwater and Land Development Manual.

B) A Registered Professional Engineer must certify stormwater and sediment and 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) The WMSC Plan shall incorporate all requirements within this Section and any additional requirements contained within the most recent version of the Ohio EPA General Permit Authorization for Stormwater Discharges Associated with Construction Activity Under the National Pollutant Discharge Elimination System that may be more restrictive.

SECTION 4.02 APPLICATION, NARRATIVE, AND SITE DESCRIPTION

The WMSC Plan must contain an application, narrative report and site description together with the information listed below.

A) Site Type (e.g., 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 where clearing, grubbing, excavating, filling, and grading will occur as well as off-site borrow and material disposal areas), and percentage of soil disturbance in relation to the entire site. Explanation of locations of off-site borrow and disposal areas must be provided including whether or not these areas are or will be covered under the project permit or an additional permit/plan will be provided. If an additional permit/plan will be provided it must be submitted simultaneously with the main project.

C) An estimate of the impervious area and percent imperviousness created by the soil disturbing activity.

D) Summary of stormwater 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. Stormwater runoff estimations and calculations (including runoff coefficients) for pre- and post-development;

4. Summary of allowable pre- and post-development peak discharges; and

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) A description of the condition of any on-site streams (e.g., prior channelization, bed instability or headcuts, channels on public maintenance, or natural channels).

H) An implementation schedule which describes in detail the sequence of major construction operations (e.g., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion, sediment and stormwater management practices or facilities to be employed during each operation of the sequence.

I) 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 waters of the state must be identified. If a FEMA designated 100-year floodplain exists on any watercourses, this shall additionally be listed.

J) For subdivided developments where the WMSC Plan does not call for a centralized sediment control structure capable of controlling sediment runoff from multiple individual lots as they are developed after construction of the subdivision infrastructure, provide a detail drawing of a typical individual lot showing standard erosion and sediment control practices including designation of specific practices for critical areas such as steep slopes, watercourse banks, channels, and riparian setbacks.

K) Location and description of any stormwater discharges associated with dedicated asphalt and dedicated concrete plants covered by this permit and the best management practices to address pollutants in these stormwater discharges.

L) 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.

M) Cover page (application must also provide this information) that includes the following:

1. Name and Location of the site – including address and sublot number, if applicable.

2. Name and Contact information including company name, individual name, address, individual email, and individual phone number for the following, as applicable:

a. Owner of Site

b. Owner of Project (if different from the site owner)

c. Person responsible for authorizing and amending the WMSC Plan

d. Professional Engineer certifying plans and calculation and other preparer, if applicable, of the Erosion and Sediment Control portion of the submittal. The Professional Engineer must additionally sign, seal, and date all plans and calculations

3. Preparation date of WMSC Plan.

4. Estimated dates that construction will commence and be completed.

5. Watershed where project is located (e.g., Chagrin, Grand, Cuyahoga, Mahoning).

6. Geographic Coordinates (i.e., latitude and longitude) for site and each stormwater management facility for the project.

N) A log documenting grading and stabilization activities as well as amendments to the WMSC Plan which occur after construction activities commence.

O) List of any conservation easements or other restrictive uses of the property on record.

P) An inspection and maintenance agreement binding the owner and all subsequent owners of lands where a stormwater 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 with the Geauga County Recorder: 1) Identify the party(s) responsible for long-term maintenance including repairs as necessary for all stormwater facilities; 2) Prohibit unauthorized alteration of all stormwater facilities without prior written approval from the Geauga SWCD; 3) Allow the Geauga SWCD access to the stormwater 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 stormwater 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 stormwater facility; 6) Specify that any pollutants collected in the stormwater facility are disposed of in accordance with local, state, and federal regulations; 7) Include and reference the Deed of the Property as an appendix to the document; and 8) Include the "as-built" drawing of the stormwater management facility including the plan and profile of the facility and details of the outlet structure and all appurtenances. 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.

Q) Prior to construction commencing or before the pre-construction meeting, the following must additionally be provided:

1. Primary operator or contractor's name, address, phone, and email that is responsible for the development area. This primary operator/contractor shall additionally file a Notice of Intent (NOI) with the Ohio EPA as a co-permittee for the project and provide evidence of such.

2. List of contact information for all contractor's/subcontractor's (name, address, phone, and email) 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. Identify which stormwater or erosion controls and phase, as listed in the construction sequence, that each contractor/subcontractor is responsible for.

R) If disturbance of streams or wetlands is anticipated, appropriate documentation as listed in Section 4.05 must additionally be provided as applicable.

SECTION 4.03 SITE CONSTRUCTION PLANS, DRAWINGS, AND DETAILS

The WMSC Plan shall include construction plan sheets containing drainage, erosion and sediment control measures, and stormwater control for proper management of the site during and after construction. 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.

C) Site Plan: A plan sheet indicating all temporary and permanent BMPs 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 Plan.

2. Soil types and their boundaries, including locations of unstable or highly erodible soils and/or known contaminated soils.

3. Existing and proposed two (2) foot contours with both clearly 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. Location of conservation easements, areas designated as open space or preserved vegetation areas, and a description of any associated temporary or permanent fencing or signage.

6. Sediment ponds and traps and associated details reflecting their dimensions, calculation of the disturbed area, sediment storage volume, detention volume, dewatering drawdown time, and drainage maps delineating the contributing drainage area to support the design of each pond or trap.

7. Location and detail drawings of all erosion and sediment control practices, including location of areas likely to require temporary stabilization during the course of site development.

8. Areas designated for the storage or disposal of solid and liquid wastes, including dumpster areas for construction debris, areas designed for cement truck washout, and vehicle fueling.

9. The location of designated construction entrances where vehicles will access the construction site.

10. The location of any areas of proposed floodplain fill, floodplain excavation, stream restoration, or known temporary or permanent stream crossing activities in watercourses.

11. The location and dimensions of riparian setbacks that may be applicable through local zoning or subdivision regulations.

12. Existing and planned location of buildings, roads, parking facilities, and utilities.

13. Detail drawings of all permanent and temporary structural stormwater management practices that will be used to control pollutants in stormwater before and after construction operations have been completed. Include the location and details of existing and planned drainage features including catch basins, culverts, ditches, swales, storm sewers, surface inlets, and outlet structures.

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. 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 nonstructural 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, minimization of disturbance of steep slopes, minimization of soil compaction, 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 stormwater 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 stormwater management and 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 by means of a mechanized vacuum of the roadway may be necessary to ensure roadway does not build up with sediment."

    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 SWCD or its representatives."

    d. "Sediment/stormwater 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 stormwater 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 stormwater runoff."

    f. "Site stabilization either permanent or temporary must follow the requirements as applicable on the following tables:"

Area requiring permanent stabilization	***Time frame to apply permanent stabilization***
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.

Area requiring temporary stabilization	*Time frame to apply temporary stabilization*
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 14 days.
For all construction activities, any disturbed area, including soil stockpiles, that will be dormant for more than 14 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 STORMWATER CONTROL METHODS

Stormwater control methods shall be designed to control flooding from within the site as well as off-site flooding and erosion that may be caused by discharge from the development. As part of the design, the Engineer shall provide documentation that supports and ensures any stormwater point discharge is directly connected to a public storm sewer system, public drainage ditch, or other natural channel with the capacity to accept the discharge. If none of these outlets are available, the post-developed surface water drainage discharge location and types shall match the pre-developed surface water drainage discharge location and types and may not degrade adjoining properties. This may require the designer use multiple stormwater management features to try to match the pre-developed discharge locations. In these cases, the designer is also encouraged to utilize grass filter strips, impervious area disconnection and other runoff reduction or low-impact development techniques to minimize discharge rates and maintain sheet flow. The design engineer shall additionally manage all distinct drainage watersheds from the developed area and not redirect into different watersheds (unless significantly minor).

Construction activities shall be exempt from the requirements of this section if the proposed activities do not include the installation of any impervious surface, or include abandoned mine land reclamation regulated by the Ohio Department of Natural Resources, stream and wetland restoration activities, and wetland mitigation activities or it can be demonstrated that the post-construction stormwater 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 stormwater management plan. Nonresidential 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 stormwater management requirements.

Construction activities on a residential lot that disturb over one acre, but less than two acres may in lieu of the requirements of this section submit as part of the Water Management and Sediment Control Plan a description of how stormwater runoff from the site will be treated to ensure there are no adverse impacts to receiving waters. This may be shown by ensuring downspouts are disconnected from storm sewers or other water

conveyances by utilizing splash blocks that drain to vegetated buffer areas. Impervious areas such as driveways, sidewalks and patios shall direct surface runoff to vegetated buffer areas and not connected directly to streams or waterways. Practices must be chosen to treat stormwater runoff for pollutants and to reduce adverse impacts on receiving waters. The applicant must also provide justifications of why practices within Table 2 or 3 or Runoff Reduction practices listed in this section are not feasible.

A) To prevent pollution of public waters by soil sediment and protect the integrity of watercourses from erosion caused by the effects of accelerated stormwater runoff from development areas, the increased peak rates and volumes of runoff shall be controlled and meet the below itemized criteria. 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 sub-drainage areas drain to the same watercourse, 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 a computerized Hydrologic Analysis Modeling tool that employs the SCS TR-20 and/or SCS TR-55 Hydrologic Analysis Methods[1] along with the latest rainfall data available from NOAA (National Oceanic and Atmospheric Administration) Atlas 14, to determine the total <u>volume</u> (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 buildout of the proposed condition. Curve numbers for the pre-development 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 the current construction under review. 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.

[1] U.S. Department of Agriculture Soil Conservation Service. May 1983. *TR-20: Computer Program for project formulation hydrology*.

2. From the volumes determined in (1) 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 chosen to be compatible with site and soil conditions and be incorporated into the permanent drainage system for the site. The BMP(s) chosen must be sized to treat the water quality volume and be additionally sized for protection of watercourses from erosion and sediment pollution and ensure compliance with Ohio's Water Quality Standards in OAC Chapter 3745-1. The water quality volume, WQ_v, shall be equivalent to the volume of runoff from a 0.90-inch rainfall and shall be determined using the following equations:

1. Using the following equation: $WQ_v = Rv * P * A/12$

Where: WQ_v = water quality volume in acre-feet

P = 0.90-inch precipitation depth
A = area draining into the BMP in acres
Rv = volumetric runoff coefficient calculated equation below:

$Rv = 0.05 + 0.9i$

where i = 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.)

2. An additional volume equal to 20 percent of the WQ_v shall be incorporated into the WQv BMP for sediment storage and/or reduced infiltration capacity post-construction.

3. The WQ_v BMP must be designed to treat 100% of the WQv of each unique drainage area and the entire area draining into the WQ_v BMP regardless of whether or not it is part of the proposed project. To avoid treating off-site drainage, rerouting around WQ_v BMP may be utilized.

4. WQ_v BMPs, as listed in Tables 2 and 3 below, 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 and avoid the creation of nuisance conditions. The outlet structure for the post-construction WQ_v BMP must not discharge more than the first half of the WQv. The WQv is the volume of stormwater runoff that must be detained by a post-construction practice as specified by the most recent edition of the Rainwater and Land Development Manual.

   If there is an existing post-construction WQv BMP that treats runoff from the disturbed area and the WQV BMP meets the post-construction requirements of this permit, no additional post-construction WQv BMP will be required. A regional stormwater WQv BMP may be used to meet the post-construction requirement if: (1) the WQv BMP meets the design requirements for treating the WQv; and (2) a legal agreement is established through which the regional WQv BMP owner or operator agrees to provide this service in perpetuity. Design information for these regional facilities such as drainage areas, capacities, elevations, outlet details, and drain times shall be included in the submitted WMSC Plan.

TABLE 2: EXTENDED DETENTION POST-CONSTRUCTION PRACTICES WITH MINIMUM DRAIN TIMES

Extended Detention Practice	***Minimum Drain Time of WQ_v***
Permeable Pavement – Extended Detention The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time.	24 hours
Dry Extended Detention Basin with Forebay and Micropool The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time. An additional volume equal to 20% of the WQv shall be incorporated into the BMP for sediment storage. Dry extended detention basins must include forebay and a micropool each sized at a minimum 0.1 X WQv and a protected outlet or include acceptable pretreatment and a protected outlet.	48 hours
Wet Extended Detention Basin The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time. Provide both a permanent pool and an extended detention volume above the permanent pool, each sized at 1.0 x WQv.. An additional volume equal to 20% of the WQv shall be incorporated into the BMP for sediment storage.	24 hours

Extended Detention Constructed Wetland The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time. An additional volume equal to 20% of the WQv shall be incorporated into the BMP for sediment storage.	24 hours
Sand Filter – Extended Detention The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time. The WQv ponding area shall completely empty between 24 and 72 hours.	24 hours
Underground Storage Facility – Extended Detention The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time. Underground storage must have pretreatment for removal of suspended sediments included in the design and documented in the WMSC Plan. This pretreatment shall concentrate sediment in a location where it can be readily removed. For non-infiltrating, underground extended detention systems, pretreatment shall be at least 50% effective at capturing total suspended solids according to the testing protocol established in the Alternative Post-Construction BMP Testing Protocol.	24 hours

TABLE 3: INFILTRATION POST-CONSTRUCTION PRACTICES WITH MAXIMUM DRAIN TIMES

Infiltration Practice	***Maximum Drain Time of WQ_v***
Bioretention Bioretention soil media shall have a permeability of approximately 1-5 in/hr. Meeting the soil media specifications in the Rainwater and Land Development Manual is considered compliant with this requirement. Bioretention cells must have underdrains unless in-situ conditions allow for the WQv (surface ponding) plus the bioretention soil (to a depth of 24 inches) to drain completely within 48 hours. The WQv stored above ground shall fully drain the WQv within 24 hours to minimize nuisance effects of standing water and to promote vigorous communities of appropriate vegetation. The WMSC shall demonstrate the design infiltration rate values are derived from site-specific measurements obtained through field tests of the in-situ soil for practices designed to infiltrate the WQv.	24 hours
Infiltration Basin The WQv stored above ground shall fully drain the WQv within 24 hours to minimize nuisance effects of standing water and to promote vigorous communities of appropriate vegetation. The WMSC shall demonstrate the design infiltration rate values are derived from site-specific measurements obtained through field tests of the in-situ soil for practices designed to infiltrate the WQv.	24 hours
Infiltration Trench The WMSC shall demonstrate the design infiltration rate values are derived from site-specific measurements obtained through field tests of the in-situ soil for practices designed to infiltrate the WQv. Must be designed to fully infiltrate the WQv and shall empty within 48 hours to recover storage for subsequent storm events.	48 hours
Permeable Pavement – Infiltration The WMSC shall demonstrate the design infiltration rate values are derived from site-specific measurements obtained through field tests of the in-situ soil for practices designed to infiltrate the WQv. Must be designed to fully infiltrate the WQv and shall empty within 48 hours to recover storage for subsequent storm events.	48 hours

Underground Storage - Infiltration The WMSC shall demonstrate the design infiltration rate values are derived from site-specific measurements obtained through field tests of the in-situ soil for practices designed to infiltrate the WQv. Must be designed to fully infiltrate the WQv and shall empty within 48 hours to recover storage for subsequent storm events. Underground storage with infiltration must have adequate pretreatment of suspended sediments included in the design and documented in the WMSC Plan in order to minimize clogging of the infiltrating surface. Pretreatment shall concentrate sediment in a location where it can be readily removed. Examples include media filters situated upstream of the storage or other suitable alternative approved by the Ohio EPA. For infiltrating underground systems, pretreatment shall be at least 80% effective at capturing total suspended solids according to the testing protocol established in the Alternative Post-Construction BMP Testing Protocol.	48 hours

E) Methods for controlling the rate, volume, and quality of stormwater 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 nonerosive 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 stormwater 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 stormwater, with properly designed retention basins being preferred. For example, utilizing permanent ponds and lakes as stormwater basins that provide multiple use areas for stormwater 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: stormwater detention structures (including extended dry basins); stormwater 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. An applicant may choose alternative post-construction BMPs that are not listed in Tables 2 or 3 if the applicant provides a letter from the Ohio EPA authorizing its approval. Alternative post-construction BMPs are required to have previously been tested to confirm stormwater treatment efficacy equivalent to those have BMPs listed

in Tables 2 and 3 using the protocol described under the Use of Alternative Post-Construction BMPs section within the latest version of the Ohio EPA General Permit Authorization for Stormwater Discharges Associated with Construction Activity Under the National Pollutant Discharge Elimination System.

8. All concentrated stormwater runoff from a post-construction BMP that flows to natural wetlands or adjacent parcels shall include a method to diffuse flow before the runoff enters the wetlands or adjacent parcel.

F) A description of the post-construction BMPs 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 (e.g., 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. Design factors for the pond shall include benching or minimum side slopes of 3:1; and

8. Stormwater ponds shall not be located in line with a stream.

H) Maintenance plans and Inspection and Maintenance Agreements shall be provided for all post-construction BMPs. Maintenance plans shall be provided by the permittee to the post-construction operator of the site upon completion of construction activities. These plans shall additionally be included in the Long-Term Inspection and Maintenance Agreement that is recorded with the deed as required in Sections 4.02 and 8.04. All stormwater management facilities shall be cleaned and maintained such that the full water quality volume is available and that the facility functions as designed at all times in perpetuity.

I) Permanent post-construction stormwater quality structures shall not be installed until 80% vegetation has been established, excess sediment buildup is removed, all embankments are finish graded, and all temporary sedimentation control devices have been removed. Upon final site stabilization, all stormwater basins must have all post-construction flow control devices installed.

For redevelopment projects (i.e., developments on untreated previously developed property), post- construction stormwater quality practices shall either ensure a 20% net reduction of the site's volumetric runoff coefficient through impervious area reduction with soil restoration or replacing impervious roof areas with green roof areas (for these

purposes green roofs shall be considered pervious surfaces), provide for treatment of at least 20% of the WQ_v for the previously developed area using a practice meeting Tables 2 or 3 criteria in this Section, or a combination of the two. Drain down times cannot be reduced by 20%, only the total volume to be treated can be reduced by 20%. Where there is a combination of redeveloped areas and new development, a weighted approached shall be used with the following equation:

$$WQv = P * A * [(Rv_1*0.2) + (Rv_2-Rv_1)] / 12$$

where

P = 0.90 inches
A = area draining in the BMP in acres
Rv1 = volumetric runoff coefficient for existing conditions (current site impervious area)
Rv2 = volumetric runoff coefficient for proposed conditions (post-construction site impervious area)

Post-construction practices shall be located to treat impervious areas most likely to generate the highest pollutant load, such as parking lots or roadways, rather than areas predicted to be cleaner such as rooftops.

J) Transportation projects – Construction of new roads and roadway improvement projects by public entities (e.g., state, counties, townships, cities, or villages) may implement post-construction BMPs in compliance with the current version (as of the effective date of this permit) of the Ohio Department of Transportation's "Location and Design Manual, Volume Two Drainage Design" that has been accepted by the Ohio EPA as an alternative to the conditions of the Ohio EPA Construction General Permit.

K) Runoff reduction practices may be utilized to reduce the size of structural post-construction practices used to capture and treat the WQv by incorporating runoff reducing practices into the design of the site's drainage system. The approach to calculate and document runoff reduction is detailed in the most recent edition of the Rainwater and Land Development Manual. BMP specific runoff reduction volumes are set by specifications within the Rainwater and Land Development Manual for the following practices:

- Impervious surface disconnection
- Rainwater harvesting
- Bioretention
- Infiltration basin
- Infiltration trench
- Permeable pavement with infiltration
- Underground storage with infiltration
- Grass swale
- Sheet flow to filter strip
- Sheet flow to conservation area

Runoff reduction practices may also be utilized in areas where a site does not drain to a common drainage system such as sheet flow from rear yards of residential lots and low-density development scenarios.

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 U.S. 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 stormwater 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, a copy of the check and application for a permit, 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.

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 United States. 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 BMPs required and shown on the plans shall have the appropriate construction detail and notes provided on the submitted plan. A Registered Professional Engineer, Registered Professional Surveyor, Registered Landscape Architect, or Certified Professional Erosion and Sediment Control Specialist (CPESC), or owner with assistance from the Geauga SWCD may prepare this plan.

SECTION 5.02 PLAN COMPONENTS

The Abbreviated WMSC Plan shall include a minimum of the following BMPs and associated details and documents as applicable:

A) A completed Abbreviated WMSC Plan Application that includes site information as indicated in Section 4.02, A, B, and M of these Regulations.

B) Site Plan that includes information as indicated in Section 4.03 B, C, C1, C3 thru C12, C14, C15 and C17 of these Regulations.

C) Compliance with State and Federal Regulations as indicated Section 4.05 B and C of these Regulations.

D) 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 and placed over a geotextile fabric.

E) Street Sweeping: Streets directly adjacent to construction entrances and receiving traffic from the development area shall be cleaned daily to remove sediment tracked offsite. If applicable, the catch basins on these streets nearest to the construction entrances shall be protected with a BMP and maintained weekly.

F) Protection of Adjacent Properties: An appropriate BMP (e.g., 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.

G) 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.

H) On-Site Channel/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.

I) 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.

J) Stabilization: The development area shall be stabilized as detailed in Table 4 below.

TABLE 4: STABILIZATION – SMALL LOTS

Area requiring stabilization	***Time frame to apply stabilization***
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 14 days.
Any disturbed area, including soil stockpiles, that will be dormant for more than 14 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.	

I) 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. Documentation of these inspections must be onsite and readily available upon request. Maintenance shall occur as detailed below:

1. <u>When practices require repair or maintenance.</u> 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 AND REVIEW

SECTION 6.01 WMSC PLAN SUBMITTAL AND REVIEW

A) When a WMSC Plan is required, two (2) copies of all plans and calculations shall be submitted to Geauga SWCD along with the applicable fee. When an Abbreviated WMSC Plan is required one (1) copy of all plans 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 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 noncompliance to the owner or to his appointed representative. Indication of noncompliance 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 stormwater management facilities has changed (i.e., new location or 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.

E) If a site is actively under construction and a new owner takes over, a resubmittal of a complete WMSC Plan or Abbreviated WMSC Plan is NOT required as long as scope of work has not changed. The new owner must notify the Geauga SWCD and submit an updated, as applicable to the site, WMSC Plan application, Contractor WMSC Plan Certification Form, and Ohio EPA NOI.

F) If a site is idle and construction is not complete and it has been 2 years or more since the project was approved and a new owner takes over, the new owner must resubmit a complete WMSC submittal as applicable in either Section 4 or 5 of these Regulations including plans, calculations, application, and applicable fee.

G) If a site is idle and construction is not complete and it has been under 2 years since the project was approved and the approval was granted under the Geauga County WMSC Regulations and Ohio EPA Construction General Permit in place at the time of transfer, no resubmittal is required. The new owner must notify the Geauga SWCD and submit an updated application and Contractor WMSC Plan Certification Form and updated Ohio EPA NOI.

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 "Geauga SWCD." If a site is issued a Notice of Violation (NOV) an additional reinspection fee of $100 for a residential building lot and $250 for a non-residential building lot may be incurred for each additional reinspection required until the site is brought into compliance.

Type of Site	Area of Disturbance	Fee
All building lots EXCEPT single-family residential lots and subdivisions (Stormwater quality AND/OR quantity design and calculations required with submittal to be reviewed)	1-3.9 acres	$ 750.00
	4-7.9 acres	$ 1250.00
	8-14.9 acres	$ 1750.00
	15-19.9 acres	$ 2250.00
	20 – 29.9 acres	$ 2,500.00
	30-39.9	$2,750.00
	>40	$3,000.00
All building lots EXCEPT single-family residential lots and subdivisions (Both stormwater quality and quantity design and calculations NOT required with submittal because stormwater provisions have been previously designed and built for full buildout of site)	1 acre or more	$400.00
All building lots EXCEPT single-family residential lots and subdivisions	< 1 acre and NOT part of a larger common plan of development or sale	$200.00
Utility Line Construction or Road Improvement within road right of way	Any	$300.00
Single-Family Residential lot	< 1 acre	$80.00
Single-Family Residential lot	1-2 acres	$100.00
Single-Family Residential lot	>2 acres	$250.00
Clearing Only (impending residential build)	N/A	$60.00
Clearing Only (impending non-residential build)	N/A	$150.00

Type of Site	# Sublots/Units	Fee
Subdivision (commercial, industrial, condominium, PUD, or residential) ** Phased Subdivisions shall be charged per phase unless multiple phases will be under construction simultaneously.	<6	$ 2,000.00
	6-10	$ 2,250.00
	11-20	$ 2,500.00
	21-30	$ 3,000.00
	31-40	$ 3,250.00
	41-50	$3,500.00
	>50	$3,750.00

Section 7 PERFORMANCE AND DESIGN STANDARDS

SECTION 7.01 GENERAL REQUIREMENTS AND NOTIFICATION

A WMSC 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 nonadherence 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 stormwater management facilities required and built for the project.

SECTION 7.02 PROTECTION OF ADJACENT PROPERTIES

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, sediment basins, or by a combination of such measures.

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

Area requiring permanent stabilization	***Time frame to apply permanent stablization***
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 conveyances of stormwater 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)
τ = 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 O.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.

3. Soil stabilization measures should be selected to be appropriate for the time of year and site conditions and may include the need for use of the addition of topsoil, straw mulch, erosion control matting, rock riprap, and/or retaining walls. Permanent seeding should be done when soil temperatures are at least 50° F or between March 15 and September 30. Dormant seeding can be done from October 1 to March 15 and must include a mulch cover and a seeding rate increase of 50% from nondormant seeding standards. If hydroseeding is chosen to be used during the dormant seeding window the seeding rate increase of 50% and a mulch cover will also be required. At all other times of the year, the area should be temporarily stabilized until a permanent seeding

can be applied. The addition of a small grain into the seed mix may aid germination and development.

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 and then covering with straw mulch. Either a mulch only or dormant seeding as specified in Section 7.03 A (3) above shall be used between October 1 and March 15. 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 14 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

Area requiring temporary stabilization	***Time frame to apply temporary stabilization***
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 14 days.
Any disturbed area, including soil stockpiles, that will be dormant for more than 14 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 October 1 and March 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 STORMWATER 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 nonerosive flow velocity from the structure to a watercourse, so the natural physical and biological characteristics and functions are maintained and protected.

B) Control of stormwater 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 (stormwater 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 1st thru March 15th due to the inability of an immediate re-establishment 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, allow sediments to settle and/or divert 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 (basin or trap) is required when any one of the following conditions will exist:

1. Concentrated stormwater runoff (storm sewer, pipe, or ditch);

2. Runoff from drainage areas that exceed the design capacity of silt fence, inlet protection, or other sediment barriers; and

3. Runoff from drainage areas that exceed the design capacity of inlet protection (generally 1 acre).

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 dewatering 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 ratio 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 sampling and tests, as needed, until the sediment basin meets this TSS performance standard. The addition of flocculants may be required to meet the TSS limit. Prior to adding flocculants, the owner or owner's representative must provide documentation to the Geauga SWCD that the product proposed is non-toxic to downstream aquatic life.

SECTION 7.06 INSTALLATION OF SEDIMENT CONTROLS

Sediment basins and traps, diversion dikes, sediment barriers, and other measures intended to trap sediment onsite 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, stormwater 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 filter out sediment and minimize sediment-laden water from entering storm drain systems, unless the storm drain system drains to a fully functional sediment-settling pond and approved by the Geauga SWCD. 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 offsite.

If ponding on an active roadway will be a safety concern or is not permitted, the contractor shall make use of an insert that is placed in the catch basin. This insert will allow water to pass through the inlet grate and capture the sediment inside the catch basin structure rather than on the roadway. This method may require more frequent maintenance to ensure ponding on the roadway does not occur.

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 stormwater 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) 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 in a straight line perpendicular to 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 ensure continued performance of their intended function throughout the course of soil disturbing activities and until any upslope 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 offsite. 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 sublot).

SECTION 7.14 OTHER POLLUTANT CONTROLS

No solid (other than incidental sediment) or liquid waste, including building materials, shall be discharged in stormwater runoff. Wash pit areas must be constructed in pre-designated areas as shown on the plans. The applicant must implement all necessary BMPs 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 stormwater to waste materials is recommended.

Covered dumpsters shall be provided for all construction solid waste and debris. Vehicle and equipment refueling areas shall be provided with self-contained tanks to control accidental spillage.

SECTION 7.15 SILT FENCE, FILTER SOCK 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. Silt fence shall be placed at least 5' from the toe of slope for sediment deposition. 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. Placing silt

fence in a parallel series does not extend the size of the drainage area. 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

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

Filter sock (silt sock) may be used in lieu of silt fence if approved by Geauga SWCD or indicated on the approved plan. Filter sock shall be 3 or 5 mil continuous tubular, HDPE 3/8" knitted mesh netting material, filled with compost. Compost shall be weed, pathogen and insect free, free of any refuse, contaminants or other materials toxic to plant growth, be derived from a well-decomposed source of organic matter and consist of particles ranging from 3/8" to 2". Filter socks shall be placed on a level line across slopes parallel to the base of the slope. Filter socks shall be placed at least 5' from the toe of slope for sediment deposition. Built up sediment shall be removed when it has reached 1/3 of the filter sock height. When a filter sock is no longer required, it shall be removed or dispersed on site. The maximum drainage area per 100 feet of filter sock is ½ acre and is dependent on slope as shown in chart below. Filter socks shall be staked at regular intervals no greater than 10'. When joining section of filter sock, they shall either be overlapped and zip tied together, or one sock can be stretched over the other to join two together. Either method should be overlapped or stretched 1'-2' over the other section.

TABLE 8: MAXIMUM SLOPE LENGTH ABOVE FILTER SOCK

SLOPE	**RATIO (H:V)**	**8"**	**12"**	**18"**	**24"**
0%-2%	0 – 50:1	125'	250'	300'	350'
2% - 10%	50:1 – 10:1	100'	125'	200'	250'
10% - 20%	10:1 – 5:1	75'	100'	150'	200'

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. Stormwater 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 stormwater runoff from areas up to 10 acres and be used to direct off-site sediment free surface water from entering the disturbed work area or it may be used to direct surface water from a construction site to a sediment basin.

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.

Prior to or upon commencement of construction, the general contractor or other contractor that has control over the day-to-day operations on the site shall file a no fee Ohio EPA Co-Permittee NOI for the site.

SECTION 7.17 DEWATERING

There shall be no turbid discharges to surface waters of the state resulting from dewatering activities. When water must be pumped for the purposes of dewatering for items 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. If groundwater 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. Groundwater 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 groundwater 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 stormwater 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 STORMWATER BASIN CONSTRUCTION

Stormwater 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 Regulations and a report of the site's compliance status sent to the owner or the owner's appointed representative. All soil disturbing activities, including installation of permanent stormwater facilities, must be constructed and maintained in conformity with approved WMSC Plans and these Regulations.

B) If it is determined by the Geauga SWCD that a violation of these Regulations occurred and the owner failed to submit and receive approval of a WMSC Plan or failed to obtain the appropriate federal and/or state permits necessary for soil disturbing activities, an immediate Stop Work Order may be issued.

C) If it is determined by Geauga SWCD that a violation of these Regulations has occurred regardless of whether or not the owner has obtained the proper permits, Geauga SWCD shall issue the first Notice of Violation to the owner or the owner's appointed representative and copy to the Commissioners indicating the deficiencies or items of noncompliance. At the point of issuance of a Notice of Violation, all inspections may be charged a $100 reinspection fee for a residential building lot and $250 for a non-residential building lot for each additional reinspection required until the site is brought into compliance. If the deficiencies or items of noncompliance have not been corrected within a period of not less than thirty (30) calendar 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 noncompliance. If the deficiencies, or items of noncompliance have not been corrected within a period of not less than fifteen (15) calendar days of the issuance of the second Notice of Violation and the violation continues, the Geauga SWCD may:

1. 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, a written approval will be issued to Geauga SWCD to proceed with issuance of a Stop Work Order and a copy of such notice provided to the Commissioners; or,

2. Request the Commissioners issue a determination of violation.

D) After issuance of a Stop Work Order by the Geauga SWCD or determination of a violation by the Commissioners, the Geauga SWCD shall request that the Commissioners seek in writing from the Prosecuting Attorney of Geauga County 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 or more than five hundred dollars. Each day of violation of a

rule or Stop Work Order is issued shall be considered a separate violation subject to this civil fine.

E) The owner to whom a Stop Work Order is issued may appeal the order to the Geauga County Court of Common Pleas, seeking an equitable or other appropriate relief from the order.

SECTION 8.02 VARIANCE

A) The Commissioners may grant a variance to these Regulations where the owner or the owner's 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 (1) 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 the Commissioners and may be either 1) Approved; 2) Approved with modifications; or 3) Disapproved, within twenty (20) working days of receipt of the request.

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 AND FINAL INSPECTION APPROVAL

A) To receive final inspection and acceptance of any project the following must be provided or completed within 2 months of completion of construction:

1. Disposition of all temporary erosion and sediment control measures.

2. Final stabilization and all permanent erosion and sediment control measures must be in existence.

3. Permanent stormwater 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 stormwater 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 stormwater 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.com.

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

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 the site by the Geauga SWCD.

B) 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 an appropriate WMSC Plan and subsequent plan review, filing, and inspection fee as specified in these Regulations:

1. Stormwater Basin Modification Request process
    a. Confirm ownership of basin
    b. Submit construction drawing of modification proposal showing:
        i. Surface area of disturbance
        ii. Depth of excavation
        iii. Details of changes or modification to outlet structure or appurtenances
        iv. Statement from a registered Professional Engineer that alterations will not adversely affect the original design of the stormwater basin functionality
    c. Obtain written approval from Geauga SWCD
    d. Submit construction schedule specifying start and end dates
    e. Provide Geauga SWCD 48-hour notification prior to start of construction
    f. Provide name, address, and telephone number of contractor/excavator
    g. Upon completion of construction provide an as-built" plan and revised stormwater calculations of the modified basin as specified in Section 8.04, A) 3 above

C) As an alternative, the owner/responsible party may petition the Commissioners for permanent maintenance of stormwater control structures and/or facilities when the benefiting area involves two or more property owners through the Ohio Drainage Law, O.R.C. 6131 or O.R.C. 1515. The County may require alternate designs of facilities to reduce maintenance costs.

D) When construction is complete, the owner must 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 the NOT form shall be forwarded to the Geauga SWCD.

E) Geauga SWCD shall regularly inspect all permanent stormwater management facilities to ensure they are functioning as originally designed. The responsible party as listed in the long-term maintenance agreement will be notified of any repairs or maintenance required. The person(s) listed as the responsible party must correct any deficiencies as noted within the time frame listed in the inspection report. Failure to correct deficiencies will result in enforcement action as listed in Section 8.01 of these Regulations.