

VILLAGE OF MARIEMONT, OHIO

RESOLUTION NO. ~~R~~ 5 -20

TO ADOPT AMENDED ARTICLE I, III, AND V RULES AND REGULATIONS FOR THE HAMILTON COUNTY STORM WATER DISTRICT

WHEREAS, pursuant to the Storm Water Phase II Permit Program (the "Phase II Program") of the National Pollutant Discharge Elimination System ("NPDES") of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq., 40 C.F.R. Parts 122.30 through 122.37; the Ohio Water Pollution Control Act (Ohio Revised Code Chapter 6111); and Ohio Administrative Code Chapter 3745-39, referred to as Phase II Storm Water Rules for Small Municipal Separate Storm Sewer Systems ("MS4"); dischargers of storm water from Small MS4s must obtain a NPDES permit from the Ohio Environmental Protection Agency; and

WHEREAS, the Phase II Program, as administered by USEPA and the Ohio EPA, requires designated communities, including the County of Hamilton (the "County") and various local independent jurisdictions which own and/or operate an MS4, to develop a Storm Water Management Program under the Phase II Permit to address the quality of storm water runoff within their jurisdictions; and

WHEREAS, The Board of County Commissioners of Hamilton County (the "Board") has created the Hamilton County Storm Water District ("HCSWD") under Chapter 6117 of the Ohio Revised Code to address the requirements of the Phase II Program in the unincorporated regions of Hamilton County ("County"), and within those incorporated municipal corporations within the County which have assented to the formation of the HCSWD and consented to its operation within their corporate limits ("Member Municipalities", or "Members", or "Co-Permittees"); and

WHEREAS, the attached amended Rules and Regulations which have been adopted by the Hamilton County Board of County Commissioners on September 12, 2019 in order to carry out the responsibilities of MS4's under the Phase II Permit Program, are intended to apply to non-storm water discharges, storm water discharges generated by construction and/or earth disturbing activities, and post-construction storm water discharges from development and previously developed sites within the unincorporated regions of the County and within municipal corporations which are co-permittees under the MS4 permit; and

WHEREAS, the Council of the City/Village of Mariemont, State of Ohio ("Council"), as a co-permittee municipal corporation under the Phase II Permit, has previously adopted through resolution (ordinance) and is implementing the HCSWD Rules and Regulations to protect the health, safety and welfare of its citizens by preventing non-storm water discharges and controlling storm water discharges from construction, development, and re-development sites.

WHEREAS, the above adopted resolution states that these Rules and Regulations of the HCSWD may be duly amended or modified by the Board of County Commissioners of Hamilton County, Ohio from time to time, and that Council will adopt said amendments or modifications to these Rules and Regulations of the HCSWD unless Council enacts alternative rules and regulations that are mutually agreed to be as equally stringent or more stringent than the Rules and Regulations of the HCSWD.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE VILLAGE OF MARIEMONT, HAMILTON COUNTY, OHIO, TWO THIRDS OF THE MEMBERS ELECTED THERETO CONCURRING:

SECTION I That Council hereby adopts, establishes and implements within Mariemont, the amended Rules and Regulations of the Hamilton County Storm Water District, Article I – Definitions, Article III – Earthworks Regulations, and Article V – Post-Construction Storm Water Quality Regulations ("Post-Construction Regulations") the same are set forth in Exhibit A which are attached hereto and incorporated into this Resolution as if fully rewritten herein.

SECTION II That Council and the appropriate administrative officials of Mariemont will cooperate with the HCSWD in the enforcement of these amended Rules and Regulations, and shall exercise such legal authority as it may possess which may be reasonably required to assist the HCSWD in carrying out the intent of the Rules and Regulations within the municipal corporate boundaries in order to achieve and maintain compliance with the requirements of state and federal law regarding the Phase II Program.

SECTION III That Council hereby:

- a. authorizes and designates the HCSWD and its authorized designated agent(s) to act as the *Enforcing Official* for Article III Earthwork Regulations, and Article V Post-Construction Storm Water Quality Regulations ("Post-Construction Regulations") within the corporate boundaries of Mariemont; and
- b. consents to and hereby authorizes the proper administrative officials of Mariemont to enter into such agreement with the Board as may be necessary and appropriate for the District to provide such Phase II services; and

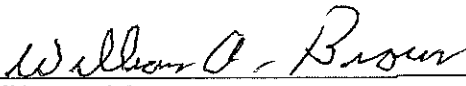
SECTION IV That it is the intent of the Council that the remedies provided in this Resolution and in the Rules and Regulations are intended to be in addition to and not exclusive of any other remedies as may be available under applicable federal, state or local law.

SECTION V That the provisions of this Resolution are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Resolution or the application thereof to any person, establishment, or Circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Resolution.

SECTION VI That this resolution shall go into effect and become law from and after the earliest period allows by law.

SECTION VII That the Clerk of Council for the Village of Mariemont is hereby directed to certify a copy of this Resolution to the Board of County Commissioners of Hamilton County.

Passed: February 24, 2020.



Bill Brown, Mayor

ATTEST:



Anthony J. Borgerding, Clerk

I, Anthony J. Borgerding, Clerk of Council of the Village of Mariemont, Ohio, do hereby certify that there is no newspaper printed in said municipality and that publication of the foregoing Ordinance was duly made by posting true copies thereof at five of the most public places in said corporation as determined by the Council, as follows: the Concourse, Miami Bluff and Flintpoint Way; the Tennis Court property, on the east side of Plainville Road between Maple and Chestnut Streets; the site of the Municipal Building, Wooster Pike and Crystal Springs Road; the northeast corner of the intersection of Rembold and Miami Road inside the enclosure; the northwest corner of the Old Town Center, intersection of Chestnut and Oak Streets; each for a period of fifteen days commencing on the 26th day of November 2018.



Anthony J. Borgerding, Clerk

Exhibit A
Amended Rules and Regulations of the Hamilton County Storm Water District

Article I – Definitions

Article III – Earthwork Regulations

Article V – Post-Construction Storm Water Quality Regulations
(Post-Construction Regulations)

RULES AND REGULATIONS
OF THE
THE HAMILTON COUNTY STORM WATER DISTRICT
ISSUED BY THE
BOARD OF COUNTY COMMISSIONERS
HAMILTON COUNTY, OHIO

ARTICLE I

DEFINITIONS

For the purposes of the Rules and Regulations of the Hamilton County Storm Water District ("HCSWD"), the following acronyms are used:

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

CFR: Code of Federal Regulations

CGP: Construction General Permit

CO: Certificate of Occupancy

EPA: Environmental Protection Agency

FEMA: Federal Emergency Management Agency

HP+D: Hamilton County Planning and Development

HCPH: Hamilton County Public Health

HCSWCD: Hamilton County Soil and Water Conservation District

HCSWD: Hamilton County Storm Water District

HSTS: Home Sewage Treatment System

I&M: Inspection and Maintenance

MS4: Municipal Separate Storm Sewer System

NOI: Notice of Intent

NOT: Notice of Termination

NOV: Notice of Violation

NPDES: National Pollutant Discharge Elimination System

OAC: Ohio Administrative Code

ORC: Ohio Revised Code

OUPS: Ohio Utilities Protection Service

SERC: State Emergency Response Commission

SWMP: Storm Water Management Plan

SWO: Stop Work Order

TCO: Temporary Certification of Occupancy

USDA: United States Department of Agriculture

USGS: United States Geological Survey

WQ_f: Water Quality Flow

WQ_v: Water Quality Volume

For the purposes of these Rules and Regulations, the following shall mean:

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

Adjacent: Lying near, close to, or contiguous; neighboring. Adjacent implies that the two objects are not widely separated.

Alternative Post-Construction Control: Innovative or experimental post-construction storm water management technologies.

As-Built: A record of the physical features of the improvements as they were actually constructed in the field.

Bankfull Channel: A channel flowing at channel capacity and conveying bankfull discharge. Delineated by the highest water level that has been maintained for a sufficient period of time to leave evidence on the landscape, such as the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial or the point at which the clearly scoured substrate of the stream ends and terrestrial vegetation begins.

Bankfull Discharge: The stream flow that fills the main channel and just begins to spill onto the floodplain; it is the discharge most effective at moving sediment and forming the channel.

Channel: The area between definite banks of a natural or artificial watercourse which confine and conduct continuously or periodically flowing water (ORC 6105.01).

Channelized Stream: See the definition as set forth in Section 6111.01 (M) of the ORC.

Check Dam: A small, temporary or permanent dam constructed across a drainage ditch or swale to lower the speed of concentrated flows for a certain design range of storm events.

Clean Hard Fill: Construction and demolition debris which consists only of reinforced or non-reinforced concrete, asphalt concrete, brick, block, tile, and/or stone which can be reutilized as construction material. Brick in clean hard fill includes but is not limited to refractory brick and mortar. Clean hard fill does not include materials contaminated with hazardous wastes, solid wastes, or infectious wastes (OAC 3745-400-01-E).

Clean Water Act: Federally enacted legislation formally referred to as the Federal Water Pollution Control Act or the Federal Water Pollution Control Act Amendments of 1972. Pub. L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4, 33 U.S.C. 1251 et. seq.

Clearing: The process of removing vegetation, thereby exposing the soil in such a manner that erosion and off-site sedimentation will be accelerated.

Common Plan of Development: A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

Compaction: The densification of earthen materials by mechanical or other approved means.

Concept Plan: A drawing of the major features of a proposed Earthwork for the purpose of study and which, if approved, permits proceeding with the preparation of detailed Improvement Plans

Contour Line: A line on a map connecting the points on a land surface that have the same elevation.

Construction: For the purposes of these regulations, and as defined in the Construction General Permit, construction activities include any clearing, grading, excavating, grubbing and/or filling activities.

Construction Entrance: A point of entrance or exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Continuing Operation:

1. A construction/development project executed progressively from start to finish without interruption; or
2. A series of small isolated Earthwork done concurrently or intermittently involving the movement of earthen material within the same site or contiguous parcels of land.

Controls: Schedules of activities, prohibitions of practices, maintenance procedures and other management practices (both structural and non-structural) to prevent or reduce the pollution of surface waters of the State. Controls also include treatment requirements, operating procedures and practices to control runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage. For the purpose of these regulations, this term replaces Best Management Practices (BMPs) appearing the Construction General Permit.

Culvert: A structure that conveys water or forms a passageway through an embankment.

Cut: An excavation that lowers an existing elevation.

Damaged or Diseased Trees: Trees that have a split trunk, broken tops, heart rot, insect or fungus problems that will lead to imminent death, undercut root systems that put the tree in imminent danger of falling, leaning as a result of root failure that puts the tree in imminent danger of falling, or any other condition that puts the tree in imminent danger of being uprooted or falling into or along a stream or onto a structure.

Degradation of a Water Resource: A condition that negatively affects the physical, biological, and/or chemical integrity of the water resource.

Detention Facility: A permanent, man-made structure used for the temporary storage of storm water runoff.

Discharge: Any storm water or non-storm water flow entering the MS4 or a water resource.

Discharger: Any person that allows or causes to allow a storm water or non-storm water discharge to enter the MS4 or a water resource.

Disturbed Area: An area of land subject to any Earthwork.

Ditch: A manmade excavation utilized for the purpose of surface water conveyance or irrigation.

Drainage: Flows from rainfall or otherwise produced by, or resulting from, the elements, storm water discharges and releases or migrations of waters from properties, accumulations, flows, and overflows of water, including accelerated flows and runoffs, flooding and threats of flooding of properties and structures, and other surface and subsurface drainage (ORC 6117.01.A.2).

Drainage Area/Drainage Watershed: The total contributing area to a control – including off site areas.

Earthwork: Operations involving the clearing, grubbing, excavating, filling, or grading of land.

Earthen Material: Soil sediment, rock, sand, gravel and organic material or residue or combination thereof associated with or attached to the soil.

Enforcing Official: An agency, individual, and/or their designated representative(s) authorized by the Board of County Commissioners of Hamilton County or the legislative body of a member Local Jurisdiction of the Hamilton County Storm Water District to lead enforcement of a specific article of these rules and regulations within the appointing jurisdiction.

Erosion: The deterioration of earthen materials, either surface or subsurface, by the actions of water, wind, snow, ice, and gravity or a combination thereof.

Excavation: Any mechanical act, by which earthen materials are removed, displaced or relocated, including the conditions resulting thereof.

Existing Terrain: The condition of the landscape, topography, or environment prior to any proposed Earthwork.

Exploratory Excavation: Temporary excavation for gathering of technical data, which is not made in connection with any permanent construction.

Extended Detention: A storm water management practice that replaces and/or enhances traditional detention facilities by releasing the water quality volume over a duration of at least 24 to 48 hours, retarding flow and allowing pollutants to settle within the facility.

Farm Activity: The science, art and business of cultivating soils, producing crops and raising livestock.

Federal Emergency Management Agency (FEMA): The agency with overall responsibility for administering the National Flood Insurance Program.

Fill: The deposit of naturally occurring earthen materials or other inert man-made materials by mechanical means, including the conditions resulting from engineered or uncontrolled deposits exclusive of building backfill.

Filter Bag: A geotextile manufactured from woven, non-biodegradable polypropylene or polymer material sized to fit a dewatering pump discharge line, or a catch basin or drainage inlet for capture of sediment.

Filtration: A storm water management practice typically composed of a pretreatment unit and a filter bed that detains storm water, filters particulate pollutants, and releases the controlled storm water to a water resource.

Final Stabilization: The condition of an Earthwork where either:

1. All soil disturbing activities at the site are complete and a uniform perennial vegetative cover (e.g., evenly distributed, without large bare areas) with a density of at least 70

percent cover for the area has been established on all unpaved areas and areas not covered by permanent structures or equivalent stabilization measures (such as the use of landscape mulches, rip-rap, gabions or geotextiles) have been employed. In addition, all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment is permanently stabilized to prevent further erosion; or

2. For individual lots in residential construction by either:
 - a. The homebuilder completing final stabilization as specified above, or
 - b. The homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or
3. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its pre-construction agricultural use. Areas disturbed that were previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters and which are not being returned to their pre-construction agricultural use, must meet the final stabilization criteria in (1) or (2) above.

Forebay: The portion of a storm water control facility, typically consisting of excavated pits or cast structures, designed to pre-treat incoming storm water runoff by slowing it and settling suspended solids, extending the useful life of the storm water control facility.

Freeboard: Distance between the peak design water elevation of a storm water control and the top of the sides of the control.

Grading: Modifying the topography of the surface of the land.

Grubbing: Removing vegetation from the soil by digging up roots and stumps.

Hamilton County Soil and Water Conservation District (HCSWCD): An entity organized under Chapter 1515 of the Ohio Revised Code referring to either the Hamilton County Soil and Water Conservation District Board or its designated employees.

Hardship: A condition in which application of the Rules and Regulations of the HCSWD deprives the Owner of a permitted use of the Owner's property.

Hazard (Earthwork Regulations): Any earth condition of considerable consequence to any property, or to public health and safety, which has been established through experience to be of certain or probable consequence, or which can be determined to be, or which is obviously a threat to property or public health and safety, including but not limited to conditions which cause inadequate drainage, erosion, sedimentation, sedimentation of ponds, excess sediment on public roads, disruption of the storm or sanitary sewer system, slope stability problems or imposition of unsafe loads on structures or slopes.

Hazardous Substance: Any substance defined by Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended.

Household Sewage Treatment System (HSTS): Any sewage treatment system, or part of such a system, for a single-family, two-family, or three-family dwelling that receives sewage (OAC 3745-11-01).

Illicit Connection: Any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge: Any discharge to a municipal separate storm sewer that is not entirely composed of storm water, as defined at 40 CFR 122.26(b)(2), except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire fighting activities.

Impervious Cover: Any physical surface that does not allow precipitation to directly, effectively absorb or infiltrate into the soil. This may include, but is not limited to, pavement or compacted gravel for roads, streets, parking lots, and driveways, rooftops, sidewalks and other areas not covered by vegetation.

Improvement Plans: Final construction drawings and specifications describing existing site conditions, proposed changes to the site, temporary storm water controls for the construction phase of the project, and permanent storm water control facilities for the phase of a project. Improvement plans shall address all submittal requirements of the Rules and Regulations of the HCSWD, and as well as fully address the requirements of a storm water pollution prevention plan required under the Ohio EPA Construction General Permit.

Industrial Activity: Activities subject to NPDES Industrial Permits as defined in Chapter 40 of the Code of Federal Regulations, Section 122.26 (b) (14).

Infiltrator: A storm water management practice that does not discharge to a water resource when receiving runoff equivalent to the water quality volume, requiring collected runoff to either infiltrate into the groundwater and/or be consumed by evapotranspiration, thereby retaining storm water pollutants in the facility.

Inlet Protection: A sediment filter, impounding area, or other practice located around or upstream of a storm drain, drop inlet, or curb inlet that temporarily ponds runoff before it enters the storm drain, allowing sediment to settle.

Inspection and Maintenance Plan: Inspection and maintenance plans provide protocols and schedules for ensuring storm water management practices are functioning as designed to prevent contaminated runoff leaving the site during the period associated with the plan. For the purpose of these regulations, there are two types of plans – the Construction-Phase Inspection and Maintenance Plan for the Erosion and Sediment Pollution Controls and Non-Sediment Pollution Controls which and the Post-Construction Controls permanently employed on the property which must comply with plan requirements outlined in these regulations. The Post-Construction Operation and Maintenance Plan is a stand-alone document that is passed on to the property owner for implementation once construction is complete.

Instability: A state of disturbed slope equilibrium, identified through observation, measurement, analysis, or experience, which is of probable immediate or long-term consequence.

Landslide: The rapid downward and outward movement and loss of stability of earthen material under the influence of gravity in which the movement of the earthen material occurs along an interior surface of sliding.

Local Jurisdiction: The City, County, Township, or Village that owns and operates an MS4 and has ultimate responsibility for compliance with an NPDES permit for storm water discharges from MS4s.

Lot: Any parcel of land occupied or intended for transfer of ownership or for building development, including the open spaces required by the Rules and Regulations of the Hamilton County Regional Planning Commission for Plats and Subdivisions of Land, and other rules and laws.

Matting: A natural or manmade material used to cover the soil surface to reduce erosion from rainfall impact, hold soil in place, absorb and hold moisture near the soil surface, and stabilize soils until vegetation is established.

Monitoring: The performance of site inspections of Earthwork, construction activities, drainage systems, and/or storm water controls used to determine compliance with the Rules and Regulations of the HCSWD and any other applicable standards.

Mulching: Application of a mixture of straw, shredded wood fiber, or a hydraulic matrix with a stabilizing emulsion or tackifier to temporarily protect exposed soil from erosion by raindrop impact or wind.

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (1) Owned and operated by the federal government, state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state or federal law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity or a designated and approved management agency under section 208 of the Clean Water Act (CWA) that discharges to waters of the State of Ohio; (2) Designed or used for collecting or conveying solely storm water; (3) Which is not a combined sewer; and (4) Which is not part of a publicly owned treatment works (POTW). [40 CFR 122.26(b)(8)].

National Pollutant Discharge Elimination System (NPDES) Permit: A permit issued by the Environmental Protection Agency (or by a State under authority delegated pursuant to 33 USC ' 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Natural Channel Design: An engineering technique that uses knowledge of the characteristics of natural stream processes to create a stable stream that will maintain its form and function over time.

Non-Storm Water Discharge: Any conveyance that is not composed entirely of storm water.

Notice of Intent (NOI): Procedural permission granted by the Ohio EPA in the form of paperwork issued allowing the applicant to be covered by the Construction General Permit.

Notice of Termination (NOT): Procedural recognition of construction completion by the Ohio EPA in the form of paperwork to terminate coverage under the Construction General Permit

Off-Lot HSTS: A HSTS designed to treat home sewage on-site and discharge treated effluent off-lot.

Ohio Rapid Assessment Method: A multi-parameter qualitative index established by the Ohio Environmental Protection Agency to evaluate wetland quality and function.

On-Lot HSTS: A HSTS designed to treat home sewage on-lot with no discharge leaving the lot.

100-Year Floodplain: Any land susceptible to being inundated by water from a base flood, having a one percent chance of being equaled or exceeded in any given year. For the purposes of these regulations, the 100-year floodplain shall be defined by FEMA or in a hydrologic / hydraulic study accepted by the **Enforcing Official** and approved and regulated by the Local Jurisdiction.

Ordinary High-Water Mark: That line on the shore or bank of a water resource established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328.3 (e)).

Outfall: Any outlet from an MS4 to a water resource, not including open conveyances connecting two MS4s, or pipes, tunnels or other conveyances that connect segments of the same stream or other surface waters of the State and are used to convey waters of the State.

Owner: The person or persons shown in the County Recorder's Office records as the title, deed, or certificate holder of the property, or any agent, or assigned of the title, deed, or certificate holder of record or any person in current control of the property.

Percent Imperviousness: The amount of hard surface area proposed on a project compared to the total area of the project site, expressed as a percentage.

Permanent Stabilization: The establishment of permanent vegetation, decorative landscape mulching, matting, sod, rip rap and landscaping techniques to provide permanent erosion control on areas where Earthwork is complete or where no further disturbance is expected for at least one year.

Person: Any individual, corporation, partnership, joint venture, agency, unincorporated association, Municipal Corporation, county agency, state agency, federal government agency, or any combination thereof.

Phase II Program: The Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq., 40 C.F.R. Parts 122.30 through 122.37, referred to as NPDES (National Pollutant Discharge Elimination System) Storm Water Phase II Permit Program and the Ohio Water Pollution Control Act (Ohio Revised Code Chapter 6111), and Ohio Administrative Code Chapter 3745-39, referred to as Phase II Storm Water Rules – Small Municipal Separate Storm Sewer Systems (MS4).

Pollution: An alteration of the quality of the waters of the state to a degree that affects such waters for beneficial use or facilities that serve such beneficial uses.

Pollutant: Sewage, industrial waste or other waste as defined by 40 CFR 122.22 and divisions (B) to (D) of section 6111.01 of the Ohio Revised Code (OAC 3745-1-02-B-68). For purposes of these HCSWD Rules and Regulations, a pollutant also includes eroded sediment and non-sediment materials generated by Earthwork or other construction activities.

Post-Construction: The conditions that exist following the completion of Earthwork in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of storm water runoff.

Post-Construction Controls: Permanent storm water management practices intended to treat the defined water quality volume(s) for a specific project/site to include pre-treatment features, primary controls, and runoff reduction practices. The controls are to be maintained and inspected as specified in the site-specific long-term inspection and maintenance plan.

Pre-Construction: The conditions that exist prior to the initiation of Earthwork in terms of topography, vegetation, land use, and the rate, volume, quality, or direction of storm water runoff.

Pre-Construction Meeting: Consultation conducted prior to the beginning of construction activity between all parties associated with the construction of the project including, but not limited to government agencies, contractors, and Owners to review agency requirements and plans as approved and submitted.

Pre-treatment: A structure, feature, appurtenance, or pollution prevention practice, or combination thereof, either aboveground or belowground, that is used as a component of a storm water management system to remove a sufficient fraction and/or type of the incoming pollutants to facilitate maintenance and/or prevent failure of a downstream storm water control.

Professional Engineer: An individual licensed in the State of Ohio to practice in the field of engineering, pursuant to Ohio Revised Code Sections 4733.01 to 4733.23.

Professional Surveyor: An individual licensed in the State of Ohio to practice in the field of surveying, pursuant to Ohio Revised Code Sections 4733.01 to 4733.23.

Project: For the purposes of these regulations, the term "project" is synonymous with "property" and "site". See "site" for definition.

Property: For the purposes of these regulations, the term "property" is synonymous with "project" and "site". See "site" for definition.

Qualified Inspection Personnel: A person knowledgeable in the principles and practice of storm water facility construction and maintenance, erosion prevention, and sediment control, who possesses the skills to assess all conditions that could impact storm water quality and to assess the effectiveness of any best management practice, storm water control facility, sediment control measure, and erosion prevention measure selected to control the quality of storm water discharges.

Rainwater and Land Development Manual (RLDM): A document that defines Ohio's standards and specifications for storm water practices implemented during land development. The target audience is that group of professionals involved in the design and implementation of development projects, but it is also used by others interested in implementing sound practices that minimize erosion, sediment and storm water impacts. The manual is maintained and updated by Ohio EPA.

Record Plat: A drawing prepared by a Professional Surveyor that documents the physical features of the improvements to a site, including but not limited to parcel boundaries, easements, setbacks, and certifications.

Retrofit: Place a storm water control facility within an existing developed area that does not already drain into a facility providing an equivalent level of storm water control.

Revocation of Performance Bond: A process where an appropriate governmental entity seizes the principal of a Performance Bond or portions thereof.

Riprap: A permanent cover of rock used to stabilize streams, provide in-stream stability, and provide a stabilized outlet below concentrated flows.

Riparian Area: Transition area adjacent to a stream and composed of trees, shrubs, and surrounding vegetation which serve to stabilize erodible soil, reduce flood size flows, filter and settle out runoff pollutants, increase stream shading, and enhance wildlife habitat. In these regulations, protection of the riparian area is provided through the establishment and implementation of Stream Corridor Protection Zones under the District Article IV regulation.

Runoff: Precipitation that moves over the land surface, as sheet flow, in open channels, or in a storm water conveyance system through the drainage area.

Sediment: Solid material both mineral and organic, which is in suspension, and is being transported or has been moved from its site of origin by water, wind, ice, snow, or gravity, and has come to rest on the earth's surface, at, above, or below sea level.

Sediment Barrier: A temporary barrier of a water-permeable material that is installed across or at the toe of a slope to intercept sheet flow runoff, detain it to allow sediment to settle behind the barrier while allowing the runoff to infiltrate and/or flow through the barrier.

Sediment Settling Pond: A temporary or retrofitted permanent basin that is designed to capture and slowly release surface water runoff at a controlled rate through an engineered outlet, detaining it long enough to allow the suspended solids and most of the sediment to settle out of the water.

Sediment Trap: A sediment settling pond with a simple outlet structure stabilized with geo-textile and riprap.

Sedimentation: The process of accumulation of earth materials/sediment resulting from erosion.

Site: Any lot, parcel of land, or common plan of development. For the purposes of these regulations, the term "site" is equivalent to "project" and "property".

Slope: The measurement of the inclination of the ground surface. Slope may be expressed as a ratio of horizontal distance to vertical distance (e.g., 4(H):1(V)) or as the quotient of vertical distance divided by horizontal distance expressed as a decimal or as a percentage.

Stability: A state of slope equilibrium, identified through observation, measurement, analysis or experience, which affords an adequate margin of safety against immediate or long-term development of instability and/or movement.

Stabilization: The use of best management practices that reduce or prevent soil erosion by means of storm water runoff, trench dewatering, wind, ice, gravity, or a combination thereof.

Stream Edge: Means the ordinary high-water mark.

Subcontractor: For the purposes of this permit, an individual or company that takes a portion of a contract from the property owner, general contractor or from another subcontractor.

Storm Water: Any surface flow, runoff, and drainage resulting from a precipitation event consisting entirely of water from any form of natural precipitation, including snow melt.

Storm Water Pollution Prevention Plan (SWP3): A site-specific – sometimes construction phase specific – stand-alone, written document that identifies potential sources of stormwater pollution at the construction site; describes practices to reduce pollutants in stormwater discharges from the construction site and post-construction site; describes long-term operation and maintenance practices and scheduled; and identifies procedures the operator will implement to comply with the terms and conditions of a construction general permit. The Ohio EPA construction general permit includes the elements which must be included in an SWP3. Required elements included in the Improvement Plan may be incorporated by reference.

Stream: A surface water having a channel with a well-defined bed and bank, either natural or artificial, that confines and conducts continuously or periodically flowing water in such a way that creates an ordinary high-water mark.

Stream Bank: The side of a stream channel bounded by the stream bed and the ordinary high-water mark of the stream.

Stream Bed: Bottom of a stream.

Stream Crossing: Any bridge, box, arch, culvert, truss, or other type of structure intended to convey people, animals, vehicles, or materials from one side of a stream to another. This does not include private, non-commercial footbridges or pole mounted aerial electric or telecommunication lines, nor does it include below grade utility lines.

Swale: An artificial conveyance that may contain contiguous areas of standing or flowing water only following a precipitation event, or is planted with or has stabilized vegetation suitable for soil stabilization, storm water treatment, and nutrient uptake, or is designed to take into account the soil erodibility, soil percolation, slope, slope length, and contributing area so as to prevent erosion and reduce the pollutant concentration of a given volume.

Temporary Stabilization: The establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation and other techniques capable of quickly establishing cover over Earthwork to provide erosion prevention between construction operations.

Top of Stream Bank: The ordinary high-water mark of a stream, also known as the bankfull depth of the stream channel.

Topsoil: Surface and upper surface soils which are presumably darker colored; fertile soil materials ordinarily rich in organic matter or humus debris.

Total Suspended Solids: solids in water that are trapped by a filter (usually with a pore size of 0.45 micrometers).

Variance: A modification of the Rules and Regulations of the HCSWD that will not be contrary to the public interest and where, due to conditions peculiar to a specific property and not the result of the action of the applicant, a literal enforcement of the Rules and Regulations would result in unnecessary hardship to the applicant.

Volumetric Runoff Coefficient: The ratio of runoff volume to precipitation volume, assigned based on drainage area characteristics or calculated as an area-weighted composite.

Water Quality Volume (WQ_v): The volume of storm water runoff from a contributing watershed that must be captured and treated prior to discharge from the developed site after construction is complete. WQ_v is based on the expected runoff generated by the mean storm precipitation volume from post-construction site conditions at which rapidly diminishing returns in the number of runoff events captured begins to occur.

Water Quality Flow (WQ_f): The volume of storm water runoff being treated by a flow-through storm water management practice to be determined utilizing the Rational Method with an intensity (i) appropriate for the water quality precipitation event. It is calculated as the product of the runoff coefficient, intensity and the area draining to the control.

Water Resource: Any public or private surface water body; including wetlands; the area within the ordinary high-water level of lakes and ponds; as well as the area within the ordinary high-water level of any stream (either natural or artificial) which confines and conducts continuous or intermittent flow.

Watershed: The total drainage area contributing storm water runoff to a single point.

Wet Extended Detention Basin: A small artificial lake overlain with a storage volume equal to the lake volume and designed to remove pollutants from storm water.

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

Work Area: A specifically indicated area of land on which Earthwork operations are under permit; may be a portion of a site or the entire site.

**RULES AND REGULATIONS
OF THE
HAMILTON COUNTY SOIL AND WATER CONSERVATION DISTRICT
AND THE HAMILTON COUNTY STORM WATER DISTRICT
ISSUED BY THE
BOARD OF COUNTY COMMISSIONERS
HAMILTON COUNTY, OHIO**

ARTICLE III

EARTHWORK REGULATIONS

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301 PURPOSE, SCOPE AND APPLICABILITY

- A. The purpose of these Earthwork Regulations is to promote and maintain the health, safety, and welfare of the citizens of Hamilton County by establishing standards for storm water controls that minimize the degradation of the water resources of Hamilton County by
1. Reducing the discharge of pollutants from the municipal separate storm sewer systems (MS4s) owned or operated by Hamilton County and member Local Jurisdictions of the Hamilton County Storm Water District ("HCSWD") to the extent practicable;
 2. Protecting the physical, chemical, and biological characteristics of the water resources of Hamilton County; and
 3. Satisfying the appropriate water quality requirements of the Clean Water Act, Ohio Law, and the Ohio Revised Code (ORC), including Section 6111.
- B. These Earthwork Regulations are adopted under authority of Ohio Law and the Ohio Revised Code, including Chapters 307 and 6117, and implement the requirements of the latest discharge permit issued by Ohio EPA to Hamilton County and the HCSWD member Local Jurisdictions under the Phase II Program.
- C. The Board of County Commissioners of Hamilton County, Ohio ("Board") shall designate the **Enforcing Official** within the unincorporated areas and townships of Hamilton County for the enforcement of these Earthwork Regulations, except to the extent that a home rule township has the authority to designate another entity as its **Enforcing Official** and exercises such authority. The **Enforcing Official** for each of the participating member municipalities and authorized home rule townships of the HCSWD shall be the chief administrative officer of the Local Jurisdiction unless the legislative body of the Local Jurisdiction legally authorizes another qualified party to fulfill all required responsibilities of the **Enforcing Official** under these Earthwork Regulations.
- D. Where authorized by law, the responsibilities of a participating Local Jurisdiction under these Earthwork Regulations may be delegated by the Local Jurisdiction to persons or entities acting in the beneficial interest of, or in the employment of, the participating Local Jurisdiction, including but not limited to, the HCSWD or the HCSWD's designated representative, provided there is a lawfully enacted Resolution or Ordinance authorizing delegation of said responsibilities.
- E. These Earthwork Regulations apply as follows:
1. The Geotechnical Requirements of these Earthwork Regulations apply to all construction projects within the unincorporated townships of Hamilton County and within the jurisdiction of the municipal corporations which are participating members of the HCSWD and have adopted the Geotechnical Requirements of these Earthwork Regulations.
 2. In unincorporated portions of Hamilton County, the Erosion and Sediment Pollution Control Requirements and Non-Sediment Pollution Control Requirements of these Earthwork Regulations apply to all Earthwork. Earthwork disturbing less than one (1) acre of land and not part of a larger common plan of

development that will disturb more than one (1) acre of land are not subject to the requirements of Section 308 EARTHWORK SUBMITTAL PROCEDURES and Section 309 EARTHWORK REQUIREMENTS FOR IMPROVEMENT PLANS, but are required to comply with all other requirements of these Earthwork Regulations, and are subject to enforcement actions. Individual lots that are part of a larger common plan of development shall comply with Section 309(G) Continuation of Controls for Individual Lot Development.

3. In incorporated member municipal corporations and authorized home rule townships within the HCSWD which have adopted these Earthwork Regulations, the Erosion and Sediment Pollution Control Requirements and Non-Sediment Pollution Control Requirements of these Earthwork Regulations apply to Earthwork disturbing one (1) acre of land or larger, or to Earthwork disturbing less than one (1) acre but part of a larger common plan of development that will disturb more than one (1) acre of land. The legislative body of incorporated member municipalities and authorized home rule townships may establish a smaller applicable area and specific requirements for these smaller areas.
- F. It is the standard sediment control policy of the Local Jurisdiction which has adopted these Earthwork Regulations that the Erosion and Sediment Pollution Control Performance Standards, and Non-Sediment Pollution Control Performance Standards of these Earthwork Regulations shall apply to all Earthwork Activities performed by the Local Jurisdiction.

302 DEFINITIONS

The words and phrases defined in Article I – Definitions of the Rules and Regulations of the HCSWD shall have the same meaning herein unless otherwise provided.

303 COMPLIANCE WITH OTHER LAWS AND DISCLAIMER OF LIABILITY

- A. Compliance with these Earthwork Regulations does not relieve the Owner from the duty to comply with any other applicable federal, state or local laws, regulations or ordinances or from responsibility otherwise imposed by law for damage to any person or property.
- B. Neither the submission, approval, or disapproval of an Improvement Plan under these Earthwork Regulations; nor the Issuance or denial of a Permit; nor the compliance or lack of compliance with these Earthwork Regulations; nor any action or lack of action by the **Enforcing Official** shall relieve the Owner from responsibility for injury or damage to any person or property otherwise imposed by law, nor create or impose any liability upon Hamilton County, the HCSWCD or any participating Local Jurisdiction in the HCSWD or their respective officers, agents, or employees for injury or damage to any person or property.
- C. Storm water control practices authorized under these Earthwork Regulations and maintained according to a Construction-Phase Inspection and Maintenance Plan approved under these Earthwork Regulations shall not be considered to be a nuisance under these Earthwork Regulations. The **Enforcing Official** will address conditions that may contribute to the creation of a nuisance according to pertinent local regulations when reviewing Improvement Plans and conducting facility inspections.

- D. Failure of the **Enforcing Official** to observe or recognize hazardous or unsightly conditions or to recommend appropriate corrective measures shall not relieve the Owner from the responsibility for any resulting condition or damage or injury or result in any liability on the part of the Local Jurisdiction, the **Enforcing Official**, Hamilton County, or their officers, employees, or agents for any resulting condition or damage or injury.
- E. These Earthwork Regulations do not create a duty upon the **Enforcing Official**, the Board, the HCSWD, the HCSWCD, or participating member Local Jurisdictions of the HCSWD to persons impacted by soil sediment pollution, erosion, or landslides.

304 CONFLICTS AND SEVERABILITY

- A. In the event that any of these Earthwork Regulations may conflict with other applicable provisions of law or ordinance, the more restrictive applicable provisions, as determined by the **Enforcing Official**, shall prevail where permitted by law.
- B. Should any article, section, subsection, clause, or provision of these Earthwork Regulations be declared by a court of applicable jurisdiction to be unconstitutional or invalid, such decision shall not affect the validity of the remainder of these Earthwork Regulations, in whole or in part.

305 EARTHWORKS PERMIT AND IMPROVEMENT PLANS REQUIRED

- A. An Owner performing Earthwork subject to these Earthwork Regulations shall submit an Improvement Plan to the **Enforcing Official** addressing the requirements of these Earthworks Regulations, receive approval of the Improvement Plan from the **Enforcing Official** prior to submittal of a Notice of Intent (NOI) to Ohio EPA, provide an Ohio EPA-approved NOI to the **Enforcing Official** when applying for an Earthwork and/or Building Permit, and obtain an Earthwork Permit prior to commencing any Earthwork, unless exempted under these Earthwork Regulations.
- B. The Improvement Plan will include many of the elements required by Ohio EPA to be incorporated into the Site Storm Water Pollution Prevention Plan (SWP3) – a stand-alone document containing all information required by the Ohio EPA Construction General Permit Part III.G and Section 309 of these Article III Earthworks Regulations. An SWP3 shall be developed for each site to be covered by this permit. For a multi-phase construction project, a separate NOI shall be submitted when a separate SWP3 will be prepared for subsequent phases.

The SWP3 shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with construction activities. In addition, the SWP3 shall describe the implementation of storm water management controls that reduce the pollutants and impact of storm water discharges during construction and pollutants associated with the post-construction land use. Those permit-required elements that are included in the Improvement Plan may be incorporated by reference into the SWP3.

- C. A Building Permit approved by the authorized Local Jurisdiction shall serve as authorization for Earthwork to proceed for projects that disturb less than one (1) acre of a site in unincorporated areas and do not present geotechnical stability issues as set forth in these Earthwork Regulations, as determined by the **Enforcing Official**.

306 EXEMPTIONS

- A. The following Earthwork is exempt from these Earthwork Regulations:
1. Subject to the provisions of Section 301(F) of these Earthwork Regulations, a public highway, transportation or drainage improvement or maintenance project undertaken by a government agency or political subdivision in accordance with a statement of standard sediment control policies that is approved by the Chief of the Ohio Department of Agriculture - Division of Soil and Water Conservation.
 2. Surface mining operations regulated by ORC, Section 1514.01.
 3. Strip mining operations regulated under ORC, Section 1513.01.
 4. Grading of land for purposes of farm activity as regulated under ORC.
 5. Temporary excavations for underground utility lines, wells, tunnels, tanks, and vaults or sign foundations, provided all such excavations shall be promptly and properly backfilled and restored to the existing terrain and stabilized immediately.
 6. Exploratory excavations under the direction of a Professional Engineer, provided all such excavations shall be promptly and properly backfilled and restored to the existing terrain and stabilized immediately.
 7. Normal cemetery operations involving opening and closing graves as permitted in ORC, Sections 517 & 759.
 8. Operations involving refuse disposal, mining, quarrying, processing and stockpiling of soils or rock materials where controlled by other regulations, provided such operations do not cause instability of any adjacent property or the discharge of sediment.
- B. Application and enforcement of the exemptions under Section 306 "Exemptions" of these Earthwork Regulations shall be conducted by the ***Enforcing Official***.

307 COORDINATION WITH LOCAL, STATE, AND FEDERAL REGULATIONS AND PERMITS

- A. Approvals issued in accordance with these Earthwork Regulations do not relieve the Owner of responsibility for obtaining all other necessary permits and/or approvals from federal, state, and/or local governments and compliance with other legal requirements. If requirements vary, the most restrictive shall prevail. Other permits and requirements may include, but are not limited to, those listed below.
1. The latest applicable Ohio EPA General Permit Authorization for Storm Water Discharges Associated with Construction Activity under the NPDES (CGP Permit);
 2. U.S. Army Corps of Engineers permits under Section 404 of the Clean Water Act;
 3. Ohio EPA Section 401 Water Quality Certification General Isolated Wetland Permit and/or non-jurisdictional wetland/stream program approvals;

4. Ohio Dam Safety Law Section 1501.21 OAC;
 5. Applicable Flood Plain Regulations;
 6. Applicable ground water protection laws; and
 7. Hamilton County Public Health (HCPH) Clean Hard Fill Regulations
- B. Earthworks Permits and Building Permits shall be processed in the following manner:
1. No Building Permit shall be issued within the work area until the Owner has complied with all provisions of these Earthwork Regulations. All Erosion and Sediment Pollution Controls must be in compliance with the Erosion and Sediment Pollution Control Performance Standards of these Earthwork Regulations and the approved plans, including but not limited to, proper installation and maintenance of sediment settling ponds and traps, sediment barriers and inlet protection, and that all idle areas have temporary and permanent stabilization as required under these Earthwork Regulations.
 2. In unincorporated areas, Building Permits will be issued only after the **Enforcing Official** sends notice to the Hamilton County Building Official of compliance with the Hamilton County Building Code. The **Enforcing Official** may request the Hamilton County Building Official to withhold the issuance of additional Building Permits, issue a Stop Work Order on active Building Permits, withhold inspections, or withhold the issuance of a Certificate of Occupancy on active Building Permits for non-compliance with the Earthwork Regulations, in addition to any other remedies that may be available to the **Enforcing Official** under these Earthwork Regulations and other law.
 3. Incorporated member municipalities within the HCSWD shall not issue Building Permits until the **Enforcing Official** provides notice to the incorporated member municipality of compliance with the Earthwork Permit. The **Enforcing Official** may request the appropriate building official to withhold the issuance of additional Building Permits, issue a Stop Work Order on active Building Permits, withhold inspections, or withhold the issuance of a Certificate of Occupancy on active Building Permits for non-compliance with these Earthwork Regulations, in addition to any other remedies that may be available to the **Enforcing Official** under these Earthwork Regulations and other law.
- C. Earthwork Permits will not be issued by the **Enforcing Official** having jurisdiction absent a showing by the Owner that compliance with all applicable regulations and permit requirements has been demonstrated.
- D. The issuance of an Earthwork Permit and activities conducted by the Owner pursuant to the Earthwork Permit process shall be coordinated with local utility providers to allow any necessary adjustment, relocation, addition or other modification to an existing utility, including overburden loading.

308 EARTHWORK SUBMITTAL PROCEDURES

- A. An Owner wishing to undertake Earthwork covered by these Earthwork Regulations shall submit an Earthwork Permit Application and Improvement Plan to the **Enforcing Official**

of the appropriate Local Jurisdiction prior to undertaking any such Earthwork. No Earthwork shall be undertaken until such Permit Application and Improvement Plan has been reviewed and approved through the established submittal and review process of the Local Jurisdiction.

- B. Pre-Submittal Meeting: A Pre-Submittal Meeting with the **Enforcing Official** may be requested to discuss the proposed project, review requirements, identify unique aspects of the project that must be addressed during the review process, and establish a preliminary review and approval schedule.
- C. Initial Plan: The Owner of a project requiring a Record Plat or equivalent submittal shall submit Improvement Plans that include the proposed Earthwork in concept (Initial Plan), and the applicable fees to the **Enforcing Official**. Initial Plans shall show approximate preliminary locations of the proposed parcel boundaries, setbacks, stream protection corridor delineations (if applicable), dedicated open space and preserved vegetation areas, conservation areas, public roads, water resources receiving storm water discharge, flood plains, existing topography, on-site and off-site areas vulnerable to erosion and sediment damage, existing and proposed drainage facilities, proposed construction access points, limits of earth disturbing activity, proposed Erosion and Sediment Pollution Controls, new and existing Post-Construction Controls, and easements to allow the **Enforcing Official** to determine if the site is laid out in a manner that meets the intent of these Earthwork Regulations and if the proposed Erosion and Sediment Pollution Controls and Post-Construction Controls are capable of controlling runoff from the site in compliance with these Earthwork Regulations and the Post-Construction Regulations (Article V of the Rules and Regulations of the HCSWD). The **Enforcing Official** shall review the Initial Plans and provide comments and recommendations for revisions if any.

An Initial Plan is required:

1. For all subdivisions.
2. For all non-residential development and Fill Sites that will involve disturbing one (1) acre of land or more.

For other construction projects, Initial Plans are encouraged to be submitted for review by the **Enforcing Official** in advance of submitting an application for an Earthwork Permit in order to avoid subsequent delays caused by the submittal of Improvement Plans which do not comply with these Earthwork Regulations.

- D. Improvement Plans: The Improvement Plan submission shall consist of construction drawings and specifications together with the applicable permit forms and such fees as may be required. The Improvement Plans shall meet the requirements of these Earthwork Regulations and must be approved by the **Enforcing Official** prior to approval of the Earthwork Permit and/or before issuance of a building permit by the Building Department. Any revised Improvement Plans shall be submitted to the **Enforcing Official** for approval prior to implementing the proposed modification.
- E. Consent to Enter Private Property: Submittal of an Earthwork Permit application, Initial Plan, and/or Improvement Plans shall be deemed to provide consent to the **Enforcing Official** to enter property subject to these Earthwork Regulations for the purpose of

gathering information necessary for review of and comment to such Permit application, Initial Plan and/or Improvement Plans.

- F. Review and Comment: The **Enforcing Official** shall review and comment on any Concept and/or Improvement Plans submitted within a reasonable period of time after proper submission. The final Improvement Plans submitted may be either approved or disapproved. If the Improvement Plans are disapproved, they shall be returned with comments stating the reasons for disapproval and requirements for revisions, if any.
- G. Approval Required:
1. The **Enforcing Official** shall issue final approval of Improvement Plans for Earthwork covered by these Earthwork Regulations to allow the Owner to submit a complete and accurate Notice of Intent (NOI) to the director of the Ohio EPA at least 21 days prior to the commencement of construction activities.
 2. The **Enforcing Official** will issue an Earthwork Permit where required upon receiving notification that authorization to begin construction has been received from the director of Ohio EPA through approval of the NOI.
 3. For sites requiring a building permit, earthwork shall not begin and building permits shall not be issued without final approval of Improvement Plans for Earthwork covered by these Earthwork Regulations and an authorization to begin construction has been received from the director of Ohio EPA, through an approved NOI.
 4. For sites that do not need a building permit, earthwork shall not begin without final approval of Improvement Plans for Earthwork covered by these Earthwork Regulations and an authorization to begin construction has been received from the director of Ohio EPA, through an approved NOI.
 5. Individual Lot Construction Will Not Proceed: Improvement Plans for individual lots in a subdivision will not be approved and building permits will not be issued unless the larger common plan of development or sale containing the lot is in compliance with these Earthwork Regulations.
- H. Approval Valid for Two (2) Years / Modification of Plans: If Earthwork has not commenced within two (2) years of approval, Improvement Plans must be re-submitted for review and approval in accordance with rules in effect at the time of re-submittal. Modifications to the project require submittal and approval of a revised Improvement Plan before work may proceed.
- I. Stopped or Abandoned Earthwork: Earthwork that is in compliance with these Regulations and is stopped or abandoned for a period of two (2) consecutive years from the date of discontinuation of Earthwork shall cause the approval of the Improvement Plans to expire and become invalid. For site work to continue either the previously approved plans must be submitted if the scope of the Earthwork has not changed, **or** an updated set of plans must be submitted for approval by the **Enforcing Official**.
- J. Preconstruction Meeting Required: On all Earthwork activities one (1) acre or larger and all fill sites, an onsite Erosion and Sediment Pollution Control pre-construction meeting

shall be held with the **Enforcing Official**, the Owner, and the contractors before any Earthwork begins.

- K. Earthwork Permit Issuance Procedure: An Earthwork Permit or Approval will not be issued until all Improvement Plans for the project are approved by the **Enforcing Official** and all pertinent Local, State and Federal permits for the project are obtained, including the following:
1. An approved NOI from the Ohio EPA.
 2. Approval obtained under local planning, zoning, subdivision, storm drainage, special flood hazard approval and/or building requirements. For subdivisions of more than six lots (major subdivisions) in unincorporated areas, an Earthwork Permit or Approval will not be issued until Improvement Plan approval has been obtained from the Hamilton County Regional Planning Commission. For all other types of developments in unincorporated areas, zoning approval must be obtained from the appropriate zoning jurisdiction.
 3. All Earthwork greater than one acre shall comply with all planning, zoning, and/or development requirements of the Local Jurisdiction before an Earthwork Permit or approval will be granted. A copy of these approvals shall be provided to the **Enforcing Official**.
 4. In unincorporated Hamilton County, all sites receiving fill other than soil shall submit a Notice of Intent with the HCPH for unincorporated Hamilton County. A copy of this approval from the HCPH shall be provided to the **Enforcing Official**.
 5. Earthwork Permits for building applications and residential subdivision and commercial developments are valid for: the duration of the project unless Earthwork is stopped or abandoned as defined under Paragraph 308(J) of these Earthwork Regulations.
 6. Earthwork Permits for Fill Project Sites are valid for one (1) year. A renewal shall be obtained prior to expiration of the Earthwork Permit.
- L. If ownership of any portion of an approved project changes, the new Owner shall submit to the **Enforcing Official** in writing the new Owner's name, address, telephone number; and the name, address and telephone number of the new Owner's Professional Engineer if different from the original Professional Engineer. The new Owner shall contact the **Enforcing Official** to schedule an onsite meeting prior to continuing with the project.
- M. The Owner shall notify the **Enforcing Official**:
1. Of commencement of Earthwork covered by these Earthwork Regulations or the Earthwork Permit at least 48 hours in advance;
 2. Of locations of any borrow or disposal sites that will be utilized prior to commencement of Earthwork;
 3. When Earthwork is completed or temporarily or permanently suspended;

4. Of any communication with and/or regulatory action of the Ohio EPA; and
 5. Of any proposed deviations from the originally approved plans.
- N. Fill Sites: An Earthwork in unincorporated Hamilton County accepting fill that is not covered under Improvement Plans or a Building Permit is a Fill Site. An Earthwork Permit for a Fill Site shall be valid for one (1) year from the date of approval. If Earthwork at the Fill Site is expected to continue beyond the expiration date, a renewal permit shall be obtained prior to expiration. A renewal permit requires a status report from the Owner, and a signed statement from the Owner that the project will precede in accordance with the previously approved plans and Earthwork Permit. A yearly Earthwork Permit renewal is mandatory for all Fill Sites. A modification of the Earthwork Permit for a Fill Site requires the submittal and approval of a revised grading plan defining recommended Erosion and Sediment Pollution Controls before the work as modified may proceed. The project shall be in compliance with all provisions of these Earthwork Regulations before a renewal will be granted.

309 EARTHWORK REQUIREMENTS FOR IMPROVEMENT PLANS

- A. Earthwork Requirements: The Improvement Plans submitted with the application for Earthwork Permit shall describe in detail how the Erosion and Sediment Pollution Control Requirements, Geotechnical Requirements, and Non-Sediment Pollution Control Requirements of these Earthwork Regulations shall be fulfilled. The Improvement Plans shall:
1. Describe in detail how the quantity and quality of storm water will be managed after construction is complete for discharge from the site and/or into a water resource, per Article V of these Regulations and the storm water quantity control regulations of the Local Jurisdiction.
 2. Describe in detail the type, location, and dimensions of structural and non-structural Erosion and Sediment Pollution Controls, Post-Construction Controls, and Non-Sediment Pollution Controls - including applicable pretreatment, outlet and inlet protection - incorporated into the site design to address the requirements of these Earthwork Regulations and provide the rationale for their selection:
 - a. The rationale must identify how Erosion and Sediment Pollution Controls and Post-Construction Controls will address flooding within the site as well as flooding that may be caused by the development upstream and downstream of the site, as required under the storm water quantity control regulations of the Local Jurisdiction.
 - b. The rationale must demonstrate that these Erosion and Sediment Pollution Controls, Non-Sediment Pollution Controls, and Post-Construction Controls minimize anticipated impacts on the channel and floodplain morphology, hydrology, and water quality of the water resource and its floodplain.
- B. Preparation by Professional Engineer: The Improvement Plans shall be prepared and sealed by a Professional Engineer and include supporting calculations, plan sheets, and design details. To the extent necessary, as determined by the **Enforcing Official**, a site

survey shall be performed by a Professional Surveyor to establish boundary lines, measurements, or land surfaces. The **Enforcing Official** may accept submittals for non-structural, fill sites from the Owner in instances where the **Enforcing Official** determines that the intent and purpose of these Earthwork Regulations can be met and the interests of the public reasonably protected. These submittals shall be handled on a case by case basis. Acceptance and approval shall be at the discretion of the **Enforcing Official**.

- C. Erosion and Sediment Pollution Controls Manual: The most recent edition of the Ohio Environmental Protection Agency (Ohio EPA) Rainwater & Land Development Manual (RLDM) shall be the basis for standards and specifications for erosion prevention and sediment control. The HCSWD and/or the **Enforcing Official** may prepare and maintain design criteria manuals or procedures that provide guidance for designing the site Earthwork, including a description of acceptable Erosion and Sediment Pollution Controls that meet the criteria of these Earthwork Regulations. The design manual or procedures may be updated from time to time based on improvements in engineering, science, monitoring, and local maintenance experience.
- D. Contents of Improvement Plans: The Improvement Plans shall include the following:
1. Site Location Map: USGS 1:24,000 or equivalent map showing the Project Name, the boundary of the project site, the name and location of major existing roadways, and the name and location of the immediate receiving water resource(s) within 500 feet of the boundary of the project site and the first subsequent named water resource(s).
 2. Site Description and Information: The following information shall be included in the general notes, project specifications and/or an attached narrative report:
 - a. The Project Name and the location of the project, including the complete site address or Parcel Identification Number, and individual lot addresses if known and applicable.
 - b. Contact information: Provide the Company name and contact information and the contact names, addresses, phone numbers, facsimile numbers, and e-mail address for the following:
 - i. The Professional Engineer responsible for the preparation of the Improvement Plans.
 - ii. The site Owner, and if applicable the agent or designee.
 - iii. The Earthwork Contractor and all applicable subcontractors, when identified.
 - c. A description of the nature and type of the construction activity (e.g. residential, shopping mall, fill site, etc.).
 - d. Total area of the site and the area of the site that is expected to be disturbed (i.e. grubbing, clearing, excavation, filling or grading, including off-site borrow areas, excavated material disposal areas, and off-site project construction support activities).

- e. Tables showing the on-site and off-site catchments tributary to the Prevention & Sediment Controls and Post-Construction Controls for each construction phase including construction start, construction completion, and any significant points during construction where drainage patterns/components change significantly. Each catchment listed on the table shall be delineated on the Site Map(s) required per Section 510 (D)(3) of Article V Post-Construction, including catchments tributary to each Erosion & Sediment Pollution Control (per Section 310 of Article III Earthwork Regulations), and Post-Construction Control (per Section 510 of Article V Post-Construction Regulations), storm water conveyance facility, and storm water detention facility under both pre-construction and post-construction site conditions (per the storm water quantity control regulations of the Local Jurisdiction).

Each Table shall provide the following information:

- i. A measure of the on-site and off-site catchment area;
- ii. A measure of the existing impervious area;
- iii. A measure of the impervious area to be constructed by the Owner;
- iv. An estimate of the impervious area that may be constructed by subsequent Owners under current zoning; and
- v. The overall imperviousness of the catchment.

The table, Project Site Map(s) and associated Improvement Plans will need to be modified or supplemented if changes in drainage areas and/or impervious areas affect the size of Erosion and Sediment Pollution Controls and/or Post-Construction Controls.

- f. Existing data describing the soils throughout the site, including the soil series, soil association, and hydrologic soil group. At the request of the **Enforcing Official**, additional geotechnical data to support the design of each proposed Erosion and Sediment Pollution Control and Post-Construction Control whose effectiveness depends upon site-specific data about the porosity, infiltration characteristics, depth to groundwater, depth to bedrock, and any impermeable layers may be required.
- g. Existing data, if available, describing the quality of any discharge from the site as well as a description or other documentation of the condition of any on-site streams.
- h. A description of prior land uses at the site (e.g., zoning, land-use codes).
- i. A description of the methods, locations, size and extent of practice used to preserve, enhance, and/or restore natural conditions as much as feasible, including but not limited to desired vegetation; permeable, uncompacted soil profiles and topsoil; designated tree preservation areas; protective grubbing and clearing practices; and suitable locations and

types of Runoff Reduction Practices.

- j. An implementation schedule which describes the sequence of major construction operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion, sediment and storm water management practices or facilities to be employed during each operation of the sequence, including the phasing of construction operations to minimize disturbed land at any one time.
 - k. The name and/or location of the immediate receiving water resource(s) and the first subsequent named water resource(s) and the aerial extent and description of wetlands or other special aquatic features at or near the Site which will be disturbed or which will receive discharges from disturbed areas of the Site.
 - l. Location and description of any storm water discharges associated with asphalt and concrete plants on or contiguous with the project site and dedicated to Site construction, and the best management practices to address pollutants in these storm water discharges.
3. Project Site Map(s): One or more site maps of the Project shall be created. The map or series of maps shall be drawn at a scale of at least 1-inch equals 50-feet. The site is to be referenced using the State Plane coordinates and shall indicate the datum used. It is preferred that the entire site be shown on a single 24"x36" (architectural D-size drawing) plan sheet to allow a complete view of the site during plan review. Each map shall identify the phase of the project, if applicable, in relation to the overall development plan and include a north arrow, elevation datum and date of preparation. The map or series of maps shall extend 200 feet beyond the project boundary and shall indicate for that area, at a minimum the following:
- a. Limits of Earthwork on the site for each phase of the project, including any off-site borrow or spoil areas.
 - b. Soils types for the entire site, including the location and extent of visibly evident existing excavations or fills, slope instability, erosion and water seepage or wet conditions, unstable or highly erodible soils, other areas with potentially serious existing or future erosion problems, areas with known contaminated soils; and/or areas where soils will be protected, enhanced or restored.
 - c. Existing and proposed two-foot (2') contours, unless site conditions require more detailed topography to depict site drainage conditions.
 - d. Drainage patterns, location of Erosion and Sediment Pollution Controls, existing and new Post-Construction Controls and associated Pre-Treatment Practices within, entering, and exiting the site during each phase of the project, including any existing and/or constructed combined and separate storm water drainage conveyance and drainage inlet facilities within the site, beyond the site, and/or within the larger common plan of development if utilized for the Site. Also, to include locations of existing and planned drainage features to include, but not limited to, catch

basins, culverts, ditches, swales, surface inlets and outlet structures.

- e. A delineation of drainage catchments tributary to each storm water management control present during each phase of construction, including before, during, and after major grading activities as well as the total off-site and on-site size of each drainage watershed in acres and the pre-construction and post-construction runoff coefficient for each area.
 - f. Location of existing and proposed utilities including appurtenances, structures and outfalls. The approximate depths of all utilities shall be indicated.
 - g. Water resource locations including known springs, wetlands, streams, lakes, water wells; locations of delineated associated Stream Corridor Protection Zones as defined under the Stream Corridor Regulations (Article IV of the Rules and Regulations of the HCSWD).
 - h. Other setbacks, conservation easements or areas designated as open space, preserved vegetation, or otherwise protected from earth disturbing activities on or within 200 feet of the site; and a description of any associated temporary or permanent fencing or signage designating the boundary of these areas.
 - i. Existing and proposed locations of buildings, roads, and parking facilities.
 - j. The location of any in-stream activities including known temporary or permanent stream crossings, floodplain fill, floodplain excavation, and stream restoration, including the boundaries of wetlands or streams and any first subsequent named receiving water resource(s) intending to be filled or relocated under an approval from the Army Corps of Engineers and/or Ohio EPA.
 - k. Existing and proposed property boundaries and individual lot numbers.
 - l. The location of any existing or proposed easements or other restrictions placed on the use of the property and the responsible party(ies) under such easement or restriction.
 - m. On-site and off-site areas vulnerable to erosion and sediment damage.
 - n. Areas designated for the storage or disposal of solid, sanitary, and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling.
 - o. The location of designated construction entrances where the vehicles will access the construction site.
4. Information Regarding Preservation Methods: (formerly Non-Structural Controls)
The Improvement Plan will include descriptions, locations, size and extent of any methods used to preserve natural conditions as much as feasible, including but not limited to:

- a. Preserving existing vegetation, vegetative buffer strips and existing soil profile and topsoil.
 - b. Phasing of construction operations to minimize disturbed land at any one time.
 - c. Designation of tree preservation areas or protective grubbing and clearing practices.
5. Information Regarding Erosion and Sediment Pollution Controls: A complete description of the measures proposed to satisfy the performance standards of these Earthwork Regulations shall be provided in the Improvement Plan for each phase of the Project in a professionally prepared document which, at a minimum, includes the following appropriate Earthwork principles, techniques, methods, operations and work sequences:
- a. One or more site maps for each phase of construction showing the location and extent of each Erosion and Sediment Pollution Control that will be installed.
 - b. A drawing of each structural Erosion and Sediment Pollution Control providing contributing drainage areas, sufficient dimensions, construction details, and design calculations.
 - i. Details for sediment traps and settling ponds noting their sediment storage and dewatering (detention) volume and contributing drainage area. Note that sediment settling ponds are required for all areas of collected or concentrated storm water runoff.
 - ii. Locations and details for inlet protection.
 - iii. The Ohio EPA recommends the use of data sheets, from the Rainwater and Land Development Manual, to provide data for all sediment traps and settling ponds noting their inputs to design and resulting parameters such as their contributing drainage area, disturbed area, detention volume, sedimentation volume, practice surface area, dewatering time, outlet type and dimensions.
 - c. Standards and specifications for the installation and maintenance of all Erosion and Sediment Pollution Controls.
 - d. Temporary and permanent stabilization requirements and timelines for specific areas of the site. Standards and specifications shall be provided for all vegetative practices including seeding, mulching, and fertilizing rates. Standards and specifications shall be included for any turf reinforcement matting or other stabilization practices as required under these Earthwork Regulations or by the **Enforcing Official**.
 - e. Areas of the site that do not drain to primary Erosion and Sediment Pollution Controls such as sediment settling ponds and traps shall be indicated. Notes shall be included on the plans indicating the appropriate Erosion and Sediment Pollution Controls, standards and specifications for

all Erosion and Sediment Pollution Controls, including those Erosion and Sediment Pollution Controls that will be provided for use by successor owners of individual lots, and those that shall be implemented by successor owners within their individual lots.

- f. An indication of areas where soil stockpiles are to be located and a narrative procedure for the stabilization of these areas immediately after the soil stockpile is completed. If the specific locations cannot be addressed in the design stage, direction shall be provided regarding the location of the soil stockpiles by indicating areas of concern and outlining the stabilization requirements.
 - g. Estimated schedule indicating the anticipated sequence of Earthwork and other construction activities, along with the Erosion and Sediment Pollution Controls and Non-Sediment Pollution Controls to be employed during each sequence, including the time of exposure of each area prior to the completion of approved Erosion and Sediment Pollution Controls.
 - h. A written narrative that describes the overall Erosion and Sediment Pollution Control plan and highlights specific areas of concern. The narrative shall indicate stabilization requirements, inspection and maintenance guidelines, and direct the developer to contact the **Enforcing Official** for a pre-construction meeting prior to commencing with any Earthwork.
 - i. For subdivided developments where a centralized Erosion and Sediment Pollution Control capable of controlling multiple individual lots is not provided, a detailed drawing of a typical individual lot showing standard individual lot Erosion and Sediment Pollution Controls.
6. Information Regarding Post-Construction Controls: For each non-structural and structural Post-Construction Control to be employed on the site, the Improvement Plan shall include the following:
- a. Site maps showing the location and size of new and existing Post-Construction Controls, Runoff Reduction Practices, Pretreatment Practices, Inlet/Outlet Protection and other storm water facilities.
 - b. Storm water calculations, shall include the area-weighted volumetric runoff coefficients and resulting water quality volume under both the pre-construction and post-construction site conditions for each catchment tributary to an Erosion and Sediment Pollution Control or Post-Construction Control (per Section 510 of Article V Post-Construction Regulations) and, storm water conveyance facility.
 - c. Detailed drawings drawn to scale with dimensions and elevations, and design calculations of Post-Construction Controls showing storage volumes and sizes of contributing drainage areas, capacities, pretreatment practices, forebays and micropools for dry basins, velocity dissipation devices/practices, outlet details – including outlet protection, drain times; and, if applicable, an explanation of the use of existing post-construction facilities including documentation of ability to meet current

water quality and quantity requirements and provision for long-term maintenance. The use of Ohio EPA data sheets is recommended (see Ohio's Rainwater and Land Development manual and Ohio EPA resources for examples).

- d. Soil and subsurface conditions, including tests of infiltration rates for native and amended soils underlying each Post-Construction Control, borings or equivalent data indicating seasonal high groundwater levels, top of bedrock elevations, and perched groundwater elevations, and an assessment of the suitability of soil and subsurface conditions for the Post-Construction Control.
 - e. Specifications for materials used to construct each Post-Construction Control, including vegetation, amended soil composition, and structural materials.
 - f. Identification of any proposed Alternative Post-Construction Controls – those practices not identified in Article V, Table 510-B – with a rationale for their selection; all related information required under Article III, Section 309.D including calculations and detailed drawings; and that meet the minimum treatment criteria and testing requirements in Article V, Section 511.
 - g. Post-Construction Control operations and maintenance requirements during and after construction.
 - h. Any supplemental information requested by the **Enforcing Official**.
 - i. The **Enforcing Official** may require calculations to be presented in specific formats and/or incorporated into spreadsheets with embedded, pre-checked calculations to facilitate **Enforcing Official** review and Ohio EPA approvals.
7. Other Approvals and Permits:
- a. Ohio EPA NPDES Permit Number and other applicable state and federal permit numbers or approvals shall be provided if available, or the status of permit applications shall be provided if final approvals have not been received.
 - b. The parcel number, address, contact information, and Earthwork Approval shall be provided for any off-site borrow areas and excavated material disposal areas.
8. Construction-Phase Inspection and Maintenance Plan: The Improvement Plans shall include a Construction-Phase Inspection and Maintenance Plan for the Erosion and Sediment Pollution Controls and Non-Sediment Pollution Controls employed on the property. This Plan shall address the inspection and maintenance frequency and requirements listed in Section 314 INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT POLLUTION CONTROLS and Section 316 INSPECTION AND MAINTENANCE OF NON-SEDIMENT POLLUTION CONTROLS of these Earthwork Regulations.

9. Calculations: Calculations shall be provided as part of the Improvement Plans for proposed storm water runoff flows, volumes, and timing into and through all Earthwork and Post-Construction Controls.
 - a. Calculations shall include the underlying assumptions and hydrologic and hydraulic methods and parameters, under pre- and post-construction land use conditions, for flood control, water resource protection, and water quality, as required in Section 310 EROSION AND SEDIMENT POLLUTION PREVENTION PERFORMANCE STANDARDS, Section 311 GEOTECHNICAL PERFORMANCE STANDARDS, and Section 312 NON-SEDIMENT POLLUTION CONTROL PERFORMANCE STANDARDS of these Earthwork Regulations.
 - b. Calculations shall demonstrate compliance with local storm water quantity management requirements and demonstrate that the runoff from upper watershed areas have been considered in the calculations and indicate that no adverse impacts are conveyed downstream of the proposed project.
 - c. An investigation of immediate downstream conditions as defined by the **Enforcing Official** is required to support development of a rationale for Erosion and Sediment Pollution Controls and Post-Construction Control selection addressing anticipated impacts on the water resource and floodplain morphology, hydrology, and water quality. If the downstream property owner(s) refuse to allow access a letter must be submitted by the downstream property owner(s) stating the refusal.
10. The Improvement Plans may be required to contain additional information when requested by the **Enforcing Official**, including but not limited to:
 - a. A report from a Professional Engineer qualified in geotechnical engineering showing the results of surface and subsurface exploration, conditions of the land, procedures for performing the grading operations, maximum slope to satisfy stability, and other geotechnical design requirements;
 - b. A description of the borrow material, its source, the construction methods to be used and the specified minimum degree of compaction;
 - c. The preparation of existing ground surface to receive fill; and
 - d. Subsurface drainage where necessary for stability.
- E. Substantial change in site conditions: The **Enforcing Official** shall be notified whenever unforeseen site conditions emerge (e.g., unforeseen water resources such as unknown springs) during the course of construction that affects the Earthwork.
- F. A notation shall be placed on the plans that the Owner is responsible for notifying the Ohio Utilities Protection Service (OUPS) of the location of the excavation or fill site, per Section 3781.25 to 3781.32 of the ORC.

- G. Continuation of Controls for Individual Lot Development: Improvement Plans for single family homes and/or individual structures that will disturb less than one (1) acre but are part of a larger common plan of development shall describe planned Erosion and Sediment Pollution Controls for the individual lot, including the location of any Erosion and Sediment Pollution Controls, and the appropriate standards and specifications for their installation, maintenance, and final stabilization, as well as a timeline for completion. Where seasonal conditions prevent permanent stabilization, alternative temporary stabilization practices shall be specified in the Improvement Plans. Detailed specifications for Erosion and Sediment Pollution Controls shall be included for lots that do not drain to a sediment settling pond or trap, or for areas needing special attention, such as steep slopes and areas within 50' of water resources. The Owner of the individual lot shall inform the future owner of the lot of any Erosion and Sediment Pollution Control Requirements that will carry over to the new lot (home) owner, and notify the **Enforcing Official** within seven (7) days of the date of transfer of the lot(s).
- H. Improvement Plan Updates Required: The approved Improvement Plan shall be modified whenever there is a change in design, construction, operation or maintenance which has or is likely to have a significant effect on the potential for the discharge of pollutants, or if the recommended controls prove to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity. Revised Improvement Plans shall be provided to the **Enforcing Official** for review and approval prior to implementing any proposed changes.

310 EROSION AND SEDIMENT POLLUTION CONTROL PERFORMANCE STANDARDS

- A. The Improvement Plan shall be a professionally prepared document which includes appropriate Earthwork principles, techniques, methods, operations and work sequences. The Earthwork Control Performance Standards contained in this Section shall be followed unless a variance is approved by the **Enforcing Official** consistent with these Earthwork Regulations according to criteria in paragraph 310(O). Erosion and Sediment Pollution Controls must be maintained in good operational condition until permanent Post-Construction Controls compliant with the Post-Construction Regulations (Article V of the Rules and Regulations of the HCSWD) are installed and operational and all areas disturbed during construction have been stabilized.
- B. Duty to Inform Contractors and Subcontractors: The Owner shall inform all contractors and subcontractors who will be involved in the implementation of the Earthwork controls about the terms and conditions of the Earthwork Permit. The Owner shall maintain a written document containing the signatures of all contractors and subcontractors involved in the implementation of the Earthwork controls, acknowledging that they have reviewed, understand and will follow the conditions and responsibilities of the Earthwork Permit and the Improvement Plans. Improvement Plans shall be created and signatures shall be obtained prior to commencement of any Earthwork. A copy shall be provided to the **Enforcing Official** prior to commencing with the project.
- C. Post-Construction Controls and Erosion and Sediment Pollution Controls: Improvement Plans shall show temporary and permanent methods, features and facilities to control runoff as required under these Earthwork Regulations and under the Post-Construction Regulations (Article V of the Rules and Regulations of the HCSWD).
- D. Preservation Methods: The Improvement Plans must clearly delineate on the document and indicate methods of preventing disturbance of any water resources, riparian areas,

unstable or highly erodible soils, steep slopes, or other areas that are protected under local, State, or Federal law. Improvement Plans shall also identify any riparian setbacks, green space preservation, conservation buffers, and other stream protection measures required under the Stream Corridor Regulations (Article IV of the Rules and Regulations of the HCSWD) and/or required by conditions of development set by the County and/or Local Jurisdiction related to stream protection. The Project shall also incorporate practices that preserve the natural condition in all other areas that are not integral to the proposed development activity. Such practices may include: preserving riparian areas adjacent to surface water resources, preserving vegetation and vegetative buffer strips, and existing soil profile and topsoil; and phasing of construction operations 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.

- E. Phased Installation: The installation of the Erosion and Sediment Pollution Controls shall be done progressively as the project is constructed. Sediment settling ponds, and/or sediment traps shall be constructed, and the skimmer or equivalent dewatering device and emergency overflow shall be functioning before clearing activity begins in the contributing watershed draining to controls. All other measures to trap sediment shall be constructed and completed before upslope clearing and grading activities are permitted to take place. Earthen structures such as dams, dikes and diversions shall be stabilized within seven (7) days after installation is complete. Where slow growing or dormant seasons occur, alternate or temporary solutions as required under these Earthwork Regulations shall be utilized. The Erosion and Sediment Pollution Controls sequencing, installation, and seasonal alternatives shall be a part of the Site Description portion of the Improvement Plans. As construction progresses and the topography is altered, appropriate Erosion and Sediment Pollution Controls must be constructed, or existing controls altered to address the changing drainage patterns and shall be provided until final permanent stabilization of the site.
- F. Sediment Controls: The Improvement Plans shall include a description of Sediment Controls that store runoff, allow sediments to settle and/or divert flow away from exposed soils or otherwise limits runoff from exposed areas. Structural Erosion and Sediment Pollution Controls shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Such practices shall include: sediment settling ponds and traps, stabilized construction entrance, dust control, sediment barriers, earth diversion dikes or ditches which direct runoff to a sediment settling pond, and storm drain inlet protection, all of which are further specified below:
1. Sediment Settling Ponds and Traps: A sediment settling pond or trap is required for all concentrated or collected storm water runoff and runoff from drainage areas that exceed the design capacity of a sediment barrier or inlet protection. Sediment settling ponds are required for all inlets receiving drainage of one or more acres. Alternative controls may be approved if it can be demonstrated to the Ohio EPA that the alternative controls are equivalent in effectiveness to a sediment settling pond or trap. The following criteria shall be used to design a sediment settling pond or trap, and calculations shall be provided in the Improvement Plans:
 - a. The sediment settling ponds/traps consist of both a dewatering zone and a sediment storage zone and are dewatered at the pond surface using a skimmer or equivalent device where feasible.

- b. The volume of the dewatering zone shall be at least 1800 cubic feet (ft³)/acre (67 cubic yards/acre) of storage per acre of total contributing drainage area with a minimum 48-hour draw down time. 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 or trap and is not co-mingled with sediment-laden runoff.
- c. 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 ft³ per disturbed acre within the watershed of the settling pond, OR
 - Method 2: The volume of the sediment storage zone shall be the volume necessary to store the sediment as calculated with RUSLE or a similar generally accepted erosion prediction model.
- d. The depth of the sediment settling pond must be less than or equal to five (5) feet. The configuration between the inlet and the outlet of the settling pond shall provide at least two (2) units of length for each unit of width (>2:1 length: width ratio).
- e. Sediment shall be removed from the sediment storage zone once it exceeds 50 percent of the minimum required sediment storage design capacity and prior to the conversion to the post-construction practice unless suitable storage is demonstrated based upon over-design. The elevation corresponding to 50 percent of the minimum required sediment storage design capacity shall be provided on the plans and staked around the perimeter of the settling pond(s) or trap(s) on-site (a minimum of 6 stakes shall be used). When the sediment reaches this elevation, the sediment shall be removed. This requirement shall be provided in Improvement Plans when detailing maintenance standards and specifications and shall be consistent with Section 314 INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT POLLUTION CONTROLS
- f. Combining multiple sediment and erosion control measures in order to maximize pollutant removal is encouraged.
- g. When designing sediment settling ponds/traps, public safety shall be considered as a design factor, especially as it relates to children, and alternative sediment controls must be used where site limitations preclude a safe design. The use of a combination of Erosion and Sediment Pollution Controls in order to achieve maximum pollutant removal is encouraged. No temporary sediment settling ponds or traps shall be placed within a permanent storm water quantity or quality control basin or Post-Construction Control unless it is large enough to contain the entire dewatering zone volume, sediment storage volume, water quality volume, and storm water quantity control volume, subject to the approval of the **Enforcing Official** and the Local Jurisdiction. In addition, no temporary sediment settling ponds or traps shall be placed directly adjacent to a

water resource unless prior written approval has been provided by the **Enforcing Official**.

- h. In unincorporated townships, alternatives such as separate sediment settling ponds or traps must be considered as opposed to retrofitting existing storm water basins. Prior approval must be obtained from the Hamilton County Planning and Development Stormwater and Infrastructure before the HCSWCD will approve retrofitting a storm water basin. Retrofitted storm water basins shall comply with the design criteria specified in this Section of these Earthwork Regulations.
 - i. Specific information shall be provided for the sediment settling ponds/traps, including the size and type of skimmer or equivalent dewatering device. Calculations shall demonstrate that the outlet has been designed to achieve the 48-hour drawdown time. Specifications shall be provided for the geo-textile fabric and riprap for the emergency overflows for each sediment settling pond/trap. The riser shall be wrapped first with a welded wire fencing and then with filter fabric. For approved retrofits of storm water quantity basins, the upper orifice shall be temporarily protected to minimize sediment from entering the Post-Construction Control.
2. Off-Site Traffic: Off-site vehicle tracking of sediments and dust generation shall be minimized. All roads, storm drainage systems and sidewalks shall be kept free of sediment so as not to create a hazard. All access points shall have a stabilized construction entrance. Periodic street sweeping and topdressing of the construction entrance shall be performed to ensure compliance with these Earthwork Regulations. Washing sediment into storm drainage systems is not an acceptable practice unless the system drains to a sediment settling pond or trap. Washing of sediment directly into water resources or storm drainage systems that drain directly to water resources without passing through a properly sized and located Erosion and Sediment Pollution Controls is prohibited.
 3. Dust Control: Dust from Earthwork shall be controlled using effective dust control practices for site and climatic conditions during each phase of construction.
 4. Sediment Barriers and Diversions: Sheet flow runoff from Earthwork shall be intercepted by sediment barriers or diversions as necessary to meet Erosion and Sediment Pollution Control objectives of these Earthwork Regulations. Where intended to provide sediment control, sediment barriers shall be placed on a level contour. These Earthwork Regulations do not preclude the use of other sediment barriers designed to control sheet flow runoff. For most applications, a standard silt fence may be substituted with a 12-inch diameter sediment barrier. The relationship between the maximum drainage area to sediment barrier for a particular slope range is shown in **Table 310-A**. Sediment barriers shall not be used for sediment control associated with concentrated flows. Placing sediment barriers in a parallel series does not extend the size of the drainage area.

Table 310-A Sediment Barrier Drainage Area Limits

Maximum Drainage Area to 100 Linear Feet of Sediment Barrier	Range of Slope for a Particular Drainage Area
0.5 acres	< 2%
0.25 acres	> 2% but < 20%
0.125 acres	> 20% but < 50%

5. Diversions: Storm water diversion practices shall be used to keep runoff away from Earthwork, control storm water run-on quantities and protect steep slopes where practicable. Such devices, which include ditches, dikes or berms, may receive storm water runoff from areas up to ten (10) acres. Earth diversion dikes or ditches alone are not considered a sediment control unless those are used to direct storm water to a properly-designed sediment-settling pond or trap.

6. Inlet Protection: Erosion and Sediment Pollution Controls shall also be used to minimize sediment-laden water from entering active storm drain systems, even if the storm drain system drains to sediment settling ponds/traps. Inlet protection or other Erosion and Sediment Pollution Controls are required to improve the overall effectiveness of the sediment settling ponds/traps and minimize their maintenance. Hazards resulting from storm drain inlet protection as it relates to diverting storm water runoff and causing erosion or creating flooding problems to adjacent roads or structures shall be taken into consideration. All inlets receiving runoff from drainage area of one or more acres will require a sediment settling pond or trap designed according to Paragraph 310 (F)(1). Alternative practices shall be specified if ponding cannot occur around the inlet and the inlet does not drain to a sediment settling pond or trap.

- G. Dewatering Activities: Dewatering activities involve the disposal of waters accumulating in trenches, sediment settling ponds, sediment traps, or other locations where ground or surface waters may collect on the site. There shall be no turbid discharges to surface water resources resulting from dewatering activities. Trench, ground water, or any other dewatering activities containing sediment shall pass through a sediment settling pond or other equally effective sediment control prior to being discharged from the site. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice. Dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge. Care shall be taken when discharging groundwater or during any dewatering work to ensure that runoff does not become pollutant-laden by traversing over disturbed soils or other pollutant source and/or cause erosion in stabilized areas. The Professional Engineer shall provide specifications for de-watering activities for the project. The Professional Engineer shall provide specifications for cleaning and disposal of spoils for in-line retention systems to prevent the discharge of sediment or other pollutants, if applicable.

- H. Stream Protection: If Earthwork disturbs areas adjacent to streams, Erosion and Sediment Pollution Controls shall be designed and implemented on-site to protect all adjacent streams from the impacts of sediment laden runoff. Construction activities in surface waters may be subject to CWA Section 404 and 401 regulations and permitting and/or state isolated wetland permit requirements include, but are not limited to: sewer line crossings, grading, backfilling or culverting streams, filling wetlands, road and utility line construction, bridge installation and installation of flow control structures. Should any

of these activities be planned, the appropriate U.S. Army Corps of Engineers office shall be contacted. No Erosion and Sediment Pollution Controls (e.g., the installation of sediment barrier or a sediment settling pond or trap in a stream) shall be used in a stream. Earthwork shall be performed in compliance with all applicable stream corridor protection zone or setback requirements. Specific stream corridor protection zone requirements are found in the Stream Corridor Regulations (Article IV of the Rules and Regulations of the HCSWD.) The placement of fill within FEMA regulated flood plains shall not be permitted to cause downstream erosion or other negative impacts.

I. Groundwater Protection:

1. No Earthwork Project shall be permitted to cause the pollution or degradation of groundwater. The Professional Engineer shall design the project to control the discharge of pollution into groundwater resources.
2. Unless otherwise authorized by Ohio EPA, only uncontaminated soil may be used as a fill material for any Earthwork in unincorporated Hamilton County constructed in an area of groundwater pollution potential with a Pollution Potential Index of 140 and greater, as defined using the methodology described in USEPA Publication EPA/600-2-87/035. Maps of this designation prepared by Ohio Department of Natural Resources Division of Water and titled "Ground-Water Pollution Potential of Hamilton County" are available from the HCSWCD or can be downloaded from the Ohio Department of Natural Resources website.
3. All Earthwork Projects in Ground Water Protection Zones in unincorporated Hamilton County must ensure proper storage and disposal of chemicals and fuels. All spills shall be cleaned up immediately and reported as required under State, Federal and local laws and regulations, including the State Emergency Response Commission (SERC) set of eight (8) release reporting rules (3750-25-01, 3750-25-05; 3750-25-10; 3750-25-12, 3750-25-13; 3750-25-15; 3750-25-20; 3750-25-25) effective June 30, 1993. For more information contact Ohio EPA.

J. Erosion Prevention Practices: The Project shall make use of erosion prevention practices that are capable of providing cover over disturbed soils unless a waiver is approved in accordance with Section 310(O) of these Earthwork Regulations. A description of erosion prevention practices designed to re-stabilize the site after Earthwork is complete shall be included in the Improvement Plans. The Improvement Plans must provide specifications for stabilization of all disturbed areas of the site and provide guidance as to which method of stabilization will be employed for the various times of the year. Such practices may include: temporary and permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing of construction operations, use of construction entrances, and the use of alternative ground cover. Erosion prevention practices shall also comply with Section 510 (C) (4) of the Post-Construction Regulations (Article V of the Rules and Regulations of the HCSWD).

K. Stabilization: At a minimum, disturbed areas must be stabilized as specified in Tables 310-B and 310-C. Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques shall be employed. Approval shall be obtained from the Enforcing Official before implementing alternative stabilization techniques per Section 310(N) of these Earthwork Regulations.

1. Permanent Stabilization of Conveyance Channels/Ditches: Special measures

shall be undertaken to stabilize ditches and prevent erosive flows. Measures may include seeding, dormant seeding (as defined in the latest edition of the Rainwater and Land Development Manual), mulching, erosion control matting, sodding, riprap, natural design with bioengineering techniques or rock check dams. The standards and specification shall be included in the permanent stabilization requirements.

Table 310-B: Permanent Stabilization

Areas Requiring Permanent Stabilization	Time Frame to Apply Erosion Prevention Practices
Any areas that will lie dormant for one (1) year or more	Within seven (7) days of the most recent disturbance
Any areas within 50 feet of a stream and at final grade	Within two (2) days of reaching final grade
Any other areas at final grade	Within seven (7) days of reaching final grade within that area

Table 310-C: Temporary Stabilization

Areas Requiring Temporary Stabilization	Time Frame to Apply Erosion Prevention Practices
Any disturbed areas within fifty (50) feet of a stream and not at final grade	Within two (2) days of the most recent disturbance if the areas will remain idle for more than fourteen (14) days
For all construction activities, any disturbed areas that will be dormant for more than fourteen (14) days but less than one (1) year, and not within fifty (50) feet of a stream	Within seven (7) days of the most recent disturbance within the area For residential subdivisions, disturbed areas must be stabilized at least seven (7) days prior to transfer of permit coverage for the individual lot(s)
Disturbed areas that will be idle over winter	Prior to the onset of winter weather – follow the guidelines outlined in the Rainwater & Land Development Manual for dormant seeding specifications

2. Runoff Control Practices: The Project shall incorporate measures which control the flow of runoff from disturbed areas so as to prevent erosion from occurring. Such practices may include rock check dams, pipe slope drains, diversions to direct flow away from exposed soils and protective grading practices. These practices shall divert runoff away from disturbed areas and steep slopes where practicable. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.

- L. Control of Sediment-Laden Runoff to Post-Construction Controls: No storm water shall be directed through any Post-Construction Control required under the Post-Construction

Regulations (Article V of the Rules and Regulations of the HCSWD), or portions thereof, until the entire area tributary to the Post-Construction Control has reached final stabilization. Final stabilization occurs after the completion of the final grade at the site, after all of the utilities are installed, and the site is stabilized with vegetation or other appropriate methods. Documentation acceptable to the **Enforcing Official** shall be submitted to demonstrate that the site has reached final stabilization. Upon a satisfactory demonstration, the Post-Construction Control may be completed and placed into service. Upon completion of the installation of the Post-Construction Control, all disturbed areas and/or exposed soils caused by such installation must be stabilized within two (2) days of the completion of the installation unless actually precluded by weather conditions, and in such event, as soon thereafter as weather conditions permit stabilization.

- M. Removal of Controls: The Owner is responsible for the removal of Erosion and Sediment Pollution Controls upon stabilization of all disturbed areas or upon completion of the project, whichever occurs first. No required Erosion and Sediment Pollution Controls shall be removed during the permit period until the upslope areas draining to the associated controls are permanently stabilized unless the removal is approved in writing by the **Enforcing Official**.
- N. Alternative Methods: Methods of erosion prevention, sediment and storm water runoff control, other than those specified by these Earthwork Regulations may be considered by the **Enforcing Official** on a case by case basis as provided below, and must be submitted for approval prior to use, installation or implementation.
1. The proposed alternative method shall otherwise comply with these Earthwork Regulations. Any required recalculation or redesign of any portion of the project is the sole responsibility of the Owner and shall not be provided by the reviewer.
 2. The decision of the **Enforcing Official** as to whether to permit the proposed alternative method will be based largely on the sufficiency and completeness of the information submitted with the application.
 3. The proposed alternative method will accomplish the purpose, intent and results of these Earthwork Regulations and will not otherwise cause a hazard.
 4. The alternative method must be enforceable by the **Enforcing Official**.
- O. Variances: The **Enforcing Official** may vary a requirement set forth in Section 310 EROSION AND SEDIMENT POLLUTION CONTROL PERFORMANCE STANDARDS of these Earthwork Regulations if site specific conditions prevent the implementation of required Erosion and Sediment Pollution Controls as written, the implementation of the controls will result in no environmental benefit, or the project is in an isolated, self-contained area where there will be no adverse effect on adjacent public or private properties or watercourses. Under no circumstances may a variance be granted if a Hazard will be created. A request for a variance shall be submitted to the **Enforcing Official** with complete detailed supporting materials and information justifying such variance and demonstrating that no Hazard will be created if the variance should be granted.
- P. Access to Erosion and Sediment Pollution Controls: Access shall be provided to the **Enforcing Official** and other authorized personnel to maintain proper operation and

function of Erosion and Sediment Pollution Controls during the project. The access must include temporary or construction easements and heavy equipment access ways. These access ways must be clear of obstructions in order to facilitate maintenance of the controls.

311 GEOTECHNICAL PERFORMANCE STANDARDS

- A. Geotechnical performance standards apply to unincorporated portions of Hamilton County and member municipalities which have adopted the requirements of this section.
- B. Tops and toes of all slopes related to any Earthwork shall be designed and placed so as to maintain a condition of stability and not cause any adverse impact on adjacent property and/or to applicable stream corridor protection zones under the Stream Protection Regulations (Article IV of the Rules and Regulations of the HCSWD).
- C. The tops and toes of all Earthwork shall be designed to be completely contained within the property being developed unless included in an easement or binding written agreement with an adjacent property owner. A Professional Engineer shall certify that the tops and toes of all slopes are set back from property boundaries or structures as necessary for:
 - 1. Stability of adjacent property.
 - 2. Adequacy of foundation support.
 - 3. Protection of adjacent property against damage from storm water runoff.
- D. The tops and toes of any Earthwork shall be designed and constructed in a manner that will not adversely impact existing or proposed buildings or adjacent property.
- E. A complete system for proper storm water runoff management and drainage of the site involving tops and toes of Earthwork shall be provided. Such a drainage system shall be completely contained within the property being developed unless containment is not feasible, in which case runoff flows may be diverted off-site in accordance with applicable runoff standards and requirements approvable by the **Enforcing Official**.
- F. The **Enforcing Official** may require additional geotechnical or other engineering data and site-specific designs where the tops or toes of slopes and/or the drainage system creates or may create a Hazard.
- G. The **Enforcing Official** may waive or modify requirements under this section of these Earthwork Regulations relating to cut and fill operations if the application for the Earthwork permit includes a written opinion from a Professional Engineer employed by the Owner stating that the proposed cut and fill operations will not cause a Hazard or is in an isolated, self-contained area where there will be no adverse effect on adjacent public or private property.
- H. A request for a waiver shall be submitted to the **Enforcing Official** with detailed evidence justifying such waiver and demonstrating that no hazard will be created if the waiver should be granted.

- I. Denial of a waiver may be appealed to the Hamilton County Earthwork Board of Appeals for projects in unincorporated Hamilton County, or to the body designated by the municipal jurisdiction to address appeals.

312 NON-SEDIMENT POLLUTION CONTROL PERFORMANCE STANDARDS

- A. Non-Sediment Pollution Controls: All necessary and appropriate Non-Sediment Pollution Controls shall be implemented to prevent the discharge of hazardous substances, solid waste (other than sediment) or liquid waste, including building materials from the site. The Improvement Plan shall describe the Non-Sediment Pollution Controls that will be implemented for the project, including but not limited to measures that:
 1. Prevent wastewater from the washout of concrete trucks, stucco, paint, form release oils, curing compounds, and other construction materials from being directly or indirectly discharged into a ditch, storm sewer or water resource.
 2. Prevent the discharge of pollutants from vehicle fuel, oils, or other vehicle fluids to a storm sewer or surface waters of the state.
 3. Minimize exposure of waste materials - including building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, and sanitary waste - to precipitation, storm water runoff, and snow melt.
 4. Prevent and respond to chemical spills and leaks, referencing applicable plans (i.e., Spill Prevention Control and Countermeasure (SPCC) plans, spill control programs, Safety Response Plans, etc.) where appropriate, and maintaining a copy of such plans on site.

All Non-Sediment Pollution Controls shall be maintained in a functional condition until all construction activities served by these Controls are complete and Post-Construction Controls are operational. The Non-Sediment Pollution Controls shall be designed to minimize maintenance requirements. The Improvement Plans shall provide a description of maintenance procedures needed for each measure and practice to ensure their continued performance.

- B. Access to Non-Sediment Pollution Controls: Access is required to maintain proper operation and function of Non-Sediment Pollution Controls during the project. The access should include temporary or construction easements and heavy equipment access ways where necessary. These access ways should be clear of obstructions and can be easily maintained.

313 FINAL INSPECTION APPROVAL AND RELEASE OF RECORD PLAT

- A. To receive final inspection and acceptance of any project, the following must be completed and provided to the **Enforcing Official**:
 1. Final stabilization must be achieved per the Improvement Plan and all Post-Construction Controls must be installed, demonstrated to be functional, and meet the criteria set forth in Article V of the Rules and Regulations of the HCSWD, as determined by the **Enforcing Official**.

2. To initiate termination of an Earthwork Permit for a project or a portion thereof and final inspection, the Owner shall submit a letter to the **Enforcing Official** certifying compliance with the permit requirements, stating the reason for termination, and indicating the portions of the site where termination is being requested. The permittee is also responsible for filing a notice of termination (NOT) with Ohio EPA.
- B. Final inspection approvals and releases of Record Plats: in unincorporated Hamilton County are subject to the following requirements:
1. Residential & Industrial Subdivisions: All requests for Release of Record Plat and Final Inspection Approval shall be initialized through the Hamilton County Engineers Office. The **Enforcing Official** shall send written notice of the approval or denial of the request within seven (7) working days of receiving the request from the County Engineers Office. For release of the Record Plat the site shall be in compliance with all provisions of these Earthwork Regulations.
 - a. All areas for which the Record Plat release is being requested shall be temporarily or permanently stabilized according to Section 310 (K) of these Earthwork Regulations.
 - b. All sediment controls shall be installed and maintained according to Section 310 (F) of these Earthwork Regulations.
 - c. The Hamilton County Engineer shall not release the Record Plat for recording until receipt of a Notice of Compliance from the Enforcing Official that the site is in compliance with all provisions of these Earthwork Regulations and has received a geotechnical certification.
 2. Commercial and Industrial Developments: The Owner shall submit a letter to the **Enforcing Official** requesting a Final Inspection a minimum of 14 days before requesting a Temporary Certificate of Occupancy (TCO) or Certificate of Occupancy (CO) from the Building Department. The Building Department shall not issue a TCO or CO until the **Enforcing Official** determines that the site is in compliance with all provisions of these Earthwork Regulations. Final stabilization must be achieved; temporary Erosion and Sediment Pollution Controls removed and all Post-Construction Controls must be installed and made functional per the approved Improvement Plan, as determined by the **Enforcing Official**.
 3. Fill Sites: To obtain release from an Earthwork Permit on Fill Sites the Owner shall send a written request to the **Enforcing Official** requesting final inspection. The entire site shall be permanently stabilized and all temporary Erosion and Sediment Pollution Controls removed. The Performance Bond will not be released until the site is in compliance with all provisions of these Earthwork Regulations.
- C. Municipal member jurisdictions shall not release the Record Plat, issue a certificate of occupancy, or otherwise allow a transfer of ownership to any property that is not in full compliance with these Earthwork Regulations.
- D. The Hamilton County Engineer in unincorporated townships or the local municipality in incorporated areas shall not approve and release the Record Plat for recording until

receipt of a Notice of Compliance from the **Enforcing Official** that the site is in compliance with all provisions of these Earthwork Regulations, has received a geotechnical certification, if applicable, and has properly transferred or removed all approved Erosion and Sediment Pollution Controls and Non-Sediment Pollution Controls, including but not limited to proper installation, closure, and/or maintenance of sediment settling ponds and traps, sediment fence and inlet protection. All idle areas must have temporary and permanent stabilization as appropriate.

314 INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT POLLUTION CONTROLS

- A. The Construction-Phase Inspection and Maintenance Plan included in the Improvement Plans shall address all requirements of this Section.
- B. All disturbed areas and areas used for storage of materials exposed to precipitation shall be inspected for evidence of or the potential for pollutants entering the drainage system. All Erosion and Sediment Pollution Controls shall be inspected and maintained to ensure continued performance of their intended function. Discharge locations shall be inspected to ascertain whether Erosion and Sediment Pollution Controls are effective in preventing significant impacts to the receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.
- C. If the inspection reveals that an Erosion and Sediment Pollution Control 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 that indicates the maintenance or repair is needed. Sediment settling ponds must be repaired or maintained within ten (10) days of the inspection that indicates the maintenance or repair is needed.
- D. At a minimum, all Erosion and Sediment Pollution Controls on the site shall be inspected by the Owner's **Qualified Inspection Personnel** at least once every seven (7) calendar days and by end of the next calendar day after any storm event greater than one-half (1/2) inch of rain per 24-hour period, excluding weekends and holidays unless work is scheduled. A record shall be made of each inspection. The Owner shall assign **Qualified Inspection Personnel** to conduct these inspections to ensure that the Erosion and Sediment Pollution Controls are functional, to evaluate whether the Erosion and Sediment Pollution Controls are adequate and properly implemented or constructed in accordance with the approved Improvement Plan, and to determine whether other Erosion and Sediment Pollution Controls are required. The **Qualified Inspection Personnel** shall record and report issues and deficiencies associated with the Erosion and Sediment Pollution Controls. A Professional Engineer must determine necessary changes to the location and position each Erosion and Sediment Pollution Control.

To record the results of inspections, the **Qualified Inspection Personnel** may use the **Enforcing Official's** Self Inspection Form and Log, Ohio EPA's form and log, or develop their own. A copy of the inspection form and log that will be implemented shall be provided to the **Enforcing Official** with the Improvement Plans. The inspection reports shall be made available to the **Enforcing Official** and shall be kept on site. Each inspection report shall be signed and certified by the Owner. At a minimum, the inspection report shall include:

1. The inspection date.

2. Names, titles, and qualifications of personnel making the inspection.
 3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event.
 4. Approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred.
 5. Weather information and a description of any discharges occurring at the time of the inspection.
 6. Location(s) of discharges of sediment or other pollutants from the site.
 7. Location(s) of BMPs that need to be maintained.
 8. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location.
 9. Location(s) where additional BMPs are needed that did not exist at the time of inspection.
 10. Corrective action required including any changes to the SWP3 necessary and implementation dates.
- E. All Erosion and Sediment Pollution Controls designed for sediment control shall be maintained in a functional condition until all up-slope areas they control are permanently stabilized and Post-Construction Controls are operational. The Erosion and Sediment Pollution Controls shall be designed to minimize maintenance requirements. The Improvement Plans shall provide a description of maintenance procedures needed for each measure and practice to ensure their continued performance.
- F. If the inspection reveals that an Erosion and Sediment Pollution Control fails to perform its intended function and that another, more appropriate Erosion and Sediment Pollution Control is needed to be effective, the Professional Engineer shall amend the Improvement Plans. The new Erosion and Sediment Pollution Control shall be installed or implemented within ten (10) days of the inspection.
- G. If the inspection reveals that an Erosion and Sediment Pollution Control has not been installed or implemented in accordance with the schedule contained in the approved plan, the Erosion and Sediment Pollution Control must be implemented within ten (10) days from the date of the inspection. If the inspection reveals that the planned Erosion and Sediment Pollution Control is not needed, the inspection record must contain a statement of explanation as to why the Erosion and Sediment Pollution Control is not needed.
- H. The Owner shall maintain the inspection records and logs for three years following the termination of the Earthwork permit. The inspection records shall include all of the items listed in Section 314(D) above, and must include names(s) and qualifications of personnel making the inspection, date(s) of the inspection, statement whether the facility is in compliance with the Improvement Plans and the permit at the time of the inspection,

any incidents of non-compliance and any observations that significantly impact the implementation of the Improvement Plans.

315 GEOTECHNICAL MONITORING AND MAINTENANCE OF CERTAIN EARTHWORK

- A. Earthwork covered under Section 311 Geotechnical Performance Standards of these Earthwork Regulations may be required by the **Enforcing Official** to obtain a permit and or be monitored by or under the direction of a Professional Engineer qualified in geotechnical engineering. In such case, the Professional Engineer shall certify to the **Enforcing Official** that the requirements under the approved plans and permit have been completed. The **Enforcing Official** may also require that Geotechnical and Erosion and Sediment Pollution Controls Declaration Contracts be signed and submitted before commencing with the any Earthwork.
- B. A geotechnical Earthwork permit may be required where a succession of small excavations or fills constitutes a continuing operation and the accumulation of such excavations or fills will exceed one or both of the following conditions within the area of Earthwork:
 - 1. Five (5) feet in vertical depth; or
 - 2. 350 cubic yards per each 5,000 square feet.
- C. A geotechnical Earthwork permit shall be required in all cases where grading is proposed on existing terrain with a known history of, or showing visible evidence of, active or dormant landslides.
- D. A geotechnical Earthwork permit may be required where the site is situated partially or wholly over terrain with a "high" landslide potential.
- E. Any excavating or filling performed pursuant to the exemptions in Section 306 Exceptions of these Earthwork Regulations which creates a hazard and / or contributes to water quality degradation shall be subject to the provisions of these Earthwork Regulations as they relate to the specific hazard.
- F. Work that meets the following provisions may be exempted from the requirement for Geotechnical Monitoring or geotechnical Earthwork permit.
 - 1. Any excavation for a basement of a building, or other structure, either privately or publicly owned, authorized by a valid Building Permit, provided:
 - a. The excavation does not exceed the following:
 - i. Twelve (12) feet in vertical depth at its deepest point; or
 - ii. One (1) cubic yard per each eleven (11) square feet of work area;
 - b. The excavation is made within an area described as the upper 25% of the vertical distance between the top of slope and toe of slope with a slope not greater than four (4) feet horizontal to one (1) foot vertical (4:1), or in the lower 75% of the vertical distance between the top of slope and toe of slope with a slope not greater than five (5) feet horizontal to one (1) foot

vertical (5:1).

2. The subsequent use of excavated material as fill on the same site, provided the fill, excluding building backfill material, does not exceed:
 - a. Five (5) feet in vertical depth at its deepest point; or one (1) cubic yard per each eleven (11) square feet of work area;
 - b. The fill is placed on site area with a slope not greater than five (5) feet horizontal to one (1) foot vertical (5:1) and
 - c. The fill does not result in a finished slope steeper than three (3) feet horizontal to one (1) foot vertical (3:1).
 3. Any other excavation or fill:
 - a. That does not exceed: five (5) feet in maximum vertical depth; or one (1) cubic yard per each fourteen (14) square feet of work area; and
 - b. Is made within an area with a slope not steeper than five (5) feet horizontal to one (1) foot vertical (5:1); and
 - c. Does not result in a finished slope steeper than four (4) feet horizontal to one (1) foot vertical (4:1); and
 - d. Does not necessitate any adjustment, relocation, addition or other modification to any existing storm sewer system.
- G. Excavating and filling operations subject to geotechnical monitoring shall be conducted under the direction of and monitored by the Owner and a Professional Engineer qualified in geotechnical engineering employed by the Owner. The Professional Engineer shall certify to the **Enforcing Official**, the completion of the requirements of the geotechnical report/plan and Permit. The Professional Engineer shall certify the existing, proposed, and long-term stability of all cuts and fills subject to geotechnical monitoring to the **Enforcing Official**. Waivers or modifications shall be made pursuant to Section 311 (H) of these Earthwork Regulations

316 INSPECTION AND MAINTENANCE OF NON-SEDIMENT POLLUTION CONTROLS

- A. The Construction-Phase Inspection and Maintenance Plan included in the Improvement Plans shall address all requirements of this Section.
- B. All areas used for storage of materials that are exposed to storm water shall be inspected for evidence of or the potential for pollutants entering the drainage system. All Non-Sediment Pollution Controls shall be inspected and maintained to ensure continued performance of their intended function. Discharge locations shall be inspected to ascertain whether Erosion and Sediment Pollution Controls are effective in preventing significant impacts to the receiving waters.
- C. If the inspection reveals that a Control is in need of repair or maintenance, it must be repaired or maintained within three (3) days of the inspection that indicates the maintenance or repair is needed.

- D. At a minimum, all Non-Sediment Pollution Controls on the site shall be inspected by the Owner's **Qualified Inspection Personnel** at least once every seven calendar days and by the end of the next calendar day, excluding weekends and holidays unless work is scheduled, after any storm event greater than one-half inch of rain per 24-hour period and a record be made of the inspection. The Owner shall assign **Qualified Inspection Personnel** to conduct these inspections to ensure that the Non-Sediment Pollution Controls are functional, to evaluate whether the Non-Sediment Pollution Controls are adequate and properly implemented or constructed in accordance with the approved Improvement Plan, and to determine whether other measures or practices are required. The **Qualified Inspection Personnel** shall record and report issues and deficiencies associated with the controls. A Professional Engineer must determine necessary changes to the location and position each Non-Sediment Pollution Control.
- E. To record the results of inspections, the **Qualified Inspection Personnel** may use the **Enforcing Official's** Self Inspection Form and Log, Ohio EPA's form and log or develop their own. A copy of the inspection form and log that will be implemented shall be provided to the **Enforcing Official** with the Improvement Plans. The inspection reports shall be made available to the **Enforcing Official** and shall be kept on site. Each inspection report shall be signed and certified by the Owner.
- F. If the inspection reveals that a Non-Sediment Pollution Control fails to perform its intended function and that another, more appropriate Non-Sediment Pollution Control is needed to be effective; the Professional Engineer shall amend the Improvement Plans to include the appropriate new Non-Sediment Pollution Control. The new Non-Sediment Pollution Control shall be installed or implemented within ten (10) days of the inspection.
- G. If the inspection reveals that a Non-Sediment Pollution Control has not been installed or implemented in accordance with the schedule contained in the approved plan, the Non-Sediment Pollution Control must be implemented within ten (10) days from the date of the inspection. If the inspection reveals that the planned Non-Sediment Pollution Control is not needed, the inspection record must contain a statement of explanation as to why the Non-Sediment Pollution Control is not needed.
- H. The Owner shall maintain the inspection records and logs for three (3) years following the completion of the project. The inspection records shall include the names(s) and qualifications of personnel making the inspection, date(s) of the inspection, statement whether the facility is in compliance with the Improvement Plans at the time of the inspection, any incidents of non-compliance and any observations that significantly impact the implementation of the Improvement Plans.

317 FEES

- A. All fees required to enforce these Earthwork Regulations shall be established by legislative action of the Board of County Commissioners for unincorporated portions of Hamilton County, or by the legislative body of the appropriate municipal jurisdiction. Fees may be charged for processing Earthwork permit applications; reviewing Initial Plans and Improvement Plans; inspecting sites before, during, or after construction; taking enforcement action; or responding to other requests pertinent to the project.

318 PERFORMANCE BOND

- A. An Erosion and Sediment Pollution Controls Performance Bond ("Performance Bond") shall be posted to an agency of the controlling jurisdiction designated by the **Enforcing Official** for Earthwork that disturbs one (1) acre or more. The Performance Bond shall be obtained by the Owner prior to the recording of the Record Plat.
- B. The Performance Bond shall be posted for the benefit of the County and/or Local Jurisdiction, for the purpose of assuring that the work shall be undertaken and completed in accordance with the approved plans and specifications of the Earthwork Permit.
- C. The Performance Bond amount, as calculated by the **Enforcing Official**, shall be based on the cost associated with the performance of maintenance of all sediment control practices. The Bond amount for maintenance of sediment control practices shall be calculated at a current rate, in dollars per cubic yard, based on the combined designed volume of all sediment control practice. The Enforcing Official may increase the Bond amount for sediment control practice maintenance when access to said practices will require additional work to perform the maintenance due to the location of said control.
- D. The **Enforcing Official** shall release the Performance Bond for sediment settling pond and trap maintenance upon acceptance of the Record Plat.
- E. In the event the Owner is also subject to a Building Permit, all requirements of the site plans and Earthworks permit shall be certified as complete by the Owner's Professional Engineer prior to the issuance of a permanent Certificate of Occupancy. The bonding of uncompleted work in this situation will not be permitted.
- F. Where Earthwork is left abandoned and/or a hazard is created, and no bond is in effect, the **Enforcing Official** may seek to mitigate the situation as provided in Section 319 ENFORCEMENT.

319 ENFORCEMENT

- A. It shall be unlawful for any Owner to fail to comply with any of the requirements of these Earthwork Regulations or any lawful order issued by the **Enforcing Official** pursuant thereto, including the failure to pay any authorized civil penalty lawfully issued hereunder.
- B. The **Enforcing Official** shall have all such rights and powers in interpreting and enforcing these Earthwork Regulations as may be accorded to such officials by law, rule, or regulation.
- C. The **Enforcing Official** bearing proper credentials and identification shall be permitted at all reasonable times to enter upon all properties to inspect, survey, test, photograph or videotape an Earthwork to determine compliance with these Earthwork Regulations. The **Enforcing Official** shall be granted access without unreasonable delay. Any obstruction preventing safe and easy access to the Earthwork shall be promptly removed or cleared upon request of the **Enforcing Official**. The cost of removing or clearing obstructions shall be the responsibility of the Owner. The **Enforcing Official** shall be entitled to examine and copy any records required to be prepared and maintained under these Earthwork Regulations or applicable permit.

- D. The **Enforcing Official** may issue an immediate Stop Work Order (SWO) if Earthwork requiring an Earthwork Permit, local permit, state permits, or federal Permit necessary for Erosion and Sediment Pollution Controls, earth movement, clearing, or cut and fill activity is being done without the required permit.
- E. If the **Enforcing Official** determines that any Earthwork has become a hazard and/or causes or contributes to a violation of any provision of these Earthwork Regulations, the **Enforcing Official** may issue a Notice of Violation (NOV) directing the Owner to correct or alleviate the hazard and/or water quality degradation within thirty (30) days and/or issue a Notice of Intent to Revoke Performance Bond.
- F. If after a period of thirty (30) days after the original NOV, the violation continues the **Enforcing Official** shall issue a second Notice of Violation (NOV) directing the owner to correct or alleviate the hazard and/or water quality degradation within fifteen (15) days.
- G. If after a period of fifteen (15) days after the second NOV, the violation continues the **Enforcing Official** shall proceed with enforcement as provided under these Earthwork Regulations, including (1) issuing a stop work order under Section 319(H) and (2) proceeding to revoke the Performance Bond according to Section 319(K) of these Earthwork Regulations. Earthwork stopped, abandoned by the Owner, or otherwise left un-stabilized for a period of fifteen (15) consecutive days after issuance of the second NOV for a particular infraction shall cause the Earthwork Permit to expire and become invalid. The Owner shall complete all necessary precautions, as determined by the **Enforcing Official**, which in his sole judgment are required to ensure that the stopped, abandoned or unstable Earthwork does not become a hazard or nuisance to human health or the environment.
- H. In addition to any other enforcement authorized herein, the **Enforcing Official** may issue an SWO whenever:
1. Permitted Earthwork is being done contrary to the terms and conditions of the permit and the **Enforcing Official** has issued two NOVs (30 and 15 days respectively) and the **Enforcing Official** has obtained written approval from the Hamilton County Prosecuting Attorney or prosecuting attorney for the local member jurisdiction whichever is applicable if, in the opinion of the prosecuting attorney, the violation is egregious;
 2. Permitted Earthwork is causing or threatens to cause a hazardous condition or imminent and substantial degradation of a water resource and the **Enforcing Official** has issued two Notice of Violations (30 and 15 days respectively) and has obtained written approval from the Hamilton County Prosecuting Attorney or prosecuting attorney for the member Local Jurisdiction whichever is applicable if, in the opinion of the prosecuting attorney, the violation is egregious;
 3. Earthwork is being performed or has been performed that is not in compliance with applicable Flood Plain Regulations. The **Enforcing Official** may order that all fill placed within the regulated flood plain without approval be removed from the flood plain until all applicable Approvals for the fill have been obtained.
- I. Once an SWO has been issued, the Enforcing Official shall request, in writing, the Hamilton County Prosecuting Attorney or the prosecuting attorney for the local member

jurisdiction to seek an injunction or other appropriate relief to abate excessive erosion or sedimentation and secure compliance with the Earthwork Regulations.

- J. An SWO shall remain in effect until (1) all required local, state, and or federal permits are issued; (2) the hazardous condition and/or water quality degradation is remedied to the satisfaction of the **Enforcing Official**; or (3) the violative work is remedied and performed in full accordance with the Earthwork Permit and these Earthwork Regulations.
- K. Notwithstanding these Earthwork Regulations, if the **Enforcing Official** finds that any Earthwork poses an imminent and substantial endangerment to any property, or an imminent and substantial degradation of a water resource, the **Enforcing Official** may seek to secure such relief as may be necessary and appropriate to abate such danger or threat, to ensure compliance with these Earthwork Regulations and that public health and the environment is protected.
- L. If a proceeding to revoke a Performance Bond is initiated under Section 319(G) of these Earthwork Regulations, the **Enforcing Official** shall give the Owner five (5) business days following issuance of a SWO to resolve the violation and the **Enforcing Official** shall inform the Owner that the Performance Bond shall thereafter be revoked in the event of continuing non-compliance. The **Enforcing Official** shall meet with the Owner at the conclusion of the five (5) day period, and if the violations still exist at that time, the **Enforcing Official** shall proceed with the liquidation of the Performance Bond and undertake with the proceeds to complete the work to resolve the violation.

320 APPEALS

- A. Any Owner aggrieved by a decision of the **Enforcing Official** in the denial of an Earthwork Permit, a condition of an issued Earthwork Permit, a NOV, or other action of the **Enforcing Official** shall have fifteen (15) calendar days from the date of receipt of such written decision to file a written appeal. Appeals for projects within the unincorporated townships are required to be filed with the Hamilton County Board of Earthwork Appeals in accordance with Section 307.56 of the ORC and the rules of the Board of Earthwork Appeals. Appeals for projects in local member municipal jurisdictions shall be filed in accordance with the local municipality's appeal procedures and rules adopted by the municipality. The municipality appeals procedures shall afford the same basic protections as provided in the standards and rules of the Hamilton County Board of Earthwork Appeals.
- B. Any aggrieved Owner shall set forth in a written notice of appeal the interpretation, ruling or order appealed from, and the provisions of these Earthwork Regulations and related laws and ordinances involved and shall state wherein the interpretation, ruling or order is unlawful or erroneous.

321 PENALTY

- A. Any person, whether Owner, agent of the Owner, or person having control of any property, who violates any of the Earthwork provisions of these Earthwork Regulations, or fails to conform to any of the provisions thereof, or fails to obey any order covered by this Permit and issued by the **Enforcing Official**, shall be subject to a such civil or criminal penalties as may be provided under applicable law, including a civil fine of not less than one hundred dollars (\$100) nor more than five hundred dollars (\$500) in

accordance Section 307.79 of the ORC. Each day of violation of these Earthwork Regulations or an order issued under the Earthwork Regulations shall be considered a separate violation subject to a civil fine.

322 REPORTING TO THE HCSWD

- A. The *Enforcing Official* shall provide the HCSWD with periodic reports of their activities to enforce these Earthwork Regulations in a format provided by the HCSWD and of sufficient content to support the Local Jurisdiction's compliance with the pertinent terms of the HCSWD's permit with Ohio EPA.
- B. Compliance with the permit enforcement and reporting requirements under this Section are the responsibility of the member Local Jurisdiction.

**RULES AND REGULATIONS
OF THE
HAMILTON COUNTY STORM WATER DISTRICT
ISSUED BY THE
BOARD OF COUNTY COMMISSIONERS
HAMILTON COUNTY, OHIO**

ARTICLE V

POST-CONSTRUCTION STORM WATER QUALITY REGULATIONS

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501 PURPOSE, SCOPE AND APPLICABILITY

- A. The purpose of these Post-Construction Storm Water Quality Regulations (“Post-Construction Regulations”) is to promote and maintain the health, safety, and welfare of the citizens of Hamilton County by establishing standards for storm water controls that minimize the degradation of the water resources of Hamilton County by:
1. Reducing the discharge of pollutants from the municipal separate storm sewer systems (MS4s) owned or operated by Hamilton County and member Local Jurisdictions of the Hamilton County Storm Water District (“HCSWD”) to the extent practicable;
 2. Protecting the physical, chemical, and biological characteristics of the water resources of Hamilton County; and
 3. Satisfying the appropriate water quality requirements of the Clean Water Act, Ohio Law, and the Ohio Revised Code (ORC), including Section 6111.
- B. These Post-Construction Regulations require implementation of the following measures during development or redevelopment of property within the HCSWD:
1. Structural and non-structural controls that encourage, where applicable and feasible, the preservation, enhancement, and restoration of:
 - a. Water resources, associated riparian areas, natural drainage patterns, uncompacted soils, vegetation, and other natural resources, including Stream Corridor Protection Zones designated under Article IV of these Regulations.
 - b. Natural infiltration and ground water recharge to maintain subsurface flow and replenish water resources, except in slippage prone soils.
 - c. Stable stream bank and bed conditions within natural or constructed drainage systems and slopes.
 - d. Water resources on or adjacent to the Site through designs that minimize the number of stream crossings and the work area associated with the disturbance.
 2. Post-Construction Controls, associated Pre-Treatment Practices, and Runoff Reduction Practices designed, permitted, constructed, and maintained to manage storm water runoff from newly developed or redeveloped property to reduce impacts to stream channels, stream stability, and water quality.
 3. Incorporate storm water controls into initial layout, Site planning, and design at the earliest possible stage/step in the development process.

- C. Incorporate the use of Post-Construction Controls that serve multiple purposes including, but not limited to, quantity/flood control, erosion control, and water quality protection. These Post-Construction Regulations are adopted under authority of Ohio Law and the Ohio Revised Code, including Chapters 307 and 6117 and implement the requirements of the latest discharge permit issued by Ohio EPA to Hamilton County and the member Local Jurisdictions of the HCSWD under the Phase II Program.
- D. The Board of County Commissioners of Hamilton County ("Board") shall designate the **Enforcing Official** within the unincorporated areas and townships of Hamilton County for the enforcement of these Post-Construction Regulations, except to the extent that a home rule township has the authority to designate another entity as its **Enforcing Official** and exercises such authority. The **Enforcing Official** for each of the participating member municipalities and authorized home rule townships of the HCSWD shall be the chief administrative officer of the Local Jurisdiction unless the legislative body of the Local Jurisdiction legally authorizes another qualified party to fulfill all required responsibilities of the **Enforcing Official** under these Post-Construction Regulations.
- E. Where authorized by law, the responsibilities of the Local Jurisdiction under these Post-Construction Regulations may be delegated by the Local Jurisdiction to any persons or entities acting in the beneficial interest of, or in the employment of the participating member Local Jurisdiction, including but not limited to, the HCSWD or the HCSWD's designated representative provided there is a lawfully enacted Resolution or Ordinance authorizing delegation of said responsibilities.
- F. These Post-Construction Regulations apply as follows:
1. In unincorporated portions of Hamilton County, these Post-Construction Regulations apply to any property where Earthwork disturbing one (1) acre of land or larger, or to any property where Earthwork disturbing less than one (1) acre but part of a larger common plan of development that will disturb more than one (1) acre of land has been conducted since the time of passage of these Post-Construction Regulations.
 2. In incorporated member municipalities within the HCSWD, these Post-Construction Regulations apply to any property where Earthwork disturbing one (1) acre of land or larger, or to any property where Earthwork disturbing less than one (1) acre but part of a larger common plan of development that will disturb more than one (1) acre of land has been conducted since the time of passage of these Post-Construction Regulations, unless the legislative body of the member municipality or authorized home rule township establishes a smaller applicable area and specific requirements for these areas.

502 DEFINITIONS

The words and phrases defined in Article I of the Rules and Regulations of the HCSWD shall have the same meaning herein unless otherwise provided.

503 COMPLIANCE WITH OTHER LAWS AND DISCLAIMER OF LIABILITY

- A. Compliance with these Post-Construction Regulations does not relieve the Owner from the duty to comply with any other federal, state or local laws, regulations or ordinances or from responsibility otherwise imposed by law for damage to any person or property.
- B. Neither the submission, approval, or disapproval of an Improvement Plan under these Post-Construction Regulations; nor the Issuance or denial of a Permit, nor compliance or lack of compliance with these Post-Construction Regulations; nor any action or lack of action by the **Enforcing Official** shall relieve the Owner from responsibility for injury or damage to any person or property otherwise imposed by law, nor create or impose any liability upon Hamilton County, any participating jurisdiction in the HCSWD, or their respective officers, agents, or employees for injury or damage to any person or property.
- C. Storm water control practices authorized under these Post-Construction Regulations and maintained according to an approved Maintenance Agreement shall not be considered to be a nuisance under these Post-Construction Regulations. The **Enforcing Official** will address conditions that may contribute to the creation of a nuisance according to pertinent local regulations when reviewing Improvement Plans and conducting facility inspections.
- D. Failure of the **Enforcing Official** to observe or recognize hazardous or unsightly conditions or to recommend appropriate corrective measures shall not relieve the Owner from the responsibility for any resulting condition or damage or injury, or result in any liability on the part of the Local Jurisdiction, the **Enforcing Official**, Hamilton County, or their officers, employees, or agents for any resulting condition or damage or injury.
- E. These Post-Construction Regulations do not create a duty upon the **Enforcing Official**, the Board, the HCSWD, or participating member Local Jurisdictions of the HCSWD to persons adversely impacted by any Post-Construction Controls required by these Post-Construction Regulations.

504 CONFLICTS AND SEVERABILITY

- A. In the event that any of these Post-Construction Regulations may conflict with other applicable provisions of law or ordinance, the most restrictive provisions, as determined by the **Enforcing Official**, shall prevail where permitted by law.
- B. Should any article, section, subsection, clause, or provision of these Post-Construction Regulations be declared by a court of applicable jurisdiction to be unconstitutional or invalid, such decision shall not affect the validity of the remainder of these Post-Construction Regulations, in whole or in part.

505 MANAGEMENT OF STORM WATER AND IMPROVEMENT PLANS REQUIRED

- A. Storm water shall be managed in accordance with these Post-Construction Regulations.
- B. In each case where these Post-Construction Regulations apply, the Owner shall submit an Improvement Plan to the **Enforcing Official** addressing the requirements of these

Post-Construction Regulations, receive approval of the Improvement Plan from the **Enforcing Official** prior to submittal of a Notice of Intent (NOI) to Ohio EPA, and provide an Ohio EPA-approved NOI to the **Enforcing Official**.

- C. The Improvement Plan will include many of the elements required by Ohio EPA to be incorporated into the Site Storm Water Pollution Prevention Plan (SWP3) – a stand-alone document containing all information required by the Ohio EPA Construction General Permit Part III.G and these Post-Construction Regulations. An SWP3 must be developed for each site to be covered by this permit. For a multi-phase construction project, a separate NOI shall be submitted when a separate SWP3 will be prepared for subsequent phases.

The SWP3 shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with construction activities. In addition, the SWP3 shall describe and ensure the implementation of storm water controls that reduce the pollutants and impact of storm water discharges during construction and pollutants associated with the post-construction land use. Those permit-required elements that are included in the Improvement Plan may be incorporated by reference into the SWP3.

- D. The Improvement Plans shall describe how storm water will be managed and shall be prepared in accordance with sound engineering and/or conservation practices by a professional experienced in the design and implementation of standard erosion and sediment controls and storm water management practices addressing all phases of construction. The Improvement Plans shall not be implemented until all required approvals are obtained.
- E. The Improvement Plans shall also comply with all drainage, flood control, floodplain management, and related storm water quantity control requirements of the Local Jurisdiction.
- F. The **Enforcing Official** shall have the authority to administer these Post-Construction Regulations and issue such notices and orders as may be necessary. The **Enforcing Official** may consult with the HCSWD, the Hamilton County Engineer, the Hamilton County Soil and Water Conservation District (HCSWCD), private engineers, or other technical experts in administering these Post-Construction Regulations.

506 EXEMPTIONS

- A. These Post-Construction Regulations do not apply to the following:
1. Activities regulated by the Ohio Department of Natural Resources Animal Waste and Agricultural Pollution Abatement Rules, Ohio Administrative Code Chapter 1501.
 2. Surface mining, strip mining, and abandoned mine reclamation activities regulated by the Ohio Department of Natural Resources;

3. Stream and wetland restoration activities;
 4. Wetland mitigation activities;
 5. Linear construction Sites, such as pipeline or utility line installation, that do not result in the installation of additional impervious surfaces as determined by the **Enforcing Official**, are designed to minimize the number of stream crossings and the width of disturbance, and comply with the requirements of the Earthwork Regulations (Article III of the Rules and Regulations of the HCSWD); and
 6. Other Sites that do not include the installation of an impervious surface.
- B. Application and enforcement of the exemptions under Section 506 "Exemptions" of these Post-Construction Regulations shall be conducted by the **Enforcing Official**.

507 COORDINATION WITH LOCAL, STATE, AND FEDERAL REGULATIONS AND PERMITS

- A. Approvals issued in accordance with these Post-Construction Regulations do not relieve the Owner of responsibility for obtaining all other necessary permits and/or approvals from federal, state, and/or local governments and compliance with other legal requirements. If requirements vary, the most restrictive shall prevail. Other permits and requirements may include, but are not limited to, those listed below.
1. The latest Ohio EPA General Permit Authorization for Storm Water Discharges Associated with Construction Activity under the NPDES (CGP Permit) authorizing storm water discharges associated with construction activity;
 2. The latest applicable Ohio EPA NPDES Permit authorizing storm water discharges associated with industrial activities;
 3. U.S. Army Corps of Engineers permits under Section 404 of the Clean Water Act;
 4. Ohio EPA Section 401 Water Quality Certification General Isolated Wetland Permit and/or non-jurisdictional wetland/stream program approvals;
 5. Ohio Dam Safety Law Section 1501.21 OAC;
 6. Applicable Flood Plain Regulations; and
 7. Applicable ground water protection laws.
- B. Compliance with other applicable regulations and permits shall be demonstrated (e.g., copies of permits, authorizations, letters of exemption, or submitted applications) before the **Enforcing Official** will approve an Improvement Plan.

- C. The Improvement Plan shall be coordinated with local utility providers to allow any necessary adjustment, relocation, addition or other modification to an existing utility, including overburden loading.

508 SUBMITTAL PROCEDURES

- A. In each case where these Post-Construction Regulations apply, the Owner shall submit an Improvement Plan to the **Enforcing Official** addressing the requirements of these Post-Construction Regulations and the Earthwork Regulations (Article III of the Rules and Regulations of the HCSWD). This Improvement Plan shall describe how storm water will be managed pursuant to these Post-Construction Regulations. No Earthwork shall be undertaken until such Improvement Plan has been reviewed and approved through the established submittal and review process of the **Enforcing Official**, and Local Jurisdiction where applicable, a Notice of Intent (NOI) has been submitted and approved by the Ohio EPA, and an Earthwork and/or Building Permit is issued by the **Enforcing Official**.
- B. Pre-Submittal Meeting: A Pre-Submittal Meeting with the **Enforcing Official** may be requested to discuss the proposed construction for the Site, review requirements, identify unique aspects of the Site construction that must be addressed during the review process, and establish a preliminary review and approval schedule.
- C. Initial Plan: The Owner of a Site shall submit a preliminary or initial plan that illustrates the proposed storm water management approach concept (Initial Plan), and the applicable fees to the **Enforcing Official**. Initial Plans shall show approximate preliminary locations of the proposed parcel boundaries, setbacks, stream protection corridor delineations (if applicable), dedicated open space, and preserved vegetation areas, conservation areas, public roads, water resources, receiving storm water discharge, flood plains, existing topography, on-site and off-site areas vulnerable to erosion and sediment damage, drainage facilities, existing and proposed Post-Construction Controls, and easements to allow the **Enforcing Official** to determine if the Site is laid out in a manner that meets the intent of these Post-Construction Regulations and if the proposed Post-Construction Controls are capable of controlling runoff from the Site in compliance with these Post-Construction Regulations. The **Enforcing Official** shall review the Initial Plans and provide comments and recommendations for revisions if any.

An Initial Plan is required:

1. For all subdivisions.
2. For all non-residential development that will disturb one (1) acre of land or more.

For other construction Sites, Initial Plans are encouraged to be submitted for review by the **Enforcing Official** in advance of submitting an Improvement Plan in order to avoid subsequent delays caused by the submittal of Improvement Plans which do not comply with these Post-Construction Regulations.

- D. Improvement Plans: The Improvement Plan submission shall consist of construction drawings and specifications along with such fees as may be required. The Improvement Plans shall meet the requirements of these Post-Construction Regulations and must be approved by the **Enforcing Official** prior to approval of an Earthwork Permit and/or before issuance of a building permit by the Building Department. Any revised Improvement Plans shall be submitted to the **Enforcing Official** for approval prior to implementing the proposed modification.
- E. Consent to Enter Private Property: Submittal of an Initial Plan and/or Improvement Plan shall be deemed to provide consent to the **Enforcing Official** to enter a property subject to these Post-Construction Regulations for the purpose of gathering information necessary for review of and comment to an Initial Plan or Improvement Plans.
- F. Review and Comment: The **Enforcing Official** shall review and comment on any Concept and/or Improvement Plans submitted within a reasonable period of time. The final Improvement Plans submitted may be either approved or disapproved. If the Improvement Plans are disapproved, they shall be returned with comments stating the reasons for disapproval and requirements for revisions if any.
- G. Approval Required:
1. The **Enforcing Official** shall provide approval of Improvement Plans for Post-Construction Controls covered by these Post-Construction Regulations.
 2. The **Enforcing Official** shall issue final approval of Improvement Plans for Post-Construction Controls covered by these Post-Construction Regulations to allow the Owner to submit a complete and accurate NOI to the director of the Ohio EPA at least 21 days prior to the commencement of construction activities.
 3. Earthwork shall not begin and building permits shall not be issued without final approval of Improvement Plans consistent with these Post-Construction Regulations and an authorization to begin construction has been received from the director of Ohio EPA.
- H. Individual Lot Construction Will Not Proceed: Improvement Plans for individual lots in a subdivision will not be approved and building permits will not be issued unless the larger common plan of development or sale containing the individual lot is in compliance with these Post-Construction Regulations.
- I. Approval Valid for Two (2) Years / Modification of Plans: If Earthwork has not commenced within two years of approval, Improvement Plans for the Site must be re-submitted for review and approval in accordance with rules in effect at the time of re-submittal. Site modifications require submittal and approval of a revised Improvement Plan before work may proceed.
- J. Stopped or Abandoned Earthwork: Earthwork stopped or abandoned for a period of two (2) consecutive years from the date of discontinuation of Earthwork shall cause the approval of the Improvement Plans to expire and become invalid. For Site work to

continue either the previously approved plans must be submitted if the scope of the Earthwork has not changed, *or* an updated set of plans will need to be submitted for approval by the **Enforcing Official**.

509 STORM WATER MANAGEMENT REQUIREMENTS FOR IMPROVEMENT PLANS

- A. Storm Water Management: The Improvement Plans shall describe in detail how the quantity and quality of storm water will be managed within the Site before, during and after construction is complete for discharges from the Site and/or into a water resource. The Improvement Plans shall:
1. Describe in detail, the type, location, and dimensions of each structural and non-structural Post-Construction Controls and storm water management practices – including applicable pre-treatment, outlets, inlets, and associated protection - incorporated into the Site design to address the requirements of these Post-Construction Regulations, and provide the rationale for their selection:
 - a. The rationale must identify how these Post-Construction Controls will be integrated with appropriate drainage and flood control facilities proposed for the Site and will not cause flooding of development upstream and downstream of the Site, as required under the storm water quantity control regulations of the Local Jurisdiction.
 - b. The rationale must demonstrate that these Post-Construction Controls will minimize anticipated impacts on the channel and floodplain morphology, hydrology, and water quality of the water resource and its floodplain.
 2. Include a maintenance agreement and a stand-alone long-term plan for operating, inspecting and maintaining the storm water management facilities serving the site. This plan shall meet all requirements established under Section 516 (G) of this regulation. Electronic and hard copies of improvement plans shall be submitted in a format acceptable to the **Enforcing Official**.
- B. Preparation by Professional Engineer: The Improvement Plans shall be prepared and sealed by a Professional Engineer and include supporting calculations, plan sheets, and design details. To the extent necessary, as determined by the **Enforcing Official**, a Site survey shall be performed by a Professional Surveyor to establish boundary lines, measurements, or land surfaces.
- C. Storm Water Design Manual: The HCSWD and/or the **Enforcing Official** may prepare and maintain design criteria manuals, procedures, calculation worksheets, and drawing templates that provide guidance for designing the storm water management system for the Site, including a description of acceptable Post-Construction Controls that meet the criteria of these Post-Construction Regulations. HCSWD and/or the **Enforcing Official** may allow use of design criteria, procedures, calculation worksheets, and drawing templates from the Ohio EPA's Rainwater and Land Development Manual (RLDM) where not in conflict with these Post-Construction Regulations and/or other applicable regulations. The design manual, procedures, calculation worksheets, and drawing

templates may be updated from time to time based on improvements in engineering, science, monitoring, and local maintenance experience.

D. Contents of Improvement Plans: The Improvement Plans shall include the following:

1. Site Location Map: USGS 1:24,000 or equivalent map showing the Site Name, the boundary of the Site, the name and location of major existing roadways, and the name and location of the immediate receiving water resource(s) within 500 feet of the boundary of the Site and the first subsequent named receiving water resource(s).
2. Site description and Information: The following information shall be included in the general notes, specifications and/or an attached narrative report:
 - a. The Name and the location of the Site, including complete Site address or Parcel Identification Number, and individual lot addresses if known and applicable.
 - b. Contact information: Provide the Company name and contact information and the contact names, addresses, phone numbers, facsimile numbers, and e-mail address for the following:
 - i. The Professional Engineer responsible for the preparation of the Improvement Plans.
 - ii. The Site Owner, and if applicable the agent or designee.
 - iii. The Earthwork Contractor and all applicable subcontractors, when identified.
 - c. A description of the nature and type of the construction activity (e.g. residential, shopping mall, etc.).
 - d. Total area of the Site and the area of the Site that is expected to be disturbed (i.e. grubbing, clearing, excavation, filling or grading, including off-site borrow areas, excavated material disposal areas and off-site construction support activities).
 - e. Tables showing the on-site and off-site catchments tributary to the Erosion and Sediment Pollution Controls and Post-Construction Controls for each construction phase including construction start, construction completion, and any significant points during construction where drainage patterns/components change significantly. Each catchment listed on the table shall be delineated on the Site Map(s) required per Section 510 (D)(3) of Article V Post-Construction, including catchments tributary to each Erosion and Sediment Pollution Control (per Section 310 of Article III Earthwork Regulations), and Post-Construction Control (per Section 510 of Article V Post-Construction Regulations), storm water conveyance

facility, and storm water detention facility under both pre-construction and post- construction site conditions (per the storm water quantity control regulations of the Local Jurisdiction).

Each Table shall provide the following information:

- i. A measure of the on-site and off-site catchment area;
- ii. A measure of the existing impervious area;
- iii. A measure of the impervious area to be constructed by the Owner;
- iv. An estimate of the impervious area that may be constructed by subsequent Owners under current zoning; and
- v. The overall imperviousness of the catchment.

The tables, Project Site Map(s) and associated Improvement Plans will need to be modified or supplemented if changes in drainage areas and/or impervious areas affect the size of Erosion and Sediment Pollution Controls, and/or Post-Construction Controls.

- f. Existing data describing the soils throughout the Site, including the soil series, soil association, and hydrologic soil group. At the request of the **Enforcing Official**, additional geotechnical data to support the design of each proposed Erosion and Sediment Pollution Control and Post-Construction Control whose effectiveness depends upon Site-specific data about the porosity, infiltration characteristics, depth to groundwater, depth to bedrock, and any impermeable layers may be required.
- g. Existing data, if available, describing the quality of any discharge from the Site as well as a description or other documentation of the condition of any on-site streams.
- h. A description of prior land uses at the Site. (e.g., zoning, land use codes).
- i. A description of the methods, locations, size and extent of practice used to preserve, enhance, and/or restore natural conditions as much as feasible, including but not limited to desired vegetation; permeable, uncompacted soil profiles and topsoil; designated tree preservation areas; protective grubbing and clearing practices; and suitable locations and types of Runoff Reduction Practices.
- j. An implementation schedule which describes the sequence of major construction operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion, sediment and storm water management practices or facilities to be employed

during each operation of the sequence, including the phasing of construction operations to minimize disturbed land at any one time.

- k. The name and/or location of the immediate receiving water resource(s) and the first subsequent named receiving water resource(s) and the aerial extent and description of wetlands or other special aquatic features at or near the Site which will be disturbed or which will receive discharges from disturbed areas of the Site.
 - l. Location and description of any storm water discharges associated with asphalt and concrete plants on or contiguous with the Site III.G.1.h and dedicated to Site construction, and the best management practices to address pollutants in these storm water discharges.
3. Project Site Map(s): One or more Site maps shall be created. The map or series of maps shall be drawn at a scale of at least 1-inch equals 50-feet. The Site is to be referenced using the State Plane coordinates and shall indicate the datum used. It is preferred that the entire Site be shown on a single 24"x36" (architectural D-size drawing) plan sheet to allow a complete view of the Site during plan review. Each map shall identify the phase of construction, if applicable, in relation to the overall development plan and include a north arrow, elevation datum and date of preparation. The map or series of maps shall extend 200 feet beyond the Site boundary and shall indicate for that area, at a minimum the following:
- a. Limits of Earthwork on the Site for each phase of construction, including any off-site borrow or spoil areas.
 - b. Soils types for the entire Site, including the location and extent of visibly evident existing excavations or fills, slope instability, erosion and water seepage or wet conditions, unstable or highly erodible soils, or other areas with potentially serious existing or future erosion problems, areas with known contaminated soils; and/or areas where soils will be protected, enhanced, or restored.
 - c. Existing and proposed two-foot (2') contours, unless Site conditions require more detailed topography to depict Site drainage conditions.
 - d. Drainage patterns, location of Erosion and Sediment Pollution Controls, new and existing Post-Construction Controls and associated Pre-Treatment Practices and within, entering, and exiting the site during each phase of the project, including any existing and/or constructed combined and separate storm water drainage conveyance and drainage inlet facilities within the Site, beyond the Site, and/or within the larger common plan of development if utilized for the Site. Also include locations of existing and planned drainage features to include, but not limited to, catch basins, culverts, ditches, swales, surface inlets and outlet structures.

- e. A delineation of on-site and off-site drainage catchments tributary to each storm water management control present during each phase of construction, including before, during, and after major grading activities as well as the total off-site and on-site size of each drainage watershed in acres, and the pre-construction and post-construction runoff coefficient for each area.
- f. Location of existing and proposed utilities including appurtenances, structures and outfalls. The approximate depths of all utilities shall be indicated.
- g. Water resource locations including known springs, wetlands, streams, lakes, water wells, and locations of delineated associated Stream Corridor Protection Zones as defined under the Stream Corridor Regulations (Article IV of the Rules and Regulations of the HCSWD).
- h. Other setbacks, conservation easements or areas designated as open space, preserved vegetation, or otherwise protected from earth disturbing activities on or within 200 feet of the Site, and a description of any associated temporary or permanent fencing or signage designating the boundary of these areas.
- i. The location of any in-stream activities including known temporary or permanent stream crossings, floodplain fill, floodplain excavation, and stream restoration, including the boundaries of wetlands or streams and any first subsequent named receiving water resource(s) intending to be filled or relocated under an approval from the Army Corps of Engineers and/or Ohio EPA.
- j. Existing and proposed locations of buildings, roads, and parking facilities.
- k. Existing and proposed property boundaries, and individual lot numbers.
- l. The location of any existing or proposed easements or other restrictions placed on the use of the property and the responsible party(ies) under such easement or restriction.
- m. On-site and off-site areas vulnerable to erosion and sediment damage.
- n. Areas designated for the storage or disposal of solid, sanitary, and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling.
- o. The location of designated construction entrances where the vehicles will access the construction site.

- 4. Detailed drawings shall be provided for each Post-Construction Control and associated Pre-Treatment Practice and Runoff Reduction Practice to be

employed on the Site. Each detailed drawing shall be to scale with dimensions and elevations, showing storage volumes, sizes of contributing drainage areas, outlet details – plan and profile views, drain times, outlet protection devices, and velocity dissipation devices/practices. The use of Ohio EPA data sheets is recommended (see Ohio's Rainwater and Land Development manual and Ohio EPA resources for examples).

5. Calculations: Calculations shall be presented as a separate report provided with the Improvement Plans for projected storm water runoff flows, volumes, and timing into and through all Post-Construction Controls and associated Pre-Treatment Practices, and Runoff Reduction Practices. Calculations shall address the following topics:
 - a. Each calculation shall describe the underlying assumptions and hydrologic and hydraulic methods and parameters, under pre- and post-construction land use conditions, for flood control, water resource protection, and water quality, as required in Section 510 Performance Standards of these Post-Construction Regulations.
 - b. Calculations shall demonstrate compliance with local storm water quantity management requirements, demonstrate that the runoff from upper watershed areas have been considered in the calculations and indicate that no adverse impacts are conveyed downstream of the Site.
 - c. An investigation of immediate downstream conditions as defined by the **Enforcing Official** is required to support development of a rationale for Post-Construction Control selection addressing anticipated impacts on the water resource and floodplain morphology, hydrology, and water quality. If the downstream property owner(s) refuse to allow access a letter must be submitted by the downstream property owner(s) stating the refusal.
 - d. Storm water calculations shall include the area weighted volumetric runoff coefficients and resulting water quality volume (WQv) under both pre-construction and post-construction Site conditions and resulting WQv for the catchment tributary to an Erosion and Sediment Pollution Control (per section 310 of the Article III Earthworks Regulations), and Post-Construction Control (per Section 510 of Article V Post-Construction Regulations), storm water conveyance facility,
 - e. Soil and subsurface conditions, including tests of infiltration rates for native, amended, and restored soils; borings or equivalent data indicating seasonal high groundwater levels, top of bedrock elevations, and perched groundwater elevations; and an assessment of the suitability of soil and subsurface conditions.
 - f. Specifications for materials used to construct each Post-Construction Control, including vegetation, amended/restored soil composition,

bioretention media and structural materials.

- g. If applicable, an explanation of the use of existing Post-Construction Controls including documentation of ability to meet current water quality and quantity requirements and provision for long-term maintenance.
- h. Identification of any proposed Alternative Post-Construction Controls – those practices not identified in Article V, Table 510-B – with a rationale for their selection; all related information required under Article III, Section 309.D including calculations and detailed drawings; and that meet the minimum treatment criteria and testing requirements in Article V, Section 511.
- i. Post-Construction Control operations and maintenance requirements during and after construction.
- j. Any supplemental information requested by the **Enforcing Official**.
- k. The **Enforcing Official** may require calculations to be presented in specific formats and/or incorporated into spreadsheets with embedded, pre-checked calculations to facilitate **Enforcing Official** review and Ohio EPA approvals.

6. Other Approvals and Permits:

- a. Ohio EPA NPDES Permit Number and other applicable state and federal permit numbers or approvals shall be provided if available, or the status of permit applications shall be provided if final approvals have not been received.
- b. The parcel number, address, contact information, and Earthwork Approval shall be provided for any off-site borrow areas and excavated material disposal areas.

7. Inspection and Maintenance Plan: An Inspection and Maintenance Plan (I&M Plan) shall be prepared for the Post-Construction Controls designed and constructed on the property. Such I&M Plans shall include all Post-Construction Controls, associated Pre-Treatment Practices, and Runoff Reduction Practices; and shall address the inspection and maintenance frequency and all other requirements listed in Section 516 Maintenance And Inspections of these Post-Construction Regulations.

E. Substantial Changes in Site Conditions: The **Enforcing Official** shall be notified whenever unforeseen Site conditions are discovered (e.g., unforeseen water resources such as unknown springs) during the course of construction that affects storm water management.

- F. Improvement Plan Updates Required: The approved Improvement Plans shall be modified whenever there is a change in design, construction, operation or maintenance which has or is likely to have a significant effect on the design or maintenance of a Post-Construction Control, Pre-Treatment Practice, or Runoff Reduction Practice. Revised Improvement Plans shall be provided to the **Enforcing Official** for review and approval prior to implementing the suggested changes.

510 PERFORMANCE STANDARDS

A. General:

1. All components of the storm water system shall be designed in accordance with the performance standards of these Post-Construction Regulations as well as with the storm water quantity control and floodplain management regulations of the Local Jurisdiction. The components must include:
 - a. All Runoff Reduction Practices.
 - b. Post-Construction Controls and associated Pre-Treatment Practices.
 - c. Storm water collection, conveyance and detention facilities.
2. Integrated Practices that Minimize Degradation of Water Resources: The Controls shall function as an integrated system that controls flooding within, upstream, and downstream of the Site, and minimizes degradation of the water resources receiving storm water discharges from the Site, as defined in Section 501(B) of these Post-Construction Regulations. Integrated practices shall:
 - a. Maintain pre-construction hydrology and groundwater recharge on as much of the Site as practicable.
 - b. Compact soil and install new impervious surfaces only where necessary to support the future land use.
 - c. Compensate for increased WQV' s caused by soil compaction and new impervious surfaces by reducing storm water peak flows to less than pre-construction levels, as calculated under Section 510 (C)(2) of these Post-Construction Regulations.
3. Storm Water Management for All Lots: Areas developed as a subdivision, as defined by the Local Jurisdiction, shall provide storm water management for the development of all subdivided lots. Post-Construction Controls that will be located within an individual lot must be shown on the Improvement Plan and comply with all applicable requirements of these regulations to be accepted by the **Enforcing Official**.
4. Earthwork Controls: Erosion and Sediment Pollution Controls compliant with the Earthwork Regulations (Article III of the Rules and Regulations of the HCSWD)

must be maintained in good operational condition until Post-Construction Controls are installed, operational, and demonstrated to function as designed.

5. Performance Compliance Documentation: Improvement Plans shall clearly document through drawings, specifications, narrative, and calculations how the design addresses each applicable performance standard in this section.

B. Exemption: A Site where soil-disturbing activities are conducted may be exempt from the requirements of Section 510 Performance Standards if:

1. The Site is part of a larger common plan of development and it is demonstrated to the satisfaction of the **Enforcing Official** that an existing Post-Construction Control meets the requirements of these Post-Construction Regulations, or
2. If the storm water quality management requirements for treating the WQv from the Site are provided by practices in a regional or local storm water management plan approved by the **Enforcing Official** and a legal agreement is established through which the regional control owner agrees to provide this service in the long term. Design information for such facilities such as contributing drainage areas, capacities, elevations, outlet details and drain times shall be included in the Improvement Plan. The regional practice must be demonstrated to address its associated portion of the Site WQv.

C. Water Quality Volume (WQv) and Runoff Reduction Volume Calculations

1. A WQv shall be calculated for each storm water control practice (i.e., Post-Construction Controls, associated Pre-Treatment Practices, and Runoff Reduction Practices) according to one of the following methods:
 - a. A site hydrologic study approved by the **Enforcing Official** that determines the volume necessary to capture and treat 90 percent of the average annual runoff volume using continuous hydrologic simulation; site-specific hydrologic parameters, including impervious area, soil infiltration characteristics, slope, and surface routing characteristics; proposed Controls controlling the amount and/or timing of runoff from the site; and local long-term hourly records, or
 - b. Use of the following equation:

$$WQ_v = R_v * P * A / 12 \quad \text{(Equation 1)}$$

where terms have the following meanings:

WQ_v = water quality volume in acre-feet

P = 0.9-inch precipitation depth

A = area draining to/raining on the storm water control practice, in acres

Table 510-A: Runoff Coefficients Based on the Type of Land Use

County Zoning District (or Equivalent)		Imperviousness Fraction	Volumetric Runoff Coefficient (Rv)
Name	Characteristics		
---	Parks, cemeteries, golf courses, lawns, playgrounds or unimproved land	0.05	0.10 0.08
"AA"	Residence District > 43,561 sq. ft. lot	0.20	0.23 0.17
"A"	Residence District 17,501 to 43,560 sq. ft. lot	0.25	0.28 0.20
"A-2"	Residence District 12,001 to 17,500 sq. ft. lot	0.33	0.35 0.24
"B"	Residence District 9,001 to 12,000 sq. ft. lot	0.45	0.46 0.34
"B-2"	Residence District 6,001 to 9,000 sq. ft. lot	0.58	0.57 0.40
"C"	Residence District 5,001 to 6,000 sq. ft. lot	0.65	0.64 0.45
"D"	Residence District up to 5,000 sq. ft. lot	0.75	0.73 0.54
"DD"	Planned Multiple Residence District	0.80	0.77 0.60
"O"	Office District	0.85	0.82 0.66
"OO"	Planned Office District	0.85	0.82 0.66
"E"	Retail Business District	0.85	0.82 0.66
"EE"	Planned Business District	0.85	0.82 0.66
"EF"	Excavation and Landfill District	0.10	0.14 0.11
"F"	Light Industrial District	0.88	0.84 0.70
"FF"	Planned Light Industrial District	0.92	0.88 0.76
"FPM"	Flood Plain Management District	Established on Case-by-Case Basis	
"G"	Heavy Industrial District	0.95	0.91 0.84
"GG"	Planned Heavy Industrial District	0.95	0.91 0.84
"H"	Riverfront District	Established on Case-by-Case Basis	

Rv = the volumetric runoff coefficient,

Where

$$Rv = 0.05 + 0.9*i \quad \text{(Equation 2)}$$

i = fraction of post-construction impervious surface

The runoff coefficients appropriate for storms less than one (1) inch are listed by land use category in **Table 510-A** of these Post-Construction Regulations. When the land use will be mixed, a weighted average runoff coefficient should be calculated.

2. Storm Water Management on Previously Developed Sites:

- a. Sites that have been previously developed, paved or built upon and where no Post-Construction Controls were installed are required to provide one or a combination of the following two conditions:
 - i. A 20 percent net reduction of the site's volumetric runoff coefficient impervious area with soil restoration or replacing impervious roof area with green roofs area (for these purposes green roofs shall be considered pervious surface).
 - ii. Treatment of at least 20 percent of the WQv for the previously developed area using a practice meeting **Table 510-C** criteria.
- b. Where there is a combination of redeveloped areas and new development, a weighted approach shall be used with the following equation:

$$WQv = P * A * [(Rv_1 * 0.2) + (Rv_2 - Rv_1)] / 12 \quad \text{(Equation 3)}$$

Where

P= 0.90-inch precipitation depth
A= Area draining into the control, 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)

- c. Where a Site includes one or more properties that do not contain previous development, then these properties shall be considered new development and the total WQv must be calculated through a weighted average based on area of Equation 1 (for the properties considered new developed) and Equation 3 (for the properties considered previous development).
- d. The drainage area tributary to a Post-Construction Control for previous development shall be a fraction of the total area of the previous development located to treat impervious area most likely to generate the highest pollutant load, such as parking lots or roadways, rather than areas predicted to be cleaner such as rooftops.
- e. Local communities or sanitary sewer districts may establish a larger percentage of the WQv for previously developed sites if necessary to meet combined sewer overflow objectives or other storm water management objectives of the community.
- f. The **Enforcing Official** may approve one or more of the practical alternatives as detailed in Section 511 Off Site Alternatives And

Alternative Actions of these Post-Construction Regulations where conditions prevent impervious area reduction or on-site storm water management for previously developed Sites.

3. Flow-Through Design Storm Water Control Practices:

- a. Certain storm water control practices utilize treatment processes such as filtering or centrifugal separation rather than a detention and settling volume. These control practices must be designed to ensure treatment of 90 percent of the average annual runoff volume. For the design of these control practices, the water quality flow rate (WQ_r) considered equivalent to the WQ_v shall be determined utilizing the Rational Method (Equation 4) with an intensity (i) appropriate for the water quality precipitation event and the time of concentration (tc) of runoff to the control practice, determined using the table given in Appendix C of the latest version of Ohio EPA's Construction General Permit:

$$WQ_r = C * i * A \quad \text{(Equation 4)}$$

where

WQ_r = Water Quality Flow Rate in cubic feet per second (cfs)
C = Rational Method Coefficient of Runoff
i = Intensity for the tc to the Alternative control (in/hr.)
A = Area draining to the control practice (acres)

- b. The **Enforcing Official** may allow certain flow-through stormwater control practices to be used as Alternative Post-Construction Controls, Pre-Treatment Practices, or Runoff Reduction Practices. Such practices may include, but are not limited to: vegetation swales, vegetated filter strips, hydrodynamic separators, high-flow media filters, cartridge filters, membrane filters, subsurface flow wetlands, multi-chamber treatment trains, road shoulder media filter drains, and wetland channels.

D. Criteria Applying to Preservation/Conservation of Natural Conditions:

1. Designation of and Integration with Stream Corridor Protection Zones: A Stream Corridor Protection Zone shall be delineated and appropriately managed for every waterbody adjacent to and/or lying within the Site according to criteria in the Stream Corridor Regulations (Article IV of the Rules and Regulations of the HCSWD). The following additional criteria shall be followed to integrate the Stream Corridor Protection Zone and the Post-Construction Controls:
- a. Post-Construction Controls in Water Resources: Post-Construction Controls shall not be constructed in water resources unless all appropriate permits allowing such construction are obtained from the Ohio EPA, the U.S. Army Corps of Engineers, and all other applicable federal, state, and local agencies. In addition, the Post-Construction

Control construction shall be in compliance with the HCSWD erosion and sediment control requirements under the Earthwork Regulations (Article III of the Rules and Regulations of the HCSWD) and the Stream Corridor Regulations (Article IV of the Rules and Regulations of the HCSWD).

- b. Storm water discharges from the Site must flow into and through Post-Construction Controls designed according to these Post-Construction Regulations prior to entering a Stream Corridor Protection Zone.
 - c. The **Enforcing Official** may determine that the Stream Corridor Protection Zone is the only practical Post-Construction Control for the portion of the site both upslope of and adjacent to the Stream Corridor Protection Zone. In this case, sites must be graded in a manner that maximizes sheet flow through the Stream Corridor Protection Zone. Storm water discharges through the Stream Corridor Protection Zone must also comply with all other applicable county or local municipal rules and regulations.
 - d. Pipes or ditches discharging storm water from a Post-Construction Control may pass through the Stream Corridor Protection Zone if adequately stabilized from erosion using Post-Construction Erosion Control Practices. Sites must be graded in a manner that maximizes sheet flow through any Stream Corridor Protection Zone designated as the Post-Construction Control for this portion of the site.
2. Preservation, Enhancement, and Restoration of Existing Natural Drainage, Soils and Vegetation: Practices that preserve, enhance, or restore existing natural drainage, soils or vegetation shall be used to the extent practicable.
- a. All areas designated for resource protection shall be designated on the Improvement Plan and clearly marked in the field with fencing or other appropriate methods. Resource protection practices may include minimizing site grading and compaction; protecting and/or restoring water resources, riparian areas, and existing vegetation; and prevention of concentrated storm water runoff to and through these areas.
 - b. Soil Preservation and Post-Construction Soil Restoration: To the extent practicable leave native soil undisturbed and protect from compaction during construction. Except for areas that will be covered by impervious surface or where infiltration must be limited due to unstable slopes and/or contaminated soils, the soil moisture-holding capacity of areas that have been cleared and graded must be restored to that of the original, undisturbed soil to the extent practicable. Areas that have been compacted or had the topsoil or duff layer removed should be amended using the following steps:
 - 1. Till subsoil to a depth of 15-18 inches;

2. Incorporate compost through top 12 inches; and
 3. Replace with stockpiled site or imported suitable topsoil to a minimum depth of 4 inches.
- c. The Improvement Plan shall include a planting plan for vegetation that will be restored within the Site, with rationale for the selection of the vegetation, its storm water management benefits, and its long-term maintenance and sustainability requirements. Particular attention will be given to restoration of vegetation within areas designated under Article IV as Stream Corridor Protection Zones.
 - d. The physical, biological, geomorphic, and hydraulic function of impaired water resources and associated floodplain storage within the Site shall be restored where practicable. The Improvement Plans will designate such areas and provide grading plans and adequate details to support such measures and facilitate review by the **Enforcing Official**.
3. Integration with Storm Water Quantity Conveyance Design Criteria: All Post-Construction Controls and associated Pre-Treatment Practices shall be integrated into the storm water conveyance and detention system for the site. This system shall be designed according to the storm water quantity control regulations of the Local Jurisdiction. The Improvement Plans shall describe how the proposed Post-Construction Controls are designed to meet the requirements of the Local Jurisdiction for storm water quantity control. The storm water quantity conveyance system shall be designed to address the following criteria for effective integration of the storm water conveyance facilities and Post-Construction Controls:
- a. Conveyance into a Post-Construction Control: The surface and subsurface storm water quantity conveyance system for the site shall direct storm water less than or equal to the WQv into one (1) or more Post-Construction Controls prior to discharge into any water resource or into off-site county, township or municipal owned/operated storm water conveyance systems.
 - b. Storm Water in Excess of the WQv: Flows in excess of the WQv shall either be diverted around the Post-Construction Controls or shall safely pass through the Post-Construction Control without re-suspending the accumulated pollutants to a level that reduces the Post-Construction Control's average annual pollutant removal capability.
 - c. Off-site storm water discharges: Off-site storm water runoff that discharges to or across the site shall either be routed around the Post-Construction Control or, if this is not possible, the Post-Construction Control shall be sized to treat all off-site incoming flow. Diversion of storm water runoff around a site or Post-Construction Control shall not contribute to increases in flows, erosion, or water quality problems

downstream.

4. Post-Construction Runoff Control Practices: Practices or features (e.g., level spreader, vegetated or rock-lined channels, rock outlet protection, energy dissipation structures, terrace drainage, subsurface drainage systems) shall be employed throughout the site's drainage system and at each inlet to a Post-Construction Control in order to provide non-erosive flow velocity from the structure to a water resource according to applicable criteria contained county or equivalent local municipal regulations.
5. General Requirements for Runoff Reduction Practices: The WQv used to size Post-Construction Controls may be reduced by incorporating Runoff Reduction Practices (**Table 510-B**) into the design of the site's surface and subsurface drainage system:

Table 510-B. Runoff Reduction Practices & Associated Drain (Drawdown) Times

Runoff Reduction Practice	Drain Time of WQv		Runoff Reduction Credit (% of WQ _{VRR})
	Minimum	Maximum	
Impervious surface disconnection	N/A	48 hours	TBD
Rainwater harvesting and reuse	N/A	48 hours	Min (V_{RR} / WQ_{VRR} , 100%)
Vegetated Swales: Detention Design	24-hours	48 hours	Min (V_{RR} / WQ_{VRR} , 100%)
Vegetated Swales: Flow Through	1	N/A	
<ul style="list-style-type: none"> ▪ HSG A/B or Amended ▪ HSG C/D 			22% 11%
Vegetated Strips: Turf Grass	24 hours	48 hours	
<ul style="list-style-type: none"> ▪ HSG A/B or Amended ▪ HSG C/D 			72% 36%
Vegetated Strips: Conservation Areas			
<ul style="list-style-type: none"> ▪ HSG A/B or Amended ▪ HSG C/D 			100% 53%
Vegetated Roof	24 hours	48 hours	Min (V_{RR} / WQ_{VRR} , 100%)
Partial Infiltration	24 hours	48 hours	Min (V_{RR} / WQ_{VRR} , 100%)
Notes:			
1. Size to convey a volume equal to the WQv, a duration of two (2) hours, and peak rainfall intensity of one (1) inch/hour at a depth of no more than three (3) inches. The use of this criterion is limited to sites where the total area disturbed is five (5) acres or less.			

- a. A Runoff Reduction Volume shall be calculated as a fraction of the water quality volume draining into and/or raining upon each Runoff Reduction Practice (WQV_{RR}) based on the water retention properties of the Practice:

$$RRv = WQV_{RR} * RR_{Credit} \quad (\text{Equation 5})$$

where

- RRv = Runoff Reduction Volume, acre-feet
 WQV_{RR} = Water quality volume draining into and/or raining onto the Runoff Reduction Practice, acre-feet
 RR_{Credit} = Fraction of the WQV_{RR} retained by the Runoff Reduction Practice (%)

The RR_{Credit} is determined for a Runoff Reduction Practice using the equation or value listed on **Table 510-B**. V_{RR} in the equation is defined as:

V_{RR} = Volume retained by the Runoff Reduction Practice, acre-feet

- b. Additional guidance for determining the Runoff Reduction Volume may be found in the RLDM, Storm Water Design Manual prepared by HCSWD or the **Enforcing Official** under Section 509(C) of these Regulations, or an alternative methodology proposed by the Owner and approved by the **Enforcing Official**.
- c. The **Enforcing Official** may approve use of Runoff Reduction Practices as a Post-Construction Control for areas of the site not draining into a common drainage system of the site (e.g., sheet flow from perimeter areas such as the rear yards of residential lots, low density development scenarios, areas draining through a stream corridor protection area established under Article IV of these regulations). The Improvement Plans shall demonstrate that the intent of pollutant removal and stream protection is being addressed by the selected Runoff Reduction Practices.
6. Additional Criteria Applying to Rainwater Harvesting and Reuse Runoff Reduction Practices:
- a. Pre-Treatment Practices shall be provided in advance of the Rainwater Harvesting system to manage any first flush pollutants generated by the collection area.
- b. The Runoff Reduction Volume credited to a Rainwater Harvesting System must be fully available within 48 hours after the end of the precipitation event. A water budget shall be included with the Improvement Plans and the Inspection and Maintenance Plan to support these volume use and draw down time criteria.

7. Additional Criteria Applying to Swale and Strip Runoff Reduction Practices:

- a. Swales/strips designed according to the detention design drain time criteria shall:
 - i. Not be located in areas where the depth to bedrock and/or seasonal high-water table is less than 3 feet below the final grade elevation.
 - ii. Only be allowed where the underlying soil consists of hydrologic soil group (HSG) A or B, unless the underlying soil is replaced by at least a 2.5-foot-deep layer of soil amendment with a permeability equivalent to an HSG A or B soil and an underdrain system is provided.
- b. Swales/strips designed according to the flow through design drain time shall:
 - i. Only be allowed on sites where the total tributary area to the swale is 5 acres or less.
 - ii. Be designed to slow and filter runoff during the WQv event by flowing through the turf grasses with a maximum depth of flow no greater than 3 inches, a peak flow of no more than 1 cubic feet per second, and a peak velocity of 0.9 feet per second.
 - iii. Be lined with fine turf-forming, flood tolerant grasses or other approved vegetation able to effectively remove pollutants as water flows through it.
 - iv. Swales should have a trapezoidal cross-sectional shape with a 4-foot to 8-foot bottom width and a minimum side slope of 3:1.
 - v. Swales receiving all or 90% of their inflow from a single inlet at the top of the swale shall be a minimum of 50 feet in length. Swales receiving flow along one or both edges shall be a minimum of 100 feet in length such that the average flow length is 50 feet.
- c. Use a level spreader or similar device to convert concentrated runoff to sheet flow before entering the swale/strip.

8. Additional Criteria Applying to Vegetated Roof Runoff Reduction Practices:

- a. The vegetated roof shall be composed of drought and extreme weather tolerant vegetation and lightweight soil mixtures able to retain at least forty (40) percent of the average annual precipitation in Hamilton County (at least sixteen (16) inches per year), absorb, filter, and detain the remaining average annual precipitation, and safely drain runoff from the roof to an appropriate storm water conveyance system.

- b. The vegetated roof shall be underlain by a waterproof membrane, root barrier, and drainage layer, protected by protection boards or materials composed of soft fibrous materials.
- c. Roof supports shall be designed to support the saturated weight of vegetated roof in addition to meeting all applicable design load requirements.

9. Additional Criteria for Partial Infiltration Runoff Reduction Practices:

- a. An infiltration practice listed on **Table 510-C** that is unable to meet the entire required maximum drawdown times may be used as a Runoff Reduction Practice if approved by the **Enforcing Official**.
- b. The Runoff Reduction Credit of a Partial Infiltration Runoff Reduction Practice equals the percentage of the WQv that may be infiltrated during the maximum drawdown time in **Table 501-C**.
- c. Partial Infiltration Runoff Reduction Practices may be proposed at any appropriate location within the Site and associated Post-Construction Controls, including within the footprint of an extended detention Post-Construction Control. Final approval of a Runoff Reduction Practice is at the discretion of the **Enforcing Official**.
- d. When a Partial Infiltration Runoff Reduction Practice is proposed, one of the following options may be considered to maximize runoff reduction while meeting the requirements of these Post-Construction Regulations:
 - i. Bioretention areas/cells without underdrains, created by adding soil amendments to increase surface infiltration rates, designed according to Section 510(F) of these Post-Construction Regulations.
 - ii. A combined infiltration/extended detention practice with an extended detention outlet placed at an elevation that allows a portion of the WQv to infiltrate into the ground within the maximum subsurface drain time and the remainder of the WQv to discharge through the extended detention outlet in no less than the minimum subsurface drain time. The extended detention storage may be placed on the surface and/or in an underground chamber with an underdrain.

E. Criteria Applying to all Post-Construction Controls and Associated Pre-Treatment Practices:

- 1. Post-Construction Controls Designed for Final Use: Post-Construction Controls shall be designed to achieve the purpose and intent of these Post-Construction Regulations, to be compatible with the proposed post-construction use of the

site, to protect the public health, safety, and welfare, and to function safely with minimal maintenance.

2. Direct Runoff to a Post-Construction Control: Runoff from all areas disturbed during construction shall be directed to one or more Post-Construction Controls and associated Pre-Treatment Practices designed in accordance with the performance standards in this section.
3. The Post-Construction Controls listed in **Table 510-C** are considered standard Controls approved for general use. Post-Construction Controls shall be designed such that the drain time is long enough to treat the storm water and release it at a rate that minimizes degradation of the water resources, but short enough to provide storage available for successive rainfall events and avoid the creation of nuisance conditions, as defined in **Table 510-C** of these Post-Construction Regulations.
4. The Post-Construction Controls chosen must be sized to treat 100% of the WQv associated with their contributing drainage area, less any Runoff Reduction Volume attributable to the Runoff Reduction Practices upstream of the Post-Construction Control, and to ensure compliance to the extent practicable with Ohio EPA Water Quality Standards (Ohio Administrative Code Chapter 3745-1) and Ohio EPA Construction General Storm Water NPDES discharge permit requirements applicable to the property.

Table 510-C: Post-Construction Controls & Associated Drain (Drawdown) Times

Extended Detention Practices	Drain Time of WQv		
	Minimum	Maximum	
<ul style="list-style-type: none"> ▪ Dry Extended Detention Basins^{1,2,3} ▪ Wet Extended Detention Basins^{1,2,4} ▪ Constructed Extended Detention Wetlands^{1,2,4,5} ▪ Permeable Pavement with underdrain^{1,2,6} ▪ Underground Storage with underdrain^{1,2,6,7} 	48 hours 24 hours 24 hours 24 hours 24 hours	72 hours 48 hours 48 hours 48 hours 48 hours	
Infiltration Practices	Maximum Drain Time of WQv		
	Surface	Subsurface	
<ul style="list-style-type: none"> ▪ Bioretention Area/Cell, no underdrain^{2,7,8} ▪ Infiltration Basin, no underdrain^{2,9} ▪ Infiltration Trench, no underdrain^{2,9,10} ▪ Permeable Pavement, no underdrain^{2,9,10} ▪ Underground Storage, no underdrain^{2,9,10,11} 	24 hours 24 hours 24 hours 2 hours N/A	48 hours 48 hours 48 hours 48 hours 48 hours	
Filtration Practices	Drain Time of WQv		
	Surface	Subsurface	
	Maximum	Minimum	Maximum
<ul style="list-style-type: none"> ▪ Sand and Other Media Filtration with underdrain^{1,2,6} ▪ Bioretention Area/Cell with underdrain^{1,2,6,8} 	12 hours 24 hours	24 hours 36 hours	48 hours 48 hours

Notes- The following criteria and those additional criteria listed throughout Section 510(E) of these Regulations apply to specific Post-Construction Controls:

1. The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the drain time.
2. A Pre-Treatment Practice, designed according to the criteria listed in Section 510(E)(5) shall be located at every point where storm water enters a Post-Construction Control. Underground storage systems with infiltration must have adequate pretreatment of suspended sediments included in the design to minimize clogging of the infiltrating surface. This pretreatment shall concentrate sediment in a location where it can be readily removed.
3. Dry basins must include a forebay and a micropool each sized at a minimum of 0.1 x WQv, or include acceptable pretreatment and a protected outlet.
4. Provide a permanent wet pool with a minimum volume equal to the WQv and an extended detention volume above the permanent pool equal to 1.0 x WQv.
5. Constructed Extended Detention Wetlands must have a permanent wet pool equal to the WQv, with 25% of the WQv in a pool and 75% in marshes.
6. The underdrain shall be sized with a restricted outlet to achieve the minimum drawdown time.
7. Pretreatment of non-infiltrating underground storage systems must be 50% effective in capturing total suspended solids using the protocols established for the Alternative Post-Construction Control Testing Protocol – or for systems that have demonstrated testing by the NJDEP.
8. Bioretention soil media shall have a permeability that retains sufficient moisture to sustain vegetation within the facility while achieving the maximum surface drain time listed in Table 510-B. Meeting the soil media specifications in a Storm Water Design Manual approved by HCSWD and/or the **Enforcing Official** under Section 509 (C) 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.
9. Infiltrating practices with the WQv stored above ground (bioretention, infiltration basin) shall fully drain the WQv within 24 hours to minimize nuisance effects of standing water and to promote vigorous communities of appropriate vegetation.
10. Subsurface practices designed to fully infiltrate the WQv (infiltration trench, permeable pavement with infiltration, underground storage with infiltration) shall empty within 48 hours to recover storage for subsequent storm events.
11. For infiltrating underground systems, pretreatment shall be 80% effective at capturing total suspended solids according to the testing protocol established in the Alternative Post-Construction Control Testing Protocol or for systems that have demonstrated testing by the New Jersey Department of Environmental Protection.

5. Pre-Treatment and Floatable Control:
 - a. Pre-Treatment Practices shall be employed at each inlet to a Post-Construction Control and may be placed at other locations within the Site, where practicable, to prevent floating materials and coarse sediment, such as litter, debris, trash, oil, and yard waste, from discharging into a Post-Construction Control.
 - b. Pre-Treatment Practices are intended to preserve the infiltration and storage capacity of the Post-Construction Control, increase its functional life, prevent scour/erosion at inlet structures, and simplify removal of collected sediment, debris and other materials.
 - c. Acceptable Pre-Treatment Practices include:
 - i. Forebays and micropools;
 - ii. Vegetated swales;
 - iii. Vegetated filter strips (sheet flow runoff only);
 - iv. Manufactured treatment devices; and
 - v. Deep sump trap or catch basin.
 - d. Pre-Treatment Practices shall be at least 50% effective at capturing average annual total suspended solids loads (or 80 % effective when used in association with an underground storage infiltration practice).
6. An additional volume for sediment storage equal to 20% of the WQv shall be incorporated into the Post-Construction Control and/or associated Pre-Treatment Practices.
7. Written documentation shall be provided in the Improvement Plans per Section 509 describing the Post-Construction Controls and associated Pre-Treatment Practices that will be installed during construction for the site, the rationale for the selection of each Post-Construction Control and associated Pre-Treatment Practices, and how each Post-Construction Control will minimize anticipated impacts on the channel and floodplain morphology, hydrology, and water quality.
8. Infiltration Practice Post-Construction Controls shall not be located where infiltrating groundwater could adversely impact slope stability based upon a geotechnical evaluation satisfying the requirements of Section 311 of the Earthwork Regulations (Article III of the Rules and Regulations of the HCSWD) or equivalent regulations of the Local Jurisdiction.
9. An as-built landscaping plan based on field observation shall be prepared for each vegetated Post-Construction Control to define vegetation that is sustainable

under the anticipated frequency of inundation within the Control.

10. Each Post-Construction Control and associated Pre-Treatment Practice shall be designed to facilitate sediment removal, vegetation management, debris control, and other maintenance activities defined in the I&M Plan for the site. The following criteria apply:
 - a. The maximum slope for any vehicle access way shall be 10 (H) to 1 (V), unless the I&M Plan approved by the **Enforcing Official** demonstrates that a steeper slope is appropriate for the planned maintenance activities.
 - b. The access way shall be designed for expected maintenance equipment and shall extend from a public roadway to each location within the Post-Construction Control/Pre-Treatment Practice designed for sediment accumulation.
 - c. Portions of Post-Construction Controls/Pre-Treatment Practices that are underground shall include a monitoring port to allow inspection without entry. Any lids, covers, or access openings shall be of such size, weight, and other characteristics to allow them to be opened in the manner described in the I&M Plan.
 - d. Post-Construction Controls shall be provided with an emergency drain, where practicable, so that they may be emptied if the primary outlet becomes clogged and/or to drain the permanent pool to facilitate maintenance. A gravity drain shall be provided where site conditions allow. Post-Construction Controls that are not provided with an emergency gravity drain must be able to be pumped in a manner described in the I&M Plan.
 - e. Post-Construction Controls/Pre-Treatment Practices shall be designed, where feasible, to incorporate provisions for mosquito management.
 - f. The **Enforcing Official** may require that additional design features be incorporated into the Post-Construction Control/Pre-Treatment Practices as necessary to assure that the facility is properly maintained and addresses public safety concerns.
11. Freeboard requirements for Post-Construction Controls: Where applicable, Post-Construction Controls must provide a minimum of one (1) foot freeboard above the projected peak stage within the Post-Construction Control facility.
12. Each Post-Construction Control/Pre-Treatment Practice shall be designed to drain toward the outlet and/or permanent pool in order to minimize standing water and saturated soil conditions that impede maintenance of the facility.
13. Permeable pavements incorporated into Post-Construction Control shall be composed of a load-bearing, durable surface together with an underlying layered

structure that temporarily stores water prior to infiltration to the soil and/or an underdrain with a controlled extended detention outlet. The pavement shall be designed to rapidly pass storm water to the underlying subgrade and/or a rock-filled reservoir which provides storage until the storm water can infiltrate into the underlying soil and/or be discharged through an underdrain. Runoff from unvegetated pervious areas surrounding permeable pavement systems must receive pretreatment prior to draining onto the pavement in order to minimize sediment loading.

F. Additional Criteria for Extended Detention Practice Post-Construction Controls:

1. The following additional criteria shall apply to Dry Extended Detention Basins, Wet Extended Detention Basins, and Constructed Extended Detention Wetlands:
 - a. The tributary drainage area shall be at least ten (10) acres, to avoid outlets with extremely small orifices prone to clogging. This requirement may be varied if documentation is provided to the satisfaction of the **Enforcing Official** that the outlet is designed to withstand clogging.
 - b. A forebay designed to allow larger sediment particles to settle shall be placed at each basin inlet, unless an alternative Pre-Treatment Practice is approved by the **Enforcing Official**. The total forebay volume shall be equal to at least 10% of the WQv. Each forebay shall consist of a separate cell, formed by an acceptable barrier such as a rock and/or vegetated weir. A fixed vertical sediment depth marker shall be installed in each forebay to measure sediment deposition over time.
 - c. Acceptable alternatives for pretreatment of extended dry detention basins include grass swales, grass filter strips, manufactured treatment devices, deep sump basins or traps and dry forebays. Note that some devices, while acceptable, may require frequent maintenance to remain functional.

Maintenance requirements for these pretreatment practices should be included in the inspection and maintenance plans.
2. The primary outlet of a Dry Extended Detention Basin must be provided with protection from blockage by silt or debris. A micropool sized at a minimum of 0.1 x WQv, designed to minimize aesthetic and other impacts associated with sediment and debris accumulation and saturated soils, is considered an acceptable outlet protection practice. An alternative means of outlet protection may be used if approved by the **Enforcing Official**.
3. Additional Criteria applying to Wet Extended Detention Basins and Constructed Extended Detention Wetlands:
 - a. Include a permanent pool with a minimum volume equal to the WQv and an extended detention volume above the permanent pool equal to 1.0 x WQv.

- b. Basin side slopes above the permanent pool shall have a run to rise ratio of 3 (H):1 (V) or flatter or as approved by the *Enforcing Official*.
 - c. The permanent pool shall be no deeper than twelve (12) feet below the basin's normal water elevation unless equipped with practices (e.g. aeration) that prevent thermal stratification. The perimeter of all permanent pool areas deeper than four (4) feet shall be surrounded by an aquatic bench that extends at least eight (8) feet and no more than fifteen (15) feet inward from the normal water edge. Unless aeration is provided, the eight- (8-) foot wide portion of the aquatic bench closest to the shoreline shall have an average depth of six (6) inches below the permanent pool and planted with hearty plants comparable to wetland vegetation that are able to withstand prolonged inundation. The remainder of the aquatic bench shall be no more than fifteen (15) inches below the permanent pool to limit growth of dense vegetation in a manner that allows waves and mosquito predators to pass through the vegetation. The maximum slope of the aquatic bench shall be 10 (H) to 1 (V).
4. An adequate water source must exist to maintain any permanent pool or micropool.
 5. The minimum length-to-width ratio for a Dry Extended Detention Basin, Wet Extended Detention Basin, Constructed Extended Detention Wetlands, and Underground Storage with underdrain shall be 2:1 to avoid short-circuiting and to increase travel time to the outlet. Where necessary, the length-to-width ratio may be increased to achieve this criterion by relocating the inlet or outlet, or by installing berms or baffles to the full depth of the WQv.
 6. Wet Extended Detention Basins and Constructed Extended Detention Wetlands shall only be allowed under the following conditions:
 - a. Where existing soils are suitable as determined by a geotechnical engineer;
 - b. Where gravelly sands or fractured bedrock are not present;
 - c. Where the permanent pool of water will be sustained year-round under normal climatic conditions; or
 - d. The facility may seasonally dry if it is also designed to meet the performance standards for a Dry Extended Detention Basin.
 7. Additional Criteria Applying to Constructed Extended Detention Wetlands:
 - a. The permanent pool of any constructed wetland shall be at least two (2) times the volume of evapotranspiration during a thirty (30) day drought at summer evaporation rates or the WQv, whichever is greater. In cases where subsurface infiltration into and exfiltration out of the wetland are

negligible, the summer evapotranspiration rates may be estimated as 0.75 times a summer pan evaporation rate of 0.2 inches/day. More rigorous water balance calculations may be required by the **Enforcing Official** where these simplifying assumptions are not valid and/or in all cases where the drainage area to the wetland is less than twenty (20) acres.

- b. Approximately 25 percent of the permanent pool volume, plus the portion of the sediment storage volume not provided by a pretreatment practice, shall be placed in deep water zones (areas with depths between 4- and 12-feet) to sustain fish communities and provide wave action to control mosquito populations. At a minimum, deep water zones shall be placed within the forebay and around the primary outlet to minimize disruption of wetland vegetation during sediment removal operations.
- c. The remainder of the Constructed Extended Detention Wetland shall consist of marshes. Dry weather depths in marshes (i.e., areas less than 18 inches deep) should vary depending on the vegetation selected. Permanent pool depths shall be six (6) inches or less within at least 35 percent of the marsh.
- d. The bottom of the permanent pool between the deep-water zone and the marsh shall be sloped no steeper than 4 (H) to 1 (V).
- e. The maximum depth of the extended detention zone above the permanent pool shall not exceed two (2) feet to reduce stress on herbaceous wetland plants.
- f. Vegetated side slopes of the basin to minimize slope erosion.

8. Additional Criteria Applying to Underground Detention/Storage Structures:

- a. Should include a separate sediment basin with access to simplify cleanout.
- b. Must include regional pretreatment verified to achieve 50% TSS removal and be designed to treat water quality flow.

9. Additional Criteria Applying to Extended Detention Outlets:

The extended detention outlet shall be designed according to the following criteria to achieve the drawdown time requirements and minimize clogging, vandalism, and maintenance:

- a. The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the drain time.
- b. A perforated pipe underdrain may be provided beneath the extended

detention volume with an extended detention outlet, a minimum grade of 0.5 percent, a diameter of four (4) or six (6) inches, and granular backfill of durable No. 57 aggregate up to a minimum of four (4) inches above the outside diameter of the pipe.

- c. Underdrains shall be sized with a restricted outlet to achieve minimum drawdown time requirements.
- d. If a single orifice outlet is used as the water quality outlet for Dry Extended Detention Basins without a micropool, the outlet shall have a diameter of at least four (4) inches, and an external trash rack and hood that protects against clogging shall be provided.
- e. For Wet Extended Detention Basins, Constructed Extended Detention Wetlands, and Dry Extended Detention Basins with micropools, the outlet shall consist of a submerged reverse-slope pipe that extends downward from the riser to an inflow point one (1) foot below the normal pool elevation of the permanent pool.
- f. If a perforated riser and/or horizontal perforated pipe is used as the water quality outlet control facility for the basin, then the perforations shall be designed according to criteria in the Ohio Department of Transportation's (ODOT's) Location and Design (L&D) Manual.
- g. The **Enforcing Official** will consider alternative outlet designs if supporting calculations and documented implementation experience is provided to demonstrate that the proposed outlet will achieve the intent of these Post-Construction Regulations.

G. Additional Criteria Applying to Infiltration Practices:

- 1. Infiltrators shall only be allowed where soil borings and infiltration tests of the in-situ soils indicate that the entire WQv will infiltrate within 48 hours and where the seasonal high-water table and any underlying bedrock are at least four (4) feet below the final grade elevation of the bottom of the infiltrator.
- 2. All runoff directed into an infiltrator from unvegetated pervious areas must receive pretreatment (e.g., flow through a swale or strip) to remove coarser sediments that could cause a loss of infiltration capacity and increase maintenance frequencies.
- 3. During construction, all runoff from disturbed areas of the site shall be diverted away from the proposed infiltrator. No construction equipment shall be permitted within the infiltrator site to avoid increased soil compaction.
- 4. The Infiltrator will be clearly marked during construction to minimize unnecessary entrance.

H. Additional Criteria Applying to Filtration Practices:

1. The following additional criteria shall apply to sand or other media filters, bioretention areas/cells, and other surface or subsurface media filters:
 - a. Filtration practices shall not be allowed in areas where the seasonal high-water table or bedrock is above the invert of the underdrain system.
 - b. Runoff from the tributary area of the filtration practice shall be directed into a pretreatment unit sized to control the entire WQv. Acceptable pretreatment units include concrete or earthen chambers in advance of the filter bed, filter strips, swales overlaying or surrounding the filter bed, a manufactured control device able to remove 50 percent of the average annual sediment load, or other surface or underground storage areas.
 - c. Runoff from the pretreatment unit shall be directed into a filter bed consisting of sand, soil, peat, and/or other media that filters particulate matter and/or absorbs the trapped pollutants. The media shall have a minimum permeability of 1 to 4 inches per hour (2 to 8 feet per day). The surface area of the filter bed shall be determined based on the following equation:

$$A = (WQ_v \cdot d) / [K \cdot T \cdot (h + d)]$$

where:

- A = surface area of the filter media bed (acre)
- WQ_v = water quality volume (acre-ft)
- d = depth of the filter media bed (ft)
- T = 1.67 days (drawdown time)
- K = saturated hydraulic conductivity of the filter media (ft/day)
- h = average depth of water above filter bed (ft)
= half the maximum depth of water

- d. The depth of a sand filter media bed shall be 18 inches. The depth of the soil filter media bed within a bioretention areas/cells shall be 30 inches or the depth of the root zone of the vegetation planted within the facility, whichever is greater.
- e. The maximum depth of water over a sand filter bed shall be 18 inches. The maximum depth of water over a soil filter bed within a bioretention areas/cells shall be between 6 inches and 12 inches, as defined in the Improvement Plans based on the type of vegetation used.
- f. A perforated pipe underdrain shall be provided beneath the filter bed with an extended detention outlet, a minimum grade of 0.5 percent, a diameter of four (4) or six (6) inches, and granular backfill of durable No. 57 aggregate up to a minimum of four (4) inches above the outside diameter

of the pipe.

- g. An overflow and/or bypass designed to convey all storms larger than the WQv up to and including the 100-year event shall be provided. Use of a vertical stand pipe or catch basin is recommended.

I. Alternative Post-Construction Controls: The **Enforcing Official** may approve the use of alternative Post-Construction Controls if documentation is provided that demonstrates, to the satisfaction of the **Enforcing Official** and with subsequent written approval from Ohio EPA, that these Post-Construction Controls are equivalent in pollutant removal and runoff flow/volume reduction effectiveness to those listed in **Table 510-B** of these Post-Construction Regulations.

1. Use of Alternative Post-Construction Controls may only be allowed if:
 - a. The permittee can demonstrate that a Control listed as an approved Post-Construction Control in **Table 510 C** is not feasible, and
 - b. That the proposed Control can meet the treatment criteria ~~identified in this section of Article V Post-Construction Regulation.~~ in the current version of the Ohio EPA General Permit Authorization for Storm Water Discharges Associated with Construction Activity under the National Discharge Elimination System (i.e., Construction General Permit).
2. Testing specifications for Alternative Post-Construction Controls may include laboratory testing, field testing, or both, as defined in the most recent version of the Ohio EPA General Permit for Storm Water Discharges Associated with Construction Activity. Testing results for storm water Manufactured Treatment Devices (MTD) certified by the New Jersey Department of Environmental Protection are acceptable to the **Enforcing Official**.
3. The WQv discharge rates and/or the WQ_r from the Alternative Post-Construction Control must be reduced to minimize stream bed erosion and protect the physical and biological integrity of the receiving water resource unless there will be negligible hydrological impact to the water resource. WQv discharge rates and the WQ_r are considered to have a negligible hydrological impact if one (1) of the following three (3) conditions can be demonstrated:
 - a. The alternative Post-Construction Control is able to recharge the entire WQv to groundwater.
 - b. The larger common plan of development or sale will create less than one (1) acre of impervious surface.
 - c. The storm sewer system discharges directly into a large river (fourth order or greater) or to a lake and where the site is less than five (5) percent of the watershed area that is upstream of the site, unless a TMDL identified water quality problems in the receiving surface waters of the State.

511 OFF SITE ALTERNATIVES AND ALTERNATIVE ACTIONS

- A. Off-site alternatives may be considered on a case-by-case basis where none of the Post-Construction Controls listed in Table 510-B of these Post-Construction Regulations are determined to be feasible. The following criteria must be met to accept an off-site alternative:
1. A maintenance agreement is established that satisfies the requirements of Section 516 Maintenance And Inspections.
 2. The off-site alternative discharges to the same Hydrologic Unit Code (HUC)-4412 watershed unit or a smaller subwatershed as defined by the **Enforcing Official**.
 3. The size of the drainage area draining into the off-site alternative is at least 1.5 times the size of the uncontrolled on-site drainage.
 4. The off-site alternative meets all applicable requirements of these Post-Construction Regulations.
- B. All off-site alternatives are subject to the approval of the **Enforcing Official** and the Director of the Ohio EPA. Off-site alternatives may include, but are not limited to the following:
1. Implementation of off-site Post-Construction Controls and/or the retrofit of an existing practice to increase quality and quantity control.
 2. Stream, floodplain, or wetland restoration.
 3. Acquisition or conservation easements on protected open space contributing to storm water control such as wetland complexes.
- C. The **Enforcing Official** may request that additional measures not required by these Post-Construction Regulations be taken to correct existing degradation of water resources or to minimize future degradation of water resources. The Property Owner and the **Enforcing Official** shall mutually determine equitable compensation for these additional measures.

512 ACCESS TO POST-CONSTRUCTION CONTROLS – LEGAL INSTRUMENT REQUIRED

- A. Access to and entrance into Post-Construction Controls as required by the **Enforcing Official** for inspections and maintenance shall be secured by a recordable real property Legal Instrument, such as an easement, a Deed of Easement, a Deed, or covenant recorded as part of the legal chain of title of the property. The following conditions shall apply to such instrument:
1. The proposed instrument in final form shall be included in the I&M Plan submitted with the proposed Improvement Plans and shall include the parcel identification

number for the property and any parcel contributing storm water to and/or required to install the system of Post-Construction Controls addressed by the Legal Instrument.

2. The instrument shall be approved by the **Enforcing Official** prior to approval of a Record Plat and/or Improvement Plan.
3. Unless otherwise allowed by the **Enforcing Official**, access to Post-Construction Controls as provided by the instrument shall be from a public right-of-way. The access shall be no less than 15 feet wide. The instrument shall also incorporate the entire Post-Construction Control plus an additional 15-foot wide band around the perimeter of the Post-Construction Control.
4. The access to the Post-Construction Control shall be graded and/or stabilized as necessary to allow maintenance equipment to access and manipulate around and within each facility, as defined in the I&M Plan for the site.
5. Instruments for structural Post-Construction Control access thereto shall include restrictions against the planting of trees, shrubbery, or other woody growth; against the construction therein of buildings, fences, walls, and other structures that may obstruct the free flow of storm water and the passage of inspectors and maintenance equipment or any other activity or structure that is inconsistent with or interferes with the use, performance or function of the Post-Construction Control and purpose of the Legal Instrument; and against the changing of final grade from that described by the final grading plan approved by the **Enforcing Official**. Any re-grading may be performed or obstruction removed by the **Enforcing Official** consistent with the Legal Instrument and charged to the appropriate Legal Entity and/or property owners.

513 SITE STABILIZATION REQUIRED PRIOR TO OPERATION OF STORM WATER CONTROLS

- A. No storm water shall be directed through any Post-Construction Control, if required under Article V of these Regulations, or portions thereof, until the entire area tributary to the Post-Construction Control has reached final stabilization. Final stabilization occurs after the completion of the final grade at the site, after all of the utilities are installed, and the site is stabilized with vegetation or other appropriate methods. Documentation acceptable to the **Enforcing Official** shall be submitted to demonstrate that the Site has reached final stabilization. Upon a satisfactory demonstration, Post-Construction Controls may be completed and placed into service. Upon completion of installation of the Post-Construction Controls, stabilization measures (e.g., seeding and mulching) must be installed on all disturbed areas and/or exposed soils caused by such installation within 7 days, weather permitting.

514 FINAL INSPECTION APPROVAL

- A. To receive final post-construction inspection and acceptance of any project, or portion thereof, the following must be completed and provided to the **Enforcing Official**:

1. Final stabilization must be achieved and all Post-Construction Controls must be installed and made functional per the approved Improvement Plan, as determined by the **Enforcing Official**.
2. An As-Built Certification, including a Survey where applicable, must be sealed, signed and dated by a Professional Engineer and a Professional Surveyor, respectively. The **Enforcing Official** may require the submission of a new set of Post-Construction Control calculations if he/she determines that the design was altered significantly from the approved Improvement Plans. The As-Built Survey must provide the location, dimensions, and bearing of such practices and include the entity responsible for long-term maintenance as detailed in the I&M Plan.
3. A copy of the complete and recorded I&M Plan as specified in Section 509 Storm Water Management Requirements For Improvement Plans must be provided to the **Enforcing Official**.

515 OWNERSHIP OF POST-CONSTRUCTION CONTROLS

- A. Unless otherwise required by the **Enforcing Official**, Post-Construction Controls shall be owned, controlled, and maintained by a Legal Entity, as follows:
 1. If the Post-Construction Control serves a single property, then the property owner shall be the Legal Entity.
 2. If the Post-Construction Control serves multiple lots in residential, commercial, industrial and/or condominium developments, then the Post-Construction Control either shall be on a separate lot or located within an easement as specified in these Post-Construction Regulations. The Legal Entity shall be one of the following:
 - a. A validly created owners association under Ohio law,
 - b. A local unit of government, or
 - c. A property owner with a valid contract with the property owners served by the Post-Construction Control.

516 MAINTENANCE AND INSPECTIONS

- A. Controls shall be maintained in accordance with the I&M Plan, which is included in the Legal Instrument approved by the **Enforcing Official** as provided in Section 512 Access To Post-Construction Controls – Legal Instrument Required of these Post-Construction Regulations. The Legal Entity defined in Section 515 Post-Construction Controls of these Post-Construction Regulations shall be responsible for maintenance of the Post-Construction Control.
- B. If the Post-Construction Control serves multiple lots in residential, commercial, industrial, and/or condominium developments, then the Legal Entity shall be responsible for the

maintenance of all Post-Construction Controls within the subdivision and/or condominium development.

- C. In the event the relationship between the Legal Entity and the property owners is dissolved, or if the Legal Entity fails to perform required maintenance, responsibility for such maintenance shall be proportionally distributed to each property owner contributing storm water to and/or required to install the system of Post-Construction Controls.
- D. The **Enforcing Official** shall not authorize any construction covered by these Post-Construction Regulations prior to approving an I&M Plan meeting the requirements of this Section. The I&M Plan shall be submitted for review as part of the Improvement Plans as a Legal Instrument in recordable form, capable of being recorded in the legal chain of title for lands in the County Recorder's office.
- E. A draft of this I&M Plan shall be provided as part of the Improvement Plan submittal. Once a draft is approved, a final copy of the Plan fully executed and in recordable form for the Hamilton County Recorder's Office, must be submitted to the **Enforcing Official** to receive final inspection approval of the site.
- F. The owners of real property contributing storm water to and/or required to install a system of Post-Construction Controls required by these Post-Construction Regulations and approved by the **Enforcing Official** shall be mutually responsible for the inspection and maintenance of these Post-Construction Controls as specified in this section and further defined in the I&M Plan unless a public agency or other entity, as approved by the **Enforcing Official**, assumes the inspection and maintenance responsibility.
- G. The I&M Plan shall provide at least the following:
 - 1. The name and contact information for the Legal Entity that owns each Post-Construction Control and (if known) the Maintenance Provider representing the Legal Entity.
 - 2. Any necessary legally binding maintenance easements and agreements;
 - 3. The parcel numbers of each property served by the Post-Construction Control.
 - 4. The parcel number and location of each Post-Construction Control.
 - 5. A map showing all access and maintenance easements for each Post-Construction Control.
 - 6. Features of the design that facilitate maintenance of the system of Post-Construction Controls including construction drawings or excerpts showing the plan view, profile and details of the outlet(s);
 - 7. Relevant elevations and associated volumes that dictate when removal of accumulated sediments must occur.

8. A description of the on-going procedures and additional standards, as required by the **Enforcing Official** which will ensure continual proper operation and performance of Post-Construction Controls.
 9. An inspection schedule and reporting requirements, including acceptable inspection checklists appropriate for each Post-Construction Control and proof of inspection certification requirements.
 10. A prohibition on alteration of the Post-Construction Control without prior written approval from the **Enforcing Official**.
 11. The location of and management practices for all instruments established under Section 512 Access To Post-Construction Controls- Legal Instrument Required of these Post-Construction Regulations that provide for access to and work on the system of Post-Construction Controls.
 12. Approvable document indemnifying the **Enforcing Official** and related public officials and public entities (the "indemnified officials") from and against any and all losses, costs, claims or liabilities whatsoever, including legal fees and other defense costs, whether from personal injury, property damages, or other losses of any kind or character asserted or threatened against the indemnified parties, and which are in any way related to the existence, construction, operation, maintenance, or failure of the system of Post-Construction Controls.
- H. Alteration or termination of the I&M Plan is prohibited unless amended or replaced by an equivalent approved plan compliant with these Post-Construction Regulations. Any changes in the I&M Plan must be approved in advance by the **Enforcing Official** and recorded in the same manner as the Original I&M Plan prior to becoming effective. The **Enforcing Official** shall be notified in writing immediately whenever a new Maintenance Provider is designated.
- I. The Legal Entity shall either serve as or contract with a Maintenance Provider who shall be responsible for managing any easements established under Section 512 ACCESS TO POST-CONSTRUCTION CONTROLS – LEGAL INSTRUMENT REQUIRED of these Post-Construction Regulations and for maintaining the system of Post-Construction Controls. The Maintenance Provider shall maintain the system of Post-Construction Controls in good working condition acceptable to the **Enforcing Official** and in accordance with the schedule of long-term maintenance activities defined in the approved I&M Plan. Adequate maintenance is herein defined as good working condition so that the system of Post-Construction Controls is performing its design functions.
- J. The Maintenance Provider shall submit to the **Enforcing Official** an annual inspection report composed of completed inspection checklists and proof of annual inspection by **Qualified Inspection Personnel**. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the entire system of Post-Construction Controls, including berms, inlet structures, outlet structures, pond areas, access roads, etc. Deficiencies shall be noted in the inspection form.

- K. Sediment accumulation resulting from the normal operation of the system of Post-Construction Controls shall be removed and disposed of appropriately. Disposal of accumulated sediments may be onsite in a reserved area(s) for this purpose or off site. Sediment removal activities shall be conducted when ~~75~~ 50 percent of the sediment storage volume becomes filled with sediment.
- L. The **Enforcing Official** bearing proper credentials and identification shall be permitted at all reasonable times to enter upon any property or to gain access to any easements established under Section 512 ACCESS TO POST-CONSTRUCTION CONTROLS – LEGAL INSTRUMENT REQUIRED as necessary to inspect, observe, maintain, and repair, as required by the enforcement and penalty provisions of these Post-Construction Regulations, the system of Post-Construction Controls whenever the **Enforcing Official** deems necessary. When practical, the **Enforcing Official** shall provide written notice to the Legal Entity, property owners and Maintenance Provider prior to entry. The **Enforcing Official** shall be granted access without unreasonable delay. Any obstruction preventing safe and easy access to the system of Post-Construction Controls shall be promptly removed or cleared upon request of the **Enforcing Official** and shall not be replaced or allowed to reoccur. The cost of removing or clearing obstructions shall be the responsibility of the Legal Entity. The **Enforcing Official** shall be entitled to examine and copy any records required to be prepared and maintained under these Post-Construction Regulations.
- M. The **Enforcing Official** may inspect Post-Construction Controls periodically and determine if maintenance is required according to criteria in the I&M Plan and/or Design Manual. If the **Enforcing Official** identifies a maintenance need, the **Enforcing Official** will provide written notification to the Legal Entity, as detailed in the I&M Plan. Upon notification, the Legal Entity shall have **thirty (30) working days**, to make repairs or submit a plan for the approval of the **Enforcing Official**, with details regarding the necessary repairs, action items and established timelines.
- N. If the Legal Entity and/or designated Maintenance Provider fails to maintain a Post-Construction Control, the **Enforcing Official** may enter the property, perform the required maintenance or remediation, and bill the Legal Entity or Maintenance Provider, or, in the event there is no then currently viable Legal Entity or Maintenance Provider, the property owner(s) contributing storm water to the control (the “Responsible Owner(s)”) for such costs, together with a 50% additional charge for administrative costs, charges and penalties, where allowed by law. In the event of nonpayment by the Legal Entity, Maintenance Provider, or Responsible Owners, the legislative body of the Local Jurisdiction or the **Enforcing Official** may cause the proportional cost of such required maintenance or remediation, together with any administrative costs and charges and allowable penalties to be collected from any and all responsible parties by any means allowable either at law or in equity, including, where authorized by law, the placement of a lien against the properties of the Responsible Owners or the collection of such costs, charges and penalties through the real estate tax duplicate to be paid with the real estate taxes of such benefitted properties.
- O. In the event the Post-Construction Controls as shown on the approved plans and specifications is not maintained in good working order in accordance with the standards

of these Post-Construction Regulations and in accordance with the I&M Plan, the Local Jurisdiction, with due notice, may enter the property and take whatever steps it deems necessary to return the Post-Construction Controls to good working order. This provision shall not be construed to allow the Local Jurisdiction to erect any permanent structure on the property. Neither the **Enforcing Official** nor any Local Jurisdictions shall be under any obligation to maintain or repair the system of Post-Construction Controls and in no event shall these Post-Construction Regulations be construed to impose any such obligations upon those entities.

- P. In the event the **Enforcing Official** or Local Jurisdiction performs any work or expends any funds to return any Control facilities back to good working order, the Legal Entity and/or the Maintenance Provider shall reimburse the Local Jurisdiction within thirty (30) days receipt of an invoice from the **Enforcing Official** or Local Jurisdiction identifying the costs incurred in the repair or remediation plus an additional 50% for administrative costs and charges. If not paid within the prescribed time period, the **Enforcing Official** or Local Jurisdiction may cause the proportional cost of such required maintenance or remediation together with any administrative costs and charges and allowable penalties to be collected by any means allowable under the law or in equity, including, where authorized by law, the placement of a lien on the benefitted properties contributing storm water, or the collection of such costs, charges and penalties through the real estate tax duplicate of such benefitting Responsible Property owners contributing storm water to and/or required to install and maintain a system of Controls. Where permitted by law, those charges shall become a lien against the benefitted Responsible Owners property or where authorized by law may be collected through the tax duplicate in the same manner as other taxes. The actions described in this section shall be in addition to and not in lieu of any legal remedies which may otherwise be available to the Local Jurisdiction or the **Enforcing Official**.
- Q. Except as to the **Enforcing Official** and the Indemnified Officials, nothing in these Post-Construction Regulations shall be construed to limit or affect any liability for damage which the Legal Entity, Maintenance Provider or Responsible Owners may have and which is alleged to have resulted from or been caused by storm water runoff where the system of Post-Construction Controls fails to operate properly.

517 FEES

- A. Where applicable, plan review, filing, and inspection fees are required to be submitted to the **Enforcing Official**.
- B. For Sites in the unincorporated areas of Hamilton County the cost of initial plan review, revisions, site inspection and detailed construction drawing review performed by the **Enforcing Official** shall be at a rate established and published from time to time by the Board of County Commissioners (BOCC). Checks shall be made payable to the "Treasurer of Hamilton County" and mailed to the Department of Public Works, Room 800, County Administration Building, 138 East Court Street, Cincinnati, Ohio 45202. The check must make reference to the Project Title, Hamilton County Public Works Project Number and Invoice Numbers. A delinquent notice shall be issued in the event that any bill has not been paid in full within thirty (30) days. If payment is not made within thirty

(30) days thereafter, inspection of construction and any further review on the Site will be stopped and the claim will be forwarded to the Prosecuting Attorney for collection.

- C. For Sites within municipalities, fees shall be established according to the appropriate provisions of the municipality's code and levied according to pertinent administrative procedures of the **Enforcing Official**.

518 PERFORMANCE SURETY

- A. The **Enforcing Official** shall require the submittal of a performance bond or surety prior to approval of the Improvement Plan in order to ensure that the Post-Construction Controls are properly installed in accordance with the approved Improvement Plans and these Post-Construction Regulations. The amount of the installation performance surety shall be the total estimated construction cost of the approved Post-Construction Controls, plus 25%. The performance surety shall conform to the following requirements:
 - 1. For subdivision development in unincorporated Hamilton County, the performance surety shall follow requirements of Section 702 of the *Rules and Regulations of the Office of the Hamilton County Engineer Governing the Surface Physical Improvements for Private Developments within the Unincorporated Areas of Hamilton County*.
 - 2. For all other development in unincorporated Hamilton County and for all development in municipal members of the Hamilton County Storm Water District, the following requirements shall apply:
 - a. A performance contract and bond or surety shall be submitted to the **Enforcing Official** or designee. It shall be delivered on a form as outlined in the Design Manual.
 - b. The surety shall remain in force until the Post-Construction Controls or related physical improvements have been satisfactorily completed and accepted by the **Enforcing Official** or designee. When an "Irrevocable Letter of Credit" is used, it shall contain a clause guaranteeing automatic one-year extensions beyond the expiration date thereof, until the work is completed and accepted. Provisions for a partial pro-rata release of the performance bond based on the completion of various construction stages can be done at the discretion of the **Enforcing Official**. The installation performance bond shall be released in full within five (5) business days of an acceptable final inspection by the **Enforcing Official**, approval of acceptable as-built plans, and a written certification by a registered Professional Engineer that the storm water practice has been installed in accordance with the approved plan and other applicable provisions of these Post-Construction Regulations.

519 ENFORCEMENT

- A. No person shall violate or cause to be violated any of the provisions of these Post-Construction Regulations, or fail to comply with any lawful order, request or other requirements of any **Enforcing Official** or authorized public authority having jurisdiction which is made or issued pursuant to these Post-Construction Regulations, or knowingly use, or cause to be used, lands in violation of these Post-Construction Regulations, or in violation of any order approving or denying an activity or authorization granted under these Post-Construction Regulations. The **Enforcing Official** shall have the authority to enforce these Post-Construction Regulations, including to the extent authorized by law the power to levy a fine and issue stop work orders (with or without a penalty) where authorized by law or in equity which is reasonably necessary and appropriate when the **Enforcing Official** determines that a violation of these Post-Construction Regulations has occurred or is occurring.
- B. The **Enforcing Official** shall have all such rights and powers in interpreting and enforcing these Earthwork Regulations as may be accorded to such officials by law, rule, or regulation.

520 APPEALS

- A. Any Owner who believes that there is an error in any order, requirement, decision or determination of the **Enforcing Official** in relation to these Post-Construction Regulations may file a written appeal with the Hamilton County Board of Storm Drainage Variances and Appeals not later than fifteen (15) days after the occurrence of the order, requirement, decision or determination concerning lands within the unincorporated area of the County, or to the appropriate designated local council, appellate board, commission or other authority of the municipal corporation concerning lands within a municipality. A copy of the appeal shall be served on the **Enforcing Official**. The appeal shall proceed and be reviewed in accordance with the rules of the relevant appellate body processing the appeal.

521 PENALTIES

- A. Any Person who knowingly violates any provision of these Post-Construction Regulations shall be subject to such fines, penalties, or other civil or criminal penalties as may be allowable under applicable law. Each day of violation shall be deemed a separate offense during any continuing period of noncompliance.
- B. The imposition of any penalties or the use of other enforcement mechanisms shall not preclude the **Enforcing Official** from instituting an action in a Court of proper jurisdiction to prevent an unlawful development, or to restrain, enjoin, correct, or abate a violation, or to require compliance with the provisions of these Post-Construction Regulations or other applicable laws, ordinances, rules, or regulations, or the orders of the **Enforcing Official** where authorized by applicable law.
- C. A lawfully issued Stop Work Order issued under these Post-Construction Regulations shall remain in effect until (1) all required local, state, and or federal permits are issued,

(2) the hazardous condition and/or water quality degradation is remedied to the satisfaction of the ***Enforcing Official***, or (3) the faulty work is remedied and executed in full accordance with the Permit and these Post-Construction Regulations, or for such other period as may be allowed by applicable law, rule or regulation.