

**MOUNT PLEASANT TOWNSHIP  
STORMWATER MANAGEMENT  
ORDINANCE**

**ORDINANCE NO. 2012-03**

**MOUNT PLEASANT TOWNSHIP**

**ADAMS COUNTY, PENNSYLVANIA**

Adopted November 15, 2012

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## **ARTICLE I – GENERAL PROVISIONS**

### **Section 101: Short Title**

This Ordinance shall be known and may be cited as the “The Mount Pleasant Township Stormwater Management Ordinance.”

### **Section 102: Statement of Findings**

The Supervisors of Mount Pleasant Township find that:

- A. Stormwater is an important water resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.
- B. Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines floodplain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases nonpoint source pollution of water resources.
- C. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public health, safety, and welfare and the protection of the people of Mount Pleasant Township, their resources, and the environment.

### **Section 103: Purpose**

The purpose of this Ordinance is to promote health, safety, and welfare within Mount Pleasant Township and its watersheds by minimizing the harm and maximizing the benefits described in Section 102 of this Ordinance, through provisions designed to:

- A. Meet water quality requirements under state law, including regulations at 25 Pa. Code 93, to protect, maintain, reclaim, and restore the existing and designated uses of the waters of the Commonwealth.
- B. Preserve the natural drainage systems as much as possible.
- C. Manage stormwater runoff close to the source.
- D. Provide procedures and performance standards for stormwater planning and management.
- E. Maintain groundwater recharge to prevent degradation of surface and groundwater quality and to otherwise protect water resources.
- F. Prevent scour and erosion of stream banks and stream beds.

- G. Provide proper operation and maintenance of all stormwater management Best Management Practices that are implemented within Mount Pleasant Township.
- H. Provide standards to meet NPDES permit requirements.

**Section 104: Statutory Authority**

Mount Pleasant Township is empowered to regulate land use activities that affect stormwater impacts by the authority of the Municipal Planning Code 53 P.S. §10101 *et seq.*, Second Class Township Code 53 P.S. §65101 *et seq.*, and the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, *et seq.*, as amended, the “Stormwater Management Act.”

**Section 105: Applicability**

- A. All Regulated Activities, as defined in Article II, and all activities that may affect stormwater runoff, including land development and earth disturbance activity, are subject to regulation by this Ordinance.
- B. Any submission that does not require a stormwater management plan at the time of subdivision or land development will still be required to address stormwater management at the time the individual lots are developed or construction commences, unless said subdivision proposes infrastructure features, such as a cul-de-sac street, for which stormwater management controls are ordinarily required.
- C. Development of the individual lots is subject to stormwater management as defined within the Ordinance.

**Section 106: Repealer**

Any other Mount Pleasant Township Ordinance provision or regulation inconsistent with any of the provisions of this Ordinance is hereby repealed to give this Ordinance full force and effect to the extent of the inconsistency only.

**Section 107: Severability**

In the event that a court of competent jurisdiction declares any section, clause or provision of this Ordinance invalid, such decision shall not affect the validity of any of the remaining sections, clauses or provisions of this Ordinance.

**Section 108: Compatibility with Other Requirements**

Approvals issued and actions taken under this Ordinance do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation, or Ordinance. In the event of a conflict, between this Ordinance and any other Ordinance, the more restrictive Ordinance shall apply.

**Section 109: Erroneous Permit**

Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board, agency or employee of Mount Pleasant Township purporting to validate such a violation.

**Section 110: Duty of Persons Engaged in the Development of Land**

Notwithstanding any provision(s) of this Ordinance, including exemptions, any landowner or any person engaged in the alteration or development of land which may affect stormwater runoff characteristics shall implement such measures as are reasonably necessary to prevent injury to health, safety, or other property. Such measures shall include actions as are required to manage the rate, volume, direction, and quality of resulting stormwater runoff in a manner which adequately protects health, property and water quality.

**Section 111: Municipal Liability Disclaimer**

- A. Neither the granting of any approval under this Ordinance, nor the compliance with the provisions of this Ordinance, or with any condition imposed by a Mount Pleasant Township official hereunder, shall relieve any person from any responsibility or damage to persons or property resulting there from, or as otherwise imposed by law nor impose any liability upon Mount Pleasant Township for damages to persons or property.
  
- B. The granting of a permit which includes any stormwater management facilities shall not constitute a representation, guarantee, or warranty of any kind by Mount Pleasant Township, or by an official or employee thereof, of the practicability or safety of any structure, use or other plan proposed, and shall create no liability upon or cause of action against such public body, official or employee for any damage that may result pursuant thereto.

## ARTICLE II – DEFINITIONS

### Section 201: Interpretation

Unless otherwise expressly stated, the succeeding shall, for the purposes of this Ordinance, be interpreted in the following manner:

- A. Words used in the present tense also imply the future tense.
- B. Words used in the singular include the plural, and vice versa.
- C. Words of masculine gender include feminine gender, and vice versa.
- D. The words and abbreviation “includes,” “including,” “shall include,” “such as,” and “e.g.” are not limited to the specific example(s) given but are intended to extend the words or words’ meaning(s) to all other instances of like kind and character.
- E. The words “shall,” “required,” or “must” are mandatory; the words “may” and “should” are permissive.

### Section 202: Definitions

**Adams County Conservation District** - As defined in Section 3(c) of the Conservation District Law (3 P.S. § 851 (c)) that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102.

**Agricultural Activity** - Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

**Applicant** - A landowner, developer, or other person who has filed an application to Mount Pleasant Township for approval to engage in any Regulated Activity at a project site in the Township.

**Best Management Practice (BMP)** - Activities, facilities, designs, measures, or procedures used to manage stormwater impacts from regulated activities, to meet state water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of this Ordinance.

**Best Management Practice, Nonstructural** - Operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff.

**Best Management Practice, Structural** - Measures consisting of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

**BMP Manual** - Pennsylvania Stormwater Best Management Practices Manual, Pennsylvania Department of Environmental Protection, December 2006 (Document #363-0300-002), as amended and updated.

**Clean Water Act** - The Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq.*, and any subsequent amendments thereto.

**Contributory Drainage Area (of Impervious Surface)** - the area of the impervious surface contributing to a concentration point directed to a pervious surface

**Conveyance Facility** - a natural conveyance channel, manmade conveyance channel or pipe conveyance facility including but not limited to, streams, channels, swales, pipes, conduits, culverts and storm sewers

**County** - Adams County Pennsylvania

**Culvert** - A structure which carries surface water through an obstruction.

**Dam** - An impoundment structure regulated by the Pennsylvania DEP Chapter 105 regulations.

**DEP** - The Pennsylvania Department of Environmental Protection.

**Design Storm** - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence, e.g., a 5-year storm, and duration, e.g., 24 hours, used in the design and evaluation of stormwater management systems.

**Developer** - Any person, partnership, association, corporation or other entity, or any responsible person therein or agent thereof, that undertakes any Regulated Activity.

**Detention Basin** - A structure designed to retard stormwater runoff by temporarily storing and releasing the runoff at a predetermined rate.

**Detention Volume** - The volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.

**Development Site (Site)** - See Project Site.

**Disconnected Impervious Area (DIA)** - An impervious or impermeable surface that is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area, which allows for infiltration, filtration, and/ or increased time of concentration.

**Disturbed Area** - An unstabilized land area where an earth disturbance activity is occurring or has occurred.

**Down-slope Property Line** - That portion of a property line of a lot or parcel of land being developed located such that overland or pipe flow from the development site would be directed toward it.

**Drainage Easement** - A limited right of use granted in private land, allowing the use of private land for stormwater management purposes, where in no structure may be constructed.

**Earth Disturbance Activity** - A construction or other human activity which disturbs the surface of the land, including land clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, operation of animal heavy use areas, timber harvesting activities, road maintenance activities, oil and gas activities, well drilling, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

**Erosion** - The natural process by which the surface of the land is worn away by water, wind, or chemical action.

**E&S Manual** - The Pennsylvania DEP Erosion and Sedimentation Control Manual, as amended and updated.

**Erosion and Sedimentation Control Plan (E&S Plan)** - A site-specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during and after earth disturbance activities.

**Existing Condition** - The dominant land cover during the 5-year period immediately preceding a proposed Regulated Activity.

**FEMA** - Federal Emergency Management Agency.

**Floodplain** - Any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area.

**Floodway** - The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the 100-year flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

**Flow Path** - The path that stormwater follows from the discharge point to the nearest property line or conveyance facility. The length of the path is measured along the ground slope.

**Forest Management / Timber Operations** - Planning and activities necessary for the management of forest land. These include conducting a timber inventory, preparation of a forest management plan, silvicultural treatment, developing or establishing a cutting budget, logging road design and construction, timber harvesting, site preparation, and reforestation.

**Groundwater Recharge** - Replenishment of existing natural underground water supplies.

**Hazardous Materials / Substances** - Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

**Impervious Surface (Impervious Area)** - A surface that prevents the infiltration of water into the ground. Impervious surfaces and areas include but are not limited to roofs, additional indoor living spaces, patios and decks, garages, storage sheds and similar structures, streets, driveways, access drives, parking areas, and sidewalks. Any areas designed to be covered by loose surfacing materials such as gravel, stone and/or crushed stone, and intended for storage of and/or travel by vehicles, or pedestrians shall be considered impervious; however, a credit may be given for pervious surface that are designed and maintained as such. The credit shall be developed on a case by case basis. Surfaces or areas designed, constructed and maintained to permit infiltration may be considered pervious in terms of stormwater management; however, this definition is not iterative throughout all definitions as determined by the Subdivision and Land Development and Zoning Ordinances. (eg. Impervious coverage (as allowed per zoning Ordinances) must include the pervious surfaces such as porous concrete or pavers in the impervious area calculation.)

**Infiltration** - Water flowing downward through the ground surface.

**Infiltration Structures** - A structure designed to direct runoff into the ground (e.g. french drains, seepage pits, seepage trench).

**Infiltration Trench / Bed** - An area of excavated earth filled with loose stone or similar materials into which surface water is directed for infiltration into the ground.

**In-Kind Repair / Replacement** - Repair or replacement of materials with the same or similar materials in the same location. This is not applicable when repair/replacement is within a Regulated Activity area.

**Invasive / Exotic Plants** - Plant species on the “Invasive Exotic Plants in Pennsylvania List” published by the PA Department of Conservation and Natural Resources, as amended.

**Karst** - A type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage, and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

**Land Development** - Shall include any of the following activities:

- A. The improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving:
  - 1. A group of two (2) or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or
  - 2. The division or allocation of land or space, whether initially or cumulatively, between or among two (2) or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features.
- B. A subdivision of land.
- C. Development in accordance with Section 503(1.1) of the Pennsylvania Municipalities Planning Code.

**Minor Stormwater Management Plan** - A plan prepared and submitted to Mount Pleasant Township for proposed projects which qualify to use the Simplified Approach. The Minor Stormwater Management Plan is broken down into List A component requirements and requirements for a “Complete” Minor Stormwater Management Plan, the requirements for which are provided under the Simplified Approach in Appendix D

**Municipality** - Mount Pleasant Township, Adams County, Pennsylvania.

**Noxious Plant** - Those species as listed in the PA Noxious Weed Control Law (3 P.S. § § 255.1—255.11), as amended and/or recodified.

**NPDES** - National Pollution Discharge Elimination System, as authorized by the Clean Water Act (33 U.S.C. §1251 *et seq.* [1972], as amended).

**NPDES Permit** - A permit required for stormwater discharges associated with construction activities, as required by the Clean Water Act (33 U.S.C. §1251 *et seq.* [1972], as amended).

**NRCS** - USDA Natural Resources Conservation Service (previously SCS).

**O&M** - Operation and Maintenance.

**O&M Plan** - Operation and Maintenance Plan.

**PCSM** - Post-Construction Stormwater Management.

**PCSM Plan** - Post Construction Stormwater Management Plan.

**Peak Discharge** - The maximum rate of stormwater runoff from a specific storm event.

**Percolation** - The downward movement, under the influence of gravity, of water under hydrostatic pressure through interstices of the soil or rock.

**Person** - An individual, partnership, public or private association or corporation, firm, trust, estate, Township, governmental unit, public utility or any other legal entity whatsoever. Whenever used in any section prescribing or imposing a penalty, the term “person” shall include the members of a partnership, the officers, agents and servants of a corporation and the officers of a Township.

**Pervious Area** - Any area not defined as impervious.

**Pennsylvania Municipalities Planning Code** - Act of 1968, P.L.805, No. 247, as reenacted and amended.

**Point Source** - Any discernible, confined, or discrete conveyance, including, but not limited to: any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, CAAP, CAFO, landfill leachate collection system, or vessel or other floating craft from which pollutants are or may be discharged.

**Project Site (Site)** - The specific area of land where any Regulated Activity in Mount Pleasant Township is planned for, conducted on, constructed, or maintained.

**Qualified Person** - Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by this Ordinance.

**Regulated Activity** - Any activities or actions that involve the alteration, disturbance or development of land as described in this Ordinance. For the purpose of this Ordinance this includes but is not limited to areas where stormwater flows or land use conditions are altered, Regulated Earth Disturbance Activities, disturbed areas, etc.

**Regulated Earth Disturbance Activity** - Activity involving earth disturbance subject to regulation under 25 Pa. Code 92, 25 Pa. Code 102, or the Clean Streams Law.

**Removed Runoff** - The volume of runoff that is captured and not released directly into the surface waters of the Commonwealth during or after a storm event.

**Retention Basin** - An impoundment in which stormwater is stored and not released during a storm event. Stored water may be released from the basin at some time after the end of a storm.

**Return Period** - The average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year return period rainfall would be expected to occur on average once every 25 years; or stated in another way, the probability of a 25-year storm occurring in any one year is 0.04, i.e., a 4% chance.

**Riparian Buffer** - A Best Management Practice that consists of permanent vegetation along surface waters. (Such areas serve as natural vegetative filters between upland landscapes and waterways.)

**Riparian Forest Buffer** - A type of riparian buffer that consists of permanent vegetation that is predominantly native trees and shrubs along surface waters that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters.

**Riser** - A vertical pipe extending from the bottom of a pond or other water impoundment that is used to control the discharge rate from the pond or impoundment for a specified design storm.

**Rooftop Detention** - Temporary ponding and gradual release of stormwater falling directly onto roof surface by incorporating control-flow roof drains into building design.

**Road Maintenance Activities** - See definition as found in Title 25, Chapter 102.1.

**Runoff** - Any part of precipitation that flows over the land.

**Runoff Characteristics** - The surface components on any watershed which either individually or in any combination thereof, directly affect the rate, amount and direction of stormwater runoff. These may include, but are not limited to; vegetation, soils, slopes and any type of manmade landscape alterations.

**Sediment** - Soils or other materials transported by surface water as a product of erosion.

**Sediment Basin** - A barrier, dam, retention or detention basin designed to retain sediment.

**Semi-Pervious Surface** - A surface which permits a limited amount of vertical transmission of water.

**Soil Cover Complex Method** - A method of runoff computation in NRCS publication “Urban Hydrology for Small Watersheds”, technical Release No. 55.

**Special Management Areas** - Those areas outlined in Chapter 7 of the BMP Manual. Special Management Areas include: brownfields, highways and roads, karst areas, mined lands, water supply well areas, surface water supplies and special protection waters.

**Spillway** - A depression in the embankment of a pond or basin which is used to pass peak discharge greater than the maximum design storm controlled by the pond or basin.

**State Water Quality Requirements** - The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code and the Clean Streams Law.

**Storm Drain System** - Publicly or privately owned facilities by which stormwater is collected and/or conveyed including but not limited to, any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

**Storm Frequency** - The number of times that a given storm event occurs on average in a stated period of years.

**Storm Sewer** - A pipe or conduit, or a system of pipes or conduits, which intercepts and carries surface stormwater runoff, but excludes sewage, industrial wastes and similar discharges.

**Stormwater** - Drainage runoff from the surface of the land resulting from precipitation, snow melt or ice melt.

**Stormwater Best Management Practice (Stormwater BMP)** - Activities, facilities, designs, measures, or procedures used to manage stormwater impacts from Regulated Activities, to meet state water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of this Ordinance.

**Stormwater Management Facility** - Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels; storm sewers, pipes, and infiltration facilities.

**Stormwater Management Plan (The Plan)** - The Adams County Stormwater Management Plan of November, 2011, which incorporates the requirements of the Act of October 4, 1978, P.L. 864 (Act 167), as amended, and known as the “Storm Water Management Act.”

**Stormwater Management Site Plan (SWM Site Plan)** - A plan prepared by the developer or his representative indicating how stormwater runoff will be managed at the development site in accordance with this Ordinance.

**Subdivision** - The division or re-division of a lot, tract or parcel of land by any means into two or more lots, tracts or parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership or building or lot development; provided, however, that the subdivision by lease of land for agricultural purposes of an area of more than ten acres, not involving any new street or easement of access or any residential dwelling, shall not be considered a subdivision.

**Swale** - A low-lying stretch of land which gathers and/or carries surface water runoff.

**SWM** - Stormwater Management.

**Technical Review Checklist (Optional)** - A checklist of technical items to be used by the reviewing entity when reviewing a PCSM Plan.

**USDA** - United States Department of Agriculture.

**Watercourse** - a stream of water; river, brook, creek, channel or ditch, whether natural or man-made.

**Waters of the Commonwealth** - Any and all rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of the Commonwealth.

**Watershed** - Region or area drained by a river, watercourse, or other surface water of this Commonwealth.

**Wetland** - Areas that are inundated or saturated by surface or groundwater 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.

## ARTICLE III – STORMWATER MANAGEMENT STANDARDS

### Section 301: General SWM Requirements

- A. For all regulated activities, unless preparation of a SWM Site Plan is specifically exempted in Section 302:
  - 1. Preparation and implementation of an approved SWM Site Plan is required.
  - 2. No regulated activities shall commence until the Supervisors of Mount Pleasant Township issues written approval of an SWM Site Plan which demonstrates compliance with the requirements of this Ordinance.
- B. All SWM Site Plans for Regulated Activities shall include such measures as necessary to:
  - 1. Protect health, safety, and property.
  - 2. Meet the water quality goals of this Ordinance:
    - a. Minimize disturbance to floodplains, wetlands, wooded areas, and existing vegetation.
    - b. Maintain or extend riparian buffers.
    - c. Avoid erosive flow conditions in natural flow pathways.
    - d. Minimize thermal impacts to waters of the Commonwealth.
    - e. Disconnect impervious surfaces by directing runoff to pervious areas.
    - f. Minimize soil disturbance and compaction.
  - 3. Incorporate the techniques for Low Impact Development Practices described in the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual).
- C. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without the written notification of the adjacent property owner(s) by the developer. Copies of all such notifications shall be included in the SWM Site Plan submission.
- D. For all Regulated Activities where erosion and sediment control is required in accordance with Title 25 of the Pennsylvania Code and the Clean Streams Law, the SWM Site Plan shall include the required erosion and sedimentation control measures. Necessary E&S BMPs shall be designed in accordance with the Erosion and Sediment Pollution Control Program Manual (E&S Manual), No. 363-2134-008 (March 2012), as amended and updated. Approval of the SWM Site Plan by Mount Pleasant Township shall be conditioned on the applicant obtaining erosion and sedimentation control approval from the appropriate agency(ies), when applicable.

- E. For all Regulated Activities where NPDES permitting is required in accordance with the Clean Water Act (33 U.S.C. §1251 *et seq.* [1972], as amended), the SWM Site Plan shall include the information required in the applicant's NPDES Permit application. Approval of the SWM Site Plan by Mount Pleasant Township shall be conditioned on the applicant obtaining NPDES Permit approval from the appropriate agency(ies), when applicable.
- F. For all regulated activities, implementation of the volume controls in Section 303 and the peak rate controls of Section 304 is required unless exempt under requirements as defined in Section 302.
- G. Special Management Areas – SWM Site Plans involving Regulated Activities within Special Management Areas shall be prepared in a manner consistent with the guidance provided in Chapter 7 of the BMP Manual. The SWM Site Plan submission shall include design details for Stormwater BMPs within said Special Management Area.
- H. A SWM Site Plan may propose that stormwater related to the proposed Regulated Activities be accommodated by existing stormwater management facilities on adjoining or nearby properties provided that the SWM Site Plan documents the following.
  - 1. The use of the Stormwater BMPs located on said adjoining or nearby property is approved in writing by the owner of the property.
  - 2. The Stormwater BMPs located on said adjoining or nearby property are designed in a manner that can accommodate the stormwater management needs of the Regulated Activity in a manner consistent with all requirements of this Ordinance. The SWM Site Plan shall include all documentation necessary for Mount Pleasant Township to confirm such compliance.
- I. SWM Site Plans, once approved by Mount Pleasant Township, shall remain on site throughout the duration of the Regulated Activity and be available for review as may be necessary by representatives of Mount Pleasant Township.
- J. The design of all Stormwater BMPs over karst geology shall include an evaluation of measures necessary to minimize adverse effects including hydro-geologic studies if required by the Township.
- K. Mount Pleasant Township may, after consultation with and approval by DEP, approve measures for meeting the state water quality requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, state law including, but not limited to, the Clean Streams Law. Mount Pleasant Township shall maintain a record of consultations with DEP pursuant to this paragraph.
  - 1. DEP is not required to be consulted for waiver of the requirements within:
    - a. Section 306. Design Criteria
    - b. Section 307. Regulations Governing Stormwater Management Facilities
    - c. Section 308. Calculation Methodology
    - d. Section 309. Carbonate Geology

- L. All natural streams, channels, swales, drainage systems and/or areas of surface water concentration shall be maintained in their existing condition unless an alteration is approved by the Township. All encroachment activities shall comply with the requirements of PA DEP 25 PA Code Chapter 105 (Water Obstructions and Encroachments), Rules and Regulations of PA DEP. Any approvals or permits issued do not relieve compliance as referenced in Section 108, Compatibility with Other Permit and Ordinance Requirements.
- M. The technical standards provided within this Ordinance are considered the baseline for design and layout of an SWM Plan. Use of other alternative and innovate designs for controlling stormwater runoff may be permitted when approved by the Township Engineer.
- N. All existing Stormwater Management Facilities and Agreements shall continue to be maintained with the intended functionality as designed and approved.
- O. All work shall be in accordance with the Township's Construction and Material Specifications.

**Section 302: Exemptions**

- A. A property owner or developer of any Regulated Activity that meets the following exemption criteria may be, upon approval from Mount Pleasant Township, exempt from certain stormwater management requirements of this Ordinance. However, the property owner or developer shall be subject to all other requirements of this Ordinance other than related requirements for which an exemption or exemptions have been authorized. The criteria for exemption in this Section apply to the total development proposed, including instances in which the development is proposed to take place in phases. The date of enactment of this Ordinance shall be the starting point from which future development and the respective exemption criteria shall be cumulatively considered and regulated.
  - 1. Regulated Activities that involve proposal of less than 5,000 square feet of impervious surface, where the total cumulative impervious added since the adoption date of this Ordinance is less than 5,000 square feet, and where the total sum of existing and proposed impervious is less than 25% of the total lot area, whichever is less, may be exempted from portions of Article III including volume control (Section 303) and peak rate control (Section 304), Article IV and Article V of the Mount Pleasant Township SWM Ordinance. The applicant shall complete requirements as defined by the Simplified Approach (see Appendix D).
  - 2. Agricultural Activities shall be exempt from the rate control, volume control and SWM Site Plan preparation and submission requirements of this Ordinance provided the agricultural activities are performed in accordance with the requirements of 25 Pa. Code 102. Further, such activities shall not be subject to the exemption approval process of Section 302.B of this Ordinance.
  - 3. Forest management and timber operations shall be exempted from the rate control, volume control and SWM Site Plan preparation and submission requirements of this Ordinance provided the forest management and timber operations are performed in accordance with the requirements of 25 PA Code 102. Further, such activities shall not be subject to the exemption approval process of Section 302.B of this Ordinance.

4. Regulated Activities involving domestic gardening for single-family consumption shall be exempted from volume control, rate control, and SWM Site Plan preparation and submission requirements of this Ordinance. Further, such activities shall not be subject to the exemption approval process of Section 302.B of this Ordinance.
  5. In Kind Repair, In Kind Replacement, and maintenance of existing surfaces, and structures shall be exempted from volume control, rate control, and SWM Site Plan preparation and submission requirements of this Ordinance. Further, such activities shall not be subject to the exemption approval process of Section 302.B of this Ordinance.
- B. Authorization of Exemptions: Mount Pleasant Township shall determine, in accordance with the following requirements and process, whether the proposed Regulated Activity qualifies for exemption under the requirements as defined by the simplified approach.
1. The property owner or developer proposing the Regulated Activity shall submit documents as required under the simplified approach.
  2. Upon receipt of the exemption request form, the Mount Pleasant Township Supervisors or its designee shall either approve or deny the exemption request. If the exemption request is denied, the Mount Pleasant Township Supervisors or its designee shall direct the property owner or developer to submit the information required to demonstrate that the proposed Regulated Activity complies with the requirements of this Ordinance or meets the exemption criteria.
  3. Exemption request approval shall be at the discretion of the Mount Pleasant Township Supervisors or its designee, and shall be subject to the following:
    - a. Mount Pleasant Township may deny any exemption request or suspend or revoke any approved exemption request at any time for any project where Mount Pleasant Township believes that the proposed Regulated Activity poses a threat to public health, safety, property, or the environment.
    - b. Approval of an exemption request does not relieve the property owner or developer from other applicable requirements of this Ordinance or of other Mount Pleasant Township Ordinance or regulations.
    - c. Mount Pleasant Township reserves the right to deny an exemption request if a drainage problem is known or identified by Mount Pleasant Township to exist or is expected to exist downstream from the proposed Regulated Activity.

### **Section 303: Volume Controls**

The low impact development practices provided in the BMP Manual shall be utilized for all Regulated Activities. Water volume controls shall be implemented using the Design Storm Method in Section 303.A

- A. The Design Storm Method (CG-1 in the BMP Manual) may be used for any size of Regulated Activity. This method requires detailed modeling to achieve the following standards.

1. The post-development total runoff volume shall not increase for all storms equal to or less than the two (2)-year twenty-four (24) hour duration precipitation.
  2. For modeling purposes:
    - a. Existing (pre-development), non-forested, pervious areas must be considered meadow within the regulated area unless the existing land use dictates a lower runoff condition.
    - b. Twenty percent (20%) of existing impervious area within the regulated area, when present, shall be considered meadow in the model for existing conditions.
  3. Infiltration BMPs shall be designed per Section 306 S. and 306 T.
- B. Infiltration Alternative: Where infiltration is not possible due to soil characteristics or is not desirable given other characteristics, water quality control may be proposed as an alternative to strict adherence to the volume control standards of Section 303 of this Ordinance. Where water quality control is proposed, the following standards shall be achieved.
1. At a minimum, the following documentation shall be provided to justify the proposal to reduce the infiltration requirements:
    - a. Description of and justification for field infiltration / permeability testing with respect to the type of test and test locations.
    - b. An interpretive narrative describing existing soils of the site and their structure as these relate to the interaction between soils and water characteristics of the site. In addition to providing soil and soil profile descriptions, this narrative shall identify depth to seasonal water tables and depth to bedrock and provide a description of all subsurface elements (restrictive layers, geology, etc.) that influence the direction and rate of subsurface water movement.
    - c. A qualitative assessment of the site's contribution to annual aquifer recharge shall be made, along with the identification of any restrictions or limitations associated with the use of designed infiltration facilities.
    - d. The provided documentation must be signed and sealed by a qualified professional.
  2. Water Quality BMPs shall be implemented on all permanent stormwater discharges from the proposed project site to achieve pollutant removal efficiencies in accordance with the following table. (Efficiency removal rating shall be based on a testing specification for particle size distribution as required per TARP Tier 1 and 2 Protocol Testing. The minimum design flow shall be based on the peak flow produced from 1" of rain as calculated.)

**Required Pollutant Removal Efficiencies for Infiltration Alternatives**

<b>Pollutant Load</b>	<b>Units</b>	<b>Required Removal Efficiency (%)</b>
Total Suspended Solids (TSS)	Pounds	85%
Total Phosphorus (TP)	Pounds	85%
Total Nitrate (NO <sub>3</sub> )	Pounds	50%

3. Design guidance from the most current version of the BMP Manual, or equivalent resource as pre-coordinated with Mount Pleasant Township, shall be consulted when choosing design criteria for water quality BMPs.

**Section 304: Rate Controls**

- A. Post-development discharge rates shall not exceed the pre-development discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.
- B. For computation of pre-development peak discharge rates:
  - a. Existing (pre-development) pervious areas must be considered meadow within the regulated area, unless the existing land use dictates a lower runoff condition.
  - b. Twenty percent (20%) of existing impervious area within the regulated area, when present, shall be considered meadow in the model for existing conditions.
- C. The developer shall demonstrate that the flows for the 1, 2, 5 and 10 year frequency storms peak rates are less than or equal to pre-development rates during the construction phase.

**Section 305: Stormwater Management Facilities for Pennsylvania Department of Transportation and Pennsylvania Turnpike Commission Roadways and Associated Facilities**

For the purposes of the Act 167 Stormwater Management (Plan) elements and this Ordinance, design policy pertaining to stormwater management facilities for Pennsylvania Department of Transportation (PennDOT) roadways and associated facilities is provided in Section 13.7 (Antidegradation and Post Construction Stormwater Management Policy) of PennDOT Publication No. 13M, Design Manual Part 2 (August 2009), as developed, updated, and amended in consultation with the Pennsylvania Department of Environmental Resources (DEP). As stated in DM-2.13.7.D (Act 167 and Municipal Ordinances), PennDOT roadways and associated facilities shall be consistent with Act 167 Plans. DM-2.13.7.B (Policy on Antidegradation and Post Construction Stormwater Management) was developed as a cooperative effort between PennDOT and DEP. DM-2.13.7.C (Project Categories) discusses the anticipated impact on the quality, volume, and rate of stormwater runoff.

Where standards in the Act 167 elements of this Ordinance are impractical, PennDOT may request assistance from DEP, in consultation with the Township and County, to develop an alternative strategy for meeting State water quality requirements and the goals and objectives of the Act 167 elements.

For the purposes of the Act 167 elements in this Ordinance, road maintenance activities are regulated under 25 PA Code Chapter 102.

### **Section 306: Design Criteria and Standards**

- A. Off-Site Areas - Off-site areas proposed to drain through a proposed development site are not subject to release rate criteria when determining allowable peak runoff rates; however, on-site drainage facilities shall be designed to safely convey off-site flows through the development site. When conditions as described above are encountered, separate analysis for developed and off-site areas shall be made for comparison purposes.
- B. On-Site Areas - On-Site Areas proposed to remain outside a Regulated Activity area shall be considered as existing conditions, without considering any reductions in cover type. When conditions as described above are encountered, separate analysis for these areas shall be made for comparison purposes.
- C. “Downstream Hydraulic Capacity Analysis” - Any existing downstream hydraulic capacity analysis shall be conducted in accordance with this Ordinance.
  - 1. All downstream facilities impacted by the total site area of the Regulated Activity shall be studied to determine if the facility has adequate capacity to handle existing and proposed flows. An impacted downstream facility is one to which the runoff from the total site area of the Regulated Activity comprises more than 50% of the total flow to such a facility. The study shall end at a perennial stream. Downstream facilities include, but are not limited to, manmade or natural swales and open channels, pipes, inlets, culverts, bridges and roadways.
  - 2. If any private facility is found to be undersized, the applicant shall be responsible for updating the facility in coordination with the Regulated Activity and appropriate municipal representation.
  - 3.
- D. Regional Detention Alternatives - For certain areas within the study area, it may be more cost-effective to provide one control facility for more than one development site than to provide an individual control facility for each development site. The initiative and funding for any regional runoff control alternatives are the responsibility of prospective developers. The design of any regional control basins must incorporate reasonable development of the entire upstream watershed. The peak outflow of a regional basin would be determined on a case-by-case basis.

- E. Capacity Improvements of Local Drainage Networks - In certain instances, local drainage conditions may dictate more stringent levels of runoff control than those based upon protection of the entire watershed. In these instances, if the developer can prove that it would be feasible to provide capacity improvements to relieve the capacity deficiency in the local drainage network, then the capacity improvements could be provided by the developer in lieu of runoff controls on the development site. Any capacity improvements would be designed based upon development of all areas tributary to the proposed improvement and the capacity criteria specified in this Ordinance. In addition, all new development upstream of a proposed capacity improvement shall be assumed to implement the applicable runoff controls consistent with this Ordinance except that all new development within the entire subarea(s) within which the proposed development site is located shall be assumed to implement the developer's proposed discharge control, if any.
- F. Capacity improvements may be provided as necessary to implement any regional or sub-regional detention alternatives.
- G. Where the potential for groundwater and/or surface water contamination exists, based on the proposed use of the Regulated Activity, safeguards shall be incorporated into the site.
1. For industrial or commercial sites where it is possible that toxic or hazardous substances may come into contact with stormwater runoff, pretreatment of the first-flush (first 1/2 inch) runoff over areas where industrial and commercial operations take place shall be provided. Pretreatment shall include means for separating light and heavy toxic and hazardous substances from the stormwater before the stormwater is conveyed to the general stormwater management facility(ies).
  2. Infiltration systems may be used to handle runoff from commercial or industrial working or parking areas only after the first-flush stormwater from these areas has been pretreated for removal of toxic and hazardous substances.
- H. Roof drains and sump pumps shall discharge to lawns, infiltration or vegetative BMPs, or pervious areas wherever/whenever possible. If the above discharge criteria cannot be met or when it is more advantageous to connect directly to streets, storm sewers or other stabilized conveyance designations, then the discharge will be permitted on a case by case basis by Mount Pleasant Township. All discharges shall be conveyed in a manner as to not cause water problems on adjoining property owners.
- I. Subsurface detention facilities shall provide adequately designed pretreatment for removal of pollutants, oil, trash and debris. Appropriate supporting information shall be provided for all proposed devices. All subsurface facilities shall be designed such that access for inspection and cleaning of the facility can occur.
- J. Inlets shall be placed on both sides of the street at low spots and at the upper side of street intersections to prevent stormwater from crossing an intersection. Other devices such as high efficiency grates or perforated pipe may be required if conditions warrant. All inlets at low points along the roadway shall have a 10" curb reveal and shall be equipped with pavement base drain extending 50 feet in either direction, parallel to the centerline of the roadway.
- K. Manholes, inlets, headwalls, and endwalls shall conform to the requirements of the PennDOT Publication 408, as modified by the adopted Township Standards.

- L. Design Standards – Permanent Detention and Retention Facilities shall be designed to meet the following standards:
1. The maximum permitted depth for dry detention or retention basins shall be 6 feet, measured from the bottom of the emergency spillway to the lowest point in the basin.
  2. The minimum top width of all basin embankments shall be 8 feet.
  3. The maximum permitted side slopes for detention or retention basins shall be 4 horizontal to 1 vertical. In order to obtain a waiver for slopes steeper than 4:1, the plan must include a planting schedule to stabilize the embankments. The proposed vegetation shall be low maintenance varieties.
  4. Minimum Bottom Slope - All detention basins shall have a minimum bottom slope of 2% unless infiltration facilities are provided.
  5. Any stormwater management facility (i.e., detention basin) designed to store runoff and requiring a berm or earthen embankment required or regulated by this Ordinance shall be designed to provide an emergency spillway to handle flow up to and including the 100-year, 24 hour design storm at post-development conditions, assuming the principal outlet structure to be clogged. The height of embankment must be set as to provide a minimum 1 foot of freeboard above the maximum elevation computed for the clogged orifice condition. Should any stormwater management facility require a dam safety permit under PA DEP 25 PA Code Chapter 105, the facility shall be designed in accordance with PA DEP 25 PA Code Chapter 105 and meet the regulations of PA DEP 25 PA Code Chapter 105 concerning dam safety which may be required to pass storms larger than 100-year event.
  6. A cutoff trench of impervious material shall be provided within all basin embankments.
  7. Where a basin embankment is constructed using fill on an existing 15% or greater slope, the basin must be keyed into the existing grade.
  8. Fencing. Any above-ground stormwater management detention/retention facility, that is designed to store at least a two foot (2') depth of runoff, shall be subject to the following fencing requirements:
    - a. Stormwater facility must be completely surrounded by a chain link fence of not less than four (4) feet in height. Alternative fences and barriers may be permitted upon request to and approval by the Township.
    - b. All gates or doors opening through such enclosure shall be equipped with a self-closing and self-latching device for keeping the gate or door securely closed at all times, when not in actual use.
  9. All outlet structures and emergency spillways shall include a satisfactory means of energy dissipation at its outlet to assure conveyance and flow without endangering the safety and integrity of the basin and the downstream drainage area.

10. A concentrated discharge of stormwater to an adjacent property shall be within a natural drainage way or watercourse, or an easement shall be required.
  11. All facilities shall be provided with an access slope at no more than 5:1 along with an access easement.
  12. Plans for infiltration must show the locations of existing and proposed septic tank infiltration areas and wells. A minimum 10 feet separation from On Lot Disposal Systems (OLDS) infiltration areas, including replacement areas, is required; however, 25 feet is desirable. Infiltration rates shall be based upon perc and probe tests conducted at the site of the proposed facility.
  13. Guards shall be provided on all intake and outfall structures as well as outlet structures. The guard bars shall be one-half inch (1/2") diameter galvanized bars on six inch (6") centers attached to the structure with three eighth inch (3/8") diameter stainless steel anchors.
  14. All facilities shall specify a maintenance requirement that controls the growth of noxious and invasive plants as specified in Appendix B of this Ordinance.
- M. All storage facilities shall completely drain both the volume control and rate control capacities over a period of time not less than 24 hours and not more than 72 hours from the end of the design storm. However, any designed infiltration at such facilities is exempt from the minimum 24-hour standard, i.e., may infiltrate in a shorter period of time, so long as none of the stormwater flowing into the infiltration facility is discharged directly into the surface waters of the Commonwealth. (Inordinately rapid infiltration rates may indicate the presence of large fractures or other conditions for which an additional soil buffer may be required.) Where extended detention facilities are utilized to mitigate increased volume, the increased volume is required to be detained not less than 24 hours from the end of the 24 hour design storm (assuming the peak rate occurs at approximately the 12 hour time period in the storm).
- N. For all regulated activities, SWM BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Stormwater Management Act.
- O. Design for BMPs shall be in accordance with design standards as listed in the BMP Manual or other legitimate source.
- P. Existing (pre-development), pervious areas must be considered meadow within the regulated area, unless the existing land use dictates a lower runoff condition.
- Q. Infiltration BMPs shall be spread out such that impervious to BMP loading ratios are less than or equal to 5:1, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Ordinance.
- R. Impervious Area.
1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development, even if development is to take place in phases.

2. For development taking place in phases, the total proposed impervious for all phases must be used in determining conformance with this Ordinance.
  3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Ordinance; except that the volume controls in Section 303 and the peak rate controls of Section 304 do not need to be considered for existing impervious areas that are not being altered by the proposed Regulated Activity.
  4. Twenty percent (20%) of existing impervious area within the regulated area, when present, shall be considered meadow in the model for existing conditions.
- S. Infiltration BMPs shall be designed in the following manner. A detailed soils evaluation of the project site shall be performed to determine the suitability of recharge facilities. The evaluation shall be performed by a qualified professional, and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability, seasonally high groundwater table, suitability of stormwater management facilities and maximum infiltration capacity in depth of water per unit area. The general process for designing the infiltration BMP shall be:
1. Site evaluation to determine general areas of suitability for infiltration practices.
  2. Provide field test throughout the area proposed for development to determine appropriate percolation rate and/or hydraulic conductivity. At least one (1) infiltration test must be included in each soil group and at least one (1) infiltration test must be conducted for each five (5) lots proposed for development. Infiltration tests must be taken at the location and depth of all proposed infiltration structures.
  3. Design infiltration facility for required storm volume based on all available data.
  4. The infiltration requirement in the High Quality/Exceptional Waters shall be subject to the Department's Chapter 93 and Anti-degradation Regulations.
  5. A double ring infiltrometer test shall be used for all infiltration tests in accordance with the current edition of the BMP Manual.
- T. Plans for infiltration must show the locations of existing and proposed septic tank infiltration areas and wells. A minimum twenty-five (25) foot separation from On Lot Disposal Systems (OLDS) infiltration areas, including replacement areas, is desired and will be evaluated by the municipality on a case by case basis. However, the separation shall not be less than the PADEP required ten (10) feet.

### **Section 307: Regulations Governing Stormwater Management Facilities**

- A. Any stormwater facility located on State highway rights-of-way shall be subject to approval by the Pennsylvania Department of Transportation (PennDOT).

- B. Any stormwater management facilities regulated by this Ordinance that would be located in or adjacent to waters of the Commonwealth or wetlands shall be subject to approval by PA DEP through the Joint Permit Application process, or, where deemed appropriate by PA DEP, the General Permit process. When there is a question whether wetlands may be involved, it is the responsibility of the Developer or his agent to show that the land in question cannot be classified as wetlands, otherwise approval to work in the area must be obtained from PA DEP.
- C. Any stormwater management facility located within the vicinity of a Floodplain shall be subject to approval in accordance with PA DEP 25 PA Code Chapter 106 (Floodplain Management) of PA DEP's Rules and Regulations.
- D. All earthmoving activities must be reviewed and approved by the Adams County Conservation District prior to commencing work.
- E. The design of all stormwater management facilities shall incorporate good engineering principles and practices. The Township shall reserve the right to disapprove any design that would result in the occupancy or continuation of adverse hydrologic or hydraulic conditions within the watershed.
- F. The existing points of concentrated drainage that discharge onto adjacent property shall not be altered without permission of the adjacent property owner(s) and shall be subject to any applicable discharge criteria specified in this Ordinance.
- G. Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this Ordinance. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the Developer must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding or other harm will result from the concentrated discharge.
- H. Where a development site is traversed by watercourses, drainage easements shall be provided conforming to the line of such watercourses. The terms of the easement shall prohibit excavation, the placing of fill or structures, and any alterations that may adversely affect the flow of stormwater within any portion of the easement. Also, maintaining of vegetation in a natural state within the easement shall be required, except as approved by the appropriate governing authority.
- I. When it can be shown that, due to topographic conditions, natural conveyance facilities on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainageways. Work within natural conveyance facilities shall be subject to approval by PA DEP through the Joint Permit Application process, or, where deemed appropriate by PA DEP, through the General Permit process.

- J. Special requirements for areas falling within defined Exceptional Value and High Quality Sub watersheds: The temperature and quality of water and streams that have been declared as exceptional value and high quality is to be maintained as defined in Chapter 93, Water Quality Standards, Title 25 of Pennsylvania Department of Environmental Protection Rules and Regulations. Temperature sensitive BMP's and stormwater conveyance systems are to be used and designed with storage pool areas and supply outflow channels and should be shaded with trees. This will require modification of berms for permanent ponds and the relaxation of restrictions on planting vegetation within the facilities, provided that capacity for volumes and rate control is maintained. At a minimum, the southern half on pond shorelines shall be planted with shade or canopy trees within ten (10) feet of the pond shoreline. In conjunction with this requirement, the maximum slope allowed on the berm area to be planted is 10 to 1. This will lessen the destabilization of berm soils due to root growth. A long term maintenance schedule and management plan for the thermal control BMP's is to be established and recorded for all development sites within defined Exceptional Value and/or High Quality Sub watersheds.

### **Section 308: Calculation Methodology**

- A. Stormwater runoff hydrographs/peak rates shall be calculated in the following manner:
1. For the purpose of considering peak flows with a fully developed runoff hydrograph, the Soil Cover Complex Method-TR-20 or TR-55 and a 24 hour rainfall event shall be used with the appropriate design rainfall depths. A dynamic or interconnected model is required for modeling of multiple drainage or sub-areas. The SCS Rainfall Type II curve or local Precipitation Frequency Data shall be used for the rainfall distribution. The Township may allow the use of other methodologies on a case by case basis as approved prior to design submittal.
  2. Times-of-concentration shall be calculated using the methodology presented in Chapter 3 of Urban Hydrology for Small Watersheds, NRCS, TR-55 (as amended or replaced from time to time by NRCS).
  3. The design storm volumes to be used in the analysis of peak rates of discharge shall be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, Version 3.0, as amended and updated, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydro meteorological Design Studies Center, Silver Spring, Maryland. NOAA's Atlas 14 can be accessed at: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.
  4. Runoff Curve Numbers (CN) for both existing and proposed conditions to be used in the Soil Cover Complex method shall be obtained from Appendix C Table 1.
  5. The design of any stormwater detention facilities intended to meet the performance standards of this Ordinance shall be verified by routing the design storm hydrograph through these facilities, using either manual methods or computerized routing. Routing shall be based upon the modified PULS method; other routing methodologies shall be subject to the approval of the Township Engineer.

- B. Conveyance Facilities shall be designed in the following manner:
1. All storm drain systems, streets, and inlets (excluding detention and retention basin outfall structures) shall be designed for a 10-year storm event. Sole access structures (culverts and bridges) shall be designed to convey the 25-year flood without overtopping the roadway.
    - a. When a pipe or culvert is intended to convey to or pass the discharge from a stormwater management facility, its required capacity shall be computed using the methodology considered for the stormwater management facility design as part of a dynamic model.
    - b. Greater design frequencies may be justified on individual projects.
    - c. A 100-year storm frequency may be required for design of the stormwater collection system to insure that the resultant stormwater runoff from the post-development storm is directed into the management facility.
    - d. If the Rational Method is used for calculating peak flows, conveyance facilities 30" diameter or less shall use a time of concentration of 5 minutes for the contributing drainage area shall be considered for the design.
  2. In general, inlets shall be spaced such that, based upon the Rational Method,  $t_c = 5$  min. and 10-year rainfall intensity, the area contributing to the inlet shall not produce a peak runoff of greater than 4 cfs. Also, inlets shall be spaced so that their efficiency, based upon efficiency curves published by the Pennsylvania Department of Transportation, is not less than 65%.
  3. The Rational Method may be used for stormwater collection and conveyance facilities provided the facilities are part of an integrated SWM facility requiring modeling using SCS Modeling. Rainfall intensities shall be consistent with appropriate times-of-concentration and return periods.
  4. Runoff Coefficients (C) for use with the Rational Method shall be obtained from Appendix C Table 2.
  5. Existing and proposed channels or swales must be able to convey the increased runoff associated with a proposed 100-year return period event within their banks at velocities consistent with protection of the channels from erosion. Acceptable velocities shall be based upon criteria included in the PA DEP *Erosion and Sediment Pollution Control Program Manual*.
  6. Existing natural or man-made channels or swales must be able to convey proposed 100-year return period runoff without creating any hazard to persons or property.
  7. Stormwater runoff on roadways (i.e. gutter spread, lane encroachment, etc.) shall be controlled in accordance with PennDOT Publications 13M, "Design Manual, Part 2" and 584, "Drainage Manual".

8. In all cases where drainage is picked up by means of a headwall, the pipe shall be designed as a culvert. Inlet and outlet conditions shall be analyzed. The minimum diameter of a culvert shall be 18 inches. The procedure contained in Hydraulic Engineer Circulars No. 5 and No. 13, as prepared by the U. S. Department of Transportation, Federal Highway Administration, Washington, D.C., shall be used for the design of culverts. All culverts shall include concrete headwalls and endwalls.

### **Section 309: Carbonate Geology**

In areas of carbonate geology, a geologist shall certify to the following:

- A. No stormwater management facility will be placed in, over, or immediately adjacent to the following features:
  1. Closer than 100 feet from sinkholes
  2. Closer than 100 feet from closed depressions
  3. Closer than 100 feet from caverns, intermittent lakes, or ephemeral streams
  4. Closer than 50 feet from lineaments in carbonate areas
  5. Closer than 50 feet from fracture traces
  6. Closer than 25 feet from bedrock pinnacles (surface or subsurface)
- B. Stormwater resulting from regulated activities shall not be discharged into sinkholes.
- C. If the developer can prove through analysis that the project site is an area underlain by carbonate geology, and such geologic conditions may result in sinkhole formations, then the project site is exempt from volume requirements as described in Section 303, Volume Control. However, the project site shall still be required to meet all other standards found in this Ordinance.
- D. It shall be the developer's responsibility to verify if the project site is underlain by carbonate geology. The following note shall be attached to all stormwater management plans and signed and sealed by the developer's geologist: "I, \_\_\_\_\_, certify that the proposed stormwater management facility (circle one) is / is not underlain by carbonate geology."
- E. Whenever a stormwater management facility will be located in an area underlain by carbonate geology, a geological evaluation of the proposed location by a qualified licensed professional shall be conducted to determine susceptibility to sinkhole formation and the possibility of groundwater contamination from the facility.

### **Section 310: Riparian Buffers / Riparian Forest Buffers**

Where an applicant proposes to utilize riparian buffers as the means to meet the requirements of this Ordinance, said riparian buffers shall be established and /or maintained in accordance with the BMP Manual or the publication *Riparian Forest Buffer Guidance*, published November, 2010 by the Pennsylvania Department of Environmental Protection, and as may be amended or updated.

**Section 311: Prohibited Discharges and Connections**

- A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the waters of the Commonwealth is prohibited.
- B. No person shall allow, or cause to allow, discharges into surface waters of the Commonwealth which are not composed entirely of stormwater, except (1) as provided in Subsection C below and (2) discharges allowed under a state or federal permit.
- C. The following discharges are authorized unless they are determined to be significant contributors to pollution to the waters of the Commonwealth:

- Discharges from firefighting activities	- Flows from riparian habitats and wetlands
- Potable water sources including water line flushing	- Uncontaminated water from foundations or from footing drains
- Irrigation drainage	- Lawn watering
- Air conditioning condensate	- De-chlorinated swimming pool discharges
- Springs	- Uncontaminated groundwater
- Water from crawl space pumps	- Water from individual residential car washing
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used	- Routine external building wash-down (which does not use detergents or other compounds)
- Diverted stream flows	- Water discharged in well testing for potable water supplies

- D. In the event that Mount Pleasant Township or DEP determines that any of the discharges identified in Subsection C significantly contribute to pollution of the waters of the Commonwealth, Mount Pleasant Township or DEP will notify the responsible person(s) to cease the discharge.

**Section 312: Alteration of Stormwater BMPs**

No person shall modify, remove, fill, landscape, or alter any Stormwater BMPs, facilities, areas, or structures in a manner, without the written approval of Mount Pleasant Township, with the exception of necessary maintenance activities such as mowing.

## **ARTICLE IV – STORMWATER MANAGEMENT (SWM) SITE PLAN REQUIREMENTS**

### **Section 401: SWM Site Plan Submission**

- A. When a property owner or developer proposes a Regulated Activity, said property owner or developer shall submit a SWM Site Plan to demonstrate compliance with the stormwater management provisions of this Ordinance. Said submission shall be required by Mount Pleasant Township unless said Regulated Activity is exempted from SWM Site Plan submission in accordance with the exemption criteria and exemption approval process established in Section 302 of this Ordinance. Where Mount Pleasant Township determines that the property owner or developer proposing the Regulated Activity is eligible to employ the process established in the Simplified Approach (see Appendix D) to address the stormwater management needs of a site, the submission of the required documentation from said Manual shall substitute for the SWM Site Plan requirements of this Article.
- B. Copies of the SWM Site Plan shall be distributed as follows:
  - 1. Two (2) copies to Mount Pleasant Township.
  - 2. One (1) copy to the Mount Pleasant Township Engineer, when applicable.
  - 3. One (1) copy to the Adams County Conservation District (if an NPDES permit is required).
  - 4. One (1) copy to the Adams County Office of Planning and Development (only if submitted as a component of a subdivision and land development plan in accordance with the Mount Pleasant Township Subdivision and Land Development Ordinance).
- C. Additional copies shall be submitted as requested by Mount Pleasant Township.
- D. The property owner or developer shall submit a review fee in accordance with Article VI. Payment of the required fee shall be considered a component of the SWM Site Plan submission. The SWM Site Plan submission shall not be considered to be complete until such time that any required fee is paid.

### **Section 402: SWM Site Plan and Narrative Requirements**

- A. Site Plan Requirements:

The SWM Site Plan shall include the following information. Where the Regulated Activity for which a SWM Site Plan is being submitted is also subject to subdivision and/or land development plan review in accordance with the Mount Pleasant Township Subdivision and Land Development Ordinance, the SWM Site Plan shall be submitted as a component of the subdivision or land development plan submission for the project and shall include the following information. Where the submission requirements of this section conflict with the submission requirements of the Mount Pleasant Township Subdivision and Land Development Ordinance, the submission requirements of this Ordinance shall control. The plan sheets shall be titled “Post Construction Stormwater Management or PCSM.”

1. The name of the development, the name and address of the owner of the property, and the name and address of the individual or firm preparing the SWM Site Plan. Also to be included are the name, address, signature and seal of any registered surveyor (attesting the accuracy of the boundary survey), professional engineer, landscape architect, or professional geologist (for geomorphological assessments) contributing to and/or responsible for any aspect of the SWM Site Plan.
2. The overall stormwater management concept for the project including any additional information required for a PCSM Plan as applicable (all items required per NPDES Permit Checklist).
3. A summary table listing existing and proposed discharge points' identification, acreage, storm event frequency, and runoff flows/discharges.
4. A determination of site conditions (existing and proposed) in accordance with the Site Assessment procedures outlined in Chapter 4 of the most current version of the Pennsylvania Stormwater Best Management Practices Manual. A site assessment shall be completed for projects proposed in areas of carbonate geology or karst topography.
5. Drainage area maps with outlines of existing and proposed drainage areas and subareas and the paths for calculating the times of concentration. Where offsite and/or site area outside of the Regulated Activity area flows are considered in calculations, drainage areas for conditions as described shall be denoted in a manner such that pre to post conditions for the Regulated Activity area (not including offsite and/or areas outside of the Regulated Activity area) may be compared.
6. For drainage models where multiple drainage areas or sub areas are considered, a dynamic or interconnected model shall be prepared.
7. A graphic and written plan scale of one (1) inch equals no more than fifty (50) feet. For parcels of twenty (20) acres or more, the scale shall be one (1) inch equals no more than one-hundred (100) feet.
8. North point (arrow).
9. Existing and proposed property boundaries. In the case of a land development plan on a large tract, the property boundary does not need to be shown in entirety at the full drawing scale. The entire tract is required to be shown in the site location map.
10. Project location map at a minimum of one (1) inch equals two-thousand (2,000) feet showing the project site property line, limits of development, streets, street names, and bodies of water within two-thousand (2,000) feet of the property boundary.
11. Existing and proposed land use within the parcel plus existing land use on the first twenty-five (25) feet of parcels surrounding the subject parcel.

12. The location of existing and proposed utilities, stormwater facilities, sanitary sewers, water lines, wells, on-lot wastewater facilities and all easements within the parcel plus the location of said features on the first twenty-five (25) feet of parcels surrounding the subject parcel.
13. Significant physical features and associated boundary limits, including flood hazard areas, sinkholes, existing drainage courses, and areas of natural vegetation.
14. Existing and proposed structures, buildings, streets, driveways, access drives, and parking areas.
15. The location of the parcel relative to streets, municipal boundaries, and other significant manmade features within twenty-five (25) feet of the parcel.
16. A determination of site conditions in accordance with the BMP Manual. A detailed site evaluation shall be completed for projects proposed in areas of carbonate geology or karst topography, as well as for other environmentally sensitive areas, whether natural or manmade, including floodplains, streams, lakes, ponds, hydric soils, wetlands, brownfields, and wellhead protection zones.
17. Stormwater runoff design computations and documentation as specified in this Ordinance, or as otherwise necessary, to demonstrate compliance with the requirements of this Ordinance.
18. A hydro geologic assessment of the effects of stormwater runoff on sinkholes, where present.
19. A description of permanent stormwater management techniques, including the construction specifications of the materials to be used for stormwater management facilities.
20. Plan and profile (horizontal and vertical as required) drawings of all Stormwater BMPs, including drainage structures, pipes, open channels, and swales, etc.
21. Proposed changes to the land surface and vegetative cover and the type and amount of existing and proposed impervious area. Provide a drawing legend of unidentified or existing and proposed features.
22. Existing and final contours at minimum intervals of two (2) feet. In areas of slopes in excess of fifteen percent (15%), five (5) foot contour intervals may be used.
23. Provide drainage flow pathways and defined drainage areas on the construction plan.

24. Clearly shown existing and proposed drainage patterns, existing and proposed elevation contours at intervals of at least one foot for plans at scale of one inch equal to 10 or 20 feet, at least two feet for all other scales. Where land is sloped more than 20%, contour intervals may be every five feet. Show spot elevations at high points and low points and critical areas which cannot be interpolated between contours. Indicate the location and elevation of the benchmark. Provide the date the existing topography was surveyed and the method of survey (aerial or field).
25. A map showing all existing manmade features beyond the subject parcel's boundary lines that may be affected by the proposed Regulated Activities.
26. Expected project time schedule.
27. An E&S plan, where applicable, as approved by the Adams County Conservation District or DEP. Indicate limits of phases and include a narrative of the construction sequence.
28. An NPDES Permit application, including all PCSM Requirements, where applicable, as administratively reviewed and approved by the Adams County Conservation District.
29. Outline of soil type limits and list soil types as shown in the Soil Survey of Adams County. Provide a table listing the following information for the applicable on-site soil types:
  - (a) Soil map symbol (soil name abbreviation);
  - (b) Soil name, applicable building site restrictions (Soil Survey Table 7);
  - (c) Applicable sanitary facilities restrictions (Soil Survey Table 8);
  - (d) Applicable construction materials restrictions (Soil Survey Table 9);
  - (e) Applicable water management restrictions (Soil Survey Table 10); and
  - (f) Hydrologic Soil Group, flooding and high water table information (Soil Survey Table 15).
30. Construction details, sections, and specifications of facilities with sufficient information and dimensions so that they can be built to meet the requirements of this Chapter. Provide a note which states that the materials and details specified shall not be altered during construction without written approval by the municipality.
31. The SWM Site Plan shall include an O&M Plan for all existing and proposed physical stormwater management facilities.
32. Provisions for permanent access or maintenance easements for all physical Stormwater BMPs, as necessary to implement the O&M Plan.
33. A note on the SWM Site Plan indicating the location and responsibility for maintenance of Stormwater BMPs and/or easements that would be located on adjoining properties as a result of proposed Regulated Activities.

34. The following signature block shall be provided:

*(Municipal official or designee)*, on this date *(date of signature)*, has reviewed and hereby certifies that the SWM Site Plan meets all design standards and criteria of the Mount Pleasant Township Stormwater Management Ordinance, Ordinance No. *(number assigned to the Ordinance)*.

B. Design Narrative Content

1. The stormwater management design narrative shall contain the following: An introductory section describing the existing site and drainage area features, the existing points of discharge from the site, proposed site improvements, description of major drainage improvements and how they impact downstream areas. Identify any unusual existing conditions at the site that affect the existing stormwater drainage. Provide a statement of who visited the site and the date or dates of the site visit of both on-site and downstream facilities.
2. A summary table listing existing and proposed discharge points' identification, acreage, storm event frequency, and runoff flows/discharges.
3. Drainage area maps with outlines of existing and proposed drainage areas and subareas and the paths for calculating the times of concentration (alternate is to show this information in the plan).
4. Existing and proposed stormwater detailed calculations of runoff, facility designs, and erosion and sedimentation control designs. Hydrologic and hydraulic calculations of all existing and proposed infrastructure and improvements.
5. Areas which are subject to flooding shall have a floodplain study provided in the narrative which meets the requirements of 402.B of this Chapter and Ordinance 2008-03 Mount Pleasant Township Floodplain Management Ordinance of 2008.
6. The design narrative shall be signed and sealed by a registered professional engineer qualified to perform such duties.

**Section 403: SWM Site Plan Review and Approval Procedure**

- A. Pre-Application Meeting: Prior to proceeding with SWM Site Plan preparation and submission, the applicant is encouraged to request a pre-application meeting with Mount Pleasant Township to discuss the plan concept and responsibility for submission of required documents and information. If the project requires an E&S plan or an NPDES permit, the applicant is encouraged to meet with a staff member of the Adams County Conservation District as well.

B. SWM Site Plan Review and Approval Procedure:

1. If a SWM Site Plan is not submitted as a component of a subdivision and/or land development plan, the review of the SWM Site Plan, recommendations, approval, approval with conditions, or disapproval shall occur within sixty (60) calendar days of submission to Mount Pleasant Township. Where the applicant submits revisions to a previously submitted SWM Site Plan, either because the applicant has elected to revise the SWM Site Plan or as a result of a determination by Mount Pleasant Township that a revision is necessary to meet the requirements of this Ordinance, this sixty (60) day period shall be restarted. Should Mount Pleasant Township fail to render a decision on the SWM Site Plan within this sixty (60) day time period, the application shall be deemed approved. The review process shall include the following components.
  - a. Upon receipt, the official accepting the SWM Site Plan shall forward a copy of the Plan to the entities referenced in Section 401.B. The official accepting the SWM Site Plan shall also cause the application to be included on the agenda for the next available meeting of the Mount Pleasant Township Planning Commission.
  - b. The Mount Pleasant Township engineer shall review the SWM Site Plan for compliance with the requirements of this Ordinance, and shall communicate his review to the Mount Pleasant Township Planning Commission and the Mount Pleasant Township Supervisors.
  - c. The Mount Pleasant Township Planning Commission shall review the application and the review of the Mount Pleasant Township engineer at its next available meeting. The Planning Commission shall provide a recommendation regarding the SWM Site Plan in writing to the Mount Pleasant Township Supervisors.
  - d. The Mount Pleasant Township Supervisors shall consider the SWM Site Plan, the Mount Pleasant Township engineer's review, and the recommendation of the Mount Pleasant Township Planning Commission at its next available meeting. Following review of this information, the Mount Pleasant Township Supervisors shall approve, approve with conditions, or disapprove the SWM Site Plan.
  - e. Decision Notification Procedure: In all cases, the decision of the Mount Pleasant Township Supervisors to approve, approve with conditions, or disapprove the SWM Site Plan shall be in writing and shall be delivered to the applicant no later than fifteen (15) days following the decision. If the SWM Site Plan is disapproved, the written decision by the Mount Pleasant Township Supervisors shall specify the defects in the application, describe the requirements which were not met, and shall cite the provisions of the Ordinance relied upon. If the SWM Site Plan is approved with conditions, the notification to the applicant shall state the acceptable conditions for approval and the timeline limit for satisfying such conditions.

2. If a SWM Site Plan is submitted as a component of a subdivision and/or land development plan, the SWM Site Plan shall be reviewed in accordance with the review process and time frame established in the Mount Pleasant Township Subdivision and Land Development Ordinance and in accordance with Section 508 of the Pennsylvania Municipalities Planning Code.
3. NPDES Permit Technical Coordination: Where the project for which a SWM Site Plan is submitted is subject to NPDES permitting, Mount Pleasant Township shall notify the Adams County Conservation District when the applicant has achieved technical compliance with the requirements of this Ordinance. Mount Pleasant Township may address this requirement through the completion of the Technical Review Checklist for NPDES Sites or comparable process as determined by Mount Pleasant Township. Upon receipt of this notification, the Adams County Conservation District will acknowledge a General NPDES permit. In the case of an Individual NPDES permit, the Adams County Conservation District will coordinate municipal reviews with the DEP Regional Office.
4. NPDES Permits and E&S Plans: Where the project for which a SWM Site Plan is submitted is subject to NPDES permitting or the submission of an E&S Plan, or both, any final approval of the SWM Site Plan by Mount Pleasant Township shall be conditioned on the applicant's receipt of the required NPDES Permit or E&S Plan approval, as appropriate.
5. Decision Notification Procedure: In all cases, the decision of the Mount Pleasant Township Supervisors to approve, approve with conditions, or disapprove the SWM Site Plan shall be in writing and shall be delivered to the applicant no later than fifteen (15) calendar days following the decision. If the SWM Site Plan is disapproved, the written decision by the Mount Pleasant Township Supervisors shall specify the defects in the application, describe the requirements which were not met, and shall cite the provisions of the Ordinance relied upon. If the SWM Site Plan is approved with conditions, the notification to the applicant shall state the acceptable conditions for approval and the time limit for satisfying such conditions. Should Mount Pleasant Township fail to notify the applicant of the decision within this fifteen (15) calendar day period, the application shall be deemed approved.

C. Waiver Requests:

1. If a SWM Site Plan is not submitted as a component of a subdivision and/or land development plan, the Mount Pleasant Township Supervisors may accept a request for waiver of one or more of the requirements of this Ordinance. Any such waiver requests shall comply with the following requirements.
  - a. The Mount Pleasant Township Supervisors may accept a request for waiver of the requirements of one or more provisions of this Ordinance if the literal enforcement will enact undue hardship because of peculiar conditions pertaining to the land in question, provided that the Mount Pleasant Township Supervisors determines that such waiver will not be contrary to the public interest and that the purpose and intent of the Ordinance is observed.

- b. All requests for waivers from an applicant shall be in writing and shall accompany and be a part of the application for approval of a SWM Site Plan. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the Ordinance involved, and the minimum waiver necessary to afford relief.
  - c. The Mount Pleasant Township Supervisors shall act to accept or reject requests for waivers within the context of its SWM Site Plan decision-making process established in Section 403.B.1 of this Ordinance. The decision of the Mount Pleasant Township Supervisors regarding acceptance of each request for waiver shall be incorporated into the written decision of the Mount Pleasant Township Supervisors for the overall SWM Site Plan as required in Section 403.B.3 of this Ordinance. The Mount Pleasant Township Supervisors shall keep a written record of all action on requests for waivers.
- 2. If a SWM Site Plan is submitted as a component of a subdivision and land development plan, requests for waiver to obtain relief from one or more of the requirements of this Ordinance shall be handled in accordance with the modification process established in the Mount Pleasant Township Subdivision and Land Development Ordinance and Section 512.1 of the Pennsylvania Municipalities Planning Code.
  - 3. The final decision to approve or disapprove all accepted requests for waiver shall be made in accordance with Section 301.K.

**Section 404: Revision of SWM Site Plans**

- A. SWM Site Plan not Submitted as a Component of a Subdivision and/or Land Development Plan: Revisions to a previously approved SWM Site Plan to incorporate a change in Stormwater BMPs or techniques, or the relocation or redesign of Stormwater BMPs, or different information about soil or other conditions from what was stated in the SWM Site Plan, shall be submitted by the applicant to Mount Pleasant Township. Mount Pleasant Township, at its sole discretion may require a re-submission of the revised SWM Site Plan in accordance with this Ordinance, including applicable review fee. For NPDES permitted sites, any revised SWM Site Plan shall be re-submitted to the Adams County Conservation District for its review. In the case of a SWM Site Plan which contains minor deficiencies (such as a missing label, omission of a required note or minor construction detail), Mount Pleasant Township may, at its sole discretion, accept a re-submission of such SWM Site Plan without the requirement of a full review fee, or a lesser fee, as determined by Mount Pleasant Township.
- B. SWM Site Plan Submitted as a Component of a Subdivision and/or Land Development Plan: A revision of an SWM Site Plan approved as a component of a subdivision and/or land development plan shall be treated as a revision of the subdivision and/or land development plan and shall be subject to the review process established in the Mount Pleasant Township Subdivision and Land Development Ordinance.

#### **Section 405: Re-submission of Disapproved SWM Site Plans**

- A. SWM Site Plan not Submitted as a Component of a Subdivision and/or Land Development Plan: A previously disapproved SWM Site Plan may be resubmitted with the revisions addressing the defects of the original submission as listed in Mount Pleasant Township's Decision Notification provided in accordance with Section 403.B.1.e. The re-submitted SWM Site Plan shall be reviewed and acted upon in accordance with Section 403.B.1 of this Ordinance. The applicable review fee must accompany the submission of a revised SWM Site Plan, unless such fee is waived by Mount Pleasant Township.
- B. SWM Site Plan Submitted as a Component of a Subdivision and/or Land Development Plan: The resubmission of the SWM Site Plan originally submitted as a component of a subdivision and/or land development plan shall be treated as resubmission of said subdivision and/or land development plan and shall be subject to the review process established in the Mount Pleasant Township Subdivision and Land Development Ordinance.

#### **Section 406: Authorization to Construct and Term of Validity**

- A. SWM Site Plans not Submitted as a Component of a Subdivision and/or Land Development Plan: Mount Pleasant Township approval of a SWM Site Plan, when such Plan is not submitted as a component of a subdivision and/or land development plan, authorizes the Regulated Activities contained in the SWM Site Plan for a maximum term of validity of five (5) years following the date of approval. Mount Pleasant Township may specify a term of validity shorter than five (5) years in the Decision Notification for any specific SWM Site Plan, particularly if the nature of the proposed SWM facilities requires more frequent maintenance and/or short-term replacement of certain components. Terms of validity shall commence on the date Mount Pleasant Township signs the Decision Notification for a SWM Site Plan. If an approved SWM Site Plan is not completed according to Section 407 within the term of validity, and if a request to extend the permit has not been submitted to Mount Pleasant Township by the applicant, the permit terminates and Mount Pleasant Township may revoke any and all permits applicable to the project. SWM Site Plans for projects with expired permits may be resubmitted in accordance with Section 405 of this Ordinance.
- B. SWM Site Plans Submitted as a Component of a Subdivision and/or Land Development Plan: Mount Pleasant Township approval of a SWM Site Plan as a component of a subdivision and/or land development plan is subject to the term of validity as specified in the Mount Pleasant Township Subdivision and Land Development Ordinance.

#### **Section 407: Final Inspection, Completion Certificate, and As-Built Plans**

- A. The stormwater management facilities constructed in accordance with a SWM Site Plan not submitted as a component of a subdivision and/or land development plan shall be subject to the following process upon the completion of construction of said facilities.
  - 1. Mount Pleasant Township may, at its discretion, inspect stormwater management facilities that do not require an NPDES Permit at any time during the construction process to ensure compliance with the approved SWM Site Plan.

2. The property owner or developer shall contact Mount Pleasant Township within seven (7) days of the completion of the construction process to schedule a Final Inspection. The Final Inspection shall be conducted by the Mount Pleasant Township engineers and/or other official as designated by the Township Supervisors.
3. Mount Pleasant Township may inspect the completed improvements to confirm consistency with the approved SWM Site Plan. Following the inspection, Mount Pleasant Township may take one of the following two actions.
  - a. Issue a Completion Certificate: A Completion Certificate may be issued when Mount Pleasant Township determines that the stormwater management facilities have been constructed in conformance with the approved SWM Site Plan.
  - b. Issue Correspondence Regarding Discrepancies: If Mount Pleasant Township determines that the stormwater management facilities have not been constructed in accordance with the approved SWM Site Plan, Mount Pleasant Township shall issue correspondence addressed to the property owner or developer summarizing the discrepancies from the approved SWM Site Plan. Such correspondence does not by itself constitute an extension of any applicable SWM Permit.
4. Upon receipt of correspondence summarizing discrepancies in the constructed stormwater facilities, the property owner or developer shall apply for permit extensions when necessary, and take one of the following two actions.
  - a. Reconstruct the required stormwater management facilities in a manner that complies with the approved SWM Site Plan. Upon completion of the reconstruction work, the property owner or developer shall contact Mount Pleasant Township for a subsequent Final Inspection in accordance with the process established in Section 407.A.2.
  - b. Submit a revised SWM Site Plan in accordance with the process established in Section 404.A. The revised SWM Site Plan shall be consistent with the improvements as constructed. Upon receipt, Mount Pleasant Township may review the revised SWM Site Plan in accordance with the review and approval process of Section 403. If the revised SWM Site Plan is approved, Mount Pleasant Township shall issue the Completion Certificate. If the revised SWM Site Plan fails to demonstrate that the constructed stormwater management facilities can comply with the requirements of this Ordinance, Mount Pleasant Township may then require the property owner or developer to reconstruct the required stormwater facilities in accordance with the originally approved SWM Site Plan.
5. Within fifteen (15) days of the Completion Certificate, the property owner or developer shall submit to Mount Pleasant Township, an As-Built Plan depicting the stormwater management facilities as constructed. If requested by the applicant, Mount Pleasant Township may grant an extension of the deadline to submit As-Built Plans.

- B. The stormwater management facilities constructed in accordance with a SWM Site Plan submitted as a component of a subdivision and/or land development plan shall be subject to the completion of improvements requirements of the Mount Pleasant Township Subdivision and Land Development Ordinance and Sections 509 through 511 of the Pennsylvania Municipalities Planning Code.

## **ARTICLE V – OWNERSHIP, OPERATION AND MAINTENANCE**

### **Section 501: Determination of Ownership and Maintenance Responsibility**

- A. The Mount Pleasant Township Supervisors shall make the final determination on the ownership and maintenance responsibilities of required Stormwater BMPs prior to final approval of the SWM Site Plan. The Mount Pleasant Township Supervisors may require a dedication of such facilities as part of the requirements for approval of the SWM Site Plan. Mount Pleasant Township shall not be obligated to accept the facilities if offered for dedication. The Mount Pleasant Township Supervisors reserves the right to accept or reject the ownership, maintenance, and operating responsibility for any portion of the stormwater management facilities and controls.
- B. If the Mount Pleasant Township Supervisors accepts dedication of any or all stormwater management facilities associated with a project, Mount Pleasant Township shall operate and maintain said facilities in accordance with the approved O&M Plan.
- C. If the Mount Pleasant Township Supervisors do not accept dedication of some or all of the stormwater management facilities associated with a project, the property owner shall sign an O&M Agreement in accordance with Section 503 of this Ordinance to ensure that the property owner will maintain the Stormwater BMPs in accordance with the approved O&M Plan. Mount Pleasant Township shall not approve the SWM Site Plan before the owner signs the O&M Agreement.

### **Section 502: Operation and Maintenance Plan:**

An Operation and Maintenance (O&M) Plan shall be included as a component of all SWM Site Plan submissions and shall include the following.

- A. Long-term ownership responsibilities.
- B. Continuing maintenance responsibilities, including schedules and estimated costs for maintenance activities. This component shall include all information necessary to ensure that the Stormwater BMPs will continually operate within the design parameters of the given facility.
- C. Continuing inspection responsibilities, including schedules for property owner inspection consistent with the standards of Section 702.

### **Section 503: Operation and Maintenance Agreements**

- A. Prior to final approval of the SWM Site Plan, the property owner shall sign and record an O&M Agreement binding the property owner to conduct all maintenance and inspection activities identified in the approved O&M Plan for proposed all stormwater control facilities which are to be privately owned.
  - 1. The property owner, heirs, successors and assigns shall maintain all facilities in accordance with the approved maintenance schedule in the O&M Plan.

2. The property owner shall provide to Mount Pleasant Township easements to ensure access for periodic inspections and maintenance by Mount Pleasant Township, as necessary.
  3. The property owner shall keep on file with Mount Pleasant Township the name, address, and telephone number of the person or company responsible for maintenance activities. In the event of a change, new information shall be submitted by the property owner to Mount Pleasant Township within ten (10) working days of the change.
  4. The O&M Agreement shall be recorded with the Adams County Recorder of Deeds.
- B. The owner is responsible for operation and maintenance of the Stormwater BMPs. If the owner fails to adhere to the O&M Agreement or the O&M Plan, Mount Pleasant Township may perform the services required and charge the owner appropriate fees. Nonpayment of fees, costs and other expenses incurred in the performance of services required may result in a municipal lien against the property.

#### **Section 504: Performance Guarantee**

For SWM Site Plans submitted as a component of a subdivision and/or land development plan, the property owner or developer shall provide a financial guarantee to Mount Pleasant Township for the timely installation and proper construction of all stormwater management controls as required by the approved SWM Site Plan and this Ordinance in accordance with the completion of improvements requirements of the Mount Pleasant Township Subdivision and Land Development Ordinance and the provisions of Sections 509 through 511 of the Pennsylvania Municipalities Planning Code.

## **ARTICLE VI - FEES AND EXPENSES**

### **Section 601: General**

- A. The Mount Pleasant Township Supervisors shall, by resolution, establish a fee schedule to defray costs incurred by Mount Pleasant Township associated with the administration and enforcement of this Ordinance.
- B. The applicant shall be responsible for the payment of all fees, costs, and other expenses incurred in the submission, review, and decision on SWM Site Plans and/or other submissions pursuant to this Ordinance.

### **Section 602: Expenses Covered by Fees**

The fee(s) may include, but are not limited to, costs for the following:

- A. Administrative, clerical, and legal costs.
- B. Review of the SWM Site Plan and reports by Mount Pleasant Township and representatives or counselors of the Mount Pleasant Township.
- C. Attendance at meetings by representatives and counselors of Mount Pleasant Township, as may be necessary.
- D. Various inspections (such as during construction and after construction) by Mount Pleasant Township or its representatives.
- E. Any additional work required to enforce any provision (s) regulated by this Ordinance, correct violations, and ensure proper completion of stipulated remedial actions.

## **ARTICLE VII - ENFORCEMENT AND PENALTIES**

### **Section 701: Municipal Inspection**

- A. Upon presentation of proper credentials, Mount Pleasant Township officials or their designee may enter at reasonable times upon any property within Mount Pleasant Township to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Ordinance.
- B. Inspections regarding compliance with the SWM Site Plan may be conducted by the Mount Pleasant Township at any time when there may be a question of compliance with the approved SWM Site Plan, the approved O&M Plan, or when any condition exists that may threaten public health, safety, or welfare.

### **Section 702: Landowner Inspection**

- A. Stormwater BMPs shall be inspected by the landowner, or landowner's designee (which shall include Mount Pleasant Township where such facilities have been dedicated to Mount Pleasant Township), according to the following list of minimum frequencies:
  - 1. Annually for the first five (5) years.
  - 2. Once every three (3) years thereafter.
  - 3. During or immediately after the cessation of a ten (10)-year or greater storm, i.e., a storm of an estimated frequency of recurrence of ten (10) years or greater interval of time.
  - 4. At any other interval as may be specified in the approved O&M Agreement.
- B. Following inspection of Stormwater BMPs by the landowner or landowner's designee, said landowner or landowner's designee shall report the findings of the inspection in writing to Mount Pleasant Township. Such report shall be provided on forms provided by Mount Pleasant Township.
- C. Following receipt of required inspection reports, Mount Pleasant Township reserves the right to confirm the findings of any inspection if reasonable cause exists to suggest that the inspection did not uncover potential problems with the Stormwater BMP. Mount Pleasant Township may conduct a subsequent inspection of the facilities to address such concern. If Mount Pleasant Township's inspection uncovers problems with the Stormwater BMPs on site that result in the site no longer being consistent with the approved SWM Site Plan for the site, Mount Pleasant Township, may initiate corrective actions in accordance with the enforcement processes enabled in this Ordinance.

### **Section 703: Suspension or Revocation of SWM Site Plan Approval**

- A. Any SWM Site Plan approval issued by Mount Pleasant Township pursuant to this Ordinance may be suspended or revoked for any of the following reasons.
  - 1. Non-compliance with or failure to implement any provision of the approved SWM Site Plan or O&M Plan.
  - 2. A violation of any provision of this Ordinance or any other applicable law, Ordinance, rule, or regulation relating to the Regulated Activity.
  - 3. The creation of any condition or the conduct of any Regulated Activity which constitutes or creates a hazard, nuisance, pollution, or endangers life or property.
- B. A suspended SWM Site Plan approval may be reinstated by the Mount Pleasant Township Supervisors when the following conditions are met.
  - 1. Mount Pleasant Township officials or their designee(s) have inspected and approved the corrections to the violations that caused the suspension.
  - 2. The Mount Pleasant Township Supervisors is satisfied that the violation has been corrected.
- C. A SWM Site Plan approval that has been revoked by the Mount Pleasant Township Supervisors shall not be reinstated. The applicant may apply for a new SWM Site Plan approval under the provisions of this Ordinance.
- D. If a violation causes no immediate danger to life, public health, or property, the Mount Pleasant Township Supervisors may, at its sole discretion, provide a limited time period for the owner to correct the violation. In these cases, the Mount Pleasant Township Supervisors will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, Mount Pleasant Township may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

### **Section 704: Enforcement**

Mount Pleasant Township may institute injunctive, mandamus, or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance when Mount Pleasant Township determines that a property owner or developer has initiated a Regulated Activity without receiving SWM Site Plan approval, that a property owner or developer has failed to comply with an approved SWM Site Plan or approved O&M Plan, or that a property owner or developer has violated any other provision of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

## **Section 705: Penalties**

- A. Any person, partnership or corporation who or which has violated the provisions of this Ordinance shall, upon being found liable therefore in a civil enforcement proceeding commenced by the Municipality, pay a judgment of not less than \$500.00 or more than \$2,000.00. No judgment shall commence or be imposed, levied or payable until the date of the determination of a violation by the District Justice. If the defendant neither pays nor timely appeals the judgment, the Municipality may enforce the judgment pursuant to the applicable rules of civil procedure. Each day that a violation continues shall constitute a separate violation, unless the District Justice determining that there has been a violation further determines that there has been a good faith basis for the person, partnership or corporation violating the Ordinance to have believed that there was no such violation, in which event there shall be deemed to have been only one such violation. The Court of Common Pleas, upon petition, may grant an order of stay, upon cause shown, tolling the per diem judgment pending a final adjudication of the violation and judgment.
- B. The Municipality may institute injunctive, mandamus, or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any Court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.



**APPENDIX A**

**OPERATION AND MAINTENANCE (O&M) AGREEMENT FOR  
STORMWATER MANAGEMENT PRACTICES**

**OPERATION AND MAINTENANCE (O&M) AGREEMENT**  
**STORMWATER MANAGEMENT PRACTICES**

**THIS AGREEMENT**, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_, (hereinafter the “Landowner”), and Mount Pleasant Township, Adams County, Pennsylvania, (hereinafter “Mount Pleasant Township”);

**WITNESSETH**

**WHEREAS**, the Landowner is the legal or equitable owner of certain real property as recorded by deed in the land records of Adams County, Pennsylvania, Deed Book \_\_\_\_\_ at page \_\_\_\_\_, (hereinafter “Property”).

**WHEREAS**, the Landowner is proceeding to build and develop the Property; and

**WHEREAS**, the Operation and Maintenance Plan (O&M Plan) approved by Mount Pleasant Township for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by Mount Pleasant Township, provides for management of stormwater within the confines of the Property through the use of Stormwater Management Best Management Practices (Stormwater BMPs); and

**WHEREAS**, Mount Pleasant Township, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Mount Pleasant Township and the protection and maintenance of water quality require that on-site Stormwater BMPs be constructed and maintained on the Property; and

**WHEREAS**, Mount Pleasant Township requires, through the implementation of the approved Stormwater Management Site Plan (SWM Site Plan), that Stormwater BMPs as required by said SWM Site Plan and the Mount Pleasant Township Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, successors, and assigns.

**NOW, THEREFORE**, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner shall construct, or cause the construction of, the Stormwater BMPs in accordance with the plans and specifications identified in the SWM Site Plan.

2. The Landowner shall operate and maintain the Stormwater BMPs as shown on the SWM Site Plan in good working order in accordance with the specific operation and maintenance requirements noted on the approved O&M Plan.
3. The Landowner hereby grants permission to Mount Pleasant Township, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the Stormwater BMPs whenever Mount Pleasant Township deems it appropriate. Whenever possible, Mount Pleasant Township shall notify the Landowner prior to entering the property.
4. In the event the Landowner fails to operate and maintain the Stormwater BMPs as provided in the O&M Plan, Mount Pleasant Township or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMPs. It is expressly understood and agreed that Mount Pleasant Township is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on Mount Pleasant Township including engineering and legal fees incurred to enforce this agreement.
5. In the event that Mount Pleasant Township, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse Mount Pleasant Township for all expenses (direct and indirect) incurred within ten (10) days of receipt of invoice from Mount Pleasant Township.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite Stormwater BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create or affect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.
7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release Mount Pleasant Township from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the Stormwater BMPs by the Landowner or Mount Pleasant Township.
8. Mount Pleasant Township intends to inspect the Stormwater BMPs at a minimum of once every three (3) years to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of Adams County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs, and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

For Mount Pleasant Township: (SEAL)

\_\_\_\_\_  
Title:

For the Landowner:

\_\_\_\_\_  
Title:

**CERTIFICATION**

I, \_\_\_\_\_, a Notary Public in and for the county and state aforesaid, whose commission expires on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, do hereby certify that \_\_\_\_\_, whose name(s) is/are signed to the foregoing Agreement bearing date of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ has acknowledged the same before me in my said county and state.

**GIVEN UNDER MY HAND THIS** \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
**NOTARY PUBLIC** (SEAL)

**APPENDIX B**

**NOXIOUS AND INVASIVE PLANT CONTROL**

## NOXIOUS AND INVASIVE PLANT CONTROL

A list of noxious and invasive plants in Pennsylvania may be found in several locations:

### **The Pennsylvania Code**

7 Pa. Code § 110. Noxious Weeds

§110.1. Noxious weed control list.

Under section 3(b) of the Noxious Weed Control Law (3 P.S. § 255.3(b)), the Noxious Weed Control Committee establishes the following noxious weed control list:

- (1) *Cannabis sativa*, commonly known as marijuana.
- (2) The *Lythrum salicaria* Complex: Any nonnative *Lythrum* including, *Lythrum salicaria* and *Lythrum virgatum*, their cultivars and any combination thereof.
- (3) *Cirsium arvense*, commonly known as Canadian thistle.
- (4) *Rosa multiflora*, commonly known as multiflora rose.
- (5) *Sorghum halepense*, commonly known as Johnson grass.
- (6) *Carduus nutans*, commonly known as musk thistle.
- (7) *Cirsium vulgare*, commonly known as bull thistle.
- (8) *Datura stramonium*, commonly known as jimson weed.
- (9) *Polygonum perfoliatum*, commonly known as mile-a-minute.
- (10) *Puerria lobata*, commonly known as kudzu vine.
- (11) *Sorghum bicolor* cv. *drummondii*, commonly known as shattercane.
- (12) *Heracleum mantegazzianum*, commonly known as Giant Hogweed.
- (13) *Galega officinalis*, commonly known as Goatsrue.

### **Pennsylvania Department of Conservation and Natural Resources (DCNR)**

The PA Department of Conservation and Natural Resources (DCNR) lists Invasive Exotic Plants in Pennsylvania on their website:

<http://www.dcnr.state.pa.us/forestry/invasivetutorial/List.htm>

A copy of the (DCNR) publication “Invasive Plants in Pennsylvania” (rev. 2006) may be found on their web site:

[www.dncr.state.pa.us](http://www.dncr.state.pa.us)

A listing of plants is included on the following page.

# Invasive Plants in Pennsylvania

SCIENTIFIC NAME      COMMON NAME      PLANT FORM      NOTES

The species below are serious threats to our native ecosystems. Many have been designed as "Noxious Weeds" by the PA Department of Agriculture and are also a major concern to our agricultural community.

<i>Aegopodium podagraria</i>	Goutweed	Flower	Commonly planted in the past and escaped; spreads aggressively by roots
<i>Alliaria petiolata</i>	Garlic mustard	Flower	Invasive in many states; spreading aggressively in woodlands by seed
<i>Carduus nutans</i>	Musk thistle	Flower	PA Noxious Weed
<i>Cirsium arvense</i>	Canada thistle	Flower	PA Noxious Weed
<i>Cirsium vulgare</i>	Bull thistle	Flower	PA Noxious Weed
<i>Datura stramonium</i>	Jimsonweed	Flower	Sometimes cultivated; spreads by seed, PA Noxious Weed
<i>Galega officinalis</i>	Goatsrue	Flower	PA and Federal Noxious Weed
<i>Heracleum mantegazzianum</i>	Giant hogweed	Flower	PA and Federal Noxious Weed; sap can cause burning blisters
<i>Hesperis matronalis</i>	Dame's rocket	Flower	Planted in gardens; escaped and naturalized along roads; spreads by seed
<i>Lythrum salicaria, L. virgatum</i>	Purple loosestrife	Flower	Garden escape which has become invasive in many states; PA Noxious weed
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	Flower	Invasive in many states; aquatic
<i>Ornithogalum nutans</i>	Star-of-Bethlehem	Flower	Common garden plant which has widely escaped
<i>Pastinaca sativa</i>	Wild parsnip	Flower	Found commonly along roadsides; widespread and abundant; spread by seed
<i>Penfla frutescens</i>	Beefsteak plant	Flower	Garden escape; widespread mostly along roadsides; spreads by seed
<i>Polygonum (Falopla) cuspidatum</i>	Japanese knotweed	Flower	Invasive in many states; difficult to control; spreads by roots and seeds
<i>Ranunculus ficaria</i>	Lesser celandine	Flower	Spreads by roots and shoots; can be very aggressive in wetlands
<i>Trapa natans</i>	Water chestnut	Flower	Wetland plant; should not be introduced as it will escape, spread, and naturalize

<i>Bromus tectorum</i>	Cheatgrass	Grass	Annual grass; very invasive throughout the west; spreads by seed
<i>Microstegium vimineum</i>	Japanese stilt grass	Grass	Annual grass; invasive in many states; spreading through woodlands by seed
<i>*Miscanthus sinensis</i>	Maiden grass	Grass	Commonly planted ornamental grass which can escape and spread by seed
<i>Phalaris arundinacea</i>	Reed canary grass	Grass	Aggressive wetland grass; native and introduced strains; widespread and abundant
<i>Phragmites australis</i>	Common reed	Grass	Native and introduced strains; wetland grass which can form huge colonies
<i>Sorghum bicolor ssp. drummondii</i>	Shattercane	Grass	Grass; PA noxious weed
<i>Sorghum halepense</i>	Johnson grass	Grass	Grass; PA noxious weed; spreads by roots and seeds

<i>*Berberis thunbergii</i>	Japanese barberry	Shrub	Escaped from cultivation and invasive in many states; spread by birds
<i>Berberis vulgaris</i>	European barberry	Shrub	Escaped from cultivation; spread by birds
<i>Elaeagnus angustifolia</i>	Russian olive	Shrub	Escaped from plantings and invasive in many states; spread by birds
<i>Elaeagnus umbellata</i>	Autumn olive	Shrub	Escaped from plantings and invasive in many states; rapidly spread by birds
<i>*Euonymus alatus</i>	Winged Euonymus	Shrub	Escaped from plantings; invasive in moist forests
<i>Ligustrum obtusifolium</i>	Border privet	Shrub	Escaped from cultivation; seeds spread by birds
<i>Ligustrum vulgare</i>	Common privet	Shrub	Planted very commonly in the past and escaped; invasive in many states
<i>Lonicera maackii</i>	Amur honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Lonicera morrowii</i>	Morrow's honeysuckle	Shrub	Escaped from plantings and invasive in many states; seeds spread by birds
<i>Lonicera morrowii x tatarica</i>	Bell's honeysuckle	Shrub	Escaped from cultivation
<i>Lonicera standishi</i>	Standish honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Lonicera tatarica</i>	Tartarian honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Rhamnus catharticus</i>	Common buckthorn	Shrub	Becoming a problem in PA
<i>Rhamnus frangula</i>	Glossy buckthorn	Shrub	Becoming a problem in PA
<i>Rosa multiflora</i>	Multiflora rose	Shrub	Invasive in many states; seeds spread by birds; PA noxious weed
<i>Rubus phoenicolasius</i>	Wineberry	Shrub	Common bramble; not cultivated; spreads by seed
<i>*Spiraea japonica</i>	Japanese spiraea	Shrub	Frequently planted; escaped in some areas
<i>*Viburnum opulus var. opulus</i>	Guelder rose	Shrub	Resembles native <i>Viburnum trilobum</i> which it replaces; both are cultivated and planted

<i>*Acer platanoides</i>	Norway maple	Tree	Commonly planted and escaped; invasive in many states; wind spreads prolific seeds
<i>Acer pseudoplatanus</i>	Sycamore maple	Tree	Escaped from cultivation ; wind spreads prolific seeds
<i>Ailanthus altissima</i>	Tree-of-heaven	Tree	Invasive in many states; wind spreads prolific seeds
<i>Paulownia tomentosa</i>	Empress tree	Tree	Prolific seeds fall to start new seedlings
<i>*Pyrus calleryana</i>	Callery pear	Tree	Commonly planted street tree; becoming a problem as an escape
<i>Ulmus pumila</i>	Siberian elm	Tree	Escaped from cultivation

<i>Akebia quinata</i>	Fiveleaf akebia	Vine	Escaped from cultivation and becoming a major problem in the Philadelphia area
<i>Ampelopsis brevipedunculata</i>	Porcelain-berry	Vine	Escaped from cultivation; spread by birds
<i>Celastrus orbiculatus</i>	Oriental bittersweet	Vine	Escaped from cultivation and invasive in many states; spreading rapidly (by birds)
<i>Lonicera japonica</i>	Japanese honeysuckle	Vine	Invasive in many states
<i>Polygonum perfoliatum</i>	Mile-a-minute vine	Vine	Range expanding, PA Noxious weed
<i>Pueraria lobata</i>	Kudzu	Vine	Invasive in many states; PA Noxious weed

This list of invasive species is not meant to be definitive, but rather a guideline to some of the most troublesome species that degrade native plant communities in Pennsylvania. These species were chosen from a more extensive list compiled from adjacent state or regional lists of invasive plant species. Input was sought from experienced individuals familiar with Pennsylvania's flora from a field perspective. For a more extensive list of invasive species, please contact DCNR, Bureau of Forestry, P.O. Box 8552, Harrisburg, PA 17105-8552.

**SITUATIONAL INVASIVES:** Some plants become problematic invasive species to a given area. For example, some species are commonly planted for quick groundcover but can be a serious problem when planted, seeded or discarded near native herbaceous communities. These situational invasives require greater care and monitoring when planted near native plant communities. These species include: *Crown-Vetch*, *Coronilla varia*; *English Ivy*, *Hedera helix*; *\*Tall fescue*, *Festuca elatior*; *\*Orange day-lily*, *Hemerocallis fulva*, *periwinkle*, *Yucca minor*; and *Chinese and Japanese wisteria*, *wisteria sinensis* and *w. floridibunda*.

**(ASTERIX):** An asterix (\*) denotes that the species has cultivars that are not known to be invasive. Cultivars are cultivated varieties of plant species bred for predictable attributes like shorter height, showier flowers, or colored foliage. An example is Norway Maple 'Crimson King' grown for its reddish leaves; this cultivar is not known to be invasive. Another example are the day lilies which have a host of cultivars that are not known as invasives. If you choose to plant a cultivar of an invasive species, ask a PA certified horticulturalist (PCH), your Penn State extension agent, or a professional horticulturalist about the cultivar's potential to be invasive.

## **APPENDIX C**

### **Tables 1-3**

**TABLE 1**  
**Runoff Curve Numbers**  
**[From NRCS (SCS) TR-55]**

LAND USE DESCRIPTION	HYDROLOGIC SOIL GROUP			
	A	B	C	D
Open Space (Good)	39	61	74	80
Meadow	30**	58	71	78
Agricultural	59	71	79	83
Forest	36**	60	73	79
Commercial (85% Impervious)	89	92	94	95
Industrial (72% Impervious)	81	88	91	93
Institutional (50% Impervious)	71	82	88	90
Residential				
Average Lot Size	% impervious			
1/8 acre or less*65	77	85	90	92
1/8 - 1/3 acre	34	59	74	82
1/3 - 1 acre	23	53	69	80
1 - 4 acres	12	46	66	78
Farmstead	59	74	82	86
Smooth Surfaces (Concrete, Asphalt, Gravel or Bare Compacted Soil)	98	98	98	98
Water	98	98	98	98
Mining Newly Graded Areas (Pervious Areas Only)	77	86	91	94

\* Includes Multi-Family Housing unless justified lower density can be provided.

\*\* Caution - CN values under 40 may produce erroneous modeling results.

NOTE: Site conditions of bare earth or fallow shall be considered as meadow when choosing a CN value for existing undeveloped conditions.

**TABLE 2**  
**RATIONAL RUNOFF COEFFICIENTS**  
By Hydrologic Soils Group and Overland Slope (%)

Land Use	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
*Cultivated Land	0.33 <sup>a</sup> 0.37 <sup>b</sup>	0.37 0.43	0.42 0.48	0.40 0.44	0.43 0.49	0.49 0.55	0.45 0.51	0.49 0.55	0.55 0.63	0.48 0.54	0.53 0.59	0.59 0.69
Pasture	0.12 0.15	0.20 0.25	0.30 0.37	0.18 0.23	0.28 0.34	0.37 0.45	0.24 0.30	0.34 0.42	0.44 0.52	0.30 0.37	0.40 0.50	0.50 0.62
Lawn	0.10 0.14	0.16 0.22	0.25 0.30	0.14 0.20	0.22 0.28	0.30 0.37	0.20 0.26	0.28 0.35	0.36 0.44	0.24 0.30	0.30 0.40	0.40 0.50
Forest	0.05 0.08	0.08 0.11	0.11 0.14	0.08 0.10	0.11 0.14	0.14 0.18	0.10 0.12	0.13 0.16	0.16 0.20	0.12 0.15	0.16 0.20	0.20 0.25
Residential Lot Size 1/8 Acre	0.25 0.33	0.28 0.37	0.31 0.40	0.27 0.35	0.30 0.39	0.25 0.44	0.30 0.38	0.33 0.42	0.38 0.49	0.33 0.41	0.36 0.45	0.42 0.54
Lot Size 1/4 Acre	0.22 0.30	0.26 0.34	0.29 0.37	0.24 0.33	0.29 0.37	0.33 0.42	0.27 0.36	0.31 0.40	0.36 0.47	0.30 0.38	0.34 0.42	0.40 0.52
Lot Size 1/3 Acre	0.19 0.28	0.23 0.32	0.26 0.35	0.22 0.30	0.26 0.35	0.30 0.39	0.25 0.33	0.29 0.38	0.34 0.45	0.28 0.36	0.32 0.40	0.39 0.50
Lot Size 1/2 Acre	0.16 0.25	0.20 0.29	0.24 0.32	0.19 0.28	0.23 0.32	0.28 0.36	0.22 0.31	0.27 0.35	0.32 0.42	0.26 0.34	0.30 0.38	0.37 0.48
Lot Size 1 Acre	0.14 0.22	0.19 0.26	0.22 0.29	0.17 0.24	0.21 0.28	0.26 0.34	0.20 0.28	0.25 0.32	0.31 0.40	0.24 0.31	0.29 0.35	0.35 0.46
Industrial	0.67 0.85	0.68 0.85	0.68 0.86	0.68 0.85	0.68 0.86	0.69 0.86	0.68 0.86	0.69 0.86	0.69 0.87	0.69 0.86	0.69 0.86	0.70 0.88
Commercial	0.71 0.88	0.71 0.88	0.72 0.89	0.71 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.90	0.72 0.89	0.72 0.89	0.72 0.90
Streets	0.70 0.76	0.71 0.77	0.71 0.79	0.71 0.80	0.72 0.82	0.74 0.84	0.72 0.84	0.73 0.85	0.76 0.89	0.73 0.89	0.75 0.91	0.78 0.95
Meadow	0.05 0.11	0.10 0.16	0.14 0.20	0.08 0.14	0.13 0.19	0.19 0.26	0.12 0.18	0.17 0.23	0.24 0.32	0.16 0.22	0.21 0.27	0.28 0.39
Parking	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97

<sup>a</sup> Runoff coefficients for storm recurrence intervals less than 25 years.

<sup>b</sup> Runoff coefficients for storm recurrence intervals 25 years or more.

Source: Rawls, W.J., S.L. Wong and R.H. McCuen, 1981, "Comparison of Urban Flood Frequency Procedures", Preliminary Draft, U. S. Department of Agriculture, Soil Conservation Service, Baltimore, MD.

\*Cultivated land "C" coefficients were compiled using other sources to reflect varying conditions of the ground cover due to tilling, plant growth, harvesting, maintenance, land management and similar factors.

\*\* Meadow and Grass Conditions were compiled using other sources to correspond to definitions grass and open space with SCS Methodology

**TABLE 3**  
**Roughness Coefficients (Manning's "n") for Overland Flow**  
**(U.S. Army Corps Of Engineers, HEC-1 Users Manual)**

<u>Surface Description</u>	<u>n</u>
Dense Growth	0.4-0.5
Pasture	0.3-0.4
Lawns	0.2-0.3
Bluegrass Sod	0.2-0.5
Short Grass Prairie	0.1-0.2
Sparse Vegetation	0.05-0.13
Bare Clay-Loam Soil (eroded)	0.01-0.03
Concrete/Asphalt - very shallow depths (less than 1/4 inch)	0.10- 0.15
- small depths (1/4 inch to several inches)	0.05-0.10

**Roughness Coefficients (Manning's "n") for Sheet Flow**  
**(U.S. Soil Conservation Service Technical Release 55)**

<u>Surface Description</u>	<u>n</u>
Smooth Surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)                      0.05	
Cultivated Soils:	
Residue Cover Less Than or 20%	0.06
Residue Cover Greater Than 20%	0.17
Grass:	
Short Grass Prairie	0.15
Dense Grasses	0.24
Bermuda Grass	0.41
Range (natural)	0.13
Woods:	
Light Underbrush	0.40
Dense Underbrush	0.80

**APPENDIX D**  
**SIMPLIFIED APPROACH**

# **SIMPLIFIED APPROACH**

## **For Minor Regulated Activities in Mount Pleasant Township, Adams County, Pennsylvania**

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#### **Introduction:**

This Simplified Approach has been created as a tool to help property owners manage stormwater on their property and streamline the process of designing on-site stormwater management facilities for new, relatively minor residential and accessory structure projects. Through the use of this manual, residents have the ability to determine the appropriate facilities for their property, project, and budget. This design method is not intended to be used with large-scale subdivision / land development projects or activities that include infrastructure such as roadways.

The Stormwater Best Management Practices (Stormwater BMPs) listed in this manual should be used as a guide and not a comprehensive list of options. Residents should contact Mount Pleasant Township or the Adams County Conservation District to discuss alternative solutions for site specific applications.

## I. Simplified Approach Directions

### Step 1:

- 1a Fill out Worksheet 1 (Section II) and create a Minor Stormwater Management Plan (hereinafter referred to as a “Plan”) as required under List A of the Minor Stormwater Plan Requirements (Section IV). (The Adams County Office of Planning and Development can create a map that is to scale for items 1-6 of List A, for a small fee.) Proposed impervious areas shall be drawn on the plan by hand by the applicant.
- 1b Fill out columns 1-3 on the “Record of Impervious” (Section III) (hereinafter referred to as the “Record”) Impervious area is defined under section 306.R of the Mount Pleasant Township Stormwater Management Ordinance. (The impervious area number/letter on the Record (column 1) shall correspond to the impervious area number/letter shown on the Plan as dictated under plan requirements.)
- 1c If the total cumulative impervious surface area added since the adoption date of this ordinance is **less than or equal to 1,000 ft<sup>2</sup>**, the project may be eligible for an exemption from additional stormwater management requirements of the Simplified Approach and the Mount Pleasant Township SWM Ordinance. In this case, file Worksheet 1, the Record, and the Plan with Mount Pleasant Township. If the total cumulative impervious surface area added since the adoption date of this ordinance is **greater than 1,000 ft<sup>2</sup> and less than or equal to 5,000 ft<sup>2</sup>** continue to Step 2.

### Step 2:

- 2a Complete the Additional Requirements for “complete” Minor Stormwater Management Plan (Section IV) (“complete” Plan). Determine if any of the proposed impervious areas are Disconnected Impervious Areas (hereinafter referred to as DIAs) (Section VI). The DIA flow paths and contributory areas must be shown on the Plan.
- 2b Fill out column 4 of the Record. If all proposed impervious areas meet the requirements for DIA, the project may be eligible for exemption from additional stormwater management requirements of the Simplified Approach and the Mount Pleasant Township Ordinance. Complete and Sign the O&M agreement (Section VIII) and file with Mount Pleasant Township along with Worksheet 1, the Record and “complete” Plan. If the proposed or Record impervious surface area is **greater than 1,000 ft<sup>2</sup> and less than or equal to 5,000 ft<sup>2</sup>, and cannot be completely disconnected**, continue to Step 3.

### Step 3:

- 3a If the proposed impervious surface cannot be completely disconnected, calculate the volume of stormwater runoff required to be captured by Stormwater BMPs. Multiply the contributory square footage of impervious draining to the BMP by 0.25 (Column 2 x 0.25 = Column 5).
- 3b Using the “Chart for Determining BMP sizing” based on Volume Required (Section VII) and standard details (Section IX), choose the BMP and size required for each contributory impervious area. The standard details are not a comprehensive list of stormwater BMP’s available. Additional information and variation is located in the *Guide to Choosing Stormwater BMPs* in Appendix C of the Adams County Act 167 Stormwater Management Plan). It is the applicant’s responsibility to select a facility and determine the appropriate size.
- 3c Complete and sign the O&M agreement and file with Mount Pleasant Township along with the Worksheet 1, the Record and “complete” Plan.

## II. Worksheet 1 (Application and Permit)

Property Owner's Name: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Address of Property: \_\_\_\_\_

Address of Owner: \_\_\_\_\_

Contact Phone Number (if different than the Owner): \_\_\_\_\_

Contact Email: \_\_\_\_\_

Parcel ID #: \_\_\_\_\_

Total Existing Impervious on the Property: \_\_\_\_\_

Total Impervious on the Lot after Project: \_\_\_\_\_

New Impervious Area Associated with this Project: \_\_\_\_\_

Stormwater Management Submission Type:

\_\_\_\_\_ Minor Stormwater Site Plan – List A (proposed impervious < 1,000 s.f. )

\_\_\_\_\_ Minor Stormwater Site Plan- “Complete” (1000 s.f. < proposed impervious > 5000 s.f.)

Are there any known existing drainage problems or the potential for the proposed project to create drainage problems? (if yes please explain) \_\_\_\_\_

### *Declaration and Acknowledgement:*

- I (we) declare that I am the property owner, or representative of the owner, and that the information provided is accurate to the best of my knowledge. I (we) agree to assume full responsibility for the implementation. I (we) understand that stormwater may not adversely affect adjacent properties or be directed onto another property without written permission. I (we) declare that the proposed project will not adversely affect any, septic systems, or drinking water wells on this or any other property.
- I (we) understand that false information may result in a stop work order or revocation of permits. Municipal representatives are granted reasonable access to the property for review and/ or inspection of this project. I (we) acknowledge that the steps, assumptions, and guidelines provided in this submission, including but not limited to the Minor Stormwater Site Plan, the Mount Pleasant Township Stormwater Worksheet 1, Record of Proposed Impervious and the Stormwater Management / BMP Facilities and Maintenance Agreement (if applicable) will be adhered to.

Applicant Acknowledgement of Submission:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

- Development activities shall begin only after Mount Pleasant Township approves the Minor Stormwater Site Plan.

Permit approved by Mount Pleasant Township

Township Official Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

### III. Record of Impervious

Record of Impervious							
List A				"Complete" Minor Stormwater Management Plan			
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Number/Letter (impervious area corresponding to Minor Stormwater Management Plan)	Area of Impervious (ft <sup>2</sup> )	Description (Roof, Patio, Pavement, Driveway, Gravel, etc.)	Does the Impervious Area Meet the Requirements to be Disconnected? (yes/no)	Contributory Area Storage Requirement; Storage (ft <sup>3</sup> ) = Column 2 x .25	BMP used to Control Required Volume (ft <sup>3</sup> )	BMP Size Requirement from Chart for Determining BMPs Sizing Based on Volume Required	Notes (minimum date)
Proposed Impervious Since Adoption Date Of This Ordinance							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
Existing Impervious Before Adoption Date Of This Ordinance							
A							
B							
C							
D							
E							
F							
G							
H							
I							
J							

## **IV. Minor Stormwater Management Plan Requirements**

All projects require the submission of a Minor Stormwater Site Plan with the items required under List A, Worksheet 1, and the “Record of Proposed Impervious (since adoption date of this Ordinance)”. If the proposed project requires stormwater management BMPs, the applicant may prepare and submit to Mount Pleasant Township a “complete” Minor Stormwater Site Plan as defined under additional requirement below, Worksheet 1, the “Record of Proposed Impervious (since adoption date of this Ordinance)”, Owner’s Acknowledgement and Stormwater Mangement/BMP Facilities Maintenance Agreement.

The Adams County Office of Planning and Development can provide assistance to applicants to obtain property maps with the below required items. Two copies shall be submitted to the Municipality. A Minor Stormwater Site Plan must show the following:

### **List A:**

1. Property Boundary
2. North Arrow and Scale (graphic) of 1”=50’ or less.
3. Aerial Photo (if the land use has changed from the photo then draw in the approximate land uses (grass, woods, etc.).
4. Building Setbacks (Labeled)
5. 5’ Contours or smaller where appropriate for the scale of the plan (Labeled)
6. Soils (Labeled)
7. Location of all existing and proposed impervious (home, accessory structures, driveways, etc.).  
The proposed impervious areas draining to a discharge point shall be numbered (1, 2, .... ) and the location of discharge from the existing and proposed impervious shall be shown, marked with an “x” or appropriate other symbol. The proposed impervious area reference number shown on the Minor Stormwater Management Plan shall correspond to the number on the Record sheet. The proposed impervious area on the plan shall be dimensioned.

### **Additional Requirements for “complete” Minor Stormwater Mangement Plan:**

1. Slope/flow direction arrows on and 50 feet beyond the property (If the property is of substantial size and the proposed impervious is within the lot interior the slope/flow direction arrows shall be shown for minimum of 100 ft beyond the site Regulated Activity area.)
2. Distance from proposed downspouts along flow path to property lines, drainage ways (natural or manmade), wooded areas, offsite structures on and 50 feet beyond the property line (If applying for the DIA credit, label the DIA flow path and length on the plan.)
3. Natural features such as drainage ways, streams, wetlands, on and 50 feet beyond the property line
4. Any other pertinent information that may be significant to the project site (steep slopes, etc.)
5. Wells and on-site septic systems
6. Size and location of stormwater BMP’s with dimensions and details (as required)
7. Soil hydrologic soil group (listed under the soil)
8. Any existing and proposed structures first floor elevations
9. Grading spot elevations and or contours defining the proposed flow characteristics
10. Approximate distance from house and elevation of proposed stormwater BMPs and overflow paths for storms greater than 2 year events

## **V. Simplified Approach Review and Approval Process**

- A. The property owner shall complete Worksheet 1, the Record of Proposed Impervious, and the Minor Stormwater Management Plan in accordance with the Simplified Approach instructions for each element. The property owner shall submit this material, along with the applicable fee, to Mount Pleasant Township. The application shall not be considered to be complete unless it includes all of the information required.
- B. Upon receipt of a complete application, the official designated by Mount Pleasant Township to administer the Simplified Approach process shall review the application against the requirements applicable to Simplified Approach submissions. The designated official shall approve the application if the application conforms to applicable requirements. The designated official shall deny the application if the application does not conform to applicable requirements. Any denial shall be in writing and shall state the reasons for such denial.
- C. The designated official shall approve or deny the complete application within fifteen (15) working days of the date of filing.
- D. The property owner may, in response to denied Simplified Approach submission, resubmit the application with revisions necessary to address the reasons for denial. Any such revised application shall be reviewed in accordance with Parts B and C above.
- E. Upon approval of a complete application, the designated official shall require the property owner to complete the Owner's Acknowledgement form. Upon receipt of the signed form, the designated official shall acknowledge such receipt. Once the Owner's Acknowledgement form is signed and its receipt acknowledged, the property owner is authorized to initiate construction of the approved project.

## **VI. How to Determine a Disconnected Impervious Area (DIA)**

When impervious surface areas like rooftops and paved areas are directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the impervious surface areas may qualify to be treated as Disconnected Impervious Area (DIAs).

**Disconnected Impervious Area:** Impervious is considered to be disconnected if it meets the requirements listed below:

- The contributing impervious drainage area is less than 500 SF.
- The overland flow path from runoff discharge point has a slope of five percent (5%) or less.
- Soils along the overland flow path are not classified as hydrologic group “D”
- The overland flow path is maintained as at least 90% uniformly vegetated condition.
- The receiving pervious area shall not include another person’s property unless written permission has been obtained from the affected property owner.
- The length of flow path must be 75’ in length for lots over 10,000 SF and 35’ for lots under 10,000 SF for disconnection.
- The distance between discharge points and flow paths must be and remain a minimum of 8’ apart for entire 75’.

**Section VI. Chart for Determining BMP Sizing (Revised 10/27/2015)**

BMP							
	Rain Garden/ BioRetention	Infiltration Trench	Infiltration Bed	Infiltration Berm	Rain Barrel (55 Gal Typ)	PA Native Deciduous Tree*	PA Native Evergreen Tree*
Variable Determining Size							
Volume Required (ft <sup>3</sup> )	Area (ft <sup>2</sup> )	Length (ft)	Area (ft <sup>2</sup> )	Length (ft)	Quantity (ea)	Quantity (ea)	Quantity (ea)
50	36	31	83	11	7	8	5
100	84	63	167	22	14	17	10
150	132	94	250	33	20	25	15
200	178	125	333	44	27	33	20
250	228	156	417	56	34	42	25
300	278	188	500	67	41	50	30
350	326	219	583	78	48	58	35
400	377	250	667	89	54	67	40
450	427	281	750	100	61	75	45
500	477	313	833	111	68	83	50
550	529	344	917	122	75	92	55
600	581	375	1000	133	82	100	60
650	630	406	1083	144	88	N/A	N/A
700	679	437	1167	156	95	N/A	N/A
750	729	469	1250	167	102	N/A	N/A
800	781	500	1333	178	109	N/A	N/A
850	827	531	1417	189	116	N/A	N/A
900	880	562	1500	200	122	N/A	N/A
950	933	594	1583	211	129	N/A	N/A
1000	983	625	1667	222	136	N/A	N/A
1050	983	656	1750	233	143	N/A	N/A
1100	1086	687	1833	244	150	N/A	N/A
1150	1136	719	1917	256	156	N/A	N/A
1200	1187	750	2000	267	163	N/A	N/A
1250	1239	781	2083	278	170	N/A	N/A
1300	1289	812	2167	289	177	N/A	N/A
1350	1340	844	2250	300	184	N/A	N/A
1400	1391	875	2333	311	190	N/A	N/A
1450	1444	906	2417	322	197	N/A	N/A
1500	1494	937	2500	333	204	N/A	N/A
1550	1544	969	2583	344	211	N/A	N/A
1600	1596	1000	2667	356	218	N/A	N/A
1650	1648	1031	2750	367	224	N/A	N/A
1700	1702	1062	2833	378	231	N/A	N/A
1750	1751	1094	2917	389	238	N/A	N/A
1800	1802	1125	3000	400	245	N/A	N/A
1850	1853	1156	3083	411	252	N/A	N/A
1900	1905	1187	3167	422	258	N/A	N/A
1950	1958	1218	3250	433	265	N/A	N/A
2000	2007	1250	3333	444	272	N/A	N/A
2050	2061	1281	3417	456	279	N/A	N/A
2100	2111	1312	3500	467	286	N/A	N/A
2150	2162	1343	3583	478	292	N/A	N/A
2200	2214	1375	3667	489	299	N/A	N/A
2250	2264	1406	3750	500	306	N/A	N/A
2300	2318	1437	3833	511	313	N/A	N/A
2350	2369	1468	3917	522	320	N/A	N/A
2400	2421	1500	4000	533	326	N/A	N/A
2450	2470	1531	4083	544	333	N/A	N/A
2500	2525	1562	4167	556	340	N/A	N/A

\*No more than 25% of total volume can be mitigated by use of trees

## **VIII. Stormwater Management/ BMP Facilities Operation and Maintenance Agreement**

**THIS AGREEMENT**, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_ hereinafter called the “Landowner,” and Mount Pleasant Township, Adams County, Pennsylvania, hereinafter called the Mount Pleasant Township.

**WHEREAS**, the Landowner is the owner of certain real property described as (Adams County Tax Map / Parcel Identification Number) \_\_\_\_\_ as recorded by deed in the land records of Adams County, Pennsylvania, Book \_\_\_\_\_ Page \_\_\_\_\_, hereinafter called the “Property”;

**WHEREAS**, the Landowner is proceeding to build on and develop the property; and

**WHEREAS**, the Minor Stormwater Site Plan, which is expressly made a part hereof, as approved or to be approved by Mount Pleasant Township, provides for detention of stormwater within the confines of the property through the use of Stormwater Best Management Practices (Stormwater BMPs); and

**WHEREAS**, Mount Pleasant Township and the Landowner, its successors and assigns, agree that the health, safety, and welfare of the residents of Mount Pleasant Township, require that on-site Stormwater BMPs be constructed and maintained on the Property; and

**WHEREAS**, Mount Pleasant Township requires that on-site Stormwater BMPs as shown on the Plan be constructed and adequately maintained by the Landowner, its successors and assigns. Any additional requirements imposed by Mount Pleasant Township are considered part of the Plan.

**NOW, THEREFORE**, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner in accordance with the specifications identified within the Plan shall construct the onsite Stormwater BMPs.
2. The applicant assumes full responsibility for the construction, operation, and maintenance of the proposed stormwater management facilities.
3. The Landowner, its successors and assigns, shall adequately maintain the Stormwater BMPs. This includes all pipes and channels built to convey stormwater to the facility, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenance is herein defined as good working condition so that these facilities are performing their design functions.
4. The Landowner, its successors and assigns, shall inspect the Stormwater BMPs after all rainfall events exceeding one inch of precipitation in a 24-hour period.
5. The Landowner, its successors and assigns, hereby grant permission to Mount Pleasant Township, its authorized agents and employees, to enter upon the Property without prior notification at reasonable times and upon presentation of proper identification to inspect the Stormwater BMPs whenever Mount Pleasant Township deems necessary.

6. The Landowner acknowledges that the proposed Stormwater BMPs will be a permanent fixture of the property that cannot be altered or removed without approval by Mount Pleasant Township.

7. In the event the Landowner, its successors and assigns, fails to maintain the Stormwater BMPs as shown on the Plan and in good working condition, Mount Pleasant Township may enter upon the Property and take whatever action is deemed necessary to maintain said Stormwater BMPs and to charge the costs of such repairs to the Landowner, its successors and assigns. This provision shall not be construed to allow Mount Pleasant Township to erect any structure of permanent nature on the land of the Landowner unless such structures were part of the approved Plan. It is expressly understood and agreed that Mount Pleasant Township is under no obligation to routinely maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on Mount Pleasant Township.

8. In the event that Mount Pleasant Township, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse Mount Pleasant Township within thirty (30) days of receipt of invoice for all expenses incurred. Mount Pleasant Township has the right to file a municipal lien for unpaid costs and expenses that have not been reimbursed thirty (30) days after receipt of invoice.

9. The intent and purpose of this Agreement is to ensure the proper maintenance of the Stormwater BMPs by the Landowner. This Agreement shall not be deemed to create any additional liability of any party for damage alleged to result from or be caused by nonpoint source pollution runoff. This Agreement imposes no liability of any kind whatsoever on Mount Pleasant Township and the Landowner agrees to hold Mount Pleasant Township harmless from any liability in the event the Stormwater BMPs fail to operate properly. In the event that a claim is asserted against Mount Pleasant Township, its designated representatives or employees, Mount Pleasant Township shall promptly notify the Landowner and the Landowner shall defend, at his own expense, any suit based on the claim. If any judgment or claims against Mount Pleasant Township shall be allowed, the Landowner shall pay all costs and expenses regarding said judgment.

10. This Agreement shall be binding to the Landowner, its administrators, executors, assigns, heirs and any other successors in interests, in perpetuity.

**Landowner:**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

**Mount Pleasant Township:**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

## **IX. Standard Details**



**DESIGN NOTE:**  
HOME OWNER TO CHOOSE LENGTH OF THE BERM REQUIRED BASED ON THE VOLUME REQUIRED PER THE BMP SIZING CHART. BERMS SHALL BE INSTALLED PARALLEL TO THE EXISTING CONTOUR SUCH THAT THE TOP OF BERM IS INSTALLED AT A UNIFORM ELEVATION.

CONTRACTOR'S OPTION: THE CONTRACTOR MAY CHOOSE TO STRIP THE SOD OFF OF THE FOOTPRINT AREA OF THE INFILTRATION BERM FOR REUSE AS STABILIZATION OF 3:1 EMBANKMENTS. IF EXISTING SOD IS NOT USED, THE DEVELOPER SHALL STABILIZE THE EMBANKMENTS WITH TEMPORARY MATTING, SEEDING AND MULCHING PER ADAMS COUNTY CONSERVATION DISTRICT REQUIREMENTS.

SOD OR PROVIDE TOPSOIL AND SEEDING STABILIZED WITH TEMPORARY NA GREEN S75 MATTING THROUGHOUT ENTIRE BERM.

AREA OF BERM FILL SHALL BE PLACED IN 6" LIFTS AND COMPACTED

EXISTING GROUND (SLOPE VARIES)

FLOWS TO ENTER BERM BY OVERLAND FLOW, SWALE OR 4"-6" PVC PIPE FROM YARD DRAIN OR ROOF LEADER

THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS SO AS NOT TO COMPACT INNER BASIN SUBGRADE AREAS. HEAVY EQUIPMENT SHOULD BE KEPT OUT OF THESE AREAS.

PROVIDE 1' X 1' TRENCH KEY AT BERM TOE

### INFILTRATION BERM DETAIL

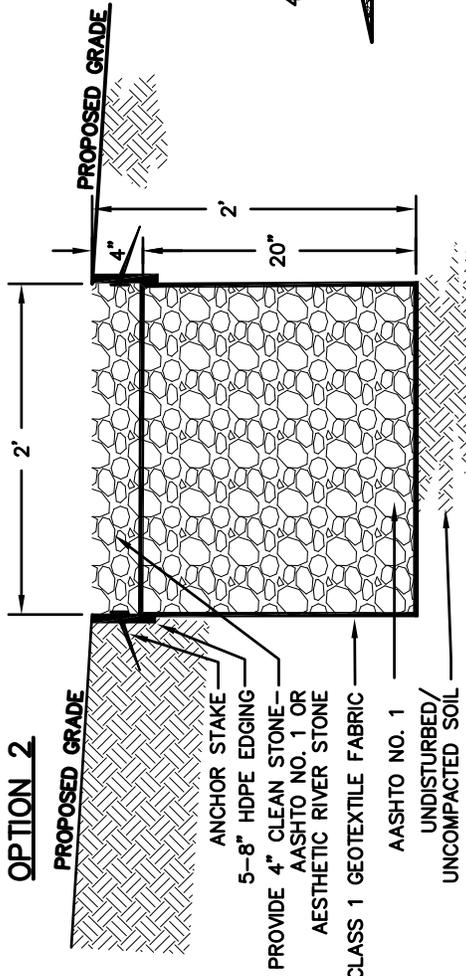
(N.T.S.)

**NOTES:**

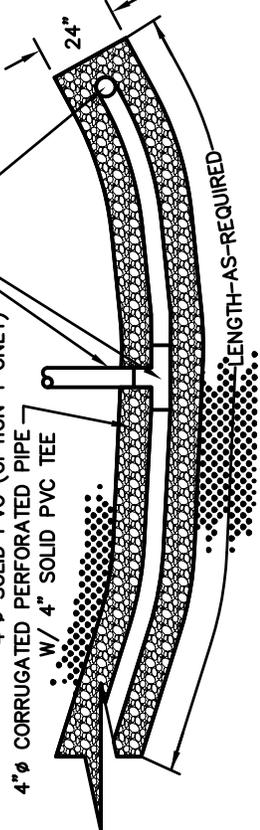
1. REMOVE TOPSOIL IN AREA OF INSTALLATION OF BERM AND STOCKPILE ABOVE. PERFORM EXCAVATION OF SUBGRADE. OVER EXCAVATING BERM BY 6" AND REPLACE WITH STOCKPILED SOIL.
2. SOIL IN THE INFILTRATION BERM BOTTOM SHOULD NOT BE COMPACTED. IF THE SUBGRADE BECOMES COMPACTED FOR ANY REASON, THE SOIL SHALL BE SCARIFIED PRIOR TO SEEDING.
3. SEDIMENT ACCUMULATION SHALL BE MONITORED SEASONALLY.
4. WHEN SEDIMENT ACCUMULATES TO A DEPTH OF 3" IN THE BERM, IT SHALL BE REMOVED.
5. BERM SOILS SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER.
6. BERMS SHALL BE KEPT FREE FROM NOXIOUS WEEDS AND INVASIVE SPECIES
7. BERMS SHOULD BE MOWED ANNUALLY OR BIANNUALLY

# SIMPLIFIED APPROACH STANDARD DETAIL INFILTRATION BERM

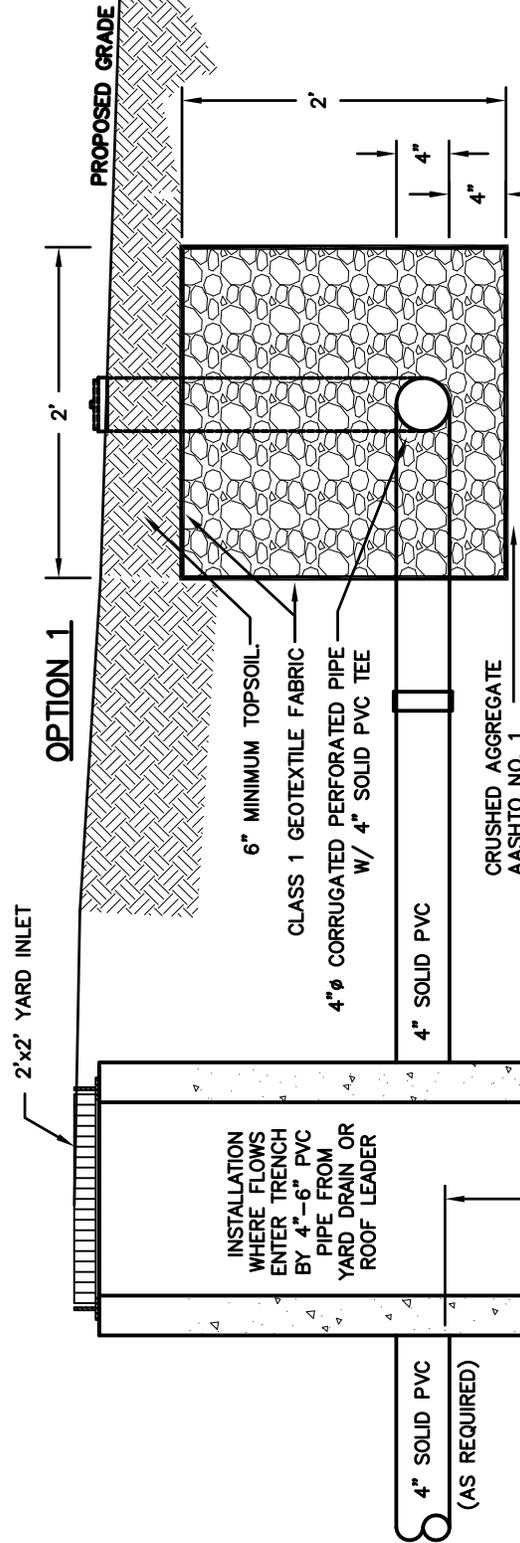
**DESIGN NOTE:**  
 CHOOSE TRENCH LENGTH TO MEET REQUIREMENT PER THE BMP SIZING CHART. TRENCHES SHALL BE INSTALLED PARALLEL TO THE EXISTING CONTOUR SUCH THAT THE TOP OF TRENCH IS INSTALLED AT A UNIFORM ELEVATION.



4" CLEANOUT ON AT THE END OF PERFORATED END SECTIONS (OPTION 1 ONLY)  
 4" TEE (OPTION 1 ONLY)  
 4" Ø CORRUGATED PERFORATED PIPE W/ 4" SOLID PVC TEE  
 24"

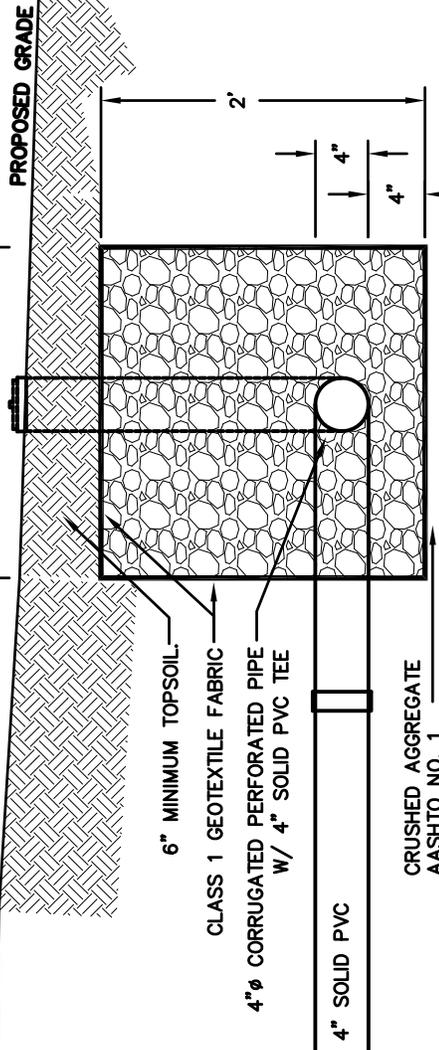


**PLAN VIEW**



**OPTION 1**

2'x2' YARD INLET



PROPOSED GRADE

INSTALLATION WHERE FLOWS ENTER TRENCH BY 4"-6" PVC PIPE FROM YARD DRAIN OR ROOF LEADER

4" SOLID PVC (AS REQUIRED)

CRUSHED AGGREGATE AASHTO NO. 1

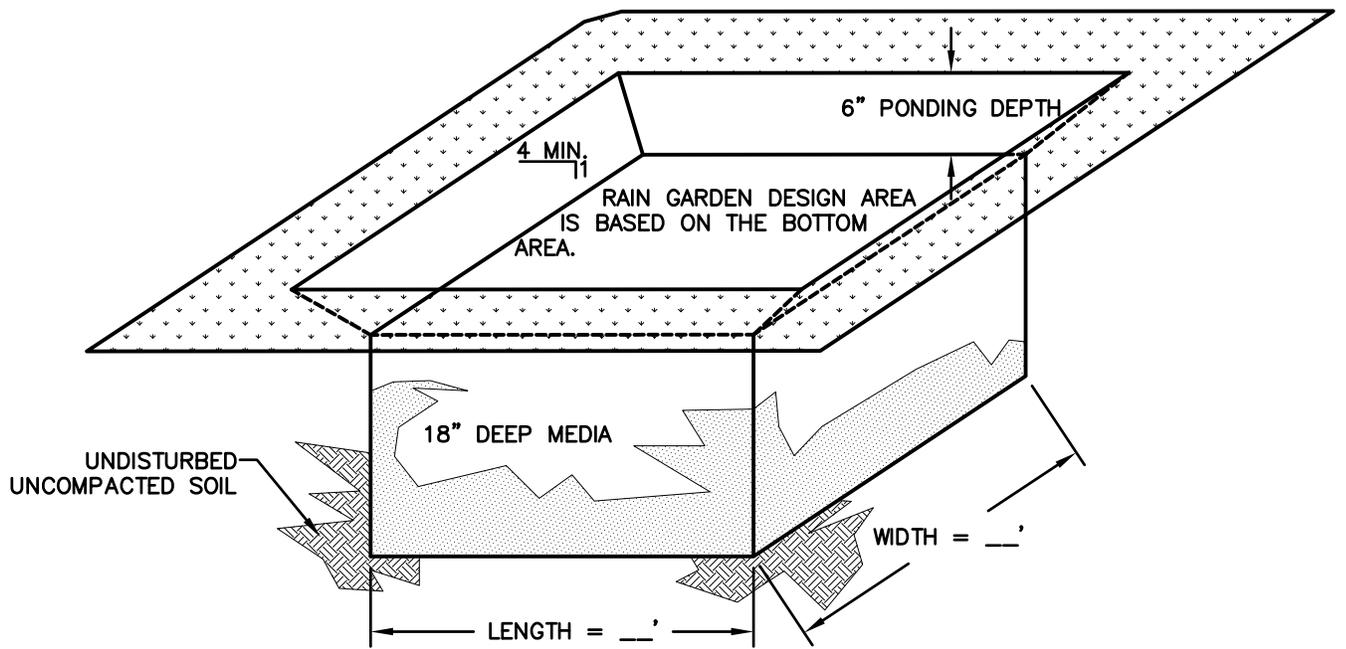
**NOTES:**

1. INFILTRATION TRENCHES TO BE INSTALLED IN UNDISTURBED SOIL. CONTINUOUS TRENCHES SHALL BE INSTALLED PARALLEL TO THE CONTOUR SUCH THAT THE TRENCH IS AT A UNIFORM ELEVATION THROUGHOUT.
2. SUBGRADE BELOW THE INFILTRATION TRENCH SHOULD NOT BE COMPACTED. IF THE SUBGRADE BECOMES COMPACTED FOR ANY REASON, THE SOIL SHALL BE SCARIFIED PRIOR TO CONSTRUCTING THE BED.
3. SEDIMENT ACCUMULATION SHALL BE MONITORED SEASONALLY.
4. PENDING THE INSTALLATION TYPE WHEN SEDIMENT ACCUMULATES TO A DEPTH OF 18" IN THE YARD BASIN, OR AS THE TOP 4" OF RIVER STONE OR AASHTO STONE ARE CHOKED WITH DEBRIS AND SEDIMENT, IT SHALL BE REMOVED.

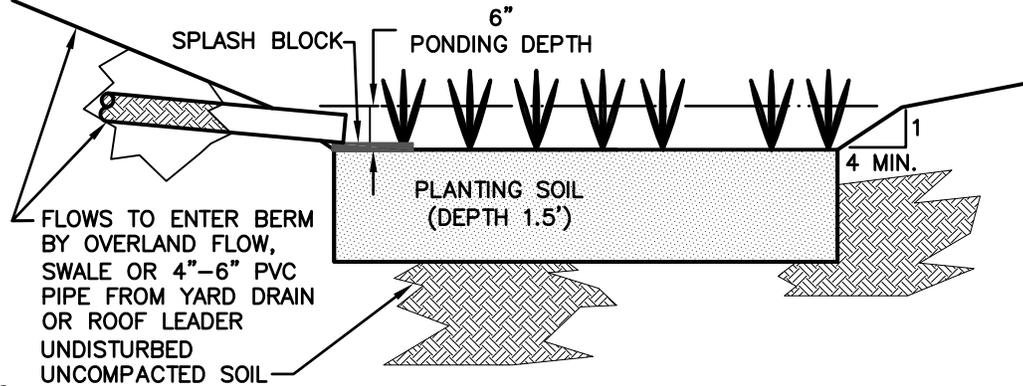
4"  
 1" WEEP HOLE 2 PER SIDE  
 24" X 24" PennDOT 2A STONE BED

**INFILTRATION TRENCH**  
 N.T.S.

**SIMPLIFIED APPROACH STANDARD DETAIL**  
**INFILTRATION TRENCH**



**DESIGN NOTE:**  
 CHOOSE LENGTH AND WIDTH TO MEET AREA REQUIREMENT PER THE BMP SIZING CHART. BERMS SHALL BE INSTALLED PARALLEL TO THE EXISTING CONTOUR SUCH THAT THE TOP OF BERM IS INSTALLED AT A UNIFORM ELEVATION.



**NOTES:**

1. PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX. RATIO FOR RAIN GARDEN SOIL MIX SHOULD CONTAIN AN APPROXIMATE RATIO OF 50% SAND, 30% COMPOST AND 20% NATIVE SOILS
2. THE SOILS SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER.
3. BRUSH OR SEEDS FROM NOXIOUS WEEDS SHALL NOT BE PRESENT IN THE SOILS.
4. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 9" LIFTS THAT ARE LOOSELY COMPACTED.
5. BIO-RETENTION AREA MUST BE PROTECTED FROM EROSION/SEDIMENTATION DURING CONSTRUCTION.
6. WET PLANTINGS IN RAIN GARDEN SHOULD BE NATIVE TO PA. DIRECTION FOR PLANTING SCHEDULE AND DENSITY BASED ON SITE CONDITIONS (SUN/SHADE/APPEAL) CAN BE OBTAINED FROM THE ADAMS COUNTY CONSERVATION DISTRICT
7. SUBGRADE IN THE RAIN GARDEN BOTTOM SHOULD NOT BE COMPACTED. IF THE SUBGRADE BECOMES COMPACTED FOR ANY REASON, IT SHALL BE SCARIFIED PRIOR TO SOIL PLACEMENT
8. IN BOROUGH'S WHERE INFILTRATION MAY BE IMPOSSIBLE DUE TO SOIL CONDITIONS OR BASEMENTS, IT IS RECOMMENDED THAT A 60 MIL HDPE POND LINER BE INSTALLED ALONG WITH 30" OF PLANTING SOIL MEDIA.

**RAIN GARDEN**

N.T.S.

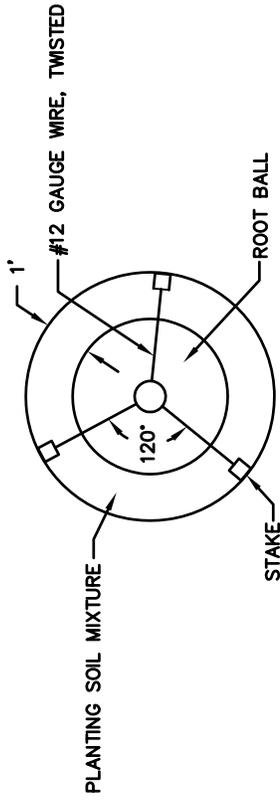
**SIMPLIFIED APPROACH STANDARD DETAIL**

**RAIN GARDEN**

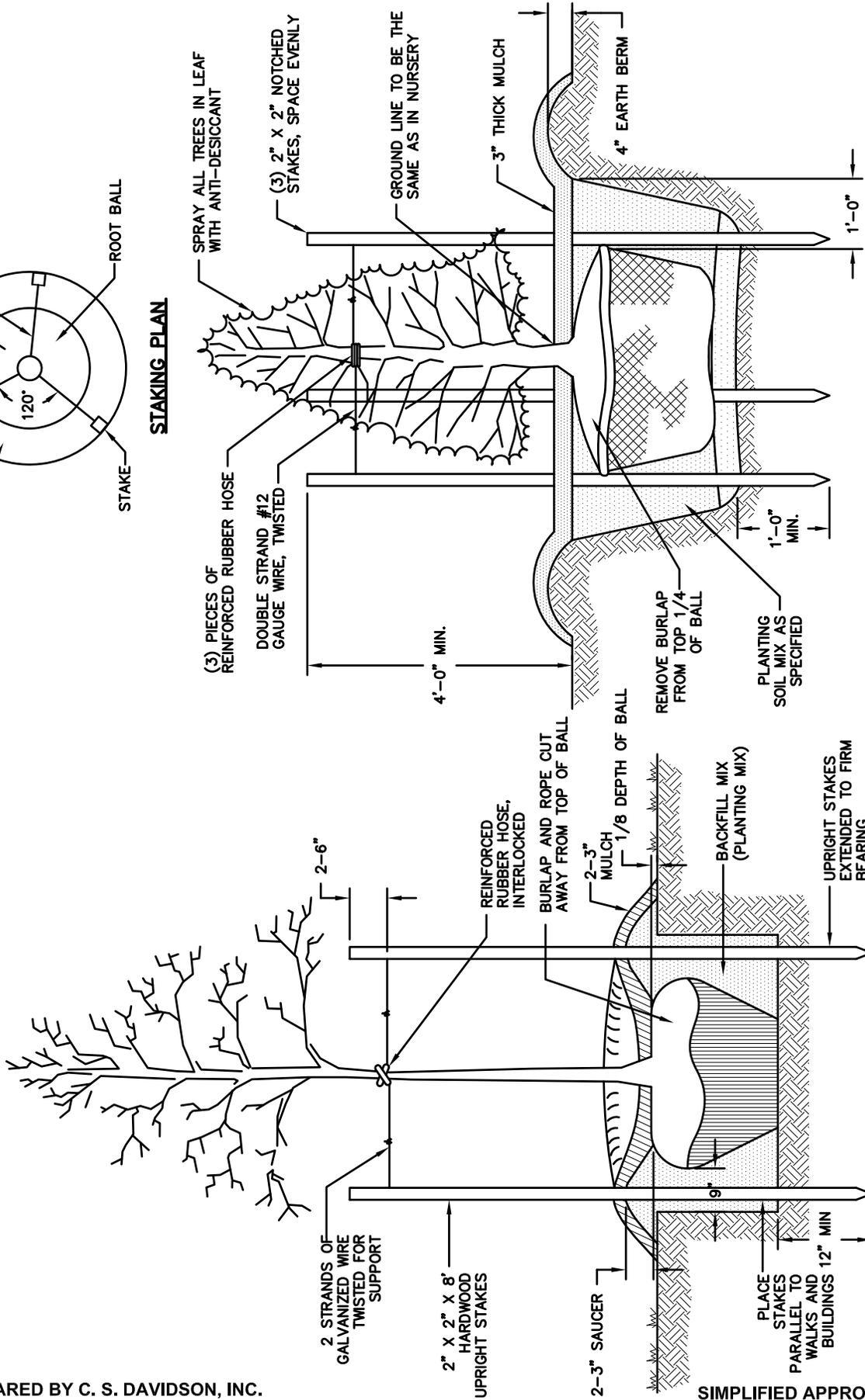
**DESIGN NOTE:**

TREES MUST BE PA NATIVE SPECIES, A MINIMUM OF 1" CALIPER. DEAD TREES SHALL BE REPLACED BY PROPERTY OWNER WITHIN A MINIMUM OF 12 MONTHS. NO MORE THAN 25% OF VOLUME REQUIREMENT CAN BE TAKEN FOR TREE PLANTING.

DRAWING PREPARED BY C. S. DAVIDSON, INC.



**STAKING PLAN**



**NOTES:**

1. SPRAY ALL TREES IN LEAF WITH ANTI-DESSICANT PRIOR TO PLANTING.
2. FLOOD SAUCER WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

**NOTE:**

1. FLOOD SAUCER WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

**DECIDUOUS TREE PLANTING DETAIL**

N.T.S.

**EVERGREEN TREE PLANTING DETAIL**

N.T.S.

SIMPLIFIED APPROACH DETAILS.dwg

DATE: JULY 2012

**SIMPLIFIED APPROACH STANDARD DETAIL  
TREE PLANTING**

**ARTICLE VIII: ENACTMENT**

The Mount Pleasant Township Stormwater Management Ordinance shall be effective on November 20, 2012.

ENACTED AND ORDAINED into an Ordinance this 15th day of November, 2012.

ATTEST:

MOUNT PLEASANT TOWNSHIP  
ADAMS COUNTY,  
PENNSYLVANIA

by the

MOUNT PLEASANT TOWNSHIP  
SUPERVISORS

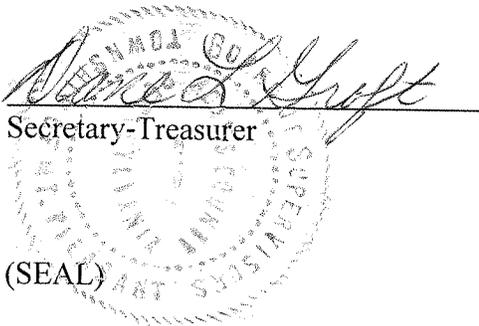
*Richard Fluegel*  
Vice Chairman

*C. A. Wibr*  
Supervisor

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*David L. Graft*  
Secretary-Treasurer

(SEAL)

The seal is circular with a double-line border. The outer ring contains the text "MOUNT PLEASANT TOWNSHIP SUPERVISORS" at the top and "ADAMS COUNTY, PENNSYLVANIA" at the bottom. The center of the seal features a smaller circular emblem with a landscape scene, including a building and trees, surrounded by the words "TOWNSHIP" and "SUPERVISORS".