

Public and Private Improvements Code

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Part 1

Administration and Enforcement

101. Title.

These regulations shall be known as and referred to as the "Township of Hanover Public and Private Improvements Code."

102. General Purposes.

The general purposes of these regulations are to:

- A. Establish construction standards and specifications governing the construction of public and private improvements in the Township that fall under the jurisdiction of the Hanover Township Subdivision and Land Development Ordinance or other Township ordinances or regulations.
- B. Control the construction and installation of public and private improvements in the Township by developers and public utility companies.
- C. Control the acceptance of public improvements.
- D. Control the satisfactory completion of private improvements.

103. Interpretation of the Provisions of the Code.

The Township shall be responsible for the administration, enforcement and interpretation of the Code.

104. Applicability.

These regulations shall be applicable to the construction of all public and private improvements in the Township.

105. Construction of Public and Private Improvements.

Public and private improvements constructed by any person or entity including a developer shall be constructed in accordance with this Code.

106. Control of Construction of Public and Private Improvements by Developers.

All construction of public and private improvements in the Township by developers shall be conducted in accordance with this Code.

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- A. *Notice Prior to Start of Work.* In order that the Township may provide proper inspection and emergency services during construction, the developer shall file with the Township a notice of commencement not less than 2 days prior to start of work and shall also submit the following:
1. Names, addresses and telephone numbers of the superintendent, contractor and subcontractors and other responsible persons to be contacted in case of emergencies.
 2. A general schedule of construction which is to be updated during construction if changes are made.
- B. *Supervision and Superintendence.*
1. The developer shall supervise and direct the work and be solely responsible to see that the work is done in accordance with the construction standards and specifications.
 2. The developer shall have available at all times while construction is continuing a competent superintendent, who may be contacted during an emergency. The superintendent will be the developer's representative at the site and shall have authority to act on behalf of the developer. All communications given to the superintendent shall be as binding as if given to the developer. If the superintendent is replaced, the developer shall give written notice thereof to the Township immediately.
 3. The developer shall be fully responsible for the acts and omissions of the contractors, subcontractors, persons and organizations directly or indirectly in his employ.
- C. *Site Appearance.* The developer shall keep the site free from accumulation of waste materials, rubbish and other debris resulting from the work. At the completion of the work, the developer shall remove all waste materials, rubbish and debris from and about the site as well as all tools, construction equipment and machinery, and surplus materials and shall leave the site clean.
- D. *Parking.* No construction vehicles, vehicles of construction employees, equipment, materials or supplies shall encroach onto a public street. In the case where there is a private street or proposed public street, not yet accepted by the Township, the developer shall maintain an 18-foot unobstructed clear path on such street for emergency vehicle purposes.
- E. *Hours of Construction.* The operation of heavy construction or excavation machinery including, but not limited to, bulldozers, high-lifts, backhoes, trucks, power shovels, pumps and jack hammers, and the operation of equipment such as saws and drills or any other type of machinery in conjunction with the construction of public and private

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improvements, which causes noise sufficient to disturb the peace and general tranquility of the general public shall be prohibited in the entire Township between the hours of 9 p.m. and 7 a.m., Monday through Saturday, and all day Sunday.

- F. *Dust Control.* The developer shall maintain the site so as to control the dust. The developer shall employ measures necessary to control dust. At the Township's direction the Township may require routine maintenance of the site for dust control should in the opinion of the Township the developer is not maintaining the site in a reasonable manner.
- G. *Responsibility for Compliance.* The developer shall have the sole responsibility to comply with all Federal, State, and local laws, and the Township disclaims any duty to enforce any violation of such laws or inform the developer of non-compliance.

107. Control of Construction of Utilities by Public Utility Companies.

A Township road occupancy permit is required for the installation of any utilities within an existing public street in accordance with the procedures and requirements set forth in this Code.

108. Violations and Penalties.

- A. It shall be unlawful for any developer or public utility company to construct public or private improvements regulated by this Code, or cause the same to be done, in conflict with or in violation of any of the provisions of this Code or any other law or ordinance of Hanover Township.
- B. *Notice of Violation.* The Township shall serve a notice of violation or order on the developer or utility company responsible for the violation of the provisions of this Code or of the plans approved thereunder. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation.
- C. Any person who shall violate a provision of this Part or who shall fail to comply with any requirement thereof, upon conviction thereof in an action brought before a district judge in the manner provided for the enforcement of summary offenses under the Pennsylvania Rules of Criminal Procedure, shall be sentenced to pay a fine of not more than \$1,000 plus costs and, in default of payment of said fine and costs, to a term of imprisonment not to exceed 90 days. Each day that a violation of this Part continues or each Section of this Part which shall be found to have been violated shall constitute a separate offense.
- D. *Abatement of Violation.* The imposition of the penalties herein prescribed shall not preclude the Township from instituting appropriate action to prevent unlawful construction or to restrain, correct or abate a violation or to stop an illegal act.

109. Stop Work Order.

- A. *Notice to Stop Work.* Upon notice from the Township that work on the installation of public or private improvements is being prosecuted contrary to the provisions of this

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Code, such work shall be immediately stopped. The stop work order shall be in writing and shall be given to the developer, or to the person doing the work. The stop work order shall state the conditions under which the work may be resumed.

- B. *Unlawful Continuance.* Any person who shall continue any work in or about a work site after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe conditions, shall be liable to the violations and penalties set forth herein.

110. Procedure for Acceptance of Public Improvements.

The procedure for acceptance of public improvements shall be in accordance with the Subdivision and Land Development Ordinance.

111. Enactment of Amendments to this Code.

This Code may be amended by action of the Supervisors in accordance with this Code; however the construction standards in Part 4 of this Code as they pertain to any particular public improvement may be amended by Resolution of the Supervisors upon recommendation of the Township Engineer.

112. Mediation of Disputes.

- A. Should there arise any dispute between the developer or the Township with regard to any provisions of this Code the developer and Township may elect to use the provisions of this Section to mediate such dispute. Participation in mediation shall be wholly voluntary. The appropriateness of mediation shall be determined by the particulars of each case and the willingness of the parties to negotiate.
- B. Parties agreeing to enter into mediation shall first enter into a written mediation agreement containing at least the following minimum provisions.
 - 1. Identification of the selected mediator who, at a minimum, shall have a working knowledge of municipal zoning and subdivision procedures, and engineering practices. The mediator shall have demonstrated skills in mediation.
 - 2. Time frame in which the mediation will be conducted and completed.
 - 3. Provisions for suspension of time limits if necessary, for applications subject to the same in regards to subdivision, land development, PRD or other application or procedures pursuant to the Pennsylvania Municipalities Planning Code, 53 P.S. §10101 *et seq.*
 - 4. Identification of all parties and affording them the opportunity to participate.

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5. Subject to legal restraints determining whether the mediation sessions or parts thereof shall be open to the public.
 6. Identification as to whether the results of such mediation shall be binding upon the parties.
- C. Funding for mediation shall be born equally between the Township and the developer.
- D. Mediated solutions shall be in writing and signed by the parties, and become subject to review and approval by the appropriate decision making body when necessary.
- E. No offers or statements made in the mediation sessions, excluding the final written mediated agreement, shall be admissible as evidence in any subsequent judicial or administrative proceedings.

Part 2

Definitions

201. Definitions.

As used in this Code, the following terms shall have the meanings indicated:

As-built plan - a drawing showing the final as-built location, elevation and/or depth, size and materials of all completed public and private improvements as well as all easements.

Cartway - that paved road surface from front of curb to front of curb.

Construction standards - the construction standards for streets, stormwater management facilities, sanitary sewer systems, pedestrian circulation, driveways, parking areas, fire hydrants, guide rails, cable TV and other facilities as set forth in this Code.

Design speed- anticipated posted speed limit plus 5 miles per hour.

Detention basin - a stormwater facility that collects and temporarily stores surface runoff and releases it at a controlled rate. Detention basins may be classified into the following categories:

Dry basin - a detention basin designed to completely drain following a storm event.

Naturalized basin - a detention basin designed to completely drain following a storm event and which blends into the surrounding environment by being curvilinear in shape and using native plants to provide soil stabilization.

Underground basin - detention storage located in underground tanks or vaults designed to provide water quantity control through detention of stormwater runoff.

Wet pond - a basin that has a permanent pool of water throughout the year. A wet pond also may be called a "wet basin" or "retention pond."

Developer - any landowner, agent of such landowner, or tenant with permission of such landowner, who constructs or causes to be constructed any public or private improvements anywhere in the Township not under a Township contract.

Driveway - a private area used exclusively for circulation and ingress and egress to a street by the owner or owners or visitors of the lot. All driveways shall meet the requirements of this Code.

Dwelling, single-family - a residential building containing one dwelling unit occupied by one family and which is the only principal building on the lot.

Emergency - any unforeseen circumstance which calls for immediate action.

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Engineer - the Township Engineer who is charged with the design and inspection of the work, and with determining the quantities of materials and labor to be paid for. During the execution of the work the Engineer shall also be interpreted to mean the assistant, inspector, or other representative acting within the authority given. The Engineer is to be considered an agent of the Township.

Financial security - a corporate bond letter of credit, or escrow account from a surety or a financial institution acceptable to the Township, naming the Township as obligee.

Landowner - the legal or beneficial owner or owners of a lot, including the holder of an option or contract to purchase (whether or not such option or contract is subject to any conditions), a lessee (if he is authorized under the lease to exercise the rights of the landowner) or other persons having a proprietary interest in the lot.

Lane width - the width of the travel lane. Typically set at 11 feet when painted with yellow and white lines.

Parking area - a public or private garage or a paved, open off-street area other than a driveway or street with adequate means of access, which meets the requirements of this Code and which is used exclusively for the parking of vehicles of occupants or visitors of the lot; however, a driveway serving a single-family dwelling or which is for the exclusive use of an individual dwelling unit in a residential building may be used as a parking area.

Private improvement - a street, sidewalk, walkway, gutter, curb, stormwater facility, sewer, waterline, driveway, parking area, street light, street sign or related facility, to be operated and maintained by a private entity, but which must comply with this Code.

Public improvements - a street, sidewalk, walkway, gutter, curb, stormwater facility, sewer, waterline, street light, street sign or related facility to be dedicated to or maintained by the Township, and which must comply with this Code.

Public utility company - any company subject to the jurisdiction of and control by the Pennsylvania Public Utility Commission or franchised cable television company.

Sidewalk - a walk for pedestrians constructed to the standards set forth in this Code.

Specifications - those portions of the contract documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the work.

Street - an avenue, boulevard, road, highway, freeway, parkway, lane, viaduct and any other ways used by vehicular traffic, but not including driveways, parking areas or walkways. "Street" includes the entire right-of-way.

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Street excavation - excavation of 18 inches or more performed within public right-of-ways or easements within the Township.

Supervisors - the Board of Supervisors of the Township.

Township - the Township of Hanover, Beaver County, Pennsylvania.

Utility - a public service including but not limited to electric service, gas service, and cable TV service.

Walkway - a walk for pedestrians constructed to the standards set forth in the Public Improvements Code.

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Part 3

[Reserved]

Part 4

Construction Standards for Public and Private Improvements

401. Streets.

The Township has adopted a subdivision and land development ordinance. In implementing that ordinance, the following standards shall apply. In the event of conflict between that ordinance and this code, the more restrictive standard shall govern.

- A. Township Streets. Typical section of grading, paving, curbing, underdrains and berm grading for township streets shall be installed in accordance with the construction standards on Standard Detail No. 2 – Typical Road Section (with shoulder) and Standard Detail No. 3 Typical Road Section (with curb). Geometric design shall be in accordance with the appropriate design speed as determined by the Township upon recommendation of the Township Engineer, the design standards of the Township Code, Subdivision of Land, and this Code.
- B. Materials. The base course and wearing surface of all streets shall be constructed in accordance with the standards of this Code, and all materials used shall meet the latest Pennsylvania Department of Transportation specifications. Additional base course depths may be required as the Engineer may determine to be necessary for the type of street that has been proposed.
- C. Bituminous curb underdrain. Permanent underdrains of a size and slope to be determined by the Township Engineer shall be installed on the upper or higher side of all streets, in cut areas where they are necessary to prevent the infiltration of water under the paved roadway and at the low points in all roads or streets. All underdrains shall parallel the roadway as nearly as possible and shall be in accordance with the construction standards on Standard Detail Nos. 2 and 3.
- D. Shoulders. Street shoulders shall be graded for the full width of the right-of-way in accordance with the typical street section in this Code and thoroughly compacted by rolling all shoulders. Slopes and berms shall be seeded to prevent erosion.
- E. Utilities in streets. All utilities crossing streets shall be installed in trenches backfilled and compacted with aggregate meeting the Pennsylvania Department of Transportation specifications and approved by the Township Engineer, and all other utilities within the right-of-way of streets shall be installed before the base, binder and bituminous wearing course is installed.
- F. Trench repaving for bituminous paving. All pavement restoration in bituminous pavement shall be constructed in accordance with the construction standard in Standard Detail No. 4, Pavement Restoration Detail.

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- G. Two-phase paving. When bituminous paving of a cartway is proposed for a subdivision or other land development and it is anticipated that construction activity and heavy material hauling will be taking place for an extended period of time across said cartway, a one-half inch thick skim coat of either FJ-1 bituminous material or other bituminous wearing course material may be applied on a temporary basis, provided the arrangement is properly spelled out in the developer's agreement. After the heavy material hauling activity is complete, the final bituminous wearing course material shall be installed on the cartway as specified in the developer's agreement.
- H. Curb ramps. The location and design of all curb ramps for access by disabled persons shall be approved by the Township Engineer. Such approval does not represent compliance with the Accessibility Guidelines of the Americans with Disabilities Act.

402. Stormwater management facilities.

The Township has adopted a separate stormwater management ordinance. In implementing that ordinance, the following standards shall apply. In the event of conflict between that ordinance and this code, the more restrictive standard shall govern.

- A. Storm sewer pipe. A minimum fifteen-inch diameter pipe shall be installed for all storm sewers to be maintained by the Township. The following is a list of acceptable pipes for use in the Township:
 - 1. Reinforced concrete pipe (RCP), ASTM C76 Class III and Class IV.
 - 2. Corrugated polyethylene (PE) culvert pipe, AASHTO-M294 and Type S.
 - 3. Polyvinyl chloride (PVC) pipe, AASHTO-M304.
 - 4. Corrugated galvanized steel pipe AASHTO-M245 Type I, AASHTO-M2465 and AASHTO-M218, Type C-10 mil coating on both surfaces, where diameter of pipe is 60 inches or more.
 - 5. Corrugated aluminum alloy pipe AASHTO-N196, Type I, where diameter of pipe is 60 inches or more.
 - 6. Corrugated aluminum alloy pipe-arch AASTTO-M196 type where diameter of pipe is 60 inches or more.
 - 7. Pipe constructed using other materials may be considered provided said pipe is specified in Penn DOT Form 408 latest edition and approved by the Township Engineer.
- B. Stormwater inlets. Stormwater inlets located in the street paving shall conform to the construction standard in Penn DOT Publication #72-M – Standards for Roadway Construction – Drawing No. RC-34M, Type M Inlet. Stormwater inlets shall be placed at

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all low points, at street intersections and at points along both sides of the street to ensure adequate drainage, but in no case shall the distance between stormwater inlets along the street exceed 300 feet unless approved by the Engineer. Stormwater inlets at street intersections shall be placed on the tangent and not on the curved portion. Additional inlets shall be constructed in areas as may be directed by the Engineer during construction to provide for proper control of surface water.

1. Grates and frames shall be structural steel, bicycle safe.
 2. Ladder bars. Plastic ladder bars shall be installed in all inlets exceeding a depth of 5 feet, and shall be in accordance with Penn DOT Publication #72-M – Standards for Roadway Construction – Drawing No. RC-34M.
 3. A poured concrete invert shall be formed in the base of all inlets to provide full drainage out of and through the structure.
- C. Stormwater manholes. All manholes shall be precast concrete constructed in accordance with the construction standards in Penn DOT Publication #72-M – Standards for Roadway Construction – Drawing No. RC-39M. Manholes shall be installed at all changes in alignment and grades of storm sewers as may be directed by the Engineer to provide for proper maintenance. If maintenance is not a problem, pipe may be installed on a curve provided the deflection angle of the pipe joint does not exceed the manufacturer's specifications. Inlets may be substituted for manholes where approved by the Engineer. The maximum distance between structures (inlets or manholes) shall be 300 feet unless otherwise approved by the Engineer.
- D. Headwall/end wall and rip rap. Concrete headwalls and splash aprons shall be constructed in accordance with the construction standards in Penn DOT Publication #72-M – Standards for Roadway Construction – Drawing No. RC-31M and RC-72M at the outfall of all storm sewers.
- E. Storm sewer lateral connection. All storm sewer lateral connections shall be made in accordance with applicable law. All storm sewer lateral connections shall be located at manholes, inlets or at locations approved by the Township Engineer or his designated representative.
- F. Township design requirements for stormwater management.
1. General requirements.
 - (a) The design criteria are intended to elaborate on the Township Stormwater Management Ordinance and to compliment Pennsylvania Stormwater Management Act, P.L. 864, No. 167. Said act requires that actions be taken:

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- [1] To assure that the maximum rate of stormwater runoff is no greater after development than prior to development activities; or
 - [2] To manage the quantity, velocity and direction of resulting stormwater runoff in a manner which otherwise adequately protects health and property from possible injury.
 - [3] Stormwater management design and construction will conform in general to the applicable recognized national and state acts, manuals, and references such as the PA Stormwater Management Act and Penn DOT published forms.
- (b) All stormwater management plans shall be designed and certified by individuals registered in the Commonwealth of Pennsylvania and qualified to perform such duties.
 - (c) Where applicable stormwater management facilities shall comply with the requirements of Chapter 105 (Dam Safety and Waterway Management) of Title 25, Environmental Protection, of the Pennsylvania Department of Environmental Protection (DEP), and Section 404 of the Clean Water Act as authorized by the U. S. Corps of Engineers.
 - (d) Stormwater management facilities that involve a state highway shall be subject to the approval of the Pennsylvania Department of Transportation.
 - (e) Stormwater runoff from a project site shall flow directly into a natural watercourse or into an existing storm sewer system, or onto adjacent properties in a manner similar to the runoff characteristics of the predevelopment flow.
 - (f) Stormwater runoff shall not be transferred from one watershed to another unless the watersheds are subareas of a larger watershed that are tributary to a common point of interest within or near the perimeter of the property. Transfer of runoff from one watershed to another under any other circumstances shall only be approved at the discretion of the Township. Documentation shall be provided that peak flow rates are not increased following development and there will be no detrimental impact in downstream areas.
 - (g) All stormwater runoff flowing over the project site shall be considered in the design of the stormwater management facilities.
 - (h) For any stormwater management facility requiring a permit to be issued by the DEP, said permit along with supporting report and plans used to secure the permit shall also be submitted.

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2. Stormwater management standards.
 - (a) Design storms.
 - [1] For developments larger than three acres, the SCS twenty-four-hour, Type II Rainfall Distribution shall be used for analyzing stormwater runoff in predevelopment and postdevelopment conditions, as well as for designing runoff control facilities (except storm runoff collection and conveyance facilities). For development sites less than 3 acres, the Rational Method may be utilized to determine peak flows and the Modified Rational Method used for design and routing of runoff control facilities.
 - [2] If the Rational Method is used, the Region No. 1, Pennsylvania Rainfall Intensity - Duration - Frequency Chart shown in the Pennsylvania Department of Transportation, Design Manual, Part 2, most recent version, shall be used to determine the rainfall intensity in inches per hour.
 - (b) Where, in the judgment of the Engineer/Township, the additional volume of stormwater runoff associated with a proposed development site will have a detrimental impact on downstream properties, and/or an existing downstream flood problem is documented, postdevelopment peak flows may be required to be reduced to less than predevelopment peak flows. Under these circumstances, acceptable peak flow rates will be determined at the discretion of the Engineer/Township for a given storm event(s) based on exiting downstream restrictions. Additional hydrologic studies or analyses may also be required.
 - (c) Calculation methods.
 - [1] Development sites. For the purposes of computing peak flow rates, runoff hydrographs and storage requirements for development sites, either the SCS Soil Cover Complex Method as presented in the most recent version of Technical Release 55 (TR-55) shall be used, or the Rational Method as specified in Subsection [F.2.\(a\)](#). When the Rational Method is used, the technical data from Pennsylvania Department of Transportation, Design Manual, Part 2, most recent version, shall be used to determine rainfall intensities, time of concentration, and runoff coefficients. The use of alternative hydrologic methodologies may be approved by the Engineer/Township if sufficient justification and documentation of their application is provided.
 - [2] Stormwater collection conveyance facilities.

- [a] For the purpose of designing storm sewers, open swales and other stormwater runoff collection and conveyance facilities, the Rational Method shall be utilized. Rainfall intensities for design should be obtained from Pennsylvania Department of Transportation, Design Manual, Part 2, most recent version. The design storm for storm sewers and swales that will discharge to detention facilities is the one-hundred-year storm. The ten-year design storm for storm systems discharging to detention facilities shall be acceptable, provided it can be documented that runoff exceeding the ten-year capacity of the storm system during a one-hundred-year storm event will ultimately discharge to the detention facility by alternative means, without endangering public safety or damaging private property. The design storm for all other onsite storm sewers or swales is the ten-year storm event, providing that larger storm events will not impact private property. Calculation sheets must be submitted. For storm inlets with multiple inflow pipes and/or bends where energy losses will be significant, inlet control conditions at the entrance to the outflow pipe shall be a design consideration to determine capacity.
 - [b] All stormwater collection and/or conveyance systems routing water through or around the development site shall be designed for the one-hundred-year storm event, unless it can be documented that said facilities will not create a hazard. A drainage easement shall be provided to contain and convey the one-hundred-year flood event throughout the project site, beginning at the furthest upstream property line of the proposed development in the watersheds.
- [3] Predevelopment conditions. The cover type for all sites will be considered to be woods with light underbrush in good hydrologic conditions at the time of proposed development. All hydrologic parameters used to calculate peak flow rates shall use the appropriate coefficients pertaining to these conditions, as recommended in the hydrologic methodologies noted in Subsection [F.2.\(c\)\[1\]](#).
- [4] Postdevelopment conditions. The hydrologic parameters used to develop peak flow rates shall be reflective of anticipated soil runoff characteristics following grading and development of the site.

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- (d) Stormwater management facilities. Peak runoff rates for all areas within or impacting the project site shall be determined and considered in the design of stormwater management facilities. These calculations shall be based on land use, time of concentration and other standard hydrologic parameters.
 - (e) Allowable release rates. The allowable release rates from stormwater management facilities, or a development site in general, shall be less (as per Subsection [F.2.\(b\)](#)) than or equal to the predevelopment peak runoff rates generated for the site. All stormwater runoff discharged from the site that is not controlled by a stormwater management facility shall be accounted for in the determination of the allowable release rates for the full range of storm events.
 - (f) Joint development of control systems. Stormwater control systems may be planned and constructed in coordination by two or more developments so long as they are in compliance with this Code.
3. Stormwater management plan.
- (a) General requirements:
 - [1] No final subdivision or land development plan shall be approved, no permit authorizing construction issued, or any earthmoving or land disturbance activity initiated until the final stormwater management plan for the development site is approved in accordance with the provisions of this Code.
 - [2] A letter from the Beaver County Conservation District (BCCD) approving the erosion and sedimentation control plan must also be received prior to the initiation of any grading. In the event that submission to the BCCD is not required by the Township, an erosion and sedimentation control plan prepared in accordance with the most recent version of PA DEP Chapter 102, Erosion and Sedimentation Control Program Manual, must be approved by the Township.
 - (b) Stormwater management report. A written and bound report shall be submitted including, but not necessarily limited to the following information.
 - [1] Proposed name or identifying title of project, the name and address of the landowner and developer of the project site, as well as the name, address, and phone number of the consultant who prepared the stormwater management plan.

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- [2] Stormwater management report date and date of the latest revision to the report.
- [3] Typewritten narrative report that should include sections describing the following items:
 - [a] Stormwater management report date and date of the latest revision to the report.
 - [b] Typewritten narrative report that should include sections describing the following items:
 - [i] Stormwater management plan objectives.
 - [ii] Hydrologic procedures used to develop plan.
 - [iii] Description(s) of predevelopment conditions.
 - [iv] Description(s) of postdevelopment conditions.
 - [v] Description(s) of proposed plan and method(s) to handle postdevelopment runoff.
 - [vi] Description(s) of proposed detention facility(s) and proposed outlet control.
 - [vii] Summary tables for predevelopment and postdevelopment peak flows, detention facility(s) allowable release rates, stage-storage-outflow characteristics and storm-routing results.
- [4] Watershed maps delineating predevelopment and postdevelopment watershed boundaries, as well as the flow path and segments used to determine time of concentrations for each watershed.
- [5] All hydrologic and hydraulic computations associated with the stormwater management plan, appended and referenced in the narrative.
- [6] Storm sewer calculations and watershed map delineating all subareas used to size and compute flow for the storm sewer system.
- [7] Operation and maintenance program. The report shall contain a proposed maintenance plan for all stormwater control facilities, in accordance with the following:

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- [a] Identify the proposed ownership entity (e.g., Township, property owner, homeowners' association, other management entity.)
 - [b] A maintenance program for all facilities, outlining the type of maintenance activities, probable frequencies, personnel and equipment requirements, and estimated annual maintenance costs.
 - [c] Establishment of a graded roadway from public highway to the detention facilities suitable for maintenance equipment access.
- (c) A copy of the proposed erosion and sedimentation control narrative and plans shall be submitted to the Township. The narrative and accompanying plans shall also be submitted to the Beaver County Conservation District for review and approval.
- (d) Stormwater controls. All proposed stormwater runoff control measures must be shown on the development site plans, including methods for collecting, conveying and storing stormwater runoff on-site. Plans must show the following information:
- [1] Proposed name or identifying title of project.
 - [2] Name of the landowner and developer of the project site.
 - [3] Name and address of consultant who prepared the stormwater management plan.
 - [4] Plan date and date of the latest revision to the plan.
 - [5] Location map. A key map showing the development site location at a minimum scale of 2,000 feet to the inch shall be provided.
 - [6] The names, locations and dimensions of streets, buildings, water courses, bodies of water, swales, drainage facilities, tree masses, significant trees, wetlands and other existing or proposed features on the site or which will be affected by runoff from the development.
 - [7] Existing and final contours with sufficient detail to show all stormwater surface drainage. The location of the benchmark and the datum used shall also be indicated.

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- [8] The boundaries of the watershed(s) and (where applicable) subbasin(s) as they are located on the development site and identify name(s) or number(s).
 - [9] The watershed and subbasin areas.
 - [10] Tract boundaries showing distances and bearings.
 - [11] Soil types and boundaries as designated by the USDA SCS Soil Survey of Beaver County.
 - [12] The location of the flow path utilized to estimate the predevelopment and postdevelopment time of concentration shall be shown and identification of each flow segment on the topographic plan.
- (e) Easements, rights-of-way, deed restrictions. All existing and proposed easements and rights-of-way for drainage and/or access to stormwater control facilities shall be shown and the proposed owner identified. Drainage easements shall be delineated and recorded for all permanent facilities, swales and storm sewers to identify their permanency and provide maintenance access. Any areas subject to special deed restrictions relative to or affecting stormwater management on the development site shall be shown.
 - (f) Permits/approvals. A list of any permits/approvals relative to stormwater management that will be required from other governmental agencies (e.g., an obstructions permit from PA DEP) and anticipated dates of submission/receipt should be included with the plan submission. Copies of applications may be requested by the Township. All stormwater- or drainage-related computations or reports associated with these permit applications shall be submitted to the Township for reference and for review.
 - (g) One-hundred-year floodplain delineation.
 - [1] Stormwater management facilities located with or affecting the floodplain of any watercourse shall also be subject to the requirements of the Township Floodplain Management Ordinances, as amended from time to time, which regulates construction and development within areas of the Township subject to flooding.
 - [2] The one-hundred-year floodplain must be delineated on all plans for all watercourses which have a watershed area of 150 acres or greater. Where, in the judgment of the Township, private property

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or public facilities may be adversely affected by the proposed activity, the one-hundred-year floodplain shall be established for any watercourse.

[3] The one-hundred-year floodplain shall be delineated by one of the following methods:

[a] The FIS study by the Federal Emergency Management Agency (FEMA).

[b] A hydrologic report prepared by an individual registered in the Commonwealth of Pennsylvania to perform such duties. Calculations and channel hydraulic characteristics used to determine floodplain limits shall be provided.

(h) Municipal liability disclaimer. Approval of a stormwater management plan by the Township shall not be construed as an indication that said plan complies with the requirements, laws, or standards of any agency of the Commonwealth, which may or may not govern said activity.

4. Design criteria for stormwater detention basins. The following criteria shall be utilized for the design of proposed detention basins.

(a) All detention basins shall be equipped with outlet structures to provide discharge control for the design storm events. Provisions shall also be made for auxiliary structures that are capable of passing the postdevelopment one-hundred-year storm peak runoff flows, presuming blockage of all lower flow controls, without damaging the basins.

(b) Shared storage basins, which provide stormwater detention for more than one development site, will be encouraged. Such basins shall meet the design criteria contained in this section. Runoff from the development sites involved shall be conveyed to the basin in a manner so as to void adverse impacts, such as flooding or erosion, to channels and properties located between the development site and the shared storage basins.

(c) As a general rule, detention basins will be designed as dry basins, although wet basins will be considered in specific situations where they can be shown to represent a significant amenity to the development and/or the Township. Basins should be designed to induce water depths as shallow as possible.

(d) Except in approved wet basins, stormwater detention basins will be designed to drain completely. A low-flow channel shall be installed to facilitate the conveyance of storm sewer flows to the basin outlet during frequent storm events. All interior portions of the basin will slope toward

the outlet or low-flow channel at a minimum slope of 1%. All impoundment areas shall be adequately underdrained to prevent long term ponding of water.

- (e) Detention basin outfall pipes shall have a minimum of two anti-seepage collars installed along the profile of the pipe. Anti-seepage collars shall be constructed of reinforced concrete.
- (f) All detention basins designed with an earthen dam shall provide a minimum of one foot of freeboard between the peak emergency spillway design flow elevation and the top of the embankment.
- (g) All embankments shall be designed, signed and sealed by a licensed professional engineer according to sound engineering practice for such structures and must meet the approval of the Township Engineer. Basins with a design water depth in excess of 10 feet may require a supporting report from a licensed professional engineer. In general, impoundment areas shall be designed to be contained with areas excavated within existing ground, rather than fill, whenever possible. Impoundment areas designed within fill shall require a supporting report from a geotechnical engineer addressing potential infiltration concerns and recommended solutions.
- (h) The outside slopes of the embankment shall not exceed two horizontal to one vertical. The interior slopes of the structure within the pool area shall not exceed a slope of three horizontal to one vertical. Design of basins with flatter slopes for aesthetics and as a maintenance consideration are encouraged. Crest of the embankment shall have a minimum width of not less than 10 feet.
- (i) The embankment shall be level along the crest and along the longitudinal centerline. In the event that the embankment would be overtopped by stormwater runoff, the flow over the crest and down the downstream slope would be sheet flow rather than being concentrated and eroding away the embankment. No trees shall be planted on the embankment. The protective fence shall not be placed across the primary or emergency spillways.
- (j) Except where special erosion protection measures are provided, all disturbed areas will be graded evenly, topped with four inches of topsoil, fertilized, seeded and mulched by methods consistent with Penn DOT Publication 408.
- (k) All outfalls to and from the basin shall be provided with end walls and erosion control measures.

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- (l) Outlet control structures shall be constructed of reinforced concrete (cast-in-place or precast) and shall be recessed into the embankment wherever practical. Trash racks for low-flow control openings should be designed to provide four to 10 times the area of the low-flow opening and facilitate debris removal and maintenance.
 - (m) An access easement with a minimum width of 20 feet to all stormwater detention basins shall be provided to the Township. This access shall be improved with a cartway consisting of 4" crushed and compacted aggregate having a minimum width of 10 feet and a maximum grade of 15%. The access easement shall include a statement on the recorded plan from the owner/operator of the basin granting access to the Township.
 - (n) Detention basins that are designed as sedimentation basins during construction operations shall be desilted and regraded to original design dimensions and have all temporary sedimentation-control devices removed prior to their conversion to detention basins. Low-flow channels and underdrains should be installed with the conversion of the basin.
 - (o) In subdivisions or projects that are constructed in phases with individual detention basins employed as sedimentation basins, said basins shall be converted to their ultimate use as stormwater management basins as soon as their tributary areas are stabilized per BCCD standards. This conversion may be requested by the Township, with supportive corroboration from the Beaver County Conservation District, and shall be implemented as outlined in the approved erosion and sedimentation control plan.
 - (p) An as-built drawing shall be required for each stormwater detention basin constructed. The drawing shall represent certification of the volume of the basin and the depth-versus-storage relationship, as well as the elevational relationships and dimensions of flow controls, including emergency spillways, as appropriate. These relationships shall be shown on the drawing in table form or in report form. In the event that these relationships vary from the computations provided in the approved plan, revised storm routings may be required at the discretion of the Township. The as-built drawing shall be stamped by a licensed professional engineer or surveyor and submitted to the Township within 60 days of the completion of the basin. No basin will be approved until this as-built drawing has been approved by the Township.
 - (q) As a matter of public safety, the detention basin shall be fully enclosed with a minimum four-foot high chain-link fence with an access gate of sufficient width to permit entry of maintenance vehicles.
5. Design criteria for collection/conveyance facilities.

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- (a) As a general rule, no stormwater may be discharged to unprotected areas such as hillsides or fills without special erosion and/or energy dissipation controls being installed. Stormwater shall either be conveyed to the nearest established stream channel as approved by the Township, or provided with an approved energy-dissipation device. Conveyance shall be by pipe or erosion-protected ditch.
 - (b) All sites shall be graded to provide drainage away from and around structures to prevent potential flooding damage.
 - (c) Collection/conveyance facilities should not be installed parallel to or close to the top or bottom of major embankments to avoid the possibility of embankment failure, with the exception of those facilities specifically designed to prohibit stormwater runoff from eroding slopes or preventing runoff from damaging downstream properties.
 - (d) Stormwater shall be collected and conveyed from upslope areas in a manner designed to prevent damage to downslope property(s) consistent with appropriate engineering standards. This system shall be identified by permanent easements with the party responsible for maintenance identified.
6. Disposal of stormwater from roof, foundation and driveway drains.
- (a) Individual lots that are required to provide for on-lot stormwater management basins per the stormwater management plan shall be identified on the recorded plan(s) for the subdivision.
 - (b) No roof, driveway or foundation drains shall be discharged onto the right-of-way of any street or the pavement of any street. They may be connected to the street stormwater collection system of pipes or inlets. All residential dwellings not connected to a private or public stormwater collection and management system shall install a stormwater containment and disposal system at the direction of the Township. Other acceptable methods of disposal include rain barrels, underground tanks, infiltration devices (i.e. rain gardens), storm sewers, large-diameter pipe-chamber systems and grassed or other ground surfaces, provided adequate consideration is given to erosion protection, or any other method approved by the Township.
 - (c) At no time will any roof, driveway or foundation drains be allowed to be connected to the sanitary sewer line.
 - (d) The use of splash blocks is permitted. The location of the splash-block discharge must be a minimum of five feet from foundations and five feet from the property line. Exceptions to this method may be permitted in the instance of townhouses or similar structures where common property lines

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exist. No stormwater runoff may be directed in such a manner as to disturb or damage neighboring properties.

- (e) Houses located on the low side of the road can use a solid pipe or corrugated pipe (minimum of four inches diameter) to the rear of the lot to a point of discharge onto a rock apron (size and dimensions to be specified) not less than 10 feet from the adjacent neighboring property line, provided said discharge has been accounted for within the approved stormwater management plan and the discharge does not impact downstream property owners.
- (f) Lots shall be graded in such a manner as to divert stormwater runoff away from adjacent property and structures consistent with appropriate engineering standards.

403. Sanitary sewer and public water systems.

All sanitary sewage facilities and all public water facilities shall be constructed in accordance with the design standards and requirements of all public boards or bodies having jurisdiction.

404. Pedestrian circulation.

- A. Sidewalks. All sidewalks shall be constructed in accordance with the construction standards on Standard Detail No. 7 – Concrete Sidewalk. Curb ramps for the physically challenged shall be provided at intersections and crosswalks conforming to the construction standard in Penn DOT Publication #72-M – Standards for Roadway Construction – Drawing No. RC-67M. The location and design of all curb ramps for access by disabled persons shall be approved by the Township Engineer. Such approval does not represent compliance with the accessibility guidelines of the Americans with Disabilities Act.
- B. Walkways.
 - 1. Minimum width. Walkways shall be a minimum of five (5) feet wide. In parking lots they shall be an additional 30 inches wide or separated by an additional 30 inches of green space on each side where automobiles or other vehicles may overhang the walkway.
 - 2. Height. Walkways in relation to parking lots and driveways shall be raised to the same height as sidewalks in relation to streets.
- C. Multipurpose walking and biking paths.
 - 1. Eight feet minimum; 10 feet desirable.
 - 2. Material shall be mud free and approved by the Township.

405. Driveways - access on to Township streets.

- A. General requirements. All driveways shall be located designed, constructed, and maintained in such a manner as not to interfere or be inconsistent with the design, maintenance and drainage of the street.
- B. General location restrictions. All driveways shall be permitted at locations in which:
 - 1. Sight distance is adequate to safely allow each permitted movement to be made into or out of the access driveway;
 - 2. The free movement of normal highway traffic is not impaired;
 - 3. The driveway will not create a hazard; and
 - 4. The driveway will not create an area of undue traffic congestion on the highway.
 - 5. Adequate sight distance at all driveways shall conform to PENNDOT latest Publication 282 (Highway Occupancy Permit Handbook) and Pennsylvania Code Title 76 Transportation, Chapter 441 (Access to Occupancy of Highways by Driveways and Local Roads).
- C. Residential driveway. Within the right-of-way of Township streets, residential driveways shall be constructed in accordance with Standard Detail No. 6 – Private Driveway Detail
- D. Grade. Driveways shall be constructed to conform to the grade of the finished shoulders. All descending or ascending grades of driveways shall begin at the street right-of-way. No stormwater shall be permitted to drain onto Township streets.

406. Parking areas and driveways on lots.

- A. Minimum paving standards.
 - 1. For driveways and parking areas for single-family: none.
 - 2. For all driveways and parking areas other than single-family shall have an aggregate base course, a bituminous binder course and a bituminous wearing course with sufficient structural strength to carry anticipated wheel loads.
- B. Parking area standards.
 - 3. Slopes.
 - (a) Maximum 5% cross slope.

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- (b) Maximum 7% longitudinal slope.
- (c) Minimum 1% cross slope or longitudinal slope.

407. Guide rails.

All guide rails shall be constructed in accordance with the construction standard in Penn DOT Publication #72-M – Standards for Roadway Construction – Drawing No. RC-53M, Type 2 Weak Post Guide Rail.

408. Underground utility installation.

A. General conditions.

1. All street excavation within a Township right-of-way or easements shall require a road opening permit.
2. No street opening shall extend across more than half of the cartway at a time. No street shall be closed at any time without prior approval from the Township.
3. Two-way traffic should be maintained whenever possible.
4. Access to driveways and/or buildings located within the work zone shall be maintained at all times.
5. No more than 250 linear feet of excavation shall be opened at any one time.
6. Traffic control shall be maintained in accordance with Pennsylvania Department of Highways Publication 213. The permittee shall furnish and maintain such signs, barricades, lights and flag persons as may be necessary to provide a safe and compliant work zone. The Township may require a separate traffic control plan under special circumstances.
7. Provisions shall be made to accommodate stormwater runoff at all times. The work shall not be permitted to interfere with the normal flow of surface or subsurface water.
8. Future maintenance shall be the responsibility of the permittee during the first two years after completion.

B. Pavement cuts. Open cutting of any street surface is not permitted unless authorized by the Township Engineer.

1. Cuts in the bituminous surface shall be a neat straight line the entire length and width of the trench using a concrete saw. Cuts through cement concrete shall be

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made to a sufficient depth to enable the removal of the concrete in a clear straight break.

2. All excavated material should be stored in such a manner as to not interrupt pedestrian or automobile traffic. Pedestrian crosswalks and sidewalks shall be kept clear at all times. Loose material shall be promptly cleaned from the streets and sidewalks using appropriate measures.
3. Special backfill requirements may be set by the Township Engineer. Backfill requirements will be determined at the time of application.
4. Restoration of asphalt pavement.
 - (a) Temporary pavement shall consist of the appropriate compacted backfill material and topped with not less than eight inches of cold patch. The temporary pavement shall be replaced with the permanent repair immediately upon suitable weather conditions or when the work is completed.
 - (b) Permanent repair shall be in accordance with Standard Detail No. 4 – Pavement Restoration.

C. Opening of berm or yard areas.

1. All work performed in areas other than the improved surface (asphalt or concrete) shall be restored to their pre-construction conditions in-kind.
2. All disturbed yard areas shall be graded, seeded, mulched and restored to their original condition.

409. Acceptance of Public Improvements

- A. Acceptance of public improvements. No public improvements shall be accepted by the Township until all required monuments have been set and as-built drawings have been submitted and certified to, by a professional land surveyor. As-built drawings shall be submitted as follows: three paper copies (24 inches by 36 inches), one Mylar copy and one copy on either a CD or e-mailed electronically in a CAD file format acceptable to the Township Engineer. The following language shall be included on all as-built drawings:

The professional land surveyor's certificate shall read as follows:

I, _____, a registered professional land surveyor of the Commonwealth of Pennsylvania do hereby certify that this plan is prepared from a field survey made on this _____ day of _____, 20____

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and it represents the location of buildings, driveways, parking areas, landscaping and elevations of the stormwater detention basin and its associated facilities as shown thereon by me for the owners or agents.

_____ (SEAL)

Registration No. _____

Date: _____

B. As-built drawings. As-built drawings shall include, but need not to be limited to, the following items:

1. Commercial as-built drawings. Buildings and location in relationship to; property lines; set back lines; property lines (bearings and distances); property corner monuments; parking delineation; line painting; right-of-way lines; easements; sanitary sewer lines; water lines, fire hydrants, Fire Department connections, curb ramps, signage, parking; monument signs; sidewalks; site lighting; paving areas (asphalt/concrete); curb (asphalt/concrete); concrete pads; dumpster enclosure; driveways-radius, width, highway occupancy permit number, landscaping required by Code; regulatory/warning signage; retaining walls; guide rail; impervious/pervious computation; surveyors certification block.
2. Residential as-built drawings. Concrete monuments; monument signs; easements; sanitary sewer lines, water lines, fire hydrants; line painting; street lighting; centerline bearings and distances for all public roadways; regulatory/warning signage; sidewalks; curb ramps; right-of-way lines; retaining walls; guiderail; surveyors certification block.
3. All as-built field surveys of the stormwater collection and detention facilities shall include the top and invert elevations of all inlets and manholes, endwalls and headwalls, easements and rights-of-way, rock rip rap and grass swales, pipe sizes and materials, detention basin storage volumes, outlet structure elevation with orifice size and elevation with computation documenting that the stormwater collection and detention facilities will manage and control the approved allowable full range of storm events.

410. Traffic regulatory and guidance signs.

All installations, locations, and materials shall comply with Township and PA DOT standards.

A. Traffic regulatory sign details and procedures.

1. Stop signs.

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2. Speed limit signs (25 mph, unless noted).
 3. No outlet signs.
 4. Yield signs.
 5. Weight, size and load restrictions.
 6. Turning restrictions.
 7. Stopping, standing and parking restrictions.
 8. Hazardous grade speed limits.
 9. No-passing zones.
 10. No turns on red restrictions.
 11. Removal of traffic hazards.
 12. School zones and school zone speed limits.
 13. Special speeds on bridges or elevated structures.
 14. Creation of one-way streets.
- B. All traffic control signs (other than street names signs) must use the following specifications:
1. One sign per post.
 2. Must use easy erect channel.
 3. Ten-foot long galvanized steel posts.
 4. Three-foot counter sink posts.
 5. Break-away hardware.
 6. Theft proof nuts and bolts.
 7. All traffic control signs must be at least seven feet to the bottom of the sign, and two feet to five feet behind the curb.
 8. Signs, when not at an intersection should be placed between lots, on lot lines.

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9. Arrows indicate flow of traffic.
- C. Street name signs.
1. The standard Township street sign must match existing street signs presently in use throughout the Township and meet current state requirements.
 2. Location.
 - (a) All street name signs should be located on the corner opposite of where a stop sign will be.
 - (b) Post must be two feet to five feet behind the curbs.
- D. Final approval.
1. All identification and traffic warning and regulatory signage must be installed prior to the Township issuing any building permits.
 2. Bonds shall not be released for the streets until all signage installations receive final approval from the Township Engineer.
 3. When all signs have been installed, the developer must request the Township to review the installations. The Township will give written acceptance/denial. (A copy must go to the Township.)
 4. All developers must purchase and install all signs on their own. The Township will not order, pay for, receive, store or install any signs, posts, etc., for the developer.

411. Street lighting.

When individual yard lighting is required in lieu of street lights, the perpetual energizing and maintenance of such shall be that of the property owners. When street lighting is made a requirement of plan approval, the installation and initial start-up shall be the responsibility of the developer and the perpetual energizing and maintenance once the plan is fully accepted, shall be that of the Township.

412. Pavement Markings.

Stop bars, symbols, transverse markings, crosswalks, and longitudinal lines shall be in accordance with Pennsylvania Department of Transportation specifications.

413. Lighting.

All exterior parking lots, driveways, vehicular access aisles, pedestrian access areas and loading spaces shall be sufficiently illuminated so as to provide safe on-site movements.

- A. Illumination shall be by sharp cutoff fixture-type with flush-mounted lens cap only.
- B. Fixtures shall be mounted parallel to the ground surface. Lighting for the purpose of highlighting a structure or landscape feature shall be exempt from this requirement, provided that the source of such light shall not be visible from the property lines or public right-of-way.
- C. Illumination shall not exceed one footcandle at all property boundaries.
- D. There shall be no direct or sky-reflected glare, whether from floodlights or from high-temperature processes (for example, combustion or welding), so as to be visible from within any residential zoning district.

414. Landscaping, Planting Strip, Walkway and Screening Requirements.

- A. Planting Strip Requirements for Commercial and Industrial Uses:
 - 1. Landscaping Along Street. A minimum eight (8) foot wide applied landscaping strip abutting all public or private streets or roadways broken only by points of vehicular or pedestrian access. Plantings shall be under three (3) feet in height (mature growth) and shall be spaced to allow good sight access into the lot. Landscaping shall not infringe upon needed driveway sight distances.
 - 2. Landscaping Around Site Perimeter When Abutting Another Commercial and/or Industrial Use. A minimum ten (10) foot wide perimeter landscaping strip shall be provided around the perimeter of the site, except along streets, with one (1) deciduous tree having a caliper of not less than two (2) inches per thirty (30) lineal feet of perimeter or evergreen trees having a height of not less than six (6) feet spaced on twelve (12) foot centers.
 - 3. Landscaping Around Site Perimeter When Abutting a Residential District. A minimum twenty (20) foot wide perimeter landscaping strip shall be provided around the perimeter of the site, except along streets, with one (1) deciduous tree having a caliper of not less than two (2) inches per thirty (30) lineal feet of perimeter or evergreen trees having a height of not less than six (6) feet spaced on twelve (12) foot centers.
- B. Interior Parking Lot Landscaping and Walkways: Refer to section 804.4 Parking (Part E) in the Hanover Township Subdivision and Land Development ordinance.

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- C. Screening of Loading Areas, Outside Storage Areas and Other Service Areas: Screenings and landscaping shall prevent direct views of loading area, storage areas outside an enclosed building, and service areas from adjacent properties or from the public or private right-of-way when viewed from ground level. Screening shall consist of opaque walls, which are architecturally compatible with the principal building on the lot, or evergreen planting. Evergreen plantings shall be of the species and size to achieve a complete visual screen within three (3) years.
- D. Street Trees: Refer to Section 514 Landscaping and Street Trees in the Hanover Township Subdivision and Land Development ordinance.
- E. Maintenance:
 - 1. The landowner and/or developer shall be responsible for maintaining the landscaping plan as originally approved. The landowner and/or developer shall be responsible for all regular and normal maintenance of landscaping, including seeding, fertilizing, pruning, and mowing.
 - 2. Any plant materials that exhibit evidence of insects, pests, diseases, and/or damage shall be appropriately treated and all dead plant materials shall be removed and replaced with living plant materials. Such replacement shall be completed within one calendar year.
- F. Plant Materials: Plant materials used for tree and shrubs can be chosen by the developer. They must meet the following criteria:
 - 1. Appropriate for use – Example, deciduous trees with at least eight (8) feet of cleared trunks for parking lot islands.
 - 2. Are appropriate for local climate conditions and for use along roadways, lot perimeters or parking lot. The use of native plants is encouraged.
 - 3. Shall be healthy and sound plant stock.
 - 4. Dead or diseased plants (shrubs) or trees are to be replaced (see E.2. above).
- G. A complete Landscaping Plan shall be submitted with all land development plans that includes a complete lot interior landscape plan in addition to a landscaped transition to adjoining properties for review and approval by the Township and its professional representatives.

Part 5

Grading and Excavating

501. Purpose.

The purpose of this Part is to provide minimum standards to safeguard persons and property and to promote the public welfare by preventing excess erosion, hazardous rock and soil slippage, sediment production and other soil and water management problems, and by regulating and controlling the design, construction, quality of materials, use location and maintenance of grading, excavation and fill.

502. Definitions.

As used in this Part, the following terms shall have the meanings indicated:

Applicant - a landowner who filed an application for a grading permit, as defined by the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended who has filed an application for development within the Township.

Architect - a registered architect licensed as such in the Commonwealth of Pennsylvania.

Bedrock - natural rock layer, hard or soft, in place at ground surface or beneath unconsolidated surficial deposits.

Board of Supervisors - the Board of Supervisors of the Township.

Building Code - the Uniform Construction Code.

Development plan - the provisions for development, including a planned residential development, a plat of subdivision, all covenants relating to use, location and bulk of buildings and other structures, intensity of use or density of development, streets, ways and parking facilities, common open space and public facilities.

Engineer - a registered professional engineer licensed as such in the Commonwealth of Pennsylvania, and knowledgeable in civil engineering.

Erosion - the detachment and movement of soil or rock fragments by water, wind, ice or gravity, including such processes as gravitational creep.

Excavation - any act by which earth, sand, gravel, rock or any other similar material is cut into, disturbed, quarried, uncovered, removed, displaced, relocated or bulldozed and shall include the conditions resulting therefrom.

Flood - a temporary inundation of normally dry land areas.

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Fill - any act by which earth, sand, gravel, rock or any other material is deposited, placed, pushed, dumped, pulled, transported or moved to a new location including the condition resulting therefrom.

Geotechnical engineering report - a report prepared by a registered professional geotechnical engineer.

Grade - the elevation of the existing or proposed ground surface at the location of any proposed excavation or fill.

Grading - an excavation or fill or a combination thereof.

Grading Administrator - a person designated by the Board of Supervisors as the representative of the Township.

Grading permit - any permit required pursuant to the provisions of this Part.

Hazard - any danger or potential danger to life, limb or health, or any adverse effect or potential adverse effect to the safety, use or stability of property, waterways, public ways, structures, utilities and storm sewers, including stream pollution.

Identified floodplain area - the floodplain area specifically identified by FEMA or in the township zoning ordinance as being inundated by the 100-year flood. Included would be areas identified as floodway (FW), flood-fringe (FF) and general floodplain (FA).

Land development -

1. The improvement of one lot or two or more contiguous lots, tracts or parcels of land for any purpose involving:
 - (a) A group of two 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.
 - (b) The division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features.
2. A subdivision of land.
3. Except as:
 - (a) The conversion of an existing single-family detached dwelling or single family semi-detached dwelling into not more than three residential units, unless such units are intended to be a condominium.

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- (b) The addition of an accessory building, including farm buildings, on a lot or lots subordinate to an existing principal building.
- (c) The addition or conversion of buildings or rides within the confines of an enterprise which would be considered an amusement park. For the purposes of this subclause, an amusement park is defined as a tract or area used principally as a new location for permanent amusement structures or rides. This exclusion shall not apply to newly acquired acreage by an amusement park until initial plans for the expanded area have been approved by proper authorities.

Landowner - the legal or beneficial owner or owners of land including the holder of an option or contract to purchase (whether or not such option or contract is subject to any condition), a lessee if he is authorized under the lease to exercise the rights of the landowner, or other person having a proprietary interest in land.

Landscape architect - a landscape architect licensed by the Commonwealth of Pennsylvania.

100-year flood - a flood that, on the average, is likely to occur once every 100 years (i.e., that has a 1% chance of occurring each year, although the flood may occur in any year).

Permit holder - any landowner, agent of said landowner, or tenant with the permission of said landowner who has been granted a grading permit pursuant to the provisions of this Part.

Person - a natural person, but also includes a partnership, corporation, trust, association or any type of legal entity.

Retaining wall - a structure composed of concrete, steel, wood, or other approved building material within the allowable stresses as specified under the building code constructed for the purpose of supporting a cut or filled embankment, or to retain or support the lateral pressure of earth or other superimposed loads.

Security - a bond, letter of credit or cash provided by the permit holder to secure performance under this Part.

Site - a lot, tract or parcel of land, or a series of lots, tracts or parcels of land which are adjoining and with respect to which grading work is to be continuous and performed at the same time.

Slope - the upward or downward slant or inclination or degree of slant, expressed either as a horizontal to vertical ratio or as a percentage of vertical inclination from the horizontal.

Soil conservation report - a report, prepared by a licensed professional engineer, that includes a description of a site and topography, drainage, cover, soils, soil limitations, erosion and sediment potential, surface runoff changes and recommendations to minimize soil limitations, erosion and sediment, and surface water disposal problems.

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Soils engineer - a registered professional engineer licensed as such in the Commonwealth of Pennsylvania and having training and experience in the branch of soils engineering.

Soils survey - the survey for Beaver County, Pennsylvania, and the accompanying text, Soil Survey of Beaver County, Pennsylvania, as prepared by the USDA Soil Conservation Service, et al.

Soil waste - any and all parts or combination of ashes, garbage, refuse, radioactive material, combustible demolition materials and industrial wastes such as food processing wastes, wood, plastic, metal scrap, etc.

Steep Slope - Where in a 100-foot horizontal distance, the slope exceeds 40%.

Township - Hanover Township, Beaver County, Pennsylvania.

Township Engineer - the appointed engineer of the Township or his designee.

503. Permit Required.

No person shall commence or perform any grading, excavation, and/or fill operations without first having obtained a grading permit from the Township. A separate grading permit shall be required for each site as follows.

- A. One permit shall cover the grading, excavation, and any fill made on the same site.
- B. Only one permit shall be required for the grading of a large continuous parcel of land for a major planned development, such as a planned residential development or a planned commercial development, when the standards for the grading of the entire parcel are satisfactory to and approved by the grading administrator.

504. Exceptions.

A grading permit will not be required, however, in any one of the following situations, but in all other respects, the provisions of this Part shall apply.

- A. An excavation which does not exceed 4 feet in vertical depth at its deepest point measured from the natural ground surface or cover an area of more than 1,000 square feet, provided that the surfaces of such excavation do not have slope at any point steeper than two horizontal to one vertical.
- B. Fill which does not exceed 4 feet in vertical depth at its deepest point measured from the natural ground surface and/or does not cover an area of more than 1,000 square feet, provided that the surfaces of such fills do not have a slope at any point steeper than two horizontal to one vertical.

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- C. An excavation below finished grade for basements and footings of a building, or a one family dwelling, swimming pool, or underground structure authorized by a building permit.
- D. An excavation of a driveway between a building site and the street. A permit is required for an excavation of a driveway between the building site and the street when, in the judgment of the grading administrator, extreme conditions (such as excessive cut or fill) exist.
- E. Soil excavated under the authorization of a properly issued building permit which is stockpiled on the same site as the excavation.
- F. Work performed or directed by the Township in a public street or alley or in a Township park, playground or recreation area or on other public property.

505. Application for Permit.

Every applicant for a grading permit shall file a written application with plans, specifications, and a soil conservation report with the grading administrator in a form prescribed by the Township. Unless waiver is granted by the grading administrator to one or more items, the application shall:

- A. Describe the land on which the proposed work is to be done by tax map, parcel number and street address, or similar description which will readily identify and definitively locate the proposed work.
- B. State the estimated dates for the starting and completion of grading work.
- C. State the purpose for which the grading application is filed.
- D. State whether or not a building, structure or other improvement, the construction of which will require a building permit pursuant to the provisions of the building code, is intended to be erected on the land on which the grading is to be done.
- E. Include plans and specifications prepared, signed and sealed by a licensed professional engineer, surveyor architect or landscape architect, and shall accurately portray and describe the site and proposed soil erosion controls, if any and shall include:
 - 1. The name of the applicant.
 - 2. The name of the owner of the land.
 - 3. The permission and approval of the owner of the property if the applicant is an agent or tenant of the landowner, by affidavit.

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4. An accurate location by tax map, parcel number and street address, with a location map or other similar information.
 5. A contour map showing the present contours of the land and the proposed contours of the land after completion of the proposed grading at 2 foot intervals where the average slope is 15% or less and at 5 foot intervals where the average slope exceeds 15%.
 6. Cross-sections of the proposed cut or fill on 50 foot intervals which show the method of benching both cut and/or fill; provided, however, that there shall be not less than two cross-sections for each site.
 7. A plot plan showing the location of the grading boundaries, lot lines, neighboring streets, or ways, buildings, surface and subsurface utilities and waterways, drainage patterns and sufficient dimensions and other data to show all work.
 - (a) Where grading is to be performed over or adjacent to existing utility lines, cross-sections shall include utility line elevations.
 8. A description of the type and classification of the soil from the soil survey, other standard surveys, or other methods.
 9. Details and location of any proposed drainage, structures and pipes, walls and cribbing.
 10. Seeding locations and schedules, debris basins, diversion channels.
 11. Erosion and sedimentation report.
 12. If truck or trailer loads of soil are to be removed from or delivered to the site, a description of truck travel routes must be approved by the Township. Evidence of approval from a State or County agency, where required, shall also be provided.
- F. If proposed grading, excavation or fill is located entirely or partially within any identified floodplain area, a document, certified by a licensed professional engineer or architect, which states that the proposed grading, excavation or fill has been adequately designed to withstand the 100-year flood elevations, pressure, velocities, impact and uplift forces associated with the 100-year flood and that the plans adhere to the restrictions of this Part. Such statement shall include a description of the type and extent of measures which have been incorporated into the design of the grading, excavation or fill.

506. Responsibilities of the Grading Administrator.

The responsibilities of the grading administrator shall be as follows:

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- A. The grading administrator shall require that a geotechnical engineering report be submitted by the applicant if the site is, has been, or is likely to become hazardous to persons or property. The Coal Resource Maps prepared by USGS, 1975 for the Greater Pittsburgh Region (as well as the SCS Soils Survey for Beaver County) shall be used to locate hazardous areas. The report shall contain a detailed description of the geological conditions of the site and shall include conclusions and recommendations that will demonstrate the relationship of the geological conditions to the proposed development, including hazardous conditions, water resources, mineral resources and environmental impact.
- B. Where, due to special circumstances and conditions, compliance with the provisions of this Part would result in unnecessary hardship, the grading administrator may make such special reasonable exceptions thereto, upon recommendation from the Township Engineer, as will not be contrary to the public interest, and may impose such conditions as it deems necessary to adequately protect the public interest.

507. Expiration of Permit; Extension.

- A. Every grading permit shall expire by limitation and become null and void if the work authorized by such permit has not been commenced within 6 months or is not completed within 18 months from the date of issue, provided that the Grading Administrator may, if the permit holder presents satisfactory evidence that unusual difficulties have prevented work being started or completed within the specified time limits, grant a reasonable extension of time, and provided further that the application for the extension of time is made before the date of expiration of the permit.
- B. Any physical changes from the original plan uncovered in the site during the construction such as surface water drainage, soil and bedrock dislocations, alteration of ground water discharge or any other natural or man-made modification which would tend to adversely affect the basis upon which the permit was issued, must be immediately reported to the grading administrator by the permit holder. If the circumstances dictate, the grading administrator shall revoke the permit or otherwise modify the conditions upon which the permit was initially issued.

508. Denial of Permit.

Where, in the opinion of the Township Engineer, the work as proposed by the applicant is likely to endanger any property or person or any street or alley or create hazardous conditions, the grading administration shall deny the permit. In determining whether the proposed work is likely to endanger property or streets or alleys or create hazardous conditions, the Township Engineer shall give due consideration to: possible saturation by rains, earth movements, runoff surface waters and subsurface conditions such as the stratification and faulting of rock aquifers, springs and the nature and type of the soil or rock.

509. Permit and Fees.

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- A. Before issuing a grading permit, the grading administrator shall collect a permit fee. Fees will be consistent with the Fee Resolution adopted by the Board of Supervisors and may be amended from time to time.
- B. Before issuance of a grading permit, the applicant shall post all necessary security, in accordance with the requirements set forth in 510 of this Part.

510. Performance Security.

Security shall be provided as follows:

- A. As a condition of grading approval, the applicant shall post a financial security acceptable to the Township in the amount of 110% of the estimated cost to perform the grading and remedial work. The cost estimate shall include the complete scope of work needed to be performed by the applicant to comply with this Part. The estimated cost shall be determined by the applicant and approved by the Township Engineer.
- B. No separate financial security shall be required if security has already been posted for construction and/or site improvements which covers the cost of grading and other control facilities.

511. Inspections.

- A. Application for the permit by the applicant shall constitute consent to enter the site for inspections at any time.
 - 1. The Township shall, when requested by the permit holder, make the inspections hereinafter required and shall either approve that portion of the work which has been completed or notify the permit holder wherein the same fails to comply with the provisions of this Part. Where it is found by inspection that the soil or other conditions are not as stated or shown in the application, the Township may refuse to approve further work until approval is obtained for a revised grading plan conforming to existing conditions.
- B. Plans for grading work bearing the approval of the Township shall be maintained at the site during the progress of the grading work and until the work has been approved.
- C. The permit holder shall notify the grading administrator in order to obtain inspections in accordance with the following schedule and at least 48 hours before the inspection is to be made. Before calling for any inspection, the owner shall have the property line stakes set and sufficient grade stakes set by a licensed professional engineer or surveyor to enable the grading administrator to verify the grading operation.
 - 1. Initial inspection: when work on the excavation or fill is about to be commenced.
 - 2. Rough grading: when all rough grading has been completed.

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3. Drainage facilities: when drainage facilities which connect to or shall become public facilities, are to be installed and inspected before such facilities are backfilled.
 4. Special structures: when excavations are complete for retaining and crib walls when reinforcing steel is in place and before concrete is poured.
 5. Final inspection: when all work, including the installation of all drainage and other structures, has been completed.
- D. If at any stage of the work the grading administrator shall determine by inspection that the nature of the formation is such that further work as authorized by an existing permit is likely to endanger property or streets or alleys or create hazardous conditions, the Township may require as a condition to allowing the work to be done that such reasonable safety precautions be taken as the grading administrator considers advisable to avoid such likelihood of danger. Safety precautions may include but shall not be limited to specifying a flatter exposed slope, construction of additional drainage facilities, berms, temporary safety fencing, terracing, compaction or cribbing.

512. Working Conditions.

The following general working conditions will apply to all grading sites:

- A. *Dust Control.* During grading operations, necessary measures for dust control will be exercised.
- B. *Debris Control.* No debris shall be deposited or accumulated on streets.
- C. *Permit Hours.* The operation of heavy construction or excavation machinery, including but not limited to bulldozers, highlifts, backhoes, trucks, power shovels, pumps and jackhammers, and the operation of equipment, such as saws and drills or any other type of machinery used outside a structure, in conjunction with work requiring a building permit, which causes a noise sufficient to disturb the peace and general tranquility of the general public or any portion thereof shall be prohibited in the entire Township between the hours of 9 p.m. and 7 a.m., Monday through Saturday, and all day Sunday and on Federally designated legal holidays.

513. Excavations.

Standards for excavations shall be as follows:

- A. Maximum slope steepness of a cut shall be two horizontal to one vertical for minimizing erosion and landslide hazards. However, upon a determination by a governmental review agency or a licensed professional engineer that the properties of the types of soil on the site to be graded, as identified by the soil survey, other standard surveys, geological

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surveys or core borings, require special consideration, then maximum slopes may then be determined as follows.

1. Landslide prone soils or unstable rock formations where existing slopes are less than 25% shall have proposed cut slopes no steeper than that are recommended by a licensed professional engineer. A document signed and sealed by said engineer shall be forwarded to the Township prior to approval of the grading permit.
- B. Cut slopes which are steeper than those specified above may be allowed under a grading permit, provided one or both of the following is satisfied.
1. The material in which the excavation is made is sufficiently stable to sustain a slope steeper than the slope specified above for recognized conditions on the site. A written statement addressed to the Township, signed and sealed by a licensed professional engineer, stating that the steeper slope will have sufficient stability and that risk of creating a hazard will be slight, must be submitted to the grading administrator.
 2. A retaining wall or other approved support designed, signed and sealed by a licensed professional engineer and approved by the administrator is provided to support the face of excavation.
- C. The bottom edge of final slopes shall be set back a minimum of 10 feet from adjacent property lines, excepting side property lines and street right-of-way lines, in which case the distance shall be a minimum of 5 feet, in order to permit the normal rounding of the edge without encroaching on the abutting property or street and to allow for location of proper drainage facilities and protective devices.
- D. Before commencing any excavation which will in any way affect an adjoining property or structures thereon, the person making the excavation shall notify in writing the owners of the adjacent property or buildings not less than 30 calendar days before such excavation is to be made that the proposed excavation is to be started. Copies of all such notices shall be supplied to the grading administrator.
- E. The grading administrator may require an excavation to be made with a cut slope flatter than those specified above if he finds the material in which the excavation is to be made is unusually subject to erosion, or if other conditions exist which, under applicable engineering practice, make such flatter cut slope necessary for stability and safety.
1. Excavations adjacent to any footing, foundation or structure shall not extend below the minimum angle of repose or natural slope of the soil under the nearest point of same unless such footing, foundation or structure is first properly underpinned or otherwise protected against settlement.

514. Fills.

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Standards for fills shall be as follows:

- A. No fill shall be made in the Township which creates a slope steeper than three horizontal to one vertical. However, the Township, on the advice and recommendation of a licensed professional engineer, may impose conditions requiring that a fill be constructed with an exposed surface flatter than three horizontal to one vertical if the licensed professional engineer states that under the particular circumstances involved, such flatter surface is necessary for stability and for the safety of persons and property.
- B. Fill slopes which are steeper than those specified above may be allowed under a grading permit, provided one or both of the following is satisfied.
 - 1. The material of which the fill is made is sufficiently stable to sustain a slope steeper than the slope specified above for recognized soil conditions on the site. A written statement addressed to the Township, signed and sealed by a licensed professional engineer, stating that the steeper slope will have sufficient stability and that risk of creating a hazard will be slight, must be submitted to the grading administrator.
 - 2. A retaining wall or other approved support designed, signed and sealed by a licensed professional engineer and approved by the administrator is provided to support the face of the fill.
- C. Whenever a fill is to be made of materials other than clean soil or earth, the grading permit shall be subject to the following additional limitations and requirements.
 - 1. The fill shall be completed within a reasonable length of time as determined by the Township Engineer and specified on the grading permit.
 - 2. Clean soil or earth shall be placed over the top and exposed surfaces of the fill, including all embankments, planting and seeding areas, to a minimum depth of 6 inches to effectively conceal all materials used in the fill other than clean soil or earth. Prior to spreading topsoil, the subgrade shall be scarified to a depth of 2 inches to facilitate the bonding of the subsoil with the topsoil. If the filling operation is intermittent, the Township Engineer may require that the top and exposed surfaces of the fill be so covered at the completion of each lift.
 - 3. No fill of any kind shall be placed over topsoil, trees, stumps or other material which would create a nuisance, potential fire hazard or sanitary problem such as decomposition which would attract rodents, termites or other pests.
 - 4. Fill areas shall be prepared by removing organic material such as vegetation and rubbish, and any other material determined by the grading administrator to prevent proper compaction and stability.

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- D. Where fills are located so that earth movement may result in personal injury or damage to adjacent property, streets, alleys or buildings, the bearing value and stability of the material under proposed fills and embankments shall be determined by subsurface investigation performed by a licensed professional soils engineer.
- E. Rock may be incorporated into fills and embankments but only in layers as per the latest edition of the Pennsylvania Department of Transportation (PennDOT) Specifications Publication 408, with voids filled and a blanket of compacted fill separating one layer of rock from the next. Rock fill shall not be placed near the bottom of foundations, building caissons and subsurface utility installations. Suitable earth shall be reserved or provided to cover rock fill under proposed seeded or planted areas.
- F. No unsuitable material, including but not limited to the following: topsoil, coal, boney, red-dog, expansive shale cinders, wood or soil waste decomposable material shall be placed in fill areas.
- G. On major fills or embankments, a toe bench shall be constructed below the mantle under the toe of fill. A porous drain and a discharge pipe shall be installed on the bottom and the back wall of the toe bench.
- H. All fills and embankments shall be installed in accordance with the requirements set forth in the latest edition of the Pennsylvania Department of Transportation Specifications Publication 408 and any special provisions as specified by a licensed professional engineer.
- I. The bottom edge of final slopes shall be set back a minimum of 10 feet from adjacent property lines, excepting side property lines and street right of way lines, in which case the distance shall be a minimum of 5 feet, in order to permit the normal rounding of the edge without encroaching on the abutting property or street and to allow for location of proper drainage facilities and protective devices.
- J. Pursuant to a determination by the grading administrator that the nature of a fill or embankment so warrants, a compaction test shall be required at the end of each lift, prior to the start of the next lift of material.
- K. Within any identified floodplain area, fill, if permitted, shall:
 - 1. Extend laterally at least 15 feet beyond the building line from all points.
 - 2. Consist of soil or small rock materials only. Sanitary landfills shall not be permitted.
 - 3. Be compacted to provide the necessary permeability and resistance to erosion, scouring or settling.

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4. Be no steeper than three horizontal to one vertical, unless substantiated data justifying steeper slopes are submitted to and approved by the Township Engineer.
5. Be used to the extent to which it does not adversely affect adjacent properties.

515. Retaining Walls.

Standards for retaining walls shall be as follows:

- A. When the natural topographic condition of the property is such that a cut of two horizontal to one vertical or a three horizontal to one vertical fill is not feasible, the grading administrator may consider the submission of a grading plan showing a retaining wall and ground slope combination that would be acceptable.
- B. Criteria for the acceptance of such a combination shall as a minimum provide the following.
 1. That the retaining wall(s) not exceed a height of 6 feet, except where there is a showing of extraordinary circumstances.
 2. If the plan incorporates terracing, the gradient of the slope between retaining walls shall not exceed two horizontal to one vertical and that the horizontal distance between walls be at least equal to the height of the retaining wall.
 3. Where a stable natural rock ledge is existing, as established by a written statement from a licensed professional engineer, a similar design of rock ledge and ground slope combination may be considered by the grading administrator.
- C. When a retaining wall is constructed to satisfy the requirements of this Part and all other applicable codes (including, but not limited to the Township Zoning and building codes), a building permit will not be required in addition to the grading permit.
- D. Retaining walls must be designed and constructed in accordance with sound engineering practice. The plans submitted for approval shall include a description of proposed backfilling and subterranean drainage facilities and bear the seal of a licensed professional engineer.
- E. Specifically, where a wall is replacing an exposed slope, the vertical face of the wall shall be set back a minimum of 10 feet from adjacent property lines, excepting side property lines and street right of way lines, in which case the distance shall be a minimum of 5 feet.
 1. An exception to this requirement may be granted by the grading administrator upon an application satisfactorily demonstrating that such an exception is necessary to permit normal use of the property, or other reasonable consideration.

- F. Where required by the Building Code, Guardrails or protective fencing are required to be installed.

516. Drainage.

Standards for drainage shall be as follows:

- A. Adequate provisions shall be made to prevent surface water from damaging the cut face of excavations and/or the sloping surface of fills and/or adjacent properties. Interception and diversion facilities for stormwater and surface water run-off, both above and below the cut area, during and after construction, shall be included in the design.
- B. Drainage ditches shall be constructed prior to clearing or grading at the toe and top of cut and fill slopes to divert the surface water to drainage facilities such as storm sewers, street gutters or natural water sheds during and after construction.
- C. Drainage ditches with a grade of 5% or greater shall be paved with concrete, bituminous material, brick, half pipe, rubble or other hard surface material.
- D. The grading administrator may approve methods and materials recommended by governmental agencies, licensed professional engineers and architects, when they are more suitable to the site in preventing damage. Private drainage facilities of any nature shall be at least designed to accommodate the largest size storm that would occur on the average of every 10 years.

517. Title 25 Environmental Protection, Chapter 102 Erosion and Sedimentation Control.

The standards for soil erosion and sedimentation control shall be as follows:

- A. A soil erosion and sedimentation control plan shall be prepared in accordance with the provisions of Title 25, Environmental Protection, Chapter 102, Erosion and Sediment Control, and approved by the Beaver County Conservation District (BCCD) prior to the commencement of any grading or other regulated earth- disturbance activity, unless the BCCD determines that said plan is not required and Township is in agreement.

518. Maintenance.

The standards for maintenance shall be as follows:

- A. The owner of any property on which an excavation or fill has been made shall maintain in good condition and repair the excavation or fill permitted and also all retaining walls, cribbing, drainage structures, fences, ground cover and any other protective devices as may be a part of the permit requirements.

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- B. If at any time subsequent to the completion of the grading work the cut face or fill slope shows evident signs of deterioration, erosion or other evidence which might be detrimental to the properties above or below the grading site, the Township, upon the recommendation of its Engineer, may direct the property owner to take whatever necessary remedial steps are deemed necessary to restore the grading area to a safe condition and to do so in a reasonable period of time.
- C. If after such notification the property owner has not made the necessary repairs within the allotted time, the Grading Administrator may direct that the required repairs be undertaken and the cost thereof shall be borne by the property owner.

519. General Requirements.

General requirements shall be as follows:

- A. The owner of the property being graded shall notify the grading administrator of the starting date of grading activity no later than 72 hours prior to the commencement of grading activity.
- B. The owner of the property being graded shall be responsible to protect and clean up lower properties of silt and debris which have washed down onto the lower properties as a result of the grading work on the higher property and restore to original condition.
- C. Proposed grading shall be accomplished so that existing stormwater runoff flows are neither increased from pre-development rates nor concentrated at the point of release onto abutting properties.
- D. No encroachment, alteration or improvement of any kind shall be made to any watercourse until required permits and approvals have been obtained from the Pennsylvania Department of Environmental Protection and provided to the Township.
- E. In order to prevent the denuding of the landscape wherever practicable, large trees and other natural features constituting important physical, aesthetic and economic assets to existing or impending development work shall be preserved.
- F. All disturbed soil surfaces shall be stabilized by effective seeding or other proper means prior to the first day of November of any year unless otherwise exempted by the grading administrator.
 - 1. Any resultant noxious vegetation that results from improper planting or maintenance of stabilized or partially stabilized soil shall be removed.
- G. Within any FW (Floodway District) and within any floodway area of any FA (General Floodplain District) as delineated in "Zoning," the following provisions shall apply.

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1. Any new grading, excavation or filling that would cause any increase in flood heights shall be prohibited.
 2. No new grading, excavation or filling shall be allowed, unless a permit is obtained from the Pennsylvania Department of Environmental Protection.
- H. In order to protect hillsides exceeding 25% in slope, no more than 20% by area of the natural vegetative cover may be removed unless a program approved by the Township for reforestation of disturbed areas over 20% by area is guaranteed.
- I. Grading and soil excavation are prohibited on any Steep Slope unless approved otherwise by the Township.

520. Violation and Penalties.

- A. A stop work order and site stabilization may be imposed at the Township's sole discretion.
- B. When written notice of a violation of any of the provisions this Code has been served by the grading administrator on any person, such violation shall be discontinued immediately.
- C. Any person who shall violate a provision of this Part or who shall fail to comply with any requirement thereof, upon conviction thereof in an action brought before a district judge in the manner provided for the enforcement of summary offenses under the Pennsylvania Rules of Criminal Procedure, shall be sentenced to pay a fine of not more than \$1,000 plus costs and, in default of payment of said fine and costs, to a term of imprisonment not to exceed 90 days. Each day that a violation of this Part continues or each Section of this Part which shall be found to have been violated shall constitute a separate offense.

521. Additional Remedy.

In case any work is performed by any person in violation of any of the provisions of this Code, the proper officers of the Township, in addition to the other remedies prescribed by law, may institute, in the name of the Township, any appropriate legal action or proceedings to prevent such unlawful work and restrain or abate said violation.

522. Appeals.

Any applicant may appeal a decision of the grading administrator to the Township Supervisors.