

**Douglass Township, Montgomery County**  
1320 EAST PHILADELPHIA AVENUE, GILBERTSVILLE, PENNSYLVANIA 19525

**SUBDIVISION AND  
LAND DEVELOPMENT  
ORDINANCE**

**Chapter 22**  
**SUBDIVISION AND LAND DEVELOPMENT**

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## Part 1 GENERAL PROVISIONS

**Section 100. Title.** This Chapter shall be known and may be cited as the "Douglass Township Subdivision and Land Development Ordinance of 1985." (Ord. 90-2, 7/16/1990, Section 100)

**Section 101. Enactment.** This Chapter has been enacted in conformance with the provisions of Act 247 of 1968, the Pennsylvania Municipalities Planning Code, as amended. (Ord. 90-2, 7/16/1990, Section 101)

**Section 102. Contents.** This Chapter contains regulations which include, but are not limited to, the following:

1. Provisions for the submittal and processing of plats for subdivision and land developments, and specifications for such plats, including provisions for tentative sketch, preliminary, and final plan processing and approvals, and for processing of final approval by stages or sections of development.
2. Provisions governing the standards by which streets shall be graded and improved, and walkways, curbs, gutters, street lights, fire hydrants, water, sewage and storm drainage facilities, and other improvements shall be installed as conditions precedent to formal approval of plats.

(Ord. 90-2, 7/16/1990, Section 102)

**Section 103. Purposes.** The following are the purposes of this Chapter:

1. To insure that development within the Township will be orderly, efficient, integrated, and harmonious.
2. To insure that the layout and arrangement of subdivisions or land developments shall conform to the Douglass Township Comprehensive Plan and to any regulations, maps, studies, and reports adopted in furtherance thereof.
3. To insure that streets in and bordering a subdivision or land development shall be coordinated, and be of such widths, grades, and in such locations as deemed necessary to accommodate prospective traffic and parking, and to facilitate fire protection.
4. To require adequate, appropriately located easements or rights-of-way for utilities and storm drainage facilities.
5. To insure that any lands offered for dedication or otherwise reserved for use as public or common grounds shall be of suitable size, configuration, and topographical character for their designated uses.
6. To insure conformance of subdivision and land development proposals with the availability of municipal services and public facilities, and the coordination of intermunicipal programs.
7. To preserve lands subject to inundation or flooding from subdivision or land development which would endanger life or property or further aggravate or increase the existing flooding of inundation conditions.

8. To encourage and promote flexibility, economy, and ingenuity in the layout and design of subdivisions and land developments, including provisions authorizing the Township to modify the requirements of this Chapter in accordance with concepts and practices consistent with the modern and evolving generally accepted principles of site planning and land development.
9. To encourage alternative routes of travel for pedestrian and bicycle use, in open space areas, away from the vehicular routes, and to provide standards for development of these routes.
10. To provide equitable handling of all subdivisions and land development proposals by providing uniform procedures and standards.
11. To encourage subdivision and land development in accordance with principles and practices which conserve energy, both during and after construction, and which encourage the use of alternative energy sources by the layout of the proposal and the siting of buildings.

*(Ord. 90-2, 7/16/1990, Section 103)*

**Section 104. Interpretation.** The provisions of this Chapter shall be the minimum requirements to meet the above-stated purposes. Where the provisions of this Chapter impose greater restrictions than those of any other statute, ordinance, or regulations, then the provisions of this Chapter shall prevail. Where the provisions of any other statute, ordinance or regulations impose greater restrictions than those of this Chapter, the provisions of such statute, ordinance or regulations shall take precedent. *(Ord. 90-2, 7/16/1990, Section 104)*

**Section 105. Subdivision and Land Development Control.**

1. Subdivision of a lot or Construction, Opening or Dedication of a Street. No subdivision or land development of any lot, tract, or parcel of land shall be made, and no street, alley, sanitary sewer, storm drain, water main, gas, oil or electric transmission line, or other improvements in connection therewith, shall be laid out, constructed, or dedicated for public use or travel, or for the common use of occupants of a building abutting thereon, except in strict accordance with this Chapter.
2. Sale of Lots, Issuance of Building Permits, or Erection of Buildings. No lot in a subdivision or land development may be sold, and no permit to erect or alter any building upon land in a subdivision or land development will be issued unless and until a subdivision and/or land development plan has been approved, and where required, recorded, and until the required improvements in connection therewith have either been constructed or guaranteed for construction in the form of a bond, escrow, or other means suitable to the Township Supervisors and approved by the Township Engineer and Solicitor, in accordance with the laws of the Commonwealth of Pennsylvania.
3. Condominiums. No provisions of this Chapter shall be construed to prohibit condominium ownership as permitted by the applicable enabling legislation of the Commonwealth of Pennsylvania.

*(Ord. 90-2, 7/16/1990, Section 105)*

8. To encourage and promote flexibility, economy, and ingenuity in the layout and design of subdivisions and land developments, including provisions authorizing the Township to modify the requirements of this Chapter in accordance with concepts and practices consistent with the modern and evolving generally accepted principles of site planning and land development.
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*(Ord. 90-2, 7/16/1990, Section 105)*



## Part 2 DEFINITIONS

**Section 200. Language Interpretation.** For purposes of this Chapter, certain words shall be interpreted as follows:

1. Words used in the present tense include the future.
2. The singular number includes the plural and the plural includes the singular.
3. The phrase “used for” includes “arranged for,” “designed for,” “intended for,” “maintained for,” and “occupied for.”
4. The word “person” includes an individual, corporation, partnership, incorporated association, and/or any other similar entity.
5. The words “include” or “including” shall not limit the term to the specified examples, but are intended to extend the meaning to all other instances of like kind and character.
6. The word “building” shall always be construed as if followed by the words “or part thereof.”
7. The word “may” is permissive, the words “shall” and “will” are always mandatory, and the word “should” is recommended but not mandatory. (*Ord. 90-2, 7/16/1990, Section 200*)

**Section 201. Definition of Terms.** Words and terms used in this Chapter shall have the meaning given in this Section. Unless expressly stated otherwise, any pertinent word or term not a part of this listing, but vital to the interpretation of this Chapter, shall be construed to have its legal definition, or in absence of a legal definition, its meaning as commonly accepted by practitioners including civil engineers, surveyors, architects, landscape architects, and planners.

**ACCELERATED EROSION** – The removal of the surface of the land through the combined action of man’s activity and the natural processes of a rate greater than would occur because of the natural process alone.

**ACCEPTED ENGINEERING PRACTICE** – that which conforms to accepted principles, tests or standards of nationally recognized technical, scientific, and/or engineering authorities.

**ALLEY** – a public or privately owned right-of-way, on which no new dwellings, stores, or other principal buildings are intended to front serving as the secondary means of access to two or more properties.

**APPLICANT** – a person who has filed an application for approval of subdivision or land development plans, including his/her heirs, successors, agents, and assigns. This term also includes landowner, developer, builder, and/or other persons responsible for the plans and construction of buildings, and/or other improvements on a parcel of land.

**BASE FLOOD** – the flood which has been selected to serve as the basis upon which the floodplain management provisions of this and other ordinances have been prepared; for purposes of this Part, the 100-year flood, as referenced in the current Douglass Township Flood Insurance Study, prepared by the Federal Emergency Management Agency, Federal Insurance Administration. Also see definition under “floodplain.”

**BASE FLOOD ELEVATION** – the 100-year flood elevation in the Douglass Township Flood Insurance Study, prepared by the Federal Emergency Management Agency, Federal Insurance Administration.

**BLOCK** – an area bounded by streets or streets and natural or manmade features.

**BMP (BEST MANAGEMENT PRACTICE)** – Methods, measures, or practices used to prevent or reduce surface runoff and/or water pollution including, but not limited to, structural and nonstructural stormwater management practices and operation and maintenance procedures. See also Non-structural Best Management Practice (BMP).

**BOARD OF SUPERVISORS** – the elected governing body of the Township; also referred to as the Supervisors.

**BUFFER** – an area designed to separate the uses of land which abut it and which functions to ease the transition between them. Unless otherwise specified, buffers may be included as part of the required setbacks and yard areas. Buffers may be divided into two or more types as explained in the “Design Standards” of this Chapter.

**BUILDER** – see “APPLICANT.”

**BUILDING** – a constructed edifice designed to stand more or less permanently, covering a space of land, usually covered by a roof and more or less completely enclosed by walls, and serving as a dwelling, storehouse, factory, gas or liquid storage tank, shelter for animals, or other useful structure—distinguished from structures not designed for occupancy (such as fences or monuments) and from structures not intended for use in one place (as boats or trailers) even though subject to occupancy—of which at least 51 percent of value is located above ground (see STRUCTURE definition).

**CARTWAY** – the portion of a street, alley or driveway intended for vehicular use.

**CANOPY TREE** – Large, shade trees with deciduous foliage (leaves lasting only one growing season, bare in winter), generally reaching at least forty feet in height at maturity.

**CALIPER** – Caliper of the trunk is a diameter measurement taken 6 inches above the ground up to and including 4 inches caliper size, and 12 inches above the ground for larger sizes. Caliper of trees is a standard measurement used in the grading of nursery stock.

**COMMON OPEN SPACE** – a parcel or parcels of land, or a combination of land and water within a development site designed and intended for the use or enjoyment of residents of a development, not including streets, off-street parking areas and areas set aside for public facilities. Also referred to as “open space.”

**COMPREHENSIVE PLAN** – the current, officially adopted comprehensive plan for the Township, including all other amendments thereto.

**CONSERVATION DISTRICT** – The [*Berks or Montgomery*] County Conservation District.

**CONSTRUCTION** – the construction, reconstruction, renovation, repair, extension, expansion, alteration, or relocation of a building or structure, including the placement of mobile homes.

**CUL-DE-SAC** – a street with access at one end from a through street; terminated at the other end with a paved turnaround.

**CURBLINE** – the outermost edge of a cartway.

**CUT** – an excavation; the difference between a point of the original ground and a designated point of lower elevation on the final grade. Also, the material removed in an excavation.

**DBH or dbh** – Diameter at breast height; a measure of trunk diameter in inches, taken at 4 ½ feet above the ground. The measured section should be unbranched and representative of the typical age of the tree species. Dbh measurement is applied to existing trees (compared to caliper used for nursery stock).

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

**DEVELOPER** – A person who seeks to undertake any regulated earth disturbance activities at a project site in Douglass Township. see “APPLICANT”

**DEVELOPABLE ACREAGE** – for the purpose of calculating density per developable acre, the developable acreage shall equal the gross land area of the proposal, minus the following acreage:

- A. All land within existing and/or proposed rights-of way for all public and/or private roads.
- B. All overhead and underground utility easements and/or rights-of-way.
- C. Soils with slopes of 15 percent or greater as defined by the soil Survey of Montgomery County, 1967.
- D. All alluvial soil floodplain or the extent of the 100-year floodplain delineated in the Flood Insurance Study for Douglass Township, Montgomery County, Pennsylvania, dated November 15, 1983, as prepared by the Federal Emergency Management Agency, Federal Insurance Administration.

**DEVELOPMENT** – Any human-induced change to improved or unimproved real estate, whether public or private, including, but not limited to, land development, construction, installation, or expansion of a building or other structure, land division, street construction, drilling, and site alteration such as embankments, dredging, grubbing, grading, paving, parking or storage facilities, excavation, filling, stockpiling, or clearing. As used in this Ordinance, development encompasses both new development and redevelopment.

**DEVELOPMENT PLAN** – the provisions for guiding development, including a plan of subdivision, all covenants relating to use, location and bulk of buildings and other structures, intensity of use or density of development, streets, parking facilities, ways, common open space, and public facilities. The phrase “provisions of the development plan” shall mean the written and graphic materials referred to in this definition.

**DEVELOPMENT SITE** – The specific tract or parcel of land where any regulated activity is planned, conducted, or maintained.

**DRAINAGE** – the natural or manmade features of the land that are specifically designed to store or carry surface water runoff.

**DRIVEWAY** – a private way providing for vehicular and pedestrian access between a public street and a parking area within a lot or property.

**EARTH DISTURBANCE ACTIVITY** – A construction or other human activity which disturbs the surface of land including, but not limited to, clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, timber harvesting activities, road maintenance activities, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials.

**EASEMENT** – a right-of-way or other right granted by a property owner for the use of a designated part of his/her property for public, quasi-public, or private purposes, including utilities, drainageways, and access.

**ECOLOGICALLY SIGNIFICANT WOODLANDS** – A natural woodland area that may have an exemplary forest plant community or support a rare or endangered species. Woodland sites listed in "A Natural Areas Inventory of Montgomery County Pennsylvania", in the Pennsylvania Natural Diversity Index (PNDI), along steep slopes and/or riparian corridors would be considered ecologically significant woodlands.

**EMERGENCY SPILLWAY** – A conveyance area that is used to pass peak discharge greater than the maximum design storm controlled by the stormwater facility.

**ENGINEER** – a professional engineer licensed as such in the Commonwealth of Pennsylvania.

**EROSION** – The process by which the surface of the land, including water/stream channels, is worn away by water, wind, or chemical action.

**EROSION AND SEDIMENT CONTROL PLAN** – A plan that is designed to minimize accelerated erosion and sedimentation. Said plan must be submitted to and approved by the appropriate Conservation District before construction can begin.

**EVERGREEN TREE** – A woody plant capable of reaching a minimum mature height of 20 feet; with foliage (needles) persistent for more than one full year, resulting in year-round (evergreen) foliage screening capacity.

**EXCAVATION** – any act by which natural materials are dug into, cut, quarried, uncovered, removed, displaced, relocated or bulldozed, as well as, the conditions resulting therefrom.

**FILL** – any act by which natural materials are placed, pushed, dumped, pulled, transported or moved to a new location above the natural surface of the ground or on top of the stripped surface, as well as the conditions resulting therefrom.

**FLOODPLAIN RELATED TERMS:**

- A. **BASE FLOOD** – the flood which has been selected to serve as the basis upon which the floodplain management provisions of this and other ordinances have been prepared. For the purposes of this Chapter, it shall be the 100-year flood as referred to in the current Flood Insurance Study and delineated on the Flood Insurance Rate Map of the Federal Insurance Administration.
- B. **BASE FLOOD ELEVATION** – the 100-year flood elevation as referenced in the Flood Insurance Study. Within the approximated floodplain, alluvial soil floodplain, or other similar documented areas, the 100-year flood elevation shall be established as a point on the boundary of the floodplain nearest to the construction site in question.

- C. FEMA and FIA – the Federal Emergency Management Agency and the Federal Insurance Administration who have jurisdiction over the National Flood Insurance Program and its related studies and regulations. FEMA is the parent agency of FIA.
- D. FLOOD – a temporary condition of partial or complete inundation of normally dry land areas.
- E. FLOODWAY – the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.
- F. FLOOD INSURANCE RATE MAP – the official FIA map which shows special hazard zones and risk areas for insurance rating purposes. For the purpose of this Chapter, it also delineates floodplain areas.
- G. FLOOD INSURANCE STUDY – the examination and determination of flood hazards by the FIA. The flood elevations contained in this study are used for floodplain management purposes as related to this and other ordinances.
- H. FLOODPLAIN – a relatively flat or low land area adjoining a stream, river, or watercourse which is subject to partial or complete inundation during a 100-year flood as delineated in the Flood Insurance Study for Douglass Township, dated November 15, 1983, as prepared by FEMA and FIA; areas shown as alluvial soils in the Soil Survey of Montgomery County, Pennsylvania, by the United States Department of Agriculture, Soil Conservation Service; or any area subject to the unusual and rapid accumulation of surface water from any source; also referred to as “flood-prone area.”
- I. FLOODPLAIN AREAS – Floodplain Conservation District as defined by the Douglass Township Zoning Ordinance [Chapter 27] as amended.
- J. FLOODPLAIN MANAGEMENT – the application of a program or activities which may consist of both corrective and preventive measures for reducing flood damages.
- K. FLOOD PROOFING – any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents. Such measures are set forth in Flood Proofing Regulations published by the Office of the Chief Engineers, U.S. Army, publication number EP 1165 2 314 (June, 1972 and as subsequently amended). Flood proofing measures for all new construction and substantial improvements of structures shall satisfy the requirements of the “Completely Dry Spaces (W1)” and “Essentially Dry Spaces (W2)” classes referenced in these regulations. In said publication where reference is made to “below” (or above) the “BFD” (Base Flood Datum) it shall be interpreted as meaning below (or above) the base flood elevation.
- L. ONE HUNDRED YEAR FLOOD – a flood that has one chance in one hundred or one percent of being equaled or exceeded in any one year. For the purposes of this Chapter, the 100-year flood (base flood) as defined by the Federal Insurance Administration in the Flood Insurance Study
- M. REGULATORY FLOOD ELEVATION – the 100-year flood elevation plus a freeboard safety factor of 1½ feet.

**N. SUBSTANTIAL IMPROVEMENT** – any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

- (1) before the improvement or repair is started; or
- (2) if the structure has been damaged, and is being restored, before the damage occurred.

For the purposes of this definition “substantial improvement” is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not the alteration affects the external dimensions of the structure. The term does not, however, include either:

- (1) any projects for improvement of a structure to comply with existing State or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions; or
- (2) any alteration of a structure listed on a National Register of Historical places or a State Inventory of Historic Places.

**FRONTAGE** – the length of the lot line abutting a street right-of-way.

**GRADE** – the slope of a street, parcel of land, utility lines, drainageways, etc., specified in percent (%) and shown on plans as required herein.

**GROUND COVER** – low growing plant materials planted in a manner to provide continuous plant cover of the ground surface; lawn, ivy and other low plant materials are included. Non-plant ground cover may also include bark or wood chips, gravel, and stone provided they are maintained as a continuous previous cover.

**GROUNDWATER RECHARGE** – The replenishment of existing natural underground water supplies from rain or overland flow.

**HEDGEROW** – typically, a narrow linear vegetated area with a mix of woody trees and shrubs formed along farm fields and pastures. Hedgerows may be considered as a desirable visual characteristic of a rural landscape, warranting preservation during the land development process.

**HEIGHT OF BUILDING** – the vertical distance measured from the average elevation of the existing grade at the location of a building to the highest point of the roof as further defined below.

- A. Flat: highest point measurable.
- B. Mansard: deck line.
- C. Gable, Hip, Gambrel: mean height between the eaves and ridge.
- D. For a building with two or more roof heights, to the higher roof.
- E. Chimneys, spires, towers, mechanical penthouses, tanks, and similar projections not intended for human occupancy shall be excluded.

**HISTORIC STRUCTURES – any structure that is:**

- A. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register.
- B. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district.
- C. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior.
- D. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
  - (1) By an approved state program as determined by the Secretary of the Interior;  
or
  - (2) Directly by the Secretary of the Interior in States without approved programs.

**IMPERVIOUS SURFACE –** A surface that prevents the infiltration of water into the ground. Impervious surfaces include, but are not limited to, streets, sidewalks, pavements, driveway areas, or roofs. Any surface areas designed to be gravel or crushed stone shall be regarded as impervious surfaces.

**IMPROVEMENT –** the physical additions, installations and changes required to render land suitable for the use proposed, including streets, curbs, sidewalks, utilities, and drainage facilities.

**LAND DEVELOPMENT –** land development shall mean

- A. The improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving:
  - (1) A group of two or more residential or non-residential buildings, whether proposed initially or cumulatively, or a single non-residential building on a lot or lots regardless of the number of occupants or tenure; or
  - (2) The division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features.
- B. A subdivision of land.
- C. The following developments are excluded from the land development definition:
  - (1) 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; and
  - (2) The addition of an accessory building on a lot, including farm buildings, subordinate to an existing principal building.

**LANDOWNER** – the legal or beneficial owner or owners of land, or a building thereon, or a portion of either, 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 proprietary interest in land, shall be deemed to be a landowner for the purposes of this Chapter.

**LOT** – a contiguous tract, parcel, or unit of land held by a landowner and/or intended for use, development, lease, or transfer of ownership, and for which a deed description is recorded or is intended to be recorded at the Office of Recorder of Deeds for Montgomery County.

**LOT AREA** – the horizontal land area of a lot, further defined as follows:

- A. Gross Lot Area – the total horizontal land area lying within the lot or tract boundaries.
- B. Net Lot Area – gross lot area minus:
  - (1) The area lying between the street centerline and the ultimate right-of-way line or equivalent right-of-way line.
  - (2) The land area of the access strip to rear, flag or interior lots.

**LOT, REAR** – a lot which conforms in all respects to the dimensional requirements of the zoning district in which it is located, except that the only road frontage and access is limited to an access strip. This definition does not include the commonly used wedge-shaped lots located on a cul-de-sac turnaround. Also known as flag or interior lot.

**MANUFACTURED HOME** – a mobile home or a transportable, single-family dwelling intended for permanent occupancy, office, or place of assembly, contained in one or more sections, built on a permanent chassis, which arrives at a site complete and ready for occupancy except for minor and incidental unpacking and assembly operations, and constructed so that it may be used with or without a permanent foundation. The term includes park trailers, travel trailers, and other similar vehicles which are placed on a site for more than 180 consecutive days.

**MANUFACTURED HOME PARK** – a parcel of land under single ownership, which has been planned and improved for the placement of two or more manufactured homes for non-transient use.

**MATURE TREE** – Any tree of 8 inches or more in dbh, whether standing alone, in tree masses, or woodlands. A mature tree shall be a healthy specimen and shall be a desirable species, as determined by the municipal consultant/arborist/forester.

**MINIMIZE** – To reduce to the smallest amount possible. "Minimize" does not mean to "eliminate" but rather that the most substantial efforts possible under the circumstances have been taken to reduce the adverse effect of the action (such as grading, clearing, construction, etc.).

**MOBILE HOME** – a factory-built, single-family detached dwelling intended for permanent occupancy, which may not meet local building codes but bears a label certifying that it is built in compliance with the Federal Manufactured Housing Construction and Safety Standards, under the authority of the 42 U.S.C. Section 5401. It shall be contained in one unit or in two or more units designed to be joined into one integral unit capable of again being



separated for repeated towing, which arrives at a site complete and ready for occupancy except for minor and incidental unpacking and assembly operations and constructed so that it may be used with or without a permanent foundation.

**MOBILE HOME LOT** – a parcel of land in a mobile home park provided with the necessary utility connections, partitions and other appurtenances necessary for the erection thereon of a single mobile home for the exclusive use of its occupants, though it may instead be designed and used for a modular or conventional single-family detached home rather than a mobile home.

**MOBILE HOME PARK** – a development of a tract of land which has been planned and improved in compliance with the requirements of the Mobile Home Park Development Regulations for the placement of mobile homes, modular homes, or conventional single-family detached homes, or combinations thereof, for non-transient use, consisting of two or more mobile home lots and 10 acres or greater in size.

**MUNICIPALITY** – Douglass Township, Montgomery County, Pennsylvania.

**NPDES** – National Pollutant Discharge Elimination System, the federal government's system for issuance of permits under the Clean Water Act, which is delegated to DEP in Pennsylvania.

**OFFICIAL MAP** – a map adopted by the Board of Supervisors showing all or part of the Township. This map may show the following public facilities: existing and proposed streets, watercourses, public grounds, parks, playgrounds, open space, pedestrian ways, railroad and transit rights-of-way, flood control basins, floodways and floodplains, and stormwater management areas.

**OUTFALL** – "Point source" as described in 40 CFR § 122.2 at the point where Douglass Township's storm sewer system discharges to surface waters of the Commonwealth.

**PERSON**- An individual, partnership, public or private association or corporation, or a governmental unit, public utility or any other legal entity whatsoever which is recognized by law as the subject of rights and duties.

**PLAN** – a graphic representation of a proposal for subdivision and/or land development, including necessary written notes.

**PLAT** – see "PLAN".

**POINT SOURCE** – Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, or conduit from which stormwater is or may be discharged, as defined in state regulations at 25 Pennsylvania Code § 92.1.

**PROJECT SITE** – The specific area of land where any regulated activities in Douglass Township are planned, conducted, or maintained.

**RECREATIONAL VEHICLE** – a vehicle which is (i) built on a single chassis; (ii) 400 square feet or less when measured at the largest horizontal projection; (iii) designed to be self-propelled or permanently towable by a light duty truck; and (iv) designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational camping, travel or seasonal use.

**REDEVELOPMENT** – Any development that requires demolition or removal of existing structures or impervious surfaces at a site and replacement with new impervious surfaces. Maintenance activities such as top-layer grinding and re-paving are not considered to be redevelopment. Interior remodeling projects and tenant improvements are also not considered to be redevelopment.

**REGULATED EARTH DISTURBANCE ACTIVITY** – Defined under NPDES Phase II regulations as earth disturbance activity of one (1) acre or more with a point source discharge to surface waters or Douglass Township's storm sewer system or five (5) acres or more regardless of the planned runoff. This includes earth disturbance on any portion of, part, or during any stage of a larger common plan of development.

**RESERVE STRIP** – a parcel of land separating a street from adjacent properties.

**REVERSE FRONTAGE LOTTING** – lotting which extends between two streets of differing classifications, with vehicular access provided from the lesser street, in order to promote traffic flow and safety on the greater street.

**REVIEW** – the action of an agency or individual authorized to examine a proposed subdivision plan such as the County Planning Commission and Township Planning Agency.

**RIGHT-OF-WAY** – a strip of land over which are provided rights for various purposes including vehicular access and travel, storm drainage, and utilities. Also see "STREET RIGHTS-OF-WAYS."

**ROAD MAINTENANCE** – Earth disturbance activities within the existing road cross-section, such as grading and repairing existing unpaved road surfaces, cutting road banks, cleaning or clearing drainage ditches, and other similar activities.

**ROUTE 100 EXPRESSWAY** – Also known as "Principal Access Roadway", designed for relatively uninterrupted, high-volume mobility between areas, access to which is limited; may include a mixture of intersections (at grade) and interchanges (grade-separated).

Source: Access Management Handbook Transportation Research Board, 2003

**PENNSYLVANIA NATURAL DIVERSITY INDEX (PNDI)** – PNDI was established in 1982 as a joint venture of The Nature Conservancy (Pennsylvania Science Office), the Pennsylvania Department of Conservation and Natural Resources and the Western Pennsylvania Conservancy to establish an inventory data base on outstanding natural habitat types and sensitive plant and animal species.

**SEPARATE STORM SEWER SYSTEM** – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) primarily used for collecting and conveying stormwater runoff.

**SEWAGE DISPOSAL** – sewage disposal shall be defined as:

- A. On-Site – a structure or device for disposal of sewage on the same lot as a house, generally consisting of septic tank and tile field or seepage pit.
- B. Community – a sanitary sewage collection system serving more than one lot with common treatment facilities, generally serving a neighborhood area and complying with State regulations.
- C. Public – a sanitary sewage collection and disposal system owned and operated by an authorized municipal body.

**SHRUB** – A woody plant, usually with multiple stems, each of which has a dbh of less than 3 inches. Shrubs are generally less than 20 feet tall at maturity.

**SIGHT DISTANCE** – the distance of unobstructed view along the centerline of a street from the driver's eye-height of 3¾ feet to the furthest visible point 6 inches above the street surface.

**SOIL PERCOLATION TEST** – a field test as prescribed by the Pennsylvania Department of Health.

**SOIL SURVEY** – the Montgomery County Soil Survey of 1967, prepared by the Soil Conservation Service of the United States Department of Agriculture.

**START OF CONSTRUCTION** – includes substantial improvement and is the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of the slab or footings, the installation of piers, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include excavation for a basement, footings, piers, or foundation or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. If the actual start of construction does not occur within 180 days, a time extension for the date of startup construction shall be granted only if a written request is submitted by the applicant, which sets forth sufficient and reasonable cause for the Building Inspector to approve such a request.

**STATE WATER QUALITY REQUIREMENTS** – As defined under state regulations – protection of designated and existing uses ( See 25 Pa. Code Chapters 93 and 96)-- including:

- A. Each stream segment in Pennsylvania has a "designated use," such as "cold water fishery" or "potable water supply," which are listed in Chapter 93. These uses must be protected and maintained, under state regulations.
- B. "Existing uses" are those attained as of November, 1975, regardless whether they have been designated in Chapter 93. Regulated Earth Disturbance activities must be designed to protect and maintain existing uses and maintain the level of water quality necessary to protect those uses in all streams, and to protect and maintain water quality in special protection streams.
- C. Water quality involves the chemical biological and physical characteristics of surface water bodies. After Regulated Earth Disturbance activities are complete, these characteristics can be impacted by addition of pollutants such as sediments, and changes in habitat through increased flow volumes and/or rates as a result of changes in land surface area from those activities. Therefore, permanent discharges to surface waters must be managed to protect stream bank, stream bed and structural integrity of the waterway, to prevent these impacts.

**STORMWATER** – The surface runoff generated by precipitation reaching the ground surface.

**STREET OR ROAD** – a public or private right-of-way serving primarily as a means of vehicular and pedestrian travel, furnishing access to abutting properties, and which may also be used for utilities, shade trees, and stormwater control.

**STREET LINE** – the dividing line between a lot and a street, identical to the ultimate right-of-way line.

**STREET RIGHTS-OF-WAY** – rights-of-way for street purposes are defined as follows:

- A. **Legal Right-of-Way** – the street right-of-way legally in the public domain at the time a plan is submitted.
- B. **Ultimate Right-of-Way** – the street right-of-way projected as necessary for adequate handling of anticipated maximum traffic volumes.
- C. **Equivalent Right-of-Way** – a street right-of-way required to be reserved where private streets are permitted. The width shall be determined by the street's function, in accordance with the street classifications contained in this Chapter.

**STRUCTURE** – any form or arrangement of building material involving the necessity of providing proper support, bracing, tying, anchoring, or other protection against the forces of the elements. Also see “building”.

**SUBDIVISION** – the division or redivision of a lot, tract or parcel of land by any means into two or more lots, tracts, parcels, or other divisions of land, including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by a Court for distribution to heirs or devisees, transfer of ownership or building or lot development. The subdivision by lease of land for agricultural purposes in parcels of more than ten acres, not involving any new street or easement of access or any residential dwelling, is not required.

**SUBSTANTIAL DAMAGE** – damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damage condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

**SUBSTANTIAL IMPROVEMENT** – any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure, either:

- A. Before the improvement or repair is started; or
- B. If the structure has been damaged and is being restored, before the damage occurred.

For the purpose of this definition “substantial improvement” is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either:

- A. Any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions; or
- B. Any alteration of a structure listed on a National Register of Historic Places or a State Inventory of Historic Places.

**SURFACE WATERS OF THE COMMONWEALTH** – Any and all rivers, streams, creeks, rivulets, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface waters, or parts thereof, whether natural or artificial, within or on the boundaries of the Commonwealth.

**SURVEYOR** – a land surveyor, licensed as such in the Commonwealth of Pennsylvania, and competent in the skills needed to conduct the surveys, layout the subdivision plans and install all markers as required by the terms of this Chapter.

**TREE MASS** – A grouping of three or more trees, with average 8 inches dbh minimum.

**UNDERSTORY TREE** – Deciduous trees with characteristic flower or foliage color of ornamental/ aesthetic value. Understory trees are generally smaller (20-40' mature height) than canopy trees.

**ULTIMATE RIGHT-OF-WAY LINE** – the dividing line between a lot and the outside limit of a street ultimate right-of-way.

**VISUAL SCREEN** – a barrier whose purpose is to obscure the view; generally comprised of plant materials suitable for the purpose.

**WATERCOURSE** – a place intended or used for the directed surface flow of water, including permanent and intermittent streams, brooks, creeks, channels, ditches, swales, and rivers.

**WATERSHED** – Region or area drained by a river, watercourse, or other body of water, whether natural or artificial.

**WATER SURVEY** – an inventory of the source, quantity, yield, and use of groundwater and surface water resources within a municipality.

**WOODLAND** – A biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or greater. Woodlands can be characterized as containing at least 100 trees with at least 50 percent of those trees having a 2-inch dbh or greater.

**YARD** – an open, generally unoccupied area of a lot which must remain free of buildings but which may contain lawn or planted areas, parking and/or driveways, walks, walls, fences, and similar appurtenances.

**Part 3**  
**PLAN SUBMISSION REQUIREMENTS**  
**AND PROCESSING PROCEDURES**

**Section 300. Applicability.** The standards, requirements, and procedures contained in this Part shall govern the submission and processing of all applications for subdivisions and/or land developments in the Township. Applications must also meet the requirements of the Douglass Township Zoning Ordinance [Chapter 27] and Comprehensive Plan, if any, and any other applicable Township ordinance or regulation. (*Ord. 90-2, 7/16/1990, Section 300*)

**Section 301. General.**

1. Plans shall be submitted in the following order:
  - A. Tentative sketch plan, in accordance with the provisions of **Sections 302 and 308** of this Part.
  - B. Preliminary plan, in accordance with the provisions of **Sections 303, 304, 305, 307, 309, 310 and 311** of this Part.
  - C. Final pan in accordance with the provisions of **Sections 306, 307, 311 and 312** of this Part.
2. Only one type of plan may be submitted at a time. No subsequent plans will be considered until a decision has been made on the previous plan submittal.

*(Ord. 90-2, 7/16/1990, Section 301)*

**Section 302. Tentative Sketch Plan Requirements.** A tentative sketch plan should be drawn legibly and to scale, although it need not be a carefully engineered drawing, and should show the following information:

1. The entire tract boundary and total acreage drawn to a scale of not less than 1 inch equals 200 feet (1" = 200').
2. Existing and proposed streets, lots, and buildings, with all lots numbered in a logical numerical system.
3. Significant physical features such as floodplains, steep slopes, woodlands, and existing structures.
4. Contour lines at 5- to 10-foot intervals.
5. Approximate locations for stormwater control basins, if necessary.
6. Location plan showing the relationship of the subject tract to the surrounding road network and major physical features.
7. North point and graphic scale.
8. Name and address of the owner.

9. Name and address of the engineer, surveyor or architect, as applicable.
10. When applicable, the proposed density, building coverage, impervious coverage, green space, and other design information needed to determine compliance with the zoning Ordinance [Chapter 27].
11. Any additional information which the applicant believes will help explain the proposal.

It is to the applicant's advantage to show as much of the above-listed information as possible. Although the Planning Commission will discuss any plan presented, a lack of significant information may result in little useful guidance to the applicant.

*(Ord. 90-2, 7/16/1990, Section 302)*

**Section 303. Preliminary Plan Requirements.** All preliminary subdivision and/or land development plans shall comply with the following requirements:

1. **Drafting Standards.**
  - A. The scale of the plan shall be one of the following: 1 inch equals 10 feet, 20 feet, 30 feet, 40 feet, 50 feet, 60 feet, or 100 feet. In determining the scale of the plan, the legibility of lines and lettering on the plan should be considered.
  - B. Accuracy shall be to within one part in three hundred.
  - C. Bearings shall be show in degrees, minutes and seconds; distances shall be shown to 1/100 of a foot.
  - D. Sheet size shall be either 18 inches X 30 inches or 24 inches X 36 inches with a 2-inch wide margin on the left edge of the plan for the purpose of binding in a record volume. *(Ord. 94-2)*
  - E. All sheets shall be the same size, and be numbered relative to the total number of sheets (i.e., 1 of 5, etc.).
  - F. Where two or more sheets are needed to show the entire tract, a reduced scale key plan shall be provided sufficient to show their relationship.
  - G. An applicant may use the metric system of measurement if agreed to in advance by the Board of Supervisors in cooperation with the Township Engineer. If the metric system is used:
    - (1) A conversion table to English equivalents shall be placed on the plan.
    - (2) Major dimensions shall be noted in both systems, with the English numbers show in parentheses.
2. **Basic Information.** Each preliminary plan shall provide:
  - A. Name of the subdivision or land development.
  - B. Name and address of the property owner, subdivider, developer, or builder.

- C. Name, address, and professional seal of the individual or firm which prepared the plan.
- D. Date of preparation of the plan and a descriptive list of revisions to the plan, and the revision dates.
- E. North point and graphic scale.
- F. The entire tract boundary with bearings and distances and total tract acreage.
- G. A list of the basic dimensional requirements and the name of the applicable zoning district.
- H. The total number of lots in the subdivision and the total acreage. When applicable, the density and number of proposed units shall be shown.
- I. Parcel number and block and unit number as assigned to the property by Montgomery County Board of Assessment. (*Ord. 94-2*)
- J. After the first submission, the file number assigned to review file by Montgomery County Planning commission. This will be a six digit number such as 92-135-1, and can be found referenced in the Montgomery County Planning Commission review letters. (*Ord. 94-2*)

*(Ord. 90-2, 7/16/1990, Section 303; as amended by Ord. 94-2, 3/7/1994, Sections 2,3,4)*

**Section 304. Minor Preliminary Plans.** This Section allows simplified plan submission and processing requirements for subdivisions and/or land developments which are minor in nature, in accordance with the following criteria and requirements:

1. **Subdivision Qualification.** Proposed subdivisions shall conform to the following criteria:
  - A. Total number of building lots is five or less.
  - B. Parent tract has frontage on an existing, improved public street.
  - C. No new road construction or widening of existing streets is required.
  - D. No subdivision of contiguous land under the same ownership has occurred during the five year period prior to the current application.
  - E. Where a minor subdivision plan covers only a part of the owner's entire holding, a tentative sketch plan, as regulated by **Section 302**, herein, shall be submitted showing a proposed street and lot layout for the remaining area of the tract.
2. **Land Development Qualification.** Proposed land developments shall conform to the following criteria:
  - A. Total land area of the tract is less than 5 acres.
  - B. The tract has frontage on an exiting, improved public street.
  - C. No new road construction is required.



- D. Less than five dwelling units are proposed if residential, or less than 2,500 square feet of gross leasable area is proposed if non-residential.
  - E. No land development of the same tract, under the same ownership, has occurred during the five year period prior to the current application; nor has a subdivision occurred during the same five year period which has the effect of creating a qualifying parcel or parcels from a larger, non-qualifying tract.
3. Disqualification. The Board of Supervisors may require a major preliminary plan submission in place of a minor plan when conditions warrant it, at the advice of the Township Planning Commission or Engineer.
4. Existing Features. In addition to complying with the requirements of **Section 303** of this Part, minor preliminary plans shall provide the following information:
- A. Streets bordering or crossing the tract, showing names, right-of-way and cartway widths, and surface conditions.
  - B. Locations of other streets within 200 feet of the tract.
  - C. Approximate locations of sanitary and/or storm sewer lines.
  - D. Location of all watercourses and limits of any flood prone areas (data from Soil Survey and/or FEMA studies).
  - E. Contours obtained from U.S.G.S. maps for subdivisions; minimum 5 foot intervals for land developments.
  - F. Location and description of existing building and other structures, labeled "To Remain" or "To be Removed" as applicable, and location and description of existing buildings and other structures less than 50 feet beyond the tract boundaries.
  - G. Outer limits of tree masses.
  - H. Locations of any natural or man-made features which may affect the developability of the land, such as quarries, marshlands, etc., within the property and up to 50 feet beyond the tract boundaries.
  - I. Locations and description of major utilities, such as pipelines and electric transmission lines, both above and below ground, with a note describing additional setback or development restrictions required in their regard.
  - J. Areas subject to deed restrictions or easements.
5. Proposed Layout. The following information must be provided on a minor preliminary plan:
- A. Layout and dimensions of all lots, including the net lot area and number of lots.
  - B. All building setback lines.
  - C. Location of areas reserved for future access, noted on the plan.

6. **Approval.** Approval by the Board of Supervisors of a minor preliminary plan shall also constitute its approval as a final plan, provided that the certifications required by **Section 305(7)**, herein, are shown on the plan.

*(Ord. 90-2, 7/16/1990, Section 304)*

**Section 305. Major Preliminary Plans.** All proposals which do not qualify for submission as minor preliminary plans shall be submitted as major preliminary plans under the following regulations:

1. Major preliminary plans shall comply with the requirements of **Section 303** of this Part.
2. All survey work for plan preparation or other required design work shall be based upon the BMMA sanitary sewer system datum. When such is not available, the U.S.G.S. datum shall be used. Local survey datum may be used only upon the approval of the Township Board of Supervisors.
3. In addition, the following shall be shown on the plan:
  - A. Zoning classification(s) of all lands abutting the proposal.
  - B. Names of all current owners of immediately adjacent lands and lands on the opposite side of all streets.
  - C. A statement showing:
    - (1) Number of acres under proposal.
    - (2) Number of lots and/or dwelling units, or gross leasable area.
    - (3) Linear feet of new streets.
    - (4) Linear feet of streets to be widened.
  - D. Description of waivers, variances, or special exceptions and the date they were granted, if any.
  - E. Description of any deed restrictions or other covenants affecting development of the tract.
  - F. The requirements of any other Township ordinance which may affect the proposal.
  - G. Legend sufficient to indicate clearly between existing and proposed conditions.
4. **Existing Features.** Within the tract proposed for subdivision or land development, and within 100 feet of the tract (or greater or lesser distance as specified below), the following information shall be shown on the plan:
  - A. Streets bordering or crossing the tract, showing names, rights-of-way and cartway width and surface conditions.
  - B. Other streets within 400 feet of the tract of the tract, showing names, and right-of-way widths.

- C. Location and size of sanitary and storm sewers, including invert elevations and direction of flow, within 400 feet of the tract. Location and type of sewage systems.
  - D. Location and size of all lakes, ponds, watercourses, wetlands, and flood prone areas (flood data from Montgomery County Soil Survey, FEMA studies and/or supporting hydrologic and hydraulic data for 100-year flood limits when provided independent of FEMA data).
  - E. Contours at 2-foot intervals shall be provided for the tract and within 50 feet of the perimeter. Contours shall be accurately drawn from filed survey data or photogrammetric data. Contours from U.S.G.S. maps shall be allowed only upon approval by the Township.
  - F. Areas with slopes of 15 percent or greater, as delineated in Montgomery County Soil Survey, or determined from the contours shown on the plan.
  - G. Mapped limits of soil types from the Montgomery County Soil Survey and the limitations of each soil for the type of development proposed and for on-site sewage disposal, if applicable.
  - H. Location, size, character and configuration of existing building, labeled "To Remain" or "To be Removed" as applicable.
  - I. Location, size, species, and condition of trees six inches in diameter or greater, when standing alone or in small groups.
  - J. Outer limits of tree masses and a general description of their types, size and condition.
  - K. Locations and limits of rock outcroppings, quarries, springs, marshlands, ravines, and other natural or manmade physical features which may affect the location of proposed streets or buildings, both within the property and up to 50 feet beyond the tract boundaries.
  - L. Location, size and ownership of utilities, both above and below ground, with a note added to describe additional setback or development restrictions required in their regard.
  - M. Location of wells.
  - N. Location of existing stormwater or erosion control facilities, including basins, pipes, diffusion devices, and velocity controls.
  - O. Location and description of existing buildings and other structures less than 50 feet beyond the tract boundaries.
5. Proposed Subdivisions and/or Land Development Layout. The proposed road and lot layout shall show:
- A. The layout of proposed streets and alleys, including names, cartway and right-of-way widths, and other dimensional data consisting of centerline courses, distances, and curve data, curb lines and radii at intersections and street location tie-ins by courses and distances; ultimate rights-of-way for existing and proposed streets.

- B. Layout and dimensions of all lots, including the net lot area.
  - C. All building setback lines.
  - D. Location, size and configuration of all land to be used for common purposes, such as recreation and open space, with notations in regard to proposed use(s) and dedication, if applicable.
  - E. Proposed walkway locations.
  - F. Approximate locations, size and configurations of proposed buildings, along with the driveway locations.
6. Grading, Drainage and Utilities. The following proposed information shall be shown on the plans or otherwise submitted in written form:
- A. When required by the Township, the plan shall indicate existing and finished grade contours at 2-foot intervals.
  - B. Finished floor elevations of proposed buildings.
  - C. Approximate limits of site disturbance, including a clear delineation of existing vegetation to be removed and to be preserved.
  - D. Stormwater and erosion and sedimentation control methods and facilities, including swales or pipes, inlets, catch basins, stormwater basins, diffusion devices, velocity controls, and supporting data.
  - E. Sewage disposal facilities including on-lot systems or sanitary sewer lines, manholes, pumping stations, location of percolation tests, etc.
  - F. Water supply lines, well location, and fire hydrants, where applicable.
7. Proposed Improvements.
- A. The plan shall contain a tentative cross section and centerline profile for each proposed or widened cartway shown on the preliminary plan, including the profile for proposed sanitary sewers, water mains, storm drains, etc., showing manholes, inlets, and catch basins. When a roadway will eventually be extended onto adjacent property, the roadway profile shall extend at least 200 feet onto the adjacent property. These plans may be submitted on separate sheets.
  - B. The plan shall show preliminary design of any bridges, culverts or other structures and appurtenances which may be required.
  - C. A drainage computations report shall be submitted to cover all drainage facilities.
  - D. When required by the Township, a Soil Erosion Control Plan shall be prepared and submitted to the Township and Montgomery County Soil Conservation District. This may be provided during the final phases of plan design.

8. **Certifications.** Upon preliminary plan approval, the preliminary plan must show:
- A. The signature and seal of the registered surveyor verifying that the plan represents a survey made by him; that the monuments exist or will be placed as located; and that the dimensional and geodetic details are correct.
  - B. The signature of the subdivider, developer or builder certifying his/her adoption of the plan and any changes thereto.
  - C. The signatures of the Township Secretary, Chairman of the Board of Supervisors, Planning Agency Secretary and Chairman of the Planning Agency certifying that the Board of Supervisors have approved the preliminary plan and changes thereto on the date shown.
  - D. If the preliminary plan will also function as the final plan and be recorded, then the certifications shown in **Section 306(2)(C)** shall be used.

*(Ord. 90-2, 7/16/1990, Section 305)*

**Section 306. Final Plan Requirements.** In addition to the applicable items under **Sections 303 and 305**, all final subdivision and/or land development plans shall comply with the following requirements:

1. **Improvements Construction Plan.**

- A. **Drafting Standards.** The same standards shall be required for an improvements construction plan, except that the horizontal scale of the plan and profile shall not exceed 50 feet to the inch and the vertical scale of the plan shall not exceed 5 feet to the inch, or comparable metric scales with a conversion table. The plan and the profile shall be drawn to the same scale.
- B. **Information to be Shown.** The plan shall contain sufficient information to provide working plans for the construction of the proposed streets, or any portion thereof, including all appurtenances, sewers, utilities, as shown on the preliminary plan from one existing or approved street to another, or in the case of a cul-de-sac, to its turnaround. This information shall include:
  - (1) **Horizontal Plan.** The horizontal plan shall show details of the horizontal layout as follows:
    - (a) Information shown on the approved preliminary plan.
    - (b) The beginning and the end of proposed immediate construction.
    - (c) Stations corresponding to those shown on the profiles.
    - (d) The curb elevation at tangent points of horizontal curves, at road or alley intersections, and at the projected intersections of the curb lines.
    - (e) The location and size of sanitary sewers and lateral connections and water mains with distances between manholes, gas, electric and other utility pipes or conduits and of storm drains, inlets and manholes. Elevations (tops and inverts) shall be shown on all storm drainage and sanitary sewer structures. All utilities shall be shown together on each utility drawing.

- (f) The location, type and size of curbs and all paving widths.
  - (g) The location and species of all proposed shade trees and the location and type of fire hydrants and street lights.
- (2) Profiles. The profiles shall show details as follows:
- (a) Profiles and elevations of the ground along the centerlines of proposed streets and along the curb line and edge of pavement of existing streets. Finish grades shall be provided at least 50 feet.
  - (b) Profiles of sanitary sewers with a profile over the sewer of the existing and finished ground surface showing manhole locations beginning at the lowest manhole.
  - (c) Profiles of storm drains showing catch basins, inlet, and manhole locations, swales, ditches, etc.
  - (d) Profiles of water mains.
- (3) Cross Sections. The cross section for each classification of street shall comply with the Township's standards and specifications as minimum requirements. It shall show a typical cross section across the road with details of grading and construction as follows:
- (a) The ultimate right-of-way width and the location and width of the cartway.
  - (b) The type, depth and crown of paving.
  - (c) The type and size of curb.
  - (d) Grading of the sidewalk area should be carried to the full width of the ultimate right-of-way and slopes of cut or fill extended beyond the ultimate right-of-way.
  - (e) The location, width, type and depth of the sidewalks, when required.
  - (f) The typical locations, size and depths of sewers and utilities.
- (4) Additional Information. The following additional information shall be submitted with the final plan:
- (a) All required local, state and federal permits shall be submitted. These permits may include: Montgomery County, the Pennsylvania Department of Transportation (PENNDOT), or Township permits; Department of Environmental Resources (DER) permits for drainage, stream alteration, dams, erosion and sedimentation control, wetlands, air pollution, or sanitary sewage facilities.
  - (b) The following statement shall be required on the final plan: "The Approved Improvement Construction Plan, a copy of which may be inspected at the office of the Township Secretary, has been made a part of the Approved Final Plan."

- (c) All final engineering calculations which support the proposed improvements, such as drainage calculations, sanitary facility design calculations, or structural calculations.

2. Record Plan.

- A. **Drafting Standards.** The same standards shall be required for a record plan as for a preliminary plan, and in addition, for recording purposes, the plans shall be placed on sheet sizes of 18 inches X 30 inches, or 24 inches X 36 inches. All lines shall be drawn to be legible if the plan is reduced to one-half size or microfilmed. Lettering shall be no smaller than one-tenth inch.
- B. **Information to be Shown.** The plan, which shall include all portions of an approved preliminary plan, shall show:
  - (1) Courses and distances sufficient for the legal description of all the lines shown on the plan. The error of closure shall not be greater than one part in 30,000. [Ord. 94-2]
  - (2) The names of abutting owners and their property lines; names, locations, widths and other dimensions of all roads, including centerline courses, distances and curve data; descriptive data of street lines not parallel or concentric to a centerline, and location tie-ins by courses and distances to the nearest intersection of all existing, planned and approved streets, and alleys; easements, recreational areas and other public improvements, within the land to be subdivided or developed.
  - (3) All lots deeded to the ultimate right-of-way so that a single deed may be drawn to the appropriate body having jurisdiction for the dedication of streets by the subdivider, developer, or builder.
  - (4) Evidence that the plans are in conformance with the Zoning Ordinance [**Chapter 27**] and other applicable Township ordinances and regulations. In any instance where such plans do not conform, evidence shall be presented that an exception waiver, or variance has been officially authorized.
  - (5) The location, material and size of all monuments with reference to them.
  - (6) Building setback lines with distances from the ultimate right-of-way line.
  - (7) Restrictions in the deed affecting the subdivision of the property.
  - (8) The location of all floodplains, and steep slopes as defined in the Zoning Ordinance [**Chapter 27**] and herein.
  - (9) Offer of dedication of the ultimate right-of-way area of existing streets.
    - (a) When the ultimate right-of-way area of existing streets is offered for dedication, the following note shall be used:

"All that area between the existing legal right-of-way line and the ultimate right-of-way line of \_\_\_\_\_ is hereby offered for dedication to the governmental body having jurisdiction."

(b) When existing buildings are located within the ultimate right-of-way area, the following note may be added to the end of the ultimate right-of-way dedication note:

“, except that all the area under and immediately abutting existing buildings in the ultimate right-of-way is not offered for dedication but is hereby reserved for future road widening purposes.”

(10) A list of all sheets that are included within the plan.

C. Certifications. Before approval, the following applicable certifications shall appear on the record plan. All certifications shall be properly signed and sealed.

(1) Owner's Certification.

Commonwealth of Pennsylvania,  
County of Montgomery

On the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, before me the subscriber, a notary public of the Commonwealth of Pennsylvania, residing in \_\_\_\_\_, personally appeared \_\_\_\_\_ who acknowledges himself/herself (themselves) to be the owner(s) of the land shown hereon. All necessary approvals of this plan have been obtained and are endorsed thereon and that I (we) desire that this plan be duly recorded.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
My Commission Expires

I (We) do hereby certify that I am (we are) the sole registered owner(s) of the land herein subdivided and that there are no suits pending affecting the title of the same and that I (we) do hereby adopt this plan and desire the same to be recorded. I (We) do further save the Township harmless and indemnify the Township of Douglass against any liability or loss resulting from the subdivision or development of this plan\* for whatever reason present or future.

\_\_\_\_\_  
Owner

\_\_\_\_\_  
Owner

(2) Corporate Certification.

Commonwealth of Pennsylvania,  
County of Montgomery

On the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, before me the subscriber, a notary public of the Commonwealth of Pennsylvania, residing in \_\_\_\_\_, personally appeared \_\_\_\_\_ who acknowledges himself/herself (themselves) to be the \_\_\_\_\_ of \_\_\_\_\_, a corporation, and that as such being authorized to do so, he/she executed the foregoing plan by signing the name of the said corporation by himself/herself as that the said corporation is the owner of the land show hereon. All necessary approvals of this plan have been obtained and are endorsed thereon and that the said corporation desires that this plan be duly recorded.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
My Commission Expires



I, \_\_\_\_\_, acknowledge myself to be the \_\_\_\_\_ of \_\_\_\_\_, a corporation, and that as such being authorized to do so, certify that the corporation is the sole registered owner of the land herein subdivided and that there are no suits pending affecting the title of the same and that I do hereby adopt this plan and desire the same to be recorded. I do further save the Township harmless and indemnify the Township of Douglass against any liability or loss resulting from the subdivision or development of this plat for whatever reason present or future.

\_\_\_\_\_  
Corporate Official

\_\_\_\_\_  
Office

**(3) Surveyor's Certification.**

I hereby certify that the plan shown and described hereon, as well as all other drawings which are a part of the plan set, are true and correct to the accuracy required by the Douglass Township Subdivision and Land Development Ordinance, and were prepared by me or under my direction for which I accept full responsibility, and represents a field survey performed by me or under my direction. The existing perimeter monuments shown hereon have been located as part of the survey and all other proposed perimeter monuments shall be set.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Surveyor

**(4) Township Supervisor's Certification.**

This plan has been approved by the Douglass Township Board of Supervisors this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
Chairman

\_\_\_\_\_  
Attested: Secretary

**(5) Township Planning Agency Certification.**

This plan has been approved by the Douglass Township Planning Agency this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
Chairman

\_\_\_\_\_  
Attested: Secretary

**(6) Wetlands Certification.**

I do hereby certify that the delineation of the wetlands shown on this plan is in accordance with the findings of my field investigation and that I have determined these limits based upon the U.S. Corps of Engineers guidelines.

\_\_\_\_\_  
Date

**(7) County Recording Note.**

Recorded in the Office of the Recorder of Deeds, in Norristown, Pennsylvania, the Plan Book \_\_\_\_\_, Page \_\_\_\_\_, on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_.

- (8) An empty block or space with minimum dimensions of 3½ inches X 2 inches shall be placed on the right side of the record plan for Montgomery County Planning Commission's 'Reviewed' stamp. This empty block or space should replace any statement that is set aside for Montgomery County Planning commission use or signature. Montgomery County Planning Commission does not sign or otherwise use those statements. (Ord. 94-2)

(Ord. 90-2, 7/16/1990, Section 306; as amended by Ord. 94-2, 3/7/1994, Sections 5,6)

**Section 307. Land Development Plans.** Land Development plans shall show the following information, either for a preliminary or final plan, in addition to the information required by **Sections 303, 305, and 306** of this Part:

1. All new covenants relating to use.
2. Man-made features for the use of two or more prospective occupants.
3. The density and/or intensity of use.
4. The total building coverage and the area of the total tract devoted to each use or group of uses, if applicable.
5. The location and placement of accessory structures and facilities.
6. All roads, driveways, parking facilities and pedestrian ways (including the total number of parking spaces).
7. The locations, areas, and types of common open space and/or recreation facilities.
8. A conceptual site utilization layout defining the general location of all proposed uses and activities.

(Ord. 90-2, 7/16/1990, Section 307)

**Section 308. Tentative Sketch Plan Procedure.** Applicants are encouraged to submit tentative sketch plans for subdivision and/or land developments, although this type of plan submission is optional.

1. Tentative sketch plans should be presented to the Township Planning Agency for informal discussion at a regularly scheduled Planning Agency meeting, following a request made to the Township Zoning Officer or Secretary to be placed on the agenda.
2. The purpose of a tentative sketch plan submission is to provide informal advice and guidance to an applicant prior to preparation of preliminary plans, and therefore, it does not constitute a formal plan submission and is not subject to a time limit.
3. The Township Planning Agency may make non-binding suggestions and recommendations to the applicant during the meeting at which the plan is discussed. These need not be presented in writing to the applicant' however, they should be summarized in the minutes of the township Planning Agency for reference.
4. If a proposal is large or complex, the Township Planning Agency may defer completing its comments and recommendations until it has consulted its technical advisors. However, the Planning Agency will try to expedite this informal review process.

(Ord. 90-2, 7/16/1990, Section 308)

**Section 309. Preliminary Plan Submission and Review Procedure.** Preliminary plans shall be submitted for all subdivisions and/or land developments subject to the following procedure and subject to the requirements of **Sections 303, 304, 305, 310, and 311.**

1. Five copies of the preliminary plan shall be submitted to the Township Secretary or Zoning Officer, in person by the applicant or applicant's agent, at the Township Building during normal Township business hours.
2. Plans must be accompanied by:
  - A. Township filing fee.
  - B. Montgomery County Planning Commission review fee.
  - C. Completed Township application and administrative forms.
3. The Plan submission date will be stamped on the plan, following a cursory review of the plan, only if the plan shows basic compliance with the requirements of this Part.
4. The Township Secretary or Zoning Officer shall distribute copies of the plan to the following for review and recommendations:
  - A. Township Planning Agency.
  - B. Board of Supervisors.
  - C. Township Engineer.
  - D. Montgomery County Planning Commission, along with the required review fee and request for review.
  - E. Township Solicitor, other Township boards or officials, sewer and/or water authorities, and/or other technical consultants as needed.
5. The application for approval of the preliminary plan shall be placed on the agenda of the next regularly scheduled meeting of the Township Planning Agency following the plan submission date.
6. The application for approval of the preliminary plan, which should include consideration of the timely recommendations of the Township Engineer, Montgomery County Planning Commission, and other technical advisors when requested, the Township Planning Agency shall communicate its recommendation to the Board of Supervisors.
7. The Board of Supervisors shall have a 90-day time period to act on the plan unless the applicant has agreed in writing to an extension of the time period.
  - A. The 90-day time period shall be measured from the date of the next regularly scheduled Township Planning Agency meeting following the plan submission date.
  - B. If the next regularly scheduled Township Planning Agency meeting occurs more than 30 days following the plan submission date, then the 90-day time period shall be measured from the 30<sup>th</sup> day following the plan submission date.
  - C. If an extension of the 90-day time period is applied, it shall be measured from the expiration of the original 90-day period. A time extension shall postpone the deadline and effects of the 90-day time period for the additional number of days agreed to in writing.

8. The Board of supervisors shall consider the preliminary plan application at one or more of its public meetings during the 90-day time period, and/or extension thereof if applicable, and shall render a decision on the plan following receipt of the recommendations of the Township Planning Agency, Township Engineer, Montgomery County Planning Commission, and/or other technical advisors as requested.
  - A. Provided, in accordance with the Pennsylvania Municipalities Planning Code, that the Board of supervisors shall not approve an application until the Montgomery County Planning Commission's report of its recommendations is received, or until the expiration of 30 days from the date the application was forwarded to the County.
  - B. In accordance with the policies of the Montgomery County Planning Commission, the 30-day time period shall begin from the date the application was received at the County.
9. Procedure Following the Board's Decision. When the Board of Supervisors makes a decision on a preliminary plan, one of the following procedures will be followed, depending on the type of decision:
  - A. Denial. If the Board denies approval of a preliminary plan in terms as filed by the applicant, then the written notification to the applicant shall specify the defects found in the application and describe the requirements which have not been met, and shall cite the provisions of the statute or ordinance relied upon.
  - B. Approval. If the Board approves a preliminary plan, in terms as filed by the applicant, then the Township Secretary will so certify thereon, and two copies of the approved plan will be forwarded to the applicant. The applicant shall then submit five paper copies and two mylar or linen copies of the approved plan for Township seal and signature.
  - C. Approval Subject to Conditions.
    - (1) If the Board approves a preliminary plan subject to specific conditions, then those conditions shall be accepted in writing by the applicant, otherwise the plan shall be denied approval. Therefore, the written notification to the applicant shall:
      - (a) Specify the conditions of approval and request the applicant's written agreement to the conditions.
      - (b) State that the application will be denied if the applicant does not agree to the conditions, and specify the defects found in the application, describe the requirements which have not been met, and cite the provisions of the statute or ordinance relied upon for denial of the plan.
    - (2) Following submission of written agreement to the conditions specified by the Board, the applicant shall meet the requirements of **Section 312** and shall submit five paper copies and two mylar or linen copies of the preliminary plan, which show compliance with the conditions, by plan revision or notation, for township seal and signature. Two signed copies will be returned to the applicant, along with a paper copy and mylar which must be recorded at the Recorder of Deeds.

*(Ord. 90-2, 7/16/1990, Section 309)*

**Section 310. Effective Period of Approval.** Approval will be effective for a period of 5 years from the date of preliminary plan approval, unless extended in writing by the Board of Supervisors.

1. No subsequent change or amendment in the zoning, subdivision, or other governing ordinance or plan shall be applied to affect adversely the right of the applicant to commence and to complete any aspect of the approved development in accordance with the terms of approval within that 5-year period.
2. In the case where preliminary and final plan approvals are concurrent, the five year period shall be measured from the date of that concurrent approval.
3. In a case of a preliminary plan calling for the installation of improvements beyond the 5-year period, a schedule shall be filed by the applicant with the preliminary plan delineating all proposed sections, as well as deadlines within which applications for final plan approval of each section are intended to be filed.
  - A. Such schedule shall be updated annually by the applicant on or before the anniversary of the preliminary plan approval, until final plan approval has been granted to the final section.
  - B. Any modification in the aforesaid schedule shall be subject to approval of the Board of Supervisors in its discretion.
  - C. Each section in any residential subdivision or land development, except for the last section, shall contain a minimum of 25 percent of the total number of dwelling units as shown on the preliminary plan, unless a lesser percentage is approved by the Board of Supervisors in its discretion.
  - D. For any section or sections, beyond the initial section, in which the required improvements have not been substantially completed within the initial 5-year period, the protections of **Section 310(1)**, above, shall also apply to each subsequent section for an additional term of 3 years from the date of final plan approval of each section.

*(Ord. 90-2, 7/16/1990, Section 310)*

**Section 311. Concurrent Preliminary/Final Plan Approval.**

1. The following may be granted concurrent preliminary and final plan approval when all required certifications are placed on the plan in accordance with **Section 306(2)(C)** of this Part:
  - A. Minor preliminary plan.
  - B. Major preliminary plans showing all information required for a final plan and for which no changes have been required by the Board of Supervisors, provided that any financial guarantees and/or development agreements have been completed to the satisfaction of the Board of Supervisors, upon recommendation of the Township Engineer and Solicitor.

2. Following a concurrent approval, plans may be recorded in accordance with the procedures of **Section 312(9)** of this Part.

*(Ord. 90-2, 7/16/1990, Section 311)*

**Section 312. Final Plan Procedure.** Following preliminary plan approval, a final plan shall be submitted in accordance with the following procedure and subject to the requirements of **Section 306** of this Part, except for those plans exempted in compliance with **Section 311** of this Part, "Concurrent Preliminary/Final Approval."

1. The final plan shall conform to the preliminary plan as approved by the Board of Supervisors, including all required modifications and conditions agreed to by the applicant.
2. The final plan may be submitted in section in accordance with **Section 310(3)** of this Part.
3. Five copies of the final plan shall be submitted to the Township Secretary or Zoning Officer, accompanied by the Township filing fee and required administrative forms.
4. The plan submission date will be stamped on the plan and the application for final plan approval shall be placed on the agenda of the next regularly scheduled meeting of the Township Planning Agency following the plan submission date.
5. Copies of the plan will be distributed to the following for review and comment:
  - A. Township Engineer, Solicitor, Zoning Officer and Planning Agency.
  - B. Other Township boards or officials, sewer and/or water authorities, and/or other technical advisors as needed.
6. The Board of Supervisors shall consider the final plan at one or more of its public meeting during the allotted 90-day time period, in accordance with **Sections 309(7)** and **309(8)** of this Part.
7. A final plan shall not be approved until the Board of Supervisors are assured that:
  - A. The plan conforms to the approved preliminary plan.
  - B. All engineering and other technical details have been resolved to the satisfaction of the Township Engineer, and other technical advisors when needed.
  - C. All financial guarantees and legal agreements have been reviewed and found satisfactory by the Township Solicitor, in accordance with **Parts 5 and 6** of this Chapter. When requested by the applicant, the Douglass Township Board of Supervisors shall furnish the developer with a signed copy of a resolution indicating approval of the final pan contingent upon the applicant obtaining a satisfactory financial security. The final plan shall not be signed or recorded until the financial improvements agreement is executed. The resolution of contingent approval shall expire and be deemed to be revoked if the financial security agreement is not

executed within 90 days unless a written extension is granted by the Board of Supervisors.

- D. The plan complies in all respects with applicable Township ordinances or that appropriate variances or waivers have been granted for features that do not comply.
  - E. All necessary permits have been obtained from the applicable regulatory agencies, authorities, or departments.
8. When the final plan is approved, the applicant shall present five paper and two linen or mylar copies of the plan to be signed by the Chairman of the Board of Supervisors, the Township Secretary and the Chairman and Secretary of the Township Planning Agency, together with the date of the approval and official Township seal.
9. Within 90 days following final plan approval, the applicant shall record the final plan in the office of the Record of Deeds of Montgomery County.
- A. In accordance with the Pennsylvania Municipalities Planning Code, whenever final plan approval is required by a municipality, the Recorder of Deeds shall not accept any plan for recording unless it contains the official approval of the municipal governing body and certification of review by the County Planning commission.
  - B. Prior to recording, the applicant should present the municipally approved plan to the Montgomery County Planning Commission for its stamp and seal, with one paper copy made available to the County Planning Commission for its files.

*(Ord. 90-2, 7/16/1990, Section 312)*

## **Part 4 DESIGN STANDARDS**

**Section 400. General.** The following principles of subdivision and land development, general requirements, and minimum standards of design shall be observed by the applicant in all instances:

1. All portions of a tract being subdivided shall be designated as lots, roads, public lands or other land uses.
2. Whenever possible, applicants shall preserve scenic points, historic sites and other community assets and landmarks, as well as natural amenities such as mature trees and waterways.
3. Subdivisions and land developments should be laid out so as to avoid excessive cut or fill.
4. Applicants shall observe the ultimate rights-of-way for contiguous existing roads as prescribed in this Part. Additional portions of the corridors for such roads shall be offered to the government agency having jurisdiction at the time the subdivision or land development is consummated. Applicable building setback lines, as defined by the Township Zoning Ordinance [**Chapter 27**] of current adoption, shall be delineated as measured from the ultimate right-of-way lines.
5. The standards of design in this Part will be used to judge the adequacy of subdivision and land development proposals. The standards included in these regulations are minimum design requirements. The Township Board of Supervisors reserves the right, in any case, to request that development features exceed these standards if conditions so warrant.
6. The Township Board of Supervisors may modify or adjust the standards of this Part to permit reasonable utilization of property while securing substantial conformance with the objectives of the regulations.
7. Floodplain land shall not be subdivided or developed except in accordance with the floodplain regulations set forth in the Township Zoning Ordinance [**Chapter 27**].
8. Improvement construction requirements will be completed under specification of the Pennsylvania Department of Transportation, the Pennsylvania Department of Environmental Resources, the Montgomery County Soil and Water Conservation District, and other appropriate agencies. In the event of conflict, the specification contained in the Part shall govern.
9. The developer\* or builder\*\* shall construct and install, at no expense to the Township, the roads, curbs, sidewalks, water mains, sanitary and storm sewers, street lights, fire hydrants, road and street signs, shade trees, monuments and other facilities and utilities specified in this Part. Construction and installation of such facilities and utilities shall



conform to the Douglass Township Engineering Standards, where applicable, and shall be subject to inspection by appropriate Township officials during the progress of the work; the subdivider shall pay for these inspections.

*(Ord. 90-2, 7/16/1990, Section 400)*

**Section 401. Recommendation by Planning Agency.**

1. The standards of design in this Part shall be used to judge the adequacy of subdivision proposals. Whenever the literal application of these standards would cause undue hardship or be plainly unreasonable, the Township Planning Agency may recommend to the Township Board of Supervisors such reasonable modifications as will not be contrary to public interest.
2. The standards included in these regulations are minimum design requirements.
3. Developers and subdividers shall, if deemed necessary by the Township Board of Supervisors upon the recommendation of the Township Planning Agency, provide areas and easements for schools and other public buildings, parks, playgrounds, playfields, rights-of-way and easements for storm and sanitary sewer facilities in any area that cannot immediately be joined to the existing storm and sanitary sewer systems of the Township.

*(Ord. 90-2, 7/16/1990, Section 401)*

**Section 402. Modification of Requirements.** The Township Board of Supervisors may grant a modification of the requirements of this Part, through a waiver, if strict application of these requirements would be unreasonable, provided that such modification will not be contrary to the public interest and that the purpose and intent of this Part is observed. All requests for a modification shall:

1. Be in writing and part of an application for subdivision and/or land development;
2. State the grounds and facts of unreasonableness or hardship on which the request is based;
3. List the provision(s) of this Chapter involved; and
4. State the minimum modification necessary.

*(Ord. 90-2, 7/16/1990, Section 402)*

**Section 403. Requirements for New Streets and Extensions of Existing Streets.** All new streets and extensions and widening of existing streets:

1. Shall be offered for dedication to the Township; state roads shall first be offered to the State, County roads shall first be offered to the County;
2. Shall conform with the circulation element of the Township Comprehensive Plan, as amended, Township Ultimate Right-of-Way Map, and county or state highway plans, and be coordinated with existing streets;

3. Shall provide appropriate access between abutting tracts of land for immediate or future use;
4. Shall create a road hierarchy among interior subdivision and land development streets and exterior streets to insure proper through-traffic flow, local access, and internal traffic distribution and flow;
5. Shall be related closely to existing topography to assure reasonable grades, alignment and drainage, appropriate access to lots, and to minimize regarding and removal of vegetation;
6. Shall be designed to continue existing streets at equal or greater right-of-way and cartway width, as recommended by the Township Engineer and Planning Agency.

*(Ord. 90-2, 7/16/1990, Section 403)*

**Section 404. Street Classifications and Requirements.** Every street, road, or highway within the Township shall be classified by its function as one of the following, and shall be subject to the requirements for its classification as contained in this Part:

1. **Primary Arterials.** Are the major highways which carry high volumes of through traffic on an inter-community, regional, or higher level. They are further classified into the following sub-classification: limited access highways, controlled access highways, semi-controlled access highways. Of the primary arterials, the semi-controlled access highway shall be the only one addressed in this Part.
  - A. **Semi-Controlled Access Highway.** Requires lesser restrictions on access granted to adjacent properties, and provides more frequent access points at grade level intersections than the other primary arterials. Access from individual properties, however, will be restricted as much as is reasonably possible. Route 73 (East Philadelphia Avenue and Big Road) and Swamp Pike, within the limits of Douglass Township are semi-controlled access highways. Semi-controlled access highways shall be governed by the regulations of **Section 405** of this Part.
2. **Secondary Arterials.** Are those streets, road, and highways which collect, carry, and feed medium volumes of traffic, and connect areas within and adjacent to the Township. They are further classified into the following sub-classifications: collectors and feeders. In this Part, collectors and feeders are combined into one sub-classification, collectors.
  - A. **Collectors.** Serve to connect primary arterials with lesser classified streets, and distribute traffic throughout the Township and adjacent areas. Collectors shall be governed by the regulations of **Section 405** of this Part.
3. **Local Access Streets.** Are the minor streets which carry the lowest volumes of traffic and serve primarily to provide vehicular access to adjacent land uses. They are further classified into the following sub-classifications, and are regulated as referenced therein:
  - A. **Residential Streets.** Shall function primarily to provide vehicular access and street frontage for lots and/or buildings within a residential subdivision and/or land development in areas of the Township which are zoned R-1, R-1A, R-2, R-3 and R-4. Residential streets shall comply with the regulations of **Section 405** of this Part.

B. Industrial Streets. Shall function primarily to provide vehicular access and street frontage for industrial lots and land uses. Industrial streets shall function primarily to serve industrial and office development in areas of the Township that are zoned M-1 and M-2. Industrial streets shall comply with the regulations of **Section 405**.

*(Ord. 90-2, 7/16/1990, Section 404*

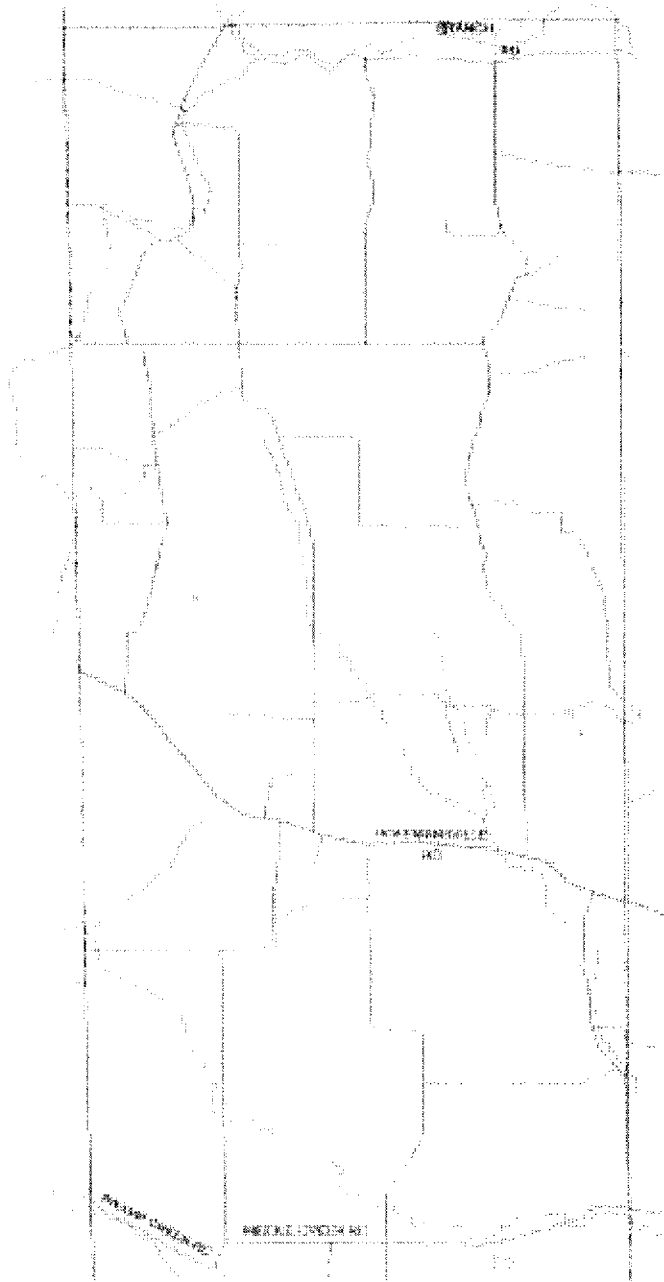
**Section 405. Street Design Standards (According to Zoning District).** All streets shall conform to the following standards.

	<u>Right-of-Way Width</u>	<u>Cartway Width</u>	<u>Curbs Required</u>	<u>Permitted Parking</u>	<u>Additional Lane Width</u>
<b>Semi-Controlled Access:</b>					
In R-1 and R-1A Districts	100 Feet	28 Feet	Yes	None	12 Feet
In All Other Districts	100 Feet	52 Feet	Yes	None	12 Feet
<b>Collectors:</b>					
In R-1 and R-1A Districts	60 Feet	28 Feet	Yes	None	11 Feet
In All Other Districts	60 Feet	40 Feet	Yes	Both Sides	11 Feet
<b>Residential:</b>					
In R-1 and R-1A Districts	50 Feet	28 Feet	Yes	None	11 Feet
In R-2, R-3, And R-4	50 Feet	30 Feet	Yes	1 Side Only	11 Feet
<b>Industrial:</b>					
In M-1 and M-2 Districts	60 Feet	34 Feet	Yes	1 Side Only	12 Feet

1. When streets follow a zoning district boundary, the street shall conform to the design standards of the more intense zoning district.
2. The street classifications for all existing streets and all proposed collector streets within the Township are shown in **Figure 1**, the Township Street Classification Map.
3. All new roads in commercial zoning districts shall meet the collector street design standards.
4. Collector streets in residential subdivisions shall be provided in the following cases and meet the following requirements:
  - A. When the subdivision has 50 or more dwelling units, a collector street shall be provided and designed to carry traffic from residential streets in the subdivision to existing streets, especially existing collector or higher classification streets.
  - B. When a collector street proposed in the Township's 1988 Comprehensive Plan crosses the property, as shown in **Figure 1**, a collector street shall be provided that follows the alignment in **Figure 1**.
  - C. When the subdivision is between two or more existing collector or higher classification streets, a collector street, that directly connects these streets, shall be provided.

- D. Whenever possible, residential collector streets shall be designed to have no residential lots directly fronting on them. When this is not possible, the lots fronting on the collector street shall have at least 100 feet of frontage and shall contain an off-street turnaround area designed so that vehicles will not have to back out onto the collector street.
- E. The Supervisors may waive the requirements outlined above where collectors will not serve the public safety or convenience

**Figure 1  
ROADWAY CLASSIFICATION MAP**

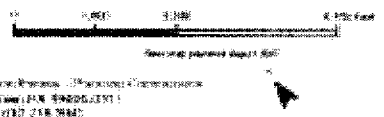


**Douglas Township  
Northern Section  
Road Classification**

- Minor Arterial
- - - - - Major Collector
- ..... Minor Collector
- · - · - Other

This map category contains private subdivisions, alleys, residential, commercial, agricultural roads, parking lots.

**MCPC** Montgomery  
County  
Planning  
Commission  
Montgomery County Council, Executive Office, Transportation  
100 North St. E., Harrisonville, MO 64503-0001  
618.714.2000 ext. 2100 or 2101  
www.montgomery.org/planning



This map is based on 2007 data provided by the Missouri Department of Transportation. The information shown here is for Montgomery County Board of Health and is not intended to be used as a legal authority of procedure in the engineering process.



5. All new roads in residential zoning districts that are not required to meet collector or higher classification street design standards shall meet the residential street design standards.
6. For semi-controlled access highways, the right-of-way width may be reduced to 80 feet by the Board of Supervisors.
7. For semi-controlled access highways, two lanes may be provided when approved by the Board of Supervisors and PENNDOT.
8. For all street classifications, the Supervisors may require additional right-of-way and paving width when:
  - F. Turning lanes are necessary for safety or convenience; and
  - G. The amount of projected traffic warrants additional paving width.
9. For no-curb streets, shoulder material treatment shall be provided to control storm drainage erosion.

*(Ord. 90-2, 7/16/1990, Section 405; as amended by Ord. 94-2, 3/7/1994, Section 7; and by Ord. 96-1, 1/15/1996)*

**Section 406. Single-Access Streets.**

1. Any street which is served by only one intersection with a through-street shall be considered a single-access street, regardless of the street's configuration within the proposed subdivision or land development. Included in this classification of streets are:
  - A. Cul-de-sac streets (temporary and permanent).
  - B. Multiple cul-de-sac streets.
  - C. Streets which loop back to themselves.
  - D. Stub streets.
2. Single-access streets shall be subject to the requirements for their classification of street, notwithstanding their single-access status.
3. Permanent Cul-de-Sac Street.
  - A. Shall be permanently closed at one end.
  - B. Shall be provided with a vehicular turnaround at the closed end with a right-of-way radius of at least 50 feet, and a paving radius of at least 40 feet.
  - C. Shall not exceed 500 feet in length, nor [be] less than 250 feet, unless approved by the Supervisors when warranted by special conditions.

- (1) Measurement of the length shall be made from the right-of-way line of the through street to the most distant point on the right-of-way of the turnaround, measured along the cul-de-sac centerline.
- (2) Special conditions may include, but not be limited to:
  - (a) Extreme topographical restrictions (slopes, floodplains, etc.).
  - (b) Oddly shaped tract configuration.
  - (c) Lack of alternative outlets because of surrounding developed conditions.
  - (d) Shall be served by an appropriately located emergency Accessway when required by the Supervisors.

4. Temporary Cul-de-Sac Streets.

- A. May be temporarily closed at one end, with the intent to extend the street onto the abutting tract upon its development.
- B. Shall be built to the tract boundary line at a location and grade that are logical for extension onto the abutting tract, but shall not exceed 750 feet, nor be less than 250 feet in length, unless approved by the Supervisors when warranted by special conditions, as in **Section 406(3)(C)(1)** and **(2)** herein.
- C. Shall not be extended as a cul-de-sac street, but shall be connected to another through street, unless approved by the Supervisors when warranted by special conditions as in **Section 406(3)(C)** herein.
- D. The developer shall show proof satisfactory to the township that a temporary dead-end road may feasibly and economically be extended and forms a logical step in the circulation pattern of the area in which it is located.
- E. Shall be provided with a vehicular turnaround at the closed end, abutting the tract boundary, with a paving radius of at least 40 feet.
  - (1) Construction shall meet the same requirements as for a permanent cul-de-sac turnaround.
  - (2) Those portions of the turnaround extending beyond the street right-of-way shall be located on temporary access easements, valid only until the road is extended.
  - (3) Upon extension of the street, the full rights and responsibilities for the area of the temporary easements shall revert to the owners of the lots on which they were located.
- F. The developer responsible for extension of the street shall also be responsible for the following:
  - (1) Removal of all curbing and paving of the temporary turnaround beyond the width of the street's cartway.



- (2) Installation of new sidewalk, curbing, and cartway paving to complete the street connection.
- (3) Extension of utilities as necessary.
- (4) Repair of any improvements damaged in this process.
- (5) Grading, installation, and/or restoration of lawn areas where affected by this removal and construction process.

5. Multiple Cul-de-Sac Streets.

- A. Are single-access streets which terminate in more than one vehicular turnaround.
- B. Shall be avoided in favor of more desirable street layouts.
- C. May be permitted where the length of the cul-de-sac is less than 500 feet, but more than 250 feet, measured from the through street intersection to each turnaround.
- D. May be permitted to exceed the 500 feet limit when approved by the Supervisors when warranted by special conditions, as in **Section 406(3)(C)(2)**, herein, or when qualified as a temporary cul-de-sac as regulated in **Section 406(4)** herein.
- E. Shall be served by an appropriately located emergency accessway when required by the Supervisors.

6. Streets Which Loop Back to Themselves.

- A. Are single-access streets which do not terminate in a vehicular turnaround, but instead loop back to intersect with themselves.
- B. Shall be discouraged but may be permitted when no alternative are determined to be feasible and preferable by the Supervisors, upon advice of the Township Planning Agency and Engineer.
- C. When permitted, shall meet the following requirements:
  - (1) Shall not under any circumstances exceed 2,000 feet in length, measured from the intersection with the through street, along the entire centerline around to its intersection with itself.
  - (2) Shall not contain more than 45 residential lots or dwelling units.
  - (3) Shall be served by an appropriately located emergency accessway.

7. Stub Streets.

- A. Shall be provided in appropriate locations for vehicular access to abutting undeveloped lands when required by the Supervisors, upon advice of the Township Planning Agency and Engineer.

- B. Shall not be longer than the width of two building lots abutting the street.
- C. Shall not be provided with a vehicular turnaround.
- D. Shall be constructed to the property line in accordance with the standards of this Part applicable to the classification of street it will be upon extension.
- E. Shall not provide access to more than two lots, one on each side of the stub street.

*(Ord. 90-2, 7/16/1990, Section 406)*

**Section 407. Street Alignment.** Sight distance, horizontal and vertical curvature, maximum and minimum street grades shall be provided on all streets in compliance with the standards contained in this Section.

1. Horizontal Curvature. Horizontal curves shall be used at all changes in direction in excess of one degree, and shall consider distance, change in grade, and alignment. The following standards shall be used:
  - A. Minimum Curve Radius:
    - (1) Semi-controlled access: 300 feet.
    - (2) Collectors: 200 feet.
    - (3) Residential and industrial: 150 feet.
    - (4) Radius measured at centerline.
  - B. Curves and tangents:
    - (1) Long radius curves shall be used rather than a series of shorter radius curves connected by tangents.
    - (2) Reverse curves shall be separated and connected by a tangent of a minimum of 100-foot length.
    - (3) Curve. Tangent relationship shall follow accepted engineering guidelines for safety and efficiency. For example, minimum radius curves shall not be used at the ends of long tangents.
  - C. Super-Elevation. Semi-controlled access streets shall be super-elevated in compliance with accepted engineering standards when a curve radius of less than 600 feet is used.
  - D. Approaches to Intersection. Approaches to intersections shall follow a straight course for a minimum of 100 feet from the intersecting centerlines.
2. Vertical Curvature. Vertical curves shall be used at changes in grade of more than one percent, in compliance with the following requirements:

- A. The following length of vertical curve shall be provided for each percent of grade change:
    - (1) Semi-controlled: 100 feet
    - (2) Collectors: 50 feet
    - (3) Residential and industrial: 25 feet
    - (4) Within 150 feet of intersection (stop condition): 10 feet
  - B. The high point or low point on a vertical curve shall be clearly identified on plans and profiles, as appropriate.
  - C. Over summits or in sumps vertical curves shall not produce excessive flatness in grade.
3. **Street Grades.** All streets shall be graded as shown on the street profile and cross section plans submitted and approved as a part of the preliminary plan approval process for subdivision and/or land development. Street grades shall comply with the following:
- A. Minimum grade for all streets shall be one percent.
  - B. Maximum grades for streets shall be:
    - (1) Semi-controlled access and collector streets, 7 percent.
    - (2) Residential and industrial streets, 10 percent for distances less than 1,500 feet.
  - C. Street grades in excess of 5 percent should be avoided wherever possible.
  - D. Street grades shall be measured along the centerline.
  - E. Curve-grade combinations shall follow accepted engineering guidelines for safety and efficiency, for example, minimum radius horizontal curves will not be permitted in combination with maximum grades.
  - F. At all approaches to intersections, street grades shall not exceed 4 percent for a minimum distance of 50 feet.
  - G. The grade of the outer perimeter of cul-de-sac turnarounds shall not exceed 4 percent, measured along the curbline.
  - H. All street grading shall be checked for accuracy under inspection by the Township Engineer.

*(Ord. 90-2, 7/16/1990, Section 407)*

**Section 408. Street Intersections.** All street intersections under the jurisdiction of this Part shall be subject to the requirement of this Section.

1. Number of Streets. Not more than two streets shall intersect at the same point.
2. Three-Way/Four-Way Intersections. Three-way or "T" intersections shall be used instead of four-way intersections unless the four-way intersection can be justified in terms of necessary and desirable through traffic movements.
3. Cul-de-Sac Intersections.
  - A. Intersections with permanent cul-de-sac streets shall be designed with the cul-de-sac street extending as a side street from the through street, rather than have a through street extend through an intersection to terminate as a cul-de-sac.
  - B. Four-way intersections may be created using two permanent cul-de-sac streets intersecting directly opposite one another along a through street, when the through street is a residential or industrial street.
4. Corrective Changes to Existing Intersections. When existing streets intersect at odd angles or have more than four approaches, the applicant shall make corrective changes to bring the intersection into compliance with this Part, as required by the Supervisors, who shall first seek the advice of the Township Engineer and Planning Agency and other technical advisors or agencies, as appropriate. For State and County highways, corrective changes shall comply with the requirements of the appropriate agency.
5. Waiver of Corrective Changes. The Supervisors may waive the above requirements for corrective changes under one or more of the following conditions:
  - A. When changes made on the applicant's land will not improve the intersection's deficiencies.
  - B. When other road improvements are already planned which could correct the problem without changes required of the applicant.
6. Angle of Intersections.
  - A. All intersection approaches shall be designed at right angles unless sufficient reason exists to justify a lesser angle. However, no angle shall be less than 75 degrees for all intersections with semi-controlled access highways or 60 degrees for collector, residential, or industrial streets, measured at the centerline intersections.
  - B. Where angled intersections are used it is preferable to design them so that the heavier traffic flow will make the obliquely angled turn rather than the acutely angled turn.

7. **Pavement and Right-of-Way Intersection Radii.** Street intersections shall be rounded with tangential arcs at the pavement edge (curbline) and right-of-way lines as listed below. Where two streets of different right-of-way widths intersect, the radii of curvature for the widest street shall apply. The curves shall be concentric with each other, when possible.

<u>Type of Street</u>	<u>Minimum Radius at Pavement Edge</u>	<u>Minimum Radius at Right-of-Way Line</u>
Semi-Controlled	60 feet	25 feet
Collector	40 feet	20 feet
Residential	25 feet	15 feet
Industrial	40 feet	20 feet

*(Ord. 90-2, 7/16/1990, Section 408)*

**Section 409. Intersection Spacing.** Spacing of intersections under the jurisdiction of this Part shall be done in compliance with the regulations contained in this Section, measured from centerline to centerline.

1. **Semi-Controlled Access Highways/Without Curbs.**

- A. Street intersections with semi-controlled access highways, without curbs, shall be spaced a minimum of 800 feet apart when located on the same side of the street.
- B. When located on opposite sides of the street, street intersections with semi-controlled access highways, without curbs, shall be located a minimum of 800 feet apart where practicable, but may be spaced as close as 400 feet apart if necessary and/or preferable in terms of sight distance and other safety-related factors.
- C. For intersection that would have to be less than 400 feet apart, first preference should be given to locating the streets opposite one another as a four-way intersection, otherwise the best solution should be sought in terms of accepted traffic safety standards.

2. **Semi-Controlled Access Highways with Curbs.**

- A. Street intersections with semi-controlled access highways with curbs shall be located a minimum of 400 feet apart wherever practicable whether on the same or opposite sides of the street.
- B. For intersections that would have to be less than 400 feet apart, first preference should be given to locating the streets opposite one another as a four-way intersection, otherwise the best solution should be sought in terms of accepted traffic safety standards.

3. **All Other Streets.** Street intersections with all other streets shall be spaced the minimum distance apart as specified for the classifications listed below, whether on the same or opposite side of the street.

- A. Collectors without curb: 600 feet.
  - B. Collectors with curb: 400 feet.
  - C. Residential and industrial streets: 200 feet.
4. **Offset Intersections.** In any case where centerlines of street intersections are or would be within 150 feet of each other, they shall be made to coincide by relocating the street within the applicant's land, unless additional problems of sight distances or other safety-related problems would be created. As an alternative, relocation further away from the offset intersection may be done in compliance with the intersection spacing requirements contained herein, when approved by the Board of Supervisors.

*(Ord. 90-2, 7/16/1990, Section 409)*

**Section 410. Clear Sight Triangles.** In order to provide adequate sight lines, clear sight triangles shall be required to be maintained along all approaches to all intersections in compliance with the standards herein.

- 1. Clear sight triangles shall be measured along street centerlines, from their point of intersection.
- 2. Where differing classifications of street intersect, the higher classification of street shall determine the dimensions used.
- 3. For semi-controlled access highways, the clear sight triangle legs shall each measure 125 feet.
- 4. For collectors, the clear sight triangle legs shall each measure 100 feet.
- 5. For residential and industrial streets, the clear sight triangle legs shall each measure 75 feet.
- 6. **Driveway Intersections.** Driveways shall be located so as to provide a clear sight triangle, measured from the intersection street centerline and the driveway centerline, of not less than 30 feet. *[Ord. 96-11]*
- 7. Within the area of clear sight triangles, obstructions to visibility shall not be permitted within the following ranges of height.
  - A. For semi-controlled access highways, collectors, and industrial streets from curb height to a minimum height of 12 feet.
  - B. For residential streets, from curb height to a minimum height of 8 feet.
  - C. Ground cover plants within the clear sight triangle area shall not exceed one foot in height.
  - D. Grading within the clear sight triangle shall not exceed a 6 percent difference measured from the elevation at any point along the top of the curb. Existing grades in excess of 6 percent shall be regarded into compliance.

E. Exceptions may be made by the Supervisors to allow location of the following items in the clear sight triangle:

- (1) One private sign post, provided that the post does not exceed one foot square or diameter, and that the sign itself is above the minimum height limit.
- (2) One shade tree, provided that, as the tree matures, the lower branches will be kept pruned to the minimum height limit.
- (3) Existing shade trees, provided that lower branches are kept pruned to the minimum height limit, and that the size, number, and arrangement of trees does not impede adequate visibility. The Supervisors may require removal of one or more trees, if necessary, to provide adequate visibility.

8. In addition to providing the specified clear sight triangles for driveways, adequate sight distances shall be provided as set forth in Section 413(1). [Ord. 96-1]

*(Ord. 90-2, 7/16/1990, Section 410; as amended by Ord. 96-1, 1/15/1996)*

**Section 411. Storm Drainage.**

1. Goals. The goals for stormwater management in Douglass Township are:

- A. To protect the health, safety and general welfare of the Township residents by protecting the surface and groundwaters of the Township through effective stormwater management and control of sedimentation and erosion, as provided in this Ordinance.
- B. To limit the negative impacts of development that occur with inadequately managed stormwater. These negative impacts include but are not limited to, altered hydrology, lowering of the groundwater table, physical stream impacts, and biological impacts to nonpoint source pollutants.

2. Purpose. The purpose of stormwater management in Douglass Township is:

- A. To maintain the pre-development water balance in watershed and sub-watersheds containing first-order and other especially sensitive streams in the Township, and to work to restore natural hydrologic regimes wherever possible throughout the stream system.
- B. To maintain the pre-development volume of groundwater recharge.
- C. To prevent significant increase in surface runoff volumes, pre-development to post-development, thereby mitigating flooding downstream in the watershed, enlarging floodplains, eroding stream banks, and creating other flood-related health and welfare property losses, and to work to reduce runoff volumes to natural levels.
- D. To maintain pre-development peak rates of discharge, site-by-site, so as not to worsen flooding adjacent to downstream sites, and to work to restore peak runoff rates to natural levels.

- E. To minimize nonpoint source pollutant loading to ground and surface waters generally throughout Douglass Township.
3. Applicability. The provisions of this Section shall apply to all subdivisions and land developments as defined by this Ordinance, or as otherwise required by the Township.
  4. General Provisions. The following provisions shall be followed and incorporated into the development review and construction process:
    - A. The choice and design of stormwater management systems used to meet the requirements of this Section shall be based on the system types and specifications set forth in the Pennsylvania Handbook of Best Management Practices for Developing Areas, published by the Commonwealth of Pennsylvania. The use of other control methods, such as those contained in the latest editions of the Current Assessment of Urban Best Management Practices, and Controlling urban Run-off, published by the Metropolitan Washington Council of Governments, that meet the criteria established in this Section, may be permitted if approved by the township Engineer. Various combinations of methods should be tailored to suit the particular requirements for the type of development and the local site conditions.
    - B. The choice and design of stormwater management systems are to be developed through a procedure that selects and locates Best Management Practices, viewing components in the following priority:
      - (1) Seeking to control runoff at its source through infiltration.
      - (2) Improving the quality of the stormwater during conveyance.
      - (3) Providing for detention.
    - C. The selection of a competent and creative design engineer by the applicant clearly is critical to the success of an approach that emphasizes the use of Best Management Practices. In order to achieve the standards and construction and maintenance cost reduction which are intended in this Ordinance, additional time and money is required in the process in preliminary engineering and design. Review and approval of the stormwater management plan will be heavily dependent on the technical review by the Township Engineer and compliance with this Ordinance.
    - D. The applicant or applicant's agent shall design, construct and/or install drainage facilities to prevent soil erosion, damage and siltation, and to manage stormwater in order to prevent the impairment of public safety or physical damage due to concentration of the stormwater runoff onto adjacent properties in accordance with this Ordinance and applicable rules and regulations of the Pennsylvania Department of Environmental Protection, and the Montgomery County Conservation District. All land areas shall be graded to secure proper drainage away from buildings, on-site sewage disposal systems, and to prevent the uncontrolled collection of stormwater in pools. The system shall be designed to collect and recharge water to the greatest extent possible.



- E. The rate of stormwater runoff from any proposed subdivision or land development shall not exceed the rate of runoff prior to development. Requirements for design of stormwater management systems that incorporate groundwater recharge as an essential element in order to control quantity of discharge is outlined in this Ordinance. The distribution of drainage discharge from the developed properties shall replicate that of before development conditions to the maximum extent possible. The methodology and facilities used shall be based on the anticipated flows and conditions of each particular site.
- F. The stormwater management plan for each subdivision or land development proposal shall take into account and provide for the peak rate and volume flows of other areas in the watershed to ensure that cumulative problems are not increased as a result of flows from the proposed project. This analysis shall also explore possibilities to share stormwater management facilities with other areas in the watershed, in which case, consultation with the Township shall be required prior to design.
- G. Recharge facilities, detention facilities, storm sewers, culverts, bridges and related drainage installation shall be designed and constructed to meet the following purposes:
- (1) To permit unimpeded flow of natural watercourses. Such flow may be redirected as required, subject to the approval of the Pennsylvania Department of Environmental Protection.
  - (2) To insure adequate drainage of all low points as may be related to streets.
  - (3) To intercept stormwater runoff along streets at intervals reasonably related to the extent and grade of the area drained to prevent flow of stormwater across intersections during the design storm.
  - (4) To insure adequate and unimpeded flow of stormwater under driveways, in, near, or across natural watercourses or drainage swales. Properly sized pipes or other conduits shall be provided as necessary.
  - (5) To prevent excessive flow on or across streets, sidewalks, drives, parking areas, and any other paved surface or accessway.
  - (6) To lead stormwater away from springs.
- H. To this end, the storm drainage system serving the street shall be designed to collect water at any point where 3 to 5 cubic feet per second is accumulated, and the bottom of all vertical grades, and immediately upgrade of all street intersections. The system shall discharge any collected water which is not recharged into the nearest practical natural drainage channel or stormwater system.
- I. All natural streams, channels, swales, drainage systems, and/or areas of concentration of surface water shall be maintained in their existing condition, unless alteration is approved by the Township. In any event, all encroachment activities shall comply with Chapter 105 of the Commonwealth of Pennsylvania's Department

of Environmental Protection Dam Safety and Waterway Management Rules and Regulations.

- J. Man-made structures shall be kept to a minimum and bridges, culverts, or rip-rap shall be constructed to maintain natural characteristics of the stream and shall meet the approval of the Township.
- K. For the purpose of this subsection, streams and intermittent streams are defined as those watercourses depicted on the Township Zoning Map, the USGS Quadrangle maps of the area, and/or determined as such pursuant to an on-site survey by the Township or their representatives.
- L. Retention/detention basins shall be designed to utilize the natural contours of the land. When such design is impracticable, the construction of the basin design shall utilize slopes as shallow as possible to blend the structures into the existing terrain. The use of multiple retention/detention facilities, which are smaller and less intrusive on the site, is encouraged to meet the requirements of this Section.
- M. Whenever feasible, natural vegetation shall be retained, protected and supplemented with comparable species, size, coverage, density and numbers of plants and vegetation.
- N. All detention/retention basins shall be sited on a separate lot and shall be perpetually maintained by a duly established Homeowners Association with provisions for appropriate management, funding and enforcement provisions to assure that the goals and criteria of this Section are met as covenants running with the land that can be enforced by the Township.
- O. All areas containing lakes, ponds, wetlands and watercourses shall be considered to be reserved for permanent open space. Any alteration, development, filling, piping or diverting of such water resources shall be in strict compliance with the provision of the Zoning Ordinance, especially those pertaining to the Flood Hazard District, and all prevailing rules and regulations of Federal and State agencies. The Township recognizes the use of wetlands as potential components of stormwater management facilities and encourages such innovative use if assurances are met that conservation measures are adequate and that all Federal and State requirements are satisfied.
- P. The Township may require that a landowner or development provide reasonable corrective measures to alleviate any existing off-site drainage problem which may be affected by the proposed subdivision and/or land development. It shall be the responsibility of the landowner or developer to obtain all drainage easements, on, over or through other properties, and the Township, its agents, workmen, and employees shall be indemnified and held harmless from any liability.
- Q. Any water originating from non-natural sources, such as swimming pools, air conditioning units, sump pumps, roof drains, or other similar flow, shall be properly discharged into a recharge facility or natural watercourses on the property or connected to an existing or proposed storm drainage system as approved by the Township. Polluting matter from such sources may not be deposited into natural watercourses or storm drains.

- R. Any water originating from non-natural sources, as referenced above, shall not be discharged onto any street or other public right-of-way used for pedestrian or vehicular access.
  - S. All building foundations, grade slabs and cellar floors located in soils that have a community development limitation degree of moderate to severe seasonal high water table (as defined in the Montgomery County Soil Survey) shall be provided with an underdrain system. This system shall provide for drainage of the enclosed volume above the slab, and relief of subsurface water to a depth of not less than 18 inches below the slab or foundation field of the herringbone or gridiron configuration in course, gravel filled trenches that are in direct contact with the slab or foundation subbase. The excavation shall provide a minimum of five one-hundredths (0.05) foot/foot slopes to the gravel-filled trenches.
  - T. To mitigate the potential polluting of surface and ground waters by pollutants such as salt, petroleum products, and anti-freeze flowing from paved parking lots, pretreatment of the runoff shall be required. The extent of the treatment shall be set by the Township Engineer and will be determined by such factors as the area of the parking lot and the course of the runoff as it is recharged or flows into natural waterways.
5. Permanent Stormwater Management Standards. The following standards shall be used to develop the stormwater management system:
- A. Standard 1: After installation of impervious cover, there shall be no increase in the volume of stormwater runoff being discharged for up to the 2-year frequency rainfall, pre-development to post-development. If the Township Engineer determines that such a standard is not achievable on the site (all or in part) based on the existing soil, bedrock, water table, or other conditions on the parcel, Standard 3 provisions apply.
  - B. Standard 2: After installation of impervious cover and assuming full compliance with Standard 1, the peak rate of stormwater discharges from the site for all design storms up to and including a 100-year frequency rainfall shall not exceed the peak discharges from the site of the same storm before disturbance.
  - C. Standard 3: If the volume standard set forth in Standard 1 cannot be achieved, then the increase in volume of stormwater runoff being discharged for up to the 2-year frequency rainfall shall be stored on site for gradual release at a rate as determined by the Township Engineer.
  - D. Standard 4. Under certain conditions, the Township, upon recommendation of the Township Engineer, may impose the following additional restrictions on stormwater discharges:
    - (1) Peak discharge may be further restricted when it can be shown that a probable risk to downstream structures or unique natural areas exists or that existing severe flooding problems could be further aggravated.

- (2) Measures shall be imposed to protect against ground or surface water pollution where the type of business activity may result in significant nonpoint source pollution ("hot spots") or the nature of the soils or bedrock underlying a stormwater management structure constitutes substantial risk of contamination, such as might be the case in limestone formations. Special provisions to be followed in these cases will be provided by the Township Engineer.
  - (3) Where groundwater yields are very low or where a groundwater supply already is heavily used, the Township may require that the entire volume of the 2-year frequency rainfall (3.2 inches in 24 hours) be retained and infiltrated.
- E. Standard 5. Significant loadings of nonpoint source pollutants shall not be discharged into either surface or groundwater. Significant is defined as resulting in an increase greater than 10 percent of existing background concentrations of all water quality parameters of consequence identified in Federal and State criteria for the watershed. In particular, nutrients (nitrate and total phosphorus), metals (cadmium and lead), total petroleum hydrocarbons (PH) and synthetic organic compounds identified by the US Environmental Protection Agency (EPA) as toxic or hazardous substances must be controlled. If the volume and peak rate standards above (Standards 1 and 2) are met, then water quality impacts are assumed to be adequately controlled. If the volume standard (Standard 1) above cannot be achieved, then a water quality impact analysis must be performed, at the direction of the Township Engineer, confirming prevention of any significant increase in nonpoint source pollution, with particular focus on the pollutants discussed above. Both structural and nonstructural (preventative) measures are to be considered for reduction and prevention of nonpoint source pollution.

6. Stormwater Management Calculation Methods.

- A. In establishing the antecedent conditions for calculating runoff prior to land disturbance, the following assumptions shall apply:
  - (1) Average antecedent moisture conditions;
  - (2) A type II distribution form;
  - (3) Woodland shall be used as the prior condition for those portions of the site having trees of greater than 6 inches caliper at 4.5 feet above the average grade at the base of the tree or where such trees existed within 3 years of application;
  - (4) Meadow shall be used for all other areas including areas of existing cultivation or impervious surface.
- B. In all plans and designs for stormwater management system and facilities submitted to the Township Engineer for approval, stormwater peak discharge and runoff shall be determined through the use of the Rational Method for all watersheds less than or equal to 200 acres. All storm intensities shall be determined from the PDT-IDF curves for Region 4 as set forth in PENNDOT, *Design Manual*, Part 2. The DeKalb hydrograph shall be used for basin sizing, however, alternative hydrograph methods may be utilized if approved by the Township Engineer. For watersheds greater than 200 acres stormwater peak discharge and runoff shall be determined through the

use of the Soil Cover Complex Method as set forth in *Urban Hydrology for Small Watersheds, Technical Release No. 55*, with specific attention given to antecedent moisture conditions, flood routing, and peak discharge specifications included therein and in *Hydrology National Engineering Handbook*, Section 4, both by the US Department of Agriculture, National Resources Conservation Service (Soil Conservation Service). All stormwater management calculations must be prepared by a licensed professional engineer.

- C. All developments shall limit the rate of stormwater runoff so that no greater rate of runoff is permitted than that of the site in its natural, pre-developed condition. Those areas within the Swamp Creek Watershed shall further limit the rate and volume of runoff to meet the criteria contained within the Act 167 Swamp Creek Watershed Study.

#### 7. Specific Infiltration System Design Criteria.

- A. Infiltration devices shall be selected based on suitability of soils and site conditions. Measures may include porous pavement with underground infiltration beds, vegetated infiltration beds, swales and trenches or other seepage structures as proposed in the Pennsylvania Handbook of Best Management Practices for Developing Areas (1998) and related references prepared by the USEPA, the Washington Metropolitan Council of Governments, the Soil Conservation Services, the Pennsylvania Department of Environmental Protection (PADEP) or other guidance documents.
- B. Soil infiltration tests shall be performed for all proposed infiltration areas; these tests shall include evaluation of selected soil horizons by deep pits and percolation measurements. Testing shall be reviewed and approved by the Township Engineer. The soil infiltration rate of discharge from the infiltration area being sued in the proposed design shall be based on these measurements.
- C. The lowest elevation of the infiltration area shall be at least 2 feet above the Seasonal High Water Table (SHWT) and bedrock, except in the case of limestone formation, in which case the distance shall be 3 feet.
- D. All roof drains shall discharge to infiltration systems with appropriate measures such as leaf traps and cleanouts taken to prevent clogging by vegetation.
- E. All infiltration systems shall have appropriate positive overflow controls to prevent storage within one foot of the finished surface or grade.
- F. All infiltration systems shall have a minimum setback of 15 feet from all residential structures. Care should be taken to prevent any seepage into subgrade structures.
- G. All infiltration systems shall be designed to infiltrate the stored volume within 48 hours.
- H. All surface inflows shall be treated to prevent the direct discharge of sediment into the infiltration system; accumulated sediment reduces stormwater storage capacity and ultimately clogs the infiltration mechanism. No sand or other particulate matter may be applied to a pervious surface for winter ice conditions.

- I. During site construction, all recharge system components shall be protected from compaction due to heavy equipment operation or storage of fill or construction material. Recharge areas shall also be protected from sedimentation. All areas designated for recharge shall not receive runoff until the contributory drainage area has achieved final stabilization.
  - J. The following procedures and materials shall be required during the construction of all subsurface facilities:
    - (1) Excavation for the infiltration facility shall be performed with equipment which will not compact the bottom of the seepage bed/trench, or like facility.
    - (2) The bottom of the bed and/or trench shall be scarified prior to the placement of the aggregate.
    - (3) Only clean aggregate, free of fines, shall be allowed.
    - (4) The top and sides of all seepage beds, trenches, or like facilities shall be covered with drainage filtration fabric. Fabric shall meet the specifications of PENNDOT Publication 408, **Section 735**, Construction Class 1.
    - (5) Perforated distribution pipes connected to centralized catch basins and/or manholes with provision for the collection of debris shall be provided in all facilities. The perforated pipes shall distribute stormwater throughout the entire seepage bed/trench, or like facility.
  - K. All infiltration facilities which service more than one lot and are considered a common facility shall have an easement provided to the Township for future access if necessary.
8. Additional Stormwater Detention/Retention Facilities Design Requirements.
- A. The following setbacks are required for stormwater management facilities:
    - (1) Stormwater recharge systems shall be located at least 50 feet from any structure, whether existing or proposed.
    - (2) Stormwater recharge systems shall be located at least 50 feet from any property boundary or right-of-way.
    - (3) Stormwater recharge systems shall be located at least 50 feet from existing wetlands, or the banks of existing streams.
    - (4) Recharge systems greater than 3 feet deep shall be located at least 15 feet from any basement wall and 25 feet from wastewater treatment areas.
    - (5) Any recharge system designed to handle run-off from any commercial or industrial impervious parking or outside storage area shall be a minimum of 50 feet from any water supply well or any wastewater treatment area.

- B. **Riser.** A riser or other acceptable outfall shall be provided at the outlet of all detention basins. The riser shall be constructed of precast or poured in place concrete with controlled orifices. The riser shall extend to an elevation one foot below the crest elevation of the emergency spillway. The riser shall be designed so that the rate of outflow is controlled by the pipe barrel through the basin berm when the depth of water within the basin exceeds the height of the rise. A trash rack or similar appurtenance shall be provided to prevent debris from entering the riser. All risers shall have a concrete base attached with a watertight connection. The base shall be of sufficient weight to prevent flotation of the riser. An anti-vortex device, consisting of a thin vertical plan normal to the basin berm, shall be provided on the top of the riser.
- C. **Landscaping.** All stormwater control systems, whether existing or proposed, shall be planted to effectively naturalize areas so as to become an integral and harmonious element in the local landscape. No trees shall be planted in dams more than 15 feet high.
- D. **Emergency Spillway.** Whenever possible, the emergency spillway for detention basins shall be constructed on undisturbed ground. Emergency spillways shall be designed according to the Soil Conservation Service Engineering Field Manual. All emergency spillways shall be lined with a permanent lining material approved by the Township Engineer and shall be constructed so that the detention basin berm is protected against erosion. The minimum capacity of the emergency spillways shall equal the peak inflow rate to the basin from the 100-year design storm. Emergency spillways shall extend along the upstream and downstream berm embankment slopes. The upstream edge of the emergency spillway shall be a minimum of 2 feet below the top of berm elevation and a minimum of one foot above the 100-year storm maximum flood elevation in the basin.
- E. **Anti-Seep Collars.** Anti-seep collars shall be installed around the principal pipe barrel within the normal saturation zone of the detention basin berms. The anti-seep collars and their connections to the pipe barrel shall be watertight. The anti-seep collars shall extend a minimum of 2 feet beyond the outside of the principal pipe barrel. The maximum spacing between collars shall be 14 times the minimum projection of the collar measured perpendicular to the pipe. A minimum of two anti-seep collars shall be provided.
- F. **Freeboard.** Freeboard is the difference between the design flow elevations in the emergency spillway and the top of the settled detention basin embankment. The minimum freeboard shall be one foot.
- G. **Slope of Detention Basin Embankment.** The maximum slope of earthen detention basin embankments shall meet the requirements contained in this subsection. Whenever possible, the side slopes and basin shape shall be amenable to the natural topography. Straight side slopes and rectangular basins shall be avoided.
- H. **Width of Berm.** The minimum top width of detention basin berms shall be 10 feet.
- I. **Slope of Basin Bottom.** In order to insure proper drainage of the detention basin, a minimum grade of 2 percent shall be maintained for all sheet flow. A minimum grade of one percent shall be maintained for all channel flow. All BMP type basins

designed for groundwater recharge or slow release of detained stormwater shall have flat bottom slopes.

- J. **Energy Dissipaters.** Energy dissipating devices (rip-rap, end sills, etc.) shall be placed at all basin outlets. Any pipe or other component which discharges directly into the basin shall be equipped with energy dissipating devices and shall outlet into the bottom of the basin.
- K. **Landscaping and Grading of Detention Basin.** All landscaping and grading standards shall be as follows:
- (1) **Cuts.** No excavation shall be made with a cut face steeper than 4 horizontal to 1 vertical, except under the condition that the material in which the excavation is made is sufficiently stable to sustain a slope of steeper than four horizontal to one vertical. A written statement to that effect is required from an engineer and must be submitted and approved by the Township Engineer. The statement shall affirm that the site has been inspected and that the deviation from the slope should not result in injury to persons or damage to property. Retaining walls shall be required if a stable slope cannot be maintained. Any retaining wall design must be approved by the Township Engineer. The toe of the slope or headwall of any cut must be located a minimum of 5 feet from property lines.
  - (2) **Fills.** No fills shall be made which creates any exposed surfaces steeper in slope than 3 horizontal to 1 vertical, except where the fill is located so that settlement, sliding, or erosion will not result in property damage or be a hazard to adjoining property, streets or buildings. A written statement is required from an engineer certifying that she/he has inspected the site and that any proposed deviation from the slope specified above should not endanger any property or result in property damage, and must be submitted to and approved by the Township Engineer.
    - (a) A concrete or stone masonry wall designed and constructed in accordance with these specifications and standards may be required to support the face of the fill where the above specified slopes are exceeded.
    - (b) The top of any fill or toe of the slope of any fill shall be located 25 feet from any property line with the exception of a downstream property line where the toe of the embankment shall be placed a sufficient distance to allow for energy dissipating devices, but in no case less than 40 feet unless approved otherwise by the Township.
    - (c) All detention basin embankments shall be placed in maximum of 8-inch lifts, compacted to a minimum of 95 percent of the maximum dry density as established by ASTM D-1557, PTM No. 112 or PTM No. 402. Prior to proceeding to the next lift, the compaction shall be checked by a soils engineer. The developer's contractor shall obtain the services of a qualified laboratory or technician to conduct compaction tests on the leading and trailing edge of the berm along with the top of the berm. All tests shall be furnished to the Township Engineer for review.



(3) Planting Requirements. All areas proposed for recreational use, whether active or passive, shall be planted to effectively naturalize the areas to become an integral and harmonious element in the natural landscape.

(4) Drainage Channels and Retention Areas. All storm drainage channels and retention areas, whether existing or proposed, shall be graded and planted to effectively naturalize areas so as to become an integral and harmonious part of the landscape by contour and type of plant material employed. Stormwater recharge areas shall be stabilized with plantings that are tolerant of both wet and dry conditions, require low maintenance and are aesthetically pleasing.

(5) Fence or Screening. A fence or suitable vegetation screen shall be provided around all detention basins as required by the Township Engineer. All vegetative screening shall be at least 3½ feet in height and shall be composed of the following shrubs: Barberry (Barberis species); Eleagnus (Eleagnus species); Firethorn (Pyracantha species); or Rose (Rose species). All vegetative screening shall provide a barrier to present entrance to the detention basin area. The fencing or vegetative screening requirement shall be waived only upon approval by the Township.

L. Easements for all basins and storm pipes not located with the public street right-of-way shall be provided.

#### 9. Stormwater Drainage System Design Requirements.

A. Design Flow Rate. The storm drain system shall be designed to carry a 25-year peak flow rate, and a 50-year peak flow rate at the sump area. The design 25-year peak flow rate into each inlet shall be indicated on the stormwater management plan. The 25-year flow rate shall be determined by the rational formula,  $Q = CIA$ . Where:

Q = Peak runoff rate, cubic feet per second (CFS);

C = Runoff coefficient equal to the ration of the runoff rate to the average rate of rainfall over a time period equal to the time of concentration;

I = Average rainfall intensity to inches per hour for a time equivalent to the time of concentration;

A = Drainage area in acres.

Approximate values for the runoff coefficient and runoff intensity is found in the following sources:

Commonwealth of Pennsylvania  
Department Transportation  
Design Manual, Part 2  
Chapter 12

- B. **Overflow System.** An overflow system shall be provided to carry flow to the detention basin when the capacity of the storm drain pipe system is exceeded. The overflow system shall be of sufficient capacity to carry the difference between the 100-year and the 25-year peak flow rates.
- C. **Inlet Capacity.** All inlets must be designed to accommodate the 25-year peak flow rate. The capacity of each inlet shall be indicated on the stormwater plan. The capacity of all C, M, or S type inlets shall be determined from the following source:

Commonwealth of Pennsylvania  
Department of Transportation  
Design Manual, Part 2  
Highway Design

Inlets to street intersections shall be placed on the tangent and not on the curved portion. Inlet grates shall be placed 1- to 1½-inch below the finished pavement surface.

- D. **Straight Pipe Selections.** Wherever possible, all storm drain pipes shall be designed to follow straight courses. No angular deflections of stormwater pipe shall be permitted. No vertical curves shall be permitted in the storm drain pipe system. Storm sewers shall be placed in the cartway of curbed streets and parallel to the roadway shoulders of streets without curbs. Storm sewers shall not be placed under curbs or sidewalks and shall not be placed under the returns at intersections. When located in undedicated land, storm sewers shall be placed within an easement not less than 20 feet wide.
- E. **Minimum Grade and Size.** All storm drain pipes shall be designed to maintain a minimum grade of one-half percent. All storm pipes shall have a minimum inside diameter of 15 inches, except that pipes under 25 or greater fill shall not be less than 24 inches, or a cross sectional area of 453 square inches.
- F. **Pipe Material and Thickness.** All storm sewers shall be Class III reinforced concrete pipe with o-ring joints, and shall meet the criteria contained in Pennsylvania Department of Transportation Publication 408, latest edition:
  - (1) Pennsylvania Department of Transportation (PENNDOT) strike-off letter Number 430-95-43, dated June 19, 1995 (Policy on Design, Fabrication and Installation of Pipes), and any subsequent amendments;
  - (2) Revisions made to the **PENNDOT Design Manual Part 2, Chapter 10** after June 19, 1995.
- G. **Pipe Capacity.** The capacity of all pipe culverts shall, as a minimum, provide the capacity to pass the peak flow from the 100-year design storm.
- H. **Pipe Arches.** Where headroom is restricted, equivalent pipe arches may be used in lieu of circular pipes.

- I. Allowable Headwater Depth. At all inlets or manholes, the maximum allowable headwater depth shall be one foot below the top of the inlet grate or the manhole cover.
- J. Horizontal Pipe Deflections. A manhole or inlet shall be provided at all horizontal deflections in the storm pipe system exceeding 5 degrees.
- K. Minimum and Maximum Cover. A minimum of 18 inches of cover shall be maintained over all storm drain pipes. The top of storm drain pipes shall be at least one-half foot below sub-grade elevation.
- L. Diversion or Runoff. All storm drain pipes shall be designed to carry the runoff into a detention basin or similar facility utilized to control the rate of runoff. No discharge at the top or side of basin embankments shall be permitted.
- M. Manholes. All manholes shall be constructed of pre-cast concrete. Manholes shall be used for any sharp changes in horizontal alignment or drainage pipe and at all connections of three or more pipes. Manholes shall be spaced no more than 300 feet apart for all pipes under 27 inches in diameter and 400 feet for pipes which are 27 inches in diameter and larger. Inlets may be installed in place of manholes, when they may serve as a useful purpose.
- N. End Walls and End Sections. End walls and end sections shall conform to the PENNDOT Standards for Roadway Construction. End sections shall be used unless the end wall shall serve as a better purpose, such as tying two pipes at one outlet ditch location.
- O. Stormwater Roof Drains and Sump Pump Lines. Stormwater roof drain pipes and sump pump lines shall, whenever possible, drain to a BMP structure. Roof drain and sump pump lines shall not discharge over sidewalks or be piped directly to the road gutter.
- P. Culverts and Drainage Channels.
  - (1) Design Flow Standards. All culverts and drainage channels shall be designed to carry a flow rate equal to a 50-year, 24-hour storm (**Soil Conservation Service, Technical Release No. 55**).
  - (2) Erosion Prevention. All drainage channels shall be designed to prevent the erosion of the bed and bank areas. The flow velocity in all vegetated drainage channels shall not exceed 3 feet per second to prevent erosion unless special provisions are made to protect banks and channel bottoms against erosion. Suitable bank stabilization shall be provided where required to prevent erosion of the drainage channels. Where storm sewers discharge into existing drainage channels at an angle greater than 30 degrees from parallel with the downstream channel flow, the far side bank shall be stabilized by the use of rip-rap or masonry, and/or concrete walls. The stabilization shall be designed to prevent erosion and frost heave under and behind the stabilizing media.

- (3) Maximum Side Slope. Any vegetated drainage channel requiring mowing of the vegetation shall have a maximum grade of 3 horizontal to 1 vertical of those areas to be mowed.
- (4) Design Standard. Because of the critical nature of the vegetated drainage channels, the design of all vegetated channels shall, as a minimum, conform to the design procedures outlined in the PADEP manuals. Several acceptable sources outline procedures for non-vegetated drainage channels, including the following:

Bureau of Public Roads  
 Hydraulic Engineering Circular No. 5  
 Hydraulic Charts for the Selection of Highway Culverts  
 Federal Highway Administration  
 Hydraulic Engineering Circular No. 13  
 Hydraulic Design of Improved Inlets for Culverts

- (5) Reference to any publications and source documents in this Section shall be deemed to include any amendments and revisions thereof.

**Q. Inlets and Manholes.**

- (1) Inlets or manholes should be provided at all changes in direction or storm water piping. At street intersections, inlets shall be placed in the tangent and not the curved portion of the curbing.
- (2) Inlets and manholes shall conform to Pennsylvania Department of Transportation specifications. Manhole covers shall have the word "STORM" cast in 2-inch high letters on the top of the cover. Inlet in paved areas shall have bicycle safe grates.
- (3) Where there is a change in pipe size at an inlet, the elevation of the top of the pipes shall be the same or the smaller pipe set higher. A minimum drop of 2 inches shall be provided between the inlet pipe and the outlet pipe invert elevations.
- (4) There shall be a maximum spacing of 400 feet between inlets or manholes in any one continuous line. Inlets shall be placed when storm flow in the street gutter for the 10-year design storm encroaches to one-half of a travel lane.

**10. Standards During Land Disturbance.**

- A. During the period of land disturbance, when significant sediment can be contained in runoff, this runoff shall be controlled prior to entering any proposed infiltration area.
- B. Peak discharges and discharge volumes from the site shall comply with the appropriate sections above, with the following additions:
  - (1) For purposes of calculating required detention storage during land disturbance, peak discharges and discharge volumes shall be calculated based upon the runoff coefficients for bare soils during the maximum period and extent of

disturbance. Controls shall insure that the difference in volumes and rates of peak discharge before disturbance and during shall not exceed those peak discharges and discharge volumes noted in this Ordinance. It should be understood that detention storage during the period of land disturbance and prior to establishment of permanent cover may require additional facilities on a temporary basis. Such measures shall be located so as to preserve the natural soil infiltration capacities of the planned infiltration bed areas.

- (2) Wherever soils, topography, cut and fill or grading requirements, or other conditions suggest substantial erosion potential during land disturbance, the Township, as recommended by the Township Engineer, may require that the entire volume of all storms up to a 2-year storm from the disturbed areas be retained on site and that special sediment trapping facilities (such as check dams, etc.) be installed.
- C. Sediment in runoff water shall be trapped in accordance with criteria of the County Conservation District and PA DEP and removed through means approved by the Township Engineer to assure proper functioning and adequate capacity in the basins or traps.
- D. Procedures shall be established for protecting soils or geologic structures with water supply potential from contamination by surface water or other disruption by construction activity.

(Ord. 90-2, 7/16/1990, Section 411; as amended by Ord. 91-12, 10/22/1991, Sections 1-4); and by Ord. 05-01, 1/18/2005, Section 1)

**Section 412. Proposals with Existing Buildings.**

1. No proposals will be approved with a property line extending through any portion of an existing building, except where that property line follows a party wall separating semi-detached or attached units, in accordance with the Township Zoning Ordinance [Chapter 27].
2. When existing buildings are retained:
  - A. Minimum building setbacks shall be met or exceeded, in respect to all new lot lines created for the districts in which the buildings are located, even if this results in a lot area or dimensions in excess of the otherwise applicable minimums.
  - B. Buildings set back in excess of the applicable minimum are encouraged, in respect to all new lot lines created, when the height and/or bulk of the existing building significantly exceeds that of proposed, abutting development. For tall buildings, a setback equal to the height of the building is required.
  - C. Run-down buildings shall be rehabilitated to conform in quality with proposed new development.
  - D. Structurally deficient buildings shall be rehabilitated in conformance with the Township's Building Code [Chapter 5, Part 1] and BOCA Property Maintenance Code.

- E. Additions to retained buildings shall conform in all respects to the requirements of the Zoning Ordinance [Chapter 27] applicable to the district in which the building is located.
  - F. Historical or culturally significant buildings shall retain their respective characters, to the greatest extent practical.
  - G. In non-residential districts, retained buildings shall be provided with adequate parking, service, and landscaped areas in accordance with the Zoning Ordinance [Chapter 27] provisions for the intended use. If the applicant cannot specify the intended use, then the most land consumptive provisions shall be applied, to ensure sufficient land areas for uses permitted in that district.
  - H. The building setback lines, existing and proposed buildings, driveways, parking areas, walks, and other similar information shall be shown on the plan, with a note added describing the buildings, and their intended purposes.
  - I. No plan approval will be granted to a subdivision or a land development unless and until the above requirements are complied with to the satisfaction of the Township Supervisors, upon recommendation of the Township Planning Agency and Engineer.
3. When existing buildings will be removed:
- A. The plan must show the location and include a brief description of the building(s) to be removed.
  - B. Plan approval will be granted upon written agreement to the expeditious removal of buildings intended for removal, in conformance with applicable Township requirements and procedures regarding demolition of buildings and disposition of the re-useable parts and/or disposal of the rubble. If the building will not be removed immediately, a financial guarantee must be posted for its removal, in compliance with **Parts 5 and 6**, herein.

*(Ord. 90-2, 7/16/1990, Section 412)*

**Section 413. Driveways.**

- 1. The requirements for driveways shall be the standards of the Pennsylvania Department of Transportation regarding access to and occupancy of highways by driveways and local roads (**Pennsylvania Code, Title 67, Chapter 441**, as amended). Driveway access to State highways shall be subject to the permit process of that Department. Driveway access to Township roads shall be subject to the standards, requirements, and processing of this Section and the requirements of the Township Driveway Regulations.
- 2. Proposals whose anticipated traffic volumes will require low, medium, or high volume driveways shall be submitted to the Township Planning Agency in tentative sketch form, for their evaluation of the general suitability of the location's classifications and design of driveways proposed.

3. Proposals with five or more minimum use driveways along any one street or road shall also be submitted as in **Section 413(1)** above.
4. Following evaluation by the Township Planning Agency, the applicant may submit plans to the State or Township for formal approval and issuance of permits.
5. No driveway location, classification, or design shall be considered finally approved until permits have been granted by the State and/or Township and preliminary plan approval has been granted by the Board of Supervisors for the subdivision and/or land development which the driveway(s) will serve.
6. Driveway crossings shall be designed in compliance with the Douglass Township Engineering Standards. *[Ord. 91-12]*

*(Ord. 90-2, 7/16/1990, Section 413; as amended by Ord. 91-12, 10/22/1991, Section 4)*

**Section 414. Additional Driveway Standards.** The following standards shall apply to driveways which intersect public or private streets, in order to facilitate safe and efficient access between streets and driveways.

1. Location.
  - A. Driveways shall be so located as to provide adequate sight distance at intersections with streets in accordance with the criteria set forth in **Section 413(1)**, above. *[Ord. 96-1]*
  - B. Driveways shall be located in a manner which will not cause the following:
    - (1) Interference to the traveling public;
    - (2) A hazard to the free movement of normal highway traffic; or
    - (3) Areas of traffic congestion on the highway.
  - C. Driveways shall be located, designed and constructed in such a manner as not to interfere with or be inconsistent with the design, maintenance and drainage of the highway. Driveway culverts shall be utilized, as necessary, to convey highway ditch drainage under driveways. *[Ord. 96-1]*
2. Distance from Street Intersections. Driveways shall be located as far from street intersections as is reasonable possible, but not less than the following distances from center line to center line:
  - A. Individual residential lots: 50 feet.
  - B. Multifamily residential and non-residential: 100 feet.*[Ord. 96-1]*
3. Choice of Streets. When streets of different classes are involved, the driveway shall provide access to the street of lesser classification unless this requirement is waived by

the Supervisors for reasons of sight distance, incompatibility of traffic, grading, drainage, or other major reasons.

4. Number of Driveways.

A. Properties with frontages of 100 feet or less shall be limited to one curb cut.

B. Not more than two curb cuts may be permitted for any single property, tract, or lot, for each street frontage.

C. More than two curb cuts per street frontage may be permitted only if anticipated traffic volumes warrant more than two, and when supported by a traffic study prepared by a qualified traffic engineer.

5. Drainage. Provisions for drainage and stormwater runoff shall comply with the Douglass Township Engineering Standards.

6. Stopping Areas. Regardless of the driveway classification, all driveways shall be provided with a stopping area within which the grade shall not exceed 5 percent. The stopping area shall be measured as follows:

A. The length of stopping area shall be a minimum of 20 feet, or the length of the longest vehicles anticipated to use the driveway, whichever is greater.

B. Stopping areas shall be measured from the edge of paving or curb line for all roads.

7. Clear Sight Triangles. Clear sight triangles shall be provided where driveways intersect streets, in compliance with the standards of Section 410, "Clear Sight Triangles." The dimensional standards shall be determined by the classification of street which the driveway intersects.

*(Ord. 90-2, 7/16/1990, Section 414; as amended by Ord. 96-1, 1/15/1996)*

**Section 415. Parking Areas and Related Internal Driveways.** Parking areas and related internal driveways shall be governed by the following:

1. Off-street parking facilities shall be provided in compliance with the parking requirements of the Township's Zoning Ordinance [**Chapter 27**] and the regulations contained herein,

2. Angled or perpendicular parking shall not be permitted along public or private streets, except where specifically permitted by this or other ordinances.

3. A maximum of fifteen parking spaces shall be permitted in a row without a landscape island of 10 feet in width; this island shall contain not less than 200 square feet of planting area.

4. Parking shall not be permitted along driveways which serve as the main entrance(s) or exit(s) to parking areas with a capacity of 150 cars or more.



5. Parking areas shall not be located closer than 20 feet from any tract boundary line, nor less than 20 feet from any ultimate right-of-way line. These areas shall be landscaped in accordance with the requirements of **Section 420(5)**, "Softening Buffer Requirements."
6. Where the edge of a parking area is located closest to a street, driveway, or other parking area, and the provisions of **Section 415(5)**, above, do not apply, a minimum separation of 10 feet shall be provided between these features. This spacing shall consist of a raised landscaped area, preferably curbed with planting in conformance with **Section 420-4**.
7. In any residential parking area where rows of parking spaces are parallel to one another, and not separated by a driveway, a raised and/or curbed planting strip shall be provided between the rows. Said strip shall have a minimum width of at least 10 feet, planted in accordance with **Section 420-4**.
8. In any residential parking area where a single row of parking spaces is located between two driveways, a raised and/or curbed planting strip shall be provided between the row of parking spaces and one driveway. Said strip shall have a minimum width of 5 feet, planted in accordance with **Section 420-4**.
9. Dead-ended parking areas shall be discouraged when the required parking capacity can be accommodated in a layout that permits more convenient vehicular movements. However, extraneous through-traffic flow should be avoided.
  - A. Up to 50 parking spaces may also be located in a dead-ended parking area if there is no more desirable feasible alternative, and sufficient back-up area is provided for the end stalls.
  - B. More than 50 parking spaces may be located on a dead-ended parking area only if a turnaround area is provided at the closed end, suitable for passenger car turning. The turnaround area may be circular, "T" or "Y" shaped, or other configuration acceptable to the Board of Supervisors.
10. Residential parking areas shall be divided into sections of not more than 36 cars each, with sections separated as required by **Section 420-4**. The total number of parking spaces permitted in a parking area comprised of such section shall be 200.
11. Parking areas for 150 cars or more, for non-residential purposes, shall be divided into sections by landscaped planting strips a minimum of 10 feet wide, in compliance with **Section 420**.
12. The following requirements apply to driveways within sites proposed for developments:
  - A. A smooth transition shall be provided between the driveway section required for access to a public street and the driveway(s) required for internal site circulation.
  - B. Main access driveways (entrance-exit), and service drives handling large trucks shall be a minimum paved width of 30 feet with one lane in each direction.
  - C. Access driveways which are clearly secondary in importance may be reduced to 26 feet in paved width.

13. Parking spaces shall be a minimum of 10 feet by 20 feet, except that where the vehicles may overhang a planting strip, a 2-foot widening of the planting strip shall permit a two foot reduction of parking space to 18 feet.

*(Ord. 90-2, 7/16/1990, Section 415)*

**Section 416. Rear Lotting.** Rear lots, as defined herein, may be permitted by the Supervisors, in accordance with the following standards and criteria:

1. **Purpose of Rear Lotting.**

- A. To preserve existing farmland and/or rural appearance and character by locating new development remote from existing road frontage, especially when new development can be screened from view by intervening topographic features such as hills and/or wooded areas.
- B. To permit reasonable subdivision of land which is physically constrained by unusual configuration of the tract or limited road frontage, and which could not be subdivided in a desirable manner using conventional streets and lotting patterns.
- C. To permit an alternative to the use of local access streets where such streets cannot be justified in terms of the number of lots served, volumes of traffic generated, and/or the need to extend, supplement, or otherwise support or reinforce an established road pattern or traffic circulation plan for the area surrounding the proposed subdivision.

- (1) As an interim alternative where future subdivision will result in appropriate street construction.

- (2) As a permanent alternative.

2. **Parts of a Rear Lot.** Rear lots shall be comprised of two parts, the access strip and the body of the lot, in compliance with the following standards:

- A. The access strip shall be a minimum of 50 feet wide for its entire length, including that portion which abuts a public street right-of-way for access.
- B. When necessary or desirable for grading, drainage, or preservation of natural features, such as trees, the access strip shall be widened beyond the 50-foot minimum as necessary.
- C. The access strip shall be a fee simple part of the rear lot, and shall not be a separate parcel of easement.
- D. The body of a rear lot shall comply with all the minimum dimensional requirements of the zoning district in which it is located. The area of the access strip shall not be counted toward the minimum lot area requirement.

3. **Review Factors.** In reviewing applications for rear lots, the following factors will be considered by the Supervisors, Township Planning Agency and Engineer.

- A. The amount of road frontage and configuration of the property being subdivided.
  - B. The sizes and number of lots proposed, including both the total number of lots and the number of rear lots.
  - C. The type and character of road which the tract abuts.
  - D. The topography of the parcel of being subdivided, with an emphasis on trees and slopes.
  - E. The character of the surrounding area in two respects:
    - (1) Its physical characteristics, and whether or not the subdivision site is distinguishable from it.
    - (2) Its planned future character; that is, whether it is in or abutting a growth area, or in an area planned for agricultural or other rural uses.
  - F. The development status of the surrounding sites.
  - G. The visual character preferred for the tract; that is, whether it is better to see a lot of houses abutting the road, or to "hide" some in rear areas to reduce the perceivable density of development.
  - H. Whether rear lots would set an undesirable precedent for nearby sites.
  - I. The economic impact of required road construction as compared to the use of access strips.
  - J. The visual and physical impacts of road construction as compared to the use of access strips.
4. Design Standards for Rear Lots.
- A. The length of the access strip shall be kept to a minimum.
    - (1) As a guide, the preferred length is approximately equal to the depth of one lot which complies with the minimum lot width and area requirements of the district in which it is located.
    - (2) No access strip should exceed three times the lot depth described in **Section 416(4)(A)(1)** above, unless the primary purpose of the additional length is to preserve farmland or other land for preservation of agriculture or rural character, by locating new development remote from road frontage.
  - B. The location of the access strip should be logically relative to the body of the rear lot, surrounding property configurations, and natural features of the land, and it shall intersect the public street at a safe, visible location.
  - C. Turns greater than 60 degrees should be avoided in access strips.

- (1) It may be necessary to widen the access strip at such sharp turns to accommodate grading, drainage, or tree preservation.
  - (2) For access strips that may become roads, the Supervisors may require turns to be designed to accommodate horizontal curves required for roads.
- D. Driveways serving access strips shall comply with the Township's Engineering Standards for drainage and cartway, from the edge of road pavement to a distance of 50 feet beyond the ultimate right-of-way line of the road.
  - E. When two access strips abut, they should share a common access point and driveway from the edge of pavement to a distance of 50 feet beyond the ultimate right-of-way line of the road, from which point either one common driveway or two individual driveways may continue. The shared portion shall be a minimum of 18 feet wide.
  - F. When more than two access strips would abut one another, one common driveway shall be required, with appropriate cross-easements, to serve the multiple access strips. Such a common driveway shall be constructed in compliance with the Township's Engineering Standards.
5. Provisions for Future Roads. The Supervisor may permit the use of rear lots where one or more access strips are intended to serve as a rights-of-way for a road which will serve future lotting. The following regulations shall apply:
- A. Legal guarantees shall be provided to assure future use of any access strip proposed for future use as a road, subject to approval of the Township Solicitor.
  - B. The road shall be constructed or financially guaranteed at the applicant's expense.
  - C. Access strips legally and financially guaranteed for future use as roads may comprise the legal and physical access to otherwise landlocked residual parcels only if the access is irrevocably guaranteed.
  - D. An overall tentative sketch plan shall be submitted as part of the proposed subdivision, to show how the rear lotting and reservation of access strips for future roads forms a logical and appropriate first phase in subdivision of the entire tract, and/or how it will allow interconnection with adjacent tracts.
  - E. When the road is constructed, any access strips which are no longer needed shall revert to the owners of the abutting lots, in accordance with the terms agreed to as part of the original preliminary plan approval which created the access strips.

*(Ord. 90-2, 7/16/1990, Section 416)*

**Section 417. Blocks.** The length, width and shape of blocks shall be guided by the following:

1. Minimum dimensional requirements of the Zoning Ordinance [Chapter 27].
2. Respect for existing natural features which may constrain subdivision or land development.
3. Need to provide efficient, convenient and safe pedestrian and vehicular circulation.
4. Suitability of lotting pattern and building sites created by the blocks.

*(Ord. 90-2, 7/16/1990, Section 417)*

**Section 418. Lots.**

1. Lots shall meet or exceed the minimum area and width requirements of the Zoning Ordinance [Chapter 27].
2. Deep, narrow lots are to be avoided, except that lots for attached dwelling units may receive special consideration.
3. Wide, shallow lots are to be avoided.
4. Every lot shall contain a building envelope suitable for the type(s) of development proposed.
5. Every lot shall have frontage of at least 50 feet along the ultimate right-of-way line of a street.
6. Lot lines shall be drawn parallel, concentric, at right angles, or radial to the right-of-way line whenever feasible and not otherwise justifiable by existing, permanent, natural or man-made features.
7. The width of a lot at the building line shall be that width in feet specified for the applicable zoning district as provided for in the Zoning Ordinance [Chapter 27] and any other applicable Township ordinance or resolution.

*(Ord. 90-2, 7/16/1990, Section 418)*

**Section 419. Grading.** All permanent and temporary cutting, filling, grading, regarding, and/or other forms of earth-moving activities shall be known as "grading" and shall be conducted only in compliance with the Township's Engineering Standards and the following requirements:

1. All grading shall be set back from property lines a sufficient distance to prevent any adverse effect on adjacent properties.
2. Wherever grading will increase the volume or velocity of stormwater flow toward a property line, the applicant shall install and maintain drainage facilities sufficient to prevent adverse effects on the adjoining property, in compliance with the Township's Engineering Standards. The construction and operation of these drainage facilities shall not cause any adverse effect on abutting properties.

3. Along property lines, where grading creates an abrupt drop-off from the abutting property in contrast to a previously existing gradual change, the applicant shall be required to install a fence or other suitable protective barrier.
4. A permit shall be required for grading operations. Permits shall be issued by the Zoning Officer upon recommendation of the Township Engineer for each tract, lot, parcel, or site which comprises a separate operation, unrelated to or not contiguous with nearby grading proposed or performed by the applicant. A permit shall not be required in the following situations, however:
  - A. For an excavation which does not exceed 20 cubic yards total material removed.
  - B. For a fill which does not exceed twenty cubic yards of material deposited.
  - C. For an excavation below finished grade for basements and footings for a single-family detached or two-family dwelling, swimming pool, or underground structure authorized by building permits, excavation for a driveway for a single-family detached or two-family dwelling, or the regrading of such excavated materials into the site from which they were excavated.
5. A site grading plan shall be required for all major subdivision and/or land development plans as part of the preliminary plan application. The Township Engineer may require a site grading plan for other proposals where the effects of grading may be a concern.
6. Final grading slopes shall not exceed 3 horizontal to 1 vertical unless special bank protection and/or walls are provided and approved by the Township.
7. During grading operation, necessary measures for dust control shall be implemented.
8. Construction equipment shall not be allowed to cross flowing streams unless a permit to do so has been obtained from DER or a waiver has been granted.
9. Approval of a soil erosion plan shall be obtained from the Montgomery County Conservation District for all land disturbance areas unless such approval is not required by the Township.
10. Topsoil Preservation. Topsoil must be removed from areas of construction and stored separately. There shall be no release of excess topsoil from the site until the entire site, other than that portion where there are buildings, other impervious surface coverage, or undisturbed natural areas, has been graded with a minimum of 8 inches of top soil. All areas of the subdivision shall be stabilized by sodding, or other materials as required by the Township Engineer, on slopes in excess of 3 horizontal to 1 vertical as shown on the final grading plan.

*(Ord. 90-2, 7/16/1990, Section 419)*

## **Section 420. Applicability.**

All subdivisions and land developments shall comply with the standards of this Article.

- A. Preliminary Plan Submission. A landscape plan shall be submitted as part of the preliminary plan submission. The landscape plan shall be prepared by a qualified professional such as landscape architect, arborist, horticulturist, urban forester, nurseryman or landscape designer.
- B. Proposed Planting Design. The landscape plan shall depict a planting design that mitigates the impacts of the proposed site activity, is coordinated with the proposed development and the surrounding community character, and complies with at least the minimum planting requirements of this Article.

## **Section 420-1. Preservation and Protection of Existing Vegetation.**

### **A. Preservation of Existing Vegetation.**

1. All subdivisions and land developments shall be laid out in such a manner as to minimize the removal and/or disturbance of healthy trees, shrubs and other vegetation on the site. It shall be incumbent on the applicant to prove that the plan minimizes vegetation removal and disturbance, given the permitted development proposal. Special consideration shall be given to mature specimen trees and ecologically significant woodlands.
2. The applicant shall prove to the satisfaction of the Board of Supervisors that vegetation removal is minimized. If challenged by the township, the applicant shall produce evidence such as written documents or plans certified by a registered landscape architect or other qualified professional showing that no more desirable layouts are possible and no alternative clearing or grading plan would reduce the loss of mature trees, tree masses, and woodlands.
3. **Tree Inventory:** An inventory of all trees 6 inches in caliper and larger on the site of the proposed subdivision and/or land development shall be conducted. The inventory shall include an identification of size, species, and condition. The use of annotated aerial photographs at a scale to include sufficient detail to allow the quantification of trees may be used to show compliance with this requirement. This requirement may also be satisfied by the use of multiple sample areas of no less than 100 feet by 100 feet (10,000 square feet), each to be used to estimate the total woodland tree count. A calculation and estimate of existing trees to be removed shall be performed before any clearing commences and shall be documented on the submitted landscape plan.
4. Removal or disturbance of vegetation in environmentally sensitive areas, including wetlands, floodplains, steep slopes, riparian corridors, Pennsylvania Natural Diversity Inventory (PNDI) wildlife habitats, and ecologically significant woodlands, shall be undertaken only as permitted in **Section 420-1.D.1.a** to minimize the adverse effects of such actions.
5. Each freestanding mature tree, tree mass, or woodland on the site shall be designated "TO REMAIN" or "TO BE REMOVED" in accordance with the following criteria:

a. A mature tree, tree mass, or woodland shall be designated "TO REMAIN" only if it meets all of the following criteria:

- 1) The outermost branches of the tree(s) are at least 5 feet or the trunk of the tree at least 20 feet, whichever is greater, from any proposed buildings, structures, paving, parking, or utilities (overhead or underground).
- 2) The outermost branches of the tree(s) are at least 5 feet or the trunk of the tree is at least 20 feet, whichever is greater from any proposed changes in grade or drainage such as excavations, mounding, or impoundments.
- 3) The tree(s) are clear of any proposed sight triangles, do not, by their location or apparent health, pose any undue threat to the health, safety, and welfare of the community.
- 4) Existing drainage patterns and water supply for the protected vegetation shall be maintained to the greatest degree feasible.

b. Mature trees, tree masses, or woodlands that do not fit the above criteria shall be designated "TO BE REMOVED."

B. Protection of Existing Vegetation. Existing vegetation designated "TO REMAIN," in accordance with **Section 420-1.A.4** above, as part of the landscaping of a subdivision or land development shall be identified in the field prior to any clearing and shall be physically protected throughout the construction process. A temporary, sturdy physical barrier, such as a snow fence, shall be erected a minimum of one foot outside the dripline or a minimum of 20 feet from the tree's trunk, whichever is greater on all sides of freestanding trees, tree masses, or woodlands prior to major clearing or construction. The barrier shall be placed to prevent disturbance to or compaction of soil inside the barrier and shall remain until construction is complete. The barrier shall be shown on the erosion and sedimentation control plan and the landscape plan. Reference to the installation of tree protection should be included in the sequence of construction notes to insure incorporation of tree protection before the earliest stages of site disturbance.

C. Credit for Preserved Trees.

1. Requirements for street trees and buffer plantings may be met, whenever possible, by preserving existing trees. Credit for existing trees which are "To Remain", as determined in **Section 420-1.A.3.a.**, to offset either the street tree or buffer planting requirements are to be calculated as follows:

<b>Preserved Tree</b> (dbh - diameter at breast height)	<b>Number of Trees Credited</b> (2½" caliper)
36" or greater	8 trees
18" - 35"	6 trees
12" - 17"	4 trees
8" - 11"	2 trees
6" - 7"	1 tree

*\*Ed. Note: 6"-7" preserved tree credit was added to encourage preservation of existing vegetation.*



**D. Tree Replacement Planting Requirements:**

**1. Size Requirements:**

- a. Any permitted removals (those listed "TO BE REMOVED") of trees with 6 inches dbh or greater must be replaced with one or more trees whose total trunk diameter (measured by caliper as nursery stock) equals the total inches in dbh of the tree(s) removed.
  - b. Each mature tree of 8 up to 18 inches dbh which is designated "TO BE REMOVED", as outlined above, shall be replaced with one tree of not less than two and one-half (2 ½) inches in caliper at the time of planting. The total tree removal impact of woodland areas designated "TO BE REMOVED" shall be measured by a forest density survey that calculates the approximate quantity of trees (with 8" or greater dbh) per square foot area. Calculated woodland tree removals and individual mature tree removals shall be listed on the plan.
  - c. Each mature tree of 18 inches or greater dbh designated "TO BE REMOVED" shall be replaced with one or more trees whose total trunk diameter (measured by caliper as nursery stock) equals the total inches in dbh of the tree removed.
2. Replacement trees shall be planted on the site to mitigate for the existing trees removed, in addition to other landscaping requirements. Proposed replacement tree plantings shall be listed on the plan.
  3. Calculation and estimation of existing trees shall be performed before any clearing commences and shall be documented on the plan.
  4. Calculation and estimation of the existing trees remaining after construction shall be performed and compared with the calculations of the approved plan. Any tree removals additional to those on the approved plan shall be replaced as required by this section prior to the issuing of any occupancy permits.
  5. A 10 percent reduction in the required total caliper of replacement trees may be granted to an applicant who demonstrates through a site analysis that the proposed development design and corresponding tree replacement proposal maximizes and enhances a site's ecological health functions. This reduction is at the sole discretion of the Township Board of Supervisors based on any reviews by a landscape architect, arborist, or other professional deemed necessary to determine the benefits of the applicant's proposal. In addition, this reduction would not lessen the quantity of required trees, only the required caliper of those trees.

**Section 420-2. Street Trees.**

**A. Requirements for Plantings. Street trees shall be required:**

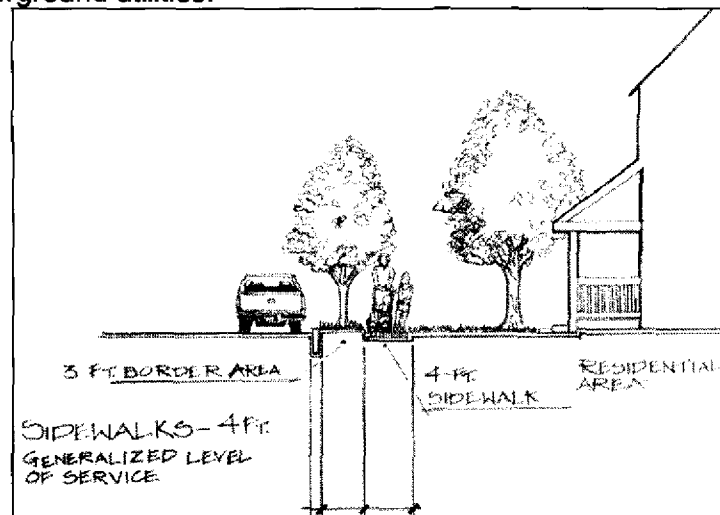
1. Along all existing streets when they abut or lie within the proposed subdivision or land development except where existing trees serve to meet the planting requirement.

2. Along all proposed streets.
3. Along all access driveways that serve five or more residential dwelling units.
4. Along all access driveways that serve two or more nonresidential properties.
6. Along major walkways through parking lots and between nonresidential buildings, as recommended by the board of supervisors.

B. Waiver Applicability. The street tree requirement may be waived by the Board of Supervisors to maintain scenic views of open space, farmland, hedgerows, natural, or other valued features.

C. Planting Standards. Street trees shall be located between the ultimate right-of-way line and the building setback line and shall meet the following standards:

1. Trees shall be planted a minimum distance of 5 feet and a maximum distance of 15 feet outside the ultimate right-of-way line. However, in certain cases, as follows, the Board of Supervisors may permit trees to be planted within the ultimate right-of-way:
  - a. In areas, such as existing villages, where planting areas may be located within the ultimate right-of-way.
  - b. In cases where closely spaced rows of street trees may be desirable and future street widening is considered unlikely.
2. In nonresidential developments, trees shall be located within a planting area within the front yard setback, at least 10 feet in width, planted in grass or groundcover. In areas where wider sidewalks are desirable, or space is limited, tree-planting pits may be used.
3. Trees shall be located so as not to interfere with the installation and maintenance of sidewalks and utilities. Trees shall be planted such that their trunks are a minimum distance of 3 feet from curbs and sidewalks, 12 feet from overhead utilities, and 6 feet from underground utilities.



4. Tree species shall be selected based on appropriate growth rates and mature heights for use beneath and adjacent to overhead utility lines.
5. Trees shall be planted at a rate of at least one tree per 40 linear feet of street frontage or fraction thereof. Trees shall be distributed along the entire frontage of the property, although they need not be evenly spaced.
6. Trees shall comply with the requirements of **Section 420-8**, herein. The use of tree species selected from the List of Recommended Plant Materials is encouraged/required (**Appendix A**).
7. Trees shall be a minimum of 2.5 inches in caliper when planted.

**Section 420-3. Buffer Plantings.**

- A. **Use Requirements:** Buffer plantings shall be installed in subdivisions and land developments to integrate new development with its surroundings, to separate incompatible land uses by providing screening and to minimize or eliminate views to certain site elements in compliance with the following regulations:
1. Buffer plantings shall be required for the following types of development and as otherwise specified in the municipal zoning ordinance:
    - a. All nonresidential development.
    - b. All single-family detached development.
    - c. All multi-family, single-family attached and semi-attached development.
    - d. All cluster development.
    - e. Active recreational facilities.
    - f. Construction of any of the following items which exceeds 400 square feet in ground coverage:
      - 1) public utility facilities or structures,
      - 2) waste collection, storage and/or treatment facilities,
      - 3) any other structure of similar character or impact.
  2. An on-site investigation by the applicant shall determine the adjacent land uses along each property boundary. In the case of vacant land, the existing zoning shall be used. The existing or zoned uses shall be noted on the plan. In the case of several permitted uses on a site, the most restrictive landscaping requirements shall apply. The municipality shall have final approval of interpretation of land uses or zoning map.
- B. **Buffer Area Location and Dimensions.**
1. A buffer planting area of not less than 25 feet in width shall be established along all property lines and external street boundaries of the tract proposed for subdivision or land development, unless otherwise specified in the zoning ordinance. Where zoning regulations allow building setbacks less than 25 feet, the buffer area may be

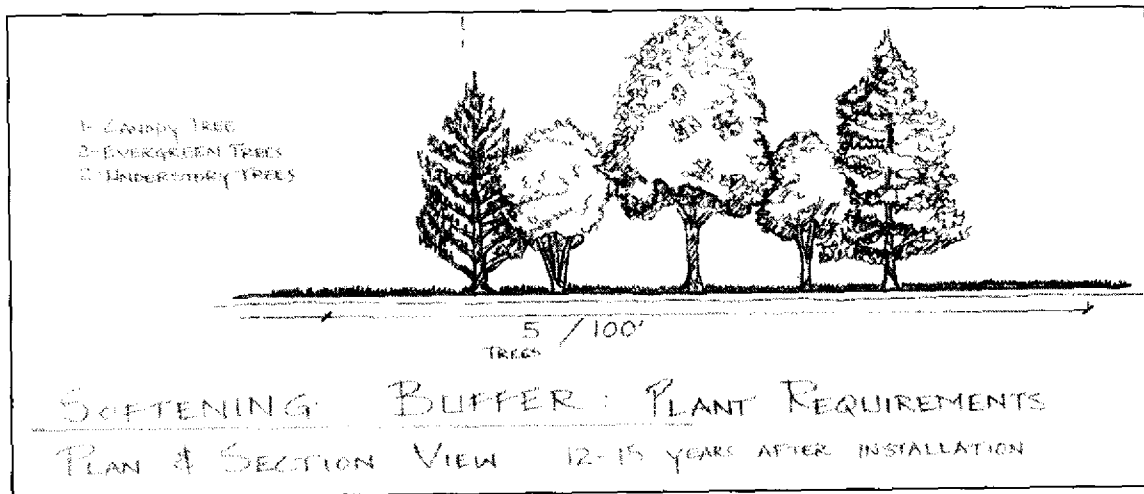
reduced to equal the width of the minimum building setback. The planting area shall not contain buildings, parking, utilities, or other accessory uses.

2. The buffer area may be included within the front, side, or rear yard setback.
3. The buffer area shall be a continuous pervious planting area consisting of canopy trees, small understory trees, and shrubs, with grass or groundcover. No paving shall be permitted within the buffer areas except for driveway crossing and/or walkways.
4. Parking is not permitted in the buffer area.
5. Stormwater basins are permitted in the buffer area provided that the visual screening requirements of the buffer are met.

C. Minimum Plant Material Requirements. The following requirements are minimum standards; additional plant material, grading treatments, or architectural elements may be included in the plan, at the applicant's discretion. In accordance with **Table 1**, for every 100 linear feet of property line and external street boundaries of the tract proposed for subdivision or land development to be buffered, the following minimum quantities, types and sizes of plant material shall be required:

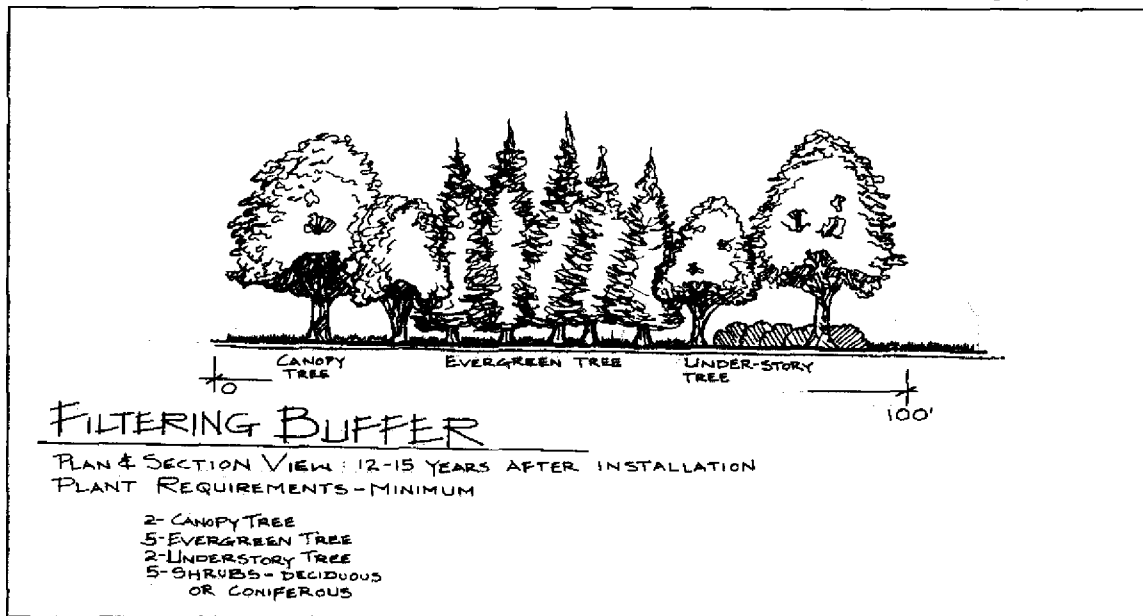
Softening Buffer:

- 1 canopy tree (2-2½" min. caliper)
- 2 understory trees (1½" min. caliper)
- 2 evergreen trees (8' min. height)



Filtering Buffer:

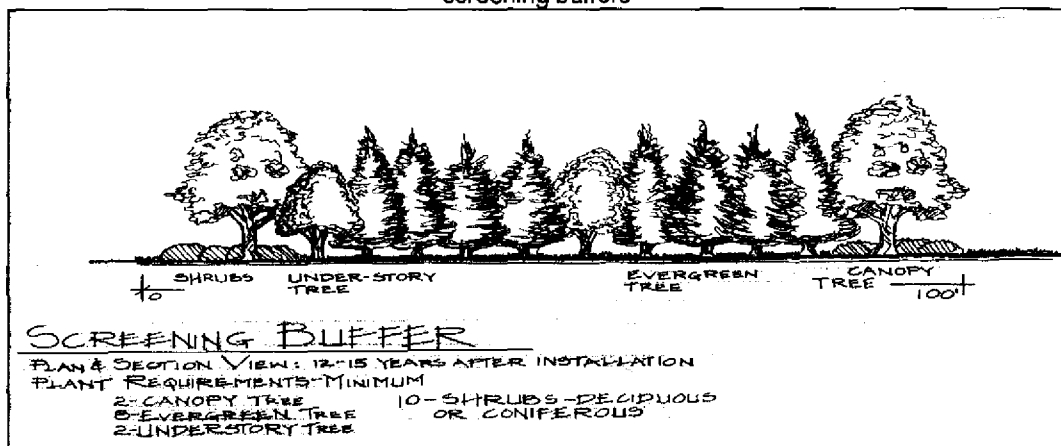
- 2 canopy tree (2-2½" min. caliper)
- 5 evergreen trees (8' min. height)
- 2 understory trees (1½" min. caliper)
- 5 shrubs-Deciduous or Coniferous (24" min. height)



Screening Buffer:\*

- 8 evergreen trees (8' min. ht.); 2 understory trees (1½" min. caliper);  
2 canopy trees (2-2½" min. caliper); 10 shrubs (24" min. ht.)
- or-
- 30 upright evergreen shrubs (4' min. ht.)
- or-
- 15 upright evergreen shrubs (4' min. ht.); 4 ornamental trees (1½" min. caliper)
- or
- 3 canopy trees (2-2½" min. caliper) -or-

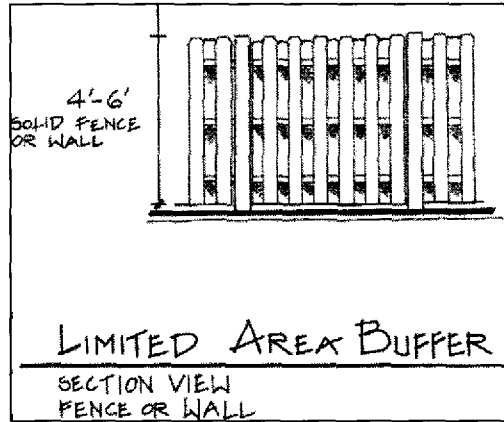
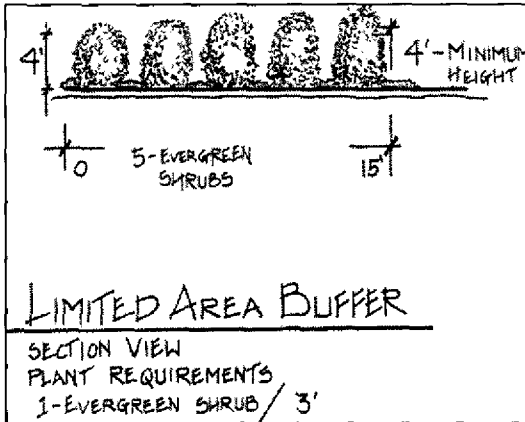
an alternative planting design that will result in at least an equivalent degree of visual screening to one of the above screening buffers



\* A screening buffer must be adequate to visually screen the proposed land use or development from off-site view. Several different planting options could be used to create an effective buffer. Grading treatments and architectural features, such as walls, fences and/or naturally undulating berms may be necessary in addition to the minimum planting quantities in order to effectively provide a visual screen.

Limited Area/Buffer\*\*

1 upright evergreen shrub per 3 feet (4' min. ht.) or  
-OF-  
4-6 foot solid fence or wall



\*\* The limited area/buffer can be used in older developed areas where space for planting is severely restricted. The planting screen would be equivalent to an evergreen hedge planting. Alternative planting arrangements, such as shade or flowering trees with deciduous shrubs, could be considered in conjunction with a fence or wall, at the discretion of municipality.

**D. Mitigation of Visual Impacts.**

1. The use of a screening buffer planting shall be required to mitigate the adverse visual impacts that the proposed land uses or site elements have on the subject tract, adjoining properties and the community in general. In addition to the requirements for buffer plantings as listed in **Table 1**, the following proposed land uses and site elements shall be screened from off-site with a screening buffer planting:
  - a. Dumpsters, trash disposal, recycling areas, and mechanical equipment.
  - b. Service and loading docks.
  - c. Outdoor storage areas.
  - d. Sewage treatment plants and pump stations.

**Table 1**  
**PROPERTY LINE BUFFERS**  
 (See Section 420-3.D for the description of softening, filtering and screening buffers)

PROPOSED USE	ADJACENT USES				
	Office/ Industrial & Public Recreation	Commercial/ Industrial	Multifamily, Single-Family Attached, Mobile Home Park	Expressway Route 100	Two-Family Single-Family Detached
Office/Institutional <sup>A</sup>	Softening	Softening	Filtering	Screening	Screening
Commercial/Industrial	Filtering	Softening	Screening	Screening	Screening
Residential	Softening	Filtering	Softening	Screening	Filtering
Active Recreation (playing fields, golf courses, swim clubs, etc.)	Softening	Filtering	Softening	Screening	Softening

<sup>A</sup> All uses in office/limited industrial parks shall be considered Office/Institutional Uses.

2. Existing topographic conditions, existing farmlands such as embankments or berms, in conjunction with existing vegetation, may be substituted for part or all of the required property line buffers at the discretion of the governing body. The minimum visual effect shall be equal to or exceed that of the required buffer or screen.

**Section 420-4. Parking Lot Landscaping.**

- A. Justification. Parking lots should be effectively landscaped with trees and shrubs to reduce the visual impact of glare, headlights, and parking lot lights; to delineate driving lanes; and define rows of parking. Furthermore, parking lots should be adequately landscaped to provide shade in order to reduce the amount of reflected heat and to improve the aesthetics of parking lots.
- B. Planting Regulations. All parking lots shall be landscaped according to the following regulations:
  1. Parking Stall Rows:
    - a. One planting island shall be provided for every 15 parking stalls. There shall be no more than 15 contiguous parking stalls in a row without a planting island.
    - b. As an alternative to the previous planting island requirement (planting islands located every fifteen contiguous parking spaces) the applicant must provide one canopy tree for every ten parking spaces in other planting island areas and in perimeter parking planting areas at the discretion of the board of supervisors.
  2. The ends of all parking rows shall be divided from drives by planting islands.

3. In residential developments, large parking lots shall be divided by planting strips into smaller parking areas of no more than 40 stalls.
  4. In nonresidential developments, large parking lots shall be divided by planting strips into smaller parking areas of no more than 100 stalls.
  5. Planting islands shall be a minimum of one parking stall or 9 feet by 18 feet in area whichever is greater, underlain by soil (not base course material) and shall be protected by curbing with drainage cuts, wheel stops, or bollards. Each planting island shall contain one shade tree plus low-growing shrubs and/or groundcover to cover the entire area.
  6. All planting strips shall be a minimum of 15 feet wide. Strips shall run the length of the parking row, underlain by soil, and shall be protected by curbs, wheel stops, or bollards. Planting strips shall contain plantings of one canopy tree every 25 feet, plus shrubs and/or groundcover to cover the entire area at maturity.
  7. The placement of light standards shall be coordinated with the landscape plan to avoid a conflict with the effectiveness of light fixtures.
  8. Plant materials shall comply with the requirements of **Section 420-8**, herein. The use of plantings selected from the List of Recommended Plant Material, **Appendix A**, is required.
- C. **Screening Requirement.** All parking lots shall be screened from public roads and from adjacent properties according to the following:
1. The perimeter of all parking lots shall be planted with a filtering buffer as per **Section 420-3.D**.
  2. The perimeter planting area around all parking lots shall be a minimum of 10 feet in width.

**Section 420-5. Additional Plantings.**

- A. **Minimum Planting Requirements.** All proposed non-residential structures shall incorporate the following minimum plant materials in the landscaping areas adjacent to the proposed structure:
1. One canopy tree (2-2½" minimum caliper) or two understory trees (8' minimum height) shall be planted for every 50 feet of proposed building façade facing a public street.
  2. Five deciduous or evergreen shrubs (18" minimum height) shall be planted for every 20 feet of proposed building façade facing a public street.
  3. Planting areas shall be a minimum 150 square feet with a minimum 10-foot width.
  4. A minimum of 25 percent of the area between the building façade and the property frontage shall consist of pervious planting areas.



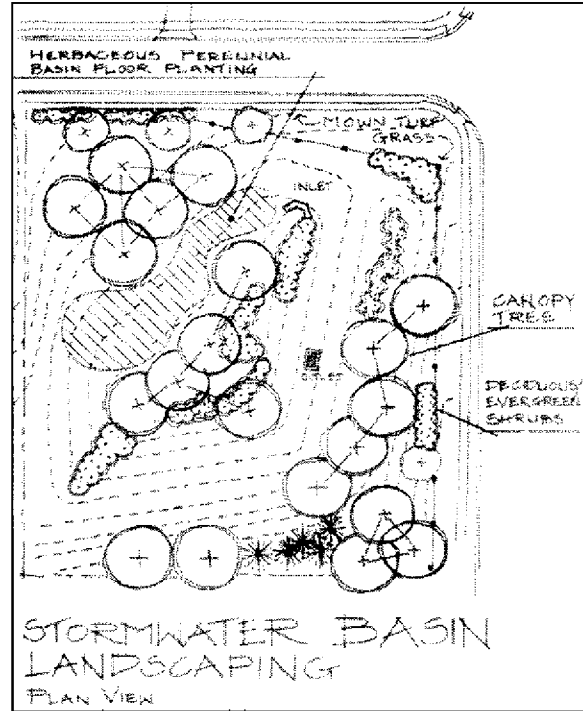
- B. Location Option. All proposed residential lots shall plant at least one canopy tree per 10,000 square foot, or a portion thereof, of lot area. Existing trees to remain may satisfy part or this entire planting requirement.
- C. All proposed attached residential units shall plant a minimum of one canopy tree for every two dwelling units.

At the discretion of the board of supervisors, if sufficient planting space is not available immediately adjacent to the proposed structure, required building façade plantings may be located on the other areas of the tract.

**Section 420-6. STORMWATER BASINS AND ASSOCIATED FACILITIES**

Landscaping shall be required in and around all stormwater management basins according to the following:

- A. Planting Requirements. All areas of stormwater management basins, including basin floors, side slopes, berms, impoundment structures, or other earth structures, shall be planted with suitable vegetation such as naturalized meadow plantings or lawn grass specifically suited for stormwater basins (see **Appendix A** for recommended plants for stormwater basins).



1. Trees and shrubs shall be planted in and around stormwater basins given they do not interfere in the proper function of the basin and no trees are planted within 30 feet of an outlet/drain structure, emergency spillway or dam. A minimum planting of 2 trees and 10 shrubs per 100 linear feet of basin perimeter shall be planted in and around the basin.
2. Naturalized ground cover plant species, such as wildflowers, meadows, and nonaggressive grasses specifically designed for the permanently wet, intermittently wet, and usually dry areas of stormwater basins, shall be seeded in the floors and slopes of the basin and meet the following requirements:
  - a. The plantings provide a satisfactory continuous cover to all areas of the basin.
  - b. The plantings do not interfere in the safe and efficient function of the basin as determined by the municipal engineer.
3. Lawn grass areas may be sodded or hydro-seeded to minimize erosion during the establishment period. Once established, these turf grass areas shall be maintained at a height of not more than 6 inches.

- B. Basin Shape. Basin shape shall incorporate curvilinear features to blend with the surrounding topography.
- C. Buffer Plantings. Stormwater basins shall be screened from adjacent properties using the buffer plantings standards according to **Section 400**.

**Section 420-7. Landscape Design Criteria.**

A. Design Criteria.

- 1. Plantings shall be placed in arrangements and locations to best mitigate the adverse impacts of proposed site development. The required plant material shall be distributed over the entire length and width of any required buffer area.
- 2. Plantings shall be spaced to comply with the visual mitigation requirements with consideration given to the provision for the future growth habits and mature sizes of selected plant species.
- 3. Plant species selection shall be based on the following considerations:
  - a. Existing site conditions and their suitability for the selected plants based on the site's soils, hydrology and microclimate.
  - b. Specific functional objectives of the plantings which may include but not be limited to visual screening, noise abatement, energy conservation, wildlife habitat, erosion control, stormwater management, and aesthetic value.
  - c. Maintenance and replacement considerations such as hardiness, resistance to insects and disease, longevity, availability and cost of plant materials.
  - d. A minimum variety of tree species is required as follows:

<u>Number of Trees</u>	<u>Min. Number of Tree Species</u>	<u>Max. % of Any One Species</u>
0-5	1	100%
6-15	2	50%
16-30	3	40%
31-50	4	30%
51+	6	20%

- 4. Existing healthy trees, shrubs, or woodlands may be substituted for part or all of the required plant material at the discretion of the governing body. The minimum quantities and/or visual effect of the existing vegetation shall be equal to or exceed that of the required buffer. In order for existing vegetation to qualify for required buffer plantings, proof must be demonstrated that adequate protection measures, particularly in the plant's root zone, are incorporated into the plan.
- 5. Plant materials shall meet the specifications of **Section 420-8**.

**Section 420-8. Plant Materials Specifications, Maintenance, and Guarantee.** The following standards shall apply to all plant materials or transplanted trees as required under this Ordinance.

A. Plant Specifications.

1. All plants shall meet the minimum standards for health, form, and root condition as outlined by the American Nursery and Landscape Association (ANLA) Standards.
2. All plant material shall be hardy and within the USDA Hardiness Zone 6 applicable to Montgomery County, Pennsylvania.
3. Proposed plant materials shall meet or exceed the minimum planting size requirement for the intended landscape use. Use of plantings selected from the List of Recommended Plant Material (**Appendix A**) is required.

B. Maintenance.

1. Required plant material shall be maintained for the life of the project to achieve the required visual effect of the buffer or screen. It shall be the ultimate responsibility of successive property owners to insure that the required plantings are properly maintained. Dead or diseased plant material shall be removed or treated promptly by the property owner and replaced at the next planting season.
2. Safety - All sight triangles shall remain clear, and any plant material that could endanger safety such as unstable limbs shall be removed and the plant material replaced if necessary. It shall be the responsibility of the property owner to maintain all plantings and architectural elements to insure a safe environment.
3. Maintenance guidelines for the plantings are encouraged to be published by the planting plan designer, to be used by ground maintenance personnel to insure that the design's buffering and screening concepts are continued.

C. Landscape Bond.

1. Any tree or shrub area that dies within 18 months of planting shall be replaced by the current landowner or developer. Any tree or shrub that within 18 months of planting or replanting is deemed, in the opinion of the municipality, not to have survived or not to have grown in a manner characteristic of its type, shall be replaced. Substitutions for certain species of plants may be made only when approved by the municipality. <sup>19</sup>
2. The developer or landowner shall deposit with the municipality a sum of money equal to the amount necessary to cover the cost of purchasing, planting, maintaining, and replacing all vegetative materials for a period of 18 months.

**Section 420-9. Plan Requirements.**

**A. Preliminary Landscape Plan Requirements.** Preliminary landscape plan shall show the following:

1. Existing Features. The location and character of existing buildings, mature trees standing alone; outer limits of tree masses and other existing vegetation; the location of floodplains, wetlands, and other natural features that may affect the location of proposed streets, buildings, and landscape plantings.
2. Proposed Landscaping:
  - a. Approximate location of all proposed landscaping required under this Ordinance.
  - b. Demarcation of existing vegetation "TO REMAIN" or "TO BE REMOVED" and the means of protecting existing vegetation during construction.
  - c. Approximate location of proposed buildings, paving, utilities, or other improvements.

**B. Final Landscape Plan Requirements.**

1. Drafting Standards. The same standards shall be required as for a preliminary plan. (See municipal ordinance)
2. Information to be shown:
  - a. Plan scale, date, north arrow, and location map with zoning district designations for the site and adjacent properties.
  - b. Location of all existing and proposed buildings and structures.
  - c. Location of all existing and proposed roads, parking, service areas, and other paved areas.
  - d. Location of all outside storage and trash receptacle areas.
  - e. Sidewalks, berms, fences, walls, freestanding signs, and site lighting.
  - f. Existing and proposed underground and aboveground utilities such as site lighting, transformers, hydrants, manholes, valve boxes, etc. (Reference may be made to other submission drawings.)
  - g. All existing and proposed contours at 2-foot intervals to determine the relationship of planting and grading areas with slopes in excess of 3:1 shall be highlighted on the plan.
  - h. Existing mature trees, woodland, and tree masses to remain.
  - i. Existing mature trees, woodland, and tree masses to be removed.

- j. Location of all proposed landscaping; including required street trees, stormwater basin landscaping, parking lot landscaping, property line buffer, and site element screen landscaping.
  - k. A planting schedule listing the scientific and common name, size, quantity, and root condition of all proposed plant material.
  - l. A schedule showing all landscape requirements and plantings proposed for each category.
  - m. Planting details, including method of protecting existing vegetation, and landscape planting methods.
  - n. Information in the form of notes or specifications concerning seed mix, seeding methods, sodding, groundcover, mulching, and the like, etc.
  - o. A detailed cost estimate shall be submitted with the public improvement escrow, showing the value of all proposed landscaping, including all labor, materials, and guarantee.
3. This condition may be satisfied through a land development agreement with sufficient and appropriate financial guarantees.
4. Certificates. When approved, the landscape plan must show:
- a. The signature and seal of the registered landscape architect responsible for preparing the landscape plan and details.
  - b. The signature of the subdivider, developer, or builder.
  - c. The signatures of the elected municipal officials, engineer, or landscape architect, and planning commission.

**Section 422. Street Construction.** All Street construction must conform to the construction specifications incorporated in this Section, as shown on the construction drawings, or when such specifications are not provided, the construction shall be in accordance with PENNDOT Specifications, Publication 408 and its latest revisions. All construction must be approved by the Township Engineer prior to acceptance by the Board of Supervisors. All grades, horizontal and vertical curves, intersections, sight distances, and tangents shall conform to the requirements established by this Part and shall be subject to the approval of the Township Engineer.

1. Crushed Aggregate Base Course.

- A. Description. This work consists of the construction of a stone or slag base course. When placed on subgrade, it shall include the preparation of the subgrade.
- B. Material.
  - (1) Course Aggregate (fine material): Type A, No. 10, stone or slag, PENNDOT Publication 408, Section 703.2.

- (2) Course Aggregate (course material): Type A, No. 1, stone or slag, PENNDOT Publication 408, Section 703.2.
- (3) Calcium Chloride: PENNDOT Publication 408, Section 721.
- (4) Water: PENNDOT Publication 408, Section 720.2

C. Construction.

- (1) Rollers and vibratory rollers shall be used which meet the requirements of PENNDOT Publication 408, Section 108.05(c).3.a and Section 108.05(c).3.h.
- (2) Spread an initial layer of fine material uniformly over the subgrade or as a bed and filler. Spread material to a depth of 2 inches on subgrade or one-inch on subbase. Do not place this initial layer of fine material on wet, frozen, or unsuitable subgrade or subbase.
- (3) Spread the course material uniformly on the initial layer of fine material to the full width of the roadway area. If the base course is more than 10 inches in compacted depth, construct in two or more layers of approximately equal depth, with no layer less than 5 inches nor more than 10 inches in depth. Compact each layer with a vibratory roller.
- (4) After the course material has been set and keyed by vibration and rolling, spread fine material uniformly over the surface. Operate the vibrator over the surface so that the fines settle into the voids. Spread additional fines in one or more applications to satisfactorily fill all the voids. Broom fine material as necessary to complete the filling of the voids.

2. Modified Base Course.

A. Description. This work consists of the construction of a stone or slag base course. When placed on subgrade, it shall include the preparation of the subgrade. This material may be used in place of crushed aggregate base course.

B. Material.

- (1) The crushed stone material shall consist of the use of Type A, No. 1 or No. 3, stone or slag mixed uniformly with fine material. The material shall be a plant mix and not mixed in the process of loading the trucks.
- (2) Course Aggregate (fine material). Type A, No. 10, stone or slag, PENNDOT Publication 408, Section 703.2.
- (3) Water: PENNDOT Publication 408, Section 720.2.

C. Construction.

- (1) Rollers and vibratory rollers shall be used which meet the requirements of PENNDOT Publication 408, Section 108.05(c).3.a and Section 108.05(c).3.h.

- (2) Spread the modified material uniformly over the full width of the roadway area. If the base course is more than 10 inches in compacted depth, construct in two or more layers of approximately equal depth, with no layer less than 5 inches nor more than 10 inches in depth. Compact each layer with a roller.
  - (3) After placing and rolling the material all voids shall be chocked with fine material. This shall be completed when required by the Township Engineer.
  - (4) Water shall be used to reduce the segregating of the material as required by the Township Engineer.
3. **Pavement Structure.** All roadway pavement structures shall meet the following depths:
- A. Bituminous Wearing Course: ID-2, one-inch depth on Bituminous Binder Course, ID-2, 2-inch depth on:
    - (1) Residential Roads: Crushed Aggregate Base Course, 8-inch depth or Modified Base Course, 10-inch depth.
    - (2) Commercial or Industrial Roads: Crushed Aggregate Base Course, 12-inch depth or Modified Base Course, 14-inch depth.
  - B. Residential Roads. On Bituminous wearing course, ID-2, 1½-inch depth; on Bituminous Concrete Base Course, 4-inch depth or on subbase, 6-inch depth.
  - C. Commercial or Industrial Roads. On Bituminous Wearing Course, ID-2, 1½-inch depth; on Bituminous Binder Course, ID-2, 2-inch depth; on Bituminous Concrete Base Course, 4-inch depth; or on subbase, 6-inch depth.
4. The pavement cross slope shall be ¼-inch (0.021 foot) per foot. Super elevation shall not be used on any roads unless required by the Township Engineer.
5. The Township shall require weight delivery slips for all material used in the pavement structure.

*(Ord. 90-2, 7/16/1990, Section 422)*

**Section 423. Additional Regulations for Floodplain Areas.** The regulations contained herein shall apply in those areas identified as flood prone in Part 16 of the Douglass Township Zoning Ordinance [**Chapter 27**]. The Flood Boundary and Floodway Map shall be available in the Township Building for inspection. In regard to the adopted Flood Plain Conservation District, the regulations contained herein shall apply to those areas defined and established as floodplain and not in conflict with the information provided in the Flood Insurance Study.

1. The regulations contained herein are intended to conform to the requirements of Section 60.3d of the National Flood Insurance Program, P.L. 93-234, and the Pennsylvania Flood Plain Management Act, P.L. 851, No. 166 of 1978, and as either is amended. Furthermore, it is the purpose of these regulations to:
  - A. Regulate the subdivision and development of floodplain areas in order to promote the general health, welfare, and safety of the community.

- B. Require that each subdivision lot or development site in floodplain areas be provided with a safe building site with adequate access; and that public facilities which serve such sites be designed and installed to preclude flood damage at the time of initial construction.
  - C. Protect individuals from buying lands which are unsuitable for use because of flood hazards by prohibiting the subdivision and development of unprotected floodplain areas.
  - D. Maintain the certification of Douglass Township and the eligibility of the property owners in the Township for the benefits of the National Flood Insurance Program, P.L. 93-234.
2. Prospective developers shall consult with the Zoning Officer to make a determination as to whether or not the proposed subdivision or land development is located within an identified floodplain.
  3. Where not prohibited by this or any other codes or ordinances, land located in a floodplain may be subdivided or developed in accordance with this and any other codes or ordinances regulating such development.
  4. The finished elevation of proposed streets within floodplain areas shall be a minimum of 2 feet above the base flood elevation. Drainage openings shall be sufficient to discharge flood flows without increasing flood heights onto lands of other property owners.
  5. Storm drainage facilities shall be designed to convey the 100-year flow without risk to persons or property. The drainage system shall ensure conveyance of drainage away from buildings.
  6. The Township Supervisors may require in a floodplain an underground system to accommodate a 100-year flood and a secondary surface system accommodate larger, less frequent floods. Drainage plans shall be consistent with local and regional drainage plans. The facilities shall be designed to prevent the discharge or increased runoff onto adjacent properties.
  7. All new or replacement sanitary sewer systems, whether public or private, located in floodplain areas shall be floodproofed, and all appurtenances thereto (including, but not limited to, pumping stations) shall be flood proofed up to a point 1½ feet above the base flood elevation.
  8. All new or replacement water systems, whether public or private, in floodplain areas, shall be floodproofed to a point 1½ feet above the base flood elevation.
  9. All other new or replacement public or private utilities and facilities in floodplain areas shall be elevated or floodproofed to a point one and a half above the base flood elevation.
  10. Waivers. Guidelines for relaxation from the requirements set forth in this Section are as follows:



- A. A waiver shall not be issued within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result.
  - B. A waiver shall only be issued if there is:
    - (1) A determination that failure to relax the requirements would result in exceptional hardship to the applicant.
    - (2) A determination that the relaxing of a requirement will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
    - (3) A determination that relaxing of a requirement will not result in any adverse impact on adjacent landowners either upstream or downstream.
  - C. A waiver shall only be issued upon a determination that the waiver is the minimum necessary, considering the flood hazard, to afford relief.
  - D. The Township shall (i) maintain a record of all waivers, including justification for their issuance, and (ii) report such decisions issued in its annual report submitted to the Federal Insurance Administrator.
11. Where the subdivision or land development lies partially or completely in a floodplain, or where the subdivision or land development borders on a floodplain, the plan shall include detailed information identifying the following:
- A. Location and elevation of existing and proposed streets, water supply and sanitary facilities, and any other permitted improvements, soil types, and proposed flood proofing measures.
  - B. Boundaries of the floodplain and the base flood elevation as defined in Part 16, "Flood Plain Conservation District," of the Douglass Township Zoning Ordinance [Chapter 27]; the floodplain shall be shaded in on all copies of the plan.

*(Ord. 90-2, 7/16/1990, Section 423)*

**Section 424. Sidewalk Location, Design and Construction.**

- 1. Where Required.
  - A. Sidewalks shall be provided along both sides of all streets and along common driveways and parking areas. The Supervisors may waive the requirement for sidewalks under one or more of the following conditions:
    - (1) Where proposed residential lot width will be 125 feet or greater
    - (2) There is clearly no destination to be reached by pedestrians (e.g. shopping centers, bus stops, employment, schools) or none anticipated in the foreseeable future.

- (3) The sidewalk(s) would not be an extension of an existing network which provides neighborhood or village circulation.
  - (4) An alternative pedestrian circulation concept can be shown to be more desirable, especially when using open space areas, provided that appropriate walks are provided between the open space walkways and the pedestrian origins and destinations.
  - (5) The rural character, density of the area and/or small size of the proposal precludes the purposeful use of sidewalks. However, regardless of the small size of a land development or subdivision proposal, sidewalks shall be required wherever they fill a gap in an existing network.
- B. In developments with common areas, sidewalks should be located appropriately to serve as access between parking areas and buildings and in common areas to serve as internal site circulation. In addition, sidewalks shall be required where deemed necessary by the Supervisors to provide access to off-site destinations.
- C. Handicap ramps shall be provided at all intersections and at other locations required by the Township.
2. Width. Sidewalks shall not be less than 4 feet in width, although the Supervisors may require additional width in commercial, industrial, office, or higher density residential areas where higher volumes of pedestrian traffic are anticipated.
  3. On Public Streets. Sidewalks shall be located between the curb and the right-of-way line 5 feet from the face of the curb. This distance may be less only when the near edge of the sidewalk is within 6 inches of the right-of-way line. The grade and paving of the sidewalks shall be continuous across driveways except in certain cases where heavy traffic volume dictates special treatment. The Township may reduce the off-set distance when existing conditions require such a change.
  4. Construction. Sidewalks shall be constructed so as to discharge drainage to the street, the grade of which shall not be less than ¼-inch per foot. The finish grade between the outside of the sidewalk to the curb line (edge of the cartway) shall never exceed the total vertical elevation change of one foot. All concrete sidewalks shall be constructed on a 4-4-inch crushed stone base to insure proper drainage. The concrete shall be placed so that there is a separate expansion joint every 5 feet. One-half inch pre-molded expansion joints shall be placed between the adjacent curb and sidewalk. All concrete sidewalks shall have a minimum thickness of 4 inches except under drives where they shall have a minimum thickness of 6 inches for residential drives and 8 inches for commercial and industrial drives. The concrete apron for the driveway shall be reinforced with wire 6 X 6 inches, No. 9 wire (minimum). Two layers of this wire shall be utilized with a minimum of 2-inch spacing between layers. The wire shall not be installed so that it is closer than one-half inch from the top or bottom surfaces of the driveway.
  5. Additional sidewalks shall be required where deemed necessary by the Supervisors to provide access to schools, churches, parks, community facilities, and commercial or employment centers, and to provide necessary pedestrian circulation within land development and/or subdivisions where otherwise required sidewalks would not be sufficient for public safety and convenience. Such additional sidewalks may be

constructed of alternative materials, in compliance with the Douglass Township Engineering Standards. [Ord. 91-12]

6. Sidewalks shall be designed to facilitate access and use by the handicapped, as approved by the Township Engineer. [Ord. 91-12]

*(Ord. 90-2, 7/16/1990, Section 424; as amended by Ord. 91-12, 10/22/1991, Section 3)*

#### **Section 425. Curbs.**

1. Where Required. Concrete curbs shall be installed along each side of all roads in accordance with the chart in Section 405 of this Chapter. The Board of Supervisors may require curbs for any road if deemed necessary for stormwater control by the Township Engineer. The Board of Supervisors may waive the curbing requirement if satisfactory justification is provided by the developer to do so.
2. Curb Dimensions. Concrete curbs shall be 18 inches deep, 7 inches wide at the top and 8 inches wide at the base. The curb shall have an 8-inch face and a 1½-inch reveal at the depressed curb for drives. Curbing shall be constructed in 10-foot lengths and an expansion joint with an approved filler shall be constructed at least every 30 feet.
3. Construction. All concrete used for curb construction shall be certified to develop a compressive strength of at least 3,000 PSI at 28 days. Certification of the mix shall be provided to the Township upon request. All edges shall be finished with an edging tool. Slipform curb machines may be used only when approved by the Township.

*(Ord. 90-2, 7/16/1990, Section 425)*

**Section 426. Rights-of-Way and Easements.** Rights-of-way or easements required for roadway construction and maintenance, sanitary sewer systems, storm drainage systems, water systems, and any other utilities and for any other specific purposes shall be required by the Board of Supervisors as needed, with the location and width in each case to be determined by the Board of Supervisors.

1. The building setback shall be at least 10 feet from the near side of all existing and proposed easements. The total setback from the property line shall not be less than that required by the applicable zoning district.
2. Nothing shall be permitted to be placed, planted, set, or put within the area of an easement. The area shall be maintained as a lawn unless further use is allowed in writing by the Board of Supervisors.
3. The owner of any lot, upon written request by the Township, and at the owner's sole expense, shall remove unauthorized items which have been placed, planted, set, or put (with or without prior knowledge of this regulation) within the area of any easement.
4. To the fullest extent possible, easements shall be adjacent to rear and side lot lines.
5. Minimum Easement Widths.

- A. Drainage easements shall be required along natural water courses with a minimum width of 50 feet. Such easements may be used for storm drainage systems, sanitary sewer lines, and open space. Where conditions warrant, such as in floodplains, additional width may be required.
  - B. A minimum easement width of 20 feet shall be required for all storm drainage systems and sanitary sewer systems which are located outside of the public right-of-way and wherever storm drainage is collected in swales and ditches. An additional 5 feet of easement width shall be required for each additional utility which is placed within the easement area.
  - C. Snow removal easement shall be 40 feet wide at the ultimate right-of-way line and 15 feet deep. No shrubbery, fence, mailbox or any obstruction which would hinder the placement of snow shall be placed within the easement. *[Ord. 96-1]*
- 6. Easements required to be obtained by developers shall provide for the maintenance, repair, and replacement of the facilities including the right of passage for such work. The Township shall have the right of review and correction of all easements obtained by developers from other property owners which shall be turned over to the Township, all requested easements.
  - 7. No right-of-way nor easement for any purpose shall be recited or described in any deed unless the same has been shown on the approved plan. Any error found in a deed shall be immediately corrected and recorded in the Office of the Recorder of Deeds for Montgomery County, at the sole expense of the developer.

*(Ord. 90-2, 7/16/1990, Section 426; as amended by Ord. 96-1, 1/15/1996)*

**Section 427. Utilities.**

- 1. All underground facilities shall be installed the full width of the right-of-way prior to the paving of the streets. The location of all underground facilities within the right-of-way shall be approved by the Township.
- 2. All water, sewer, and gas mains shall be installed underground. All electric, telephone, and other communication services, both main and service lines, shall be installed underground except where it is demonstrated to the satisfaction of the Township Supervisors that underground installations herein required are not feasible because of physical conditions of the land involved.
- 3. All electric and communication mains and services located within the public right-of-way shall be installed at least 3 feet deep.
- 4. The provisions in this Part shall not be constructed as to limit or interfere with the construction, installation, operation, and maintenance of public utility structures or facilities which may hereafter be located within public easements or rights-of-way designated for such purposes.

*(Ord. 90-2, 7/16/1990, Section 427)*

**Section 428. Sanitary Sewers and On-Lot Disposal.**

1. **Sanitary Sewers.** Wherever practicable, sanitary sewers shall be installed and connected to the Berks-Montgomery Municipal Authority system. In areas not presently served by public sanitary sewers, the Township Supervisors may require, in addition to the installation temporary, individual on-lot sewage disposal facilities, the installation of a capped sanitary sewer system which would include house connections if studies by the Township Supervisors indicate that extension of the public sanitary sewer mains or laterals to the property being subdivided appears probable or necessary to protect public health.
  - A. **Construction.** All sanitary sewer systems shall be designed and constructed in accordance with the requirements of the Berks-Montgomery Municipal Authority and DER.
  - B. **Planning Approvals.**
    - (1) The developer must obtain approval from DER for all public sewer connections in excess of one equivalent dwelling unit (EDU). The developer shall update the Township Sewage Facilities Plan through the use of revisions as required by Chapter 71 of the Pennsylvania Code.
    - (2) When required by DER, the developer shall obtain a water quality permit for the proposed sanitary sewer system or extension.
2. **On-Lot Disposal Systems.** If public sewage disposal is not available, and the sewage treatment is on a project or individual lot basis, such private facilities must be installed by the developer or builder under the direct supervisions of the Montgomery County Health Department or DER representative, whichever is applicable. *[Ord. 94-2]*
  - A. The developer or builder shall obtain approval from DER through the use of the Planning Module for Land Development for all developments which consist of more than one EDU.
  - B. Proof of sewerability of every lot or parcel shall be provided before final plan approval of any subdivision or development unless waived by the Board of Supervisors. Where plan approval is not required by the Board of Supervisors, then a sewage permit shall be required before issuance of a building permit.
  - C. The Montgomery County Health Department or DER representative shall require percolation tests, soil tests, and other data to determine the size and extent of the facilities. Such tests shall be conducted for each lot to be developed. During installation of such facilities, and before final coverage, the applicable inspector shall make inspections and check to assure that all requirements and specifications have been met. They shall be granted free access to the development area at all times during this construction period. *[Ord. 94-2]*
  - D. A septic tank shall be required and shall be provided with a cover to facilitate cleaning. Abandoned wells shall not be used as cesspools or any type of sewage disposal.

- E. The on-lot sewage systems shall be designed and constructed in accordance with any other Township regulations or ordinance, and DER requirements.
- F. In no instance shall a septic tank tile field or other effluent disseminating system be located nearer to a drilled well than 100 feet.

*(Ord. 90-2, 7/16/1990, Section 428; as amended by Ord. 94-2, 3/7/1994, Section 8)*

**Section 429. Water Supply.**

**1. Public and Community Water Systems.**

- A. All systems shall be designed and constructed in accordance with the requirements established by the Township Board of Supervisors. These requirements shall include the standards established by the Borough of Boyertown when it is anticipated that the proposed system will be part of the Boyertown system or the standards established by any other water company servicing the Township when it is anticipated that the proposed system will be part of a particular water company's system.
- B. All water mains and lines as indicated on the approved plans shall be installed from each lot to the municipal or community supply.
- C. Fire hydrants shall be located at accessible points throughout the subdivision or land development when public water supply is available, and shall be located within 600 feet of all existing and proposed structures as measured along roadways. As part of the capped water system, the fire hydrant line shall be built to the location of the hydrant and capped.

**2. On-Lot Water Systems.**

- A. Where no public or community water supply is available, wells shall be constructed for each lot or land development.
- B. All wells shall be designed and constructed in accordance with the requirements of all other Township regulations or ordinances and DER regulations.

**3. Capped Water Systems.**

- A. In areas not presently served by municipal or community water supply, the Township Supervisors may require, in addition to individual wells, the installation of a capped water system, if studies by the Township indicate that a municipal or community water supply appears probable or necessary to protect public health. Such systems shall include all service connections to the lots or parcels.
- B. All systems shall be designed and constructed in accordance with the requirements for public and community water systems, Section 429(1) of this Part.
- C. A circular area with a radius of 100 feet shall be shown around each well to denote clear space in which no on-lot sewage system is to be located.

*(Ord. 90-2, 7/16/1990, Section 429)*

**Section 430. Erosion and Sediment Control.**

1. No changes shall be made in the contour of the land, no grading, excavation, removal, or destruction of the topsoil, trees, or other vegetative cover of the land shall commence until such time that a plan for minimizing erosion and sedimentation has been approved by the Township or it is determined that such plan is not necessary.
2. All erosion control facilities shall be designed and constructed in accordance with the regulations of the Township, Montgomery County Conservation District, and DER.
3. An NPDES stormwater permit is required for construction sites over 5 acres in accordance with PADEP regulations, 25 Pa. Code, Chapter 92, before final plan approval is granted by the Township Board of Supervisors. The Township may require erosion and sedimentation control approval be obtained from the Montgomery County Conservation District for construction sites under 5 acres. When final plan approval is not required by the Board, a building permit shall not be issued until such erosion and sedimentation control approvals mentioned in subsections (1) and (2), above, have been obtained or the Township should determine that such erosion and sedimentation control will not be necessary. *[Ord. 96-1]*

*(Ord. 90-2, 7/16/1990, Section 430; as amended by Ord. 96-1, 1/15/1996)*

**Section 431. Bridges and Culverts.**

1. All bridges and culverts shall be designed to meet current PENNDOT standards to support the expected load and to carry expected flows. They shall be constructed to the full width of the right-of way.
2. Approvals or waivers shall be obtained from DER for all bridges, culverts, and storm drainage pipes unless the Township has determined that such application would not be necessary.
3. Extensions, construction or reconstruction of bridges, culverts, and pipes which are a part of the County or State roadway system shall require their approval before final plan approval by the Board of Supervisors.

*(Ord. 90-2, 7/16/1990, Section 431)*

**Section 432. Survey Monuments.**

1. Survey monuments shall be placed on the right-of-way lines at corners, angle points, beginning and end of curves, at all corners and changes in directions of the boundary of the tract under development and at other points as required by the Township. All monuments, existing and proposed, shall be shown on the record plans. The monuments shall be placed after all roadway improvements have been completed.
2. One of the following types of permanent reference monuments shall be installed by the developer or property owner at all locations mentioned above:
  - A. Concrete monuments with minimum dimensions of 20 inches by 4 inches square with 45 degree beveled edges.

B. Solid steel pins which minimum dimensions of 5/8-inch in diameter and 24 inches in length.

3. **Bench Marks.** All survey work for plan preparation and other required design shall be based upon the BMMA sanitary sewer systems datum. When such is not available, the U.S.G.S. datum shall be used. Local survey datum may be used only upon approval by the Township.
4. **Lot Stakeout.** All lot corners and other changes in direction shall be marked with metal pins upon completion of all lot grading. All markers shall be permanently located and shall be at least a 5/8-inch metal pin with a minimum length of 24 inches, located in the ground to the finished grade.

*(Ord. 90-2, 7/16/1990, Section 432)*

**Section 433. Signs.** The developer or property owner shall provide and install all street signs, speed limit signs, and all other regulatory signs required by the Township. All signs shall meet the requirements of PENNDOT. *(Ord. 90-2, 7/16/1990, Section 433)*

**Section 434. Street Lighting.** Street lights shall be installed when required by the Township. The developer or property owner shall provide a street lighting plan which shall be approved by the utility company and the Township Board of Supervisors before final plan approval. *(Ord. 90-2, 7/16/1990, Section 434)*

**Section 435. Wetlands.**

1. All subdivision and land development shall have determined the limits of the wetlands as defined by the "U.S. Federal Manual for Identifying and Delineating Jurisdictional Wetlands." Such delineation shall be recorded on the record plan.
2. When wetlands are present, a certification note as shown in **Section 306(2)(C)(5)** of this Chapter shall be placed on the record plan and signed.
3. A copy of the wetlands identification report shall be provided to the Township for their records.
4. Buildings shall *not be located in wetlands and must be set back at least 25 feet from the edge of wetlands.*
5. The Township Board of Supervisors may waive the wetland requirements upon the advice of the Township Engineer and/or the Township Planning Commission.

*(Ord. 90-2, 7/16/1990, Section 435)*



**Part IVA**  
**STANDARD CONSTRUCTION OF MATERIAL SPECIFICATION**  
**FOR PUBLIC IMPROVEMENTS**

**Section 400A. PROCEDURES**

1. Supervisors approve development plan but do not sign plan and release for recording until:
  - a. Township engineer has received from developer's representative a construction cost estimate of all improvements and the Township Engineer has approved the estimate, and
  - b. A Development Agreement that can be recorded with the Montgomery County Recorder of Deeds Office has been approved and executed by the Township, the Developer, and the Property Owners, and
  - c. A Financial Security Agreement with appropriate security as provided by the Pennsylvania Municipal Planning Code ("PMMC") and the Douglass Township Subdivision and Land Development Ordinance ("SALDO") is approved by the Township and is fully funded or appropriately guaranteed, and
  - d. All requisite permit fees, costs, and other fees or payments due the Township have been paid or are to be paid upon the release of the Plan for recording, and
  - e. Title insurance is issued to the benefit of the Township in an amount sufficient to cover the fair market value of the public improvements and property to be dedicated or otherwise improved for public purposes or use, and
  - f. All deeds and/or easements for property to be dedicated to the Township are to be escrowed with the Township with descriptions approved by the Township Solicitor and Township Engineer and such funds that are necessary to prepare or revised the deeds, to obtain title insurance that will insure that the Township receives clear title to the dedicated property and to record the deeds.
2. The Plan is released for recording with other requisite documents including the Development Agreement and the Financial Security being executed, established and funded per arrangements approved by the Township. The requirements of article V., section 500, Subdivision and Land Development of the Municipalities Planning Code, are incorporated herein and must be complied with.
3. Written verification of recording and issuance of Title Insurance to the benefit of the Township is provided to the Township confirming that there are no liens or encumbrances

affecting the property to be dedicated to the Township and that all obligations under the Development Agreement are not subject to any liens or encumbrances.

4. An application for a building permits is submitted to the Township and approved upon subject to all conditions precedent to the issuance have been complied with. No work is to be performed until the preconstruction meeting has been held.
5. A preconstruction conference shall be required for all subdivision and land developments where there is financial security required for the construction and installation of improvements and for any other construction or earthmoving activities when deemed necessary by the Township. The preconstruction meeting shall be in accordance with an agenda previously established and circulated among those required to attend as well as the Township Manger. A form for the preconstruction conference agenda is included in the exhibits attached hereto.

The following are requested to attend:

- a. Developer and contractors,
  - b. Township representatives, including the Township Engineer and Inspector,
  - c. Utility representatives,
  - d. Representatives of other reviewing or permitting agencies.
6. For the preconstruction meeting, the Developer shall provide:
    - a. 5 sets of construction plans
    - b. 2 sets of approved Erosion & Sediment Control Plan
    - c. Copies of necessary permits and approvals
    - d. Materials and Equipment Shop Drawings, as may be required
    - e. Act 172/287 Notification Number
  7. a. Proof of all required permits, insurance certifications, and other necessary approvals shall be provided at the preconstruction meeting as well as compliance with the utility notification requirement of Act No. 172/287. Construction shall not commence until all permits and approvals are obtained. The property owner under his signature shall make all permit applications.
    - b. All applications and/or permit fees shall be paid at the time of application and shall be in the amount as established by resolution of the Board of Supervisors as in effect at the time of application.
    - c. A general list of permits and/or approvals, which is not all inclusive or limited, is as follows:

<u>PERMITS OR APPROVALS</u>	<u>AGENCY</u>
Stream Encroachment	(Pa D.E.P.) (Army Corps of Engineers) (Pa Fish Commission)
Wetlands and/or Flood Plain Encroachments	(Pa D.E.P.) (Army Corps of Engineers)
Water Quality	(Pa D.E.P.) (Delaware River Basin Commission)
State Highway Access and/or Occupancy	(Pa DOT) (Douglass Township)
County Street Access and/or Occupancy	(Montgomery County)
Township Street Opening	(Douglass Township)
Township Street Access (Driveways & Roads)	(Douglass Township)
Grading, Soil Erosion & Sediment Control	(County Soil Conservation) (Douglass Township)
Sanitary Sewer Connections and Installations	(Douglass Sewer Advisory Board)
Water Connection and/or Installations	(Local Water Utility Co.)

8. Thereafter, construction shall begin provided that all conditions precedent have been satisfied as determined by the Township Engineer.

9. Inspections/Notifications

a. Unless otherwise provided herein or by the Township Engineer, the Township, through its duly authorized representative, shall perform all inspections to confirm that approved materials have been used and that there has all construction and installation of all improvements have been performed by proper and approved methods in accordance with the standards of the Township. Unless the Board of Supervisors authorizes otherwise, all costs associated with the inspections shall be the responsibility of the owner and developer.

b. Inspections shall be required prior to the commencement of construction, during the installation of materials and structures, and upon the completion of all improvements. All improvements shall be installed in accordance with all required approved regulations and specifications.

c. Any and all unsatisfactorily work, use of inappropriate methods or procedures, and the installation or construction with defective materials, inappropriate design or poor workmanship shall be rejected and noted for the record on the inspection standards punch list. The same shall be cured, corrected, and approved by the Township Engineer or inspector before final acceptance.

d. All required improvements shall be placed, sited, installed and/or constructed in accordance with the Plan and per the controls as established by a registered Pennsylvania surveyor or licensed civil engineer to ensure that the installation and the construction of all improvements are in proper location, elevation, alignment and profile.

e. Scheduling of the required inspections shall be the responsibility of the Developer. The Developer shall notify the Township or the appropriate agency at least two (2) workdays before commencing any work on any undertaking that requires inspection including those tasks as set forth in subsection 8.f. hereof.

f. The Township's representative shall be notified prior to the commencement of any construction and/or excavation, including removal of topsoil, grubbing of shrubs, bushes, trees and vegetation of any kind, or the performance of any work in a street, right-of-way, utility easement, storm drainage easement, of any work in a street, right-of-way, utility easement, storm drainage easement, waterways or any other work per the Plan or Development Agreement.

10. The Developer shall institute appropriate traffic control and safety measures including the following:

a. Work being performed on any and all existing public highways, streets, rights-of-way and easements, shall require Street Occupancy Permit, the posting of a performance bond as may be required from the proper authority, and the establishment and institution of all required safety protection, including flag persons, appropriate signage, barricades, flashing warning devices and other required safety devices and procedures. All safety protection methods, devices and procedures shall be in conformance with Pennsylvania Department of Transportation Publication 203, Work Zone Traffic Control current edition. The Developer shall be solely responsible for implementing the appropriate safety procedures and installing and using the required safety devices, at the Developer's sole cost and expense.

b. All work performed shall be in compliance with Federal, State and local safety regulations and to assure the safety of the public and all personnel involved directly or indirectly in the construction of all improvements. Safety measures such as trench shoring, protective clothing, safety shields, safety switches on power equipment, and vehicle alarms shall be used where appropriate.

11. For the periodic release of financial security:

a. The Developer shall request the release from Township.

b. The Township shall submit the request to Engineer for approval.

c. The request shall be on a form and presented in such manner as approved by the

Township and its Engineer. The request shall be made and shall be deemed received so that the Engineer shall have at least thirty (30) days to review and comment with respect to the release prior to a public meeting of the Board of supervisors

d. The Engineer approves or recommends an adjustment to the request

e. At a public meeting, the Board of Supervisors acts on the release request after receiving the recommendation of the Engineer

12. At the end of construction of the improvements:

a. There shall be a pre-final inspection,

b. And, thereafter a final inspection.

13. Upon all punch-list items being completed, all improvements being accepted, and the requisite dedication, acceptance, and recording of all documents necessary for any dedication and acceptance, the financial security for the performance of the installation and construction of the improvements in accordance with the Plan and Development Agreement shall be released by formal action of the Board of Supervisors subject to the execution of the Maintenance Agreement and Financial Security for the Maintenance of the improvements for an 18 month period thereafter.

14. Prior to the release of the Maintenance financial security, the Township shall inspect to assure that the development is and has been constructed in compliance with the Plan and the Development Agreement. Upon certification of compliance by the Township Engineer and approval by the Board of Supervisors after the 18-month maintenance period, the maintenance financial security will be released.

#### **Section 401 A. MANDATORY COMPLIANCE WITH ORDINANCES, REGULATIONS, PLANS**

The following references contain information that is relevant to the construction of public improvements in Douglass Township and must to be strictly complied with where applicable.

In the event that the standards of any ordinance, regulation or plan is more strict than any other standard, the more strict standard shall be complied with and applied:

1. The Douglass Township Codified Code of Ordinances
2. The Douglass Township Comprehensive Plan
3. The Douglass Township Standard Construction and Material Specification for Sanitary Sewer Extensions
4. The PaDEP Bureau of Soil and Water Conservation Erosion and Sediment Pollution Control Manual
5. The PaDOT Specifications, Publication 408

6. The PaDOT Standards for Roadway Construction, Publication 72
7. The PaDOT Design Manual, Part IV
8. The PaDOT Code Title 67, Chapter 203 - Work Zone Traffic Control
9. The PaDOT Code Title 67, Chapter 211 - Official Traffic Control Devices
10. The PaDOT Code Title 67, Chapter 411 - Access to and Occupancy of Highways by Driveways and Local Roads
11. The PaDOT Code Title 67, Chapter 459 - Occupancy of Highways By Utilities

**a. SANITARY SEWER SYSTEM**

Inspection of the sanitary sewer system is the responsibility of the Sewer Authority. Prior to the start of any work on the sanitary sewer improvements the developer and/or contractor shall contact the Sewer Authority and shall adhere to their policies, procedures and standards. The standard specifications and details relating to sanitary sewer construction are included in the "Standard Construction and Material Specifications for Sanitary Sewer Extensions" document prepared by Douglass Township.

**b. WATER DISTRIBUTION SYSTEM (MUNICIPAL OR PUBLIC)**

Inspection of all municipal or public water distribution system improvements is the responsibility of the local utility company serving the area. Prior to the start of any work on the water line improvements the Developer and/or contractor shall contact the utility company and shall adhere to their policies, procedures and standards.

**c. STORM DRAINAGE SYSTEM**

Visual inspection by the Township representative shall be made of each section of installed storm sewer system. Inspections shall be made prior to backfilling any section, including pipes, inlets, manholes, endwalls, detention and retention basins, culverts and bridges, and all items being installed as part of the storm drainage system. Cast in place concrete structures and bridge structures shall require material samples, in compliance with ASTM C39 standards. Samples must be taken in the presence of the inspector. Cut sheets for the layout of the storm drainage system must be prepared and provided by the contractor when required by the Township.

**d. ROAD STRUCTURE AND UNDERDRAIN PIPE**

Visual inspection by the Township representative shall be made of each section of installed roadway structure, including subgrade, base, binder and wearing courses and underdrain systems. The contractor shall be responsible for submittal of all certified material delivery slips.

#### **e. CONCRETE CURB STRUCTURE**

Visual inspection by the Township representative shall be made of each section of installed curb structure, including subgrade, base, general alignment and any forms to be used. String line shall be set prior to any concrete pour to show line and grade, profile and alignment. Cut sheets for the layout of the curbing must be prepared and provided by the contractor when required by the Township. The contractor shall be responsible for submittal of all certified material delivery slips.

#### **f. SIDEWALK STRUCTURES**

Visual inspection by the Township representative shall be made of each section of installed sidewalk structure, including subbase grade and form grade and alignment prior to any pour.

#### **g. DETENTION BASIN STRUCTURES**

Visual inspection by the Township representative shall be made of each section of installed detention basin structures, including grading, outlet structures and piping and stabilization. The contractor shall be responsible for completing compaction testing on all basin fill material and for providing test results to the Township.

#### **I. SEEDING, SODDING AND EROSION CONTROLS**

Visual inspection by the Township representative shall be made as required to assure compliance with approved plans, regulations and general acceptable methods and practice.

#### **H. AS-BUILT PLANS**

As-built plans are required for public improvements which are to be offered for dedication to the Township. The list of items to be provided and/or shown on the plan is included in the Exhibits.

#### **II. SPECIFICATIONS**

##### **A. STREETS**

##### **1. SUBGRADE**

a. The bottom of the excavation and the top of the fill between the outer limits of the paving or base course, when completed will be known as the subgrade and shall conform to the lines, grades, and cross-sections, given on the approved plans or as determined by the Township Engineer or other person designated by the Township Supervisors. The subgrade shall be solidly compacted to a firm and unyielding state by rolling with a power roller, weighing ten (10) tons minimum. Unstable areas shall be removed and replaced with suitable fill, and then re-rolled as required to provide a uniform, even surface.

b. Construction Methods - After the excavation or rough grading has been performed and all drains have been constructed, the subgrade shall be fine graded and shaped to the proper

cross-section. It shall be compacted to a firm unyielding surface by rolling the entire area with an approved power roller having a metal weight of not less than ten (10) tons. Solid rock, boulders, soft clay, and all spongy material which will not consolidate under the roller shall be removed from the subgrade to a depth to be determined by the Township Engineer or other person designated by the Township Supervisors. The space shall be filled with suitable material from the excavation and the subgrade re-rolled until it presents a smooth and firm surface of the proper shape and cross-section. Crown board and straight edge or string lines shall be used for checking road and street construction.

## 2. SUBBASE

This work shall consist of constructing a layer or layers of compacted aggregate on a prepared subgrade area.

a. *Materials* - The aggregate shall be stone, gravel, millings or slag meeting the requirements of Pa DOT Type C or better, No. 2A material or approved equal.

b. *Construction Methods* - The construction methods for the subbase shall conform to the requirements as specified in Section 350.3 of Pa DOT Publication 408, latest edition.

c. *Unsuitable Subgrade* - If at the time of construction, local unstable subgrade conditions are encountered, the Township Engineer may require that all areas of unstable subgrade be excavated to sufficient depth, replaced with approved material and compacted to a density and stability equal to or greater than the surrounding subgrade.

## 3. SHOULDER

a. Supporting shoulders shall be constructed on all section of projects where a base course or pavement is to be constructed without other permanent support along the sides. All shoulders shall be thoroughly compacted and graded to provide drainage from the macadam surface.

b. *Construction Methods* - Where concrete curbing is not being installed, paved shoulders are to be constructed adjacent to the paving of the proposed road. The width and type of construction, grade, and construction methods of these shoulders shall be determined by or shall meet the approval of the Township Engineer or other person designated by the Township Supervisors.

## 4. BASE, BINDER AND WEARING COURSES

a. Base, binder and wearing courses shall consist of one or more layers of materials conforming to the requirement of the following section of Pa DOT Publication 408, latest edition.

- Section 309 – Superpave Asphalt Mixture Design, HMA base course.

- Section 409 – Superpave Asphalt Mixture Design, HMA binder course.



- Section 409 – Superpave Asphalt Mixture Design, HMA wearing course.

b. Plant Mixed HMA Base Course:

1) Superpave Asphalt Mixture Design HMA pavement courses shall be placed in layers as is more fully described in Pa DOT Publication 408, latest edition, for each specific design, or as may be specified otherwise by the Township.

2) The subbase shall be properly prepared and primed as may be required for base course placement according to Pa DOT Publication 408, latest edition.

3) The base course shall be properly prepared and primed as may be required to receive subsequent courses. Prior to application of additional bituminous courses, existing base courses shall be inspected by the Township representative for defects such as fracture, racking or other signs of base failure, or potential failure. All areas of failure, or potential failure, shall be removed by saw cutting, and replaced, or repaired, to the satisfaction of the Township representative.

4) Bituminous Surface Course - The surface course shall consist of two (2) courses, binder course and wearing course, of hot-mixed, hot-laid, asphaltic concrete, constructed on a prepared base course. The bituminous surface course shall have a total thickness, after final compaction, as indicated in Table 1 or as specified by the Township Engineer or other persons designated by the Township Supervisors. All street pavement cross-sections, except where super-elevated for curves, shall have a slope from the center of the road to the gutter of a minimum of one-quarter (1/4") inch per foot to a maximum of one-half (1/2") inch per foot.

i) Materials - The materials shall conform to the requirements as given in Sections 309 and 409 of the Pa DOT Specifications 408, latest edition.

ii) Construction Methods - The surface coursing shall be applied in strict accordance with the requirements of PaDOT Publication Form 408, latest edition. No visible moisture shall be present prior to the laying of each course. Road surface temperature shall be 50 degrees F. or greater prior to the laying of a bituminous surface. The air temperature shall be 40 degrees F. or greater with the temperature rising. All bituminous surface courses shall have a total thickness after compaction as indicated in Table 1 or as specified by the Township Engineer or other persons designated by the Township Supervisors. All edges shall be kept straight and sharp, forming a clean-cut line between finished road and shoulder where shoulder construction is used.

iii) The binder course shall be installed immediately following the base course installation.

iv) Delivery Slips - Douglass Township will require delivery slips for all materials used in the construction of streets.

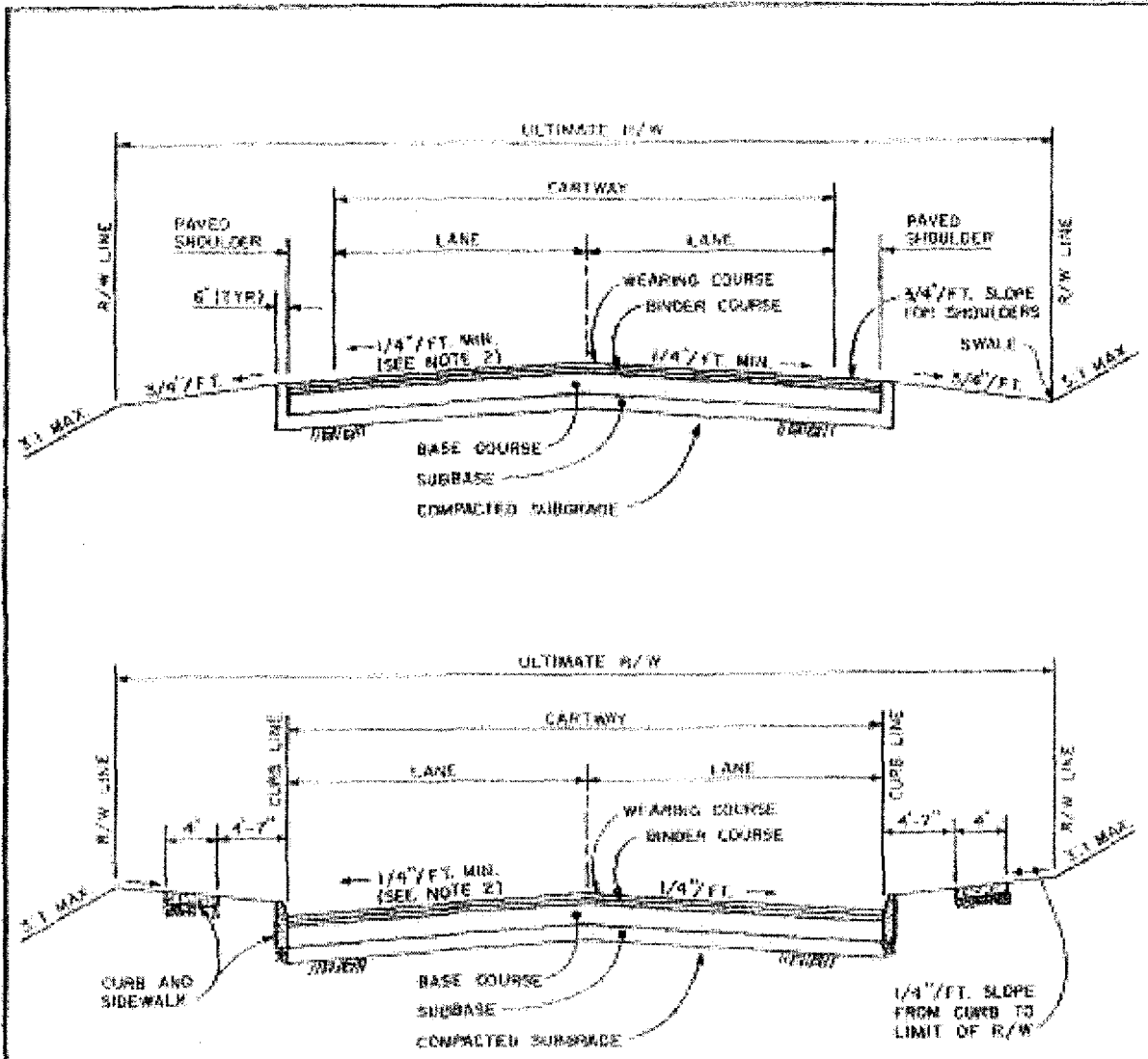
v) Joints - Joints formed by binder or surface course laid adjacent to concrete curbs or other rigid structures shall be sealed with AC-20, twelve inch (12") width as directed by the Township Engineer.

Table 1 – Minimum Street Construction Standards

	Local & Residential Streets	Collector & Arterial Streets
9.5mm Surface Course	1 ½"	1 ½"
19mm Dense Graded Binder Course	2"	2"
25mm Bituminous Concrete Base Course	3"	4"
PennDOT No. 2A Coarse Aggregate Subbase	4"	4"

- NOTES:**
- (1) All thickness specifications are for compacted materials.
  - (2) Optional design cross-sections may be reviewed by the Township Engineer, and approved by the Township, provided the design has a Structural Number equal to or greater than that of the standard specification.
  - (3) Permanent Cul-de-sac Street, Marginal Access Street, Service Street, and Off-Street Parking Construction shall conform to standards for Local and Residential Streets.
  - (4) Binder Course to be installed immediately following base course installation.

# TYPICAL ROADWAY CROSS-SECTION DETAIL



**NOTES**

1. SEE SUBDIVISION ORDINANCE FOR CARTWAY, RIGHT-OF-WAY AND SHOULDER WIDTHS.
2. INCREASE SLOPE WHEN DEEMED NECESSARY BY THE ENGINEER.
3. SEE TABLE I FOR ALTERNATIVE PAVEMENT SECTIONS AND PAVEMENT THICKNESS SPECIFICATIONS.

**Typical Roadway Cross Section**



**Brown Consulting Engineers, L.L.C.**  
 1314 East Philadelphia Avenue  
 Gilbertville, PA 18925

DATE: No Scale  
 DATE: April 2006

## B. STREET EXCAVATION

### 1. GENERAL

a. It shall be unlawful to drill any hole or make any opening or excavation in any existing street in the Township without first having obtained a permit for such from the Township.

### 2. EXECUTION

a. As the work is performed, the permit holder shall provide and maintain such fences, barriers, "street closed" and warning signs, yellow lights and other danger signals, and watchmen as shall be necessary to prevent accidents to the public, pursuant to and in compliance with the standards established by the Pennsylvania Department of Transportation as set forth in Title 67, Pennsylvania Code, Chapter 203, as amended or supplemented from time to time.

b. The amount of trench opened and the amount that is unfilled, if any, at the conclusion of the work day shall at all times be subject to the decision of the Township.

c. Before commencement of the work, the permit holder shall notify the Township Road Superintendent to allow for the supervision and inspection of the backfill and restoration.

d. All openings or excavations of streets, except for drill holes, shall be cut with a power saw and not with an air jackhammer or similar device.

e. Any person or entity opening or excavating any street shall, upon completion of the project and after notification of the Township, immediately and completely backfill such openings or excavations, mechanically tamping the same so as to prevent any settling thereof, shall restore the surface to the specifications of the Township, but, in no event to a condition inferior to what existed at the time that the permit was issued, and shall remove from the site of work all debris, tools and equipment.

f. All backfilling and restoration shall be done in strict conformance with the detailed sketches for backfilling and restoration that are set forth herein.

g. Where test holes have been drilled, the holes shall be filled and sealed with hot tar.

h. Permanent restoration, backfilling of any opening and/or excavations shall be as follows:

1) Before completing the backfilling of any trench, a saw cut shall extend a minimum of twelve inches (12") beyond the trench opening on all sides of the excavation.

2) From bottom of conduit to a level 7.5" below the surface of the trench shall be backfilled with 2A stone aggregated, mechanically tamped in six-inch (6") intervals. The material excavated from the trench may not be used for backfilling.

3) Six inches (6") of Superpave Asphalt Mixture Design, HMA Base Course, 25 mm mixture, placed in two lifts, extending a minimum of twelve inches (12") on each side of the trench, shall be placed on top of the 2A stone backfill. The Developer and contractor shall be responsible for any settlement within one (1) year of the final restoration.

4) 1.5" of Superpave Asphalt Mixture Design, HMA Wearing Course, 9.5 mm mixture properly compacted and graded to the surface of the street shall be placed on top of the base course and sealed at the saw cut with an approved asphalt sealing material.

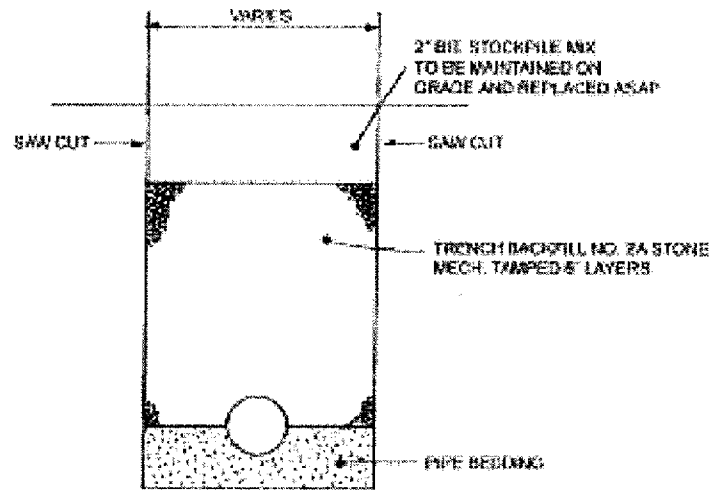
5) All lateral street cuts shall be backfilled with 2A stone aggregate.

i. Temporary Restoration: During winter construction periods, the trench shall be backfilled as in the second item of the specifications for permanent restoration above except that the 2A stone shall extend to a level 2" below the surface of the trench. The final step shall be temporary application of bituminous stockpile mix to bring the trench to street grade. Inspection shall be made periodically to maintain the trench in condition satisfactory to the Township. On or before May 31st following the date the street cut was first made, the permitted shall permanently restore the cut as in subsections h (4) and h (5) above.

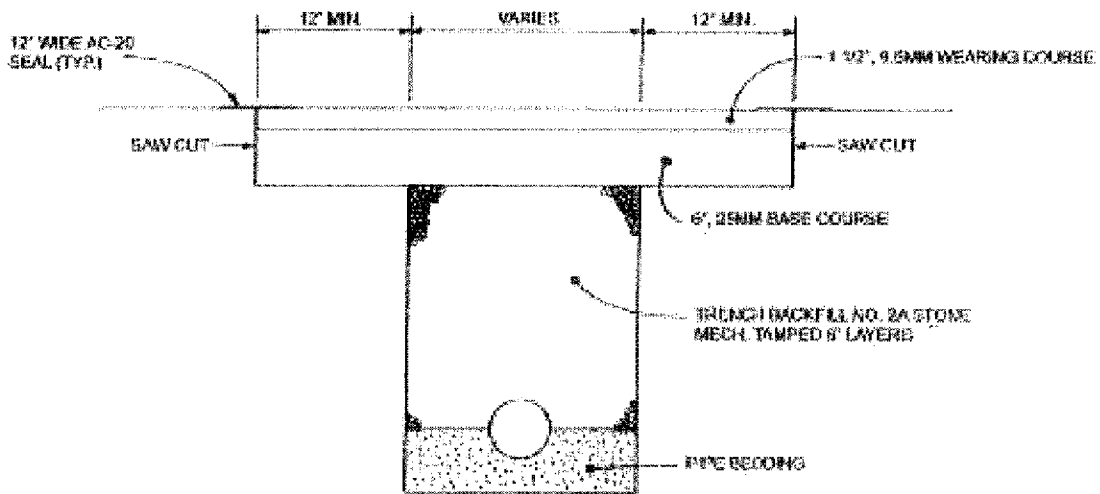
j. Where major street openings or excavations are done on a newly constructed street or a street repaved within three (3) years prior to the date of issuance of said permit, at the discretion of the Board of Supervisors, the entire street covered by the permit issued at the location for the work, shall be re-topped with paving materials as required by the Township.

Road Trench Restoration Details – New Paved Streets Detail and Existing paved Streets Detail as set forth in Exhibit on the following pages hereto.

## Road Trench Restoration Details New Paved Streets



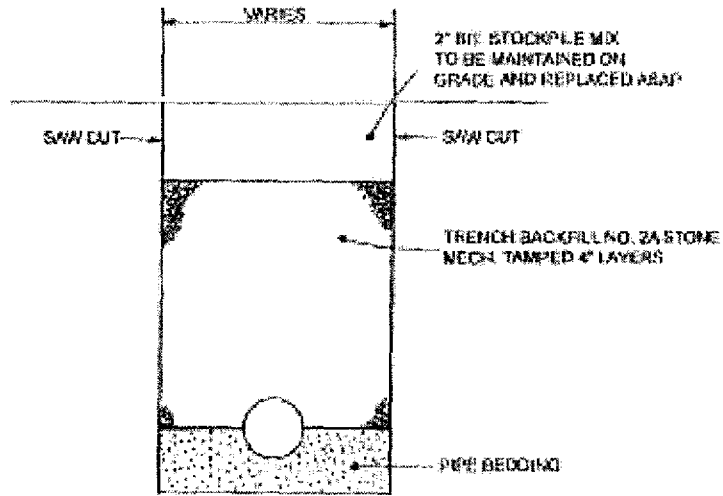
TEMPORARY RESTORATION



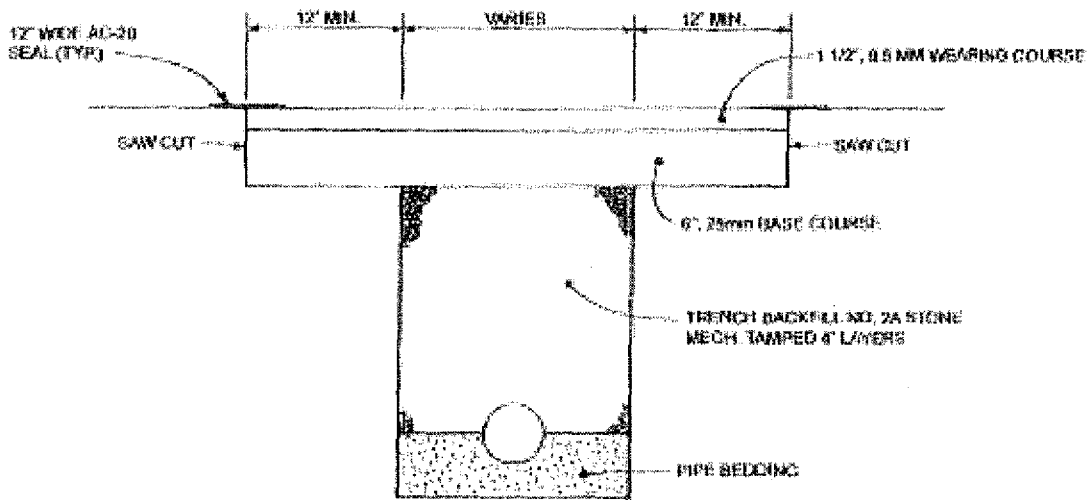
PERMANENT RESTORATION

<b>Road Trench Restoration Details New Paved Streets</b>	
<b>Brown Consulting Engineers, P.C.</b> 1334 East Philadelphia Avenue GREENSBORO, PA 15625	
<small>SCALE:</small>	No Scale
<small>DATE:</small>	Apr 17, 2005

## Typical Trench Restoration Details



### TEMPORARY RESTORATION



### PERMANENT RESTORATION

### Typical Trench Restoration Details For Existing Paved Street



**Brown Consulting Engineers, L.L.C.**  
1314 Ford Philadelphia Avenue  
Gettysville, PA 17325

SCALE: No Scale

DATE: April 2005

for

## Existing Paved Street

### C. DRIVEWAYS

#### 1. GENERAL

a. All residential, commercial and industrial driveways opening onto a highway, street, road or avenue, presently or proposed for the future, shall require the issuance of a driveway permit before construction.

b. Prior to the construction of any residential, commercial or industrial driveway that opens onto a Township highway, street, road or avenue, a driveway sketch and driveway profile plan, prepared in accordance with the sample attached hereto, shall be submitted to Douglass Township.

c. A driveway shall not be located in a manner to endanger roadway traffic. Safe stopping sight distance shall be used as design criteria that shall be based upon the posted speed limit or as normal driving conditions may warrant.

d. The driveway shall be paved for a distance of 50 feet from the edge of the roadway payment.

#### 2. EXECUTION

a. Driveway width, minimum	10 feet
Width at road entrance	15 feet

#### b. Driveway slope:

maximum (within 20' of pavement edge)	5%
maximum (beyond 20' point)	13%
minimum	1%

#### c. Drainage swale across driveways

1) Cross slope shall be 6% from edge of roadway pavement.

2) Swale centerline shall be at least 6' from edge of pavement and shall be constructed of concrete or macadam.

#### d. Drainage pipes under the driveway:

1) Minimum size of pipe shall be 12". Pipes shall be sized to pass the peak runoff rate from the 5-year design storm.

2) The pipe shall be placed at least 6' from the edge of pavement.

3) Drainage pipes shall be at least 20' in length.

e. Paved driveways shall consist of 2" minimum depth 9.5 mm wearing course on 4" minimum depth 2A crushed stone base.

f. A radius return of 6' minimum shall be used at the driveway intersection with the edge



of roadway paving. This standard shall apply only where there is no curb.

g. Where a driveway is placed in relations to curb areas, the curb depression shall be 2' wider than the drive. The curb shall be depressed to 1 1/2" from the gutter line.

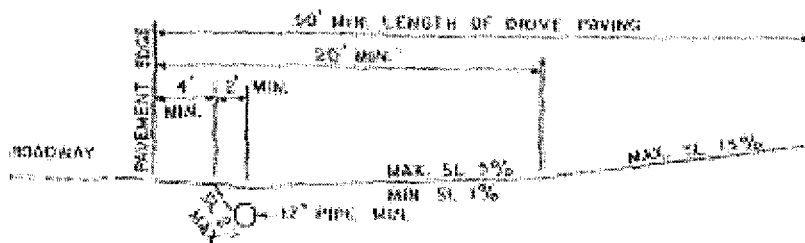
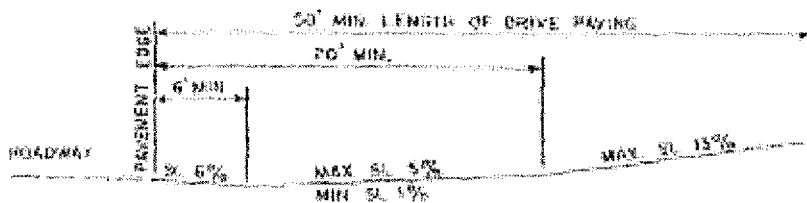
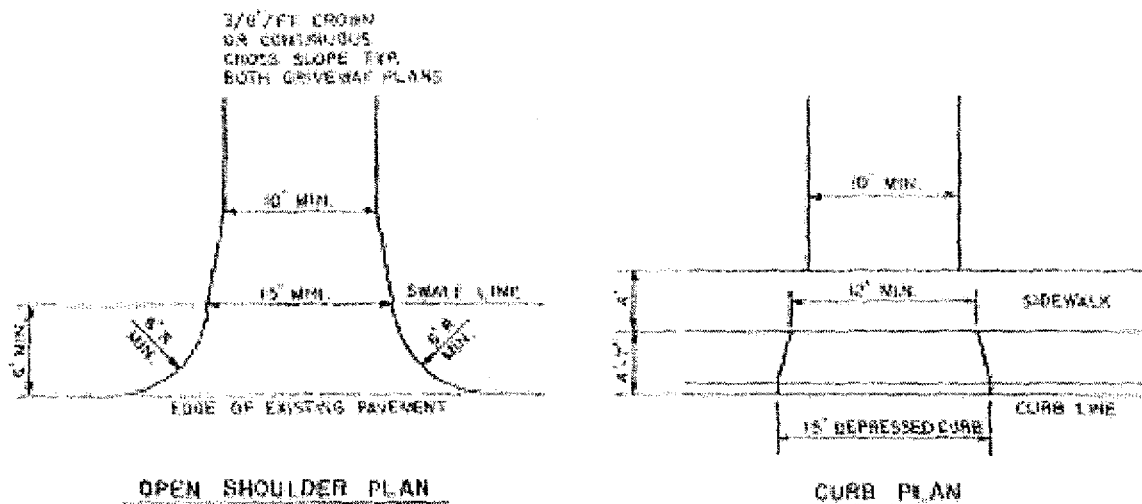
h. A driveway for other than a single family residential use, shall be designed in accordance with rural streets under section 817.2 of the Township SALDO, as applicable.

i. At each point where a private driveway intersects a public street or road, clear-sight triangles of 10 feet, measured from the point of intersection of the street line and the edge of the driveway, shall be maintained. Within the clear-sight triangles vegetation and other visual obstructions shall be limited to a height of not more than two feet above the street grade.

j. Concrete for the driveway aprons shall meet the material, curing and finishing requirements included in the sidewalk and curb sections.

k. A minimum overhead clearance of twelve (12) feet above the driveway surface shall be provided for safe access of emergency service vehicles.

## Driveways Detail



<b>Driveways</b>	
<b>Brown Consulting Engineers, LLC</b> 1314 East Philadelphia Avenue Orefield, PA 19555	
SCALE	No Scale
DATE	April 2005

## D. SIDEWALKS AND CURBS

### 1. GENERAL

a. The construction of any new sidewalk or curb or the repair of any existing sidewalk or curb in the Township shall be done in conformance with the specifications, regulations and/or provisions set forth herein unless specifically waived by the Board of Supervisors.

b. Grades - The grade to which every curb, gutter, or sidewalk shall be hereafter laid, constructed or repaired, other than that established in an approved subdivision plan, shall be approved by the Township Engineer. Grade cut sheets for the curb or sidewalk shall be provided to the Township Engineer for review when he so requires the same prior to the installation of the structure.

c. Public Safety - It shall be the duty of the owner of the land abutting upon any curbs and/or sidewalks to keep the sidewalk and curb in good repair and condition that there is not any danger to the welfare and safety of the public. The Township shall notify a property owner when a sidewalk or curb needs to be repaired or reconstructed. The property owner shall make the repair or reconstruction within thirty (30) days after written notice is given to the property owner. Nothing herein shall be construed to place the responsibility or liability of determining when sidewalks may become dangerous to the welfare and safety of the public upon the Township. At all times such responsibility and liability shall be solely upon the property owner whose land abuts the curb or sidewalk.

d. Certain Trees Prohibited - All new street trees shall be planted on the residence side of the sidewalk at a distance of at least two feet (2') outside of the road ultimate right-of-way.

e. Open Gutters - Rain Conductors - No open gutters for rain water or drainage of any kind shall transverse over the top of the sidewalk or curb.

f. Permit - No person or entity, or corporation shall construct or repair any sidewalk, curb or gutters, without first applying for and obtaining a permit for the same use from the Building Inspector of Douglass Township. No permit will be required for new curbing, gutters or sidewalk to be constructed in an approved subdivision that is to be installed by the Developer.

g. ADA Compliance - All sidewalks and handicap ramps shall meet all ADA standards including the provision of detectable warnings.

### 2. EXECUTION

a. All sidewalks, driveway aprons and curbs, except as may be otherwise provided in this section, shall be constructed of monolithic concrete. The concrete shall meet PaDOT criteria for air entrained Class AA concrete with a compressive strength of 3,500 pounds per

square inch (psi) in twenty-eight (28) days. Certification of the concrete mix shall be furnished if required by the Engineer. Belgium block curb may be substituted for concrete curb at locations approved by the Township.

b. The concrete curbs shall have a depth of not less than eighteen inches (18") and shall be eight inches (8") thick at the base and seven inches (7") thick at the top. Curbs shall be constructed with an eight inch (8") reveal and shall rest on a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4") and a width of not less than twelve inches (12").

c. The Belgium block curbs shall have a combined depth of block and concrete of not less than eighteen inches (18") and shall meet the dimensional standards as detailed in this section. Belgium block curbs shall be constructed with an eight inch (8") reveal and shall rest on a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4").

d. Sidewalk Width and Location - The space between the street side of the curb and the street side of the paved edge of the sidewalk shall be four feet seven inches (4'-7"). The paved width for a sidewalk shall be four feet (4') in all new developments or for new street construction. The width of the sidewalk shall be increased to a minimum of eight feet (8') when it is in combination with a bike path. In existing developed sections of the Township and where sidewalks have been constructed prior to the date of the sidewalk ordinance (Ordinance 95-4, enacted June 12, 1995), existing conditions shall be taken into consideration by the Township in applying the width and location regulations.

d. Drainage - Finished sidewalks shall have a grade from the inner edge of the sidewalk to the outer edge of the curbs of one quarter of an inch (1/4") to the foot.

e. Sidewalks shall not be less than four inches (4") in thickness and shall rest on a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4").

f. Mortar shall be used only in case of patching honeycombed concrete and then shall be one (1) part cement and two (2) parts of sand or its equal.

g. Sidewalk shall have clean cut joints, a minimum one inch (1") deep, every five (5) linear feet, and expansion joints every thirty (30) linear feet or less and at structures. Curbs shall have clean cut joints, a minimum of two inches (2") deep, every ten (10) linear feet, and expansion joints every sixty (60) linear feet or less, at structures, and at the end of a days work. Expansion joints shall be one half inches (1/2") thick with pre-molded expansion joint filler. Expansion joint material shall also be placed between any curb and driveway apron. All

sidewalks shall have a float finish except that any sidewalk on a grade of ten percent (10%) or greater shall have a broom finish.

h. A driveway over a sidewalk shall be at least six inches (6") thick and shall include 6" X 6" by 10 gauge welded wire fabric. A driveway over a sidewalk shall be constructed with a foundation of a compacted bed of AASHTO No. 57 (Pa DOT 2B) crushed stone of a depth of not less than four inches (4"). Widths shall be a minimum of ten feet (10') for single driveways and twenty feet (20') for double driveways, except as approved otherwise by the Township.

i. All joints between curb and bituminous pavement shall be sealed with AC-20.

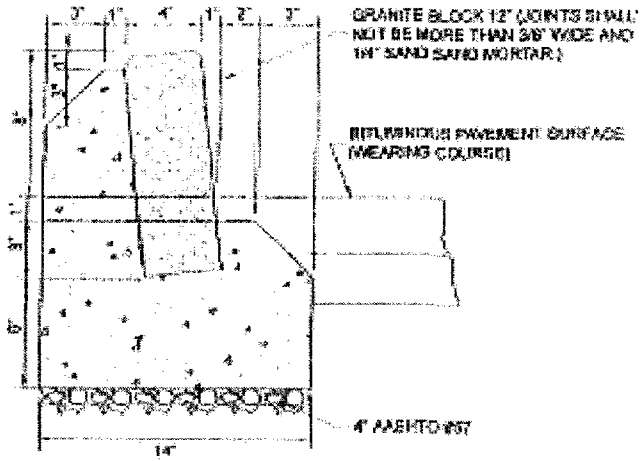
j. The surface of all sidewalks, driveway aprons and curbs shall be treated with a non-discoloration sealing compound for the prevention of damage from salt. The sealing compound shall be Seal Tight CS 309-25, as manufactured by W.R. Meadows, or an approved equal, and shall be applied in accordance with the manufacturer's specifications.

k. The curbing at fire hydrant locations must be painted yellow for a distance of 15 feet each side of the hydrant. The curbing need not be painted through driveway openings adjacent to hydrants.

ORDINANCE PLAN FOR CURB, SIDEWALK, HANDICAP RAMP AND DRIVEWAY  
CONSTRUCTION DETAIL-as set forth on Exhibit on the following page  
BELGIAN BLOCK DETAIL-as set forth on Exhibit on following page.

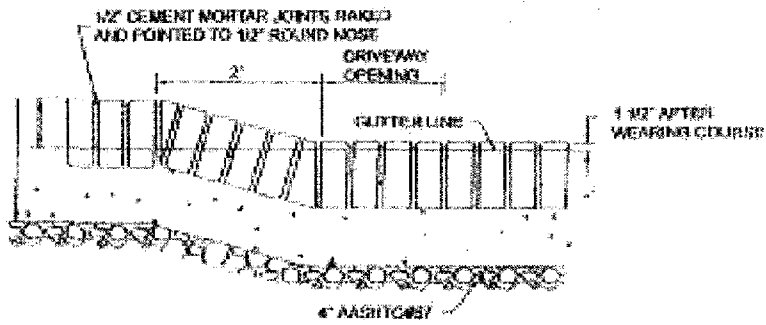


# BELGIAN BLOCK DETAIL




**SECTION VIEW**

- NOTES:
1. JOINTS NOT TO EXCEED 1/2" IN WIDTH
  2. 11" BLOCK MAY BE USED IN CURB DEPRESSIONS



NOTE: DISTANCE FROM FACE OF CURB TO FRONT OF SIDEWALK SHALL BE 4'-7" SHOWING ON ROADWAY CROSS SECTION

**ELEVATION VIEW**

<b>Belgian Block Curb Detail</b>	
 <b>Brown Consulting Engineers, P.C.</b> 1314 East Philadelphia Avenue Drexelville, PA 19025	
DATE	No Scale
DATE	April 2008

## **E. BIKE PATHS, BIKE LANES AND BICYCLE ROUTES**

### **1. GENERAL**

a. All subdivisions and land developments shall be required to provide for and establish bike paths, bike lanes and bike routes, unless waived by the Township.

b. The entire design and construction of bike paths shall be in accordance with good engineering practice and shall be subject to the approval of the Township.

### **2. EXECUTION**

a. The near edge of the bike path shall not be less than 4'-7" from the face of the curb along any street. Where this setback cannot be accomplished, a suitable physical barrier shall be provided.

b. The width of the path shall be 8 feet and 12 feet if the path or trail is to be used for multipurpose activities and uses. However, the Township, upon good cause shown, may permit variations in the width requirement. The Township may also permit the installation of bicycle paths in a combined structure with, or in lieu of, a sidewalk or walking path.

c. The bicycle path shall, as near as possible, follow the topographic contour lines of the particular area where the path is to be installed.

d. Curb ramps shall be installed for the crossing of intersecting streets. Curb ramps shall have a maximum slope of six to one with the sides having a maximum slope of two to one.

e. The vertical clearance from the bicycle path surface to an overhead obstruction shall be not less than 10 feet.

f. The bicycle path shall be constructed of 4 inch Pa DOT 2A stone base with 2-inch asphalt binder course and a 1-inch wearing course.

g. All bike paths shall be constructed in such a manner to insure adequate and proper drainage and to prevent the bike path from being inundated by surface drainage.

h. Unless specified otherwise, all materials and construction procedures shall be in accordance with Pa DOT Publication 408, the latest edition as amended.

i. Proper signage for all bicycle lanes, including stripped roadways as a visual separator and "Share the Road" signs shall be provided and installed as is necessary.

## **F. STORM DRAINAGE IMPROVEMENTS**

### **1. MATERIALS**

a. All storm drainage pipe shall be reinforced concrete, rubber gasketed, conforming to AASHTO M170, M198 and M207.



b. Corrugated polyethylene (PE) smooth bore interior only conforming to ASTM D1248, ASTM D2412, AASHTO M252 and 294 may be used only when approved by the Board of Supervisors. All PE pipe shall be placed on a minimum of six inches (6") of AASHTO #57 stone and backfilled with same to a foot above the crown of the pipe.

c. Inlet boxes and manholes shall conform to Pa DOT Standard Drawings and Publication 408, latest edition.

d. Inlet frames and grates shall conform to Pa DOT Standard Drawings and Publication 408, latest edition. Bicycle safe grates shall be installed on all inlets in paved areas. Cast Iron grates shall be installed on all inlets located in lawn or grass areas.

e. Storm manholes covers shall be gray, malleable or ductile iron meeting the criteria in Section 605.2 of PaDOT Publication 408, 24 inches in diameter and shall have the word "STORM" cast in 2" high letters on the top of the cover.

f. All miscellaneous storm drainage appurtenances, such as head walls, endwalls and energy flow dissipaters, shall be in accordance with Pa DOT publication 408, latest edition and the Pa DOT Standard Drawings.

g. Materials for trench backfill shall conform to the following:

1) General: Suitable material, when used as backfill shall be capable of being compacted to at least ninety-five percent (95%) of maximum density at optimum moisture content.

2) Type 1 Material: Excavated material from the trench or materials from other sources which are free from large clods, roots, or stones larger than eight (8) inches may be used from top of bedding material to one foot above crown of pipe in lawn areas where polyethylene (PE) pipe is not used.

3) Select Backfill: Select backfill shall be "Selected Granular Material" in accordance with Section 703.3 of the Pa DOT Publication 408, latest edition, excepting the use of slag.

## 2. EXECUTION

a. When there is a change in pipe size in an inlet, or manhole the elevation of the top of pipes shall be the same or the smaller pipe higher. A minimum drop of 2 inches shall be provided at the inlet pipe invert elevation and the outlet pipe invert elevation.

b. At street intersections, inlets shall be placed in the tangent and not in the curved portion of the curbing.

c. Inlets or manholes shall be placed at all changes in vertical or horizontal direction of pipe.

d. The minimum diameter of storm pipe shall be 15 inches.

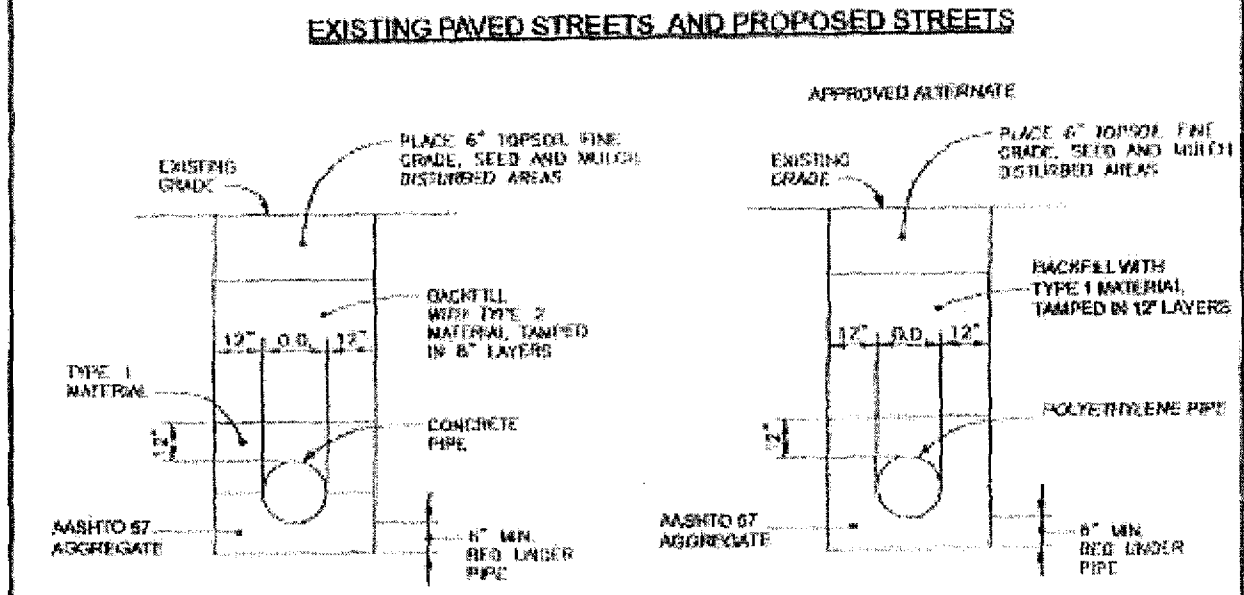
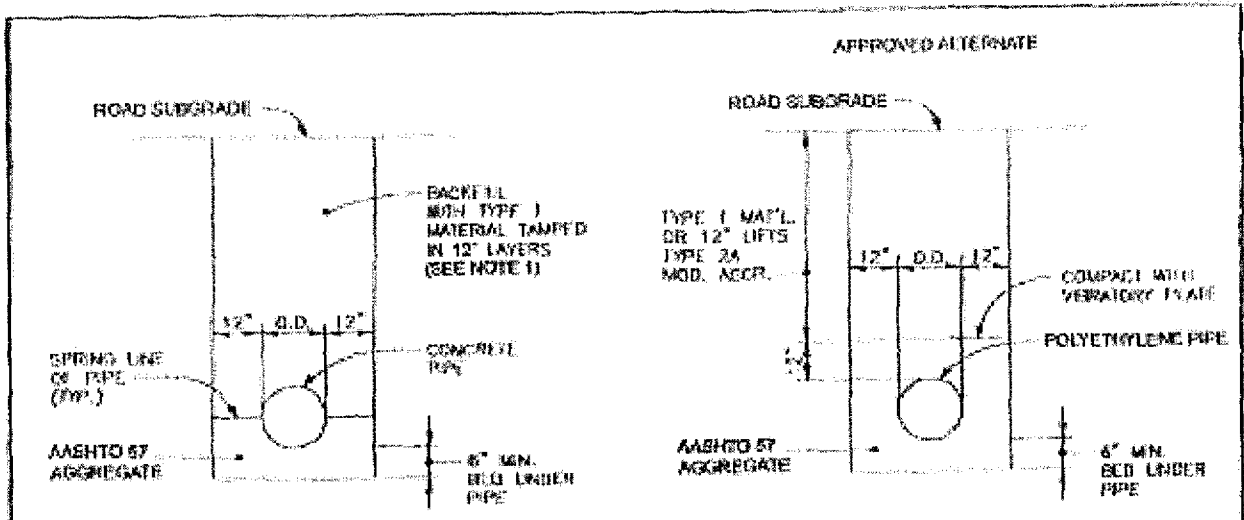
e. The minimum slope of all storm sewer pipe shall be 0.5%.

f. Bridge

1) An enclosed water carrying structure of one or more barrels having a combined span of 8 feet or greater.

2) All bridge designs shall be in accordance with PaDOT Design Manual, Part IV (latest revisions) and shall be submitted to Douglass Township for approval of materials, structural design, compliance to H-25 loading, flow design capacity and calculated life cycle of proposed structures. All bridges shall have approach guide rail in accordance with PaDOT.

## Typical Trench Restoration Details for Storm Sewer Pipes



**NOTES:**  
 1. COMPACTION/DENSITY TESTING EVERY 50' SURFACE LATERAL LINES TO BE TESTED.

<b>Typical Trench Restoration Details For Storm Sewer Pipes</b>	
<b>Brown Consulting Engineers, I.P.C.</b> 1314 East Philadelphia Avenue Gettysville, PA 17325	
<small>Scale:</small>	No Scale
<small>Date:</small>	April 2006

## G. STORMWATER DETENTION BASIN IMPROVEMENTS

### 1. MATERIALS

a. Pipe-reinforced concrete, rubber gasketed, shall conform to AASHTO M170, M198 and M207.

b. Poured-in-Place Outlet Structure - Reinforced concrete shall be minimum 4,000 psi compressive strength in accordance with Pa DOT Publication 408, latest edition, as amended.

c. Precast Outlet Structure - Reinforced concrete shall be minimum 4,000 psi compressive strength in accordance with Pa DOT Publication 408 latest edition, as amended. The Developer shall submit the design for Township review and approval.

d. Precast Reinforced Concrete Inlet Box Sections shall be in accordance with AASHTO M259, Pa DOT Publication 408, latest edition as amended and Pa DOT standard drawings.

e. Orifice Plates shall be stainless steel, type 304, with stainless steel mounting hardware, using 1/4 inch thick up 24 inch span and 3/8 inch thick over 24 inch spans.

f. Headwalls/End walls shall be constructed with reinforced concrete, having a minimum 4,000 psi. and a comprehensive strength in accordance with Pa DOT Publication 408, latest edition as amended.

g. Cutoff (Anti-Seep Collars) shall be constructed with reinforced concrete having a minimum 4,000 psi comprehensive strength.

h. Concrete Pipe End Sections shall be constructed with reinforced concrete in accordance with Pa DOT Publication 408, latest edition, as amended.

i. Cast Iron Grates shall be constructed In accordance with Pa DOT Publications 408, latest edition, as amended.

### 2. EXECUTION

a. Basins shall be installed prior to any earthmoving or land disturbances that will be serving by the basins. The phasing of their construction shall be as noted in the erosion control narrative and on the Plan.

b. Whenever a basin is to be located in an area underlined by limestone, a geological evaluation of the proposed location shall be conducted to determine the susceptibility of the property to sinkhole formations. The design of all facilities over limestone formations shall include measures to prevent ground water contamination and, where necessary, sinkhole formation. Soils used for the construction of basins shall have low-erodibility factors ("K" factors).

c. The maximum slope of the earthen detention embankments shall be four horizontal to

one vertical (4:1). The top and/or toe of any slope shall be located a minimum of five (5) feet from any property line. Whenever possible, the side slopes and basin shape shall conform to the natural topography.

d. The minimum top width of the detention basin berm shall be 10 feet. A cutoff trench (key-way) of impervious material shall be provided under all embankments that require fill material. The cutoff trench shall be a minimum of 8 feet wide, 2 feet deep and have side slopes of one to one.

e. In order to insure proper drainage on the floor of the basin, a minimum grade of 2% percent shall be maintained for areas of sheet flow. For channel flow, a minimum grade of 1% shall be maintained. Under certain circumstances, such as continuous seasonal flow, the Township may require a low flow channel be constructed.

f. All detention/retention basin embankments shall be placed in maximum of 8 inch lifts, compacted to a minimum of 95% of the maximum dry density, as established by ASTM D-1557, PTM No. 112 or PTM No. 402. Prior to proceeding to the next lift, the compaction shall be checked by the Township Engineer or a soils engineer. The Developer shall obtain the services of a qualified laboratory or technician to conduct compaction tests on the leading and the trailing edge of the berm along with the top of the berm. All tests shall be furnished to the Township for review.

g. Whenever possible, the emergency spillway for detention basins shall be constructed on undisturbed ground. Emergency spillways shall be constructed of reinforced concrete checker blocks or other permanent material approved by the Township Engineer. All emergency spillways shall be constructed so that the detention basin berm is protected against erosion. The minimum capacity of all emergency spillways shall be the peak flow rate from the 100-year design storm after development. The construction material of the emergency spillway shall extend along the upstream and downstream berm embankment slopes. The upstream edge of the emergency spillway shall, as minimum, extend to the toe of the berm embankment. The emergency spillway shall not discharge over earthen fill and/or easily erodible material.

h. The minimum freeboard for flow through the emergency spillway shall be 1 foot. Freeboard is the difference between the design water elevation in the spillway and the top of berm elevation.

i. Anti-seep collars shall be installed around the pipe barrel within the normal saturation zone of the detention basin berms. The anti-seep collars and their connections to the pipe barrel shall be watertight. The anti-seep collars shall extend a minimum of 2 feet beyond the outside of the principal pipe barrel. The maximum spacing between collars shall be 14 times

the minimum projection of the collar measures perpendicular to the pipe. A minimum of two anti-seep collars shall be installed on each pipe outlet.

j. Underground Detention: The Developer shall submit a design for Township review and approval.

## H. EROSION AND SEDIMENT POLLUTION CONTROL

### 1. REQUIREMENTS OF REGULATORY AGENCIES

#### a. Erosion and Sediment and Pollution Control Plan:

i) The Developer shall conduct soil erosion and sediment pollution control work in accordance with rules, regulations and requirements adopted by the Pennsylvania Department of Environmental Protection (D.E.P.) and the Montgomery County Conservation District.

ii) Detail requirements for the control plan are described in an Erosion and Sediment Pollution Control Program Manual that may be obtained from the Bureau of Soil and Water Conservation, Division of Soil Resources and Erosion Control, Harrisburg, Pennsylvania and are to be complied with.

b. Fines and related costs resulting from failure to provide adequate protection against soil erosion and sediment pollution control are the obligation of the Developer and the contractor.

c. Erosion and sediment pollution control measures employed will be subject to approval and inspection by the Pennsylvania Department of Environmental Protection and/or County Conservation District.

### 2. EXECUTION

a. An Erosion Control Facilities shall be installed and maintained in accordance with the approved Plan.

b. One copy of the approved soil erosion and sediment pollution control plan shall be kept at the project site at all times.

## I. GEOTEXTILES

### 1. MATERIALS

#### a. Geotextile materials shall be used for but not limited to the following uses:

i) Class 1 - Subsurface drainage.

ii) Class 2 - Erosion Control

iii) Class 3 - Sedimentation Control

iv) Class 4 - Layer separation

## 2. EXECUTION

- a. During any project review phase, construction phase, or inspection phase the Township may require the use of Geotextile materials for any of the above noted classes.
- b. Geotextile material placement, securing stake spacing and Geotextile physical property requirements shall meet the standards of Pa DOT 408, latest revision as amended, Sections 212 and 735.
- c. Erosion control matting and blankets in residential subdivisions and developments shall be secured in place with only biodegradable or wooden stakes. Metal staples and metal pins shall not be used.

## J. SIGNS AND MARKINGS

### 1. TRAFFIC CONTROL AND STREET SIGNS

- a. Unless specified otherwise, all materials, sign dimensions, lettering and installation shall meet the requirements of Pa DOT Title 67, Chapter 211, latest edition as amended.
- b. Street signs shall be reflectorized with a white legend on a green background and shall be sized in accordance with current Township standards.
- c. Street sign posts shall be U-channel with breakaway mountings meeting PaDOT specifications for material and length.
- d. All fittings shall be aluminum and/or stainless steel.
- e. Each post shall have two signs, naming each street.
- f. Where new streets are constructed, street signs shall be installed immediately after installation of the road binder course or prior to issuance of the first new home occupancy permit, whichever first occurs.
- g. No Parking signs should be placed at the beginning and end of the no parking zone and at intervals of approximately 175 feet. The signs should be double sided for the signs to be read in both traffic directions. Where possible, No Parking signs shall be installed at property lines.
- h. All signs shall have high intensity reflectorized backing.

### 2. END OF STREET PERMANENT BARRICADE

- a. Plastic barrier planks and posts shall be pressured treated and shall meet the requirements of PaDOT Publication 408, section 678, latest edition as amended.
- b. A barrier structure shall be post and beam type construction, 6" X 8" posts installed 36" below finish grade, by mechanical driving or setting in concrete. Posts maximum 10' centers, three 2" X 10" cross members fit into framing structure and be self-supporting.

c. A barrier length shall be the full width of the cartway. The barrier height shall be 60", as measured from the adjacent street surface.

d. The barrier shall have Pa DOT Class I or Class II reflective sheeting applied to an aluminum blank and fastened to plastic planks on the barrier facing the direction of approaching traffic.

### 3. END OF LANE MARKERS

a. Right clearance markers, Pa DOT W16-2-2R, and painted line striping shall be installed at all widened sections of roadways where the widened portion of the lane ends.

b. The markers shall be 18" X 36" with reflectorized white and red stripes. The bottom of the markers shall be at least 18 inches above the pavement and shall be mounted on steel channel post with breakaway mount. Line striping shall be as shown on the standard layout or as approved by the Township.

### 4. STOP BARS, CENTERLINE AND SHOULDER MARKINGS

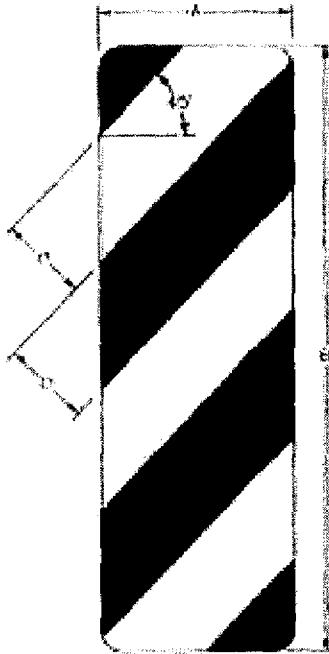
a. At all streets or widened sections of road where curb is not required, but paved shoulders are to be constructed, the cartway shall be delineated from the shoulder by the painting of a four inch (4") wide white line.

b. Unless approved otherwise, 12-inch wide stop bars shall be painted from the curb to the road centerline at each stop sign installed in any subdivision or land development.

c. Unless approved otherwise, the Developer shall be responsible for the installation of a solid double yellow line on any collector street running through or adjacent to its development.

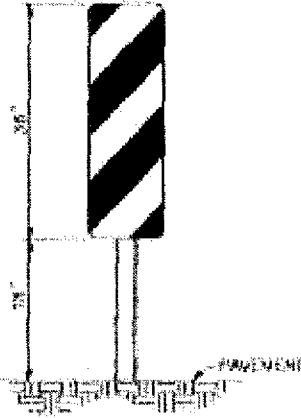
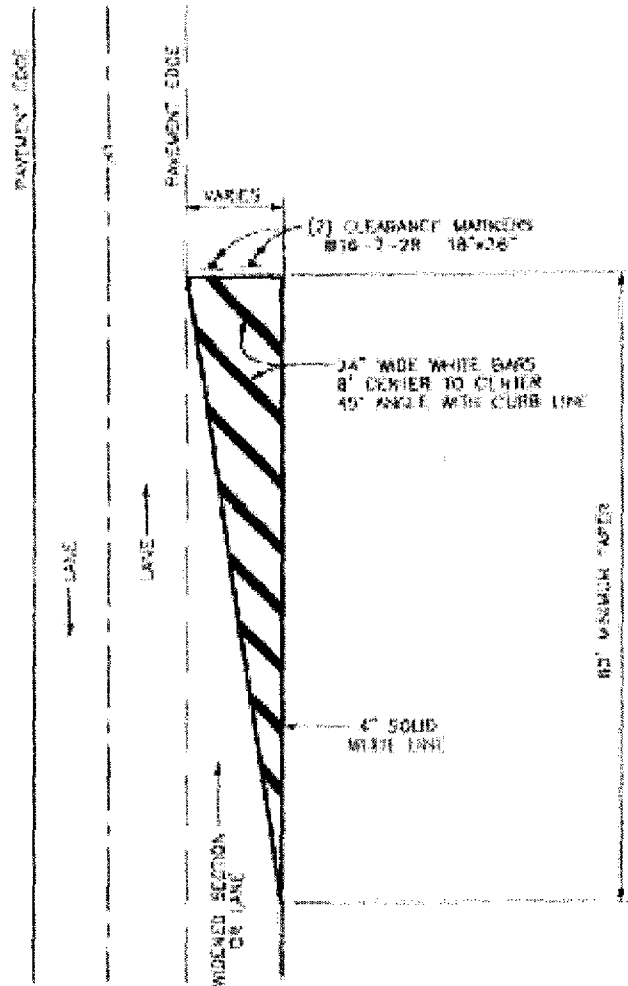



# End of Lane Markings



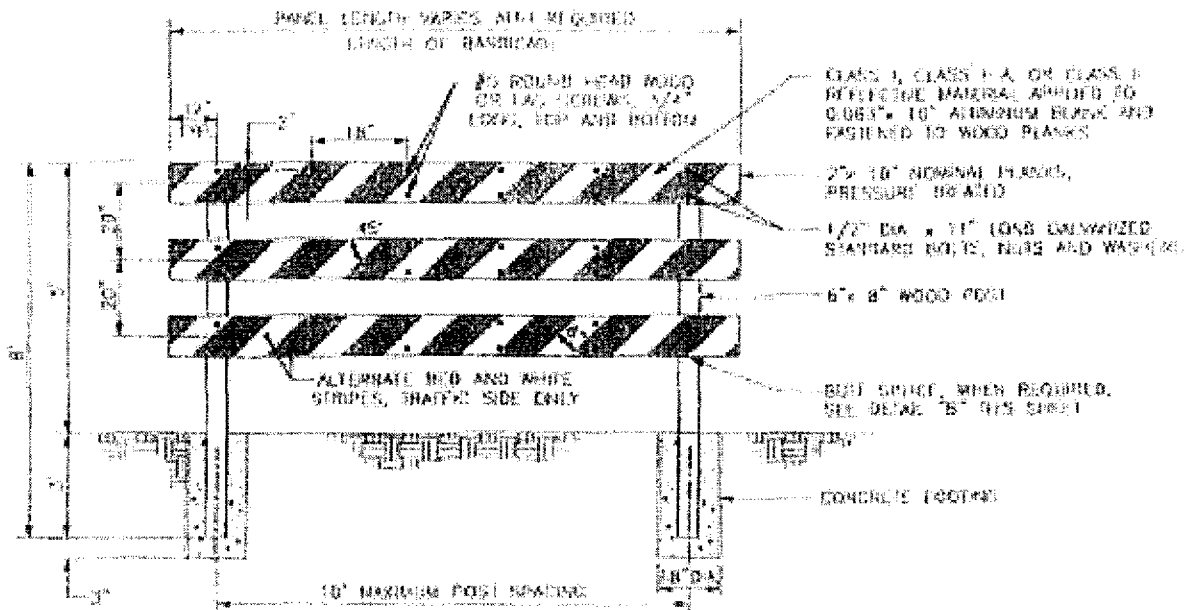
W1E-2-2R

SIGN SIZE	DIMENSIONS		
	A	B	C
18x16	18	16	4 TO 6 1/2

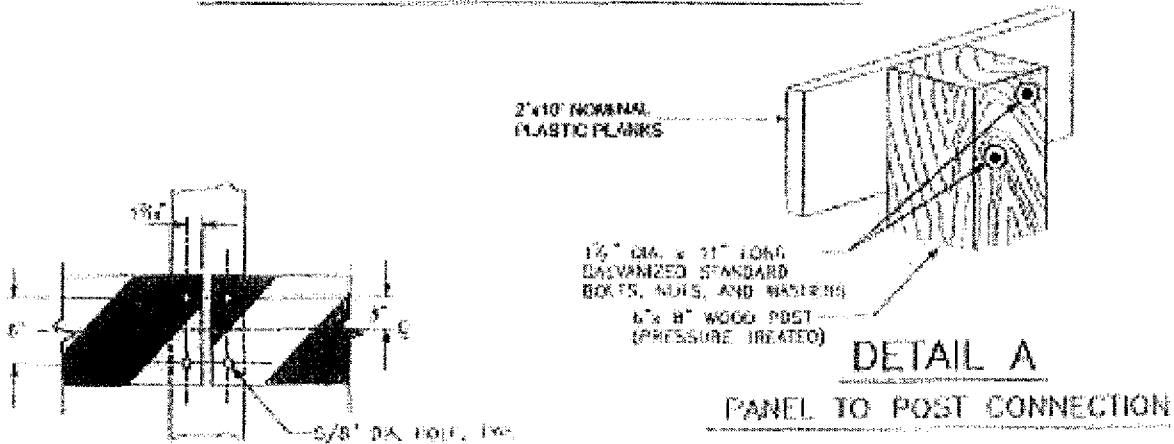


<b>End of Lane Markings</b>	
 <b>Brown Consulting Engineers, L.L.C.</b> 1314 East Philadelphia Avenue Gettysville, PA 17325	
DATE:	No Scale
BY:	April 2008


### Plastic Panel Barricade – Detail



### WOOD PANEL – WOOD POSTS



**DETAIL B**

<b>Plastic Panel Barricade</b>	
 <b>Brown Consulting Engineers, s.c.f.c.</b> 1313 East Philadelphia Avenue Gilbertville, PA 16825	
SCALE:	No Scale
DATE:	April 2008

## **K. STREET LIGHTS**

### **1. GENERAL**

- a. The Developer shall have street lights installed in accordance with the methods for street light installation as approved by the Township.
- b. The location of street lights shall be in accordance with the approved subdivision or land development plan.
- c. All street lights shall be served by underground conduit.
- d. Provisions shall be made for energizing street lights after 50 percent or more of the dwellings or nonresidential floor area in a given subdivision or land development or section of a subdivision or land development has been occupied.
- e. The Developer shall be responsible for all charges or rates for the street lights until such time that the streets are accepted as public streets by the Township.

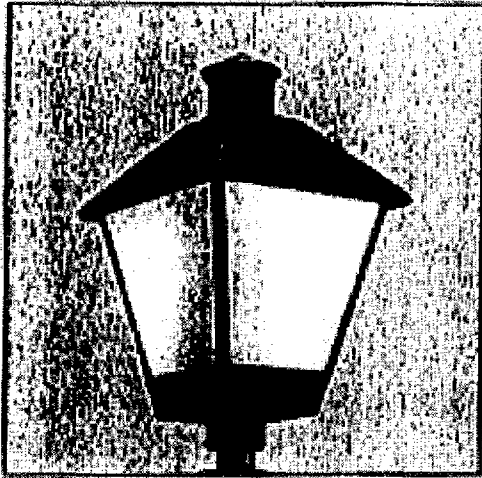
### **2. MATERIALS**

- a. All materials shall conform to the requirements established by Met-Ed. The Township may not accept dedication of any street light system that does not meet Met-Ed standards.
- b. All street lights along new residential streets shall have colonial type, 100 watt, and high pressure sodium, post top mount fixtures, of a style herein specified.

### **3. INSTALLATION**

- a. Unless specified otherwise the street lights shall be installed by Met-Ed. The Developer shall be responsible for all material and labor costs associated with the street light installation including all applicable taxes.
- b. The Developer shall be responsible for the digging and backfilling of the wire trenches and for the complete restoration of disturbed areas. The Developer shall also be responsible for the construction of the concrete anchor base for street light posts, if required.
- c. The Developer shall coordinate the timing of the street light installation with Met-Ed.

Cooper Utility Lighting LXF Lexington

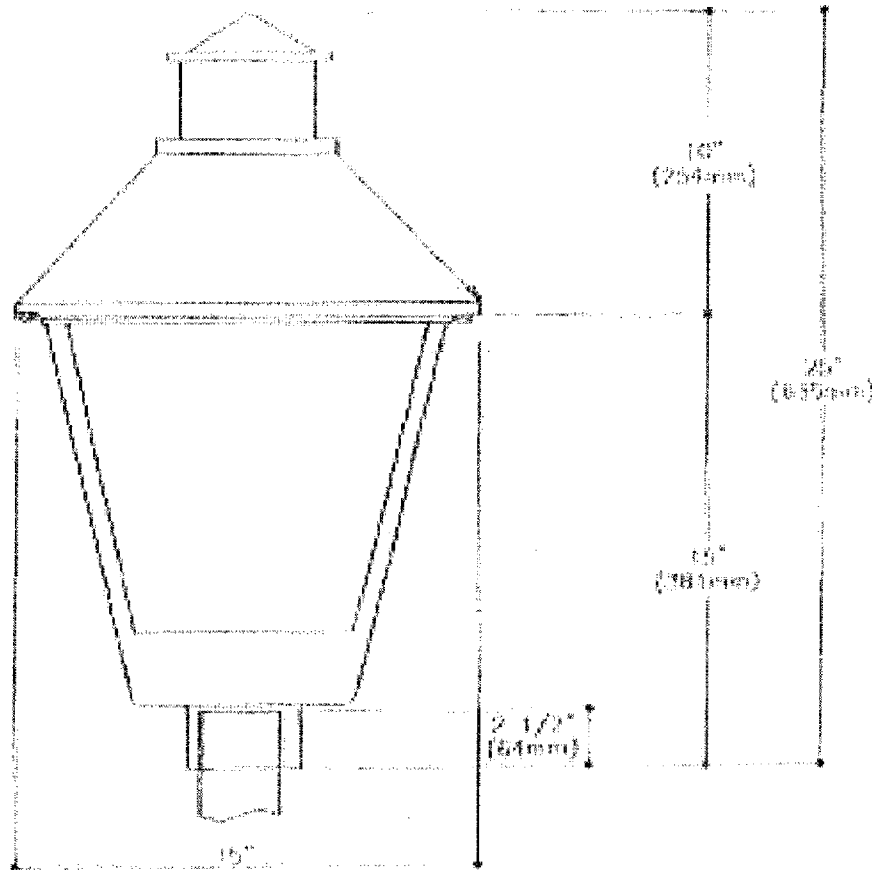


**COOPER UTILITY LIGHTING  
LXFLEXINGTON**

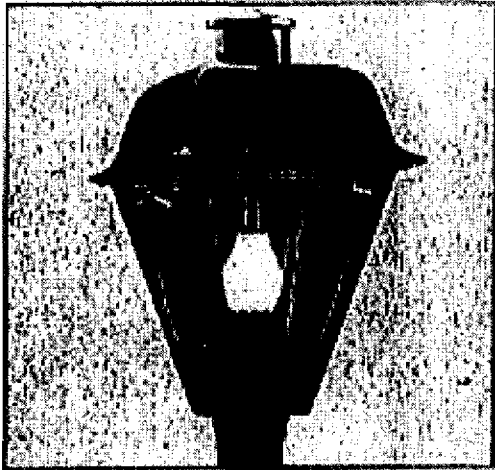
100 W

High Pressure Sodium  
Post Top

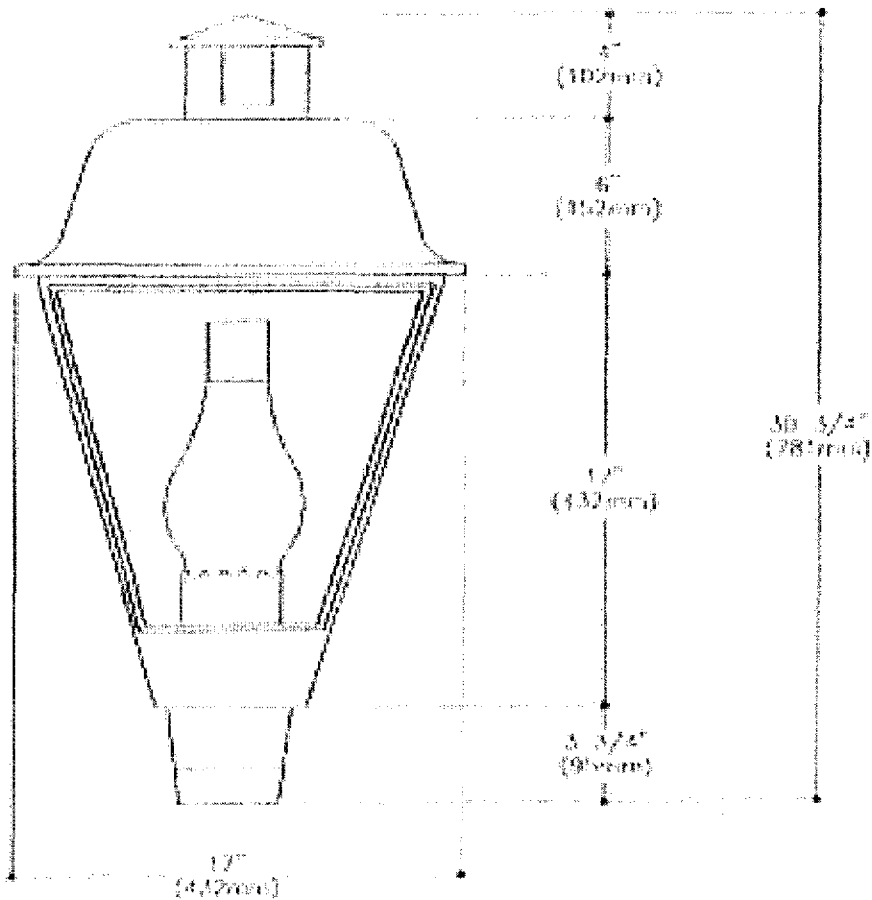
**APPROVED STANDARD**



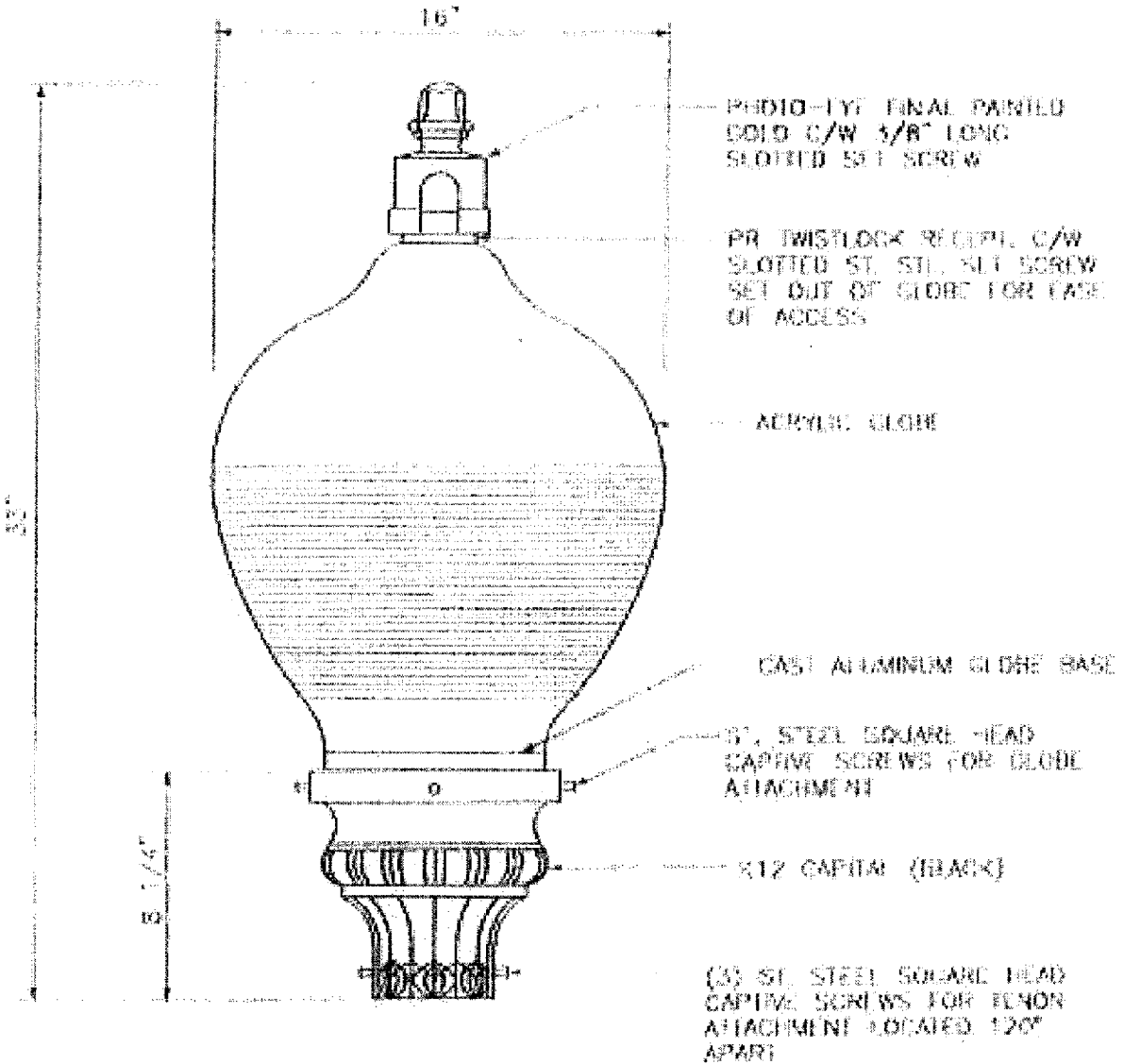
Cooper Utility Lighting UTD Dayform Traditionaire



**COOPER UTILITY LIGHTING**  
**UTDDAYFORM**  
**TRADITIONAIRE**  
100 W  
High Pressure Sodium  
Post Top  
**APPROVED OPTIONAL**



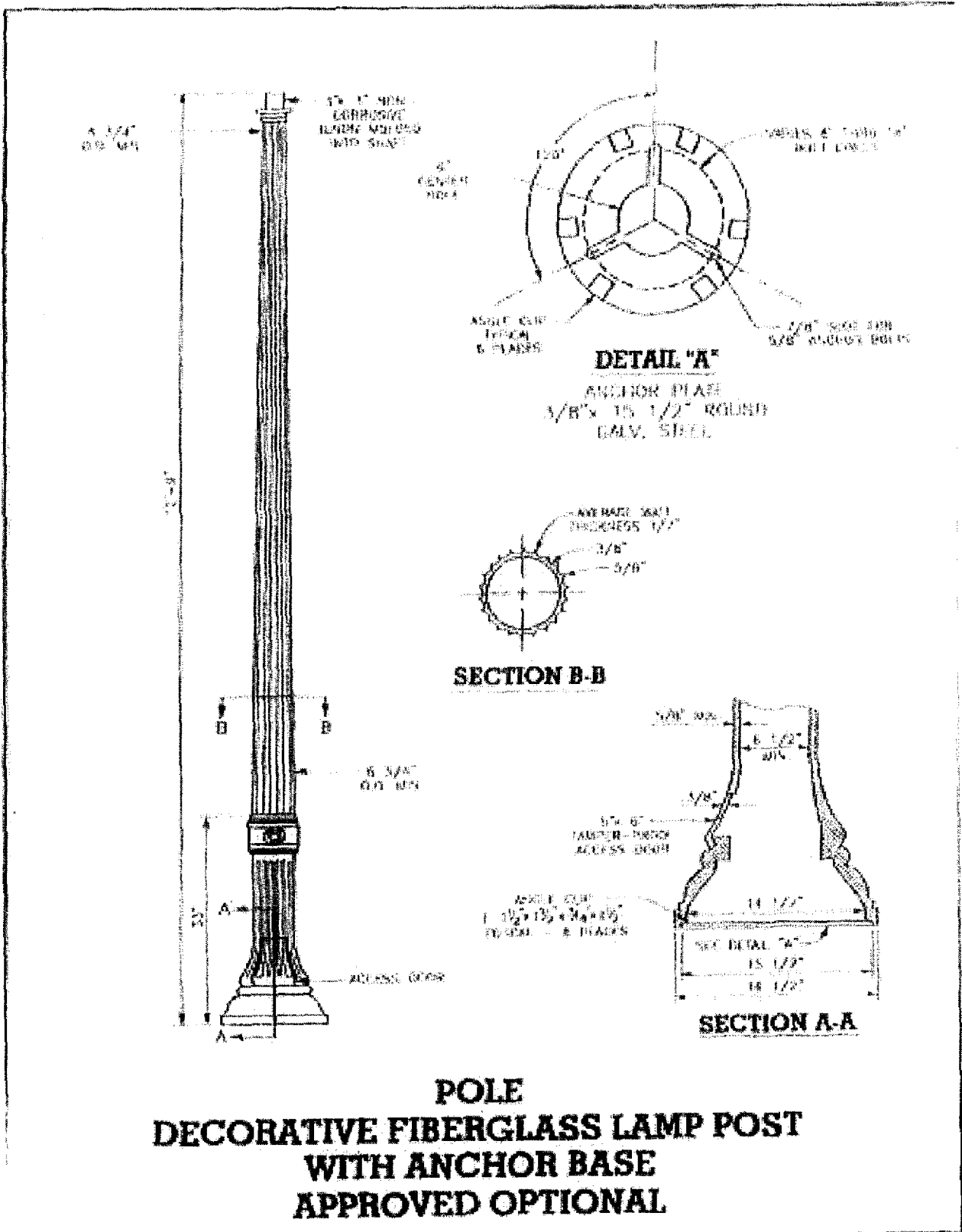
Approved Optional Manufactured by King Luminaire Company



**APPROVED OPTIONAL  
MANUFACTURED BY  
KING LUMINAIRE COMPANY**



**Pole – Decorative Fiberglass Lamp Post**



**POLE  
 DECORATIVE FIBERGLASS LAMP POST  
 WITH ANCHOR BASE  
 APPROVED OPTIONAL**



**L. MAILBOXES**

**1. MATERIALS**

a. All materials shall meet the requirements of the U.S. Postal Service.

**2. EXECUTION**

a. All mailbox locations shall be subject to approval by the Post Office and the Township. Residents should contact the Township and the post office serving their area prior to the installation of any new mailbox.

b. Unless directed otherwise by the Post Office, mailboxes shall be installed as follows:

i). The bottom of the box shall be 42" to 45" above the road or shoulder elevation adjacent to the box.

ii). The front face of the box shall be 2" to 3" behind the face of curb or behind the edge of shoulder. No portion of the mailbox or supporting post should overhang the road or shoulder.

iii). If possible, the mailbox should be located to the left of the driveway when facing the house from the road.

**PRECONSTRUCTION CONFERENCE AGENDA**

**PROJECT NAME** \_\_\_\_\_

\_\_\_\_\_

**Date** \_\_\_\_\_

**I. Introductions**

**II. List of Developers / Contractors**

a. Contact Names \_\_\_\_\_

b. Phone Numbers \_\_\_\_\_

**III. Tentative work schedule**

a. Construction start date \_\_\_\_\_

b. Anticipated completion date \_\_\_\_\_

c. Anticipated daily hours of operation \_\_\_\_\_

**IV. Construction Procedures**

- a. Erosion Control
- b. Stormwater runoff control
- c. Site grading
- d. Road construction
- e. Utilities
- f. Curb and Sidewalk

**V. Contractor / Developer responsibilities**

**VI. Defective work and quality control procedures**

**VII. Escrow Account disbursement request procedure**

- a. Proper request submittal
  - 1) Request submitted to Township
  - 2) All requests numbered sequentially
  - 3) Review with inspector prior to submission
- b. Submittal Form
  - 1) All requests using Engineer's reference nos.
  - 2) All requests include quantity

**VIII. Final Inspection and Final Payment**

- a. Record plan requirements
- b. Inspection of completed work
- c. Punch list of items to be completed

**IX. As Built Plan**

The Developer shall submit record Plans of as-built conditions prior to the dedication and/or acceptance of all improvements in compliance with the following requirements:

- 1. Plan Scale - no smaller than 1" = 50 ft.
- 2. Information to be shown on the Plan:
  - a) Street cartway and right-of-way widths, including location of curb and/or shoulder, horizontal curve data and transitions for the curb and cartway;
  - b) Centerline profiles for all new roads, indicating proposed and as-built centerline grades with centerline elevations at 100 foot stations at a maximum;
  - c) Sidewalk and grass strip location including width and all handicap ramps;

- d) Driveway locations and widths and driveway pipes, if installed, including size, length, type, inverts and type of pipe;
- e) Top of curb elevations on P.C. and P.T. at intersections;
- f) Street monuments with elevations;
- g) Surface indication of Public utility lines (gas, electric, cable, telephone);
- h) Location of all storm sewer manholes, inlets, endwalls and storm sewers, including length, size, slope and type of pipe and top and invert elevation of each manhole, inlet and endwall;
- i) Location of all water mains, service lines and laterals, fire hydrants, valves, tees and fittings, including length, size, type and depth of line;
- j) Location of all sanitary sewer manholes, sewer mains, sewer laterals, pump stations and force mains, including length, size, slope and type of line, top and invert elevation of each manhole, length and roadway stationing of each lateral and depth of all lateral ends not connected to house lines;
- k) Size (volume) by contours of detention basins, including a certification of the total volume of each basin;
- l) Type of basin outlet structure, including sizes and elevations of all outlet openings;
- m) Width and elevation of the basin emergency spillway;
- n) Width and elevation of the top of the basin berm;
- o) Location of all street lights and signs; and
- p) Lot number and street address for each lot.

3. At least two property corners must be referenced to the PA State Plane Coordinate System.

4. Elevations and contours must be referenced to NAD83 vertical datum.

5. A certification must be included on the plans, or provided separately if signed and sealed by the surveyor, certifying that all of the required property corner and right-of-way monuments have been installed.

6. Two (2) sets of reproducible and three (3) sets of paper prints of the record plans are to be furnished after the plans have been reviewed and found acceptable.

7. The Plan must be signed and sealed by a registered surveyor licensed in the Commonwealth of Pennsylvania.

8. Additional information, including all improvements that are required by the Subdivision Ordinance, the Plan and/or Development Agreement, shall be shown on the Plan where

necessary to depict the full development, improvements, utilities, roads, easements, and conditions.

9. Unless otherwise provided by the the Board of Supervisors, the As-Built Plan shall also be delivered to the Township on computer diskette or compact disc in Arc View 8.3 format or other software format as approved by the Township.

## **Part 5**

### **IMPROVEMENT CONSTRUCTION REQUIREMENTS**

**Section 500. Applicability.** The improvement construction requirements set forth in this Part apply to all applicants submitting a final plan for subdivision or land development in Douglass Township. No lot in a subdivision may be sold; no permit to erect, alter or repair any building upon land may be issued; and no building may be erected, unless the improvements required by the Board of Supervisors in connection therewith have either been constructed or guaranteed as required in this Part. (*Ord. 90-2, 7/16/1990, Section 501*)

**Section 501. Required Improvements.** The applicant shall agree in writing to construct streets and other improvements required by this Chapter from the lot or lots to be sold or built upon to an existing improved street, subject to the provisions of **Section 105(2)** herein. The work shall be performed in strict accordance with the approved plans and Township standards and specifications, or the applicable provisions of the Pennsylvania Department of Transportation specifications, or other agency having jurisdiction over the improvement. No plan shall be finally approved until the developer has completed all of the necessary and appropriate improvements as required, or until such time as the applicant has provided a proper financial guarantee as required by this Part, in accordance with the Municipalities Planning Code, to cover the estimated construction costs and engineering cost for such improvements. The applicant shall also guarantee that no lot will be sold or building constructed in any flood prone area prior to completion of all floodproofing measures planned for such lot and necessary access facilities. (*Ord. 90-2, 7/16/1990, Section 501*)

**Section 502. Financial Security.** In lieu of the completion of any improvements required for final plan approval, financial security in an amount sufficient to cover the costs of any improvements or common amenities shall be provided to the Township in accordance with this Section.

1. **Type of Security.** Without limitations as to the type of financial security which the Township may approve, which approval shall not be unreasonably withheld, irrevocable letter of credit from a Federal or Commonwealth chartered lending institution and/or restrictive or escrow in such lending institutions shall be deemed acceptable financial security for the purposes of this Section. Such financial security shall be posed with a bonding company or Federal or Commonwealth chartered lending institution chosen by the developer, builder or subdivider posting the financial security, provided said bonding company or lending institution is authorized to conduct business within the Commonwealth.
2. **Amount.** The amount of the financial security to be posted for the completion of the required improvements shall be equal to 110 percent of the cost of completion estimated as of 90 days following the date scheduled for completion by the developer.
3. **Determination of Improvement Costs.** The amount of financial security required shall be based upon an estimate of the costs of completion of the required improvements submitted by an applicant or developer and prepared by a professional engineer licensed as such in the Commonwealth of Pennsylvania and certified by such engineer to be a fair and reasonable estimate of such cost. The Douglass Township Board of

Supervisors, upon the recommendation of the Township Engineer, may refuse to accept such estimate for good cause. If the applicant or developer and Douglass Township are

4. **Time Limit.** Such financial security shall provide for and secure to the public the completion of all subdivision improvements for which such security is being posted on or before the date fixed in the subdivision plan or subdivision agreement for completion of such improvements.
5. **Delayed Completion.** If the subdivider, developer or builder requires more than one year from the date of posting of the financial security to complete the required improvements, Douglass Township may adjust the amount of the financial security by comparing the actual cost of the improvements which have been completed and the estimated cost of the completion of the remaining improvements as of the expiration of the 90<sup>th</sup> day after either the original date scheduled for completion or a rescheduled date of completion. After this adjustment, the Township may require the developer to post additional security in order to assure that the financial security equals 110 percent of the cost of completion.
6. **Development in Stages.** In the case where development is projected over a period of years, the Board of Supervisors may authorize submission of final plats by sections or stages of development in accordance with **Section 310(3)** of this Chapter and subject to such requirements or guarantees as to improvements in future sections or stages of development.
7. **Water and Sewer Facilities.** If water mains or sanitary sewer lines, or both, along with apparatus or facilities related thereto, are to be installed under the jurisdiction and pursuant to the rules and regulations of a public utility or municipal authority separate and distinct from Douglass Township, financial security to assure proper completion and maintenance there of shall be posed in accordance with the regulations of the controlling public utility or municipal authority and shall not be included within the financial security as otherwise required by this Section.

*(Ord. 90-2, 7/16/1990, Section 502)*

### **Section 503. Release from Liability.**

1. **Partial Release.** As the work of installing the required improvements proceeds, the party posting the financial security may request the Board of Supervisors to release, or authorize the release from time to time, such portions of the financial security necessary for payment to the contractor(s) performing the work. Any such request shall be in writing addressed to the Douglass Township Board of Supervisors and subject to the provisions for release as established in **Section 509 of Act 247**, the Pennsylvania Municipalities code.
2. **Release in Full.** The portion of the financial security unencumbered by the post-completion security of **Section 503(4)** shall be released only upon completion of installation of the required improvements in accordance with the approved improvement construction plan. Strict compliance with procedures established by **Section 510 of Act 247**, the Pennsylvania Municipalities Planning Code, shall be followed with respect to the release of financial security posted by the subdivider, owner, developer, or builder. If the Douglass Township Board of Supervisors fails to comply with the time limitations of

**Section 510 of Act 247**, all improvements will be deemed to have been approved and the developer shall be released from all liability pursuant to the financial security.

3. **Incomplete Improvements**. If the required improvements are not completely installed within the period fixed or extended by the Board of Supervisors, the Board of Supervisors shall declare the financial security in default to collect the amount payable thereunder. Upon receipt of such amount, the Township shall install such improvements as were covered by the security and are commensurate with the extent of building development which has taken place in the subdivision or land development, not exceeding in cost, however, the amount collected upon the security. Strict compliance with procedures established by **Section 511 of Act 247**, the Pennsylvania Municipalities Planning Code, shall be followed.
4. **Post-Completion Security**. The developer shall be responsible for maintenance of all subdivision or land development improvements until such improvements are offered for dedication and accepted by the Township, and 10 percent of the performance guarantee shall be held back until a maintenance guarantee has been posted as provided for in **Section 602(3)**.

*(Ord. 90-2, 7/16/1990, Section 503)*

**Section 504. Inspection of Work and Materials.**

1. **Notice**. The Township Engineer shall be notified 48 hours in advance of the commencement of any construction or installation operation, in order that provision may be made for inspection by the Township. Construction and installation operations shall also be subject to inspection by Township officials during the progress of the work. The subdivider, developer or builder shall pay for all inspections.
2. **Improvement Specifications**. All required road improvements shall be constructed in accordance with the applicable provisions of the latest edition of the PENNDOT Publication 408, dated 1976, including the latest revisions and other applicable regulations. All other required improvements shall be constructed in accordance with approved specifications.
  - A. **Specifications**. The specifications will be furnished to the applicant by the Township. If any of the specifications are unavailable at the Township building, the Township Engineer shall provide the applicable specifications.
  - B. **Sample of Materials**. During or after construction of any required improvement, should the Township require a sample of materials, said sample shall be furnished by the appropriate contractor, in form specified by the Township Engineer.
3. **Delivery Slips**. Copies of all delivery slips for materials used in the construction of any storm sewers, sanitary sewers, roads, curbs, sidewalks, or any other facility within a Township right-of-way or easement shall be supplied to the Township.

*(Ord. 90-2, 7/16/1990, Section 504)*

**Section 505. Off-Site Improvements.** Certain improvements beyond the geographical boundaries of a site to be subdivided and/or developed, including but not limited to road improvements, may be required to be constructed where it can clearly be demonstrated that such improvements have been made necessary solely through the additional burden imposed by the subdivision and/or development of the site. The Solicitor shall render final judgment in any instances where a dispute arises as to the direct cause relationship for the improvement(s). The subdivider or developer may be required to cover costs which must be incurred by the Township or other governmental jurisdiction in order to make these improvements feasible. The legal and financial arrangements to cover costs of the off-site improvements shall be the same as those prescribed in **Section 502.**

*(Ord. 90-2, 7/16/1990, Section 505)*



**Part 6**  
**FEES, CONDITIONS OF ACCEPTANCE AND PENALTIES**

**Section 600. Applicability.** This Part sets forth the fees and costs for the subdivision and development of land, engineering and inspection services and related site tests and material, and the opening and dedication of roads, streets, drainage facilities and other public improvements in the Township. Conditions of acceptance of any street or site improvements and penalties for the violation of this Chapter are provided in this Part. (*Ord. 90-2, 7/16/1990, Section 600*)

**Section 601. Fees and Costs.** The subdivider, builder or developer shall be required to furnish a bond and to pay the following fees and costs as applicable.

1. Preliminary Plan. The Township filing fee and Montgomery County Planning Commission review fee.
2. Final Plan. The subdivider, developer, or builder will be required to furnish financial security, in an amount and with such surety as shall be approved by the Board of Supervisors, to guarantee the payment of:
  - A. Professional Services. The services of the Township Engineer and/or Solicitor provided in these rules and regulations. In addition, all costs for other engineering, legal and professional certification as deemed necessary.
  - B. Material and Facilities Test. The actual cost of all drainage, water and/or material tests.
  - C. Inspection. All costs of the Township Inspector at the current hourly rate while engaged on the project.
  - D. Dedication. Legal fees, advertising and other costs involved in the dedication of streets and public improvements to the Township.
3. Such bonds as may be required under the regulations of the applicable sewer and water authorities.
4. Fee schedule will be set by resolution by the Board of Supervisors.

(*Ord. 90-2, 7/16/1990, Section 601*)

**Section 602. Conditions of Acceptance.** The Township shall have no obligation to take over and make public any street or other improvement unless:

1. Conditions. The Township shall have no obligation to take over and make public any street or other improvement unless:
  - A. The required improvements, utility mains and laterals, and monuments, shown on an approved plan or plans have been constructed in compliance with all requirements.

- B. It is established to the satisfaction of the Board of Supervisors that there is a need for the improvements to be taken over and made public.
2. **Acceptance.** The Township shall have no responsibility with respect to any street or other improvement, notwithstanding the use of the same by the public, unless the street or other improvement is accepted by an ordinance adopted by the Board of Supervisors.
  3. **Guarantee.** The Board of Supervisors shall require the posting of financial security to secure structural integrity of all improvements located in the development, as well as, the functioning of said improvements in accordance with the design and specifications as depicted on the final plat for a term not to exceed 18 months from the date of acceptance of dedication. Said financial security shall be of the same type as otherwise required with regard to installation of such improvements, and the amount of the financial security shall not exceed 15 percent of the actual cost of installation of said improvements.

*(Ord. 90-2, 7/16/1990, Section 602)*

**Section 603. Penalties.** Any person, partnership, or corporation who or which has violated the provisions of this Subdivision and Land Development Ordinance shall, upon being found liable, therefore, in a civil enforcement proceeding commenced by Douglass Township, pay a judgment of not more than \$500 plus all court costs, including reasonable attorney fees incurred by Douglass Township as a result thereof. No judgment shall commence or be imposed, levied, or be payable until the date of the determination of a violation by the district justice. If the defendant neither pays nor timely appeals the judgment, Douglass Township may enforce the judgment pursuant to the applicable rules of civil procedure. Each day that a violation continues shall constitute a separate violation, unless the district justice determining that there has been a violation further determines that there was a good faith basis for the person, partnership, or corporation violating this Chapter to have believed that there was no such violation until the fifth day following the date of the determination of a violation by the district justice and thereafter each day that a violation continues shall constitute a separate violation. All fines collected for such violations shall be paid to the Township.

*(Ord. 90-2, 7/16/1990, Section 603)*

**Section 604. Jurisdiction.**

1. **Subdivision and Land Development Control.** It shall be unlawful for the owner of any land in the Township, or any other person, firm or corporation, to subdivide any lot, tract, or parcel of land, or to lay out, construct, open or dedicate for public use of travel, any street, sanitary sewer, storm sewer, drainage facilities, or other facilities in connection therewith, or for the common use of occupants of buildings within the subdivision or land development, unless and until final plans of such subdivision or development shall have been prepared by a registered professional engineer, or registered surveyor, submitted to and approved in writing thereon by the Township Board of Supervisors and recorded in the Montgomery County Recorder of Deeds Office in Norristown, Pennsylvania.
2. **Sale of Lots; Issuance of Building Permits; Erection of Buildings.**
  - A. No lot in a subdivision may be sold, and no permit to erect, or alter, any building upon land in a subdivision or land development may be issued unless and until the

municipal improvements required by the Board of Supervisors in connection therewith have either been constructed or guaranteed as herein provided.

- B. No building in a subdivision or land development depending for ingress and egress upon the improvements of any street or streets, herein provided for, shall be permitted to be occupied before improvements are fully completed from an existing paved street to and across the lot on which the building is located, and/or to a sufficient depth along the side of the lot to service any driveway, driveways, or parking areas.
- C. No building shall be permitted to be occupied before permits have been issued for the required sewage and water facilities and these facilities are fully provided and operational.

*(Ord. 90-2, 7/16/1990, Section 604)*

**Part 7**  
**AMENDMENTS; VALIDITY; REPEALER**

**Section 700. Amendment Procedure.** The Board of Supervisors may, from time to time, amend, supplement, change, modify, or repeal this Chapter by proceeding in accordance with the regulations of this Part. The Board of Supervisors shall, by resolution adopted at a regular or special meeting, fix the time and place of a public hearing on the proposed amendment and cause public notice thereof to be given as follows:

1. By publishing a notice thereof once each week for two successive weeks in a newspaper of general circulation in the Township. The first notice shall not be more than 30 days or less than 14 days from the date of the hearing.
2. The notice shall state the time and place of the hearing, the general nature of the proposed amendment and that full opportunity to be heard will be given to any citizen and all parties in interest attending such hearing.
3. Whenever a proposed amendment affects a particular property, there shall be posted upon said property or premises at such place or places as the Board of Supervisors may direct, notice of said proposed amendment.

*(Ord. 90-2, 7/16/1990, Section 700)*

**Section 701. Referral to Planning Commissions.** All proposed amendments before adoption shall be referred to the Township Planning Agency and the Montgomery County Planning Commission at least 30 days prior to the public hearing, for recommendation and report, which shall be advisory. *(Ord. 90-2, 7/16/1990, Section 701)*

**Section 702. Validity.** Should any section of this Chapter be declared to be invalid by a court of competent jurisdiction, such decision shall not affect the validity of the Chapter as a whole or any other Part thereof. *(Ord. 90-2, 7/16/1990, Section 702)*

**Secton 703. Repealer.** All ordinances and parts of ordinances inconsistent herewith are hereby repealed upon the effective date of this Chapter; otherwise to remain in full force and effect. *(Ord. 90-2, 7/16/1990, Section 703)*

**Part 8**  
**FLOODPLAIN AREAS**

**Section 801. General Provisions.**

1. The regulations contained herein shall apply in those areas defined and established as Floodplain Conservation District in Part 16 of the Douglass Township Zoning Ordinance.
2. The regulations contained herein are intended to conform to the requirements of **Section 60.3** of the National Flood Insurance Program, P.L. 93-234, and the Pennsylvania Floodplain Management Act, P.L. 851, No. 166 of 1978, and as either is amended. Furthermore, it is the purpose of these regulations to: *[Ord. 96-1]*
  - A. Regulate the subdivision and development of floodplain areas in order to promote the general health, welfare and safety of the community.
  - B. Require that each subdivision lot or development site in floodplain areas be provided with a safe building site with adequate access; and that public facilities which serve such sites be designed and installed to preclude flood damage at the time of initial construction.
  - C. Protect individuals from buying lands which are unsuitable for use because of flood hazards by prohibiting the subdivision and development of unprotected floodplain areas.
  - D. Maintain the certification of Douglass Township and the eligibility of the property owners in Douglass Township for the benefits of the National Flood Insurance Program.

*(Ord. 84-7, 5/7/1984; as amended by Ord. 96-1, 1/15/1996)*

**Section 802. Waivers.** The guidelines for relaxation from the requirements set forth in this Part are as follows:

1. A waiver shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
2. A waiver shall only be issued if there is:
  - A. A determination that failure to relax the requirements would result in exceptional hardship to the applicant.
  - B. A determination that the relaxing of a requirement will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
  - C. A determination that relaxing of a requirement will not result in any adverse impact on adjacent landowners either upstream or downstream.

3. A waiver shall only be issued upon a determination that the waiver is the minimum action necessary, considering the flood hazard, to afford relief.
4. The Township shall (i) maintain a record of all waivers including justification for their issuance, and (ii) report such decisions issued in its annual report submitted to the Federal Insurance Administrator.

*(Ord. 84-7, 5/7/1984, Section 801)*

**Section 803. Pre-Application Procedures for Subdivision and Land Developments.**

1. Prior to the preparation of any plans, it is suggested that prospective developers consult with the Montgomery County Health Department concerning soil suitability when on-site sewage disposal facilities are proposed. *[Ord. 94-2]*
2. Prospective developers shall consult the Montgomery County Conservation District representative concerning erosion and sediment control measures and the effect of geologic conditions on the proposed subdivision and land development.
3. Prospective developers shall consult with Douglass Township and Montgomery County Planning Commission to make a determination as to whether or not any flood hazards either exist or will be created as a result of the subdivision and land development.

*(Ord. 84-7, 5/7/1984, Section 802; as amended by Ord. 94-2, 3/7/1994, Section 9)*

**Section 804. Preliminary Plan Requirements for Subdivision and Land Developments.**

The following information shall be required as part of the Preliminary Plan and shall be prepared by a registered Engineer or Surveyor:

1. Name of Engineer, Surveyor, or other qualified person responsible for providing the information required in this section.
2. A map showing the location of the proposed subdivision or land development with respect to the municipality's floodplain areas including information on, but not limited to, the Established Flood Level and Regulatory floor Elevation, boundaries of floodplain areas, proposed lots and sites, fill, flood or erosion protective facilities, and areas subject to deed restrictions.
3. Where the subdivision or land development lies partially or completely in a floodplain area, or where the subdivision or land development borders on a floodplain area, the Preliminary Plan shall include detailed information giving the location and elevation of existing and proposed streets, water supply and sanitary facilities, building sites, soil types and proposed streets, water supply and sanitary facilities, building sites, soil types and proposed floodproofing measures. Such maps shall also show contours at intervals of 2 or 5 feet depending upon the slope of the land and identify accurately the boundaries of the floodplain areas.
4. All subdivision and land development plans shall be drawn to assure that:
  - A. Proposals are consistent with the need to minimize damage;

- B. Public utilities and facilities, such as sewer, gas, electrical and water systems are located and constructed to minimize or eliminate flood damage; and
  - C. Adequate drainage is provided so as to reduce exposure to flood hazards.
5. The developer shall provide a certification from a Registered Professional Engineer that adequate precautions against flood damage have been taken with respect to the design of any buildings or structures located wholly or partially within a floodplain area. *[Ord. 86-6]*
  6. A copy of all plans for new construction in floodplain areas shall be submitted by Douglass Township to Montgomery County Conservation District for review and comment prior to the issuance of a building permit. The recommendations of the Conservation District shall be considered by the Board of Supervisors of Douglass Township for possible incorporation into the proposed plan.
  7. A copy of all plans for new construction in floodplain areas shall be submitted by Douglass Township to any other appropriate agencies or individuals, including but not limited to, Montgomery County Planning Commission; any appropriate Watershed Association; Soil Conservation Service (U.S. Department of Agriculture); Montgomery County Conservation District; and municipal engineer for review and comment.
  8. Where a non-residential structure is intended to be made watertight below the regulatory flood elevation:
    - A. A registered professional engineer or architect shall develop and/or review structural design, specifications and plans for the construction, and shall certify that the design and methods of construction are in accordance with the requirements of **Section 302(2), Chapter 8, Part 3**.
    - B. A record of such certifications which includes the specific elevation (in relation to the mean sea level) to which such structures are flood-proofed shall be maintained by the Township.

*(Ord. 84-7, 5/7/1984, Section 803; as amended by Ord. 86-6, 7/21/1986; and by Ord. 87-5, 12/7/1987, Section 7)*

**Section 805. Final Plan Requirements.** The following information shall be required as part of the Final Plan and shall be prepared by a registered engineer or surveyor:

1. All information required for the submission of the Preliminary Plan incorporating any changes requested by the Board of Supervisors of Douglass Township.
2. A map showing the exact location and elevation of all existing and proposed roads, buildings, structures, water supply and sanitary facilities to be constructed in floodplain areas. Such maps shall also show contours at intervals of two or five feet depending upon the slope of the land and identify accurately the boundaries of floodplain areas.

*(Ord. 84-7, 5/7/1984, Section 804)*

**Section 806. Design Standards and Improvements.** The following requirements shall apply for all subdivision and land developments proposed in Douglass Township.

1. General.

- A. Where not prohibited by this or any other codes or ordinances land located in floodplain areas may be subdivided or developed with the provision that the developer construct all buildings and structures to preclude flood damage in accordance with this and any other codes or ordinances regulating such development.
- B. Within the floodway part of the Floodplain Conservation District, no subdivision or land development shall be approved if the proposed development or improvements will, individually or collectively, result in any increase in the 100-year flood elevation.
- C. If Board of Supervisors of Douglass Township determines that only a portion of a proposed plan can be safely developed, it shall limit development to that portion and shall require that the development proceed consistent with this determination.
- D. When a developer does not intend to develop the plan himself and the Board of Supervisors of Douglass Township determines that additional controls are required to insure safe development, it may require the developer to impose appropriate deed restrictions on the land. Such deed restrictions shall be inserted in every deed and noted on the Record Plan.

2. Excavation and Grading. Where any excavation or grading is proposed, or where any existing trees, shrubs or other vegetative cover will be removed, the developer shall consult the Montgomery County Conservation District representative concerning plans for erosion and sediment control and a report on the soil characteristics of the site in order to determine the type and magnitude of development the site may safely accommodate. Before undertaking any excavation or grading, the developer shall conform to all pertinent laws, regulations and ordinances of the Commonwealth of Pennsylvania and Douglass Township.

3. Drainage Facilities. Storm drainage facilities shall be designed to convey the flow of surface waters without risk to persons or property. The drainage system shall insure drainage at all points along streets, and insure conveyance of drainage away from buildings and on-site waste disposal facilities.

The Board of Supervisors of Douglass Township may require an underground system to accommodate frequent floods and a secondary surface system to accommodate larger, less frequent floods. Drainage plans shall be consistent with local and regional drainage plans. The facilities shall be designed to prevent the discharge of excess runoff onto adjacent properties.

4. Streets. The finished elevation of proposed streets within floodplain areas shall be a minimum of 2 feet above the Base Flood Elevation. Drainage openings shall be sufficient to discharge flood flows without increasing flood heights onto lands of other property owners.



5. **Sewer Facilities.** All sanitary sewer systems located in floodplain areas, whether public or private, shall be floodproofed up to the Regulatory Flood Elevation.
  - A. The Board of Supervisors of Douglass Township may prohibit installation of sewage disposal facilities requiring soil absorption systems where such systems will not function due to high ground water, flooding or unsuitable soil characteristics. The Board of Supervisors of Douglass Township may require that the developer note on the plan and in any deed or conveyance that on-site sewage disposal systems are prohibited in designated floodplain areas.
  - B. The Board of Supervisors of Douglass Township may prescribe adequate methods for waste disposal. If a public sanitary sewer system is located within or near the proposed subdivision or land development, the Board of Supervisors of Douglass Township shall require the developer to connect to this system where practical, and shall prescribe the procedures to be followed by the developer in connecting to said system.
6. **Water Facilities.** All water systems in floodplain areas, whether public or private, shall be floodproofed to the Regulatory Flood Elevation. If there is an existing public water supply system within or near the subdivision or land development, the Board of Supervisors of Douglass Township shall require the developer to connect to this system where practical and shall prescribe the procedures to be followed by the developer in connecting to said system.
7. **Other Public Utilities and Facilities.** All other public or private utilities and facilities shall be elevated or floodproofed to the Regulatory Flood Elevation.

*(Ord. 84-7, 5/7/1984, Section 805)*

**Section 807. Performance Bond.** No Final Plan shall be approved by the Board of Supervisors of Douglass Township until the improvements required by this Part are constructed in a satisfactory manner. In lieu of such construction, the Board of Supervisors of Douglass Township may grant final approval prior to completion, providing:

1. The developer enters into an agreement with the Board of Supervisors of Douglass Township guaranteeing that the improvements will be installed in accordance with the plans, specifications, and schedules approved by the Board of Supervisors of Douglass Township prior to Final Plan approval. This agreement shall also guarantee that no lot will be sold or building constructed in any floodplain area prior to completion of all floodproofing measures planned for such lot and necessary access facilities.
2. Simultaneous with the execution of the agreement specified in subsection (1) above, the developer shall offer security to guarantee performance of this agreement and the installation of improvements by the developer at his expense in accordance with the approved plans, specifications and schedules. The security shall be in the full amount of the estimated costs. The agreement shall be conditioned upon final approval of the plan. The security shall consist of a certified check, escrow account acceptable or irrevocable letter of credit in favor of the Board of Supervisors of Douglass Township.

3. The developer shall agree that any deposit in escrow may be applied by the Board of Supervisors for the completion of improvements as agreed and may be held for a period of three months after final completion of such improvements for the purpose of:
  - A. Guaranteeing and securing the correction of any defect in material or workmanship furnished for such improvements, and not discernible at the time of final inspection or acceptance by the Board of Supervisors; and
  - B. Guaranteeing against any damage to such improvements by reason of the settling of the ground, bed or foundation.

Such agreement shall also provide that the security may be applied by the Board of Supervisors of Douglass Township to any costs incurred correcting such defects. The balance of such security, if any, held at the end of such period shall be returned by the Board of Supervisors to the depositor or paid to the order of the depositor without payment of interest by the Board of Supervisors.

4. Prior to offering any improvements to the Board of Supervisors, the developer shall furnish a written guarantee that all indebtedness incurred for supplies, material, labor furnished, or engineering and professional services in the construction of improvements have been paid in full and that there are no claims for damage or suits against the contractor involving such improvements.

*(Ord. 84-7, 5/7/1984, Section 806)*

**Section 808. Conflict.** It is not intended by this Part to repeal, abrogate, annul or interfere with any existing ordinances or enactments, or with any rule, regulation or permit adopted or issued thereunder, except insofar as the same may be inconsistent or in conflict with any of the provisions of this Part; provided, that where this Part imposes greater restrictions than any such previous ordinance or enactment, then the provisions of this Part shall control. *(Ord. 84-7, 5/7/1984, Section 807)*

**Section 809. Validity.** Should any section or provision of this Part be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the ordinance as a whole, or any other part thereof. *(Ord. 84-7, 5/7/1984, Section 808)*

**Section 810. Municipal Liability.** The approval of a subdivision or land development plan near or within the Floodplain Area shall not constitute a representation, guarantee or warranty of any kind by the municipality, or by any official or employee thereof of the practicability or safety of the proposed plan and shall create no liability upon Douglass Township, its officials or employees. The degree of floodproofing intended to be provided by this Part is considered reasonable for regulatory purposes and is based on engineering and scientific methods of study. This Part is not intended to imply that land outside floodplain areas or subdivisions or developments permitted within such areas will always be totally free from flooding or flood damage. *(Ord. 84-7, 5/7/1984, Section 809)*



## Appendix A

### RECOMMENDED PLANT MATERIAL LIST

SHADE OR CANOPY TREES - Suitable for Street Trees or Parking Lots as well as for Buffers and Screens. (*Minimum Mature Height - 30 feet or more*)

<b>Scientific Name</b>	<b>Common Name</b>
Acer rubrum	Red Maple (native)
Celtis occidentalis	Hackberry (native)
Cladastris lutea	Yellowwood (native)
Fraxinus americana 'Rosehill'	Rosehill White Ash
Fraxinus pennsylvanica cv. Marshall's Seedless	Marshall's Seedless Green Ash
Ginkgo biloba 'Princeton Sentry'	Ginkgo (male only)
Gleditsia triacanthos inermis	Thornless Honeylocust
Koelreuteria paniculata	Golden Rain Tree
Liquidamber styraciflua	Sweet Gum (native)
Platanus occidentalis	Sycamore (native)
Platanus x acerifolia 'Bloodgood'	London Planetree
Quercus bicolor	Swamp White Oak (native)
Quercus borealis	North Red Oak (native)
Quercus coccinea	Scarlet Oak (native)
Quercus imbricaria	Shingle Oak (native)
Quercus phellos	Willow Oak (native)
Quercus rubra	Red Oak (native)
Quercus shumardii	Shumard Oak
Sophora japonica	Japanese Pagodatree
Tilia americana	American Linden (native)
Tilia cordata	Little Leaf Linden
Tilia tomentosa	Silver Linden
Ulmus parvifolia	Chinese Lacebark Elm
Zelkova serrata	Japanese Zelkova

SHADE OR CANOPY TREES - Suitable for Property Line Buffers and Non-Vehicular Use Areas Only. (*Minimum Mature Height - 30 feet or more*)

<b>Scientific Name</b>	<b>Common Name</b>
Acer saccharinum	Silver Maple (native)
Acer saccharum	Sugar Maple (native)
Betula nigra	River Birch (native)
Fagus grandifolia	American Beech (native)
Fagus sylvatica	European Beech
Fraxinus americana	White Ash (native)
Liriodendron tulipifera	Tuliptree (native)
Metasequoia glyptostroboides	Dawn Redwood
Ostrya virginiana	Hop Hornbeam (native)
Phellodendron amurense	Amur Cork Tree

Plantanus acerifolia  
 Quercus alba  
 Quercus coccinea  
 Quercus palustris  
 Quercus vellutina  
 Sassafras albidum

London Plane  
 White Oak (native)  
 Scarlet Oak (native)  
 Pin Oak (native)  
 Black Oak (native)  
 Sassafras (native)

**UNDERSTORY TREES - Suitable as Street Trees beneath Overhead Utility Lines. (*Mature Height = 15-35 feet*)**

<b>Scientific Name</b>	<b>Common Name</b>
Amelanchier canadensis	Shadblow Serviceberry (native)
Amelanchier laevis	Allegheny Serviceberry (native)
Carpinus carolinia	Ironwood (native)
Cercis candensis	Redbud (native)
Chionanthus virginicus	Fringetree (native)
Cornus florida	Flowering Dogwood (native)
Cornus kousa chinensis	Chinese Kousa Dogwood
Cornus mas	Corneliancherry Dogwood
Crataegus cv. Toba	Toba Hawthorn
Crataegus phaenopyrum	Washington Hawthorn
Crataegus viridis 'Winter King'	Winter King Hawthorn
Halesia carolinia	Silverbells (native)
Hammamelis virginiana	Witch Hazel (native)
Koelreuteria paniculata	Golden Raintree
Laburnum x watereri	Goldenchain Tree
Magnolia soulangeana	Saucer Magnolia
Magnolia virginiana	Sweetbay Magnolia (native)
Malus (cultivars) varieties)	Crabapple (disease resistant)
Oxydendrum arboreum	Sourwood (native)
Prunus sargentii	Sargent Cherry
Prunus serrulata cv. Kwanzan	Kwanzan Cherry
Prunus yedoensis	Yoshino Cherry
Pyrus calleryana cv. Redspire	Redspire Pear
Styrax japonica	Japanese Snowbell
Syringa amurensis var. japonica	Japanese Tree Lilac

**LARGE DECIDUOUS SHRUBS - Suitable for Use in Property Line Buffers or Site Element Screen (not clipped hedges). (*Minimum Mature Height - 15 feet or more*)**

<b>Scientific Name</b>	<b>Common Name</b>
Aronia arbutifolia	Black Chokeberry (native)
Calycanthus floridus	Sweetshrub (native)
Cephalanthus occidentalis	Buttonbush (native)
Clethra alnifolia	Summersweet (native)
Cornus sericea	Redosier Dogwood (native)
Enkianthus campanulatus	Redvien Enkianthus

Forsythia sp.	Forsythia
Fothergilla major	Large Fothergilla (native)
Ilex verticillata	Winterberry (native)
Lindera benzoin	Spicebush (native)
Lonicera fragrantissima	Winter Honeysuckle
Myrica pennsylvanica	Bayberry (native)
Philadelphus coronaris	Mockorange
Physocarpus opulifolius	Common Ninebark
Rhus glabra	Smooth Sumac (native)
Rhus typhina	Staghorn Sumac (native)
Sambucus canadensis	Elderberry (native)
Spiraea nipponica	Snow Mound Spirea
Vaccinium corymbosum	Blueberry (native)
Viburnum dentatum	Arrow Wood (native)
Viburnum lentago	Nannyberry (native)
Viburnum prunifolium	Black Haw (native)
Viburnum opulus	European Cranberrybush
Viburnum	
Viburnum trilobum	American Cranberry (native)

DECIDUOUS OR EVERGREEN SHRUBS - Suitable for Clipped Hedges in Property Line Buffers or Site Element Screens. *(Minimum Mature Height - 4 feet or more)*

Scientific Name	Common Name
Aronia arbutifolia	Black Chokeberry (native)
Cornus mas	Corneliancherry Dogwood
Cotoneaster salicifolia	Willowleaf Cotoneaster
Euonymus fortuneii vegetus sarcoxie	Big Leaf Wintercreeper
Ilex crenata	Japanese Holly
Ilex glabra	Inkberry (native)
Juniperus chinensis	
cv. glauca hetzi	Hetz Blue Juniper
Juniperus chinensis	
cv. pfitzeriana compacta	Compact Pfitzer Juniper
Ligustrum ibolium	Ibolium Privet
Lonicera fragrantissima	Winter Honeysuckle
Philadelphus lemoinei	Mockorange
Ribes alpinum	Currant
Taxus baccata	English Yew
Taxus x media	Hybrid Yew
Viburnum dentatum	Arrow Wood (native)
Viburnum lentago	Nannyberry (native)
Viburnum opulus	European Cranberry Bush
Viburnum prunifolium	Black Haw (native)
Thuja occidentalis	American Arborvitae (native)

EVERGREEN SHRUBS - Suitable for Site Element Screens. *(Minimum Mature Height - 4 feet)*

<b>Scientific Name</b>	<b>Common Name</b>
Azalea - evergreen varieties - must reach 3-foot height	Azalea
Ilex crenata	Japanese Holly
Ilex glabra	Inkberry (native)
Ilex meserveae (varieties)	Blue Holly(s)
Juniperus chinensis "Hetzi Glauca"	Hetz Blue Juniper
Juniperus virginiana	Eastern Red Cedar (native)
Kalmia latifolia and cultivars	Mountain Laurel (native)
Leucothoe fontanessiana	Leucothoe
Pieris floribunda	Mountain Andromeda (native)
Pieris japonica	Japanese Andromeda
Rhododendron sp.	Various Lg. Rhododendrums
Taxus sp.	Yew
Thuja Sp.	Arborvitae
Viburnum rhytidophyllum	Leatherleaf Viburnum

EVERGREEN TREES - Suitable for Property Line Buffers or Site Element Screens. (*Minimum Mature Height - 20 feet*)

<b>Scientific Name</b>	<b>Common Name</b>
Abies concolor	White Fir
Chamaecyparis obtusa	Hinoki Falsecypress
Chamaecyparis pisifera	Japanese Falsecypress
Ilex opaca	American Holly (native)
Picea abies	Norway Spruce
Picea glauca	White Spruce
Picea omorika	Siberian Spruce
Picea pungens	Colorado Spruce
Pinus strobus	White Pine (native)
Pinus thunbergii	Japanese Black Pine
Pseudotsuga menziesii	Douglas Fir

CANOPY TREES - Suitable for Stormwater Detention Basins

<b>Scientific Name</b>	<b>Common Name</b>
+ Acer rubrum	Red Maple
* Acer saccharinum	Silver Maple
* Betula nigra	River Birch
Celtis occidentalis	Common Hackberry
* Fraxinus americana	White Ash
Fraxinus pennsylvanica	Green Ash
+ Liquidambar styraciflua	Sweet Gum
Liriodendron tulipifera	Tulip Poplar
* Nyssa sylvatica	Black Gum
Platanus occidentalis	Sycamore
Platanus x acerifolia	London Planetree

<i>Prunus serrotina</i>	Black Cherry
<i>Quercus alba</i>	White Oak
* <i>Quercus phellos</i>	Willow Oak
+ <i>Quercus bicolor</i>	Swamp White Oak
* <i>Quercus palustris</i>	Pin Oak
<i>Quercus shumardi</i>	Shumard Oak
<i>Sassafras albidum</i>	Sassafras
+ <i>Taxodium distichum</i>	Bald Cypress

#### DECIDUOUS/EVERGREEN ORNAMENTAL TREES - Suitable for Stormwater Detention Basins

Scientific Name	Common Name
* <i>Amelanchir canadensis</i>	Shadblow Serviceberry
* <i>Carpinus carolinia</i>	Ironwood
<i>Chamaecyparis thyoides</i>	Atlantic Whitecedar
* <i>Chionanthus virginicus</i>	Fringetree
* <i>Magnolia virginiana</i>	Sweetbay
<i>Ostrya virginiana</i>	Hophornbeam
+ <i>Salix caprea</i>	Willow sp.
+ <i>Salix discolor</i>	Pussy Willow sp.
* <i>Thuja occidentalis</i> cv. <i>nigra</i>	Arborvitae

#### DECIDUOUS OR EVERGREEN SHRUBS SUITABLE FOR STORMWATER DETENTION BASINS

Scientific Name	Common Name
<i>Alnus serrulata</i>	Smooth Alder
+ <i>Aronia arbutifolia</i>	Red Chokeberry
<i>Aronia melanocarpa</i>	Black Chokeberry
* <i>Caly canthus florida</i>	Sweetshrub
+ <i>Cephalanthus occidentalis</i>	Buttonbush
+ <i>Clethra alnifolia</i>	Summersweet
+ <i>Cornus amonum</i>	Silky Dogwood
<i>Cornus racemosa</i>	Gray Dogwood
+ <i>Cornus sericea</i>	Redosier Dogwood
<i>Ilex decidua</i>	Possumhaw
+ <i>Ilex glabra</i>	Inkberry
+ <i>Ilex verticillata</i>	Winterberry
<i>Itea virginiana</i>	Virginia Sweetspire
<i>Juniperus virginiana</i>	Eastern Redcedar
* <i>Lindera benzoin</i>	Spicebush
* <i>Myrica cerifera</i>	Southern Bayberry
+ <i>Myrica pennsylvanica</i>	Northern Bayberry
<i>Rhododendron atlanticum</i>	Coast Azalea
+ <i>Rhododendron nudiflorum</i>	Pinxterbloom Azalea
+ <i>Rhododendron viscosum</i>	Swamp Azalea



* <i>Sambucus canadensis</i>	Elderberry
<i>Sambucus racemosa</i>	Red Elder
<i>Spirea latifolia</i>	Meadowsweet
* <i>Viburnum cassinoides</i>	Witherod
* <i>Viburnum dentatum</i>	Arrowwood
* <i>Viburnum lentago</i>	Nannyberry
<i>Viburnum prunifolium</i>	Blackhaw
* <i>Viburnum trilobum</i>	American Cranberrybush

#### HERBACEOUS PERENNIALS - Suitable for Stormwater Detention Basins

<b>Scientific Name</b>	<b>Common Name</b>
<i>Acorus calamus</i>	Sweetflag
<i>Andropogon virginicus</i>	Broomsedge
<i>Aquilegia canadensis</i>	Wild Columbine
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Asclepias tuberosa</i>	Butterflyweed
* <i>Aster novae angliae</i>	New England Aster
<i>Aster novae-belgii</i>	New York Aster
<i>Caltha palustris</i>	Marsh Marigold
<i>Chelone glabra</i>	White Turtlehead
<i>Chelone lyonii</i>	Pink Turtlehead
* <i>Chrysanthemum leucanthemum</i>	Ox-Eye Daisy
* <i>Echinacea purpurea</i>	Purple Cornflower
+* <i>Eupatorium dubium</i>	Joe Pye Weed
+* <i>Eupatorium fistulosum</i>	Hollow Joe Pye Weed
<i>Filipendula rubra</i>	Queen of the Prairie
* <i>Hemerocallis</i> sp.	Day Lily
* <i>Hesperis matronalis</i>	Dames Rocket
+ <i>Hibiscus moshentos</i>	Rose Mallow
+* <i>Iris pseudocaris</i>	Yellow Iris
+ <i>Iris versicolor</i>	Blue Flag
<i>Lilium superbum</i>	Meadow Lily
<i>Liatris spicata</i>	Blazing Star
+* <i>Lobelia cardinalis</i>	Cardinal Flower
+* <i>Lobelia siphilitica</i>	Blue Lobelia
* <i>Monarda didyma</i>	Bee Balm
+* <i>Panicum virgatum</i>	Switchgrass
* <i>Phalaris arundinacea</i>	Canary Reed Grass
* <i>Rudbeckia</i> sp.	Black-Eyed Susan
+ <i>Scirpus acustus</i>	Hard Stem Bullrush
+ <i>Spartina alternifolia</i>	Cordgrass
<i>Tradescantia ohiensis</i>	Spiderwort
+ <i>Typha angustifolia</i>	Narrowleaf Cattail
+ <i>Typha latifolia</i>	Common Cattail
+* <i>Vernonia noveboracensis</i>	New York Iron Weed

\* Suitable for usually well-drained areas that may be subject to occasional flooding

+ Suitable for permanently wet areas

**Appendix B  
NOXIOUS/INVASIVE TREE SPECIES LIST**

The following tree species may be considered as noxious, invasive exotic or undesirable in sensitive plant communities. Their removal may be warranted for ecological restoration purposes. Removals of these species should not require mitigation, as set forth in **Section 420-1**.

Acer platanoides  
Acer pseudoplatanus  
Ailanthus altissima  
Eleagnus angustifolia  
Eleagnus umbellata  
Evodia daniellii  
Morus alba  
Paulownia tomentosa  
Phellodenron amurense  
Prunus avium  
Robinia pseudoacacia  
Ulmus pumila

Norway maple  
Sycamore maple  
Tree of Heaven  
Russian olive  
autumn olive  
Korean evodia  
Mulberry  
Empress tree  
Amur cork tree (female)  
Sweet cherry  
Black locust  
Siberian elm

# **Appendix C**

## **Douglass Township**

### **Act 167**

# **STORMWATER MANAGEMENT**

*ORDINANCE*

**ORDINANCE NO. 2004-02**

**Douglass Township, Montgomery County,  
PENNSYLVANIA**

**Adopted at a Public Meeting held on  
February 17, 2004**

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## **ARTICLE I – GENERAL PROVISIONS**

### **Section §101. Short Title**

This Ordinance shall be known as the Douglass Township Stormwater Management Ordinance.

### **Section §102. Statement of Findings**

The governing body of Douglass Township finds that:

- A) Stormwater runoff from lands modified by human activities threatens public health and safety by causing decreased infiltration of rainwater and increased runoff flows and velocities, which overtax the carrying capacity of existing streams and storm sewers, and greatly increases the cost to the public to manage stormwater.
- B) Inadequate planning and management of stormwater runoff resulting from land development throughout a watershed can also harm surface water resources by changing the natural hydrologic patterns, accelerating stream flows (which increase scour and erosion of stream beds and stream banks, thereby elevating sedimentation), destroying aquatic habitat, and elevating aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals, and pathogens. Groundwater resources are also impacted through loss of recharge.
- C) A program of stormwater management, including reasonable regulation of land development and redevelopment causing loss of natural infiltration, is fundamental to the public health, safety, welfare, and the protection of the people of Douglass Township and all of the people of the Commonwealth, their resources, and the environment.
- D) Stormwater can be an important water resource by providing groundwater recharge for water supplies and baseflow of streams, which also protects and maintains surface water quality.
- E) Public education on the control of pollution from stormwater is an essential component in successfully addressing stormwater.
- F) Federal and state regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the National Pollutant Discharge Elimination System (NPDES).
- G) Nonstormwater discharges to municipal separate storm sewer systems can contribute to pollution of waters of the Commonwealth by Douglass Township.

### **Section §103. Purpose**

The purpose of this Ordinance is to promote the public health, safety, and welfare within Douglass Township by maintaining the natural hydrologic regime and minimizing the impacts described in **Section §102** of this Ordinance through provisions designed to:

- A. Manage stormwater runoff impacts at their source by regulating activities that cause the problems.
- B. Provide review procedures and performance standards for stormwater planning and management.
- C. Utilize and preserve existing natural drainage systems as much as possible.
- D. Manage stormwater impacts close to the runoff source, requiring a minimum of structures and relying on natural processes.
- E. Focus on infiltration of stormwater to maintain groundwater recharge, to prevent degradation of surface and groundwater quality, and to otherwise protect water resources.
- F. Maintain existing flows and quality of streams and watercourses.
- G. Meet legal water quality requirements under state law, including regulations at **25 Pennsylvania Code Chapter 93.4.a** requiring protection and maintenance of “existing uses” and maintenance of the level of water quality to support those uses in all streams, and the protection and maintenance of water quality in “special protection” streams.
- H. Prevent scour and erosion of stream banks and stream beds.
- I. Provide proper operation and maintenance of all permanent stormwater management facilities and BMPs that are implemented in Douglass Township.
- J. Provide a mechanism to identify stormwater controls necessary to meet NPDES permit requirements.
- K. Implement an illegal discharge detection and elimination program that addresses non-stormwater discharges into Douglass Township’s separate storm sewer system.

### **Section §104. Statutory Authority**

The Municipality is empowered to regulate land use activities that affect stormwater impacts by the authority of the Second Class Township Code, the Stormwater Management Act, and other state and federal statutes.

### **Section §105. Applicability/Regulated Activities**

- A. This Ordinance applies to any Regulated Earth Disturbance activities within the Municipality, and all stormwater runoff entering into the Municipality’s separate storm sewer system from lands within the boundaries of the Municipality.

- B. Earth Disturbance activities and associated stormwater management controls are also regulated under existing state law and implementing regulations. This Ordinance shall operate in coordination with those parallel requirements; the requirements of this Ordinance shall be no less restrictive in meeting the purposes of the Ordinance than state law.

#### **Section §106. Repealer**

Any ordinance or ordinance provision of Douglass Township inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

#### **Section §107. Severability**

In the event that any section or provision of this Ordinance be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of any of the remaining provisions of this Ordinance.

#### **Section §109. Compatibility with Other Ordinances or Legal Requirements**

- A. Approvals issued pursuant to this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act, or ordinance. To the extent that this Ordinance imposes more rigorous or stringent requirements for stormwater management, the specific requirements contained in this Ordinance shall be followed.
- B. Nothing in this Ordinance shall be construed to affect any of Douglass Township's requirements regarding stormwater matters that do not conflict with the provisions of this Ordinance, such as local stormwater management design criteria (e.g., inlet spacing, inlet type, collection system design and details, outlet structure design, etc.). Conflicting provisions in other municipal ordinances or regulations shall be construed to retain the requirements of this Ordinance addressing state water quality requirements.



## ARTICLE II – DEFINITIONS

### Section §201. Interpretation

For the purposes of this Ordinance, certain terms and words used herein shall be interpreted as follows:

- A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.
- B. The word “includes” or “including” shall not limit the term to the specific example, but is intended to extend its meaning to all other instances of like kind and character.
- C. The words “shall” and “must” are mandatory; the words “may” and “should” are permissive.

### Section §202. Definitions

**Accelerated Erosion** – The removal of the surface of the land through the combined action of man’s activity and the natural processes of a rate greater than would occur because of the natural process alone.

**Applicant** – A person who has filed an application for approval to engage in any regulated activity defined in **Section §105** of this Ordinance.

**BMP (Best Management Practice)** – Methods, measures, or practices used to prevent or reduce surface runoff and/or water pollution including, but not limited to, structural and nonstructural stormwater management practices and operation and maintenance procedures. See also Non-structural Best Management Practice (BMP).

**Conservation District** – The [*Berks or Montgomery*] County Conservation District.

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

**Developer** – A person who seeks to undertake any regulated earth disturbance activities at a project site in Douglass Township.

**Development** – Any human-induced change to improved or unimproved real estate, whether public or private, including, but not limited to, land development, construction, installation, or expansion of a building or other structure, land division, street construction, drilling, and site alteration such as embankments, dredging, grubbing, grading, paving, parking or storage facilities, excavation, filling, stockpiling, or clearing. As used in this Ordinance, development encompasses both new development and redevelopment.

**Development Site** – The specific tract or parcel of land where any regulated activity set forth in Section 105 is planned, conducted, or maintained.

**Earth Disturbance Activity** – A construction or other human activity which disturbs the surface of land including, but not limited to, clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, timber harvesting activities, road maintenance

activities, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials.

**Emergency Spillway** – A conveyance area that is used to pass peak discharge greater than the maximum design storm controlled by the stormwater facility.

**Erosion** – The process by which the surface of the land, including water/stream channels, is worn away by water, wind, or chemical action.

**Erosion and Sediment Control Plan** – A plan that is designed to minimize accelerated erosion and sedimentation. Said plan must be submitted to and approved by the appropriate Conservation District before construction can begin.

**Groundwater Recharge** – The replenishment of existing natural underground water supplies from rain or overland flow.

**Impervious Surface** – A surface that prevents the infiltration of water into the ground. Impervious surfaces include, but are not limited to, streets, sidewalks, pavements, driveway areas, or roofs. Any surface areas designed to be gravel or crushed stone shall be regarded as impervious surfaces.

**Municipality** – Douglass Township, Montgomery County, Pennsylvania.

**NPDES** – National Pollutant Discharge Elimination System, the federal government’s system for issuance of permits under the Clean Water Act, which is delegated to DEP in Pennsylvania.

**Outfall** – “Point source” as described in 40 CFR § 122.2 at the point where Douglass Township’s storm sewer system discharges to surface waters of the Commonwealth.

**Person**- An individual, partnership, public or private association or corporation, or a governmental unit, public utility or any other legal entity whatsoever which is recognized by law as the subject of rights and duties.

**Point Source** – Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, or conduit from which stormwater is or may be discharged, as defined in state regulations at 25 Pennsylvania Code § 92.1.

**Project Site** – The specific area of land where any regulated activities in Douglass Township are planned, conducted, or maintained.

**Redevelopment** – Any development that requires demolition or removal of existing structures or impervious surfaces at a site and replacement with new impervious surfaces. Maintenance activities such as top-layer grinding and re-paving are not considered to be redevelopment. Interior remodeling projects and tenant improvements are also not considered to be redevelopment.

**Regulated Earth Disturbance Activity** – Defined under NPDES Phase II regulations as earth disturbance activity of one (1) acre or more with a point source discharge to surface waters or Douglass Township’s storm sewer system or five (5) acres or more regardless of the planned runoff. This includes earth disturbance on any portion of, part, or during any stage of a larger common plan of development.

**Road Maintenance** – Earth disturbance activities within the existing road cross-section, such as grading and repairing existing unpaved road surfaces, cutting road banks, cleaning or clearing drainage ditches, and other similar activities.

**Separate Storm Sewer System** – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) primarily used for collecting and conveying stormwater runoff.

**State Water Quality Requirements** – As defined under state regulations – protection of designated and existing uses ( See 25 Pa. Code Chapters 93 and 96)--including:

- A. Each stream segment in Pennsylvania has a “designated use,” such as “cold water fishery” or “potable water supply,” which are listed in Chapter 93. These uses must be protected and maintained, under state regulations.
- B. “Existing uses” are those attained as of November, 1975, regardless whether they have been designated in Chapter 93. Regulated Earth Disturbance activities must be designed to protect and maintain existing uses and maintain the level of water quality necessary to protect those uses in all streams, and to protect and maintain water quality in special protection streams.
- C. Water quality involves the chemical biological and physical characteristics of surface water bodies. After Regulated Earth Disturbance activities are complete, these characteristics can be impacted by addition of pollutants such as sediments, and changes in habitat through increased flow volumes and/or rates as a result of changes in land surface area from those activities. Therefore, permanent discharges to surface waters must be managed to protect stream bank, stream bed and structural integrity of the waterway, to prevent these impacts.

**Stormwater** – The surface runoff generated by precipitation reaching the ground surface.

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

**Watercourse** – A channel or conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

**Watershed** – Region or area drained by a river, watercourse, or other body of water, whether natural or artificial.

## **ARTICLE III – STORMWATER MANAGEMENT FOR WATER QUALITY**

### **Section §301. General Requirements**

- A. All regulated Earth Disturbance Activity within the Municipality shall be designated, implemented, operated and maintained to meet the purposes of this Ordinance, through these two elements:
  - 1. Erosion and sediment control during the Earth Disturbance Activity (e.g. during construction), and
  - 2. Water quality protection measures after completion of Earth Disturbance Activity (e.g. after construction), including operations and maintenance.
- B. No regulated Earth Disturbance Activity within the Municipality shall commence until the requirements of this Ordinance are met.
- C. Erosion and sediment control during Regulated Earth Disturbance Activity shall be addressed as required by **Section 303**.
- D. Post construction water quality protection shall be addressed as required by **Section 304**. Operations and maintenance of permanent stormwater BMP's shall be addressed as required by **Article IV**.
- E. All Best Management Practices (BMPs) used to meet the requirements of this Ordinance shall conform to the State Water Quality Requirements, and any more stringent requirements as determined by the Municipality.
- F. Techniques described in **Appendix A** (low Impact Development) of this Ordinance are encouraged, because they reduce the costs of complying with the requirements of this Ordinance and the State Water Quality Requirements.

### **Section §302. Permit Requirements by Other Governmental Entities**

The following permit requirements may apply to certain Regulated Earth Disturbance Activity, and must be met prior to commencement of regulated earth disturbance activities, as applicable:

- A. All regulated earth disturbance activities subject to permit requirements by DEP under regulations at 25 Pennsylvania Code Chapter 102.
- B. Work within natural drainageways subject to permit by DEP under 25 Pennsylvania Code Chapter 105.

- C. Any stormwater management facility that would be located in or adjacent to surface waters of the Commonwealth, including wetlands, subject to permit by DEP under 25 Pennsylvania Code Chapter 105.
- D. Any stormwater management facility that would be located on a state highway right-of-way or require access from a state highway shall be subject to approval by PennDOT.
- E. Culverts, bridges, storm sewers, or any other facilities which must pass or convey flows from the tributary area and any facility which may constitute a dam subject to permit by DEP under 25 Pennsylvania Code Chapter 105.

**Section §303. Erosion and Sediment Control During Regulated Earth Disturbance Activities**

- A. No regulated earth disturbance activities within Douglass Township shall commence until Douglass Township receives an approval from the Conservation District of an Erosion and Sediment Control Plan for construction activities.
- B. DEP has regulations that require an erosion and sediment control plan for any earth disturbance activity of five thousand (5,000) square feet or more, under 25 Pennsylvania Code § 102.4(b).
- C. In addition, under 25 Pennsylvania Code Chapter 92, a DEP “NPDES Construction Activities” is required for Regulated Earth Disturbance Activities.
- D. Evidence of any necessary permit(s) for regulated earth disturbance activities from the appropriate DEP regional office or County Conservation District must be provided to Douglass Township.
- E. A copy of the erosion and sediment control plan and any required permit, as required by DEP regulations, shall be available on the project site at all times.

**Section §304. Water Quality Requirements After Regulated Earth Disturbance Activities Are Complete**

- A. No regulated earth disturbance activities within the municipality shall commence until approval by Douglass Township of a plan that demonstrates compliance with State Water Quality Requirements after construction is complete.
- B. The BMPs shall be designed, implemented, and maintained to meet state water quality requirements and any other more stringent requirements as determined by Douglass Township.
- C. To control post-construction stormwater impacts from regulated earth disturbance activities, state water quality requirements can be met by BMPs, including site design, which provide for replication of pre-construction stormwater infiltration and runoff conditions so that post-construction stormwater discharges do not degrade the physical, chemical, or biological characteristics of the receiving waters. As described in the DEP Comprehensive Stormwater Management Policy (#392-0300-002, September 28, 2002), this may be achieved by the following:

1. Infiltration: replication of pre-construction stormwater infiltration conditions,
  2. Treatment: use of water quality treatment BMPs to ensure filtering out of the chemical and physical pollutants from the stormwater runoff, and
  3. Stream bank and Stream bed Protection: management of volume and rate of post-construction stormwater discharges to prevent physical degradation of receiving waters (e.g., from scouring).
- D. DEP has regulations that require municipalities to ensure design, implementation and maintenance of (BMPs) that control runoff from new development and redevelopment after Regulated Earth Disturbance Activity is complete. These requirements include the need to implement post-construction stormwater BMPs with assurance of long-term operations and maintenance of those BMPs.
- E. Evidence of any necessary permit(s) for regulated earth disturbance activities from the appropriate DEP regional office must be provided to Douglass Township. The issuance of an NPDES Construction Permit (or permit coverage under the statewide General Permit (PAG-2)) satisfies the requirements of **Section § 406.A**.
- F. BMP operations and maintenance requirements are described in **Article IV** of this Ordinance.

## **ARTICLE IV – STORMWATER BMP OPERATIONS AND MAINTENANCE PLAN REQUIREMENTS**

### **Section 401. General Requirements**

- A. No regulated earth disturbance activities within Douglass Township shall commence until approval by Douglass Township of a stormwater control and BMP operations and maintenance plan that describes how the permanent (e.g., post-construction) stormwater controls and BMPs will be properly operated and maintained.
- B. The following items shall be included in the stormwater control and BMP operations and maintenance plan:
1. Map(s) of the project area, in a form that meets the requirements for recording at the offices of the Recorder of Deeds of [*Berks or Montgomery*] County, shall be submitted on \_\_\_\_\_-inch x \_\_\_\_\_-inch sheets. The contents of the maps(s) shall include, but not be limited to:
    - a. Clear identification of the location and nature of permanent stormwater controls and BMPs,
    - b. The location of the project site relative to highways, municipal boundaries, or other identifiable landmarks,
    - c. Existing and final contours at intervals of two (2) feet, or others as appropriate,
    - d. Existing streams, lakes, ponds, or other bodies of water within the project site area,

- e. Other physical features including flood hazard boundaries, sinkholes, streams, existing drainage courses, and areas of natural vegetation to be preserved,
  - f. The locations of all existing and proposed utilities, sanitary sewers, and water lines within fifty (50) feet of property lines of the project site,
  - g. Proposed final changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added,
  - h. Proposed final structures, roads, paved areas, and buildings, and
  - i. A 15-foot wide access easement around all stormwater controls and BMPs that would provide ingress to and egress from a public right-of way.
2. A description of how each permanent stormwater control and BMP will be operated and maintained, and the identity and contact information associated with the person(s) responsible for operations and maintenance,
  3. The name of the project site, the name and address of the owner of the property, and the name of the individual or firm preparing the plan, and
  4. A statement, signed by the landowner, acknowledging that the stormwater controls and BMPs are fixtures that can be altered or removed only after approval by Douglass Township.

**Section 402. Responsibilities for Operations and Maintenance of BMPs**

- A. The BMP Operations and Maintenance Plan (“Plan”) for the project site shall establish responsibilities for the continuing operation and maintenance of all permanent stormwater BMPs as follows:
  1. If a Plan includes structures or lots which are to be separately owned and in which streets, sewers and other public improvements are to be dedicated to the Municipality, stormwater BMPs may also be dedicated to and maintained by the Municipality;
  2. If a Plan includes operations and maintenance by a single ownership, or if sewers and other public improvements are to be privately owned and maintained, then the operation and maintenance of stormwater BMPs shall be the responsibility of the owner or private management entity.
- B. The Municipality shall make the final determination on the continuing operations and maintenance responsibilities. The Municipality reserves the right to accept or reject the operations and maintenance responsibility for any or all of the stormwater BMPs.

### **Section 403. Municipality Review of BMP Operations and Maintenance Plan**

- A. The Municipality shall review the Plan for consistency with the purposes and requirements of this ordinance, and any permits issued by DEP.
- B. The Municipality shall notify the Applicant in writing whether the Plan is approved.
- C. The Municipality may require an "As-built Survey" of all stormwater BMPs, and an explanation of any discrepancies with the Operations and Maintenance Plan.

### **Section 404. Adherence to Approved BMP Operations and Maintenance Plan**

It shall be unlawful to alter or remove any permanent stormwater control and BMP required by an approved stormwater control and BMP operations and maintenance plan, or to allow the property to remain in a condition which does not conform to an approved stormwater control and BMP Operations and Maintenance Plan, unless an exception is granted in writing by the Municipality.

### **Section 405. Operations and Maintenance Agreement for Privately Owned Stormwater BMPs**

- A. The property owner or Applicant shall sign an Operations and Maintenance Agreement with Douglass Township covering all stormwater controls and BMPs that are to be privately owned. The maintenance agreement shall be transferred with transfer of ownership. The Agreement shall be substantially the same as the agreement in **Appendix B** of this Ordinance.
- B. Other items may be included in the agreement where determined necessary to guarantee the satisfactory operation and maintenance of all permanent stormwater controls and BMPs. The agreement shall be subject to the review and approval of Douglass Township.

### **Section 406. Stormwater Management Easements**

- A. Stormwater management easements are required for all areas used for off-site stormwater control.
- B. Stormwater management easements shall be provided by the Applicant or property owner if necessary for access for inspections and maintenance or the preservation of stormwater runoff conveyance, infiltration, and detention areas and other stormwater controls and BMPs by persons other than the property owner. The purpose of the easement shall be specified in any agreement under **Section §405**.



**Section 407. Recording of Approved BMP Operations and Maintenance Plan and Related Agreements**

- A. The owner of any land upon which permanent stormwater controls and BMPs will be placed, constructed, or implemented, as described in the stormwater control and BMP operations and maintenance plan, shall record the following documents in the Office of the Recorder of Deeds for Montgomery County, within fifteen (15) days of approval of the stormwater control and BMP operations and maintenance plan by Douglass Township:
  - 1. The operations and maintenance plan, or a summary thereof,
  - 2. Operations and maintenance agreements under **Section 405**, and
  - 3. Easements under **Section 406**, the Plan, or the Agreement.
- B. Douglass Township may suspend or revoke any approvals granted for the Project Site upon discovery of failure on the part of the owner to comply with this section.

**Section 408. Municipal Stormwater BMP Operation and Maintenance Fund**

- A. If stormwater BMPs are accepted by the Municipality for dedication, the Municipality may require persons installing stormwater BMPs to pay a specified amount to the Municipality to help defray costs of operations and maintenance activities. The amount of may be determined as follows:
  - 1. If the BMP is to be privately owned and maintained by the Municipality, the amount shall cover the estimated cost for operations and maintenance for ten (10) years, as determined by the municipality.
  - 2. The amount shall then be converted to present worth of the annual sales values.
  - 3. If the BMP is not to be owned and maintained by the Municipality, the amount shall cover the estimated costs for inspection, said amount being converted to present worth of ten (10) years as determined by the Municipality.
- C. If a BMP is proposed that also serves as a recreational facility (e.g., ball field or lake), Douglass Township may adjust the amount due accordingly.

**ARTICLE V – INSPECTIONS AND RIGHT OF ENTRY**

**Section 501. Inspections**

- A. The Municipality or its designee may inspect all phases of the construction, operations, maintenance and any other implementation of stormwater BMPs.
- B. During any stage of the Regulated Earth Disturbance Activity, if the Municipality or its designee determines that any BMPs is not being implemented in accordance with this Ordinance, the Municipality may suspend or revoke any existing permits or other approvals until the deficiencies are corrected.

**Section 502. Right-of-Entry**

- A. Upon presentation of proper credentials, duly authorized representatives of Douglass Township may enter at reasonable times upon any property within Douglass Township to inspect the implementation, condition, or operation and maintenance of the stormwater controls or BMPs in regard to any aspect governed by this Ordinance.
- B. BMP owners and operators shall allow persons working on behalf of Douglass Township ready access to all parts of the premises for the purposes of determining compliance with this Ordinance.
- C. Persons working on behalf of Douglass Township shall have the right to temporarily locate on any stormwater control or BMP in Douglass Township such devices as are necessary to conduct monitoring and/or sampling of the discharges from such stormwater control or BMP.
- D. Unreasonable delays in allowing Douglass Township access to a stormwater control or BMP is a violation of this Article.

**ARTICLE VI – FEES AND EXPENSES**

**Section 601 General.**

The Municipality may charge a reasonable fee for review of BMP Operations and Maintenance Plans to defray review costs incurred by the Municipality. The Applicant shall pay all such fees.

**Section 602. Expenses Covered by Fees**

The fees required by this Ordinance shall at a minimum cover:

- A. Administrative costs.
- B. The review of the plan by the municipal Engineer.
- C. The site inspections including, but not limited to, pre-construction meetings, inspections during construction of stormwater BMPs, and final inspection upon completion of the stormwater BMPs.
- D. All legal fees for review of the Plan Agreement and/or easement as well as for any legal services rendered with respect to a Plan, the review of the same, including interpretation enforcement or legal services and any related legal costs concerning the imposition, execution, and enforcement of the Plan, Agreement or any easements arising therefrom.
- E. Any additional work required to enforce any permit provisions regulated by this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

## ARTICLE VIII – PROHIBITIONS

### Section 801. Prohibited Discharges

Note: The following language taken from DEP’s NPDES program and model NPDES ordinance is required to be incorporated into this Ordinance.

- A. No person in the Municipality shall allow, or cause to allow, stormwater discharges into the Municipality’s separate storm sewer system which are not composed entirely of stormwater, except (1) as provided in subsection B below, and (2) discharges allowed under a state or federal permit.
- B. Discharges that may be allowed based on a finding by the Municipality that the discharge(s) do not significantly contribute to pollution to surface waters of the Commonwealth, are:
  - 1. Discharges from fire fighting activities
  - 2. Potable water sources including dechlorinated water line and fire hydrant flushings
  - 3. Irrigation drainage
  - 4. Routine external building washdown (which does not use detergents or other compounds)
  - 5. Air conditioning condensate
  - 6. Water from individual residential car washing
  - 7. Spring water from crawl space pumps
  - 8. Uncontaminated water from foundation or from footing drains
  - 9. Flows from riparian habitats and wetlands
  - 10. Lawn watering
  - 11. Pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used
  - 12. Dechlorinated swimming pool discharges
  - 13. Uncontaminated groundwater
- C. In the event that the Municipality determines that any of the discharges identified in **Subsection B** significantly contribute to pollution of waters of the Commonwealth, or is so notified by DEP, the Municipality will notify the responsible person to cease the discharge.
- D. Upon notice provided by the Municipality under **Subsection C**, the discharger will have a reasonable time, as determined by the Municipality, to cease the discharge consistent with the degree of pollution caused by the discharge.
- E. Nothing in this section shall affect a discharger’s responsibilities under state law.

**Section 702. Prohibited Connections**

- A. The following connections are prohibited, except as provided in Section 701.B above:
  - 1. Any drain or conveyance, whether on the surface or subsurface, which allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the separate storm sewer system and any connections to the storm drain system from indoor drains and sinks; and
  - 2. Any drain or conveyance connected from a commercial or industrial land use to the separate storm sewer system that has not been documented in plans, maps, or equivalent records and approved by the Municipality.

**Section 703. Roof Drains**

- A. Roof drains shall not be connected to streets, sanitary or storm sewers, or roadside ditches in order to promote overland flow and infiltration/percolation of stormwater where advantageous to do so.
- B. When it is more advantageous to connect directly to streets or storm sewers, connections of roof drains to streets or roadside ditches may be permitted on a case by case basis as determined by the Municipality.
- C. Roof drains shall discharge to infiltration areas or vegetative BMPs to the maximum extent practicable.

**Section 704. Alteration of BMPs**

- A. No person shall modify, remove, fill, landscape, or alter any existing stormwater control or BMP unless it is part of an approved maintenance program without the written approval of the Municipality.
- B. No person shall place any structure, fill, landscaping, or vegetation into a stormwater control or BMP or within a drainage easement that would limit or alter the functioning of the stormwater control or BMP without the written approval of the Municipality.

**ARTICLE VIII – ENFORCEMENT AND PENALTIES**

**Section 801. Public Nuisance**

- A. The violation of any provision of this Ordinance is hereby deemed a public nuisance.
- B. Each day that a violation continues shall constitute a separate violation.

**Section 802. Enforcement Generally**

- A. Whenever Douglass Township finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, Douglass Township may order compliance by written notice to the responsible person. Such notice may, without limitation, require the following remedies:
  - 1. Performance of monitoring, analyses, and reporting;

2. Elimination of prohibited connections or discharges;
  3. Cessation of any violating discharges, practices, or operations;
  4. Abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
  5. Payment of a fine to cover administrative and remediation costs;
  6. Implementation of stormwater controls and BMPs; and
  7. Operation and maintenance of stormwater controls and BMPs.
- B. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violations(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline, the work will be done by Douglass Township or designee, and the expense thereof shall be charged to the violator.
- C. Failure to comply within the time specified shall also subject such person to the penalty provisions of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent Douglass Township from pursuing any and all other remedies available in law or equity.

**Section 803. Suspension and Revocation of Permits and Approvals**

- A. Any building, land development, or other permit or approval issued by Douglass Township may be suspended or revoked by Douglass Township for:
1. Noncompliance with or failure to implement any provision of the permit;
  2. A violation of any provision of this Ordinance; or
  3. The creation of any condition or the commission of any act during construction or development which constitutes or creates a hazard or nuisance, pollution, or which endangers the life, health, or property of others.
- B. A suspended permit or approval shall be reinstated by Douglass Township when:
1. The municipal Engineer or designee has inspected and approved the corrections to the stormwater controls and BMPs or the elimination of the hazard or nuisance, and/or
  2. Douglass Township is satisfied that the violation of the Ordinance, law, or rule and regulation has been corrected.
- C. A permit or approval that has been revoked by Douglass Township cannot be reinstated. The Applicant may apply for a new permit under the procedures outlined in this Ordinance.

**Section 804. Penalties**

- A. Any person violating the provisions of this ordinance shall be guilty of a summary offense, and upon conviction shall be subject to a fine of not more than \$ 1,000 for each

violation, recoverable with costs. Each day that the violation continues shall constitute a separate offense and the applicable fines are cumulative.

- B. In addition, Douglass Township, through its Solicitor, may institute injunctive, mandamus, or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus, or other appropriate forms of remedy or relief.

**Section 805. Appeals**

- A. Any person aggrieved by any action of the Municipality or its designee, relevant the provisions of this ordinance, may appeal to the relevant judicial or administrative body according to law, within the time period allowed.

**ENACTED and ORDAINED** at a regular meeting of the Board of Supervisors  
on the 17th of  
February, 20 04.

This Ordinance shall take effect immediately.

**LOW IMPACT DEVELOPMENT (LID) PRACTICES**

**LOW IMPACT DEVELOPMENT (LID) PRACTICES**

**ALTERNATIVE APPROACH FOR  
MANAGING STORMWATER RUNOFF**

Natural hydrologic conditions can be altered radically by poorly planned development practices such as introducing unnecessary impervious surfaces, destroying existing drainage swales, constructing unnecessary storm sewers, and changing local topography. A traditional drainage approach of development has been to remove runoff from a site as quickly as possible and capture it in a detention basin. This approach leads ultimately to the degradation of water quality as well as expenditure of additional resources for detaining and managing concentrated runoff at some downstream location.

The recommended alternative approach is to promote practices that will minimize proposed conditions runoff rates and volumes, which will minimize needs for artificial conveyance and storage facilities. To simulate pre-development hydrologic conditions, infiltration is often necessary to offset the loss of infiltration by creation of impervious surfaces. The ability of the ground to infiltrate depends upon the soil types and its conditions.

Preserving natural hydrologic conditions requires careful alternative site design considerations. Site design practices include preserving natural drainage features, minimizing impervious surface area, reducing the hydraulic connectivity of impervious surfaces, and protecting natural depression storage. A well-designed site will contain a mix of all of those features. The following describes various techniques to achieve the alternative approach:

- **Preserving Natural Drainage Features.** Protecting natural drainage features, particularly vegetated drainage swales and channels, is desirable because of their ability to infiltrate and attenuate flows and to filter pollutants. However, this objective is often not accomplished in land development. In fact, commonly held drainage philosophy encourages just the opposite pattern -- streets and adjacent storm sewers are typically located in the natural headwater valleys and swales, thereby replacing natural drainage functions with a completely impervious system. As a result, runoff and pollutants generated from impervious surfaces flow directly into storm sewers with no opportunity for attenuation, infiltration, or filtration. Developments designed to fit site topography also minimize the amount of grading on site.

- **Protecting Natural Depression Storage Areas.** Depressional storage areas either have no surface outlet or drain very slowly following a storm event. They can be commonly seen as ponded areas in farm fields during the wet season or after large runoff events. Traditional development practices eliminate these depressions by filling or draining, thereby obliterating their ability to reduce surface runoff volumes and trap pollutants. The volume and release rate characteristics of depressions should be protected in the design of the development site. The depressions can be protected by simply avoiding the depression or by incorporating its storage as additional capacity in required detention facilities.
- **Avoiding Introduction of Impervious Areas.** Careful site planning should consider reducing impervious coverage to the maximum extent possible. Building footprints, sidewalks, driveways, and other features producing impervious surfaces should be evaluated to minimize impacts on runoff.
- **Reducing the Hydraulic Connectivity of Impervious Surfaces.** Impervious surfaces are significantly less of a problem if they are not directly connected to an impervious conveyance system (such as a storm sewer). Two basic ways to reduce hydraulic connectivity are routing of roof runoff over lawns and reducing the use of storm sewers. Site grading should promote increasing travel time of stormwater runoff and should help reduce concentration of runoff to a single point in the development.
- **Routing Roof Runoff Over Lawns.** Roof runoff can be easily routed over lawns in most site designs. The practice discourages direct connection of downspouts to storm sewers or parking lots. The practice also discourages sloping driveways and parking lots to the street. By routing roof drains and crowning the driveway to run off to the lawn, the lawn is essentially used as a filter strip.
- **Reducing the Use of Storm Sewers.** By reducing use of storm sewers for draining streets, parking lots, and back yards, the potential for accelerating runoff from the development can be greatly reduced. The practice requires greater use of swales and may not be practical for some development sites, especially if there are concerns for areas that do not drain in a “reasonable” time. The practice requires educating local citizens and public works officials who expect runoff to disappear shortly after a rainfall event.
- **Reducing Street Widths.** Street widths can be reduced by either eliminating on-street parking or by reducing roadway widths. Municipal planners and traffic designers should encourage narrower neighborhood streets that ultimately could lower maintenance.
- **Limiting Sidewalks to One Side of the Street.** A sidewalk on one side of the street may suffice in low-traffic neighborhoods. The lost sidewalk could be replaced with bicycle/recreational trails that follow back-of-lot lines. Where appropriate, backyard trails should be constructed using pervious materials.
- **Using Permeable Paving Materials.** These materials include permeable interlocking concrete paving blocks or porous bituminous concrete. Such materials should be considered as alternatives to conventional pavement surfaces, especially for low use surfaces such as driveways, overflow parking lots, and emergency access roads.
- **Reducing Building Setbacks.** Reducing building setbacks reduces impervious cover associated with driveway and entry walks and is most readily accomplished along low traffic streets where traffic noise is not a problem.



- **Constructing Cluster Developments.** Cluster developments can also reduce the amount of impervious area for a given number of lots. The biggest savings occurs with street length, which also will reduce costs of the development. Cluster development groups the construction activity in less-sensitive areas without substantially affecting the gross density of development.

In summary, a careful consideration of the existing topography and implementation of a combination of the above mentioned techniques may avoid construction of costly stormwater control measures. Benefits include reduced potential for downstream flooding and water quality degradation of receiving streams/water bodies, enhancement of aesthetics, and reduction of development costs. Other benefits include more stable baseflows in receiving streams, improved groundwater recharge, reduced flood flows, reduced pollutant loads, and reduced costs for conveyance and storage.

ORDINANCE APPENDIX B

**STORMWATER CONTROLS AND BEST MANAGEMENT PRACTICES OPERATIONS AND MAINTENANCE AGREEMENT**

**STORMWATER CONTROLS AND BEST MANAGEMENT PRACTICES OPERATIONS AND MAINTENANCE AGREEMENT**

**THIS AGREEMENT**, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 200\_\_, by and between \_\_\_\_\_, (hereinafter the "Landowner"), and \_\_\_\_\_, \_\_\_\_\_ County, Pennsylvania, (hereinafter "Municipality");

**WITNESSETH**

**WHEREAS**, the Landowner is the owner of certain real property as recorded by deed in the land records of \_\_\_\_\_ County, Pennsylvania, Deed Book \_\_\_\_\_ at Page \_\_\_\_\_, (hereinafter "Property").

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

**WHEREAS**, the Stormwater Controls and BMP Operations and Maintenance Plan approved by Douglass Township (hereinafter referred to as the "Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, provides for management

of stormwater within the confines of the Property through the use of Best Management Practices (BMPs); and

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

**WHEREAS**, for the purposes of this agreement, the following definitions shall apply:

**BMP** – “Best Management Practice”-activities, facilities, designs, measures, or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge, and to otherwise meet the purposes of the municipal Stormwater Management Ordinance, including but not limited to infiltration trenches, seepage pits, filter strips, bioretention, wet ponds, permeable paving, rain gardens, grassed swales, forested buffers, sand filters, and detention basins.

- **Infiltration Trench** – A BMP surface structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,
- **Seepage Pit** – An underground BMP structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,
- **Rain Garden** – A BMP overlain with appropriate mulch and suitable vegetation designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or underground aquifer, and

**WHEREAS**, Douglass Township requires, through the implementation of the Plan, that stormwater management BMPs as required by said Plan and the municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, his successors, and assigns.

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

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specifications identified in the Plan.
2. The Landowner shall operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to Douglass Township and in accordance with the specific maintenance requirements noted on the Plan.
3. The Landowner hereby grants permission to Douglass Township, its authorized agents, and employees to enter upon the property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. Whenever possible, Douglass Township shall notify the Landowner prior to entering the property.
4. In the event that the Landowner fails to operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to Douglass Township, Douglass Township or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). This provision shall not be construed to allow Douglass Township to

erect any permanent structure on the land of the Landowner. It is expressly understood and agreed that Douglass Township is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on Douglass Township.

5. In the event that Douglass Township, pursuant to this Agreement, performs work of any nature or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse Douglass Township for all expenses (direct and indirect) incurred within ten (10) days of receipt of an invoice from Douglass Township.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the on-site BMP(s) by the Landowner; provided, however, that this Agreement shall not be deemed to create or effect any additional liability on any party for damage alleged to result from or be caused by stormwater runoff.
7. The Landowner, its executors, administrators, assigns, and other successors in interest shall release Douglass Township's employees and designated representatives from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Municipality. In the event that a claim is asserted against Douglass Township, its designated representatives, or employees, Douglass Township shall promptly notify the Landowner, and the Landowner shall defend, at his own expense, any suit based on the claim. If any judgment or claims against Douglass Township's employees or designated representatives shall be allowed, the Landowner shall pay all costs and expenses regarding said judgment or claim.
8. Douglass Township shall inspect the BMP(s) at a minimum of once every three (3) years to ensure their continued functioning.

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