

ARTICLE VI

DESIGN STANDARDS

SECTION 601 **General.** The standards and requirements contained in this Article shall apply as minimum design standards for subdivisions and land developments in the Township.

601.01 **Compliance with Municipal Ordinances Required.** All plans shall be designed in compliance with the Township Zoning Ordinance, all other applicable Township ordinances and requirements and all other local, state and federal regulations as they may apply to such plans.

SECTION 602 **Streets, Access Drives and Driveways.**

602.01 **General Arrangement.** The following criteria shall be considered in the design of streets in all subdivision and land development plans:

- A. The arrangement of streets shall conform to applicable municipal comprehensive plans, official maps, and Township and state street and highway plans as have been duly adopted.
- B. For streets not shown on a comprehensive plan, official map or adopted highway plan, the arrangement shall provide for the appropriate extension of existing streets and shall conform as closely as possible to the original topography.
- C. Residential streets other than arterials, collectors and marginal access streets shall be arranged so as to discourage excessive speeds.
- D. Streets shall be designed with drainage grates that are safe for crossing by bicycles or horse-drawn vehicles.
- E. Adequate vehicular and pedestrian access shall be provided to all lots.
- F. Curvilinear streets and cul-de-sacs should be utilized only where their use will be consistent with adjoining development patterns, topography, and natural features of the site. Cul-de-sacs shall not be used where it is possible to provide loop streets that provide better access for emergency vehicles, fewer restrictions for snow removal and improved pedestrian access. Curvilinear streets shall not be used immediately adjacent to an existing grid street system without providing a transition that continues and protects the

existing grid pattern. New street systems platted adjacent to an existing village shall not be merely looped back on local access streets within the village, but shall connect with, or be designed to connect with in the future, streets of a higher class. Consideration shall be given to the dispersal of traffic from commercial and employment centers and to the ultimate functioning of the street system.

- G. Streets shall be laid out to provide convenient and safe access to all lots. Where appropriate, the Board of Supervisors may require additional cartway improvements and right-of-way width along existing street frontages to accommodate the anticipated traffic increases and to facilitate vehicular turning movements to and from individual lots.
- H. Where a development abuts an existing or proposed arterial street, the Board of Supervisors may require the use of marginal access streets, reverse frontage lots or other such treatment that will provide protection for abutting properties, reduce the number of intersections with the arterial street, and separate the local and through traffic.

602.02 Street Hierarchy.

- A. Streets shall be classified in a street hierarchy system with design tailored to function, subject to the approval of the Board of Supervisors.
- B. Each street shall be classified and designed to the standards for the appropriate street classification for its entire length.
- C. Private Streets. Private streets are prohibited unless such streets meet the design standards of these regulations for local access streets. All subdivision streets shall be dedicated to the public unless design objectives of the development warrant private ownership. Approval of a subdivision involving a private street shall be solely at the discretion of the Board of Supervisors. Applications which propose a private street shall be accompanied by an agreement which shall be recorded with the Lancaster County Recorder of Deeds as part of the final plan. This agreement shall establish the conditions under which the street will be constructed and maintained, as well as conditions controlling an offer of dedication, and shall stipulate:

- (1) That the street shall be constructed and maintained to conform to the specifications of this Ordinance.
- (2) That the landowners of the abutting lots will include with any future offer for dedication sufficient monies, as estimated by the Township Engineer, to restore the street to conformance with Township standards.
- (3) That an offer for dedication of the street shall be made only for the street as a whole.
- (4) The method of assessing maintenance and repair cost.
- (5) That an agreement by the landowners of fifty-one percent (51%) of the front footage thereon shall be binding on the landowners of the remaining lots.

D. Arterial Street Design. The design standards for arterial streets shall be as specified by the Pennsylvania Department of Transportation for state highways, and as specified by Township standards for Township streets classified as arterial streets under the Federal Aid System.

602.03 Determination of Required Right-Of-Way and Cartway Width for Local and Collector Streets.

A. Right-of-way, cartway and shoulder widths for each local and collector street shall be as follows:

TABLE I

<u>Street Classification</u>	<u>Minimum Required Width</u>		
	<u>Right-of-Way</u>	<u>Cartway</u>	<u>Shoulder*</u>
Collector	60'	27'	6'
Local Access			
with parking	50'	27'	4'
without parking	50'	20'	4'
Alley	20'	10'	0'

* Where required By Section 602.04.

B. All plans shall be designed to provide for the entire required right-of-way and cartway. The right-of-way shall be measured from street line to street line and shall be sufficiently wide to

contain the cartway, curbs, shoulders, sidewalks, graded areas, drainage swales, utilities and shade trees.

- C. The right-of-way width of a new street that is a continuation of an existing street shall in no case be continued at a width less than the existing street. Where the right-of-way width of the new street is greater than the existing street, a transition area shall be provided, the design of which is subject to approval by the Board of Supervisors.
- D. The right-of-way shall reflect future development as indicated by the comprehensive plan or official map, if any.

602.04 Shoulders.

- A. The construction of shoulders and drainage swales shall be provided where curbs are not required.
- B. Shoulder requirements shall comply with the requirements set forth in Table I of Section 602.03. Where non-motorized vehicle use is prevalent, the Board of Supervisors may require additional shoulder width to provide for the safe use of such non-motorized vehicles..

602.05 Curbs and Drainage Swales.

- A. Curbing may be required by the Board of Supervisors for:
 - (1) storm water management;
 - (2) street stabilization;
 - (3) delineation of parking areas;
 - (4) ten (10) feet on each side of drainage inlets; and
 - (5) intersections, corners and tight radii.
- B. Curbs shall be constructed according to the specifications set forth in Appendix No. 17.
- C. Curbing shall be designed to provide a ramp for bicycles and wheel chairs at each intersection, at the principal entrances to buildings which front on parking lots, and at all crosswalks. All ramps shall comply with applicable state and federal regulations pertaining to handicapped access.
- D. Where curbing would typically be required, the Board of Supervisors may waive such installation of curbs when:

- (1) shoulders are required;
- (2) soil or topographic conditions make the use of shoulders and drainage swales preferable; and
- (3) it is in the best interest of the Township to preserve its rural character by using shoulders and drainage swales instead of curbs.

E. Where curbing is not required, shoulders and drainage swales shall be provided.

602.06 Sidewalks.

- A. Sidewalks and associated graded areas within existing and proposed street rights-of-way shall be required by the Board of Supervisors when the subject tract is close to pedestrian generators such as schools, to continue a walk on an existing street, to link areas, or as indicated in the comprehensive plan.
- B. Sidewalks shall be placed parallel to the street within the right-of-way unless a waiver has been granted to preserve topographical or natural features, or to provide visual interest, or unless the applicant shows that an alternative pedestrian system provides safe and convenient circulation.
- C. Within land developments, sidewalks shall be located to provide pedestrian access between uses and parking areas, other uses within the lot and with adjacent streets.
- D. Pedestrian way easements ten (10) feet wide may be required by the Board of Supervisors through the center of blocks more than six hundred (600) feet long to provide circulation or access to schools, playgrounds, shopping or other community facilities.
- E. Sidewalk width shall be four (4) feet; wider widths may be necessary near pedestrian generators and employment centers. Where sidewalks abut the curb and cars overhang the sidewalk, widths shall be six (6) feet.
- F. Sidewalks and graded areas shall be constructed according to the specifications set forth in Appendix No. 18.

602.07 Vertical Alignments. Vertical street alignments shall be measured along the street centerline. The minimum grade of all streets shall be one

percent (1%) and the maximum grade of all streets shall be ten percent (10%).

- A. Vertical curves shall be used in changes in grade exceeding one percent (1%). The minimum lengths (in feet) of vertical curves shall be fifteen (15) times the algebraic difference in grade. For example, if a three percent (3%) upgrade is followed by a four percent (4%) downgrade, the algebraic difference in grade is 7 [$+3-(-4)=7$]; the minimum length of the vertical curve would then be 105 feet [$15 \times 7 = 105$].
- B. Where the approaching grade exceeds seven percent (7%) on any or all streets at a four-way street intersection, or the terminating street at a three-way intersection, a leveling area shall be provided on the streets with such excessive grade. Such leveling areas shall have a maximum grade of four percent (4%) for a minimum length of seventy-five (75) feet measured from the intersection of the centerlines.
- C. The grade within the diameter of a turnaround at the terminus of a permanent cul-de-sac shall be five percent (5%).

602.08 Horizontal Alignments. Horizontal street alignments shall be measured along the street centerline. Horizontal curves shall be used at all angle changes in excess of two (2) degrees. Single long radius curves shall be used rather than a series of curves with varying radii or a series of short curves separated by short tangent segments. The minimum horizontal curve radius for streets shall be one hundred and fifty (150) feet.

- A. **Perimeter Streets.** Plans with street locations along the perimeter of the subject tract shall be required to show setback lines and clear sight triangles within the adjacent lots. Permission to place such setback lines and clear sight triangles within the adjacent lots shall be obtained from the adjacent landowners.
- B. **Cartway Alignment.** The centerline of the street cartway shall correspond with the centerline of the street right-of-way.

602.09 Street Intersections.

- A. Multiple intersections involving the junction of more than two streets are prohibited.
- B. The distance between the centerline of streets intersecting at grade with a local access street shall be no less than one hundred and

fifty (150) feet measured along the centerline of the street being intersected.

- C. The distance between the centerline of streets intersecting at grade with a collector street shall be no less than three hundred (300) feet measured along the centerline of the street being intersected.
- D. The distance between the centerline of streets intersecting at grade with an arterial street shall be no less than six hundred (600) feet measured along the centerline of the street being intersected.
- E. Right angle intersections shall be used whenever possible. No street shall intersect another at an angle of less than seventy-five (75) degrees.
- F. The cartway edge at street intersections shall be rounded by a tangential arc with a minimum radius of twenty (20) feet for local streets and thirty (30) feet for intersections involving arterial and collector streets. The street right-of-way radii at intersections shall be substantially concentric with the edge of the cartway.
- G. Where appropriate, the Board of Supervisors may require additional traffic lanes to facilitate safe vehicular turning movements at existing or proposed street intersections within or bordering subdivision or land development plans.
- H. Clearly marked crosswalks shall be provided at all intersections when sidewalks or pedestrian easements are provided in a development. Crosswalks may also be required by the Board of Supervisors at other locations to promote the convenience and safety of pedestrian traffic. The design of crosswalks and the materials used shall be consistent with the standards of the Pennsylvania Department of Transportation.

602.10 Sight Distance at Street Intersections.

- A. Proper sight distance shall be provided at all new street and all new access drive intersections in accordance with the latest edition of the Pennsylvania Department of Transportation Design Manual - Part 2, Highway Design (Publication 13), Section 2.18.F. Sufficient design and plan information shall be submitted with the plan application proving that this minimum standard will be achieved. Such design information shall be sealed by a professional registered in Pennsylvania to perform such design work.

- B. At all street intersections where stop signs or other stop control devices are not proposed, clear sight triangles shall be required and shall include the area on each street corner that is formed by a triangle where the two legs of the triangle extend one hundred (100) feet from the centerline intersection of the two intersecting streets along the centerlines of said streets. The planting of trees or other plantings or the location of structures exceeding thirty (30) inches in height that would obstruct the clear sight across the area of the clear sight triangle shall be prohibited; and a public right-of-entry shall be reserved for the purpose of removing any object, material or otherwise, that obstructs the clear sight.

602.11 Lot Access.

- A. The Board of Supervisors may disapprove any point of ingress or egress to any lot or development from any street when the proposed ingress or egress would create unsafe conditions, reduce the capacity of the adjoining street, result in substandard circulation and impaired vehicle movement, or be inconsistent with the Comprehensive Plan.
- B. The Board of Supervisors may require the applicant to provide ingress and egress to a particular lot through the remainder of the subject tract or other properties over which he has control.
- C. In approving ingress or egress from any state highway, the Board of Supervisors can only approve those access points that are not in conflict with safety standards of the Pennsylvania Department of Transportation. A Highway Occupancy Permit is required for each access point onto a state highway.
- D. The receipt of a Highway Occupancy Permit does not assume direct approval of the Board of Supervisors. The Board of Supervisors may require the applicant to reapply for such a permit if the location of the access approved by said permit is in conflict with any provision of this Ordinance or if the Board of Supervisors feels the location of the access will hinder the safe and efficient movement on any state highway or the proper development of the subject tract. In the event that, after such reapplication, PennDot refuses to modify the Highway Occupancy Permit to conform with the provisions of this Ordinance, the PennDot decision shall prevail.

602.12 Non-motorized Vehicle Lanes. All non-motorized vehicle lanes shall be designed according to one of the following standards:

- A. Separate bicycle paths shall be required if such paths have been specified as part of an adopted municipal comprehensive plan.
- B. Bicycle lanes, where required, shall be placed in the outside lane of a street, adjacent to the curb or shoulder. When on-street parking is permitted, the bicycle lane shall be between the parking lane and the outer lane of moving vehicles. The lanes shall be delineated with markings, preferably striping. Raised reflectors or curbs shall not be used.
- C. Separate carriage lanes shall be required if such lanes have been specified as part of an adopted municipal plan or recommended in an adopted transportation study.
- D. Carriage lanes, when required, shall be located adjacent to the outside travel lane of the cartway and may be contained within the shoulder. When on-street parking is permitted, the carriage lane shall be located between the outside travel lane and the parking lane.
- E. Movement within the non-motorized lanes shall flow in the same direction as the adjacent travel lane.
- F. Non-motorized vehicle lanes shall be constructed according to the specifications set forth in Appendix No. 19.

602.13 Street Provisions for Future Developments. Where appropriate, areas shall be reserved for future street usage in conjunction with the development of adjacent lots. Areas reserved for future street usage will not be required to be improved; however, these areas shall be reserved for street improvements to be provided by the developer of the adjacent lot.

Wherever there exists a dedicated or platted area reserved for future street usage along the boundary of the subject tract, the adjacent street shall be extended into the subject tract provided this use is not adverse to the man-made or natural features of the site.

602.14 Extension of Existing Streets. The extension of existing streets which are presently constructed with a cartway different from the standards of this Ordinance shall be provided with a transition area, the design of which is subject to approval by the Board of Supervisors.

602.15 Street Improvements. All street paving must conform to the following specifications:

- A. All new streets, other than those owned and maintained by the Pennsylvania Department of Transportation (PennDOT), shall be designed with one of the following cross-sectional specifications (all courses are compacted thicknesses):
 - (1) A nine (9) inch No. 4 stone subbase, a two and one-half (2-1/2) inch 2A stone base, a two (2) inch ID-2 binder course and a one and one-half (1-1/2) inch ID-2 wearing course, or:
 - (2) As an alternative to the above specification, the two (2) inch ID-2 binder course may be replaced with two (2) inches of BCBC.
- B. All streets to be owned and maintained by PennDOT shall be designed in accordance with PennDOT specifications.

602.16 Cul-de-Sac Streets.

- A. A cul-de-sac street will not be permitted when a through street is feasible. The feasibility of a through street will be based on the physical features of the subject tract, the potential for extension of the street to adjoining lots, restrictions imposed by other government regulations and the ability of the design to meet all other requirements of this Ordinance. When cul-de-sac streets are proposed, the application shall be accompanied by written analysis of the merits of the design and the reasons that a through street would not be feasible. Approval of cul-de-sac streets shall be at the sole discretion of the Board of Supervisors.
- B. Permanent cul-de-sac streets, when permitted, shall be designed to serve a maximum of 250 AADT for residential development and a maximum of 500 AADT for non-residential development.
- C. All cul-de-sac streets shall have a minimum length of two hundred and fifty (250) feet. Permanent cul-de-sac streets shall have a maximum length of six hundred (600) feet. Temporary cul-de-sac streets shall not exceed eight hundred (800) feet in length.
- D. The length of a cul-de-sac street shall be measured from the centerline intersection with the through street to the center point of the turnaround.

- E. Permanent cul-de-sacs shall have a paved circular turnaround with a minimum radius of fifty (50) feet. The right-of-way for the turnaround shall maintain the same distance between the cartway edge and the right-of-way line as maintained for the straight sections of the street.
- F. Temporary cul-de-sacs may have circular, "T" shaped or "hammerhead" shaped turnarounds. Turnarounds shall be constructed completely within the street right-of-way. Restoration of paved areas within the street right-of-way shall be the responsibility of the developer connecting to the temporary cul-de-sac.
- G. Any temporary cul-de-sac street designed for access to an adjoining lot or for authorized phased development and which is greater than one (1) lot deep shall be provided with a temporary all-weather turnaround within the subdivision or land development. The use of such turnaround shall be guaranteed to the public until such time as the street is extended.

602.17 Future Access Strips. Future access strips are street rights-of-way reserved for future street improvements. They shall be designed in conformance with the design requirements of a street, and the contiguous lots must contain proper setbacks and sight distance reservations.

602.18 Special Purpose Street. Off-street parking must be provided for all lots which abut a special purpose street, and the prohibition of on-street parking must be identified along the cartway.

602.19 Access Drives. Access drives shall be designed to meet the following requirements:

- A. Any lot which utilizes an access drive shall have frontage along a public or private street.
- B. The plan shall note that the access drive does not qualify for dedication to the Township and that the landowner assumes all responsibility for its maintenance.
- C. Access drives shall be designed for their intended function. All travel lanes shall be a minimum of ten (10) feet wide, however, sufficient design information must be submitted to indicate the number of travel lanes and width proposed have been designed to accommodate the anticipated traffic to and from the development.

In addition, vertical and horizontal alignments of such drives must be designed to allow for the safe and convenient circulation of traffic within the development. The Board of Supervisors may require additional cartway width or turning lanes if it is determined that the intended use and function of the access drive warrants such design to ensure safety and convenience.

- D. Parallel parking shall only be permitted along access drives when sufficient cartway width is proposed to accommodate both the travel lanes and parking stalls. Perpendicular parking which would require vehicles to back into travel lanes of an access drive is prohibited.
- E. Proper sight distance shall be provided at access drive intersections with existing streets according to the requirements of Section 602.10.
- F. The Board of Supervisors reserves the authority to disapprove the location of any access drive intersection with an existing or proposed street as stipulated in Section 602.11.
- G. Access drives shall be constructed and maintained with a paved surface of concrete or bituminous materials, or another approved dust-free surface..

602.20 Driveways. Proposed driveways shall be designed in accordance with the Township Zoning Ordinance.

602.21 Street Names. Continuations of existing streets shall be known by the same name. Names for new streets shall not duplicate or closely resemble names of existing streets. All new street names are subject to the approval of Lancaster County-Wide Communications. All street names shall conform, where applicable, to any Township for street names. Private streets shall be named in conformance with this section.

602.22 Signs.

- A. Design and placement of traffic signs shall follow the requirements specified in the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the U.S. Department of Transportation.
- B. At least two (2) street name signs shall be placed at each four-way street intersection and one at each "T" intersection. Signs shall be installed under light standards and free of visual obstruction. The

design of street name signs should be consistent, of a style appropriate to the Township, of a uniform size and color, and erected in accordance with Township standards.

Private streets shall be provided with street name signs in conformance with this section. The plan shall note that it is the responsibility of the developer to install street name signs for private streets.

- C. Parking regulation signs shall be placed along streets within the right-of-way in areas that restrict parking.
- D. Site information signs within all land developments shall follow a design theme related and complementary to other elements of the overall design of the development.

602.23 Utility and Shade Tree Areas.

- A. Utilities and shade trees shall generally be located within the street right-of-way on both sides of and parallel to the street. (An alternative placement for shade trees is outside the public right-of-way.)
- B. Utility and shade areas shall be planted with grass, ground cover, or treated with other suitable cover material.

602.24 Lighting.

- A. Lighting for vehicular and pedestrian safety shall be provided at street intersections, entryways to commercial land developments, in parking lots adjacent to public streets and along required pedestrian ways.
- B. Lighting shall be provided in accordance with an illumination plan designed by the Pennsylvania Power & Light Company or in conformance with the IES lighting standards. (See Appendix No. 16)
- C. Spacing of standards shall be equal to approximately four (4) times the height of the standard.
- D. The maximum height of standards shall not exceed the maximum building height permitted, or twenty-five (25) feet, whichever is less.

- E. The height and shielding of lighting standards shall provide proper lighting without hazard to drivers or nuisance to residents, and the design of lighting standards shall be of a type appropriate to the development and the Township.
- F. Spotlights, if used, shall be placed on standards pointing toward the buildings and positioned so as not to blind the residents, rather than on the buildings and directed outward which creates dark shadows adjacent to the buildings.

602.25 Underground Wiring.

- A. All electric, telephone, television, and other communication facilities, both main and service lines servicing new developments, shall be provided by underground wiring within easements or dedicated public rights-of-way, installed in accordance with the prevailing standards and practices of the utility or other companies providing such services.
- B. Lots which abut existing easements or public rights-of-way where overhead electric or telephone distribution supply lines and service connections have heretofore been installed may be supplied with electric and telephone service from those overhead lines, but the service connections from the overhead lines of the utilities shall be installed underground. In the case of existing overhead utilities, should a street widening, or an extension of service, or other such condition occur as a result of the subdivision and necessitate the replacement or relocation of such utilities, such replacement or relocation shall be underground.
- C. Where overhead lines are permitted as the exception, the placement and alignment of poles shall be designed to lessen the visual impact of overhead lines as follows: alignments and pole locations shall be carefully routed to avoid locations along horizons; clearing swaths through wooded areas shall be avoided by selective cutting and a staggered alignment; trees shall be planted in open areas and at key locations to minimize the view of the poles and the alignments; and alignments shall follow rear lot lines and other alignments.
- D. Subject to regulations and restrictions of the applicable utility company, year-round screening of any utility apparatus appearing above the surface of the ground, other than utility poles, shall be required.

SECTION 603 Parking Facilities

603.01 Vehicular Parking Facilities. All vehicular parking facilities and internal drives within parking areas shall be designed to allow for the safe and efficient movement of vehicles within a development and on the adjacent street in accordance with the Township Zoning Ordinance.

603.02 Bicycle Parking Facilities. Bicycle parking facilities for non-residential land uses shall be provided when required by the Board of Supervisors subject to the following regulations:

- A. Bicycle parking facilities shall be convenient to the uses for which they are provided.
- B. Bicycle parking facilities shall permit at least two (2) feet of free space between any bicycle attached to a security device and the edge of a curb or sidewalk. For areas where motor vehicles are permitted to park overhanging a curb or sidewalk, the distance shall be increased to four (4) feet. For streets having no curb or sidewalk, the minimum clearance shall be three (3) feet between any bicycle attached to a security device and the outside edge of the street shoulder.

SECTION 604 Blocks and Lots.

604.01 Configuration. The configuration of blocks and lots shall be based upon the minimum and maximum lot area requirements, the salient natural features, the existing improvements, the proposed improvements and the adjacent development pattern. Lot configurations should provide for flexibility in building locations while providing safe vehicular and pedestrian circulation. Lots with areas that are two (2) or more times the minimum requirements shall, wherever feasible, be designed with configurations which allow for additional subdivision.

604.02 Residential Blocks.

- A. All blocks in a residential subdivision shall have a minimum length of three hundred (300) feet and a maximum length of ten (10) times the minimum required lot width, not to exceed two thousand (2000) feet.
- B. Blocks along arterial streets shall not be less than eight hundred (800) feet in length.

- C. The design of blocks longer than eight hundred (800) feet shall give special consideration to the requirements of fire protection, pedestrian access and utility service. The Board of Supervisors may require easements as necessary for these purposes.

604.03 Nonresidential Blocks. Blocks in nonresidential areas may vary from the requirements of Section 604.02 when required by the nature of the use. Adequate provisions shall be made for off-street parking, loading areas and traffic circulation.

604.04 Specific Lot Configuration Requirements.

- A. In order to avoid jurisdictional problems, lot lines shall, wherever feasible, follow municipal boundaries rather than cross them. Where a lot is divided by a municipal boundary, the minimum standards of both municipalities shall apply.
- B. Generally, side lot lines shall be radial or perpendicular to street right-of-way lines. Exceptions may include cases where proposed lot lines follow existing lot lines, improvements or natural features.
- C. All lots shall front on a public street unless a private street is approved for access. Principal vehicular access to lots shall be provided from the frontage along the approved street.
- D. Lots resulting from a proposed subdivision that will be large enough to be further subdivided shall be configured to facilitate such future subdivision. Adequate street right-of-way shall be provided as necessary. The Board of Supervisors may require a sketch plan of such large lots that indicates the potential future subdivision generally in conformance with the design standards of this Ordinance.
- E. Subdivisions shall be designed to accommodate the current and future development of the subject tract, the development potential of adjacent lots, the development goals and policies of applicable comprehensive plans and applicable standards of the Township Zoning Ordinance. Flaglots shall not be created when lots can be designed that directly access an existing or proposed public or private street. Whenever possible, lots shall be designed with adequate access by providing the required lot width at the street right-of-way line. Flaglots shall not be created when such design would limit or restrict the development potential of the subject tract or would prevent a landowner from using the subject tract at the maximum lawful densities.

Notwithstanding the above, flaglots may, in limited situations, represent a viable design alternative. In such cases the Board of Supervisors may, at its sole discretion, approve the platting of flaglots when:

- (1) Flaglots are designed for infill situations in which a court is to be created by the placement of not more than two flagpoles side-by-side and where up to four (4) lots are oriented to a common private street easement. Such lots shall be served by public sewer and water, and the flaglot design shall maximize the permitted density; or
 - (2) Flaglots proposed to create lots for units of occupancy which are to be located to the rear of the subject tract where there is no potential for the construction of a public or private street to provide access to the proposed lot. In such cases, the applicant must demonstrate that there is no potential to construct a street due to a) severe topographic or other environmental constraints which limit the design of a street, or b) other factors inherent in the site which make the construction of a public or private street impractical. In such cases, evidence shall be submitted to the Board of Supervisors which documents the above circumstances and demonstrates that the platting of flaglots shall not restrict the development potential and pattern of development of the subject tract and adjacent lots, shall not result in unsafe driveway locations on public streets, and shall not restrict future development at the maximum lawful density; or
 - (3) Flaglots proposed on agriculturally zoned land so as to create building lots on the least agriculturally suitable portion of the subject tract. Evidence shall be presented which demonstrates why the area of the proposed flaglot is less productive or inappropriate for agricultural uses. The proposal shall identify how the proposed flaglot will be coordinated with any further development of the farming operation permitted by the applicable zoning regulations.
- F. No more than two contiguous flaglots shall be permitted.
- G. The flagpole portion of the flaglot shall maintain a minimum width of twenty-five (25) feet and shall not change direction more than once. The area of the flagpole shall not be counted as part of the

lot area used to show compliance with the minimum lot size requirements of the Township Zoning Ordinance.

- H. No portion of any flagpole shall be used for on-lot sewage disposal or other improvements other than access improvements.
- I. The Board of Supervisors may attach any reasonable conditions to the creation of flaglots as it finds necessary or desirable to provide for the orderly development of land and street systems.
- J. Double frontage lots are prohibited except where provided as reverse frontage lots. Reverse frontage lots are only permitted when a reduction of driveway intersections along a street with a high volume of vehicular movements is desired. Additionally, reverse frontage lots may be permitted when rear alleys are proposed to provide vehicular access to lots. All reverse frontage lots shall include an identification of the frontage for use as street access.
- K. All residential reverse frontage lots shall have within every rear yard that is adjacent to any street right-of-way, other than an alley, a planted screen within a buffer easement of at least ten (10) feet in depth running the entire width of the proposed lot across which there shall be no vehicular access.

SECTION 605

Easements. Easements for sanitary sewer facilities, storm water drainage facilities, public or private utilities or pedestrian access shall meet the following standards:

- 605.01** **Location of Easements.** To the fullest extent possible, easements shall be adjacent to lot lines.
- 605.02** **Easement Conflicts Prohibited.** Nothing shall be placed, planted, set or put within the area of an easement that would adversely affect the function of the easement or conflict with the easement agreement.
- 605.03** **Width of Pedestrian Easements.** Pedestrian easements shall have a minimum width of ten (10) feet.
- 605.04** **Width of Utility Easements.** Public utility easements shall have a minimum width of twenty (20) feet, and private utility easements shall have a minimum width of ten (10) feet. All utility companies are encouraged to use common easements.

605.05 Storm Water Drainage Easements Required. The applicant shall reserve easements where storm water management facilities are existing or proposed, whether located within or beyond the subject tract. Easements shall have a minimum width of twenty (20) feet and shall be adequately designed to provide area for the collection and discharge of water, the maintenance, repair and reconstruction of the drainage facilities, and the passage of machinery for such work. The easements shall clearly identify who has the right-of-access and responsibility of maintenance.

605.06 Variable Petroleum Easement Widths. Where any petroleum or petroleum product transmission line traverses a subdivision or land development, the applicant shall confer with the applicable transmission or distribution company to determine the minimum distance which shall be required between each structure and the centerline of such petroleum or petroleum product transmission line.

SECTION 606 Survey Monuments and Markers.

606.01 Concrete Monuments Required. Sufficient concrete monument locations must be shown on the final plan to define the exact location of all streets and to enable the re-establishment of all street lines. In general, they shall be set on the street line on one side of the street at the beginning and ending of all curves and at those points on the curve at the street intersections necessary to establish the actual intersection.

606.02 Monumentation of Streets. Permanent stone or concrete monuments shall be accurately placed along at least one side of each street at the beginning and end of all curves and at all angles.

As an alternative to permanent stone or concrete monuments for streets with concrete curbs, holes may be drilled in the curb along at least one side of each street at the beginning and end of all curves and at all angle points. In the event that any of these points are inaccessible, drilled holes in the curb, offset and referenced from lot corners may be substituted providing there is no more than three hundred feet between drilled hole locations.

606.03 Lot Line Markers. Markers shall be set at all points where lot lines intersect curves, at all angles in lot lines and at the intersection of all other lot lines.

606.04 Monument and Marker Specifications. Monuments shall be of concrete or stone, with a flat top having a minimum width or diameter of four (4) inches and a minimum length of thirty (30) inches. Concrete monuments shall be marked with a three-quarter (3/4) inch copper or brass dowel;

stone or precast monuments shall be marked on the top with an identifiable inscription and a drill hole. Markers shall consist of iron pipes or steel bars at least thirty (30) inches long and not less than three-quarters (3/4) of an inch in diameter.

Drill Hole Specifications. Holes shall be drilled in concrete curbs (with or without PK nails or discs) having a minimum diameter of one-quarter (1/4) inch. The depth of the holes shall be such that a PK nail or disc, if used, can be set in as close to the surface of the curb as possible. Minimum depth without the use of PK nail or disc shall be one-half (1/2) inch. In the absence of PK nails or discs, chisel or saw marks shall be used to facilitate and identify the drill hole locations.

606.05 Placement by Land Surveyor Required. All monuments, markers and drilled holes shall be placed by a land surveyor so that the scored marked point, or center of the drilled hole, shall coincide with the point of intersection of the lines being monumented or marked.

606.06 Monuments to be Shown on Final Plan. All existing and proposed monuments, lot line markers, property corners and drill holes shall be shown on the final plan. Those that are proposed shall be labeled as such. Drilled holes in curbing shall be referenced mathematically to a point on the street right-of-way line.

SECTION 607 Storm Water Management and Floodplain Controls.

If storm water management information provided in accordance with Sections 402 or 403 indicates that the existing storm water management system on the subject tract does not meet the requirements of this section, then the storm water management facilities must be designed to meet the requirements of this Ordinance.

When the proposed storm water management system will utilize or be integrated into an existing storm water collection or conveyance system, the existing facilities shall be improved to the standards of this Ordinance. The applicant shall determine the impacts of any proposed improvements of the existing system to downstream lots. If, in the opinion of the Board of Supervisors, the improvements will cause adverse impacts on downstream lots, the applicant shall mitigate such impacts.

607.01 Storm Water Management. All subdivision and land development applications, except single lot subdivisions where a principal building exists on the lot and no new construction is proposed, revised subdivision or land development plans, lot add-on plans, and farm-related businesses conducted within existing agricultural buildings, shall include storm water

management data in a form acceptable to the Board of Supervisors. The storm water management data shall identify all proposed storm water management facilities and supportive information required by this Ordinance. Storm water management data shall be prepared by a design professional qualified to perform such duties. Developers and consultants are urged, but not required, to discuss storm water management design approaches for specific projects with the Board of Supervisors prior to the submission of the preliminary or final plan.

607.02 General Design Data.

- A. In the interest of reducing the total area of impervious surface, preserving existing features which are critical to storm water management and reducing the concentration of storm water flow, the developer may consider the design flexibility provided by the waiver process.
- B. Maximum use shall be made of the existing on-lot natural and man-made storm water management facilities.
- C. Innovative storm water management and recharge facilities may be proposed (e.g., rooftop storage, drywells, cisterns, diversion structures, aeration of lawns, holding tanks, infiltration systems, stream channel storage, in line storage in storm sewers, and grading patterns), provided they are accompanied by detailed engineering plans and performance capabilities that are acceptable to the Board of Supervisors.

607.03 Design Standards.

- A. Storm water management facilities shall be provided so that the peak discharge of the calculated post development runoff from the subject tract to an adjacent lot does not exceed the peak discharge of the calculated pre development runoff.

Runoff calculations for the pre and post development comparison shall consider five (5) different storm frequencies: the two (2), ten (10), twenty-five (25), fifty (50) and one hundred (100) years storm events.

For pre development computations, all runoff coefficients for the subject tract shall be based on actual land use assuming summer or good land cover conditions. Off-site land use conditions used to determine storm flows for designing storm water management

facilities shall be based on existing land uses assuming winter or poor land cover conditions.

- B. The design of storm water management collection facilities that service drainage areas within the subject tract shall be based upon a twenty-five (25) year storm frequency event. Storm water management facilities that convey off-site storm water through the subject tract must be designed to convey a fifty (50) year event.
- C. All developments must also include design provisions that allow for the overland conveyance of the post Q100 year storm flows through the subject tract without damage to any private or public property.
- D. Runoff calculations for on-site storm water management facilities shall be based upon the following methods:
 - (1) Rational Method. This method is recommended and preferred for design of all collection, conveyance and retention facilities when drainage areas are less than one and one-half (1-1/2) square miles or where times of concentration are less than sixty (60) minutes.
 - (2) SCS TR-55 Graphical Method (1986, or latest revision). This method may be used in lieu of the Tabular Hydrography Method for sizing conveyance systems. It does not provide an adequate inflow hydrography for basin routing.
- E. Criteria and assumptions to be used in the determination of storm water runoff and design of management facilities are as follows:
 - (1) Runoff coefficients shall be based on the land use coefficients listed in Appendix No. 20 and No. 22.
 - (2) Times of concentration shall be based on the following design parameters:
 - (a) Overland flow: The maximum length for each reach of overland flow before concentrated swale or sheet flow develops is one hundred fifty (150) feet. The nomograph in Appendix No. 23 shall be used for determination of the times of concentration.

- (b) Concentrated flows: At points where overland flows concentrate in field depressions, swales, gutters, curbs or pipe collection systems, the time of concentration between these design points shall be based upon Manning's Equation or acceptable engineering design standards as determined by the Board of Supervisors.
- (3) If the Rational Method is used, the Rainfall Intensity-Duration-Frequency Chart shown in Appendix No. 21 shall be used to compute the rainfall intensities.
- (4) If the Soil-Cover-Complex Method is used, storm water runoff shall be based on the following twenty four (24) hour storm events:

TABLE II

Storm Event	Inches of Rainfall
2 years	3.36
10 years	5.23
25 years	6.24
50 years	7.20
100 years	8.40

Source: Pennsylvania Department of Transportation, Rainfall Intensity-Duration-Charts, developed by Penn State University, Department of Engineering, October 1986.

- (5) Use of other criteria, assumptions, references, calculation methods and computer modeling may be utilized provided detailed design information and programming with references are submitted and approved by the Board of Supervisors.
- F. The design plan and construction schedule shall incorporate measures to minimize soil erosion and sedimentation.
- G. Consideration shall be given to the relationship of the subject tract to the drainage pattern of the watershed.
- H. Storm water shall not be transferred from one watershed to another, unless:

- (1) the watersheds are sub-watersheds of a common watershed which join together within the subject tract, (2) the effect of the transfer does not alter the peak discharge onto adjacent lots, or (3) easements from the affected downstream landowners are provided.
- I. A concentrated discharge of storm water to an adjacent lot shall be within an existing watercourse or enclosed in an easement.
 - J. Retention basins and detention basins shall be designed to safely discharge the peak discharge of a post development one hundred (100) year frequency storm event through an emergency spillway in a manner which will not damage the integrity of the basin.
 - K. Retention basins and detention basins and water carrying facilities shall be stabilized in accordance with current engineering and Soil Conservation Service practices.
 - L. Retention basins and detention basins shall be designed and maintained to insure the design capacity after sedimentation has taken place.
 - M. Basins which are not designed to release all storm water shall be specifically identified as retention basins or permanent pond basins. All other basins shall have provisions for de-watering, particularly the bottom, and shall not create swampy or unmaintainable conditions. Low flow channels and tile fields may be used to de-water the bottom of the basin. Discharge structures shall be designed to eliminate the possibility of blockage during operation.
 - N. Retention basins and detention basins which are designed with earth fill dams shall incorporate the following minimum standards:
 - (1) The maximum water depth shall not exceed six (6) feet.
 - (2) The minimum top width of all dams shall be five (5) feet.
 - (3) The side slopes of earth fill dams shall not be less than three (3) horizontal to one (1) vertical on the downstream side of the embankment.
 - (4) Basins without restricted access shall have impoundment areas with side slopes no greater than five (5) horizontal to

one (1) vertical. Basins with steeper side slopes shall be protected by fencing that will discourage access.

- (5) A cutoff trench of impervious material shall be provided under all dams.
 - (6) All pipes and culverts through dams shall have properly spaced concrete cutoff collars or factory welded anti-seep collars.
 - (7) A minimum of one (1) foot of freeboard above the maximum design water surface elevation of the emergency spillway shall be provided.
 - (8) Minimum floor elevations for all structures that would be affected by a basin, other temporary impoundments, or open conveyance systems where ponding may occur, shall be two (2) feet above the Q100 year water surface. If basement or underground facilities are proposed, detailed citations addressing the effects of storm water ponding on the structure and flood-proofing design information shall be submitted for approval.
- O. The capacities of the pipes, gutters, inlets, culverts, outlet structures and swales shall consider all possible hydraulic conditions. The following minimum design standards have been established by the Board of Supervisors:
- (1) For grass swales and roadside drainage swales, two (2) design considerations shall be met:
 - (a) the first shall consider channel velocity and stability based upon a low degree of retardance ("n" of .03); and
 - (b) the second shall consider channel capacity based upon a high degree of retardance ("n" of .05).
 - (2) The "n" factors to be used for paved or rip-rap swales shall be based on accepted engineering design practices.
 - (3) The following chart shall be used to determine the "n" factors for corrugated metal pipe:

TABLE III

"n" Factors

Pipe Diameter (inches)	Helical		Annular	
	Capacity	Velocity	Capacity	Velocity
up to 18	.017	.014	.026	.024
21 through 30	.021	.017	.026	.021
larger than 30	.026	.019	.026	.019

- (4) The "n" factor for concrete or any other smooth pipe shall be .010 for velocity and .013 for capacity.
- (5) The velocity to be used in the design of any pipe storm water conveyance system shall be based on the maximum velocity obtainable. The capacity shall be based upon full flow conditions.
- (6) Inlets, culverts and basin discharge systems shall be designed for the worst case condition. Inlet capacity shall be based on design data provided by the manufacturers and accepted by the Board of Supervisors. If acceptable information is not available, inlets in non-ponding areas shall be designed for a maximum capacity of four (4) cubic feet per second (cfs). Where ponding occurs, inlet capacity shall be based on accepted engineering design practices. Culvert design shall consider either inlet/outlet control or a combination of hydraulic losses through the system, whichever is greater. Basin discharge systems shall be designed to the same standards as culverts. If it cannot be readily determined which hydraulic condition controls, the basin discharge rate shall be based on the highest possible discharge rating curve with the basin capacity sized to store the excessive storm water runoff based on the lowest possible discharge rating curve.
- P. Inlets shall be along the curb line. Inlets shall not be designed or installed for curbs along the radius of an intersection. Manholes and inlets, when proposed, shall not be spaced more than six hundred (600) feet apart. Additionally, manholes shall be placed at points of abrupt changes in the horizontal or vertical direction of storm sewers. Inlets may be substituted for manholes where they will serve a useful purpose.

- Q. Curb, gutter and roadside drainage swale depths shall comply with the following requirements:
- (1) If a proposed lot is to be graded so as to redirect post development flow into a drainage swale along an existing street where no curbs exist, or when an existing drainage swale is to be integrated into the proposed storm water conveyance system, a maximum depth of six (6) inches shall be permitted in the roadside drainage swale.
 - (2) All new streets without curbs shall be designed to maintain a maximum depth of flow in roadside drainage swales of three (3) inches. All new streets with curbs shall be designed to maintain a maximum depth of flow of three (3) inches along slant curbs, two (2) inches along rolled curbs, or one and one half (1-1/2) inches along vertical curbs. All driveway intersections shall be designed so that flows do not enter the lot from the adjacent street and no additional flows are diverted onto the adjacent street.
 - (3) Proposed access drive intersections with streets shall be designed to maintain a maximum depth of flow across the access drive of one and one-half (1-1/2) inches. All such access drive intersections shall be designed so that flows do not enter the lot from the adjacent street and no additional flows are diverted onto the adjacent street.
 - (4) The depth of flow across street intersections, including new street intersections with existing streets, shall be a maximum of one (1) inch.
- R. Curves in pipes or box culverts without an inlet or manhole are prohibited. Tee joints, elbows and wyes are also prohibited.
- S. Storm water management pipe collection and conveyance systems shall have a minimum diameter of fifteen (15) inches and shall be made of reinforced concrete pipe (class III), corrugated galvanized metal pipe, corrugated polyethylene pipe, or approved equivalent. Where installation conditions merit, structural calculations that address the actual design requirements will be required.
- T. Storm water management facilities not located within a public street right-of-way shall be centered within an easement.

- U. The maximum swale, gutter or curb velocity of storm water runoff shall be maintained at levels which result in a stable condition both during and after construction.

The following are considered characteristics of a stable condition:

- (1) It neither aggrades or degrades beyond tolerable limits.
- (2) The channel banks do not erode to the extent that the channel cross section is changed appreciably.
- (3) Sediment bars do not develop.
- (4) Erosion does not occur around culverts and bridges or elsewhere.
- (5) Gullies do not form or enlarge due to the entry of uncontrolled storm water runoff.

- V. Grass lined channels shall be considered stable if the calculated velocity does not exceed the allowable velocities shown below:

- (1) Three (3) feet per second where only sparse vegetation can be established and maintained because of shade or soil condition.
- (2) Four (4) feet per second where normal growing conditions exist and vegetation is to be established by seeding.
- (3) Five (5) feet per second where a dense, vigorous sod can be quickly established or where water can be temporarily diverted during establishment of vegetation. Netting and mulch or equivalent methods for establishing vegetation shall be used.
- (4) Six (6) feet per second where there exists a well established sod of good quality.

- W. Where swale bends occur, the allowable velocities listed above shall be divided by the following factors:

- (1) Swale bends 0 to 30 degrees: 1.50
- (2) Swale bends 30 to 60 degrees: 1.75
- (3) Swale bends 60 to 90 degrees: 2.00
- (4) Swale bends 90 degrees and over: 2.50

These calculated grass lined channel flows may be exceeded if the design professional can provide acceptable supportive design criteria as proof of erosion prevention.

Where the velocity of storm water runoff exceeds the allowable velocity, erosion protection must be provided. The method of erosion protection proposed must be supported by the appropriate design information and references.

- X. When final plan applications are submitted in sections, and if temporary facilities are required for construction of a section, such facilities shall be included in the submitted plans. In the event temporary measures cannot adequately handle the storm water runoff, the main outfall line shall be included as part of the construction of the proposed section.

- Y. The following principles shall be applied to the design plan and construction schedule to minimize soil erosion and sedimentation:
 - (1) Stripping of vegetation, grading or other soil disturbance shall be done in a manner which will minimize soil erosion.
 - (2) Whenever feasible, natural vegetation shall be retained and protected.
 - (3) The extent of the disturbed area and the duration of its exposure shall be kept to a minimum, within practical limits.
 - (4) Either temporary seeding, mulching or other suitable stabilization measures shall be used to protect exposed critical areas during construction.
 - (5) Drainage provisions shall accommodate the storm water runoff both during and after construction.
 - (6) Soil erosion and sediment facilities shall be installed prior to any on-site grading.

607.04

Ownership, Administration, and Maintenance of Storm Water Management Facilities. The final plan shall identify the ownership and method of administering and maintaining all permanent storm water management facilities. With regard to the maintenance of these facilities, they must be either:

- A. Dedicated to and accepted by the Township; or

- B. Maintained by a private entity (e.g., homeowners association or individuals that own the land) in accordance with the terms of an agreement, declaration of easements or other legally binding documentation approved in form by the Board of Supervisors. (See Appendix No. 15) The agreement, declaration of easements or other legally binding documentation shall provide that the Township shall have the right to:
- (1) Inspect the facilities at any time.
 - (2) Require the private entity to take corrective measures and assign the private entity reasonable time periods for any necessary action.
 - (3) Authorize maintenance to be done and lien all cost of the work against the properties of the private entity responsible for maintenance.

The agreement, declaration of easements or other legally binding documentation shall be submitted to the Board of Supervisors which may require the agreement to contain provisions requiring the posting or periodic payment of escrow funds by the private entity to guarantee proper maintenance of the facility.

607.05 Erosion and Sediment Control. All development applications which invoke grading or excavation shall conform to the requirements of Chapter 102 of the Rules and Regulations of the Pennsylvania Department of Environmental Protection, as amended.

- A. No changes shall be made in the contour of the land; no grading, excavating, removal or destruction of the topsoil, trees or other vegetative cover of the land shall be commenced within a proposed subdivision or land development until such time that a plan for minimizing erosion and sediment control has been reviewed by the Lancaster County Conservation District and approved by the Board of Supervisors, or there has been a determination by the Board of Supervisors, upon recommendation by the Lancaster County Conservation District, that erosion and sediment control plans are not necessary.
- B. The following measures are effective in minimizing erosion and sedimentation and shall be included where applicable in the control plan:

- (1) Stripping of vegetation and grading shall be kept to a minimum.
 - (2) Development plans shall preserve significant natural features, cut and fill operations shall be kept to a minimum, and plans shall conform with topography so as to create the least erosion potential and adequately handle the volume and velocity of storm water runoff.
 - (3) Whenever feasible, natural vegetation shall be retained, protected and supplemented.
 - (4) The disturbed area and the duration of exposure shall be kept to a practical minimum.
 - (5) Disturbed soils shall be stabilized by permanent vegetation or by engineered erosion control and drainage measures as soon as practicable in the development process.
 - (6) Temporary vegetation and mulching shall be used to protect exposed critical areas during development.
 - (7) Provisions shall be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development. Where necessary the rate of storm water runoff will be mechanically retarded.
 - (8) Sediment in the runoff water shall be trapped until the disturbed area is stabilized by the use of debris basins, sediment basins, silt traps, or similar measures.
 - (9) Basin and perimeter controls shall be established at the commencement of work within the subject tract.
 - (10) Storage piles shall be protected and stabilized within thirty (30) days.
 - (11) Earth or paved interceptors and diversions shall be installed at the top of cut or fill slopes where there is a potential for erosive surface runoff.
- C. In order to prevent pollution of any watercourse and to reduce erosion of soil, sediment control devices shall be installed prior to any grading, filling or excavation. Such devices shall be designed

to retain sediment on the subject tract or flowing adjacent to the subject tract.

- D. Within thirty (30) days after completion of grading, all surfaces disturbed by vegetation removal, grading, haul roads, or other construction activity that alters natural vegetative cover, are to be revegetated to control erosion, unless covered with impervious or other improved surfaces authorized by approved plans. Erosion controls may include any combination of engineered or vegetative measures.

607.06 Floodplain. Floodplain areas shall be established and preserved as provided below:

- A. A one hundred (100) year floodplain shall be established for all watercourses and shall be delineated in accordance with the provisions of the Township Zoning Ordinance.
- B. The inclusion of a floodplain within lots in order to meet minimum lot area and yard requirements is allowed provided each such lot contains sufficient area exclusive of the floodplain for buildings and, when applicable, on-lot sanitary wastewater disposal systems and replacement drain field area.
- C. It is recommended that the five hundred (500) year floodplain corridor be identified on plans and that any structures located between the one hundred (100) and five hundred (500) year floodplain be flood-proofed to the limits of the five hundred (500) year floodplain corridor.

607.07 Wetlands. No subdivision or land development shall involve uses, activities or improvements which would entail encroachment into, the regrading of, or the placement of fill in wetlands in violation of state or federal regulations. Applicants must submit evidence to the Board of Supervisors that, if wetlands are present on the site, the Pennsylvania Department of Environmental Protection and the U.S. Army Corps of Engineers have been contacted to determine the applicability of state and federal wetland regulations. Any approval of the Board of Supervisors shall be contingent on full compliance with any requirements of any regulatory agency, and no action by the Board of Supervisors shall be relied on in lieu of a permit issued by the appropriate agency.

SECTION 608 Landscaping. Landscaping consistent with the standards of this Ordinance shall be provided in all subdivisions and land developments except where such standards are less stringent than those set forth in the

Township Zoning Ordinance in which case the landscaping shall be provided consistent with the standards of the Township Zoning Ordinance.

608.01 Planting Screen for Reverse Frontage Lots.

- A. A planting screen within a buffer easement along the rear of reverse frontage lots shall consist of one (1) row of staggered mixed evergreen and deciduous trees which shall be at least six (6) feet in height when planted and shall be spaced not more than ten (10) feet apart on center. The trees shall be of such species so as to attain a height at maturity of not less than twenty (20) feet. Deciduous plant materials shall comprise no more than thirty percent (30%) of the number of plants in the buffer. The required height of the buffer planting may be achieved in part by mounding or installation of plants along a berm.
- B. All planting shall be performed in conformance with good nursery and landscape practice. Plant materials shall conform to the standards recommended by the American Association of Nurseryman, Inc., in the American Standard of Nursery Stock, ANSIZ60, current edition, as amended.

608.02 Street Trees. Street trees shall be provided in all residential subdivisions with densities greater than one (1) dwelling unit per acre and in all commercial and residential land developments. All street trees shall be provided by the developer in accordance with the following standards:

- A. The trees shall be nursery grown in a climate similar to that of the locality of the subject tract. Varieties of trees shall be subject to the approval of the Board of Supervisors.
- B. All trees shall have a normal habit of growth and shall be sound, healthy and vigorous; they shall be free from disease, insects, insect eggs and larvae.
- C. The trunk diameter, measured at a height of six (6) inches above finish grade, shall be a minimum of two (2) inches.
- D. Trees shall be planted between the street right-of-way line and the setback line except where the Township has authorized placement of trees within the street right-of-way. Trees shall be planted so future growth of the trees shall not interfere with the street cartway, sidewalk or utilities. Street tree branching shall not interfere with clear sight triangles. Typical branching shall not be within ten (10) feet of ground level after ten (10) years of growth.

- E. All planting shall be performed in conformance with good nursery and landscape practice and to any standards established by the Township.
- F. Requirements for the measurements, branching, grading, quality, balling and burlapping of trees shall follow the code of standards recommended by the American Association of Nurserymen, Inc., in the American Standard for Nursery Stock, ANSIZ60, current edition, as amended.
- G. A minimum of two (2) canopy street trees shall be provided for every one hundred (100) feet of public street right-of-way frontage on a lot. Street trees shall be placed a minimum of forty (40) feet apart along the street right-of-way and shall be located so as to maximize the growth potential of the plant material, minimize the potential for root interference with public infrastructure and enhance the quality of the development. Street trees shall be one of the following species:

Acer platanoides	Norway Maple
Acer rubrum cultivars	Red Maple
Acer saccharum	Sugar Maple
Aesculus hippocastanum	Common Horse Chestnut
Aesculus x cornea	Red Horse Chestnut
Cladrastis lutea	American Yellowwood
Fraxinus pennsylvanica lanceolata	Green Ash
Gleditzia triacanthos inermis	Thornless Honey Locust
Liquidambar styraciflua	Sweet Gum
Ostrya virginiana	Hop Hornbeam
Quercus acutissima	Sawtooth Oak
Quercus palustris	Pin Oak
Quercus rubra	Red Oak
Tilia cordata	Littleleaf Linden
Tilia x euchlora	Crimean Linden
Tilia tomentosa	Silver Linden
Ulmus parvifolia	Chinese Elm
Zelkova serrata	Japanese Zelkova

Other tree species may be used provided acceptable information is submitted to the Board of Supervisors to indicate that the species are hardy street trees. No one species shall comprise more than twenty-five percent (25%) of the entire number of street trees in a particular development.

- H. Street trees are to be maintained and guaranteed for a minimum of two (2) years. Planting of trees shall occur within the standard planting season for such trees (typically March through November). No more than one-third (1/3) of the tree shall be damaged or dead without replacement. Replacement trees shall conform to all requirements of this Ordinance and shall be maintained and guaranteed for a minimum of two (2) planting seasons.

608.03 **Ground Cover.** Ground cover shall be provided on all areas of the subject tract to prevent soil erosion. All areas which are not covered by paving, stone or other solid material shall be protected with a suitable vegetative ground cover.

SECTION 609 **Sanitary Wastewater Disposal and Water Supply.**

609.01 **Sanitary Wastewater Disposal.** The developer shall provide the highest type of sanitary wastewater disposal facility consistent with existing physical, geographical, geological and economic conditions. The following types of sanitary wastewater disposal facilities are listed in order of desirability:

- A. Publicly owned sanitary wastewater disposal system.
- B. Privately owned sanitary wastewater system used by one unit of occupancy with subsurface absorption.
- C. Privately owned sanitary wastewater system used by two (2) or more units of occupancy with treatment other than subsurface absorption or holding tank which is owned by a single individual.
- D. Privately owned subsurface absorption or drainage fields used by two (2) or more units of occupancy.
- E. If the project is located within an Urban Growth Boundary, or if the site is within an area planned for sewer service by a municipal sewage facilities plan adopted pursuant to Act 537 of 1966, and if public sewer service is available within the following distances, subdivisions and land developments shall be connected to an existing public sanitary sewer system: two hundred (200) feet for one (1) unit of occupancy; four hundred (400) feet for two (2) units of occupancy; six hundred (600) feet for three (3) units of occupancy; eight hundred (800) feet for four (4) units of occupancy; and one thousand (1,000) feet for five (5) units to fifteen (15) units of occupancy. For developments of greater than

fifteen (15) units of occupancy which are within one (1) mile from an existing public sanitary sewer system, adequate justification shall be provided as to why the developer should not provide a connection to the existing public sanitary sewer system. For developments of greater than fifteen (15) units of occupancy which are more than one (1) mile from an existing system, the sanitary sewer strategy shall be determined on a case-by-case basis taking into consideration the density of development, economic considerations and the requirements of the municipal sewage facilities plan.

- F. If a public system is not in place or cannot be extended, the developer may provide individual subsurface disposal systems subject to applicable regulations of the Pennsylvania Department of Environmental Protection; provided that, if a public sanitary sewer system will be provided to such areas within a six (6) year period as indicated in the municipal sewage facilities plan, the Board of Supervisors may require installation of a capped system within the street right-of-way.
- G. The Board of Supervisors shall require that approval from the Pennsylvania Department of Environmental Protection be granted prior to approval of the final plan.
 - (1) When appropriate, the Board of Supervisors may condition approval of the final plan on the receipt of the approval of the Plan Revision Module prior to the sale of lots or commencement of construction.
 - (2) When a Plan Revision Module for land development is not required, or such approval has been waived by the appropriate authority, written notice of such action shall be submitted to the Board of Supervisors.
- H. Where on-lot sanitary wastewater disposal facilities are to be utilized, each lot so served shall be of a size and shape to accommodate the necessary subsurface wastewater disposal system at a safe distance from building and water supply in accordance with Title 25, Chapter 73, Rules and Regulations of the Pennsylvania Department of Environmental Protection, as amended. All newly created lots shall be tested by the Township sewage enforcement officer to prove that each lot is suitable for on-lot wastewater disposal. No lot shall be created in an area without public sewer unless such lot is suitable for on-lot wastewater disposal.

609.02

Water Supply. Whenever an existing or approved water system is accessible to a proposed development, a distribution system shall be provided to furnish an adequate supply of water to each unit of occupancy.

- A. Applicants shall submit to the Board of Supervisors documentation in the form of a copy of a Certificate of Public Convenience from the Pennsylvania Public Utility Commission that the development is located in an area served by a public utility and a statement that the utility has the capacity to serve the development at this time; or a cooperative agreement or an agreement to serve the development from a bona fide cooperative association of landowners or from a municipal corporation, authority or utility. A water system shall be considered accessible to a development, and shall be connected to the development, if public service is available within the following distances: two hundred (200) feet for one (1) unit of occupancy; four hundred (400) feet for two (2) units of occupancy; five hundred (500) feet for three (3) to ten (10) units of occupancy; and within one thousand (1,000) feet for any development resulting in more than ten (10) units of occupancy.
- B. Whenever the water supply system contains sufficient capability or is planned to have such capability within two (2) years from the date of final plan approval, fire hydrants shall be provided. The location and kind of fire hydrant shall meet the specifications of the local fire company and the Township when applicable. Suitable agreements shall be established for the ownership and maintenance of such a distribution system.
 - (1) Hydrants shall be spaced to provide necessary fire flow, and the average area per hydrant typically should not exceed one hundred twenty thousand (120,000) square feet. In addition, hydrants shall be spaced so that each dwelling unit shall be within six hundred (600) feet of a hydrant.
 - (2) A hydrant shall be located at all low points and at all high points with adequate means of drainage provided.
 - (3) If an approved water system will be extended to the subdivision within six (6) years, the Board of Supervisors may require installation of a capped water distribution system.
- C. Where a regional system is not accessible, particularly where on-lot sanitary disposal systems are to be used, a community water

supply may be required. If such a system is provided, it shall be approved by the Pennsylvania Department of Environmental Protection, and appropriate measures shall be provided to ensure adequate maintenance.

- D. Where a lot is to be served by an on-lot well, the applicant shall comply with the well drilling requirements within the Township Zoning Ordinance.