

ARTICLE IV

DEVELOPMENT DESIGN STANDARDS

SECTION 400 GENERAL

- A. The following standards shall be complied with in all subdivision and land development, and are intended as the minimum for the promotion of the public health, safety and welfare. If an Applicant/developer, however, can clearly demonstrate to the satisfaction of the Board that because of peculiar physical conditions pertaining to his land, the literal enforcement of these standards would cause undue hardship, such variations from their literal interpretation may be permitted as may be reasonable and consistent with the purpose and intent of this Ordinance subject to Section 704 of this Ordinance. Such variations shall represent the least change from the standard.
- B. All proposed subdivisions shall comply fully with the existing zoning regulations applicable to the land, and no parcel of land shall be created, either by inclusion or exclusion from a proposed subdivision, which cannot be properly utilized for a permitted use under the existing zoning regulations.
- C. Physical improvements to the property being subdivided shall be provided, constructed, and installed as shown on the Plan of Record, in accordance with the requirements of the Township.
- D. All improvements installed by the applicant shall be constructed in accordance with the design specifications of the Township. Where there are no applicable Township specifications, all such specifications are subject to the approval of the Township Engineer.
- E. Applicants shall comply with design guidelines in the Zoning Ordinance pertaining to the KR Kimberton Retail District, the C Commercial District, and the MU Mixed-Use Development District, and with the design guidelines of Ordinance 124 for development in Kimberton Village.

SECTION 401 LAND REQUIREMENTS

- A. Land shall be suited to the purposes for which it is to be subdivided. Proposed land developments shall be coordinated with existing nearby neighborhoods so that the community as a whole may develop harmoniously.
- B. No land shall be developed for residential purposes unless all hazards to

life, health, or property from flood, fire, and disease shall have been eliminated or unless the plans for the development shall provide adequate safeguard against such hazards.

- C. If, in the opinion of the Planning Commission, an applicant proposes streets or building development which would unnecessarily destroy existing tree growth, whether by reason of street alignment, grading or otherwise, the Planning Commission shall either:
1. Refuse to recommend approval of the Preliminary Plan; or
 2. Suggest alternate method of subdivision which would preserve as many of the existing trees as possible which measure six (6) inches in diameter and above; or
 3. Recommend to the Board that, as a condition of their approval, the developer be required to plant one (1) new tree of not less than two (2) inch diameter for every existing tree measuring twelve (12) inches in diameter and above, which would be destroyed, such new trees to be planted on the lots and not as street trees, as directed by the Board.

The purpose of this particular regulation shall be to maintain the supply of natural vegetation, prevent erosion of the topsoil on the site and surrounding properties, foster the retention of ground water supply and generally promote the health, safety and welfare of the citizens.

SECTION 402 LOT DESIGN

- A. General Lot Design Standards
1. Lot dimensions, areas and orientation shall be appropriate for the type of development and use contemplated, and sufficient to provide satisfactory space for off-street parking and other accessory uses.
 2. Insofar as practical, side lot lines shall be at right angles to straight street lines, and radial to curved street lines and cul-de-sac turnarounds.
 3. Where feasible, lot lines shall follow municipal boundaries rather than cross them, in order to avoid jurisdictional problems.
 4. Where feasible, the depth of residential lots shall be not less than one (1) nor more than three (3) times their width.

B. Lot Frontage Standards

1. All lots shall have direct access to a public street, or to an approved private street and where applicable shall have a frontage in accordance with zoning standards, but shall have a minimum width of fifty (50) feet where fronting directly on the street and in the case of an interior lot, the required access strip shall have a minimum width of twenty-five (25) feet connecting to a public or private street.
2. Any proposed lots abutting an existing or proposed arterial or collector street in the Township shall be designed as reverse frontage lots having access to the street with a lower function, as required in Section 1409 of the Township Zoning Ordinance. This requirement may be waived by the Board of Supervisors if, in its judgment: i) the advantages to the Township of compliance with this standard are outweighed by the applicant's resulting inability to meet other requirements of this Ordinance or the Zoning Ordinance; or ii) compliance would be unreasonable or impractical due to the size of the proposed development, configuration of the site, etc.
3. All residential lots using reverse frontage shall have a rear yard with a minimum depth of seventy-five (75) feet, measured in the shortest distance from the proposed dwelling unit to the proposed right of way, and shall, within such rear yard and immediately adjacent to the right of way, have a planting screen easement of at least ten (10) feet in width, across which there shall be no right of access.
4. No interior lot shall be permitted on the turnaround of a cul-de-sac.

C. Building Setback Lines

The minimum building setback line shall be in accordance with the East Pikeland Township Zoning Ordinance but may be placed deeper on a cul-de-sac (circular turnaround) lot in order to satisfy minimum lot width requirements where the side lot lines are not parallel to each other.

D. Interior Lots

1. No more than two (2) contiguous interior lots shall be formed within a proposed subdivision. The creation of such lots shall be minimized and limited to those circumstances dictated by the configuration of the site however the applicant shall not be permitted to use interior lot design to avoid constructing or extending streets.

2. No more than two (2) lots, one behind the other, shall be created along a new or existing street. Access to any other lots shall be taken directly from a new street.
3. An interior lot shall have an access strip, with a minimum width for its entire depth of twenty-five (25) feet, and which meets the minimum lot frontage requirements of this Ordinance. The access strip shall be in addition to the minimum lot area requirements as prescribed in the Township Zoning Ordinance.

E. Crosswalks

1. Crosswalks may be required by the Board of Supervisors to facilitate pedestrian circulation and to give access to community facilities where situations warrant concern for the safety and welfare of Township residents.
2. Such crosswalks shall have a width of not less than ten (10) feet and a paved walk of not less than four (4) feet.

SECTION 403 MONUMENTS AND MARKERS

A. Monument Standards

1. Permanent stone or concrete monuments shall be accurately placed at the intersection of all lines forming angles and at changes in directions of lines in the boundary (perimeter) of the property being subdivided.
2. All monuments shall be placed by a registered professional engineer or surveyor so that the scored point created by an indented cross or drilled hole in the top of the monument shall coincide exactly with the point of intersection of the lines being monumented.
3. Monuments shall be set with their top level with the finished grade of the surrounding ground.
4. All streets shall be monumented on the right of way line at the following locations:
 - a. At least one monument at each intersection;
 - b. At changes in direction of street lines;
 - c. At each end of each curved street line, (e.g., points of

curvature and tangency); only one side of each street need be monumented;

- d. An intermediate monument wherever topographical or other conditions make it impossible to sight between two (2) otherwise required monuments; and
 - e. At such other places along the line of streets as may be determined by the Township Engineer to be necessary so that any street may be readily defined in the future.
- 5. Utility pipeline rights-of-way shall be monumented at all property lines.
 - 6. Common open space and community sewage disposal areas shall be monumented.

B. Marker Standards

- 1. Markers shall be accurately placed at all lot corners within a subdivision.
- 2. Markers shall consist of solid iron pipe or pins, with a minimum diameter of one-half (1/2) inch and shall have a minimum length of eighteen (18) inches.
- 3. Markers shall be placed in concrete to ensure that they will not be removed.

SECTION 404 STREET SYSTEM

- A. Proposed streets shall be consistent with such street plans or parts thereof as have been officially prepared and adopted by the Township, including recorded subdivision plans and the Comprehensive Plan of the Township.
- B. Proposed streets shall further conform to such Township, County and State road and highway plans as have been prepared, adopted and/or filed as prescribed by law.
- C. Thoughtful and imaginative design of streets and their relationship to the arrangement and shape of lots is required. An important element is the blending with topography to produce curvilinear design and reasonable grades. The rectilinear design of streets and lots, involving long straight sections of street, shall be avoided.
- D. Local streets shall be laid out so as to discourage through traffic, but provisions for street connections into and from adjacent areas may be

required.

- E. Where a subdivision abuts or contains an existing or proposed major thoroughfare, the Board may require dedication of additional right of way specified hereinafter and marginal access streets, rear service alleys, reverse frontage lots, or such other treatment as will provide protection for abutting properties, reduction in the number of intersections with the major thoroughfare and separation of local and through traffic.
- F. New half or partial streets shall not be permitted except where essential to reasonable subdivision of a tract in conformance with the other requirements and standards of this Ordinance and where, in addition, dedication of the remaining part of the street has been secured. Wherever a tract to be subdivided borders an existing half or partial street, the other part of the street shall be plotted within such tract. Where half or partial streets are proposed, the acceptance of final plans shall be conditioned upon the provision of guarantees providing for the construction or completion of such streets to Township standards. As an interim measure, a temporary turnaround must be provided for half or partial streets.
- G. Dead end streets shall be prohibited, except as stubs to permit future street extension into adjoining tracts, or when designed as cul-de-sacs and shall be dedicated in accordance with Section 605 of this Ordinance.
- H. Where streets and other public improvements continue into adjoining municipalities, evidence of compatibility of design, particularly with regard to street widths, shall be submitted. The applicant shall coordinate such design with both municipalities to avoid abrupt changes in cartway width or in improvements provided.
- I. Where a proposed subdivision abuts an existing subdivision having a dedicated residential street dead-ending at a common property line, the proposed subdivision shall make provision for extension of such dedicated residential street within the proposed subdivision for a distance of not less than one (1) lot depth and connection with another street. In the design of a proposed subdivision, provision shall be made for continuation of the width, gradient, general alignment and direction of traffic flow of a collector street that dead-ends at a common property line or is proposed in the Township Comprehensive Plan whenever such proposal has been adopted by resolution of the Board.
- J. Where lots abut an existing street, additional right of way, paving and other street improvements shall be required for such an existing street to the extent deemed by the Board to be in the public interest.
- K. If lots resulting from original subdivision are large enough to permit resubdivision, or if a portion of the tract is not subdivided, adequate street

rights of way to permit further subdivision shall be provided as necessary, to be no less than the rights of way then required for minor collector or local streets.

SECTION 405 STREET RIGHT OF WAY WIDTHS

A. The minimum right of way, cartway and shoulder widths for all new streets in the Township shall be as follows:

<u>Street Function</u>	<u>Right of Way Width</u>	<u>Cartway Width</u>	<u>Shoulder* Width</u>
Expressway	Per PennDOT	Per PennDOT	Per PennDOT
Major Arterial	Per PennDOT	Per PennDOT	Per PennDOT
Minor Arterial	60'	24'	8'
Major Collector	60'	24'	8'
Minor Collector	50'	24'	6'
Local Access:			
26+ lots/DU's	40'	24'	4'
11 to 25 lots/DU's	40'	22'	4'
1 to 10 lots/DU's	40'	20'	4'
Private Street	40'	18'	0'
Common Driveway	35'	14'	0'

*If no curbs are provided, see Appendix A for curb and sidewalk construction.

B. Additional right of way and cartway widths may be required by the Township for the following purposes:

1. To promote public safety and convenience.
2. To provide parking space in commercial districts and in areas of high density residential development.
3. To accommodate special topographic circumstances which may result in cut/fill slopes extending beyond the standard right of way in all circumstances to assure accessibility for maintenance operations.

C. Right of way of lesser width than prescribed in this section shall not be permitted.

- D. Subdivisions abutting existing streets shall provide the minimum right of way widths for those streets in accordance with the provisions of this section for dedication.
- E. Where a subdivision abuts an existing street of improper cartway or right of way width or alignment, the Township Supervisor shall require the dedication of land sufficient to widen the street or correct the alignment and require the escrow of money where deemed necessary in order to improve said cartway.

SECTION 406 INCREASE OF RIGHT OF WAY WIDTHS

In the case where lots created within a subdivision are large enough to accommodate either further subdivision, or a higher intensity of development, and thus may result in higher traffic levels, the Township may require that additional right of way be provided to permit the future development of a higher order street.

SECTION 407 STREET GRADES

- A. There shall be a minimum centerline grade of one (1) percent. Centerline grades shall not exceed the following:

Street Function	Maximum Grade
Arterial	6%
Collector	8%
Local Access*	10%

*On developments of less than 25 lots, the maximum grade shall not exceed 12%, as long as the road is not a through road.

- B. In the approach to an intersection, the street grade shall not exceed the following percentage for the classification of street indicated below. These approach grades shall extend for a minimum of fifty (50) feet from the nearest right of way of the intersection street:

Arterial Street	3%
Collector Street	4%
Local Street	6%

- C. A minimum grade for cul-de-sac bulb areas shall be established so that curb grading shall not be less than one (1) percent.

- D. At all changes of street grades where the algebraic difference exceeds one (1) percent, vertical curves shall be provided to permit the following minimum sight distances:

Arterial Street	Four hundred (400) feet
Collector Street	Three hundred (300) feet
Local Street	Two hundred (200) feet

- E. Under no circumstances shall maximum grades be permitted using the minimum curve radii.

SECTION 408 STREET ALIGNMENT

- A. Whenever street lines are deflected in excess of five (5) degrees, connection shall be made by horizontal curves.
- B. To ensure adequate sight distance, minimum centerline radii for horizontal curves shall be as follows:

Arterial Street	Five hundred (500) feet
Collector Street	Three hundred (300) feet
Local Street	One hundred fifty (150) feet

- C. A tangent of at least one hundred (100) feet shall be introduced between all horizontal curves on collector and arterial streets and between reverse curves on local streets.
- D. Super elevation in accordance with PennDOT standards shall be required when curve radii are less than six hundred (600) feet on arterial streets.

SECTION 409 STREET INTERSECTIONS

- A. Right angle intersections shall be used.
- B. No more than two (2) streets shall cross at the same point.
- C. To the fullest extent possible, intersections with collector and arterial streets shall be located not less than one thousand (1,000) feet apart, measured from centerline to centerline. Exceptions shall be those cases deemed by the Board to require close spacing without endangering the public's safety.

- D. Streets entering from opposite sides of another street shall either be directly across from each other or offset by at least two hundred (200) feet on local and collector and three hundred (300) feet on arterial streets, measured from centerline to centerline.
- E. Where curbs are required, curb radii shall not be less than thirty-five (35) feet, forming a tangential arc, and the top curb grade lines for intersecting streets shall be so designed that would meet at a common point if projected. For all intersections involving an arterial street, a forty-foot (40-foot) radius shall be required.
- F. Clear sight triangles shall be provided at all public street intersections. Within such triangles, no vision-obstructing object shall be permitted which obscures vision above the height of thirty (30) inches and below ten (10) feet measured from the centerline grade of intersecting public streets. Such triangles shall be established from a distance of:
1. Seventy-five (75) feet from the point of intersection of the centerlines, except that clear sight triangles shall be provided for all intersections with collector and arterial streets in accordance with PennDOT standards.
 2. Where an intersection is controlled by a stop sign or traffic signal the sight triangle shall be measured from a point in the center of the controlled or lesser street twenty-five (25) feet back from the curb line of the uncontrolled or through street to the distance required above.
- G. In designing street intersections, the following sight distance dimensions shall be used:

<u>Posted Speed of Intersected Street</u>	<u>Sight Distance*</u>
Stop condition (all streets)	75'
25 mph	175'
35 mph	300'
45 mph	450'
55 mph	600'

*Measured from a point set back fifteen (15) feet from the intersected pavement edge on the street controlled by a stop sign or signal.

- H. Greater sight triangle dimensions imposed by PennDOT for intersections with the State highway system shall supercede the above.

- I. Whenever a subdivision abuts or contains an existing or proposed street with an ultimate right of way of sixty (60) feet or more, the Township Planning Commission may recommend and the Board require restriction of access to the arterial street by:
 - 1. Provision of reverse frontage lots;
 - 2. Provision of service streets along the rear of the abutting lots, together with prohibition of private driveways intersecting the arterial streets; or
 - 3. Provision of marginal access streets, provided that the reserve strips establishing such marginal access streets shall be definitely placed within the jurisdiction of the Township under an agreement meeting the approval of the Township.
- J. Except as specified above, reserve strips shall be prohibited.

SECTION 410 SINGLE ACCESS STREETS/CUL-DE-SACS

- A. A single access shall not be approved wherever a through street is practical, except where the single access is clearly the basic principle for design of the subdivision.
- B. Any dead-end street for access to an adjoining property or because of authorized stage development shall be provided with a temporary, all weather turnaround within the subdivision, and the use of such turnaround shall be guaranteed to the public until such time as the street is extended.
- C. Single access streets, permanently designed as such, shall not serve more than twenty (20) lots or exceed one thousand (1,000) feet.
- D. Single access streets, permanently designed as such, shall have a minimum length of two hundred fifty (250) feet.
- E. All cul-de-sac streets, whether permanently or temporarily designed as such, shall be provided at the closed end with a fully paved turnaround, unless a fully curbed planting island is constructed, in which case the minimum pavement dimension measured radially shall be twenty (20) feet.
- F. The minimum radius to the pavement edge or curb line shall be forty (40) feet and the minimum radius of the right of way line shall be fifty (50) feet.
- G. Drainage of cul-de-sac streets shall preferably be towards the open end.
- H. The centerline grade on a cul-de-sac street shall not exceed ten (10)

percent and the grade of the diameter of the turnaround shall not exceed five (5) percent.

- I. There shall be a maximum of four (4) lots containing any access along the turnaround portion of a cul-de-sac street measured from reverse curve to reverse curve.
- J. Where the turnaround right of way of a cul-de-sac street is placed adjacent to the tract boundary, a fifty (50) foot right of way width shall be provided along the boundary line to permit dedication and extension of a street at full width in accordance with Section 605 of this Ordinance, un-less future expansion of a cul-de-sac street is clearly impractical or undesirable. The small triangles of land beyond the cul-de-sac to the boundary shall be so deeded that maintenance of these corners of land will be the responsibilities of the adjoining owners until the roadway is continued.

SECTION 411 ACCELERATION, DECELERATION AND TURNING LANES

- A. Deceleration or turning lanes may be required by the Township along existing and proposed streets whenever the Board determines such lanes as required to meet reasonable safety needs, as determined by a traffic impact study, Section 306.D.
- B. Deceleration lanes shall be designed to the following standards:
 - 1. The lane shall have a minimum width of twelve (12) feet, or in the case of intersections with State highways, such width as is required by the applicable regulations and standards of PennDOT.
 - 2. The lane shall provide the full required lane width for the entire length which shall be measured from the centerline of the intersecting road. In addition, there shall be a seventy-five (75) foot taper provided at the beginning of the lane so that traffic can leave the main travel lane smoothly.
 - 3. The minimum lane length shall be as follows:

Design Speed of Road	Minimum Taper	Deceleration Lane Length
30 mph	75'	165'
40 mph	75'	275'
50 mph	75'	300'

- C. Acceleration lanes are required only when the need is indicated by a traffic impact study. The design shall be as per the recommendation of the Township Engineer. As necessary, a paved taper shall be provided for right hand turns.

SECTION 412 STREET CONSTRUCTION

All materials entering into the construction of streets and the methods of construction and drainage shall be in accordance with the applicable requirements of Pennsylvania Department of Transportation Specifications Publication 408, latest revision thereof, and shall be supplied by vendors approved by the Pennsylvania Department of Transportation for the supply of such materials. Cross-sections shall be as described in Table A and detailed in Appendix A, Sheet SD-1. Inspection of materials and construction methods shall be as approved in Section 601 of this Ordinance.

- A. Street Design
 - 1. Thickness of paving materials for all Township streets shall meet the minimum requirements outlined below:

Type	Reference * PennDOT Publication 408	Thickness for Road Classification		
		Residential Street	Collector Street	Commercial or Light Industrial Street ***
Base Course, 0.0 to 0.3 million ESAL's Superpave Asphalt Mixture Design, 25.0 mm, PG 64-22,	Section 309	5"	X	X
Base Course, 0.3 to 3.0 million ESAL's Superpave Asphalt Mixture Design 25.0 mm, PG 64-22,	Section 309	X	5"	6" **
Binder Course, 0.0 to 0.3 million ESAL's Superpave Asphalt Mixture Design 25.0 mm, PG 64-22,	Section 409	2"	X	X
Binder Course, 0.3 to 3.0 million ESAL's Superpave Asphalt Mixture Design 25.0 mm, PG 64-22,	Section 409	X	2"	2"
Wearing Course, 0.0 to 0.3 million ESAL's, SRL L Superpave Asphalt Mixture Design 9.5 mm, PG 64-22,	Section 409	1 ½"	X	X
Wearing Course, 0.3 to 3.0 million ESAL's, SRL G Superpave Asphalt Mixture Design 9.5 mm, PG 64-22,	Section 409	X	1 ½"	1 ½"

* Reference to section number in Pennsylvania Department of

Transportation (PennDOT) Specifications Publication 408, latest revision thereof.

- ** Base Course over five (5) inches must be laid in two (2) passes.
- *** The type of asphalt material specified shall be based upon design traffic conditions. The Board may require alternate asphalt materials as appropriate for the actual design traffic conditions.

2. Paving design is based on overall soil conditions in the Township. The Board may require additional paving, base or sub-base materials where soil types are inferior, wet or otherwise unsuitable as indicated by the "Soil Survey of Chester and Delaware Counties, Pennsylvania" prepared by the U.S. Soil Conservation Service or where, in the opinion of the Board, such conditions exist.
3. Underdrain shall be provided along both sides of all new streets. Underdrain shall meet the specification of PennDOT Publication 408 and 72M.

B. Sub-grade

1. The area within the limits of the proposed road surface shall be shaped to conform to the line, grade and cross-section of the proposed road.
2. Remove or stabilize all unsuitable sub-grade materials.
3. Wet or swampy areas shall be permanently drained and stabilized.
4. Fills shall be made with suitable materials approved by the Township Engineer and thoroughly compacted for full width in uniform layers of not more than eight (8) inches thick. No more than two (2) feet of fill shall be laid between inspections by the Township Engineer.
5. The sub-grade shall be thoroughly compacted by rolling with a minimum ten-ton three-wheel roller. Equivalent vibratory sheepsfoot or rubber-tired rollers may be used at the discretion of the Township Engineer. Sub-grade shall be compacted, tight and dry, to ninety-five (95) percent compaction at optimum moisture and shall not be soft and spongy under the roller. Compaction of the sub-grade shall extend the full width of the cartway, including the width to be occupied by shoulders.
6. In fill areas over three (3) feet thick, compaction tests are required in each eight (8) inch layer at one hundred fifty (150) foot intervals. The tests must be performed by a certified testing laboratory and results submitted to the Township Engineer. All compaction must

be ninety-five (95) percent compaction at optimum moisture. Any layer not coming up to standard will be removed or re-rolled until suitable compaction is obtained.

C. Paving

1. Paving and base thickness and materials shall be as specified in Paragraph A of this section.
2. The sub-base course where required shall be installed and compacted in accordance with Pennsylvania Department of Transportation specifications and shall extend twelve (12) inches on all streets beyond the paving line when curbs are not to be installed.
3. Bituminous base, binder and surface courses shall be laid to the specified thickness measured, after compaction. All bituminous courses shall be laid with a mechanical bituminous paver in accordance with specifications of the Pennsylvania Department of Transportation Specifications, Publication 408, latest edition thereof.
4. Crown board and straight edge shall be used for checking street construction. Maximum tolerance shall not exceed one-quarter (1/4) inch in the finished surface.
5. Delivery slips for all material deliveries shall be furnished to the Board.
6. Failure to adhere to the above specifications shall give the Board - cause to refuse to accept streets for dedication.

D. Grading and Shoulders

1. Roadways shall be graded for the full width of the right of way on each side. Shoulders or berm areas, including planting strips behind curbs, shall be graded with a minimum slope of one-half (1/2) inch per foot and a maximum slope of one (1) inch per foot. Beyond the limits of this grading, banks shall be sloped to prevent erosion but this slope shall not be less than three (3) to one (1) vertical with tops of slope in cuts rounded. All unpaved areas between the street line and the curb or shoulders (as the case may be) shall be covered with not less than four (4) inches of topsoil, fertilized and seeded in manner and with materials approved by the Board.

E. Traffic Control

All traffic control devices proposed to be erected or modified shall be equipped or retrofitted with opticom devices with receivers facing all

directions of travel.

SECTION 413 PRIVATE STREETS

The following standards shall apply to private streets:

- A. No more than five (5) lots shall be served by a private street. In the case where lots served by a private street are capable of further subdivision, and therefore, having the potential to exceed the five (5) lot limit, the private street shall be designed in accordance with public street standards for a local street.
- B. All private streets shall be constructed with a base course consisting of a minimum of six (6) inches of PA 3A crushed stone base course and five (5) inches of compacted BCBC placed on a prepared and compacted dry sub-grade. The base course shall be shaped and rolled to provide a two (2) inch crown or sloped laterally to facilitate drainage and shall be covered with one and one-half (1 1/2) inches of ID-2 compacted wearing course, a minimum of eighteen (18) feet wide.
- C. As a condition to final plan approval, an agreement providing for the maintenance, repair, construction and reconstruction, including drainage facility maintenance and snowplowing of private streets, shall be submitted to the Township.
- D. Any subdivision or land development application proposing six (6) or more single family home lots served by an internal street shall be designed in accordance with Township public street standards. In planned residential developments and commercial and industrial developments, the Board shall designate those streets to be designed and constructed as Township streets.
- E. The turnaround shall be provided with an all-weather surface to be approved by the Board of Supervisors and Planning Commission and shall be constructed in accordance with Section 410.

SECTION 414 PRIVATE DRIVEWAYS

- A. General
 - 1. Private driveways shall be provided for all residences and the construction shall be in accordance with the regulations of this Section in order to provide safe access to Township and State roads, to eliminate problems of stormwater runoff, and to assure sufficient area for and access to off-street parking.
 - 2. Any person, partnership or corporation wishing to construct or alter

a driveway onto a public right of way shall first make application to the Building Inspector or other designated official of the Township, present plans and obtain a permit for said construction.

3. No building permit will be issued without first obtaining a permit to construct such driveway.
4. No more than two (2) lots shall be served by a private driveway in cases of common ownership or shared use of a private driveway.
5. A common driveway, as defined by this Ordinance, shall be of sufficient width, in the opinion of the Township Engineer, to provide safe passage of two (2) vehicles or shall have a sufficient number of pullover areas to provide safe passage of two (2) vehicles.
6. Private driveways, whether individual or common, on corner lots shall be located at least fifty (50) feet for local roads and one hundred (100) feet for collector and arterial roads from the point of intersection of the nearest street right of way lines. For any lots other than corner lots, driveways shall be located at least one hundred (100) feet from the point of intersection of the nearest street right of way lines.

B. Plans

A plan shall be submitted with each application that shall include at least the following:

1. Site plan of driveway within twenty-five (25) feet of public right of way and twenty-five (25) feet to each side of centerline of the driveway.
2. Adjacent driveways or streets within one hundred (100) feet.
3. Profile of driveway with existing and proposed grading within the area of the site plan and existing or proposed public road.

C. Construction

1. Grade. The driveway within the legal right of way of the public road, or for a distance of at least twenty (20) feet from the edge of the cartway, whichever is greater, shall not have a grade in excess of five (5) percent. That portion of the driveway that extends from the legal right of way for a distance of fifty (50) feet shall not have a grade exceeding fifteen (15) percent.

2. **Material.** The driveway shall be constructed with a base of stone base compacted to four (4) inches and a surface of a minimum of one and one-half (1 1/2) inch ID-2 bituminous wearing course. Driveway material standards shall apply to driveways for a minimum of twenty-five (25) feet from the edge of cartway or curb.
3. **Width.** No driveway shall be less than twelve (12) feet wide within the limits of the legal right of way.
4. **Unobstructed Sight Distance.** No permit shall be issued for any driveway, nor shall any driveway be constructed that does not comply with PennDOT safe sight distance criteria.
5. A minimum of one (1) parking space within the street right of way, but off the paved cartway, shall be provided where the grade of the driveway at any point exceeds eight (8) percent. Such off street parking space shall be a minimum of nine (9) feet by eighteen (18) feet and shall be on a grade not exceeding eight (8) percent.

D. **Drainage**

1. The gutter line, wherever possible, shall be maintained as a paved swale. It shall have a maximum depth of four (4) inches and a minimum width of twenty-four (24) inches.
2. A pipe may only be placed under the drive entrances when approved by the Township Engineer. The condition where a pipe will be accepted will be governed by the gutter depth on each side of the drive. The minimum pipe size under the driveway will be determined by the Township Engineer.
3. Driveways shall be graded so that, wherever possible, surface drainage will be discharged to the owner's property; otherwise, adequately sized pipes, inlets, and/or headwalls shall be installed and gutter improvements shall be made to direct surface drainage into the road drainage system and not onto the paving of the intersecting road.

SECTION 415 CURBS

- A. Curbs shall be installed along both sides of all proposed streets. Curbs shall be either the vertical type or the rolled curb type, except that rolled curbs shall not be used on streets whose grade exceeds seven (7) percent, or any collector or arterial street. The transition from one type to another shall be made only at street intersections.
- B. Grass swales may be permitted in lieu of curbs within rights of way of

developments of less than 10 lots, subject to the approval of the Township engineer.

- C. Curbs shall be provided on all new parking areas located within a land development.
- D. All curbs shall conform to specifications contained in Section 426. Concrete Curb and Sidewalk Specifications.
- E. Curbs and drainage swales shall be constructed to the dimensions shown in Appendix A.
- F. Curbing shall be constructed in ten (10) foot lengths. A pre-molded expansion material having a minimum thickness of one-fourth (1/4) inch shall be placed between sections of curved curb and at intervals of not more than thirty (30) feet. Intermediate joints between ten (10) foot sections shall be formed of two (2) layers of single ply bituminous paper or may be saw cut after laying.
- G. When curved curb joins with tangent curb at curb returns on sharp curves where a curb is jointed to an inlet and elsewhere as directed, there shall be embedded in the concrete two (2) #4 reinforcing bars twenty-four (24) inches long. These bars shall extend twelve (12) inches into the curb on each side of the joint. The portion of the bar extending into the tangent curb shall be rendered bondless by a coating of approved material and enclosed in part in approved tubes or caps which will provide a one-half (1/2) inch minimum positive clearance pocket. The top surface of the curb shall be finished true to line and grade in a smooth, neat and even manner by means of wood floats, and the edge of the faces and back shall be rounded to a radius of not more than three-quarters (3/4) inch.
- H. The depressed curb at driveways shall be no higher than one and one-half (1 1/2) inch above the street surface. The length of this depressed curb shall not exceed thirty-five (35) feet without a safety island. This safety island shall not be less than fifteen (15) feet in length. Pipes or grates or other constructions shall not be placed in the gutter to form a driveway ramp.
- I. Excavations shall be made to the required depth, and the material upon which the curb is to be constructed shall be compacted to a firm, even surface. Where the sub-grade is soft or spongy, as determined by the Township Engineer, a layer of crushed stone not less than four (4) inches thick shall be placed under the curb.
- I. Where it is necessary to replace existing vertical curbs with depressed curbing, two (2) ten (10) foot long sections of existing curb shall be removed down to the sub-grade without disturbing the adjacent cartway

paving. Any portions of the cartway disturbed during curbing removal or installation will be repaired to new condition.

- K. Any depressed curb sections that are unused when a development or phase of a development is completed, shall be completely removed and replaced with full section upright curbing to line and grade of adjacent curbing. Forming and pouring vertical curbing on top of an existing curb depression will not be permitted.

SECTION 416 STREET NAMES AND SIGNS

- A. Proposed streets that are obviously in alignment with already existing and named streets shall bear the names of the existing streets.
- B. In no case shall the name of a proposed street duplicate, or be similar to an existing street name in the Township and in the postal district, irrespective of the use of the suffix street, road, avenue, boulevard, driveway, place, court, lane, etc.
- C. All street names shall be subject to the recommendation of the Township Planning Commission and the approval of the Board of Supervisors and fire department serving the Township.
- D. Street name signs shall be installed at all street intersections. The design and placement of such signs shall be subject to approval by the Township.
- E. Traffic control signs shall be shown on final plans for all streets. Signs and posts shall meet PennDOT standards. The Township may require additional signs prior to dedication of roads.

SECTION 417 SIDEWALKS

- A. All residential developments in excess of ten (10) lots shall have either a sidewalk or pathway system acceptable to the Township. All pathways proposed shall be of materials, location and construction approved by the Township engineer.
- B. Paved sidewalks shall be provided on all collector streets within a subdivision; on all streets within one thousand (1,000) feet of and leading to a school; on all commercial streets; and at such other locations deemed by the Board to be necessary for the safety and convenience of the public.
- C. Sidewalks may be required on both sides of new streets in residential subdivisions or land developments. Sidewalks may be required on only one (1) side of the street in subdivisions or land developments if there are

residential lots on only one (1) side of the street.

- D. Sidewalks shall be provided along all new streets and parking areas located in non-residential subdivisions or land developments unless it can be shown, to the satisfaction of the Board, that pedestrian traffic does not follow or mix with vehicular traffic, in which case, both sidewalks and curbs may not be required.
- E. Sidewalks shall be located within the street right of way a minimum of three (3) feet from the right of way line. Generally, a grass planting-strip should be provided between the curb and sidewalk. Handicap ramps shall be provided at all intersections.
- F. All sidewalks shall conform to specifications for Class A concrete, as specified by PennDOT, with a minimum compression strength of 3,500 psi after twenty-eight (28) days.
- G. Sidewalks shall be a minimum of four (4) feet wide except along collector and arterial streets and adjacent to shopping centers, schools, recreational areas and other community facilities, where they shall be a minimum of five (5) feet wide.
- H. Where sidewalks abut the curb and building, wall or other permanent structure, a pre-molded expansion joint one-fourth (1/4) inch in thickness shall be placed between curb and the sidewalk for the full length of such structure. Sidewalks shall be constructed in separate slabs thirty (30) feet in length except for closures. The slabs between expansion joints shall be divided into blocks five (5) feet in length by scoring transversely.
- I. Sidewalks shall have a minimum thickness of four (4) inches when used solely for pedestrian traffic and a minimum thickness of six (6) inches at all driveways. Welded wire fabric (6/6-10/10) shall be provided in all sidewalks constructed at driveways.
- J. Excavation shall be made to the required depth and a layer of four (4) inch base of PA #57 stone shall be placed and thoroughly compacted prior to laying the sidewalks when used solely for pedestrian traffic and a minimum thickness of a six (6) inch base at all driveways.
- K. All plans shall designate the handicap accessibility routes from parking areas to buildings. All curbs, sidewalks and other accessible routes for individuals with disabilities shall comply with the Americans With Disabilities Act and the Township Building Code for handicap accessibility. Construction shall be in compliance with ADA Standards for Accessible Design (28 CFR Part 36, as amended) or to Accessible and Usable Buildings and Facilities (ICC/ANSI A117.1 – 2003, as amended). Curb and ramp construction details shall be consistent with those found in PennDOT

Publication 72M RC-67M.

SECTION 418 SHADE TREES AND SCREEN PLANTING

Street trees shall be planted by the applicant no less than six (6) inches from the outer edge of the right-of-way, spaced no more than forty (40) feet apart. No fences, hedges, free-standing walls, or planting (except street trees) shall be permitted within the rights of way of a street.

When recommended by the Planning Commission, and required by the Board, screen planting shall be placed by the developer. The initial minimum height and density of such screening shall be approved by the Board. Shade trees and screen planting shall be used in conformance with Section 1709 of the Zoning Ordinance. The developer is encouraged to use plant material selected from the Plant List found in Appendix E and where practical to use plants that are native species.

When a specific landscaping plan is prepared and approved by the Township, the developer may provide for the rearrangement of required street trees into clusters of trees to blend with other proposed landscaping on lots.

SECTION 419 SEWAGE TREATMENT AND DISPOSAL

- A. Each subdivision or land development shall provide sewage disposal that is consistent with the Township Act 537 Plan. Where the public sewer is not yet accessible but is planned for extension to the subdivision, the applicant shall install sewer lines, including lateral connections as may be necessary to provide adequate service to each lot when connection with the sewer system is made. The sewer lines shall be suitably capped at the limits of the subdivision, and the laterals shall be capped until sewers are provided. On-site disposal facilities shall also be provided in the interim. Design of capped sewer systems shall be subject to approval by the Pennsylvania Department of Environmental Protection, the Township and the Valley Forge Sewer Authority. The requirements of the Valley Forge Sewer Authority are set forth in Appendix B of this Ordinance. Permits, where required, shall be obtained before construction of a sanitary sewer system is started.
- B. Sanitary sewers shall be designed and constructed in strict accordance with Pennsylvania Department of Environmental Protection and the Valley Forge Sewer Authority standards, or their successors. A copy of the approval by the Valley Forge Sewer Authority of such systems shall be submitted with the final plan. Permits, where required, shall be obtained before construction of a sanitary sewer system is started.
- C. Sanitary sewers shall not be used to carry stormwater.

- D. All lots which cannot be connected to a public or community sanitary sewage disposal system in operation at the time of construction of a principle building shall be provided with an individual on-site sanitary sewage disposal system meeting the design standards of Title 25, Chapter 73, Rules and Regulations of the Pennsylvania Department of Environmental Protection.
- E. If public sewer is available to serve a proposed development, that system shall be installed. To utilize a public sewer system the development must also have a public water system. If no public water is available and on lot wells are to be used, a dry, capped public sewer shall be installed.
- F. If individual on-site sanitary sewage disposal facilities are to be utilized, the applicant shall prepare a feasibility report to be incorporated in the Land Planning Modules to be submitted. Such report shall compare the cost of providing on-site facilities with alternate sewage disposal methods. Based on the analysis of this report, the Township may require the installation of a public sanitary sewer system or capped sewer constructed in accordance with Valley Forge Sewer Authority regulations.
- G. Where individual on-site sanitary sewage facilities are to be utilized, each lot so served shall be of a size and shape to accommodate the necessary length of tile fields at a safe distance from, and where feasible at a lower elevation than the proposed well and building(s) to facilitate gravity flow.
- H. Where community on-lot sewage disposal systems are proposed, requiring a building or structure to be located above ground, the building or structure shall be completely screened from the view of any adjacent properties, according to the screening provisions of Section 1407 of the Township Zoning Ordinance.
- I. The proposed method of sanitary sewage disposal shall be in accordance with the East Pikeland Township's officially adopted Act 537 Sewage Facilities Plan, as amended.
- J. Sanitary Sewage Disposal System(s)
 - 1. Sanitary sewage disposal systems shall be provided consistent with the design standards and requirements contained in this Ordinance.
 - 2. Whenever an applicant proposes that individual on-site sanitary sewage disposal systems shall be utilized within the subdivision, before the issuance of a building permit, an on-site system shall be designed and a permit obtained from the Chester County Health Department.

3. In all other cases, the applicant shall provide a complete community or public sanitary sewage disposal system. The design, installation, ownership and maintenance of such systems shall be subject to the approval of the Township Engineer, the Township Planning Commission and Board of Supervisors, and to the approval of the Pennsylvania Department of Environmental Protection. As a minimum, the design of each community on lot sanitary sewage disposal system shall provide a reserve area in the event the primary subsurface disposal area should fail. The reserve area shall be located within soils suitable to support such a system and shall not be located within the required open space. Both the primary and reserve area shall be tested, preserved from structures, and noted on the final plan.

K. Deep Probe Test Pits and Soil Percolation Test Requirements

1. Deep probe test pits and soil percolation tests shall be performed for all subdivisions wherein building(s) at the time of construction will not be connected to a public or community sanitary sewage disposal system in operation. Deep-hole test pits are recommended as a further means of guaranteeing suitability of a site.
2. Deep probe test pits and soil percolation tests shall be made in accordance with the procedure required by the Pennsylvania Department of Environmental Protection, by either a registered professional engineer, or registered sanitarian and/or the Pennsylvania Sewage Facilities Act sewage enforcement officer.
3. Deep probe test pits and soil percolation tests shall be performed on each lot within the site of the proposed on-site sanitary sewage disposal facilities for both the primary and backup disposal area and noted on the final plan.
4. Testing is required for both a primary and replacement sewage absorption area. Both sites and test holes must be shown on Final Plans.

SECTION 420 WATER SUPPLY

- A. Adequate and potable water supply system(s) shall be installed consistent with design principles and requirements contained in this Ordinance and Department of Environmental Protection regulations.
- B. Where the applicant proposes that individual on-site water supply systems shall be utilized within the subdivision or land development, the applicant shall demonstrate the feasibility of such systems. Before the issuance of a

building permit, a permit shall be obtained subject to the standards provided for within Subsection 501, Chapter 500, Rules and Regulations of the Chester County Health Department.

- C. Wherever feasible, the subdivision or land development shall be provided with a complete central water supply system by the Pennsylvania American Water Company, or its successor. The design and installation of such central water supply system shall be subject to the approval of the Township, the Fire Marshal and the water company.
- D. Wherever a central water supply system is provided, fire hydrants shall be installed for fire protection as approved by the Fire Marshall and Township Engineer.
 - 1. All fire hydrants shall be located on a minimum six (6) inch lateral on an eight (8) inch looped system.
 - 2. The location of hydrants shall be approved by the Fire Marshal and the Township. In addition, fire hydrants shall be located as follows:
 - a. Fire hydrants shall be located at street intersections and with intermediate hydrants between intersections located so spacing does not exceed six hundred (600) feet measured along the street. In addition, the average spacing between fire hydrants shall not exceed the requirements of Section C105 of the International Fire Code, 2003.
 - b. Fire hydrants shall be spaced in a development so that all proposed building(s) will be no more than six hundred (600) feet from the hydrant measured along the street. In addition, the minimum number of fire hydrants available to a building shall not be less than the requirements of Section C103 of the International Fire Code, 2003.
 - c. Fire hydrants shall be located adjacent to paved streets suitable for fire apparatus and where possible, at least fifty (50') feet from any building.
 - d. A fire hydrant shall not be located within eighteen (18") inches of or more than ten (10') feet from the curblineline or edge of paving.
 - e. Fire hydrants shall not be installed within a fifteen (15') foot radius of any obstruction.
 - f. The barrel of a fire hydrant shall be set perpendicular to the

ground with the lowest discharge outlet at least fifteen (15") inches from the finished grade. Large hydrant outlets shall face the street.

3. Fire hydrants shall provide a minimum of fifteen hundred (1500) Gallons Per Minute (GPM) at a residual pressure of thirty (3) pounds per square inch (psi).
4. Fire hydrant body colors and top colors shall comply with the chart below:

Color bands Chart for Water Main Sizes	
20"	Red flange
16"	Green flange
12"	Blue flange
10"	Yellow flange
8"	Orange flange
6"	Pink flange
4"	Purple flange

5. Fire hydrants shall meet the specifications of the Insurance Services Office of Pennsylvania and shall comply with the following specifications:
 - a. All fire hydrants shall be equipped with a 4½ " pumper nozzle, with five (5") inch storz connection and cap, and two (2) two and one-half (2 ½") inch hose connections. Fire hydrants on a main size of larger than twelve (12") inches shall be equipped with dual 4 ½" pumper nozzles, with five (5") inch storz connections and caps. An eight (8") inch lateral connection shall be utilized with twelve (12") inch water mains.
 - b. The fire hydrant shall open left and the valve opening shall be 5 ¼".
 - c. All fire hydrants shall be equipped with a five (5') foot reinforced fiberglass pole marker with red/white reflective bands. The pole marker shall have a flexible shaft, heavy duty spring, and integral mounting bracket.
6. For additional fire protection, a dry hydrant may be required to be incorporated into existing and proposed ponds or reservoirs and an access easement provided for emergency use.

E. Minimum Water Supply Requirements

1. In all subdivisions and land developments served by public water, the

following water pressure and gallonage requirements shall apply:

- a. Residential Use. A minimum domestic pressure of forty psi (40) pounds per square inch shall be provided at each house to be connected to the water main. The system to which the residential unit is connected shall have sufficient capacity to supply a minimum of three hundred (300) gallons of water per residential unit per day within the subdivision or land development, and supply the minimum needs for fire protection as required in subsection D.3 above.
 - b. Commercial or Industrial Use. A minimum pressure of forty psi (40) pounds per square inch shall be provided at each commercial or industrial building connected to the water main. When an applicant wishes to connect to a public water system, a study shall be made to determine if there is adequate water to supply the building and use. For purposes of fire protection in commercial and industrial districts, fifteen hundred (1,500) GPM at 30 psi residual pressure is required.
- F. Approvals Conditioned Upon Adequacy of Public Water Supply
1. No subdivision or land development application proposing an individual or central water supply system shall be granted preliminary or final approval unless the applicant demonstrates, by a fair preponderance of the credible evidence, full compliance with the provisions of this section.
- G. Use and Occupancy Permits
1. No use and occupancy permit shall be issued for any building within a subdivision or land development until and unless water mains, service connections and fire hydrants serving such building are installed and functioning.

SECTION 421 OTHER UTILITIES

- A. All other utility lines including, but not limited to electric, gas, street light supply, cable television, and telephone shall be placed underground. Installation of all utilities shall be in strict accordance with the engineering standards and specifications of the public utility concerned.
- B. In accordance with the provisions of Act 178, all developers, contractors, etc., will contact all applicable utilities and accurately determine the locations and depth of all underground utilities within the boundaries of the tract proposed for development, prior to excavation. A list of the applicable

utilities and their phone numbers shall appear on the plans submitted for review and proof shall be presented to the Township prior to final plan approval.

C. Gas, Electric and Petroleum Product Pipelines

1. There shall be a minimum distance of fifty (50) feet, measured at the shortest distance, between any proposed dwelling and any existing natural gas, electric, or petroleum product transmission right of way line.

SECTION 422 STORMWATER MANAGEMENT

A. Stormwater Management

1. Storm Drainage Required. A stormwater management system including but not limited to a storm sewer system and all appurtenances, retention or detention facilities, and infiltration facilities shall be required to be constructed by the owner or applicant in any area from which the surface or subsurface drainage could impair public safety or cause physical damage to adjacent lands or public property.
2. The standards for design of stormwater drainage and management systems are contained in Chapter 22, Grading, Erosion and Sediment Control and Stormwater Management, of the Code of Ordinances of the Township of East Pikeland .
3. Maintenance of stormwater management facilities shall be provided in accordance with Chapter 22, Grading, Erosion and Sediment Control and Stormwater Management, of the Code of Ordinances of the Township of East Pikeland.

SECTION 423 STRIPPING, PILING, REPLACEMENT OR REMOVAL OF TOPSOIL

Initial construction of any site shall consist of stripping and piling of topsoil from all areas planned to be disturbed. The area stripped shall be kept to a minimum. Upon completion of other construction, the entire amount of topsoil stripped shall be replaced on the site. No topsoil shall be disposed of, by sale or otherwise, off the site of the construction.

SECTION 424 PARK, RECREATION, OPEN SPACE AND TRAILS

A. Purpose.

The purpose of this Section is to implement the recreation and open space goals of the Township as contained in the Comprehensive Plan, including:

1. Providing a variety and balance of facilities that can meet the varied recreational needs of the residents, businesses and industry;
 2. Preserving open space and protecting the environmental, scenic, historical and cultural features of East Pikeland;
 3. Developing a system of facilities that can deliver recreation services effectively and efficiently;
 4. Providing equitable and convenient accessibility to recreation facilities;
 5. Supporting community development and stability by providing recreation sites and open space.
- B. In reviewing subdivision and land development plans, the applicant shall consider whether community facilities, especially parks, recreation and open space areas are adequate to meet the needs of the additional dwellings proposed by the subdivision. The East Pikeland Township Open Space, Recreation and Environmental Resources Plan identifies existing and proposed standards for these facilities. The Township Planning Commission shall prepare a report, comparing the proposed plan and proposals submitted by the applicant as required by the provisions of the East Pikeland Township Open Space, Recreation and Environmental Resources Plan and this Section, to determine if the plan satisfies the requirements of the Township.
- C. Land and Facilities for Recreation, Trails and Open Space.
All subdivision and land development proposals shall be required to meet the provisions for providing suitable public recreation, trails and open space. These provisions require that new development proposals provide land and facilities to be dedicated, or fees-in-lieu thereof to meet public recreation, trails and open space needs. All proposed public recreation, trails and open space facilities are to be designed in accordance with the provisions of the East Pikeland Township Open Space, Recreation, and Environmental Resources Plan. All trails are to be designed in accordance with Section 424.E
1. The applicant shall provide land and improvements to satisfy the requirements of Section 424.C and 424.E; the amount and composition of land to be provided shall meet the following standards:

- a. The amount of land to be dedicated (see Percentage of Lot Area to be Dedicated Table) is based on the gross tract area.
- b. All land is to be offered for public dedication, but can remain as private property for use by the residents of the proposed project at the discretion of the Board of Supervisors.
- c. The location and use of land to be dedicated to meet the provisions of Section 424.C should be designed in accordance with the East Pikeland Township Open Space, Recreation and Environmental Resources Plan
- d. The provision of trails shall be in accordance with Section 424.E
- e. The applicant is responsible for providing and installing recreation equipment and/or site improvements suitable to the area of land, subject to the approval of the Board of Supervisors.

PERCENTAGE OF LOT AREA TO BE DEDICATED

<u>TYPE OF DEVELOPMENT**</u>	<u>TOTAL</u>	<u>ACTIVE RECREATION</u>	<u>PASSIVE RECREATION/ OPEN SPACE</u>
Residential lots greater than 10.0 acres.	0%	--	--
Residential lots of 6.0 to 10.0 ac.	5%	0%	5%
Residential lots from 2.0 acres to less than 6.0 acres	10%	0%	10%
Residential lots from 25,000 square feet to less than 2 acres	20%	0%	20%
Residential lots from 10,000 square feet to less than 25,000 square feet	25%	5%	20%
Residential lots from 3,000 square feet to less than 10,000 square feet	30%	20%	10%
Residential lots of less than 3,000 square feet, and apartments, townhouse and condominium development sites	40%	25%	15%
Industrial uses	20%	0%	20%
Commercial uses	10%	0%	10%
Institutional uses	25%	0%	25%

**If the proposed development includes the clustering or lot averaging option, the net density shall be used to determine the lot sizes.

2. If the Township chooses a fee-in-lieu of land dedication and improvements to satisfy the requirements of Section 424.C and Section 424.E, the amount of any fee shall be as follows:

Total cost per dwelling unit or equivalent dwelling unit \$3,909

Land cost per dwelling unit or equivalent dwelling unit \$1,107

Improvements cost per dwelling unit or equivalent dwelling unit \$2,802

Where the land cost is the estimated total value of land and acquisition costs of proposed parks and open space (including trails) as set forth in the East Pikeland Township Open Space, Recreation and Environmental Resources Plan, as may be amended from time to time by the Board of Supervisors;

Where the improvements cost is the estimated total value of the design and improvements costs of proposed parks and open space (including trails) as set forth in the East Pikeland Township Open Space, Recreation and Environmental Resources Plan, as may be amended from time to time by the Board of Supervisors;

Where the total cost is the land cost plus the improvements cost;

Where the cost per dwelling unit is determined by dividing the relevant cost (i.e. the land cost, improvements cost and/or total cost) by the estimated number of dwelling units; and

Where the estimated number of dwelling units is calculated by dividing the Chester County Planning Commission Ten-Year Population Projection for the Township by 2.7 persons per dwelling unit.

Fees for residential uses shall be established on a per dwelling unit basis. Fees for non-residential uses shall be established on an equivalent dwelling unit basis, where one equivalent dwelling unit shall equal the number of required off-street parking spaces, as provided in Section 1707.5 of the East Pikeland Township Zoning Ordinance, divided by two and seven tenths (2.7).

Fees shall be adjusted each year based upon the consumer price index (CPI) for the Philadelphia region for each year from the effective date up to and including the year in which the fee is actually paid to the Township.

D. Open Space Characteristics and Design Standards

In designating areas for open space and recreation within the subdivision and land development plan, the following criteria and standards shall be adhered to by the applicant:

1. Consistent with the Township Open Space, Recreation and Environmental Resources Plan;
2. Suitable for active recreational uses, without interfering with adjacent dwelling units, parking, driveway, and roads. The land used for active recreation should not be in the flood plain, on slopes exceeding six (6) percent, in wetlands, or comprised of surface water;
3. Consistent with natural feature and historic features protection provisions, as contained in Section 425 of this Ordinance.
4. The linkage of erosion and sediment control or stormwater control facilities with open space and recreation areas may be permitted and is encouraged by the Township if the presence of such facilities does not conflict with proposed activities or detract from the aesthetic values associated with the open space. Plans for combining these facilities should be submitted to the Township for review and approval.
5. Interconnected with open space or recreation areas on abutting parcels wherever possible, including provisions for pedestrian trails, for general public use to create linked pathway systems within the Township.
6. Coordinated with applicable open space and recreation plans of any Federal, State, County, Regional, adjacent Municipal, or private organization to compliment various programs increasing the utility of the open space and recreation network.
7. Comprised of areas not less than seventy-five (75) feet in width, and not less than one quarter (1/4) acre for active recreation facilities, or two (2) acres for passive recreation or open space facilities.
8. Provided with sufficient perimeter parking when necessary, and with safe and convenient access by adjoining street frontage or other right of way easements capable of accommodating pedestrian, bicycle, maintenance, and vehicle traffic and containing appropriate access movements.
9. Undivided by any public or private streets, except where necessary for proper traffic circulation, and then only upon recommendation of

the Township Engineer and Planning Commission.

10. Free of all structures, except those related to outdoor recreational uses.
11. Suitably landscaped either by retaining existing vegetation and wooded areas and/or by a landscaping plan for enhancing open space areas through plantings which are consistent with the purposes of this Section and which minimize maintenance costs.
12. Conveniently accessible to the general public to improve the utility of the facility and to promote its use among the residents. This applies to private facilities with limited access, as well, in case it is ever offered for dedication to the Township.
13. Consistent with the definition of Open Space in Section 201.

E. Trails

1. Purpose

The Board of Supervisors of East Pikeland Township has determined that the provision of a Comprehensive Trail System, as identified in the East Pikeland Township Open Space, Recreation and Environmental Resources Plan, is an essential element in meeting the recreational, as well as the transportation, needs of the residents of the Township and that trails already existing in the Township represent an important resource insofar as they form the basis of such Comprehensive Trail System.

It is the purpose, therefore, of this Section to require the provision of trails and/or trail links in all subdivisions and land development, or a fee-in-lieu thereof and to prevent the loss and regulate the use of existing trails.

2. Provision of Trails

In all subdivisions and land developments, provision shall be made for the reservation and/or dedication of trail corridors and the construction of trails in accordance with the Comprehensive Trail System delineated in the East Pikeland Township Open Space, Recreation and Environmental Resources Plan, or for the provision of trail links to the system.

3. Maintenance of Trails

- a. Where the maintenance of trails is to be the responsibility of individual lot owners, a homeowners association or similar entity, of an organization capable of maintenance responsibilities, the Township shall require that such responsibilities be established in perpetual covenants or deed restrictions binding on the landowner's successors in interest and may further require that an initial maintenance fund be established.
 - b. All trails shall be maintained to a standard determined by usage. The Township shall have the right, but not the obligation, to keep trails passable. A trail may be maintained by a property owner when such maintenance does not infringe upon passage by trail users. The Township shall have the right to close a trail entirely, or to specific uses, in cases of abuse of rules and regulations established for the appropriate use of such trail.
4. Fee-In-Lieu of Trails
- a. In all subdivisions and land developments wherein trails have been identified, as part of the Comprehensive Trail System, in the East Pikeland Township Open Space, Recreation and Environmental Resources Plan, the Applicant shall set aside land and construct such trails, or shall set aside land and construct trail links. In such cases that the Township determines a trail set-aside will not contribute directly to the Township's Comprehensive Trail System, a fee-in-lieu for the acquisition, construction and maintenance of trails shall be required.
 - b. A note shall be placed on the Final Plan stipulating the amount of the fee as established by paragraph a, above.
 - c. The full amount of the fee shall be placed in escrow as a condition of Final Plan approval. Payment of the fee for any lot shall be made at any of the following points, whichever occurs first: (i) at the time of conveyance of the lot; (ii) at the time of application for a building permit; or (iii) at the time any public improvements are offered for dedication.
 - d. All fees received pursuant to this Section shall be placed in a special capital reserve fund created for trail acquisition, construction and maintenance at locations consistent with the Comprehensive Trail System as identified in the East Pikeland Township Open Space, Recreation and Environmental Resources Plan.

5. Trail Conservation Standards

- a. Disturbance to existing pedestrian or equestrian trails shall be permitted only when a property cannot otherwise be developed and then only when relocation of such trails is approved. No person may block the use of a trail or alter the path thereof unless a plan for the relocation is submitted to the Township. The plan shall be approved by the Board of Supervisors upon recommendation of the Planning Commission, which shall make its recommendation within forty-five (45) days of the submission of an application for trail relocation. No relocation shall be permitted if such relocation will impede the use of the trail or result in a trail width of less than ten (10) feet. Properties within which trail relocations are permitted shall maintain existing connections to trails on adjacent properties.
- b. Any existing trail is presumed to exist by prescriptive easement with public entitlement to its perpetual use. The Board of Supervisors may authorize the Township Solicitor, in cases of disputes over the existence of a prescriptive easement, to seek a judicial determination of fact by an action at law or equity.
- c. The Township shall maintain a map of existing trails that shall indicate: (i) whether the easement of such trails has been confirmed by grant, agreement or judicial decision; (ii) the identification of the entity assuming responsibility for maintenance of the trail; (iii) any restriction(s) on the use of the trail; and (iv) whether the location of the trail has been established by survey.
- d. Except by approval of the Township, motor vehicles shall not be permitted on trails.

6. Trail Construction Specifications

- a. General Standards
 - (1) Proposed trails shall be properly related to such trail plans or parts thereof as have been officially prepared and adopted by the Township and adjacent townships, including recorded subdivision and land development plans, and shall be classified according to their function within the Comprehensive Trail System.

- (2) Proposed trails shall further conform to such county and state trail plans as have been prepared, adopted and files as prescribed by law.
- (3) Thoughtful and imaginative design of trails and their relationship to the shape and arrangement of lots and structures is required. Trails shall be logically related to environmental features so as to minimize disturbance of such features and they shall be constructed on reasonable grades, have proper drainage and provide for adequate vision.
- (4) Trail links shall be designed to serve local residents and provide connections to the Comprehensive Trail System.
- (5) Major Trail Elements
 - (a) Where a subdivision or land development abuts or contains an existing or proposed major trail element, the Board of Supervisors may require dedication of additional trails or such other treatment to provide protection of abutting properties or reduce trails that are duplicative in purpose.
 - (b) Where warranted, due to additional traffic, drainage or comparable conditions, major trail elements that are part of, or connect to developments shall be improved by the Applicant or by means of escrowed funds for use by the Township to provide such improvement(s).
- (6) Partial Trails
 - (a) Partial trails shall not be permitted except where essential to the reasonable development of the tract and where dedication of the remaining portion of the trail has been secured.
 - (b) Dead-end trails shall not be permitted except as stubs to permit future trail extension into or from adjoining tracts.

b. Trail Widths

- (1) The minimum trail path for all new trails shall be as follows:
 - (a) Multi-use Trails and Bikeways 7 Feet
 - (b) Trail Links 5 Feet
- (2) Greater trail path widths may be required by the Township for the following purposes:
 - (a) To promote public safety and convenience.
 - (b) To accommodate special topographic conditions that may result in grading outside the standard trail width.

c. Trail Alignment

- (1) To ensure adequate sight distance, the minimum centerline radii for horizontal curves shall be as follows:

Bikeways	65 Feet
Multi-Use Trails and Trail Links	15 Feet
- (2) Sight lines and stopping sight lines for all new trails shall be as follows:

	<u>Sight Lines</u>	<u>Stopping Sight Lines</u>
Bikeways	130 Feet	150 to 175 Feet
Multi-Use Trails and Trail Links	60 Feet	50 Feet

d. Trail Grades

- (1) Grades for Multi-Use Trails and Trail Links shall not exceed four percent (4%), however a maximum grade of eight percent (8%) may be permitted for a distance not to exceed one hundred (100) feet where the topography provides conditions for minimal grading.
- (2) Grades for Bikeways shall not exceed five percent (5%), however steeper grades may be permitted for

a distance not to exceed two hundred (200) feet where the topography provides conditions for minimal grading.

- (3) Maximum grades shall not be permitted with the minimum curve radii.

e. Trail Construction

- (1) General

All materials and methods used in the construction of trails and the drainage facilities thereof shall conform to the standards of this Section and the applicable standards of the American Association of State Highway and Transportation Official (AASHTO). Bikeways shall be designed for speeds not to exceed thirty (30) mph, and Multi-Use Trails shall be designed for speeds not to exceed ten (10) mph.

- (2) Surfacing

- (a) Macadam trails shall, at a minimum, consist of a base course of four (4) inches of crushed stone and a wearing surface of two (2) inches of asphalt.
- (b) Stone trails shall, at a minimum, consist of four (4) inches of three eighths (3/8) inch crushed stone.
- (c) Natural Trails shall, at a minimum, consist of four (4) inches of licorice root mulch, wood chips or other natural mulch material approved by the Board of Supervisors, or may be, upon approval of the Board of Supervisors, left in its natural state.

- (3) Trail Clearance

Overhead clearance for both Bikeways and Multi-Use Trails shall be a minimum of eight (8) feet.

- (4) Trail Lighting

- (a) Trail lighting is not required unless the Township determines that parking areas, trailheads or major road crossings warrant

such.

- (b) In the event that lighting is required, such lighting shall conform to Section 1711 of the Zoning Ordinance.

(5) Trail Signage

- (a) Trail signage shall conform to the standards of the Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices* with regard to sign shape and color. FHWA standards with regard to sign size shall not apply to trails, except as specifically required for bicycle facilities. Signs shall be clearly readable, easily understood and sized according to the scale of the trail.

- (b) Unless specifically waived by the Township, the following types of signs shall be required at applicable points along trails:

Regulatory Signs - Such signs are to be used for traffic control or to provide operational requirements. Examples of such signs include: stop and yield signs; speed-limit signs and right-of-way signs.

Warning Signs - Such signs shall be used to advise trail users of existing or potential dangerous conditions. Examples of such signs include: Grade change warnings; surface condition change warnings and bridge, intersection and tunnel approach warnings.

Guidance Signs - Such signs shall be used to provide trail information or directions. Examples include signs that advise of local points of interest or service facilities.

- (c) Excessive signage or signage that detracts from the natural or scenic qualities of the trail shall be avoided and no advertising signs shall be permitted.

7. Inspections of Trails

The construction and/or installation of trails shall be subject to the provisions of Section 601 of this Ordinance.

8. Performance Guarantee for the Construction of Trails

No building permit shall be issued if required trails are not fully constructed at the time of application for such permit except upon submission of a performance guarantee for the construction of the trails. Release from Performance Guarantees shall be in accordance with Section 603 of this Ordinance.

9. As-built Plans of Trails

As-built plans of trails shall be provided in accordance with the provisions of Section 604 of this Ordinance.

10. Continuous Offer of Dedication of Trails Subject to Acceptance by the Board of Supervisors.

The dedication and acceptance of trails shall be in accordance with the provisions of Section 605 of this Ordinance.

11. Maintenance Guarantee

A guarantee of maintenance for trails accepted for dedication by the Board of Supervisors shall be provided in accordance with the provisions of Section 606 of this Ordinance.

12. Private Trails

Private trails, in addition to the required trail set aside or fee-in-lieu of trails, may be permitted by the Board of Supervisors when there is a recorded agreement between the private trail owner and the Township specifying that such trails will not be considered part of the Township's Comprehensive Trail System and will not be offered for dedication. Private trails may not become part of the Township's Comprehensive Trail System or be accepted by the Township unless constructed to the standards of this Article existing at the time of offer of dedication.

F. Ownership of Park and Recreation Areas and Facilities, Open Space and Trails

The following standards shall apply to that portion of park and recreational and facilities, open space and trails not retained by an Applicant and/or the original owner.

1. Although it is the policy of the Township to require the dedication in fee simple of park and recreational areas and facilities, open space and trails, the Board of Supervisors, at its discretion, may approve the following forms of ownership for park and recreational areas and facilities, open space land and trails. Such forms of ownership may be used, individually or in combination when approved by the Board of Supervisors:
 - a. Condominium
 - b. Homeowners Association
 - c. Dedication in Fee Simple
 - d. Dedication of Easements
 - e. Transfer of Fee Simple Title and Easements to a Private Conservation Organization.

Such land shall not be eligible for transfer to another party except for transfer to another form of ownership permitted under this Section, and then only where there is no change in the open space ratio. The following shall be required for each of the forms of ownership:

- a. Condominium

The common open space may be controlled through the use of condominium agreements, such agreements to be in conformance with the Uniform Condominium Act of 1980. All such common open space land shall be held as "common element".
- b. Homeowners Association

The common open space may be held in common ownership by a homeowners association and shall be subject to the provisions of Section 424.G.
- c. Dedication in Fee Simple

The Township may, but shall not be required to, accept any portion or portions of park and recreation areas and facilities, open space and trails, provided that:

 - (1) Such land is accessible to the residents of the Township.

- (2) There is no cost of acquisition, other than any costs incidental to the transfer of ownership.
- (3) The Township agrees to and has access to maintain such land.

d. Dedication of Easements

The Township may, but shall not be required to, accept easements for public use of any portion or portions of park and recreation areas and facilities, open space and trails, title to which shall remain with a condominium or homeowners association, provided that:

- (1) Such land and facilities is accessible to the residents of the Township.
- (2) There is no cost of acquisition, other than any costs incidental to the transfer of ownership.
- (3) A maintenance agreement, acceptable to the Township, is attained.

e. Transfer to a Private Conservation Organization

With permission of the Township, an owner may transfer either a fee simple title, with appropriate deed restrictions in favor of the Township, or a conservation easement to a private non-profit organization, among whose purposes is to conserve park and recreation areas and facilities, or open space, or trails or natural or environmental resources, provided that:

- (1) The organization is acceptable to the Township and is a bona fide conservation organization with perpetual existence.
- (2) The conveyance contains appropriate provision for proper reverter or retransfer in the event that the organization becomes unwilling or unable to continue carrying out its functions.
- (3) A maintenance agreement acceptable to the township is attained.

2. Included in any terms of ownership shall be protection of the park and recreation areas, open space and trails from development in perpetuity by means of a conservation easement prohibiting

development. The required easement shall be conveyed either to the Township, in which case the development's property owners shall be named as third party beneficiary or to a conservation organization acceptable to the Township, in which case the Township and the development's property owners shall be named as third party beneficiaries.

G. Homeowners Association

Homeowners Associations shall be governed by the following requirements:

1. The developer shall provide the Township a description of the Homeowners Association, including its by-laws and documents governing common open space and trail maintenance and use restrictions.
2. The Homeowners Association shall be established by the developer and shall be operating before the sale of any lots within the development.
3. Membership in the Homeowners Association shall be mandatory for all lot owners and their successors.
4. The Homeowners Association shall be responsible for the maintenance of common open space and trails and for the provision of insurance thereon, and shall be responsible for the payment of real estate taxes on common open space only where the following preferred alternative is not utilized; The developer of any development wherein open space is provided may arrange with the Chester County Board of Assessment a method of assessment of the common open space that allocates to each parcel in the development a share of the total assessment of such common open space. Where this alternative is to be utilized, the method of allocation shall be approved by the Board of Supervisors.
5. The members of the Homeowners Association shall share equitably in the costs of maintaining and improving common open space and trails in accordance with the procedures established by such Homeowners Association.
6. In the event of the proposed transfer of common open space or trails by the Homeowners Association or the assumption of maintenance by the Township, notice of such action shall be provided by the Homeowners Association to all property owners within the development.

7. The Homeowners Association shall have adequate staff, or shall contract for such services, to properly administer and maintain common open space and trails.
8. The Homeowners Association may manage or lease back common open space and trails to the developer, his heirs or assigns, or to any other person or corporation qualified to manage, operate and maintain common open space and trails, however such lease agreement shall provide the following:
 - a. That the residents of the development shall have, at all times, access to the common open space and trails.
 - b. That the common open space and trails to be leased shall be maintained only for the purposes set forth in this Ordinance.
 - c. That the operation of open space and trail facilities may be for the benefit of the residents of the development only or may be open to the residents of the Township.
 - d. That the trails, set aside as part of the Township's Comprehensive Trail System, shall be open to the residents of the Township.

The lease shall be subject to the approval of the Board of Supervisors, as shall any transfer or assignment of the lease. Such lease agreements shall be recorded with the Recorder of Deeds of Chester County within thirty (30) days of execution and a copy thereof filed with the Township.

SECTION 425 NATURAL AND HISTORIC FEATURES PROTECTION

- A. Consideration shall be shown, and limitations or restrictions shall be identified, for all natural features, such as large trees, watercourses, historic areas and structures, and similar community assets that, if preserved, will add attractiveness and value to the remainder of the subdivision. Trees shall be preserved wherever possible.
- B. No specimen tree shall be disturbed.
- C. Where a proposed subdivision or development necessitates the clearing of trees or portions of tree masses, developers shall be guided by the following criteria in selecting trees and ornamentals for retention or clearing;

1. Aesthetic values, including autumn coloration, type of flowers and fruit, bark and crown characteristics, amount of dieback present;
 2. Susceptibility of tree to insect and disease attack and to air pollution;
 3. Species longevity;
 4. Wind firmness and characteristic of soil to hold trees;
 5. Existence of disease, rot or other damage to the tree; and
 6. Protection of buildings (e.g., dead and large limbs hanging over buildings should be removed).
- D. Developers shall exercise care to protect trees from damage during construction. Tree removal shall be limited to the actual construction site necessary to build and move construction equipment.
- E. All uses and activities established after the effective date of this Ordinance shall comply with the following standards. Site alterations, re-grading, filling or clearing of vegetation prior to the submission of applications for zoning or building permits or the submission of plans for subdivision or land development shall be a violation of this Ordinance. In the event that two (2) or more resources overlap, the resource with the greatest protection standard (the least amount of alteration, re-grading, clearing or building) shall apply to the area of overlap.
1. Streams, watercourses, wetlands, lakes or ponds. Such areas shall not be altered, re-graded, developed, filled, piped, diverted or built upon except in strict compliance with the Pennsylvania Department of Environmental Protection regulations and where no other reasonable alternative is available.
 2. In the event that a wetlands delineation, validated by the U.S. Army Corps of Engineers, is shown to vary from the wetlands boundary shown on the plan in accordance with Section 304.C.5.b.(13), the Corps delineation will govern.
- F. Historic features and other points of interest shall be identified and preserved in accordance with the terms of the East Pikeland Township Zoning Ordinance and may be credited toward open space requirements under the following conditions:
1. The feature being preserved shall be listed upon a Township, County, State, and/or National roster or inventory of features, monuments, or places of historic or general interest, or the

applicant shall by some other means demonstrate to the satisfaction of the Board of Supervisors that the said feature is of sufficient public interest to warrant preservation. Features may include, but shall not necessarily be limited to historically, culturally, or architecturally significant buildings, monuments, or sites; unique or historic landscape elements, such as historic gardens or Penn oaks; archaeological sites; and any other feature which shall be deemed by the Board of Supervisors to be of historic or cultural value to the Township.

2. The feature shall be situated upon a tract of land of sufficient size to preserve an impression, although not necessarily the exact condition, of the environs of the said feature prior to construction of the proposed development. The amount of credit toward open space requirements shall be equivalent to the size of this tract.
3. The feature shall not be moved.
4. The developer may be required to provide interpretive signage explaining the significance of the feature.
5. The feature and the tract upon which it is located shall be maintained by the owner of the tract, a community association, a public agency, or a private conservation group which shall be responsible for the maintenance of the feature and its grounds.
6. The developer shall be responsible for improvements to the site deemed necessary by the Board of Supervisors to protect public safety.
7. The Township shall maintain a permanent record of all historic features that have been credited to open space requirements, as well as the amount of land per feature so credited.

SECTION 426 CONCRETE CURB AND SIDEWALK SPECIFICATION

A. General

The construction of any new curbs or sidewalks and the repairing of any existing curbs or sidewalks in the Township shall be in conformance with the following specifications.

1. The grade to which every curb, gutter, or sidewalk shall be hereafter laid, constructed or repaired, other than that established in an approved subdivision and land development plan, shall be that fixed and designated by the Township Engineer. When required by the Township Engineer, grade cut sheets for the curb

or sidewalk shall be provided for review prior to the installation of the structure.

2. No open gutters for conducting rainwater or drainage of any kind will be permitted to run over the top of curbs or sidewalks. All underground rain conductors shall be Schedule 40 PVC.
3. No persons or person, firm or corporation shall construct or repair any curb, sidewalk, or gutters within the public right-of-way without first applying for and obtaining a permit for the same from the Township. No permit will be required for new curbing, gutters or sidewalk to be constructed in an approved subdivision and/or land development, which is to be installed by the developer.

B. Concrete Mix, Placement, Finishing, and Curing

1. All curbs, gutters and sidewalks as well as all driveways over sidewalks shall be constructed of monolithic concrete. Said concrete shall have a low slump with a maximum slump of four (4) inches, a compressive strength of four thousand (4,000) pounds per square inch (psi) in twenty eight (28) days, a low water-cement ratio of forth-five hundredth (0.45) or less, entrained air of five (5) to eight (8) percent total air content and a minimum cementitious materials content of five hundred sixty-four (564) pounds per cubic yard (lb/cu yd) of concrete. Certification for the concrete mix shall be furnished if required by the Engineer. At the discretion of the Township Engineer, certified test results can be required for a 28 day test.
2. Proper finishing practices shall be used. No finishing operation shall be performed while there is excess moisture or bleeding water on the concrete surface. No subsequent finishing operation after bull floating shall be done until the concrete will sustain foot pressure with only about one-quarter inch (1/4") indentation. The final finishing operation shall be to make a light broom finish.
3. The finished concrete shall be cured for at least seven (7) days after placement. As soon as the concrete is hard, it shall be cured by one or combination of:
 - (a) Moisten the concrete and cover it with waterproof paper of polyethylene film weighted down around the edges to prevent evaporation.
 - (b) The concrete shall be kept continuously wet with a sprinkler.
 - (c) The concrete shall be covered with burlap that is kept moist by occasionally spraying with water.
 - (d) Liquid membrane-forming curing compound, meeting the

specifications of ASTM C309, Type 1, Classes A and B, shall be sprayed onto the concrete surface prior to temperatures below forty (40) degrees Fahrenheit. The curing compound shall be a type that leaves no permanent discoloration on the surface and does not interfere with the application of any subsequent surface treatment.

The concrete shall air dry for at least thirty days prior to application of deicer chemicals. If time does not permit this air drying, the concrete surface shall be sealed with an approved breathable surface treatment.

4. Cold Weather Precautions. If concrete is placed when the air temperature is or is expected to be less than forty (40) degrees Fahrenheit, the following procedures shall be followed:
 - (a) Use heated concrete so that temperature does not fall below fifty (50) degrees Fahrenheit during placing, finishing and curing.
 - (b) Keep the concrete warm when freezing is possible. Use insulating blankets or a thick layer of dry straw. To keep the straw dry and in place, cover it with canvas, waterproof paper, or plastic sheeting.
 - (c) Protect slab edges and corners with extra care, they are most vulnerable to freezing.

During cold weather, high-early-strength concrete may be used to speed setting and strength development. This can reduce the curing period from seven (7) days to three (3) days, but the concrete shall be kept at or above fifty (50) degrees Fahrenheit for these three (3) days. The concrete shall then cool gradually to air temperature to prevent thermal shock. Calcium chloride admixture shall not be used.

5. Hot Weather Precautions. If concrete is placed when the air temperature is or is expected to be above eight-five (85) degrees Fahrenheit, the following procedures shall be followed:
 - (a) Use concrete that has been chilled during batching and mixing.
 - (b) Dampen the subgrade and forms.
 - (c) Have enough manpower and equipment on hand to finish the concrete quickly.
 - (d) Cover the concrete with wet burlap or plastic sheeting, and expose only a small area at a time just ahead of finishers, or use continuous wet curing methods.
 - (e) Start curing as soon as possible.

- (f) Place and finish the concrete in the cooler early morning when possible.
- 6. The Applicant shall provide the Township copies of all delivery slips for all materials used in the conjunction of curbs and sidewalks.

SECTION 427 VEHICLE TURNING RADII

All preliminary plans shall provide Vehicle Turning Radii plans showing the following information:

- A. Emergency Vehicles – Provide access for a WB-50 vehicle to the locations of the development deemed necessary by the Township Engineer based on recommendation from the local emergency service providers. The local fire department shall have the option to conduct a post-construction test drive with their largest equipment and any turning radii obstructing shall be removed or remedied to the satisfaction of the Township Engineer.
- B. Large Trucks – Provide access for a WB-62 vehicle for all new streets, common driveways, or non-residential developments deemed necessary by the Township Engineer.

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