

## ARTICLE X

### DESIGN STANDARDS AND REQUIRED IMPROVEMENTS

#### 1001. APPLICABILITY.

A. Minimum Requirements. The design standards and improvements required in this Article are the minimum requirements for approval of a subdivision or land development. Additional or higher type improvements may be required in specific cases where the Borough Council determines such improvements are clearly necessary to protect the public health and safety.

B. Modifications and Exceptions. See Section 107 of this Ordinance.

1002. REQUIRED IMPROVEMENTS. This Article sets forth the design and construction standards for required improvements. These minimum standards shall apply to any such improvement, regardless of whether the improvement will be dedicated to the Borough.

#### 1003. OVERALL REQUIREMENTS.

A. Land shall be suitable for the purpose for which it is to be subdivided or developed.

B. Hazardous Conditions. Subdivisions or land developments subject to hazardous conditions (such as open quarries, limestone solution channels, presence of toxic substances, unconsolidated fill, floodprone land, excessive eroding land or contaminated water supply) shall not be approved until the developer has provided or has legally committed to provide adequate measures to overcome or eliminate the hazards, in the determination of the Borough Council. See the floodplain requirements of the Borough Zoning Ordinance.

C. Comprehensive Plan. The subdivision or land development shall be designed with consideration of any applicable provisions of the Borough Comprehensive Plan.

D. Zoning. All aspects of a proposed subdivision or land development shall conform to the Borough Zoning Ordinance and all other Borough Ordinances and specifications.

E. Nearby Development. A subdivision or land development and its street pattern shall be coordinated with existing or approved nearby developments or neighborhoods to provide for harmonious development and to help prevent conflicts between different developments.

- F. Safety. No subdivision or land development shall occur in such a way that would significantly threaten the public health and safety, including hazards of toxic substances, traffic hazards, explosive hazards or fire hazards.

1004. STREETS.

- A. Access to Proposed Subdivisions and Land Developments. All proposed subdivisions and land developments shall have adequate and safe access to the public street system. Proposed streets shall be adjusted to the contour of the land to produce usable lots and reasonably sloped streets.
- B. Stub Streets. Where deemed necessary by the Borough Council for efficient movement of traffic, a subdivision or land development shall include the extension of a proposed street with right-of-way to the boundary line of the tract to provide for an eventual extension into the adjacent tract for efficient circulation of traffic throughout the area.
- C. Street Improvements. Where a subdivision or land development abuts or contains an existing street of inadequate cartway or right-of-way width, additional right-of-way and/or cartway width shall be required conforming with Table 10.1, "Design Standards for Streets." See also Section 801.A. of the Zoning Ordinance entitled "Frontage Required Onto Improved Street."
- D. Intersections.
1. The centerlines of streets shall intersect at right angles except where the Borough Council determine that a right angle intersection is not feasible. In such case, the intersection shall be at as nearly a right angle as possible, with an absolute minimum angle of 75 degrees.
  2. No more than two streets shall intersect at one point. Where one street intersects a cross street, the intersecting street shall either be aligned with any street intersecting on the other side of the cross street or be offset by the following minimum distances:
    - a. 150 feet along a local street,
    - b. 400 feet along a collector street, and
    - c. 1,000 feet along an arterial street.
    - d. The minimum distances of this subsection shall be measured between the points where the centerlines of the right-of-ways of the intersecting streets intersect with the centerline of the cross street (See the following figures).

RESOLUTION NO. 2442-a3

TATAMY BOROUGH, NORTHAMPTON COUNTY, PENNSYLVANIA

A RESOLUTION TO AMEND THE TATAMY BOROUGH SUBDIVISION AND LAND DEVELOPMENT ORDINANCE, ARTICLE X, SECTION 1004. K. 6., STREET CONSTRUCTION STANDARDS.

WHEREAS, Tatamy Borough Council, pursuant to the Borough Code has the power to enact resolutions, being beneficial to the Borough; and

WHEREAS, the Borough of Tatamy has determined that it is in the best interest of the Borough that the street construction standards as set forth in the Subdivision and Land Development Ordinance should be upgraded; and

WHEREAS, the Subdivision and Land Development Ordinance permits revision of the street construction standards by Borough Council by Resolution based upon the latest version of PennDOT's Form 408 or its successor publication; and

WHEREAS, the Borough wishes to upgrade the street constructions standards.

NOW THEREFORE, BE IT RESOLVED, by the Tatamy Borough Council for the Borough of Tatamy, Northampton County, Pennsylvania, and hereby approves the amendment of the Subdivision and Land Development Ordinance, Article X, Section 1004. K. 6. as follows:



SECTION 1004 K. 6. Street Construction Standards. All streets shall meet the following construction standards, which may be revised by Borough Council by Resolution, based upon the latest version of PennDOT's Form 408 or its successor publication, unless a differing standard is required by PennDOT for a State street:

BOROUGH OF TATAMY  
SUBDIVISION AND LAND DEVELOPMENT ORDINANCE  
STREET CONSTRUCTION STANDARDS

	Local Streets and Collector Streets Not Abutting or Within an Industrial Zoning <u>District</u>	Local and Collector Streets Abutting or Within an Industrial Zoning District or <u>Any</u> <u>Arterial Street</u>
2A Aggregate Subbase	4 inches	4 inches
Bituminous Concrete Base Course*	5 inches	6 inches
ID-2 Binder**	Not Required	3 inches
ID-2 Wearing Course***	1.50 inches	1.5 inches

\* Superpave 25 mm Base Course may be substituted.

\*\* Superpave 25 mm Binder Course may be substituted.

\*\*\* Superpave 9.5 mm Wearing Course may be substituted.

All Ordinances or parts of Ordinances in conflict or inconsistent herewith are hereby repealed absolutely.

This Resolution shall be effective on the date of passage.



Be it resolved this 4th day of November, 2002.

ATTEST:

BOROUGH OF TATAMY

By Joyce A. Lambert  
Joyce Lambert, Secretary/  
Treasurer

By Robert Fisher  
Robert Fisher, President

Approved this 4th day of November, 2002.

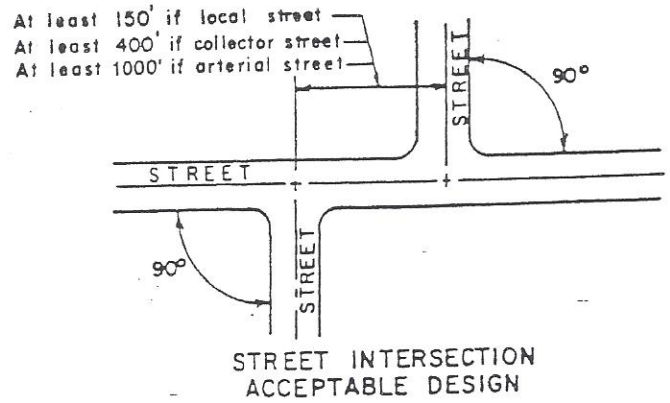
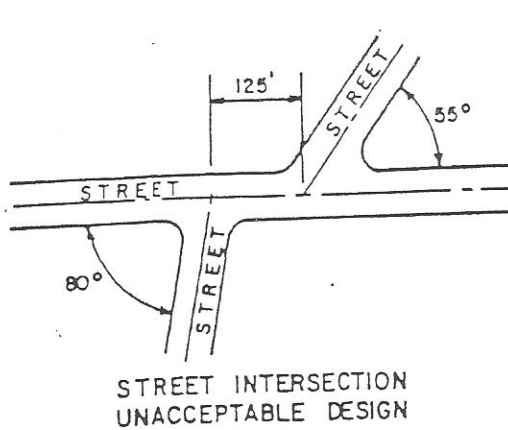
ATTEST:

BOROUGH OF TATAMY

By Joyce A. Lambert  
Joyce Lambert, Secretary/  
Treasurer

By Luke Duignan  
Luke Duignan, Mayor





3. At street intersections, the property line shall be rounded by arcs with the radii listed below. For arterial streets, the Borough Council may require a larger radius than stated below, if recommended by the Borough Engineer. (See Chart below).

Type of Street	Minimum Radius of Arc at Intersection of Cartway Edge or Curb Line (in feet)	Minimum Radius of Arc at Intersection of Right-of-Way (in feet)
Arterial	40	30
Collector	35	25
Local	25	15

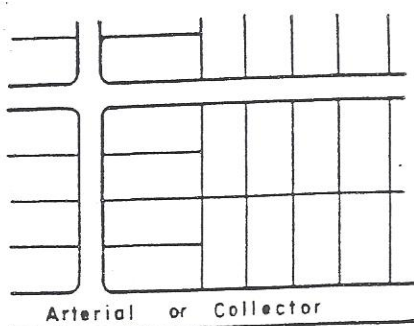
E. Arterial and Collector Street Frontage. Where a subdivision or land development abuts or contains an existing or proposed arterial or collector street, the Borough Council shall require one or more of the following methods of layout and site design if it determines one or more of these methods will be reasonable, feasible and necessary to avoid increased traffic congestion and improve traffic safety. The Board's decision to use one or more of the following methods will be based on the recommendations of the Planning Commission, the Borough Engineer, any comments from PennDOT and any professional traffic studies that have been submitted.

1. the use of a marginal access or "frontage" street or access only onto side or interior streets, to collect traffic from numerous driveways and direct it to a select few number of entrances to the arterial or collector street, and/or
2. the minimization of the number and length of driveway cuts or street intersections onto an arterial or collector street, which may include requiring the use of shared driveways between adjacent uses or lots, and/or
3. the restriction of ingress and egress involving left-hand turns onto or off of the arterial or collector street, and/or

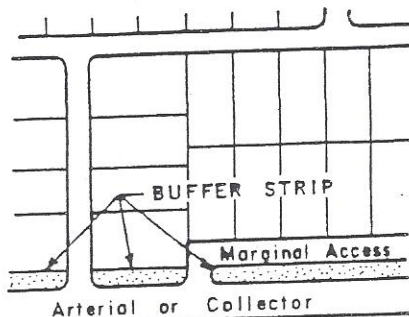


4. the prohibition of driveways from individual dwellings entering directly onto an arterial or collector street. If there is no alternative to this, each driveway entering onto an arterial or collector street shall have adequate turn-around space for vehicles provided within the lot so that vehicles do not back onto the street.

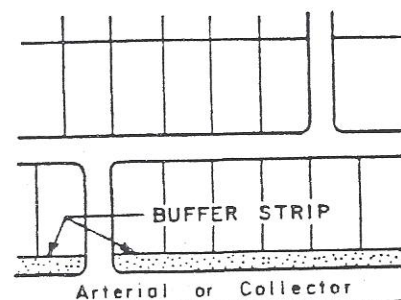
5. See also the section of the Borough Zoning Ordinance entitled "Access Onto Arterial and Collector Streets."



UNACCEPTABLE DESIGN



MARGINAL ACCESS STREET  
ACCEPTABLE DESIGN



REVERSE FRONTAGE LOTS  
ACCEPTABLE DESIGN

#### F. Street Design Standards.

1. Minimum street design standards shall comply with the Table below, unless PennDOT establishes a stricter requirement.

TABLE 10.1  
DESIGN STANDARDS FOR STREETS  
(All Dimensions in Feet Unless Specified)

DESIGN SPECIFICATIONS	TYPE OF STREET:		
	Arterial	Collector	Local and Marginal Access
Right-of-Way Width	80	60	50
Cartway Width	44*****	36*****	30*****
Acceleration/Deceleration Lane Width	10	NA	NA
(where determined to be needed by the Borough Council or PennDOT)			
Minimum Sight Distance*	475	300	200
Minimum Tangent between Reverse Curves**	200	100	100
Minimum Centerline Radii for Horizontal Curves	400***	300	150
Maximum Grade****	6%	8%	10%

NA = Not Applicable.

- \* Horizontal sight distances shall be measured from a point 3.5 feet above the road surface to a point 6 inches above the road surface, and shall be based upon standards of the American Association of State Highway and Transportation Officials (AASHTO).
- \*\* All tangents shall be measured along the street centerline.
- \*\*\* Larger radii may be required as determined by the Borough Engineer.
- \*\*\*\* Minimum grades for all streets shall be 1.0 percent, unless the Borough Engineer determines that a lesser grade acceptable.
- \*\*\*\*\* This minimum cartway width shall be reduced to 26 feet for: a) a local cul-de-sac street that will clearly ultimately serve 12 or fewer dwelling units or b) a local street serving only single family detached lots of 1 acre or greater of lot area.
- \*\*\*\*\* Or as required by PennDOT if a State street is involved, plus any turning lanes that may be required by PennDOT or Borough Council.

2. Horizontal curves shall connect street lines that are deflected in excess of 2 degrees.

3. Vertical curves shall be used at changes of grade exceeding 1 percent. The length of the vertical curve shall be determined by multiplying the algebraic difference in change of percent in grade by the following factors:

a. arterial streets	160 feet
b. collector streets	80 feet
c. local and marginal access streets	30 feet

4. All approaches to an intersection of two or more streets shall have a levelling area not greater than 5 percent grade for a distance of 25 feet for a local street and 50 feet for an arterial or collector street, measured from the nearest right-of-way line of the intersecting street.

5. The grade across the turnaround in a cul-de-sac shall not exceed 5 percent.

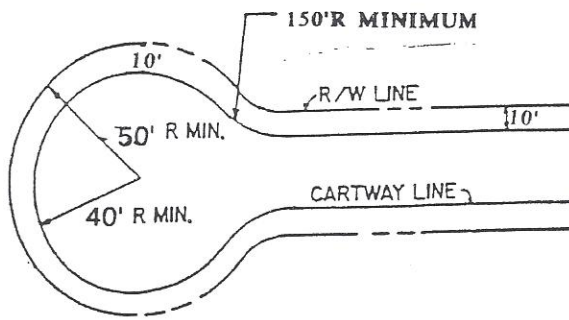
6. The minimum grade of any street gutter shall be 1.0 percent.

7. A minimum tangent of 100 feet shall be required between reverse curves on a street and between a curve and a street intersection where 1 of the intersecting streets is a collector or an arterial street.

G. Easements. Easements shall be provided adjacent to street rights-of-way, tract boundaries and lot lines and other required areas according to the following standards:

1. Drainage, sanitary or domestic water easements shall be provided as indicated and required by the plans. The minimum width of easement shall be 20 feet (which might include 10 feet on each side of abutting lots within a subdivision) with an additional width of 10 feet for each additional utility.
  2. A minimum separation distance of 10 feet shall be provided between any sanitary sewer and any other utility or storm sewer. The centerline of any sanitary or storm sewer shall be a minimum of 10 feet from the edge of any utility easement.
- H. Sightlines at Intersections of Streets. The requirements of the Borough Zoning Ordinance shall apply to all subdivisions and land developments.
- I. Cul-de-Sac Streets.
1. Cul-de-sac streets shall be permitted with a maximum length of 800 feet. Cul-de-sac streets shall include a turn-around with a minimum radius of 40 feet to the face of the outside curb and a minimum radius of 50 feet to the legal right-of-way (see the figure below).
  2. The circular right-of-way of the cul-de-sac shall maintain a minimum 10 feet width between the edge of paving and the edge of the right-of-way. The circular paving of the cul-de-sac shall be connected to the approach paving by an arc having a radius of not less than 150 feet (see the figure below).
  3. The Borough Council, upon the recommendation of the Planning Commission, may permit acceptable alternative turn-around designs, including a turn-arounds of acceptable radii incorporated into a parking court or a landscaped island (with an acceptable system for maintenance) within a cul-de-sac.
  4. No street shall dead-end without an approved turn-around at the end of the street. Temporary stub streets shall be required to include at least a temporary cul-de-sac, if the stub would be longer than 150 feet or serve more than 3 dwellings or lots.
  5. A cul-de-sac street shall serve a maximum of 20 dwelling units.





6. See also the design standards in Table 10.1.

J. Maintenance. As a condition for Final Plan approval, the developer must enter into a legally binding agreement which shall state who is to be responsible for the improvement and maintenance of any street not offered for dedication. If an association of lot owners is to be made responsible, such association must be legally organized prior to plan approval by an agreement approved by the Borough.

K. Street Design and Construction Standards.

1. Streets shall be graded, improved and surfaced to the grades and dimensions shown on plans, profiles and cross-sections submitted by the developer that meet applicable Borough standards.
2. Right-of-Way Grading.
  - a. The entire right-of-way shall be graded to the approved cross-section. All trees, stumps and other material deemed unsuitable by the Borough Engineer shall be removed. The excavation shall be backfilled and suitably compacted to the satisfaction of the Borough Engineer.
  - b. The finished street surface shall be crowned in conformance with the Borough Street and Improvement Specifications.
  - c. A proper super-elevation (banked curves) shall be provided on arterial and collector streets when required by the Borough Engineer.

3. Grading Beyond Right-of-Way.

- a. The subdivider or developer may be required to grade beyond the right-of-way line in order to provide continuous slope from the right-of-way line to the proposed elevation of the abutting property.
- b. Such grading beyond the right-of-way shall maintain the original conditions of slope and contours except where storm water runoff designs dictate or warrant improvement or alteration of the original slope and contours.
- c. Approved plans, either preliminary or final, showing proposed grading, shall be a covenant running with the land, unless altered by written permission from the Borough Council.
- d. In areas of earth excavation or earth fill, such grading shall be done to a maximum slope of 1 foot vertical to 3 feet horizontal.
- e. In no case shall the required street grading extend onto an adjoining property with a different landowner, unless the other adjoining property owner gives a written agreement to the developer to accomplish such work.

4. Trench Excavation. All trenches excavated within the cartway of an existing or proposed public street or right-of-way shall be mechanically compacted with backfill acceptable to the Borough Engineer or be stone backfilled if the cartway is to be paved in the same construction season.

5. Drainage of streets shall comply with Section 1008 of this Ordinance.

6. Street Construction Standards. All streets shall meet the following construction standards, which may be revised by Borough Council by resolution, based upon the latest version of PennDOT's Form 408 or its successor publication, unless a differing standard is required by PennDOT for a State street:

	Local Streets and Collector Streets Not Abutting or Not Within an Industrial Zoning District	Local and Collector Streets Abutting or Within an Industrial Zoning District or Any Arterial Street
Sub-base	Not required	6 inches
Compacted Aggregate Base Course	6 inches	8 inches
Compacted ID-2 Binder Course	1.5 inches	2 inches
Compacted ID-2 Wearing Course	1 inch	1.5 inches

7. Sub-Grade. All streets shall be constructed upon a properly rolled and crowned sub-grade.

8. Alternative Designs. Alternative street bed designs may be prepared and will be considered. The alternate design must provide load capabilities equivalent to or higher than the capabilities of the designs set forth above. Alternate designs will be reviewed on the basis of design recommendations of the appropriate trade association and be subject to the approval of the Borough Council, based upon review of the Borough Engineer.

L. Private Streets. Any private street or accessway that will eventually serve traffic from 3 or more dwelling units or 2 or more industrial, commercial and/or institutional uses shall be designed and constructed to Borough construction standards, including the provision of a street right-of-way. This requirement shall not apply to a parking court that is not serving through-traffic or to a driveway serving a single building.

M. Required Street Improvements.

1. If there is a reasonable relationship between the need for an "on-site improvement" of a street (including but not limited to a new or upgraded traffic signal, or land dedication to improve an abutting intersection, or the re-alignment of an abutting curve in a street or widening of the abutting cartway or right-of-way) and a proposed subdivision or land development, the subdivision or land development shall be required to fund its fair share of the cost of such improvement and to dedicate sufficient right-of-way.

2. An applicant for any land development or major subdivision shall be required to widen the cartway and any shoulders of abutting streets to Borough standards, from the centerline of the street right-of-way inward towards the project's lot lines, unless: a) the Borough Council determines that it is not needed or that a lesser improvement is sufficient or b) PennDOT specifically refuses in writing to allow such improvement to a State street in the foreseeable future.

3. The following shall be the definition of "on-site improvement," unless this definition is amended by State law: "all street improvements constructed on the applicant's property, or the improvements constructed on the property abutting the applicant's property that are necessary for the ingress and egress to the applicant's property."



4. In place of funding the improvement at the time of final approval, the Borough may enter into an agreement to: a) allow the developer to construct the improvement or b) allow the improvement to be funded in stages in relationship to the stages of the development or c) require the funds to be placed in escrow until such time as sufficient funds are available for a more comprehensive improvement. Any such funds received under this Section shall be accounted for separately and remain committed to traffic improvements.
  5. This section shall be carried out through determinations of the Borough Council, based upon recommendations of the Planning Commission, which shall make determinations based directly upon the recommendations of the Borough Engineer, any comments from PennDOT and any professional traffic studies that have been submitted.
- N. Extensions of Public Streets. Borough Council shall require that an applicant extend a public street where deemed necessary to serve a proposed subdivision or land development.
1. If only a minor residential or agricultural subdivision is involved, and if the applicant only owns or controls the land on only 1 side of the proposed street, then the applicant shall only be required to extend and improve such street and install any required curbing and sidewalks from the centerline of the planned street right-of-way to the applicant's proposed lot lines, except that in no case shall the cartway be less than 16 feet in width. In such case, the completion of the other side of the right-of-way shall be the responsibility the owner of the abutting property on that side, at the time that such land is proposed for a subdivision or land development.

1005. BLOCKS.

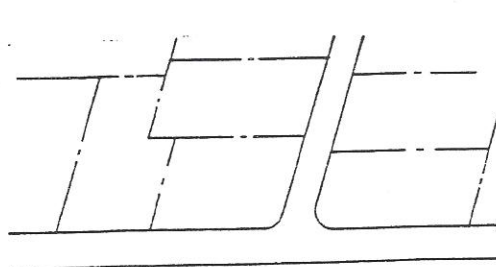
A. Residential.

1. Maximum Length. Residential blocks shall not exceed 1,500 feet in length in subdivisions using an average lot size of 1 acre or larger and shall not exceed 1,200 feet in length in subdivisions having an average lot size less than 1 acre, unless permitted by the Borough Council.
2. Minimum Length. Residential blocks shall have a minimum length of 250 feet, unless otherwise approved by the Borough Council.
3. Blocks shall be of sufficient width to permit 2 tiers of lots except where access is limited by virtue of an adjoining arterial street or by virtue of topographic limitations, unless permitted by the Borough Council.

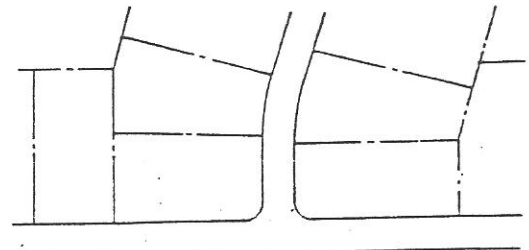
- B. Nonresidential. Nonresidential blocks shall not be less than 600 feet in length.

1006. LOTS.

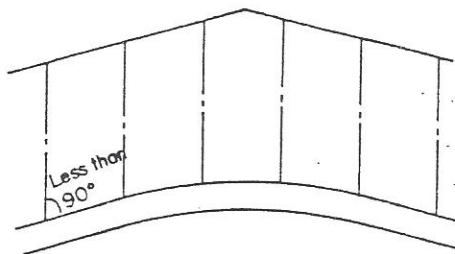
- A. Lots shall conform to the applicable minimum lot sizes, lot widths, setback and all other requirements as set forth in the Borough Zoning Ordinance.
- B. All lots shall front on a public or private street improved to meet Borough standards or for which such improvements have been insured by the posting of an acceptable performance guarantee under this Ordinance.
- C. The average depth-to-width ratio of a lot shall generally not be greater than 3 to 1, unless otherwise permitted by the Borough Council.
- D. Side lines of lots shall abut and be approximately at right angles to straight streets and on radial lines to curved streets, unless otherwise permitted by the Borough Council. Pointed or very irregularly shaped lots shall be avoided. (See figures below).



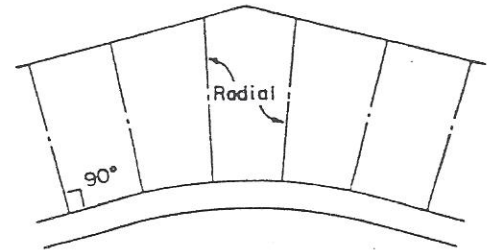
UNACCEPTABLE LOT LAYOUT



ACCEPTABLE LOT LAYOUT



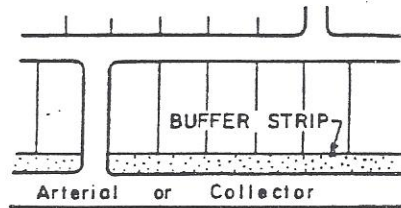
UNACCEPTABLE LOT LAYOUT



ACCEPTABLE LOT LAYOUT

- E. 1. Double frontage lots shall ordinarily not be created except as needed to avoid direct vehicular access onto an arterial or collector street by individual driveways.

2. On any residential lot that includes a rear yard directly abutting onto a collector or arterial street or expressway, such rear yard shall include a 10 feet deep planting strip along the back of the lot, with access across this strip clearly prohibited on notes on any approved plan (see Figure below). In addition to any street trees required by Section 1018 of this Ordinance, this planting strip shall include evergreen plantings meeting the buffer yard requirements of the Borough Zoning Ordinance. Any fencing in the rear of such lots shall be placed on the inside side of such plantings. Such plantings shall be placed so that they do obstruct safe sight distance.



REVERSE FRONTAGE LOTS  
DESIRABLE DESIGN

- F. If the remnants of land (other than rights-of-way) exist after subdividing, they shall be incorporated in existing or proposed lots.

G. Bus Stops.

1. The developer of any residential land developments or subdivisions that involve 15 or more dwelling units shall contact the School District prior to submitting final plans to establish an acceptable and safe location for a school bus stop.
2. The Planning Commission may require the developer of any major subdivision or land development to contact the local public transportation agency to seek an appropriate location for a public bus stop.

1007. OPEN SPACE AND RECREATION AREAS AND FEES

A. Intent.

1. To provide adequate open spaces, recreational lands and recreational facilities to serve new residents of new developments, for both active and passive recreation.
2. To recognize and work to carry out the Recreation Plan sections of the officially adopted Tatamy Borough Comprehensive Plan.

- B. Applicability. This section shall apply to any subdivision or land development for which a preliminary plan or a combined preliminary/final plan is submitted after the enactment date of this amendment.



1. This section shall not apply to plans that the Borough Council determines only involve clearly minor adjustments or corrections to an approved preliminary plan or clearly minor adjustments or corrections to a preliminary plan that was before the Borough for consideration at the date of the adoption of this amendment.

C. Limitations on Use of Fees.

1. Any fees collected under this section shall be placed within an interest-bearing account and shall be accounted for separately from other Borough funds.
2. Such fees shall only be used for the following: acquisition of public open space, development of public recreational facilities, landscaping of public open space and closely related engineering and design work.
3. Unless the Borough identifies fees for a particular set of facilities or particular recreation area, then the fees shall be used for the further development of the North Tatamy Playground or the Tatamy Municipal Park as recreation areas providing programs and facilities for the entire Borough.

D. Land Dedication. Any subdivision or land development regulated under this Section 1007 shall be required to dedicate the specified amount of common open space, unless the Borough Council determine that such land in that location would not serve a valid public purpose, in which case recreation fees-in-lieu of land shall be required.

1. Generally, it is the intent of this Section that developments of 5 or fewer dwelling units that do not include land that is adjacent to existing publicly-owned land shall be required to pay a recreation and open space fee in lieu of dedicating land. However, if the applicant does not agree to pay such fees, then land shall be required to be dedicated.
2. The land and fee requirements of this section shall be based upon the number of new dwelling units that would be permitted on the lots of a subdivision or land development after approval.
3. Amount of Common Open Space. A residential subdivision or land development shall be required to dedicate 1,000 square feet of land per proposed dwelling unit as common open space, unless the Borough Council determines that recreation fees in-lieu of the open space would be more in the public interest.

E. Fees for Residential Development. If the Borough Council determines that a land dedication within a proposed subdivision or land development would not be in the public interest, the applicant shall be required to pay fees-in-lieu of dedicating open space. This fee shall be \$500 per permitted dwelling unit, unless these fees are revised by later resolution of the Borough Council.

F. Decision on Land vs. Fees. The Borough Council shall determine whether a land dedication or the payment of fees shall be required. This determination should, but is not required to, be made at the time of sketch plan review. The Borough should, at a minimum, consider the following in this decision:

1. Whether the land in that location would serve a valid public purpose.
2. Whether there is potential to make a desirable addition to an existing recreation area.
3. Whether the proposed land would meet the objectives and requirements of this section.
4. Whether the area surrounding the proposed development has sufficient existing recreation and open space land, and whether it is possible for pedestrians and bicyclists to reach those lands.
5. Any recommendations that may be received from the Planning Commission.
6. Any relevant policies of the Borough Comprehensive Plan.

G. Land to be Dedicated.

1. Land required to be dedicated shall be suitable for its intended purpose, in the determination of the Borough Council. The applicant shall state what improvements, if any, that he/she intends to make to the land to make it suitable for its intended purpose, such as grading, landscaping, or development of trails. Such land shall be free of construction debris at the time of dedication.
2. Required common open space shall be dedicated to the Borough, unless the Borough Council agree to accept a dedication to any of the following: Northampton County, a homeowner or condominium association or an environmental organization acceptable to the Borough Council. In the case of a rental development, the Borough may permit the common open space may be retained by the owner of the adjacent residential buildings.
3. If required common open space is to be owned by a homeowner association, the developer shall be required to establish such association in a form that requires all property-owners with the development to annually contribute to the maintenance of the common open space. Any homeowner association agreements regarding required common open space shall be subject to acceptance by the Borough Council, based upon review by the Borough Solicitor. The provisions of Section 703(f) of the State Municipalities Planning Code should serve as a model for such agreement.



4. Any required common open space dedication shall include deed restrictions to permanently prevent its development for buildings, except buildings for non-commercial recreation or to support maintenance of the land.
5. Priority shall be given to dedication of land that would be suitable for a) new neighborhood parks in neighborhoods not currently served by existing parks, or b) would preserve woods, steep slopes or other important natural features or land along the Bushkill creek.
6. Land that is not suitable for active or passive recreation shall not be accepted as part of a required dedication, including areas within a stormwater detention basin that could not serve recreation purposes. Portions intended for active recreation shall be well-drained, of less than 4 percent average slope and not require filling in of a wetland for use.
7. Common open space within a subdivision or land development shall be contiguous, except as may be specifically exempted by the Borough Council, and shall have adequate access for maintenance and for pedestrians.
8. Other Ordinances. Any required land dedication under this Section shall be in addition to any land dedication or improvement requirements of any other Borough ordinance or resolution.
9. Lands Close to Buildings. For the purposes of this section, no land shall be used to meet the minimum common open space requirements of this section if such land is within: a) 15 feet of any building or b) within 15 feet of a parking area of more than 6 parking spaces (other than parking areas specifically developed to serve the open space). This specifically includes, but is not limited to, open space surrounding buildings in a development of apartments or townhouses.
10. Residual Lands. If only a portion of a larger tract of land is currently proposed to be subdivided, or the applicant owns one or more adjacent tracts that are not currently proposed to be subdivided, the applicant shall provide a sketch of a possible future land dedication on these adjacent lands in case they would be developed in the future.
11. Coordination With Future Adjacent Dedication. The Borough Council may require that a required land dedication within a property currently being subdivided be placed along an edge of the property so that it may, in the future, be combined with an open space dedication on the edge of an adjoining property when that adjoining property is subdivided or developed.



H. Combination of Land and Fees. Upon mutual agreement of the Borough Council and the applicant, the Borough may accept a combination of common open space and fees-in-lieu of land to meet the requirements of this section for a residential subdivision or land development. This combination shall be based upon the common open space requirement applying for a certain of dwelling units and the fee-in-lieu of land requirement applying for the remaining number of dwelling units.

I. Timing of Fees. Fees required under this section shall be paid prior to the recording of the final plan, except as follows:

1. If the required fee would be greater than \$2,000, and the applicant and the Borough mutually agree to provisions in a binding development agreement to require the payment of all applicable recreation fees prior to the issuance of any building permits within each clearly defined phase of the development, then the fees are not required to be paid prior to recording of the final plan but may instead be paid within the development agreement requirements.
2. If the applicant agrees to pay such fees in installments, then all such fees shall not be considered to be "paid" for the purposes of any applicable time limitations for utilization under the State Planning Code until all such fees are paid in full, including all installments and phases.

J. Fee Modification Process. An applicant may seek a modification of the requirements of this section under the procedures of Section 107 by offering to construct substantial permanent recreation facilities within the proposed subdivision or land development or on adjacent public open space that the applicant clearly proves to the satisfaction of the Borough Council will substantially meet the recreation needs of the residents of the development.

#### 1008. STORM WATER MANAGEMENT.

##### A. General Provisions.

1. Storm water runoff from any subdivision or land development (including during construction and earthmoving) shall not occur at a peak rate (measured in cubic feet per second) that is greater after development than occurred prior to development.
2. Control of runoff from a site shall occur using appropriate means of detention of the water on the site and/or other approved types of storm water management, within the requirements of this Ordinance.
3. Runoff that is detained shall be held and released at a pre-determined controlled rate by appropriately installed devices. The release shall be in the same manner as the natural or predevelopment means of discharge from a site (such as point discharge or sheet flow).

4. Storm water runoff shall not be increased or redirected in such a way that it results in hazards to persons or property or interferes with the normal movement of vehicles.
5. All storm water management methods are subject to approval by the Borough Engineer.
6. Storm water shall be directed away from buildings and on-lot septic systems.
7. All storm water management plans shall take into account and provide for existing flow from upstream areas within the entire watershed.
8. The existing points of natural drainage discharge onto adjacent property shall not be altered nor shall the concentration of water runoff be increased because of development without the written approval of all affected landowners.
9. No storm water runoff or natural drainage water shall be so diverted as to overload existing drainage systems, or create flooding or the need for additional drainage structures on other private properties or public lands, without complete approval of provisions being made by the developer for properly handling such conditions, including water runoff impoundments, if necessary.
10. All lots shall be laid out and graded to prevent cross lot drainage, to provide positive drainage away from proposed building locations and any primary or alternate septic system locations.
11. An adequate storm sewer system consisting of inlets and other underground drainage structures with approved outlets shall be constructed where the runoff of storm water and the prevention of erosion cannot be accomplished satisfactorily by surface drainage facilities, as determined by the Borough Council, based upon the recommendation of the Borough Engineer.
12. Outlet locations shall be approved by the Borough Engineer.
13. Sequence of Construction. No substantial grading shall occur and no building permits shall be issued for any building unless any detention basin, siltation basin or improved major swale approved to handle the resulting runoff is in place. Any detention basin shall be seeded and stabilized and have an installed outlet structure prior to the construction of any streets or buildings within that drainage basin.

B. Calculations of Stormwater Runoff.

1. Storm water calculations shall be submitted in a clear and legible manner for any lot or tract that would result in more than 5,000 square feet of total impervious cover.



2. These calculations shall follow a method preapproved by and acceptable to the Borough Engineer. The following methods are recommended:
    - a. Rational Method.
    - b. Soil Cover Complex Method. See U.S. Soil Conservation Service Technical Release No. 55 "Urban Hydrology for Small Watersheds."
  3. Rainfall data shall be from PennDOT, for the Lehigh Valley.
  4. The storm water calculations shall include the following:
    - a. Pre- and post-development drainage maps showing existing and proposed grades and including any off-site tributary area,
    - b. Pre- and post-development runoff calculations,
    - c. Detention basin design calculations (as applicable),
    - d. Pipe and swale sizing calculations,
    - e. All other information that is needed to construct proposed stormwater drainage facilities, including, but not limited to, slopes, proposed elevations, typical cross sections and details.
    - f. Such information as the Borough Engineer determines is needed to determine compliance with this Ordinance.
    - g. If the development occurs in phases, the entire system shall be shown.
  5. Where crop farming or disturbed earth exists on the site prior to development, meadow in good condition shall be used as the starting base for the calculation.
- C. Design Storms. The following shall apply unless superceded by PennDOT or other stricter standards.
1. At a minimum, the applicant shall prove to the satisfaction of the Borough Engineer that no increase in peak storm water discharge will leave the tract during earthmoving, construction or after development than occurred prior to any of these activities, under the following conditions and storm frequencies (considered individually), unless any more restrictive requirements of an applicable official Stormwater Management Plan adopted by DER and the County pursuant to State Act 167 of 1978, as amended:
    - a. 2-year storm,
    - b. 5-year storm,
    - c. 10-year storm,
    - d. 25-year storm,
    - e. 50-year storm and
    - f. 100-year storm.
    - g. If using the SCS calculation method, a 24 hour Type II storm shall be used in the calculations required by this subsection.



2. Storm sewer piping, roadside swales and inlet systems shall be designed for a 25-year storm. A 24 hour Type II rainfall shall be used if using the soil complex method. The openings of culverts and under bridges shall be designed for a 50-year, 24 hour type II rainfall (except within the 100 year floodplain). Bridges shall be designed with 1 foot of freeboard.
3. Within the 100-year floodplain, any storm water management structures and systems shall be designed to handle a 100-year storm. A 24 hour Type II storm shall be used if using the soil complex method.
4. The storm water management plan shall show that a 100-year, 24-hour storm can be safely conveyed without jeopardizing any principal building on or adjacent to of the site.

D. Design Submission.

1. All plans showing the proposed storm drainage construction must be accompanied by a complete design stamped and signed by a Pa. Registered Engineer or Registered Landscape Architect.
2. When subdivisions or land developments are submitted to the Borough for approval in sections, a complete general storm sewer design for the proposed subdivision or land development shall be submitted at the preliminary plan level. The proposed design must take into account the entire tract and the watershed.
3. All stormwater controls shall be designed to function adequately after the completion of each phase of a development. This may require the use of temporary structures, which shall be shown on submitted plans.
4. A development shall be required to include the construction of stormwater controls in areas of future phases of a development prior to construction of earlier phases if the Borough Engineer determines that that is necessary to make sure that the system will work after the completion of each phase. This shall, for example, include the extension of the main outfall line.
5. A set of approved design plans shall be maintained on file at the site during construction.
6. Drainage structures that are located on State highway rights-of-way shall be found to be acceptable to PennDOT, and PennDOT approval shall be a condition of any final approval of the Borough.
7. Submission Requirements. The submission requirements for stormwater management plans for Preliminary and Final Plans within Articles V and VI of the Subdivision and Land Development Ordinance shall apply to all required submissions under this section.

E. County Watershed Plans. For areas of a development that are located within a watershed for which a storm water management plan has been adopted by DER and the County (pursuant to the State Storm Water Management Act), the County Plan shall supercede any conflicting parts of this Section. This specifically includes reconsideration of detention of storm water where the County Plan so recommends.

F. Joint Storm Drainage Facilities.

1. Storm water management facilities may be planned and constructed in coordination by two or more developments, provided that all other parts of this Section are complied with and a process to ensure maintenance is established that is acceptable to the Borough Council.
2. The Borough may require a development to contribute its fair share of the costs of a comprehensive regional or subregional storm water system in place of requiring an on-site detention basin.

G. Methods of Detention and Flow Delay.

1. The following methods of detention or flow-delay devices may be found to be acceptable by the Borough Engineer:
  - a. Wet or dry ponds and detention basins
  - b. Roof storage and increased roof roughness
  - c. Parking lot detention
  - d. Infiltration trenches
  - e. Porous pavements, grassed channels and vegetated strips
  - f. Cisterns, underground reservoirs or covered ponds
  - g. Increasing the roughness coefficients on the development's surface area
  - h. Decrease percentage of impervious area
  - i. Groundwater recharge
  - j. Routing flow over lawns in swales within stormwater easements
  - k. Detention storage within the storm sewer
  - l. Another method that may be approved by the Borough Engineer

H. Rooftop Storage. If a roof is to be used for detention, a condition of such use shall be that the applicant submit appropriate calculations and a signed statement from a Registered Architect or Registered Engineer that the structure will be able to support the roof loadings. This statement shall be required prior to issuance of the building permit.

I. Parking Lot Storage. A maximum of 30 percent of paved parking lot may be found acceptable as a storm water detention but not retention facility. Ponding shall be arranged so that pedestrians may cross the parking lot relatively dryly. There shall be a maximum designed depth of 6 inches, and the pavement shall be designed to withstand the effects of ponded water. The area used for the storage shall be the least used portions of the parking.



J. Groundwater Recharge. In general, all runoff control measures shall be designed to encourage groundwater recharge, if suitable subsurface conditions are present. However, in any such recharge, proper precautions shall be taken to prevent pollution of the groundwater, prevent the formation of sinkholes and to promote safety.

K. Detention Basins Standards.

1. For the purpose of this Section, a retention basin shall be required to meet the same standards as a detention basin.
2. Emergency Spillways. All detention basins shall be designed with an emergency spillway.
  - a. These spillways at a minimum shall be able to handle a 100-year post-development peak discharge.
  - b. Whenever possible, the emergency spillway for detention basins shall be constructed on undisturbed ground. If the emergency spillway cannot be constructed on undisturbed ground, it shall be constructed of suitable material adequately compacted in accordance with specifications preapproved by the Borough Engineer.
  - c. Emergency spillways shall be constructed of reinforced concrete, vegetated earth or concrete rubble. All emergency spillways shall be constructed so that the detention basin berm is protected against erosion.
  - d. The emergency spillway shall be a minimum of 2 feet below the adjacent berm elevation. The emergency spillway shall convey the 100-year storm at a maximum depth of 1 foot over spillway. The downstream slope of the spillway shall as a minimum extend to the toe of the berm embankment. The edge of the basin grading shall be within the subject property.
  - e. All detention basin outflow structures shall be designed with trash racks over the outflows.
3. Slope of Detention Basin Embankment. The maximum inside slope of earthen detention basin embankments shall be 4 horizontal to 1 vertical. The maximum outside slope shall be 3 to 1. The top or toe of any slope shall be located a minimum of 5 feet from any property line. Whenever possible the side slopes and basin shape shall be amenable to the natural topography. Straight side slopes are prohibited.
4. Width of Berm. The minimum top width of detention basin berms shall be 10 feet, unless the Borough Engineer determines that a greater width is needed for maintenance and/or structural purposes.



5. Slope of Basin Bottom. In order to insure proper drainage of the detention basin, a minimum grade of 2 percent shall be maintained for all sheet flow. A minimum grade of 1 percent shall be maintained for all channel flow, provided that a synthetic low flow channel of suitable materials is provided.
6. Antiseep Collars. Antiseep collars shall be installed around the principal pipe barrel within the normal saturation zone of the detention basin berms. Antiseep collars shall not be required on basins designed to have a depth of water of less than 3 feet. The antiseep collars and their connections to the pipe barrel shall be watertight. The antiseep collars shall extend a minimum of 2 feet beyond the outside of the principal pipe barrel. The maximum spacing between collars shall be 10 times the minimum projection of the collar measured perpendicular to the pipe.
7. Fencing.
  - a. A detention basin shall be required to be surrounded with galvanized vinyl clad chain link metal fencing or an alternative type of fence acceptable to the Borough if any of the conditions are present:
    1. The maximum depth of water in the basin after a 10 or 25 year storm is greater than 30 inches, and/or
    2. The basin is intended to hold water for periods of longer than 3 hours after the rainfall subsides, and/or
    3. The basin is to be dedicated to the Borough and the Borough Council request fencing.
  - b. Fencing of a detention basin under the above subsection shall not be required if the nearest residential district, school, existing residence or recreation facility is at least 1,500 feet away in walking distance from the basin.
8. Landscaped Screening of Detention Basins.
  - a. A detention basin shall be screened from view of existing residences, a residential zoning district or a public street, unless the basin would meet all of the following conditions:
    1. it would have an average inside slope of less than 4 to 1 on the inside of the basin,
    2. either: a) the inside and outside of the berm of the basin would be mowed grass or other attractive vegetative ground cover or b) the basin would be designed to closely resemble a natural pond, and
    3. it would not be surrounded by a primarily metal fence.

- b. Any required screening shall meet the "buffer yard" standards of the Borough Zoning Ordinance. This landscaping is not required where natural vegetation that will completely fulfill this purpose will be maintained.
9. Multiple Basins. The use of multiple detention basins should be investigated over the use of one larger storage facility.
  10. All outflow structures from storage facilities shall be equipped with a regulatory device that will permit modification to regulate the amount of out-flow. Suitable anti-vortex and/or velocity retarders shall be used.
  11. An outflow control structure shall be provided at the outlet of all detention basins. This structure shall be constructed of metal or concrete and shall be designed so that the rate of outflow is controlled by the pipe barrel through the basin berm when the depth of water within the basin exceeds the height of the structure. A trash rack or similar device shall be provided to prevent debris from entering the outflow structure. The crest elevation shall be set at a minimum of 12 inches below the emergency spillway.
  12. Retention Basins. Aeration devices may be required, dependent upon the quality of the influent and detention time.
  13. Recreation. When reasonable, efforts should be made to allow suitable recreational uses of portions of detention areas. This might include designing a detention basin so that only a portion would be wet after a minor storm, and the remainder would be well-drained during all except the most serious storms. These areas may be acceptable at the discretion of the Borough as part of any recreation land that may be required under this Ordinance.
  14. Detention basins shall not be placed within: a) an existing sinkhole or b) a location likely to be highly vulnerable to sinkholes or c) a distinct topographic depression within a carbonate geology area, without a suitable liner or other engineering measures acceptable to Borough Council, based upon advice of the Borough Engineer.
- L. Construction Standards. Construction and materials of storm drainage and control facilities (including pipes) and erosion control facilities shall be in accordance with the approved plans and any accompanying specifications. The construction details and standards of the following publications, or their successor publications, in their most recent revision shall be used:
1. "County Erosion and Sedimentation Control Handbook."
  2. PennDOT, Form 408, Specifications.
  3. PennDOT, RC Series, Roadway Construction Standards.
  4. In cases where the above documents and/or Borough specifications conflict, the more restrictive shall apply, except in areas of PennDOT jurisdiction.



M. Storm Sewers.

1. The construction of new storm sewers or the connection into acceptable existing storm sewers shall be required or allowed by the Borough Council if the Borough Council determines on the basis of the recommendation of the Borough Engineer that this is the most feasible and reasonable option.
2. Any storm sewers shall be constructed to Borough specifications and shall not interconnect with sanitary sewers.

N. Drainage Pipe, Culvert and Catch Basin Design.

1. The minimum diameter of any cross drainage or culvert pipe shall be 15 inches.
2. Open pipe ends shall be fitted with concrete end walls, prefabricated end sections, rip-rap and/or energy dissipators, as deemed appropriate by the Borough Engineer.
3. Drainage pipes shall have a minimum slope of 0.5 percent and drainage swales and gutters 2.0 percent. As a minimum, the tops of all pipes should be at the same elevation when changing pipe sizes.
4. Manholes or inlets shall be used at all changes in horizontal alignment, at changes of vertical grade and at all pipe intersections. No run of pipe shall exceed 400 feet in length, without appropriate measures to allow cleanout. Trash racks shall be placed on all stormwater entrance structures.
5. Bridges and culverts shall meet PennDOT Construction Standards. DER shall be contacted to determine if a dams and waterways permit is required.
6. Grating. Appropriate safety grates shall be attached to all catch basins, storm water inlets, pipe openings and other storm-water receiving structures, as needed, to ensure that maximum openings do not exceed 25 square inches. Along streets and pedestrian areas, bicycle safe grates shall be used as needed.
7. Storm Sewer Outfall. Storm sewer outfalls shall be designed, with respect to the elevation of the invert or other features, that when the receiving watercourse is within a 25 year storm, the storm sewer will continue to drain the area it is designed to serve.
8. a. To minimize sheet flow of storm water across lots located on the lower side of streets, and to divert flow away from building areas, the cross-section of the street as constructed shall provide for parallel ditches or swales or curbing on the lower side which shall discharge only at drainage easements.



- b. Inlet spacing shall be designed such that in a 25 year storm, one traffic lane of at least 10 feet in width shall be free from stormwater.

O. Storm Water Easements. (See also section 1011)

1. Where a subdivision or development is traversed by a watercourse, drainageway, channel or stream that the Borough Engineer determines is subject to significant stormwater flows, a drainage easement shall be provided along the following:
  - a. the 100 year floodway where that is defined,
  - b. where a 100 year floodway is not defined, the 100 year floodplain,
  - c. where the 100 year floodplain is not defined, a 20 feet width shall be used on either side of the center of the watercourse, unless the Borough Engineer requires or permits a differing width.
2. The drainage easements required by this section are intended to preserve the unimpeded flow of natural drainage and to provide for future possible widening, deepening, relocating, improving or protecting of such drainage facilities. The Borough Engineer may require up to 0.5 foot freeboard if deemed necessary along newly constructed watercourses.
3. Structures and other obstructions to flow (except fences made of materials and placed so as to not obstruct flow) shall be prohibited within storm water easements. Such easements shall grant the Borough the right to enter the easement to accomplish maintenance work, although the Borough assumes no responsibility for such work.
4. It shall be the responsibility of the applicant to obtain all storm water easements on, over or through other properties that are needed to carry out the proposed storm management plan.
5. Areas where storm water easements have or will be granted shall not be obstructed during or after construction.

P. Surface Waters.

1. All natural streams, channels, swales, drainage systems and/or areas of concentration of surface water shall be maintained in their existing condition unless alteration is approved by the Borough Engineer. The applicant shall be responsible to obtain all necessary DER permits (see Chapter 105 of Title 25 of the State regulations).
2. Creek Alignments. Any change to the alignment of a watercourse, or any blocking, impeding or redirecting of a watercourse shall only occur with written approval of DER and the Borough Engineer.

Q. Ownership and Maintenance of Stormwater Facilities. A system for the ownership and maintenance responsibilities of all temporary and permanent storm water facilities and erosion and sedimentation control facilities that is satisfactory to the Borough Council shall be established prior to Final Plan approval including:

1. Description of temporary and permanent maintenance requirements.
2. Identification of responsible individual, corporation, association or other entity for ownership and maintenance of both temporary and permanent storm water management and erosion and sedimentation control facilities.
3. Establishment of suitable easements for access to all facilities.
4. Where the Grading and Storm Drainage Plan proposes Borough ownership and/or maintenance, a description of the methods, procedures and the extent to which any facilities shall be turned over to the Borough, including a written approval and agreement from the Borough indicating acceptance of responsibilities as proposed, shall be incorporated as an integral part of the Plan.
5. The Borough may, at the complete discretion of the Borough Council, accept or not accept an offer by the applicant for Borough ownership of storm water facilities.
  - a. If the Borough accepts ownership and maintenance responsibilities for storm water facilities, the applicant shall be required by the Borough Council to fund a dedicated account to fund the first 25 years of such maintenance. This funding shall be based upon a reasonable estimate by the Borough staff or the Borough Engineer.
6. Storm water facilities shall be designed to require minimal maintenance and shall have suitable access for maintenance.
7. All storm drainage facilities shall be properly maintained by the party designated as responsible on the final subdivision plan, unless the Borough Council agree to accept a change in the party responsible or the party owning the facility.
8. Should a facility not be maintained in proper working order, the Borough Council, may after due notice to the responsible party, arrange for the needed maintenance to be accomplished with all such expenses charged to the responsible party. These expenses shall be collectible as municipal claims are now collected by law.
9. The Borough Engineer and Code Enforcement Staff shall have the right to enter private property to inspect storm drainage facilities. Reasonable effort should be made to contact the property owner prior to any such inspection.



1009. SANITARY SEWAGE DISPOSAL SYSTEMS.

A. In General.

1. All subdivisions and land developments shall be served with an adequate sewage disposal system (either on-lot or central systems) that will meet State regulations.
2. Any principal building or use within a subdivision or land development that generates wastewater and that in the determination of the Borough Council, based upon the advice of any applicable municipal authority and the Borough Engineer, could reasonably connect into a public sanitary sewage system shall be required to connect into that system. The applicant shall be responsible to pay such reasonable capital expenses that are necessary for such connection.

B. Central Sewage Systems. If a municipality or municipal authority is to provide central sewage service, it shall have the authority to approve or reject the proposed sewage collection system. If non-public central sewage service is proposed, the Board of Supervisors shall have the authority to permit or not permit such service to be used to meet the requirements of this section based upon 1) whether public sewage service is reasonably expected to be available to the site in the foreseeable future, 2) whether the proposed system would be consistent with the Borough's official sewage facilities plan and 3) whether the system would include an acceptable permanent system to ensure proper operation and maintenance.

C. On-Lot Sewage Disposal System.

1. If connection to a public sanitary sewage system is not required at the time of occupancy, and if an alternative central sewage system is not approved by the Borough under the Borough Sewage Facilities Plan, then each lot shall be required to be served by an on-lot sewage disposal system that will meet all applicable State regulations. Each such proposed location shall be tested and approved by Borough Sewage Enforcement Officer, prior to approval of the Final Plan. The approved test locations shall be shown on the Final Plan.
2. Any use with an on-lot septic system and that does not have capped sewers shall include a suitable land area set aside in open space for a second septic system that could be used if the first system fails. Such site shall be tested and approved by the Borough Sewage Enforcement Officer prior to Final Plan approval.
3. The applicant shall submit results or a summary of the tests of required on-lot septic tests at the time of Final Plan review.
4. The Borough Sewage Enforcement Officer may require that the lot area(s) be increased in accordance with State septic regulations.



- D. Sewer Connection and Capped Sewers. If sewage service will not be accessible at the time of the development of the land development or subdivision, but is planned to be accessible within 3 years of the final approval, the Borough Council may require that the subdivider install approved capped sewer lines within the limits of the land development or subdivision, in addition to approved on-site sewage facilities. Such sewer lines shall be capped at the limits of the subdivision or land development and the laterals shall be capped at the street right-of-way.
- E. Laterals. Each lot with central sewage service shall be served by a separate sewage lateral.

1010. WATER SUPPLY SYSTEMS AND FIRE HYDRANTS.

A. In General.

1. All subdivisions and land developments shall be served with an adequate on-lot or central water supply system that will meet DER and Borough requirements. Any non-public water supply system serving three or more principal users or lots shall be required to provide adequate water pressure, in the determination of the Borough.
2. The Borough Council, based upon any recommendations of the Planning Commission, the Borough Engineer and the appropriate water supplier, shall require all lots and principal uses within a subdivision or land development to be connected to the central water system where the Borough Council determines that such connection would be feasible and reasonable.

B. Central Water Supply System. Proposed extensions of central water systems shall meet all applicable procedures, reviews and requirements of the appropriate Municipal Authority or Public Utility. The design of such system shall be approved by the authority or utility prior to final plan approval, although specific detailed water service agreements are not required to be signed prior to final plan approval.

C. On-Lot Water Supply System.

1. When a subdivision or land development is not required to connect to a central water system, acceptable locations for on-lot water systems shall be shown on plans and shall be constructed in accordance with regulations of DER.
2. Wells should be located no closer than 25 feet from any future street right-of-way.

D. Fire Hydrants. All subdivisions and land developments that will be served by public water service shall provide fire hydrants as needed with appropriate water pressure so that all dwelling units and principal buildings are within 600 feet of an active fire hydrant.

1011. WASTE DUMPSTERS, MISCELLANEOUS UTILITIES AND EASEMENTS.

- A. All electric power, telephone, cable television, natural gas, and other utilities shall be placed underground except where the Borough Council determines it is not feasible, and in accordance with the current standards of the utility serving the subdivision or development.
- B. All garden apartment developments shall include conveniently located refuse collection facilities for the residents. All uses within non-residential land developments and subdivisions shall include appropriate refuse collection facilities. All bulk refuse collection dumpsters shall be screened on 3 of 4 sides by walls or evergreen landscaping from view of dwellings, adjacent residentially zoned lots and public streets.
- C. Easements shall be shown on the final plans and be provided as follows:
  - 1. Unless waived by the Borough Engineer, all lots shall include a drainage and utility easement around the perimeter of each lot. The minimum width for easements shall be 20 feet, which may be reduced to 10 feet for each lot if a 10 feet minimum easement already exists on the abutting side of the abutting lot.
  - 2. Additional width of easements shall be provided for additional utilities if required by the water or sanitary sewage supplier or the Board of Supervisors. The easement widths along side lot lines shall: a) not be required along lotlines where buildings (such as townhouses) are to be attached and b) shall be reduced if the Borough Zoning Ordinance allows a principal building setback that is more narrow than the width of the easement that would otherwise be required.
  - 3. Minimum separation distances between utility lines shall be as required by the applicable utility or as deemed necessary by the Board of Supervisors, based upon advice of the Borough Engineer.
  - 4. Utility and drainage easements shall be placed along lot lines or street rights-of-ways whenever reasonable, as opposed to within the center of a lot.

1012. ACCESS DRIVES AND DRIVEWAYS.

- A. Construction Standards for Access Drives. See Section 1004.
- B. Access. A State Highway Occupancy Permit is required for all access drives or driveways onto a State road.
- C. Location. The minimum distance between an access drive or driveway to a street intersection shall be as follows:



Type of Subdivision or Land Development	Distance Between Centerlines of Access Drive or Driveway and Nearest Intersection Street By Type of Intersecting Street		
	Arterial	Collector	Local
Residential - Single Family Detached Dwelling	150 ft.	100 ft.	75 ft.
Residential - Other than Single Family Detached Dwellings and Garden Apartments	150 ft.	75 ft.	50 ft.
Nonresidential or Mixed	300 ft.	200 ft.	150 ft.

D. Sightlines at Intersections of Driveways or Access Drives with Streets.  
See the Borough Zoning Ordinance.

E. Grades. Grades of access drives or driveways shall not exceed 12 percent when connecting to a local or collector street and 7 percent when connecting onto an arterial street; however, the initial 20 feet from the edge of the cartway shall not exceed 7 percent, except for an arterial street shall not exceed 4 percent.

F. Drainage. The developer shall make adequate provisions to maintain uninterrupted parallel drainage along a public street where intersected by an access drive or driveway. Access drives and aisles within parking lots shall be graded and drained to keep the primary travel lane free of stormwater.

G. Driveway Setbacks. A driveway or accessway shall be setback a minimum of 5 feet from the lot line of any abutting single family detached dwelling, unless the 2 lots share an approved driveway.

1013. OFF-STREET PARKING AND LOADING. See the Borough Zoning Ordinance.

1014. SIDEWALKS, PATHWAYS AND DRIVEWAY APRONS.

A. Sidewalks built to Borough specifications shall be required along all arterial and collector streets except where Borough Council deems they are not necessary for adequate and safe pedestrian movement or that they would be impractical to construct along a reasonable length of street.

B. Pathway or Bikeway.

1. If deemed necessary for the convenient and safe circulation of bicycles and pedestrians, the Borough Council, upon the recommendation of the Planning Commission, may require that a major subdivision or land development include the granting of an easement for a pathway or bikeway.



2. A bikeway or pathway may be required to have a width of up to 8 feet and may be required to be illuminated and/or paved to Borough standards.
3. A bikeway or pathway may be included within the required minimum area of an abutting lot.

C. Location and Width.

1. Sidewalks, where required or provided, shall be located within the legal right-of-way line of a street.
2. The sidewalks shall be constructed to retain a grass planting strip with a minimum width of 3 feet between the curb and sidewalk. This strip shall not be paved except at driveway entrances.
3. Sidewalks shall have a minimum width of 5 feet along arterial streets and 4 feet along collector or local streets.
4. Pathways shall be a minimum width of 4 feet.

D. Construction.

1. Sidewalks at locations other than driveway crossings shall consist of a minimum of 4 inches of portland cement concrete underlain with a minimum of 3 inches of compacted gravel or crushed stone.
2. Sidewalks at driveway crossings shall consist of a minimum of 6 inches wire mesh reinforced portland cement concrete underlain with a minimum of 4 inches of compacted gravel or crushed stone.
3. Pathways shall be constructed of one of the following, at a minimum: 4 inches of portland cement concrete underlain by 4 inches of compacted gravel or crushed stone or 2 and 1/2 inches of bituminous underlain by 6 inches of compacted gravel or crushed stone.

E. Handicapped Access. All sidewalks and curbs at the intersection of 2 or more public streets shall include a sloped curb cut suitable for use by wheelchairs.

F. Maintenance. It shall be the responsibility of adjacent landowners to maintain sidewalks.

1015. STREET LIGHTING.

- A. Street lights shall be placed along streets within and abutting a proposed subdivision or land development where the Borough Council deems them necessary to provide safe traffic or pedestrian circulation. Street lights should be provided at all street intersections, curves in streets and the more isolated areas of a development.

- B. Such lights shall meet design standards established by the applicable electric company.
- C. Where street lights are required on a public street, the developer shall be responsible to complete or reimburse the reasonable costs of the public utility for the installation of the street lights, including completing all excavation.
- D. On all private streets, parking areas and other areas requiring lighting, the developer shall provide the lighting systems. If within a residential development, a system acceptable to the Borough Council shall be established for the maintenance and funding of electricity for such lights.

1016. STREET NAMES. Street names are subject to the approval of the Borough Council and the local postmaster, and shall continue the name of any street with the same or similar alignment, and shall not duplicate or be closely similar to the name of another street within the Borough, the same 5 digit zip code area or the same area served by emergency services.

1017. REGULATORY SIGNS. The developer shall reimburse the Borough for the costs of supplying and installing needed traffic regulatory signs and street name identification signs. All traffic regulatory signs shall meet current standards of PennDOT.

1018. LANDSCAPING AND STREET TREES.

A. Street Trees.

1. Street trees are required to be planted under this section within all land developments and major subdivisions. Street trees shall not be required for frontage along a residential or agricultural lot of more than 3 acres.

a. The Planning Commission may approve other species of trees than those listed below if the applicant proves to the satisfaction of either Commission that the trees would be sturdy, attractive and resistant to disease and road salt.

b. Permitted Species of Trees

Deciduous:

Gleditsia triacanthos - Thornless Locust  
Acer rubrum - American Red Maple  
Acer saccharum - Sugar Maple  
Celtis occidentalis - Common Hackberry  
Fagus sylvatica - European Beech  
Fraxinus pennsylvanica - Green Ash  
Fraxinus americana - White Ash  
Ginkgo biloba fastigiata - Maiden Hair Tree (male only)  
Liquidambar styraciflua - Sweet Gum

Liriodendron tulipifera- Tulip Poplar  
Quercus phellos - Willow Oak  
Quercus acutissima - Sawtooth Oak  
Quercus imbricaria - Shingle Oak  
Quercus borealis - Red Oak  
Quercus coccinea - Scarlet Oak  
Sophora japonica - Chinese Scholar Tree  
Quercus macrocarpa - Bur Oak  
Quercus alba - White Oak  
Quercus montana - Chestnut Oak  
Quercus velutina - Black Oak  
Tilia americana - American Linden  
Tilia petiolaris - Silver Linden  
Tilia euchlora - Crimean Linden  
Tilia cordata - Little Leaf European Linden  
Zelkova serrata - Zelkova

Evergreen:

Ilex opaca - American Holly  
Picea abies - Norway Spruce  
Picea glauca - White Spruce  
Picea omorika - Serbian Spruce  
Picea pungens - Colorado Spruce  
Pinus nigra - Austrian Pine  
Pinus strobus - White Pine  
Pinus thunbergi - Japanese Black Pine  
Pseudotsuga taxifolia - Douglas Fir  
Tsuga canadensis - Canada Hemlock  
Tsuga caroliniana - Carolina Hemlock

3. Quality of Trees.

- a. Trees permitted shall be of symmetrical growth, free of insect pests and disease, and durable under the maintenance contemplated.
- b. Trees which have died or have become diseased or pest-ridden within 18 months from the time of planting shall be replaced by the developer.

4. Minimum Size. The trunk diameter (measured at a height of 1 foot above the finished grade level) shall be a minimum of 2 inches.

5. Planting and Maintenance.

- a. Trees shall be planted and staked in conformance with good landscaping practices.
- b. Trees adjacent to or within parking areas shall be properly protected from damage by vehicles by raised curbs, similar devices or sufficient setback.



- c. Required trees shall be properly maintained and shall not be removed by the developer without being replaced by another tree that meets the requirements of this section.

6. Required Number and Spacing of Street Trees.

- a. Within and abutting all land developments and major subdivisions, along any street (or any access drive serving more than one commercial, industrial or institutional principal use), an average of 1 deciduous street tree shall be required for every 50 feet of distance along the street right-of-way line on each affected side of the street or access drive.

- b. Spacing. The trees required under this Section shall be spaced throughout the development along streets, but are not required to be planted at exact intervals and may be clustered following an approved plan. Trees shall be located and trimmed so that they do not restrict sight distance at driveway and street intersections.

8. Location of Street Trees. The trunks of required street trees shall be planted within the street right-of-way but at a minimum of: a) 2 feet from any established curb line and b) 6 feet from the cartway if there is no curbing. Where trees are to be planted between the curb and the sidewalk, special consideration shall be given to the species of trees that are planted.

9. Other Requirements. The street trees required under this Section shall be in addition to any trees required under other Borough regulations, including the parking lot landscaping requirements of the Zoning Ordinance.

10. Credit for Existing Trees. If existing healthy street trees are to be protected and preserved that would, in the determination of the Borough Engineer, generally meet the intent and requirements of this Section, they may serve as a credit towards the number of street trees required to be planted.

B. Ground Cover.

- 1. After completion of a project, all exposed ground surfaces that are not paved within a subdivision or land development, and that are not covered by approved gravel areas or decorative stones or similar material, shall be covered by a natural ground cover that will prevent soil erosion and the emanation of dust.

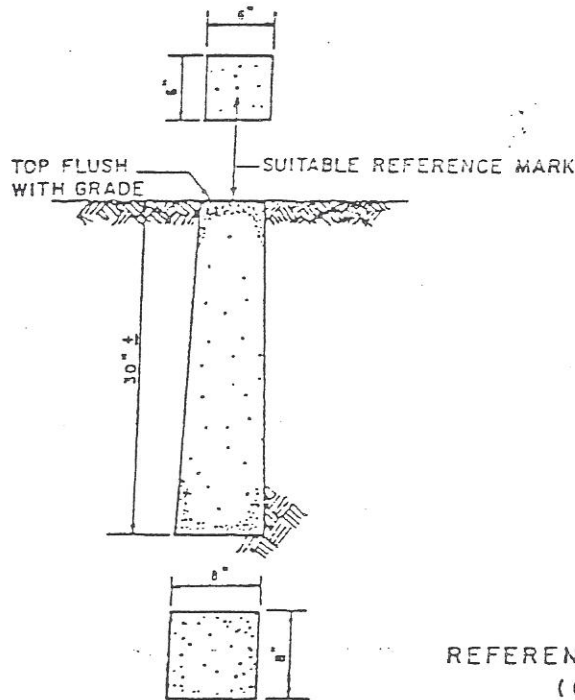
- 2. The vegetative cover shall not be poisonous in nature.

- C. Buffer Yards. See the requirements for buffer yards in the Borough Zoning Ordinance.

1019. MONUMENTS AND LOT PINS.

A. Monuments.

1. Location. Permanent reference monuments shall be located at each intersection of rights-of-ways of street(s) constructed by the developer, at the beginning and ending of all street curves, and at exterior corners of the subdivision. With the approval of the Borough Engineer, the subdivider may install monuments on only one side of the street provided that enough monuments are set to permit a surveyor to stake out accurately any building lot shown on the Record Plan.
  2. Type. Reference monuments shall be constructed of steel reinforced portland cement concrete to the dimensions shown in the accompanying sketch or another detail accepted by the Borough Engineer.
  3. Placement. Reference monuments shall be placed so that the top of the monument is as shown in the accompanying sketch.
- B. Lot Pins. All lot corner markers shall be permanently located and shall be at least a 3/4 inch metal pin or pipe with a minimum length of 20 inches, located in the ground to existing grade.



1020. CURBS.

- A. Curbs shall be provided along both sides of all public and private streets where deemed by the Borough Council to be necessary.
- B. If curbs are waived, appropriate stabilized drainage channels designed to handle a 25 year storm shall be required along all streets within the street right-of-way.
- C. All required curbs shall meet the following specifications:
  - 1. Only straight curbs shall be provided. Such curbs shall be of portland cement concrete and be 24 inches deep, 6 inches wide at the top, 8 inches wide at the bottom and have an exposed face between 6 and 8 inches. Such concrete shall meet the minimum 3000 P.S.I. 28 day strength test according to A.S.T.M. standards.
  - 2. Expansion joints shall be provided a minimum of every 30 feet. Each expansion joint shall contain 0.5 inch premolded bituminous expansion joint materials. Contraction joints shall be provided a minimum of every 10 feet.
  - 3. Gutter design shall be subject to the approval of the Borough Engineer based upon standard engineering practices.