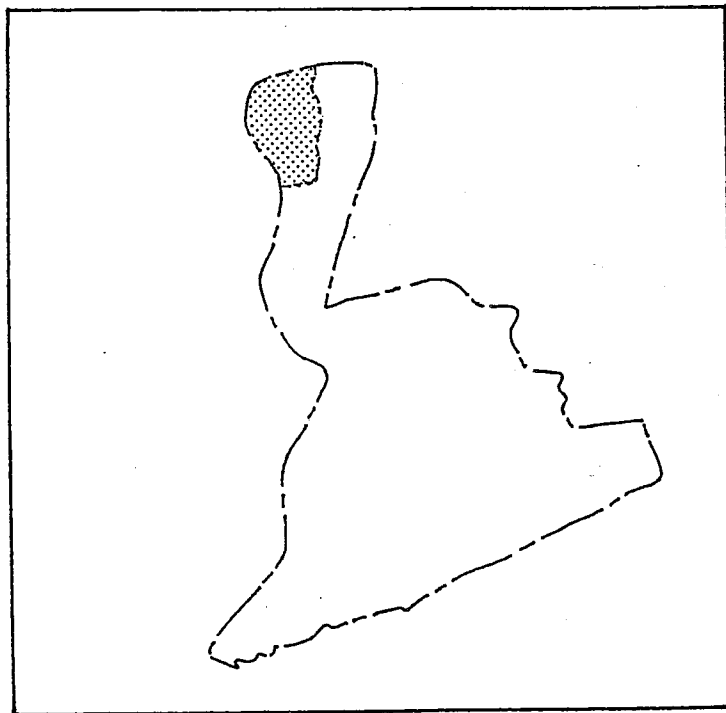


SUBDIVISION
and
LAND DEVELOPMENT
ORDINANCE

Delaware Township
Northumberland County, PA



1995

DELAWARE TOWNSHIP
NORTHUMBERLAND COUNTY, PENNSYLVANIA

SUBDIVISION & LAND DEVELOPMENT ORDINANCE

ENACTED: September 5, 1995

EFFECTIVE: September 5, 1995

Prepared by the
DELAWARE TOWNSHIP PLANNING COMMISSION
DELAWARE TOWNSHIP ZONING OFFICER
and
DELAWARE TOWNSHIP MANAGER

Enacted by the
DELAWARE TOWNSHIP BOARD OF SUPERVISORS

with the assistance of
LANDPLAN, INC.
Professional Planning and Development Consultant



DELAWARE TOWNSHIP
SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

Table of Contents

Article 1.

SHORT TITLE, AUTHORITY & PURPOSE

		<u>Page</u>
Section	100	Short Title 1.
	101	Authority 1.
	102	Purpose 2.
	103	Applicability 2.
	104	Authority of County Planning Commission 2.
	105	Interpretation 3.
	106	Disclaimer of Municipal Liability 3.

Article 2.

PLAN REQUIREMENTS

Section	200	General Requirements 4.
	201	Sketch Plans (Optional) 4.
		A. Sketch Plan Content 4.
		B. Data to be Submitted 5.
	202	Preliminary Plans 5.
		A. Preliminary Plan Requirements 5.
		B. Data to be Submitted 6.
	203	Final Plans 8.
		A. Final Plan Requirements 8.
		B. Data to be Submitted 10.
	204	Land Development Plans 12.
		A. Land Development Plan Requirements 12.
		B. Data to be Submitted 12.



Article 3.

PLAN PROCESSING PROCEDURES

		<u>Page</u>
Section	300	Plan Review & Approval Authority 13.
	301	Sketch Plans (Optional) 13.
	302	Preliminary and Final Plans 13.
		A. Plan Submission Requirements 13.
		B. Plan Evaluation Process 14.
		C. Plan Approval Process 16.
		D. Effect of Preliminary Approval 17.
	303	Land Development Plans 18.
	304	Installation & Approval of Improvements 19.
		A. General Requirements 19.
		B. Improvement Guarantee 19.
		C. Release from Improvement Guarantee 20.
		D. Remedies to Effect Completion 21.
		E. Dedication of Improvements 22.
	305	Plan Recording Requirements 22.
	306	Resubdivision Procedures 23.
		Plan Processing Procedures Flow Chart 24.

Article 4.

DESIGN & CONSTRUCTION STANDARDS FOR REQUIRED IMPROVEMENTS

Section	400	General Standards 25.
	401	Blocks and Lots 25.
	402	Streets and Driveways 26.
		TABLE 1. - Design Standards for Public & Private Streets 30.
		TABLE 2. - Construction Standards for Public & Private Streets 33.
		TABLE 3. - Driveway & Access Drive Design Guidelines 37.

(Continued on Next Page)



Article 4.

DESIGN & CONSTRUCTION STANDARDS FOR REQUIRED IMPROVEMENTS

(Continued)

	<u>Page</u>
403 Open Space/Recreation Area	38.
404 Sewage Facilities	38.
405 Water Supply	41.
406 Utilities	42.
407 Site Preparation Requirements	43.
A. Erosion and Sedimentation Control	43.
B. Grading	45.
408 Stormwater Management	46.
409 Wetlands	54.
410 Floodplain Management	55.
411 Monuments and Markers	56.

Article 5.

LAND DEVELOPMENTS

Section 500 General Requirements	59.
501 Site Planning Requirements	59.
502 Residential Developments	61.
503 Commercial Developments	69.
504 Industrial Developments	70.
505 Recreational Developments	71.
506 Institutional Developments	77.
507 Other Land Developments	78.

Article 6.

ADMINISTRATION & ENFORCEMENT

Section 600 Waivers or Modifications	79.
601 Records	79.
602 Amendments	79.
603 Preventive Remedies	79.
604 Administration	80.
605 Enforcement Remedies	81.
606 Fee Schedule	81.



Article 7.

DEFINITIONS

			<u>Page</u>
Section	700	General Interpretations	84
	701	Definitions	84

Article 8.

ENACTMENT & MISCELLANEOUS PROVISIONS

Section	800	Severability and Validity	104
	801	Repealer	104
	802	Enactment and Effective Date	104

APPENDICES

Appendix A.	Delaware Township Existing Road Inventory and Type	105
-------------	--	-----

Appendix B.	Illustrations	
	1. Street Cross Section Detail	
	2. Cul-De Sac Detail	
	3. Typical Layout of Driveway & Road Intersections	

Appendix C.	Stormwater Management Figures	
	1. Runoff Coefficients for the Rational Formula	
	2. Storm Intensity-Duration- Frequency Chart for Region 3	
	3. Anti-Seep Collar Design	



ARTICLE 1.

SHORT TITLE, AUTHORITY & PURPOSE

100 SHORT TITLE

This Ordinance shall be known and cited as the "Delaware Township Subdivision and Land Development Ordinance of 1995".

101 AUTHORITY

Section 501 of the PA Municipalities Planning Code, 53 P.S. Section 10501, as reenacted and amended in 1988, December 21, P.L. 1329, Act 170, and as further amended by Act 209 of 1990 and Act 131 of 1992, provides that Delaware Township may regulate subdivision and land development within the Township by enactment of a Subdivision and Land Development Ordinance. Such activities shall be defined as follows.

- A. "**Subdivision**" is defined as the division or redivision of a lot, tract, or parcel of land by any means into two or more lots, tracts, or parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership or building or lot development: Provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than 10 acres, not involving any new street or easement of access or any residential dwelling, shall be exempted.
- B. "**Land Development**" is defined as any of the following activities: (See **Definitions, Article 7, for exemptions.**)
 - 1. The improvement of one lot or two or more contiguous lots, tracts or parcels of land for any purpose involving:
 - a. a group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or
 - b. the division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features.
 - 2. A subdivision of land.
 - 3. Development in accordance with Section 503 (1.1) of the PA Municipalities Planning Code.

102 PURPOSE

The Delaware Township Board of Supervisors hereby cite the following as the specific purposes for which this Ordinance was enacted.

- A. To provide for orderly, efficient, and harmonious development of the Township.
- B. To promote the health, safety, and general welfare of the citizens of the Township.
- C. To ensure coordination of subdivision and land development proposals with municipal public improvement plans and programs.
- D. To secure the protection of soil and water resources and natural drainageways.
- E. To facilitate the safe and efficient movement of people and goods through the Township.
- F. To secure equitable processing of all subdivision and land development plans by providing uniform standards and procedures.
- G. To encourage the utilization of flood hazard areas in a manner that will not increase the flood hazard.

103 APPLICABILITY

Any person, partnership or corporation intending to subdivide or develop property in Delaware Township shall prepare plans in accordance with the standards contained in this Ordinance. Such plans and all required documentation shall be submitted to the Township Planning Commission for review and to the Township Board of Supervisors for approval or disapproval, as per the requirements of this Ordinance. The Township Supervisors shall consider all review comments and recommendations received prior to taking action on a proposed subdivision or land development. The Township Supervisors shall however, have full authority to approve or disapprove all such plans or proposals.

104 AUTHORITY OF COUNTY PLANNING COMMISSION

Copies of all subdivision and land development plans for proposals to be located within Delaware Township shall be forwarded or delivered, upon receipt by the municipality, to the Northumberland County Planning Commission for review and comment. The municipality shall not approve such proposal until receipt of the County comments or until the expiration of 30 days from the date such proposal was forwarded or delivered to the County Planning Commission. (See also Section 302 B.2 of this Ordinance.)

105 INTERPRETATION

The provisions of this Ordinance shall be held to be minimum requirements to meet the purposes stated herein. Where the provisions of this Ordinance impose greater restrictions than those of any statute, other ordinance or regulation (i.e. State enabling statutes, local zoning or building codes, etc.), the provisions of this Ordinance shall prevail. Where the provisions of any statute, other ordinance or regulation impose greater restrictions than those of this Ordinance, the provisions of such statute, ordinance or regulation shall prevail.

106 DISCLAIMER OF MUNICIPAL LIABILITY

The grant of approval of a subdivision or land development plan or of any improvement installed as a condition thereof, shall not constitute a representation, guarantee, or warranty of any kind by the Township, or by any official, employee or appointee thereof as to the practicability or safety of the proposed use, and shall create no liability upon the Township, its officials, employees or appointees for any damage that may result pursuant thereto. The applicant shall in all cases rely on accepted engineering methods or building practices when designing a subdivision or land development or installing any required improvement. In addition, no such approval shall guarantee the accuracy of any survey or subdivision or land development plans prepared by a registered professional land surveyor.

ARTICLE 2.

PLAN REQUIREMENTS

200 GENERAL REQUIREMENTS

All subdivision and land developments plans, whether intended as sketch, preliminary or final submissions, shall meet the requirements outlined in the following Sections.

201 SKETCH PLANS (Optional)

A. Sketch Plan Content

When utilized, sketch plans need not be prepared by a registered professional land surveyor, but should be legibly drawn at a reasonable scale and should include or show the following data to ensure the greatest usefulness:

1. Title block, containing the name of the owner of the tract, municipality, date, approximate scale of the drawing, and north arrow.
2. Tract boundary sketch, showing the location of the proposed subdivision or development in relation to the entire tract and zoning district boundary lines.
3. Location map, showing the relationship of the proposed subdivision or land development to all adjoining properties and the road and highway system in the area.
4. Proposed street and lot layout, including the approximate dimensions and acreage of the area to be developed.
5. The location of all significant topographic and physical or natural features, including watercourses, wetlands, forests, or floodplains on or adjacent to the subdivision or development site.
6. The location of all existing buildings or structures on the site.
7. The location of all existing streets, rights-of-way, and utilities on or adjacent to the site.
8. The probable location of any proposed community sewer and water systems, and stormwater management facilities.

B. Data to be Submitted with a Sketch Plan

The following data, information, or documents should be submitted with the sketch plan:

1. A description of the ultimate character, degree and type of development proposed or the extent of subdivision intended.
2. An approximate timetable or staging sequence for the proposed subdivision or land development.
3. Topographic contour information relative to the site of the proposed development, i.e. a copy of the USGS Quadrangle for the area.
4. Copies of proposed deed restrictions, where applicable.

202 PRELIMINARY PLANS

A. Preliminary Plan Requirements

Preliminary Plans shall be either black and white or blue and white prints, drawn on 18" x 24" or 24" x 36" sheets, and shall be prepared at a scale not to exceed 100 feet to the inch. If the preliminary plan is drawn in two or more sections, it shall be accompanied by a key map showing the exact location of the sections.

Preliminary plans shall show the following data:

1. Title block containing the name of the owner of the tract, name of the development, municipality, date, graphic scale, and the name and profession of the individual preparing the plan.
2. North arrow; perimeter boundaries showing bearings and distances of the area to be developed; proposed lot lines; dimensions of areas to be dedicated to public use; building setback lines; total number of parcels or dwelling units, including a numbering system to identify each lot; approximate area of each lot; total acreage; and existing zoning classification and applicable district dimensional requirements.
3. Tract boundary sketch, showing the location of the proposed development in relation to the entire tract and showing the names of owners of all adjoining property and of all abutting subdivisions. For subdivisions or land developments located in the Agricultural Preservation and Conservation Zoning Districts, such tract boundary sketch shall also illustrate all lots which have been subdivided from the parent tract since April 5, 1994.
4. Location map, showing the relation of the tract to adjoining properties, the road and highway system and municipal boundaries, including an area

extending at least 1/2 mile from the subdivision boundaries.

5. Location and width of all existing or proposed streets, rights-of-way, parking areas, and easements on or adjacent to the tract, including right-of-way and pavement widths and street names. (Duplication of existing street names within the Township shall not be permitted.)
6. Location and size of existing and proposed sewers, water mains, stormwater management facilities and/or culverts, buildings, transmission lines, fire hydrants, and other significant man-made features on or adjacent to the tract.
7. Soil percolation test sites and/or deep test pit locations, and soils mapping or soil type information, as appropriate, except where public sewers are provided.
8. Existing watercourses, floodplains, wetlands, wooded areas and other significant natural features. The boundary of the floodplain shall be shown utilizing the Flood Insurance Study (FIS) and accompanying flood maps for the municipality. If detailed information is not obtainable, the floodplain shall be generally located utilizing the best available data such as Corps of Engineers' Floodplain Studies or mapping of previous floods. The 100 year flood elevation shall be provided wherever the FIS is available, wherever feasible, or where new developments of more than 50 lots or five (5) acres, whichever is less, are involved.
9. Topographic contours at vertical intervals of a minimum of ten (10) feet and datum and benchmark to which contour elevations refer. Topographic contours of less than ten (10) foot intervals may be required for flat sites and development plans for intensive development. The Township Planning Commission may waive the requirements for topographic contours in low density subdivisions involving no public water or sewer systems and where a site investigation provides sufficient information for approval.)
10. Plan approval/signature blocks for the Township Planning Commission and Board of Supervisors and a plan review block for the County Planning Commission.
11. Plan acknowledgement statement, with signature of developer and/or property owner of record if other than the developer, to the effect that the proposal accurately reflects his/her intentions for the site.
12. Certification, with seal and original ink signature, by a registered professional land surveyor, to the effect that the survey and map are correct.

B. Data to be Submitted with the Preliminary Plan

The following information, data, and documents shall be submitted with the

preliminary plan:

1. Completed Subdivision or Land Development application form.
2. Applicable plan processing, and improvement design review fees.
3. Copies of proposed deed restrictions and preliminary Private Street Use and Maintenance Agreements to be utilized, where applicable.
4. Typical cross-sections and centerline profiles for each proposed street, and preliminary designs of proposed bridges and culverts, where applicable.
5. Sketch of proposed street layout for the remainder of the affected parcel where the preliminary plan covers only part of the subdivider's holdings, if applicable.
6. Documentation, in accordance with Section 404 of this Ordinance, that the subdivider has adequately planned for sewage disposal, including preliminary designs of proposed sewerage systems and appropriate approvals or permits from the PA Department of Environmental Resources where public or community systems are to be utilized, and, if required, feasibility studies.
7. Where appropriate, approval letters or permits issued by local water authorities or the PA Department of Environmental Resources, in accordance with Section 405 of this Ordinance, regarding proposed water supply systems, preliminary designs of such systems, and, if required, feasibility studies.
8. Such evidence as may be necessary or required by Section 407 of this Ordinance to show that effective soil conservation measures have been planned and are to be implemented in accordance with Title 25, Chapter 102 of the Rules and Regulations of the Department of Environmental Resources, or as hereafter amended, including a preliminary grading plan. (For further information concerning proper soil erosion and sedimentation control procedures, the subdivider or developer is referred to the Northumberland County Conservation District.)
9. A Stormwater Management Plan for the proposed subdivision in accordance with the requirements of Section 408 of this Ordinance.
10. Where appropriate, wetlands determinations and/or delineations as per the requirements of Section 409 of this Ordinance.
11. If any portion of the proposed development is in a flood prone area, additional information concerning protection and use of this area shall be submitted as required by law or Section 410 of this Ordinance. Such information shall include assurances that all utilities and facilities, such as

streets and sewer, gas, electrical and water systems are located and constructed to minimize flood damage, and that adequate drainage is provided so as to reduce exposure to flood hazards.

12. Where the land included in the proposed subdivision has a gas pipeline, a petroleum or petroleum products transmission line, or power or fiber optics transmission line located thereon, a copy of the recorded document for such pipeline or transmission line may be required to be submitted to verify the location and width of said right-of-way.
13. Other documentation and certificates of approval from the proper authorities as may be required by the Township, including but not limited to, PADOT Highway Occupancy Permits or letters from utility companies indicating their intent and ability to serve the proposed development.
14. An approximate timetable or staging sequence for the proposed subdivision or land development.
15. Contractor-prepared estimates of the cost of all proposed or required improvements, when applicable. (See also Section 304 of this Ordinance.)

203 FINAL PLANS

A. Final Plan Requirements

Final plans shall be either black and white or blue and white prints, drawn on 18" x 24" sheets, and shall be prepared at a scale not to exceed 100 feet to the inch. When necessary, the plan may be placed on several sheets, accompanied by an index sheet showing the entire subdivision.

Final plans shall show the following data:

1. Title block, containing the name of the owner of the tract, name of the development, municipality, date, graphic scale, name and profession of the individual preparing the plan.
2. North arrow; and perimeter boundary lines by bearings and distances which provide a survey of the area to be developed, closing with an error of not more than one (1) foot in 5,000 feet.
3. Proposed lot lines by their courses and distances showing bearings to the nearest second and distances to nearest one-one hundredth of a foot (circular lines shall be defined by their radius, arc distances and the long chord bearing and distance); acreage and dimensions of areas to be dedicated to public use; building setback lines; total number of parcels or dwelling units, including a numbering system to identify each lot; acreage of each lot; total acreage; and existing zoning classification and applicable district dimensional requirements.

4. Tract boundary sketch, showing the location of the proposed development in relation to the entire tract and showing the names of owners of all adjoining property and all adjacent subdivisions. For subdivisions or land developments located in the Agricultural Preservation and Conservation Zoning Districts, such tract boundary sketch shall also illustrate all lots which have been subdivided from the parent tract since April 5, 1994.
5. Location map, showing the relation of the tract to adjoining properties, the road and highway system and municipal boundaries, including an area extending at least 1/2 mile from the subdivision boundaries.
6. Location and width of all existing or proposed streets, rights-of-way, parking areas, driveways (as determined appropriate), and utility or drainage easements on or adjacent to the tract, including bearings and distances of rights-of-way and easements, right-of-way and pavement widths, and street names. (Duplication of existing street names within the Township shall not be permitted.)
7. Location and size of existing and proposed sewers, water mains, stormwater management facilities and/or culverts, buildings, transmission lines, fire hydrants, street lights, and other significant man-made features on or adjacent to the tract.
8. An indication of those areas not intended to be dedicated for public use.
9. Soil percolation test sites and/or deep test pit locations, and soils mapping or soil type information, as applicable, except where public sewers are provided.
10. Existing watercourses, floodplains, wetlands, wooded areas and other significant natural features. The boundary of the floodplain shall be shown utilizing the Flood Insurance Study (FIS) and accompanying flood maps for the municipality. If detailed information is not obtainable, the floodplain shall be generally located utilizing the best available data such as Corps of Engineers' Floodplain Studies, or mapping of previous floods. The 100 year flood elevation shall be provided wherever the FIS is available, wherever feasible, or where new developments of more than 50 lots or five (5) acres, whichever is less, are involved.
11. Topographic contours at vertical intervals of a minimum of ten (10) feet and datum and benchmark to which contour elevations refer. Topographic contours of less than ten (10) foot intervals may be required for flat sites and development plans for intensive development. The Township Planning Commission may waive the requirements for topographic contours in low density subdivisions involving no public water or sewer systems and where a site investigation provides sufficient information for approval.)
12. Location and material of all permanent monuments and markers.

13. Plan acknowledgement statement, with signature of a registered professional land surveyor, certifying that the monuments and/or markers shown on the plan have been set and indicating the date such markings were set.
14. Plan approval/signature blocks for the Township Planning Commission and Board of Supervisors and a plan review block for the County Planning Commission.
15. Plan acknowledgement statement, with applicable deed book and page number reference and signature of the property owner certifying record ownership of the tract, and indicating that the proposal accurately reflects his/her intentions for the site. (Where a valid sales agreement or contract is provided to the Township, the plan acknowledgement statement may be signed by the person or corporation having equitable title in the property.)
16. Certification, with seal and original ink signature, by a registered professional land surveyor, to the effect that the survey and map are correct.

B. Data to be Submitted with the Final Plan

The following information, data, and documents shall be submitted with the final plan:

1. Corrected and updated material from the preliminary plan.
2. Completed Subdivision or Land Development application form.
3. Applicable plan processing, improvement design review & inspection fees.
4. Copies of proposed deed restrictions, Private Street Use and Maintenance Agreements, and deeds proposing dedication of improvements to the Township, where applicable.
5. Final cross-sections and centerline profiles for each street, and final designs of bridges and culverts.
6. Documentation, in accordance with Section 404 of this Ordinance, that the subdivider has adequately planned for sewage disposal, including final designs of sewerage systems and appropriate approvals or permits from the PA Department of Environmental Resources where public or community systems are to be utilized.
7. Where appropriate, approval letters or permits issued by local water authorities or the PA Department of Environmental Resources, as required by Section 405 of this Ordinance, regarding proposed water supply systems, and final designs of such systems.

8. Such evidence as may be necessary or required by Section 407 of this Ordinance to show that effective soil conservation measures have been planned and are to be implemented in accordance with Title 25, Chapter 102 of the Rules and Regulations of the Department of Environmental Protection or as hereafter amended, including a final grading plan. (For further information concerning proper soil erosion and sedimentation control procedures, the subdivider or developer is referred to the Northumberland County Conservation District.)
9. Final designs of any stormwater control improvements, and related documentation required in accordance with Section 408 of this Ordinance.
10. Where appropriate, wetland determinations and/or delineations as per the requirements of Section 409 of this Ordinance.
11. If any portion of the proposed development is in a flood hazard area, additional information concerning protection and use of this area shall be submitted as required by law or Section 410 of this Ordinance. Such information shall include assurances that all utilities and facilities, such as streets and sewer, gas, electrical and water systems are located and constructed to minimize flood damage and that adequate drainage is provided so as to reduce exposure to flood hazards.
12. Where the land included in the proposed subdivision has a gas pipeline, a petroleum or petroleum products transmission line, or power or fiber optics transmission line located thereon, a copy of the recorded document for such pipeline or transmission line may be required to be submitted to verify the location and width of said right-of-way.
13. Other documentation and certificates of approval from the proper authorities as may be required by the Township, including but not limited to, PA DOT Highway Occupancy Permits or letters from utility companies indicating their ability to serve and the requirements for providing service to the proposed development.
14. A copy of the arrangements made regarding ownership and maintenance of all dedicated and undedicated recreation or open space areas in the development, streets, parking lots, and stormwater management facilities. (See also Sections 403 D. and 408 D.4.)
15. Where appropriate, one of the following financial assurances for guaranteeing improvements. (See also Section 304 regarding Improvement Guarantees.)
 - a. a bond, certified check or other financial security satisfactory to the Township Supervisors and an executed Improvement Agreement; or
 - b. a certificate from the Township Engineer indicating that the

improvements have been inspected and found to be installed in accordance with specifications approved as part of the preliminary plan.

204 LAND DEVELOPMENT PLANS

All proposed land development proposals shall conform to the requirements for preliminary and final plan submissions contained in Sections 202 and 203 of this Ordinance.

A. Land Development Plan Requirements

In addition to meeting the requirements of the above-referenced sections, such plans shall also show the following information.

1. Location and size of all existing and/or proposed principal and accessory buildings and structures, including solid waste storage sites, signs, lighting facilities, and similar features.
2. Location of accessways, and parking, loading/unloading areas.
3. Location of all proposed on-site pedestrian and vehicular circulation facilities and controls, including sidewalks, cross-walks, traffic signals, etc.
4. Table showing the extent of plan compliance with the area, density, height, yard, and off-street parking requirements of the Township Zoning Ordinance.

B. Data to be Submitted with Land Development Plans

The following additional documentation or data shall also be submitted with land development plans.

1. A description of the proposed development in sufficient detail for the Township to evaluate the submission, including anticipated traffic volumes and traffic flows, and numbers of expected employees, tenants, customers, or inhabitants. (A traffic study may be required where the Township determines that the development could have considerable impact on Township roads. When required, such study shall be prepared by a registered professional engineer or other transportation specialist.)
2. Cross-sections, showing the design details of proposed accessways, parking, and loading/unloading areas.
3. Plans addressing proposed landscaping, lighting and signage, where applicable.

ARTICLE 3.

PLAN PROCESSING PROCEDURES

300 PLAN REVIEW AND APPROVAL AUTHORITY

All plans of proposed subdivisions and land development in Delaware Township, whether preliminary or final, shall be subject to approval, modification or rejection by the Township Board of Supervisors. Prior to action by the Supervisors however, all plans shall be submitted to the Township Planning Commission and County Planning Commission for their review, evaluation and recommendations. Copies of the plans may also be submitted to the Township Engineer, where applicable, and to other appropriate agencies for review at the discretion of the Township Planning Commission before recommendations are made to the Township Supervisors. (See plan processing details below and illustrated in the flow chart on page 24.)

301 SKETCH PLANS (Optional)

Prior to the filing of an application for review and approval of a proposed subdivision or land development, it is recommended that the developer submit a sketch plan to the Township Planning Commission for advice on the requirements necessary to achieve conformity with the standards and other provisions of this Ordinance; as well as to alert the developer to other factors pertinent to the design and effectuation of the subdivision or land development. **The submission of a sketch plan shall not constitute the filing of an application for approval of a subdivision or land development.**

The developer or his agent or representative should be present to discuss any such proposal with the Township Planning Commission. No formal action will be taken on a sketch plan submission, but the Planning Commission shall, after review and evaluation of the proposal, indicate to the developer or his agent, their findings and recommendations regarding preparation of preliminary or final plans. The Planning Commission shall complete its review as promptly as possible. One copy of the sketch plan shall be left with the Commission for their files. **The review of a sketch plan shall not authorize the recording of the plan nor the conveyance of lots.**

302 PRELIMINARY AND FINAL PLANS

A. Plan Submission Requirements

1. For the purposes of this Ordinance, any proposed subdivision or land development plan which is submitted to the Township for review and approval but does not meet the applicable plan or other Ordinance requirements, may be considered as a sketch plan at the request of the

applicant and upon recommendation of the Township Planning Commission. (See also Section 302 B.1.)

2. Plans involving the installation of streets, sanitary sewers, public water supplies, stormwater management facilities and other site improvements shall be considered as preliminary plans for initial consideration.
3. Where site improvements are not proposed by the subdivider, nor required by the Township, or where improvements have been installed in accordance with a previously approved preliminary plan, the proposed subdivision or land development plan may be considered as a final plan.
4. Preliminary plan submission requirements may be waived by the Township where a subdivision or land development proposal consists of five (5) or fewer lots or dwelling units, has frontage along an existing public street, and where no other site improvements are required. In such instances, the proposed subdivision or land development plan may be considered as a final plan.
5. The final plan shall conform in all significant respects with any approved preliminary plan. Otherwise the plan submitted shall be considered as a revised preliminary plan. (See also Section 302 D.1.)
6. It shall be the responsibility of the subdivider/developer to coordinate his plans with all appropriate public and private utilities and/or service agencies in the manner set forth in this Ordinance.

B. Plan Evaluation Process

Applications for preliminary or final plan review and approval shall be submitted to the Township and shall be processed in accordance with the following procedures.

1. Application. Ten (10) copies of all proposed preliminary or final subdivision and land development plans and three (3) copies of all other materials and information required by this Ordinance shall be submitted to the Township Subdivision Ordinance Administrator no less than 14 days in advance of the next regular meeting of the Township Planning Commission at which the plan is to be considered. **(A plan shall be considered filed upon receipt by the Subdivision Ordinance Administrator of all required plans and materials, including plan processing fees.)** Plans submitted less than 14 days before the next scheduled meeting of the Planning Commission will not be considered filed until the date of the following regular meeting of the Commission.

The Township Subdivision Ordinance Administrator shall, upon receipt of a subdivision or land development plan proposed for either preliminary or final approval, check the submission for completeness. If incomplete, the

submission shall immediately be returned to the applicant/developer, with an indication of its deficiencies. (Where applicable, the Administrator may also indicate to the applicant/developer that such plans could be submitted for sketch plan consideration as per the standards contained in Section 302 A.1. Written concurrence from the applicant/developer shall be required for such consideration.

2. Referrals. If the submission is complete, the Subdivision Ordinance Administrator shall distribute the plans as follows:

- a. Eight (8) copies of the plans and two (2) copies of the accompanying documentation shall be retained for the Township Planning Commission for their review, evaluation and recommendations.
- b. Two (2) copies of the plans and one (1) copy of the accompanying documentation (including any applicable County review fee) shall be forwarded to the Northumberland County Planning Commission for their review and recommendations. (The County Planning Commission shall report its findings to both the Township Supervisors and Planning Commission within 30 days of the date of submission.) Such review shall include one (1) copy of the submitted plan showing any recommended changes and a written report containing the agency's comments regarding the proposed plan.
- c. Where a proposed subdivision or land development involves the design of streets, public or community sewer systems or water supplies, stormwater management facilities, or other site improvements, a copy of the plan and appropriate improvement designs shall be forwarded to the Township Engineer for his review and recommendations. In addition, copies of the plan may also be forwarded to the Township Municipal Authority, the Township Zoning Officer, the PA Department of Transportation, the PA Department of Environmental Resources, the Northumberland County Conservation District, or officials from adjacent municipalities for their input and comments, where such is deemed appropriate by the Subdivision Ordinance Administrator or Township Planning Commission. (These individuals and agencies shall be given a minimum of 30 days to respond with comments.)

3. Planning Commission Review and Action.

- a. At its first regular meeting following acceptance of a filed plan, the Township Planning Commission shall consider the subdivision or land development plan to determine its conformity to the design standards and plan requirements contained in this Ordinance. (The developer or his agent should be present to discuss all such proposed plans with the Township Planning Commission and to facilitate the plan review process.) In addition, the Commission shall also consider any comments received from the County Planning Commission or other

review agencies. The Commission shall then make recommendations for approval, disapproval or other appropriate action to the Township Supervisors.

- b. The Planning Commission shall forward its recommendations, along with all remaining copies of the plan, to the Township Supervisors for action. The Commission's recommendations shall be communicated to the Supervisors either by letter or shall be noted on all copies of the returned plans. The letter or annotated plans or both shall be signed and dated by the Chairman of the Planning Commission, or in his absence the Vice Chairman or other presiding officer of the Commission.

C. Plan Approval Process

1. Upon receipt of recommendations from the Township and County Planning Commissions (or upon expiration of the established review period), the Township Supervisors shall consider and take action on the proposed subdivision or land development plan at its next scheduled meeting. (The developer or his agent should be present to discuss all such proposed plans with the Township Supervisors and to facilitate the plan approval process.) The Supervisors shall render a decision and communicate it to the applicant not later than 90 days following the date of the regular meeting of the Township Planning Commission next following the date that the plan is filed, provided that should the next regular meeting occur more than 30 days following the filing of the plan, the said 90 day period shall be measured from the 30th day following the date the plan is filed.
2. The Township Secretary shall notify the applicant of the Township Supervisors' decision in accordance with the following procedure.
 - a. Within 15 calendar days after the Supervisors' meeting, the Secretary shall notify the subdivider or his agent, in writing, of the action taken by the Supervisors specifying what changes, or additions, if any, will be required prior to plan approval.
 - b. If the proposed plan is not approved, the decision shall specify the defects found, describe the requirements which have not been met, and shall cite the provisions of the Ordinance which have been relied upon.
 - c. Failure of the Supervisors to render a decision and communicate it to the subdivider within the time and in the manner required herein shall be deemed an approval of the proposed plan, unless the applicant/developer has agreed, in writing, to an extension of the time period or change in the manner of presentation or communication of the decision.

3. The Supervisors' action shall be noted on all remaining copies of the plan and approved plans shall bear the signatures of a majority of the Board and the date of such action. One (1) copy of the plan shall be retained by the Township for its files and the other remaining copies shall be returned to the applicant.
4. The Township Supervisors may grant preliminary or final plan approval subject to conditions acceptable to the applicant. Such conditions shall either be written on all copies of the plan and be signed by the applicant indicating concurrence or the Supervisors shall produce a list of all such conditions within 15 days of the date of conditional approval and present such listing to the applicant for written concurrence. Failure of the applicant to sign the plans or execute the list to indicate concurrence, as applicable, and return it to the Supervisors within 30 days of the conditional approval date or prior to the Supervisors' next regular meeting, whichever comes first, shall nullify the approval granted. Plans shall not be signed by the Supervisors until receipt of the executed concurrence from the applicant.
5. The Township Supervisors may offer a mediation option as an aid in completing proceedings authorized by this Section. In exercising such an option, the Supervisors and mediating parties shall meet the stipulations and follow the procedures set forth in Section 908.1 of the PA Municipalities Planning Code, 53 P.S. Section 10908.1, as reenacted and amended in 1988, December 21, P.L. 1329, Act 170, and as further amended by Act 209 of 1990 and Act 131 of 1992.
6. In order to facilitate financing, when requested by the developer, the Supervisors may furnish the developer with a signed copy of a Resolution indicating approval of the final plan contingent upon the developer obtaining a satisfactory financial security. The final plan or record plan shall not be signed nor recorded until the financial improvements agreement is executed. The Resolution or letter of contingent approval shall expire and be deemed to be revoked if the financial security agreement is not executed within 90 days unless a written extension is granted by the Supervisors; such extension shall not be unreasonably withheld and shall be placed in writing at the request of the developer.

D. Effect of Preliminary Approval

1. Approval of the preliminary plan shall constitute approval of the subdivision or land development as to the character and intensity of development, and the arrangement and approximate dimensions of streets, lots, and other planned features. The approval binds the subdivider to the general scheme of the subdivision shown and permits the subdivider to proceed with final detailed design of improvements, and with preparation of the final plan. **Approval of the preliminary plan does not authorize the sale of lots nor the recording of the preliminary plan, nor does it constitute**

approval of the final plan.

2. The applicant shall have a period of five (5) years from the date of preliminary approval in which to submit a final plan(s) for the subdivision and/or substantially complete all aspects of the approved development, including installation of all site improvements. If the applicant fails to submit a final plan(s) within the five (5) year period, the approval of the preliminary plan shall become null and void unless an extension of time is requested by the subdivider, in writing, along with a schedule for submission of the final plan, and is approved by the Township prior to the expiration date.
3. Where preliminary approval has been granted, no subsequent change or amendment in Township zoning or subdivision regulations shall adversely affect the right of the applicant to commence and to complete any aspect of the approved development in accordance with the terms of his approval within five (5) years from such approval.
4. The final plan may be submitted in sections, each covering a portion of the entire subdivision or land development shown on the preliminary plan. However, each section in a residential subdivision or land development, except the last section, shall contain a minimum of 25 percent of the total number of lots or dwelling units depicted on the preliminary plan, unless a lesser percentage is approved by the Township.

303 LAND DEVELOPMENT PLANS

- A. Plans involving the utilization of a single tract of ground for the development or location of one (1) or more non-residential structures or two (2) or more residential structures or dwelling units shall be considered, reviewed and evaluated as land development proposals (except those exempted by definition). Land development activities shall include, but are not limited to, the development or construction of:
 1. Industrial or commercial buildings or complexes;
 2. Multi-family dwellings, such as townhouses or apartments; and
 3. Mobile home parks or other multi-family housing developments, including planned residential developments.
- B. Land development plans shall be reviewed and approved in accordance with the plan submission, processing and approval procedures contained in Section 302 of this Ordinance. Final approval of a land development plan does not authorize the conveyance of lots, but may authorize the conveyance of individual dwelling units, i.e. condominiums.

304 INSTALLATION AND APPROVAL OF IMPROVEMENTS

A. General Requirements

1. Improvements required by the Township Supervisors may include streets, sanitary sewers, water supply systems, stormwater controls, utilities, or other such improvements necessary for development of a site.
2. Improvements shall be installed by the subdivider prior to final plan approval OR a suitable improvement agreement with satisfactory financial security shall be provided to ensure installation of the improvements by the subdivider at the standards set forth in these regulations. The final plan shall not be approved until final detailed design of the improvements is approved and the improvements are installed and inspected and determined to have been constructed in accordance with the approved plans OR a suitable improvement guarantee for installation and maintenance of such improvements is provided.

B. Improvement Guarantee

1. In lieu of completion of any improvements required as a condition of final plan approval, the applicant shall file with the municipality, financial security as an improvement guarantee in the amount of 110% of the cost to install the improvements estimated as of 90 days after the date of scheduled completion of the improvements. The cost of the required improvements shall be established by a qualified Professional Engineer selected by the applicant and submitted to the Supervisors for approval. The Supervisors may choose to reject such estimate for good cause shown.
2. If the developer and the Township Supervisors are unable to agree upon an estimate, then the estimate shall be recalculated and recertified by a qualified Professional Engineer chosen mutually by the Supervisors and the developer. The estimate certified by this engineer shall be presumed fair and reasonable, and shall be the final estimate. In the event an engineer is so chosen, fees for the services of said engineer shall be paid equally by the Supervisors and the developer.
3. Should completion of the required improvements require more than one (1) year, the Supervisors may increase the amount of financial security by an additional ten percent (10%) for each one (1) year period beyond the first anniversary date of the posting of the original security or to an amount not exceeding 110% of the cost of completing the required improvements as reestablished on or about the expiration of the preceding one (1) year period.
4. If a development is projected over a period of years, the Supervisors may authorize submission of plans by stages, which shall be subject to such requirements or guarantees as the Supervisors deem essential for the

protection of any finally approved section of the development.

C. Release from Improvement Guarantee

1. As the work of installing the required improvements proceeds, the Supervisors may authorize the release to the developer of such portions of the security necessary for payment to the contractor or contractors performing the installation of required improvements. Any request for the release of such portions of funds shall be in writing to the Supervisors and the Supervisors shall have 45 days from receipt of the request within which to authorize their engineer to inspect and certify, in writing, that the improvements to be covered by the funds have been completed satisfactorily. Upon such certification, the Supervisors shall authorize release, by the bonding company or lending institution, of the amount estimated by the municipal engineer which fairly represents the value of the completed improvements. The Supervisors may, prior to final release at the time of completion and certification by its engineer, require retention of 10% of the estimated cost of the aforesaid improvements.
2. Under certain conditions the Supervisors may agree to other procedures for the release of portions of any posted financial security so long as the work has been done in accordance with the terms of plan approval.
3. When all necessary improvements have been completed, the developer shall notify the Supervisors in writing by certified or registered mail of said completion and shall send a copy of said notification to the municipal engineer. The Supervisors shall, within ten (10) days after receipt of such notice, authorize an inspection by their engineer of the aforesaid improvements. A written report shall be filed by the municipal engineer with the Supervisors, and a copy mailed to the developer by certified or registered mail, within 30 days after receipt of the Supervisors' inspection authorization. Said report shall indicate approval or rejection of the completed improvements. If all or any portion of the improvements are rejected, the report shall include a statement of reasons for the rejection.
4. The Supervisors shall notify the developer within 15 days of receipt of the engineer's report, in writing by certified or registered mail, of their action with respect to approval or rejection of the completed improvements.
5. If any portion of the completed improvements shall be found not satisfactory, the developer shall proceed to correct or complete those improvements and upon completion shall notify the Supervisors by those procedures contained in this Section.
6. Upon approval of the completed improvements, the Supervisors shall release to the developer those funds remaining in the financial security deposit including all interest accrued thereunder. Prior to release of such funds, the developer shall guarantee to the Supervisors, in writing, the

functioning and structural integrity of the improvements for a period of 18 months from the date of improvement approval or the date of acceptance of dedication. (See also Section 304 E.2.)

Record drawings ("as built") for all site improvements shall be provided by the developer to the Township upon completion of construction activities and prior to the Township's release of the final portion of the financial security deposit. As appropriate, record drawings shall include:

- a. Mean sea level elevation of the first floor and subgrade floors of all buildings and structures.
 - b. Plan view locations of all buildings; stormwater management facilities; sanitary sewer facilities; water lines; and electric, telephone, gas, and cable television utilities and facilities.
 - c. Size and material description of all storm pipes, sanitary sewers and water lines.
 - d. Invert elevations of all storm pipes, orifices and spillways.
 - e. Rim elevations of all manholes, cleanouts, and stormwater inlets.
 - f. Grading details of all stormwater detention/retention/infiltration facilities.
 - g. Property lines and easements.
7. Should the Supervisors or Township Engineer fail to comply with the time limitations as provided, all improvements will be deemed to have been approved and the developer shall be released from all liability pursuant to his performance bond or other improvement guarantee.

D. Remedies to Effect Completion of Improvements

In the event that any improvements which may be required have not been installed as provided in this Ordinance or in accordance with the approved final plan, the Township Supervisors shall enforce any corporate bond, or other security or performance guarantee, by appropriate legal and equitable remedies. If proceeds of such bond, or other security are insufficient to pay the cost of installing or making repairs or corrections to all the improvements covered by said security, the Township Supervisors may, at its option, install part of such improvements in all or part of the subdivision or land development and may institute appropriate legal or equitable action to recover the monies necessary to complete the remainder of the improvements. All of the proceeds, whether resulting from the security or from any legal or equitable action brought against the developer, or both, shall be used solely for the installation of the improvements covered by the security, and not any other municipal purpose.

E. Dedication of Improvements

1. Where the subdivider proposes to dedicate improvements to the municipality and the Township Supervisors have agreed to accept such improvements, a deed which dedicates the land and the improvements to the Township shall be recorded with the final plan or upon completion of the construction of such improvements and approval by the Township Engineer, as applicable. A copy of such deed shall be submitted with the subdivision plan, where construction of such improvements is completed, inspected and approved by the Township Engineer prior to final plan approval. In addition, the developer shall submit "as built" drawings to the Township for all improvements being dedicated to the municipality. Such drawings shall be submitted prior to acceptance of the improvements by the Township.
2. Where the municipality accepts dedication of all or some of the required improvements, the Supervisors may require up to 15% of the actual cost of installation of said improvements for financial security to insure the structural integrity of those improvements for a term not to exceed 18 months from the date of acceptance of dedication.
3. The Supervisors may approve a final plan without an offer of dedication for streets or other improvements, provided that such improvements are noted as private on the final plan. The subdivider shall also be required to provide a notice in each deed, lease, or conveyance setting forth an arrangement between the subdivider and buyer or lessee for maintenance of such private facilities.

305 PLAN RECORDING REQUIREMENTS

- A. Upon notification of approval of the final plan, the subdivider shall record one (1) copy of the approved plan in the Office of the Northumberland County Register and Recorder within 90 days after approval. Should the subdivider fail to record the final plan within the 90 day period, the approval of the Supervisors shall be null and void unless an extension of time is requested by the subdivider in writing and is granted in writing by the Supervisors before the expiration date. Proof of recording, including the applicable Map Book and Page Number when available, shall be supplied to the Township Subdivision Ordinance Administrator by the subdivider to complete the recording process.

A copy of the approved final plan must be recorded before proceeding with the sale of lots or prior to the issuance of a Building/Zoning Permit authorizing the construction of buildings.

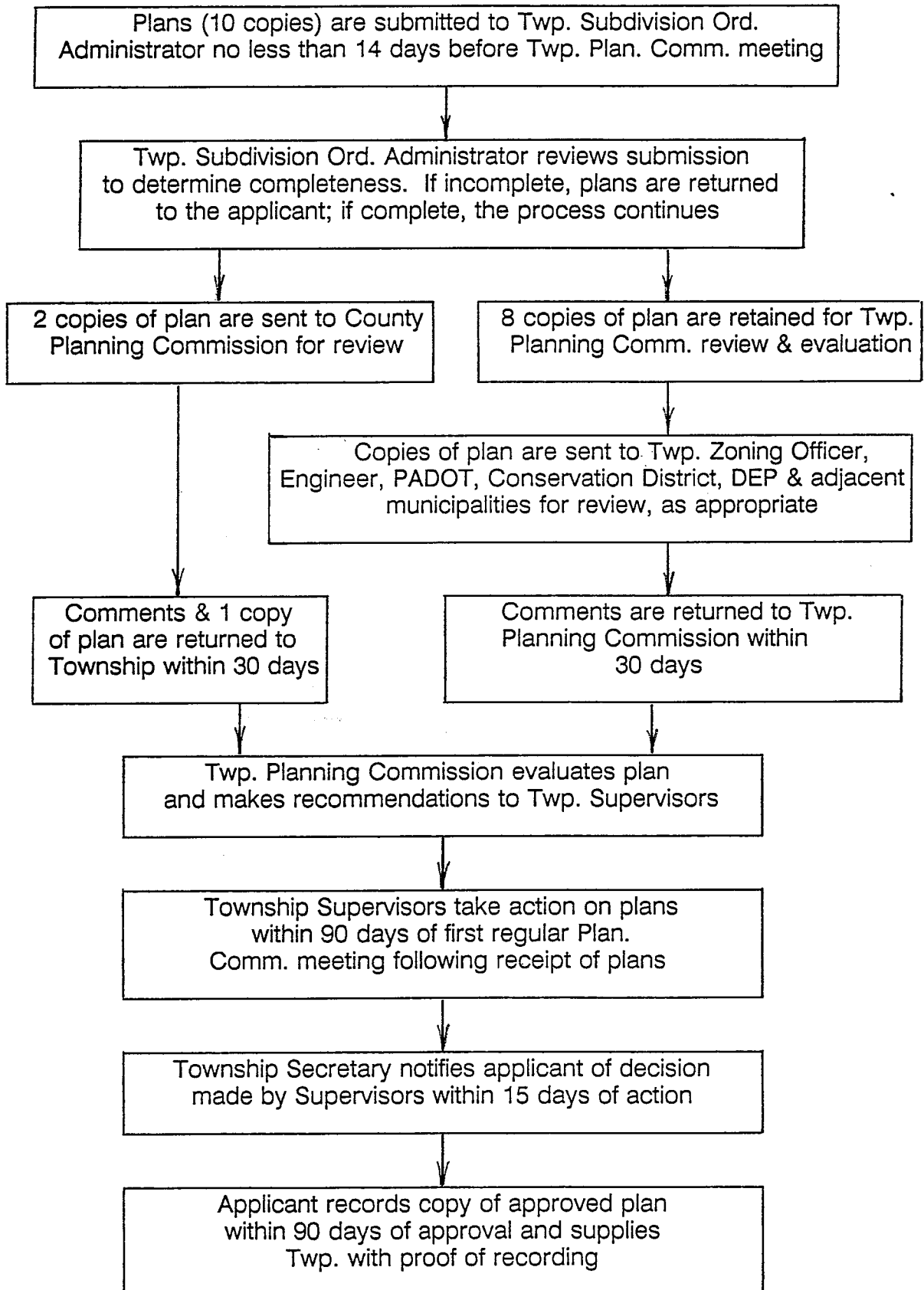
- B. Recording of the final plan shall not constitute grounds for assessment increases until such time as lots are sold or improvements are installed on the subject land.

- C. Recording the final plan after approval shall have the effect of an irrevocable offer to dedicate all streets and other ways to public use, and to dedicate or reserve all park and other public areas to public use unless reserved by the subdivider as hereinafter provided. The approval however, shall not impose any duty upon the municipality concerning acceptance, maintenance or improvement of any such dedicated streets, parks, areas or portions of same until the Supervisors shall have made actual appropriation of the same by ordinance or resolution, or by entry, use, or improvement.

306 RESUBDIVISION PROCEDURES

For any replatting or resubdivision of land, the same procedure, rules, and regulations shall apply as prescribed herein for an original subdivision.

**SUBDIVISION AND LAND DEVELOPMENT
PLAN PROCESSING PROCEDURES**



ARTICLE 4.

DESIGN AND CONSTRUCTION STANDARDS FOR REQUIRED IMPROVEMENTS

400 GENERAL STANDARDS

- A. The principles, standards, and requirements of this Article shall be applied by the Planning Commission and Supervisors in evaluating and reviewing proposed subdivision plans and shall be considered minimum standards. Where deemed appropriate or necessary to protect the public health, safety or welfare, the Planning Commission may recommend and the Supervisors may require more restrictive standards. Whenever other applicable regulations impose more restrictive standards, those regulations shall apply.
- B. Land deemed by the Township to be uninhabitable because of the hazards it presents for life, health or property, such as areas of excessive slope, unstable soils or soils of inadequate weight bearing strength, or sites susceptible to flooding, or those with very poor access, shall not be plotted for residential occupancy, nor for such other uses as may increase danger to health, life or property, or aggravate the flood hazard.
- C. Subdivision proposals shall be generally consistent with the stated policies of any duly adopted municipal Comprehensive Plan and the use of land in any proposed subdivision shall comply with the provisions of the Delaware Township Zoning Ordinance and Zoning Map, enacted on April 5, 1994, or as may hereafter be amended, and any other ordinances or regulations hereafter adopted by the Township.
- D. New subdivisions shall be coordinated with all existing or proposed developments on adjacent properties.

401 BLOCKS AND LOTS

A. Blocks

- 1. The length, width and shape of blocks shall be determined with due regard to the provision of adequate sites for the type of buildings proposed, applicable municipal zoning requirements, topography, and the requirements for safe and convenient vehicular and pedestrian circulation.
- 2. Where block lengths exceed 1,200 feet or where deemed essential by the Township, a cross walk or walkway, with a right-of-way width of not less than 12 feet and a surfaced width of not less than five (5) feet, may be required by the Township to afford pedestrian access to schools, playgrounds, shopping centers, or other places of public assembly. The surface of such walkway shall be determined on a case by case basis.

Where such walkways are provided, the developer shall include a proposal for the ownership and maintenance of the walkway which is acceptable to the Township as a part of his subdivision or land development plan submission.

B. Lots

1. All lots shall conform to the minimum area and width requirements contained in the Delaware Township Zoning Ordinance.
2. Lot size, dimension and the placement of lots within blocks shall be such that they provide the largest amounts of usable open space for the users thereof; the most economical provision of services; and, the most advantageous relationship with the site's natural topography and vegetation.
3. All lots shall abut a street or have direct access via a public or private street with a right-of-way width of no less than 50 feet, except in the case of a lot being added to and becoming a part of an adjacent existing lot with road frontage "provided that no more than two (2) lots may be located on any cul-de-sac". (Adopted 7/5/06)
4. Double frontage lots shall be avoided, except where essential to provide separation of residential development from collector or arterial streets or to overcome topographic or orientation disadvantages. Where double frontage lots are permitted, a buffer yard of at least ten (10) feet, shall be provided along the side of the property adjacent to the thoroughfare, across which there shall be no right of access.
5. A parcel being subdivided for the purpose of being added to an existing, adjacent lot of record shall not be subject to the minimum lot size or soils testing requirements of this Ordinance, provided that a note indicating the parcel's addition status is placed on the plot plan and the existing lot and the addition are combined into a single deed of record. The plan note shall also include a reference to the Deed Book and Page Number of the existing parcel. If both parcels are described separately in the same deed, then a note shall be placed on the plan and in the deed indicating that the two (2) lots are to be considered as one for subdivision purposes. In this manner the purchaser is precluded from subsequent conveyance of the acquired addition without prior approval under the terms and conditions of this Ordinance.

402 STREETS AND DRIVEWAYS

- A. Street Classification (See also Appendix A for a list of all streets and roads in Delaware Township and their functional classification.)
1. The State Highway System includes all public streets and highways operated and maintained by the PA Department of Transportation (PA DOT).

DOT).

2. The Municipal Street System includes all public streets and roads maintained by Delaware Township. Subdividers proposing public dedication of streets within a subdivision shall submit road design and construction plans which meet the Township's minimum specifications as a part of the plan submission process. In instances where the Township agrees to accept a road constructed within a subdivision, a deed dedicating the street and its right-of-way to the municipality shall be recorded with the final plan or upon completion of the street construction and approval of the Township Engineer, as applicable.
3. Private streets include all streets not dedicated, accepted, and maintained as public streets. Private streets may be permitted where the following conditions are met.
 - a. Private streets shall be designed and constructed in accordance with the standards and specifications contained in TABLES 1 and 2 of this Ordinance.
 - b. A survey of the centerline of the private street shall be shown on the plot plans along with a notation identifying the street and its right-of-way as being private.
 - c. The subdivider shall provide a Use and Maintenance Agreement in each deed, lease, or conveyance prescribing the width of the street right-of-way, its location, and setting forth an arrangement between the subdivider and buyer or lessee for improvement and maintenance of the private street. A copy of any such Agreement shall be submitted to the Township for review and approval with the subdivision or land development plans.
 - d. Where an existing private street is proposed to provide access to a new subdivision, the subdivider shall prepare a Use and Maintenance Agreement and have it signed by all property owners using the existing street if such an Agreement is not included in the existing deeds. Where such an Agreement is secured, it shall be recorded with the final plan and shall describe the width of the street right-of-way, its location in accordance with the standards of this Ordinance, and shall set forth arrangements for maintenance of the private roadway. A copy of such Agreement shall be submitted to the Township for review and approval with the subdivision or land development plans.

Where such an Agreement cannot be secured, the Township may consider the proposed subdivision or land development plans with a Use and Maintenance Agreement signed by all users of the private street in the new subdivision or land development. A copy of the Agreement shall be submitted to the Township for review with the

subdivision or land development plans and the approved Agreement shall be incorporated into each deed, lease or conveyance for the development.

B. Access Permit Requirements

1. In order to protect public safety, the Township Supervisors may limit access onto a public street or highway to specific locations and may require such locations to be shown on the plot plan.
2. A Highway Occupancy Permit must be issued by the PA DOT before construction of access onto any state highway can be initiated. Where any such access is proposed as part of a subdivision or land development proposal, the subdivider shall submit a copy of the PA DOT Highway Occupancy Permit to the Township along with his subdivision or land development plans. Where the location of such access is not known at the time of subdivision plan submission, a note shall be placed on the plans indicating the need to obtain this Permit prior to the initiation of driveway construction. (See also Section 402 J.)
3. A Highway Occupancy Permit shall be issued by the Township before construction of access onto a Township street or roadway can be initiated. In instances where such access is proposed as part of a subdivision or land development proposal, the subdivider shall include a copy of the municipal Occupancy Permit as a part of his plan submission. Where the location of such access is not known at the time of subdivision plan submission, a note shall be placed on the plans indicating the need to obtain this Permit prior to the initiation of driveway construction. (See also Section 402 J.)

C. General Street System Standards

1. All subdivision plans shall extend or continue existing public rights-of-way at a width no less than required by the minimum specified by this Ordinance.
2. Local streets within a new development or subdivision shall be laid out to discourage through traffic. However, provision for the extension and continuation of streets into and from adjoining areas may be required.
3. Where a subdivision or land development abuts or contains an existing or proposed arterial or collector street, the Township may require marginal access streets, reverse frontage lots, or such other treatment as will provide protection for abutting properties, reduction in the number of intersections with the arterial or collector street, and separation of local and through traffic.
4. Where the lots in a development are large enough for resubdivision, or if

a portion of the tract is not subdivided, suitable access and street openings for such an eventuality shall be provided.

D. Street Design Standards

Minimum design standards for streets serving residential, commercial, institutional, and industrial development are shown on TABLE 1 and are further detailed in the following Sub-Sections. (See also PA DOT's Publication 70, Guidelines for the Design of Local Roads and Streets, August 1990, or as may hereafter be amended.)

1. Provision for additional street right-of-way may be required by the Township for public safety and convenience, or for access to off-street parking in commercial and industrial areas and in areas of high density residential development.
2. In addition to the minimum street grade and alignment standards shown in TABLE 1, the following requirements shall also be applied.
 - a. Whenever street lines deflect from each other at any point, connection shall be made by horizontal curves with minimum centerline radii no less than those shown on TABLE 1.
 - b. Vertical curves shall be used in changes of grade exceeding one percent (1%).
 - c. Abrupt indentations shall be avoided.
 - d. Proper sight distance shall be provided with respect to both horizontal and vertical alignments as established in TABLE 1.
 - e. Street grades shall be as established in TABLE 1.
 - f. All streets shall be designed to provide for the discharge of surface water away from their right-of-way. In no case however shall any discharge be directed onto private property, except where drainage easements are approved. Street crown grades shall be 1/4 inch to 3/8 inch per foot for paved streets and 3/8 inch to 1/2 inch per foot for stabilized streets, except where super-elevated curves are used. Shoulder grades shall not exceed 3/4 inch per foot.

E. Intersections

1. Streets shall be laid out to intersect as nearly as possible at right angles, and no street shall intersect any other at less than 60 degrees. Multiple intersections involving the junction of more than two (2) streets shall be avoided where at all possible.

TABLE 1.

**MINIMUM DESIGN STANDARDS
FOR PUBLIC AND PRIVATE STREETS**

(See also Illustrations I & II in Appendix B)

	Major Collector Streets	Minor Collector Streets	Local Streets	Private Streets ^{1,2}
<u>General</u>				
Minimum Right-of-Way Width	60 ft.	50 ft.	50 ft.	50 ft.
Minimum Cartway Width (with curbs)	36 ft.	30 ft.	24 ft.	---
Minimum Cartway Width (without curbs)	30 ft.	24 ft.	20 ft.	16 ft.
Minimum Shoulder Width (each side)	6 ft.	6 ft.	5 ft.	4 ft.
<u>Cul-de Sac Turnaround</u>				(Adopted July 3, 2001)
Right-of-Way Diameter	---	---	120 ft.	100 ft.
Cartway Diameter	---	---	100 ft.	80 ft.
Maximum Grade	---	---	3 %	5 %
<u>Street Grades</u>				
Maximum Grades ³	7 %	8 %	10 %	10 %
Minimum Grades	0.5 %	0.5 %	0.5 %	---
<u>Minimum Sight Distance at Road Intersections</u> ⁴	375 ft.	300 ft.	200 ft.	150 ft.
<u>Minimum Centerline Horizontal Curve Radius</u>	500 ft.	300 ft.	150 ft.	---

¹ These standards shall apply to private streets serving three (3) or four (4) lots or dwelling units. Private streets serving 1 or 2 lots or dwelling units shall provide a minimum right-of-way width of 50 feet.

² Private streets serving five (5) or more lots or dwelling units shall be designed and constructed to the standards outlined for local streets.

³ Street grades and curve radii may also be calculated utilizing PADOT's Publication 70, Guidelines for Local Roads and Streets, August 1990, or as hereafter amended, and shall be based on the highway's functional classification and design speed.

⁴ Sight distance shall be measured at a height of four (4) feet above road surface.

2. Where the grade of any private or public street or private driveway or access drive exceeds seven percent (7%) at the approach to an intersection, a leveling area shall be provided having a grade of less than or equal to four percent (4%) for a distance of 25 feet measured from the edge of the shoulder or curb of the intersecting street.
3. Road intersections shall be rounded with radii of 35 feet for local streets and 50 feet for collector streets. Driveway intersections shall have radii of no less than ten (10) feet.
4. Clear sight triangles of 75 feet measured along the centerline, shall be provided and maintained at all intersections. (Sight distance shall be measured at a height of four (4) feet above road surface.) No significant obstructions or plantings (excluding necessary utility poles or street lights) higher than 30 inches or tree limbs hanging lower than ten (10) feet shall be permitted within this area.
5. Intersections entering on opposite sides of the street shall be laid out directly opposite each other, or where permitted by the Township, shall be separated by at least 150 feet between centerlines.
6. Intersections on the same side of the street shall be separated by intervals of no less than 800 feet, measured from centerline to centerline.
7. Private streets intersecting public streets shall be provided with an asphalt wearing surface for a distance of 25 feet measured from the edge of the public street right-of-way, and shall have a cartway width of 16 feet where the private street serves four (4) or fewer lots or dwelling units and a width of 20 feet in all other cases.

F. Cul-de-sac Streets

Cul-de-sac streets shall be designed in accordance with the standards provided in TABLE 1. The following standards shall also apply.

1. Cul-de-sac streets shall be a minimum of 1000 (Adopted 7/5/06) feet in length. Additional length may only be approved by the Township where such length is deemed to be in the best interest of the municipality and where it is determined that such extension will cause no jeopardy to public safety. (Adopted 6/1/99)
2. All cul-de-sac streets shall be provided with a turn-around area which shall be graded and surfaced in the same manner as the street. Parking shall be prohibited in the turnaround area. (Adopted 6/1/99)
3. Any street dead-ended for access to an adjoining property, or because

of authorized, staged development shall be provided with a temporary turnaround with a stabilized surface and an outside diameter of at least 100 feet. (The specific time period allotted for such temporary construction shall be established in an Agreement between the Township and the developer.)

4. Innovative alternatives to the standard circular turn-around may be considered by the Township where area equivalent to the requirement for turn-arounds in TABLE 1 is provided.

G. Street Construction Standards

Minimum construction standards for public and private streets serving residential, commercial, institutional and industrial development are shown on TABLE 2, and are further detailed in the following Sub-sections.

1. All streets proposed for dedication to the municipality shall meet the requirements set forth by the Township Supervisors in TABLE 2 for local or collector streets at the time of dedication.
2. Streets shall be surfaced to the grades and dimensions shown on plans, profiles, and cross-sections submitted by the subdivider or developer and approved by the Township. Before finalizing street installation, the subdivider shall install any required utilities and provide adequate drainage facilities for the street in accordance with the requirements of Sections 402 H., 407, and 408 of this Ordinance.
3. The pavement sub-base, base, and wearing surface for residential, commercial, institutional and industrial developments shall be constructed to the specifications contained in TABLE 2. (See also PA DOT's Publication 70, Guidelines for the Design of Local Roads and Streets, August 1990, or as may hereafter be amended.) All components of the pavement structure shall meet the requirements specified in the most current version of PA DOT's Publication, Form 408.
4. The sub-base shall extend six (6) inches beyond the required cartway width on each side of the proposed street in order to provide additional support and structural integrity for the cartway wearing surface. The sub-base shall be composed of Penn-DOT approved 2A and shall be constructed to the depth set forth in TABLE 2 of this Ordinance. In over-excavated areas, the material used must be AASHTO No. 1, or other material approved by the Township Supervisors. (Adopted July 3, 2001)
5. Street shoulders shall be constructed to a compacted depth equal to the depth of the base and wearing surface of the street. The finished surface elevation of the shoulder shall meet the finished elevation of the edge of the cartway. (See TABLE 1 for minimum width requirements.)
6. In instances where access to a subdivision is proposed via a private street,

TABLE 2.

CONSTRUCTION STANDARDS

FOR PUBLIC AND PRIVATE STREETS

(See also Illustrations I & II in Appendix B)

Street Type ¹	Course	Type of Material ²	Depth of Material After Compaction ^{3, 4}
Major Collector Streets	Wearing Surface Base Sub-base	ID-2 Bituminous Concrete Sub-base	1 1/2 inches 6 inches 8 inches
Minor Collector Streets	Wearing Surface Base Sub-base	ID-2 Bituminous Concrete Sub-base	1 1/2 inches 6 inches 8 inches
Local Streets	Wearing Surface Base Sub-base	ID-2 Bituminous Concrete Sub-base	1 1/2 inches 4 inches 8 inches
Private Streets (serving 3 or 4 lots or d.u.'s) ⁵	Wearing Surface Base Sub-base	----- 2RC Stone or Equivalent Sub-base	----- 4 inches 6 inches

¹ Arterial streets shall be designed and constructed in accordance with all applicable PADOT standards.

² All components of the pavement structure shall meet the requirements specified in the most recent version of PADOT's Publication, Form 408. (See also Publication 70, Guidelines for the Design of Local Roads and Streets, August 1990, or as may be amended.)

³ Compaction shall be by 10 ton vibratory roller or equivalent.

⁴ The depth of all materials may be modified by the Township based on the soil types and drainage patterns of the area. In wet or poorly-drained areas, the Township may also require a 4 inch pavement base drain.

⁵ Private streets serving five (5) or more lots or dwelling units shall be constructed to standards for local streets. Private streets serving 1 or 2 lots or dwelling units need not be constructed to meet specific standards.

the following construction standards shall apply.

- a. Private streets serving one (1) or two (2) lots or dwelling units need not be constructed to meet specific standards, but shall provide a minimum right-of-way width of 50 feet.
- b. Private streets serving three (3) or four (4) lots or dwelling units shall be constructed to the standards outlined in TABLE 2.
- c. Private streets serving five (5) or more lots or dwelling units shall be constructed in accordance with the standards for local streets contained in TABLE 2.
- d. Existing private streets proposed as access to a new subdivision or development must be constructed with a stabilized, all-weather driving surface in accordance with the standards of this Ordinance. An independent engineering analysis, paid for by the subdivider or developer, may be required by the Township to evaluate the capability of the existing road to accommodate the projected additional use generated by the proposed development.
- e. Where additional development is proposed utilizing an existing private street, the total number of lots or dwelling units served by the private street shall determine the applicable construction standards. It shall be the responsibility of the subdivider or developer to improve the condition of the existing private street where such improvement is deemed appropriate by the Township.

H. Curbs and Drainage Swales

1. Curbs. For local streets, curbs may be either the vertical or mountable type. No mountable curbs may however be used for collector or arterial streets. The transition from one type of curb to another shall be affected only at a street intersection. Curbs shall be constructed of concrete or other material as approved by the Township, and shall include a minimum 8-inch reveal, provided, however, that low profile curbs may be approved for local streets only. Curbs shall also conform to all applicable PA DOT and Township standards. (Adopted 6/1/99) and (Adopted July 3, 2001).
2. Drainage Swales. In areas where curbing is not used, stabilized drainage swales shall be provided along all new streets to avoid erosion and control run-off. These drainage swales, along with other drainage facilities, shall be designed to handle the runoff from the proposed development and areas of the drainage basin already accommodated. At a minimum, all erosion and sedimentation control standards set forth in Title 25, Chapter 102 of the PA Code, the Rules and Regulations of the Department of Environmental Protection, and the following specifications shall be met:

- a. The side slope shall be a maximum of 2:1 horizontal to vertical ratio, 3:1 or flatter slope being desirable.
 - b. There shall be a rounded area with a cross-sectional dimension of two (2) feet at the point of intersection of the shoulder and side slope.
 - c. The minimum depth of the swale shall be one (1) foot below the outer edge of the shoulder.
 - d. The bottom of the swale shall have a rounded area with a cross-section dimension of four (4) feet.
 - e. The minimum and maximum gradient of the drainage swale shall be .75% and 10% respectively.
 - f. The swale shall be sodded, seeded or otherwise stabilized to avoid erosion problems as follows. Any portion of a swale which exceeds a 5% gradient shall have its bottom rounding area lined with stone to a depth below the finished grade equal to one and one-half (1 1/2) times the average size of the largest stone used. For swales of 5% gradient, at least 25% of the stone used shall be eight (8) inches or larger, 75% may be less than eight (8) inches in size. For swales of 10% gradient, at least 25% of the stone used shall be 19 inches or larger in size. Drainage swales having a gradient between 5% and 10% shall use stones which are proportionately larger than the eight (8) inch stone used for the 5% gradient swale.
3. Drainage Pipes. Where a new driveway is proposed to cross a drainage swale adjacent to a public or private street, a drainage pipe of adequate size and length shall be installed by the applicant underneath the driveway to handle the runoff. The Township shall review the proposed pipe size and length as a part of their Occupancy Permit process where such facilities are to be installed along a municipally-owned street. Where a State-owned street is involved, PA DOT shall make the necessary determinations.

I. Street Verge

1. Sidewalks. Sidewalks may be required by the Township, where in their opinion, the type of development proposed or the character of the area warrants. Sidewalks placed within the road right-of-way shall commence one (1) foot inside the right-of-way line and extend towards the curb line or edge of the cartway and shall be at least four (4) feet in width; shall be constructed of reinforced concrete at least four (4) inches in depth; and shall be laid on at least four (4) inches of compacted gravel or stone. Sidewalks shall be scored in five (5) foot blocks with expansion joints generally every 20 feet. Where driveways cross over sidewalks, sidewalks shall be a minimum of six (6) inches in depth with welded wire fabric reinforcement. Pre-cast concrete sidewalks may also be approved for use

by the Township.

2. Street Signs. Street signs shall be placed at all intersections and their design shall be subject to approval by the Township.
3. Street Names. Names proposed for new streets shall not duplicate or resemble closely the name of an existing street in Delaware Township or any adjoining municipality. Proposed streets in obvious alignment with others already existing and named, shall be given the name of the street they continue. All proposed street names shall be subject to approval by the Township and the local Post Office, where necessary.
4. Property Trees. Property trees may be provided by the developer where sufficient trees do not exist or will not be retained. Such trees shall not be planted within the street right-of-way. At maturity, such trees shall be no closer to a street or property line than three (3) feet. Trees shall also meet the clear sight triangle requirements set forth in Section 402 E.4. of this Ordinance.

J. Driveways and/or Access Drives

1. All proposed lots or land developments shall be situated in such a fashion so that safe access onto a public or private road can be provided. Driveways and/or access drives shall be designed and constructed in accordance with the minimum guidelines contained in TABLE 3 of this Ordinance.
2. In a situation where significant potential safety hazards exist, such as excessive slope or areas of extremely limited sight distance, the Township may require, prior to granting final subdivision approval, that:
 - a. the subdivider construct the driveway or access drive in accordance with the guidelines contained in TABLE 3; or
 - b. the specific driveway or access drive location be shown on the plot plans; (See Section 402 B); or
 - c. a deed restriction be placed on the future use of the lot requiring the guidelines to be complied with when a driveway or access drive is proposed for construction.
3. The standards provided in TABLE 3 are intended as guidelines and shall be utilized to the greatest extent possible in every instance. However, where deemed appropriate by the Township, lesser standards may be approved.
4. Private driveways or access drives serving five (5) or more lots or dwelling units shall be designed and constructed in accordance with the standards for private streets set forth in TABLES 1 & 2 of this Ordinance.

TABLE 3

DRIVEWAY AND ACCESS DRIVE DESIGN GUIDELINES

(See also Illustration III in Appendix B)

Type of Development	Min./Max. Width	Max. Grade ¹	Min. Curb Radius ²	Min. Intervals ³	Min. Sight Distance ⁴
Single Unit Residential	12/35 ft.	12%	10ft.	40 ft.	150 ft.
Multi-Unit Residential ⁵	20/35 ft.	10%	15 ft.	50 ft.	200 ft.
Non-Residential Uses	24/35 ft.	8%	15 ft.	50 ft.	300 ft.

¹ All driveways or access drives shall provide a stopping or leveling area having a grade less than or equal to 4% which extends 25 feet from the edge of the shoulder or curb of the intersecting street. This leveling area shall intersect the street at an angle of no less than 60 degrees, preferably 90 degrees.

² Where dropped curbs are used to provide driveway access, the minimum width of the dropped curb shall be 20 feet for single family residential uses and 35 feet for multi-unit and non-residential uses. The transition from the normal driveway width to the width of the dropped curb shall begin ten (10) feet back from the edge of the curb for single family residential and 15 feet back for multi-unit and non-residential uses.

³ Minimum intervals for single family residential units shall apply between an intersection and the first driveway only. Minimum intervals for other types of uses shall be measured between any two points of access, including both driveways and public streets.

⁴ Minimum sight distance shall be measured from the point of intersection of the driveway centerline and the street right-of-way line to a point on the cartway centerline. No significant obstructions or plantings measuring between 30 inches above road grade and ten (10) feet above road grade shall be permitted within this area.

⁵ For the purposes of driveway or access drive design, the multi-unit residential design criteria shall be used for driveways or access drives serving five (5) or more dwelling units.

403 OPEN SPACE/RECREATION AREA

- A. Where a proposed subdivision or land development contains 25 or more lots or dwelling units, the Township may require the reservation and/or dedication of up to five percent (5%) of the total area of the proposed development (or as may be required elsewhere in this Ordinance) for the common use of all residents of the development. (This requirement may be waived by the Township where the average lot size in a subdivision or land development is greater than 1/2 acre.)
- B. Any open space required by the Township shall be suitable for varied outdoor uses, including recreational activities. Such open space shall be located so as to be easily and safely accessible from all areas of the subdivision and shall be free of safety and health hazards. Portions of the area to be used for recreational purposes shall have suitable physical characteristics for varied recreational use, including well-drained soils, gentle topography, and suitable shape and size.
- C. Where open space/recreation area is required by the Township, the proposed subdivision or land development submission shall include plans indicating the type of recreation or related facilities to be installed or constructed by the developer in such area. Or, upon agreement of the developer and the Township, the Township may accept the payment of fees in lieu of said construction or installation from the developer. Such fees shall bear a reasonable relationship to the use of the open space and facilities by future inhabitants of the development and shall be used only for the purpose of providing park or recreation facilities accessible to the development. All fees collected by the Township shall be set aside for construction of specific recreation facilities identified as part of the approved subdivision. The Township shall utilize any such fees within three (3) years from the date they were paid or the developer may request a refund.
- D. Where open space/recreation area is provided, the subdivider shall submit, with his subdivision or development plans, a proposal which provides for the maintenance and ultimate ownership of such space. Where such open space is not dedicated to the Township or where such dedication is not accepted by the Township, an Agreement which assigns maintenance responsibilities for the open space and/or recreational facilities shall be approved by the Township, recorded with the final plan, and referenced in the deeds of each parcel within the development.

404 SEWAGE FACILITIES

All subdivisions and land developments shall be provided with adequate sewage facilities. It shall be the responsibility of the developer to make the necessary arrangements and/or conduct the appropriate tests to determine that such facilities can or will be provided to handle the sewage generated by his development in accordance with the following standards.

A. General Requirements

In general, the method of sewage facilities to be provided shall be determined by the Township, giving consideration to the following order of preference:

1. Connection to a public sanitary sewer or community sewerage system designed and constructed in accordance with the requirements of the PA Department of Environmental Protection (DEP), particularly where public sanitary sewers are available within 150 feet of any principal building in the development;
2. Provision by the developer of a complete private sanitary sewer or community sewerage system using a treatment plant, designed and constructed in accordance with the requirements of the PA DEP;
3. Individual on-lot sewage systems designed and constructed in accordance with the requirements of the PA DEP.

The judgment of the Township Supervisors as to the method of sewage disposal to be used will be made after study and review of a sewage feasibility report submitted by the developer. The submission of such a report may be waived by the Township where it is deemed unnecessary. When required however, such report shall be prepared by a registered professional engineer or other individual of demonstrated qualifications. In each instance, the Supervisors shall obtain a recommendation from the Delaware Township Municipal Authority.

B. Planning Requirements

Documentation which demonstrates that the subdivider has adequately planned for sewage disposal within the proposed subdivision must be submitted with the subdivision plan, whether preliminary or final, as follows.

1. For subdivisions of ten (10) lots or less proposing individual on-lot sewage facilities, a completed DEP Planning Module Component I, approved by DEP, shall be required.
2. For subdivisions proposing individual on-lot, sewage systems on more than ten (10) lots, a community sewerage system, stream discharge, or municipal sanitary sewer extension, a completed copy of the appropriate DEP Planning Module component(s) and an indication that approval has been given by the DEP for the proposed revision to the Township's Official Sewage Facilities Plan shall be required.

C. Individual On-lot Sewage Systems

1. All proposed subdivisions shall have appropriate soils testing performed in accordance with State DEP standards, unless connection to or provision

of a public sanitary sewer or community sewerage system is proposed by the developer. The location of all test pit and percolation test sites shall be marked on the subdivision plot plan, where applicable.

2. For single lot subdivisions or for residual parcels created by the subdivision of other land, where the subdivider provides written documentation to the Township which demonstrates that the proposed subdivision or residue is not intended for development, the Township may waive the requirement for soils testing. (All appropriate DEP sewage planning requirements shall however still be met, including approval of Non-Building Waiver Request Forms, where applicable.) In such cases, plot plans shall be stamped or marked by the Township indicating that approved lots are "Not For Development". Prior to development, all such plans shall be resubmitted to the Township for approval and the requirements of this Section shall be met in full at that time.
3. Where soils testing indicates that the soils of a site, lot or parcel will not accommodate an individual on-lot sewage system, the Township may approve the proposed submission, provided that the plot plans indicate which lot(s) has failed the soils testing. Further, these plans shall be stamped or marked by the Township indicating that such approved lots are "Not For Development" and that prior to development, plans for these lots shall be resubmitted to the Township for approval.

D. Sanitary Sewer or Community Sewerage Systems

1. Where extension to an existing municipal sanitary sewer or community sewerage system or construction of a new sewer or community sewerage system, either public or private, is proposed or required, the subdivider or developer shall provide the Township with plans prepared by a registered professional engineer and a letter of certification indicating that the proposed facility has been designed in accordance with the standards of the DEP or a copy of the DEP-approved Water Quality Permit for the facility. Where an existing sanitary sewer or community sewerage system is to be extended, the developer shall also submit a letter from the Township Municipal Authority or other service provider approving the plans for the proposed extension and indicating their intent to serve the subdivision or development, as part of the plan submission process.
2. Following construction where an existing sewerage system is extended, the developer shall provide the Township with an approved inspection report from the Township Municipal Authority or other service provider indicating that such construction was completed satisfactorily. Where a private sewerage system is constructed, the developer shall provide the Township with documentation from DEP or other qualified engineer/inspector, approved by the Township, which indicates that the facility was installed in accordance with the terms of the Water Quality Permit. (The Township reserves the right to retain an independent registered professional engineer

to certify that the sewerage facility has been properly constructed or installed. In this case, the subdivider or developer shall reimburse the Township for all reasonable expenses charged by the engineer for such inspection in accordance with the procedure established in Section 706 of this Ordinance.)

3. A Plan addressing the maintenance of all private sanitary sewer or community sewerage systems shall be made by the developer and furnished to the Township and DEP for review and approval as a part of the subdivision or development plan submission process.

405 WATER SUPPLY

All subdivisions and land developments shall be provided with a safe, adequate and potable water supply. It shall be the responsibility of the subdivider or developer to provide such service and/or supply each lot or dwelling unit in his development utilizing one of the following methods.

A. Public Water Systems

1. Subdivisions and land developments shall be connected to an existing public water system where such system is available within 1,000 feet of the proposed development. Where the number of lots or dwelling units in a subdivision or land development exceeds 25, the Township may require installation of a community water system if it is not feasible to connect to an existing public system. The Township may require the developer to submit a feasibility study prepared by a registered professional engineer or other qualified individual to show that the use of a public or community water system is not feasible.
2. If water is to be provided by means other than by private wells owned and maintained by the individual owners of lots within the subdivision or development, the developer shall present evidence to the Township that water is to be supplied to the subdivision by a certified public utility, a bona fide cooperative association of lot owners, or by a municipal corporation, authority or utility. A copy of a Certificate of Public Convenience from the PA Public Utility Commission or an application for such certificate, a cooperative agreement or a commitment or agreement to serve the area in question, whichever is appropriate, shall be acceptable evidence.
3. New public water systems which are proposed to service new subdivisions or land developments shall be designed and constructed in accordance with the regulations of the PA Department of Environmental Protection (DEP). The developer shall submit to the Township a copy of the appropriate DEP-approval letter or permit for construction and operation of the new public water system as a part of his subdivision or development plan submission.

4. Extensions to existing water systems which are proposed to service new subdivisions or land developments shall be designed and constructed in accordance with the regulations of the PA DEP. The developer shall submit to the Township a letter from the appropriate water authority approving the plans for the proposed extension to the existing system and indicating their intent to serve the development. In addition, the developer shall also submit a letter of approval for the proposed system extension from DEP.
5. Fire hydrants with sufficient pressure shall be provided as an integral part of any public water supply system and shall be placed at such locations as are deemed appropriate, based on the type of development proposed.

B. Non-Public Water Systems

Where a proposed subdivision or land development involves the conveyance of lots served by a non-public water supply system or the development of a tract upon which an on-site well is to be provided to serve all or parts of the development, the subdivider or developer shall provide the Township with a letter or permit from the PA DEP which approves the construction and operation of the proposed system. This documentation shall be supplied to the Township as a part of the subdivision or land development submission process.

C. On-Lot Water Systems (Private Wells)

1. Where neither a public or non-public water supply system is proposed by a developer to serve his development, individual on-lot wells shall be installed by each property owner. Where groundwater problems are known to exist, or where anticipated levels of development may result in water supply problems, the Township may however require the developer to demonstrate that a reliable, safe and adequate groundwater supply exists to support the water usage demands of the proposed subdivision without detrimental effects upon existing adjacent water wells. (Supporting documentation must be provided by a qualified engineer or other professional of demonstrated capability; i.e. a hydrogeologist or hydrologist.) The standards set forth in the Safe Drinking Water Act and other appropriate DEP regulations shall apply in such instances.
2. Individual on-lot wells shall be located at least 100 feet from any on-lot sewage system.

406 UTILITIES

- A. When easements are required for utilities, the minimum width shall be as required by the appropriate utility company (but shall not be less than 20 feet), and to the fullest extent possible, the easement shall be centered on or be adjacent to rear or side lot lines or be adjacent to the street right-of-way line.

Local utility companies shall be consulted by the developer when locating easements.

- B. The location, width, and purpose of all utility easements shall be shown on all subdivision or development plot plans.
- C. Telephone, electric, television cable and other such utilities shall be installed underground in accordance with the PA Underground Utilities Act (Act 287 of 1974).
- D. Underground installation of utilities shall not be required:
 - 1. in subdivisions containing less than five (5) lots bordering an existing right-of-way served by overhead utility lines, or
 - 2. where utilities are proposed to service commercial or industrial properties, or
 - 3. where a variance to the requirements of Act 287 has been granted by the PA Public Utilities Commission,

unless otherwise required by the Township.

- E. Underground installation of the utility distribution and service lines shall be completed prior to street paving and storm drainage, curbing and sidewalk installation. All street rights-of-way and other easements where utility lines are to be installed shall be graded to within six (6) inches of final grade before trenches are excavated.
- F. Letters from all appropriate utility companies indicating their ability to provide service for the proposed subdivision or land development shall be submitted to the Township by the developer as a part of his subdivision or land development plan submission.
- G. The Township may require the installation of utilities prior to final approval where the cost of installation, including the cost of excavation for underground utilities, will not be completely paid by the utility company. In each case, the Township shall also consider the procedures of the applicable utility company involved for the extension of utility service to lots within a subdivision.

407 SITE PREPARATION REQUIREMENTS

A. Erosion and Sedimentation Control

Effective soil conservation measures shall be planned and implemented for all subdivisions and land developments in accordance with the Rules and Regulations of the Department of Environmental Protection (PA Code, Title 25, Chapter 102 - Erosion Control, or as may hereafter be amended) and the

following criteria.

1. No changes shall be made in the contour of the land; no grading, excavating, removal or destruction of the topsoil, trees or other vegetative cover of the land shall be commenced unless adequate provisions are made by the landowner for minimizing soil erosion and sedimentation.
2. For the purposes of this Ordinance, a complete erosion and sedimentation control plan as outlined in the most current edition of the Erosion and Sediment Pollution Control Program Manual, developed by the Bureau of Soil Conservation of the PA DEP, shall be prepared by an individual of demonstrated capability for subdivisions or land development proposals where:
 - a. more than 1/2 acre will be disturbed to develop the site (including dwelling construction, driveway and sewage system installation, etc.); or
 - b. site improvements are involved; or
 - c. major earthmoving activities are proposed; or
 - d. disturbances are proposed for areas of steep or severe slope or for areas adjacent to streams or water bodies; or
 - e. the proposal involves any commercial, institutional or industrial use; or
 - f. where such is deemed appropriate by the Township.
3. All such Erosion and Sedimentation Control Plans shall be submitted by the developer to the Township along with preliminary or final subdivision or land development plans, as appropriate. A copy of the Plan shall then be forwarded by the Township to their Engineer, the Northumberland County Conservation District, and as necessary, the PA DEP, for review and acceptance prior to approval of the proposed subdivision or land development.
4. A notice shall be placed on all final subdivision and land development plans indicating that future property owners or developers must meet the Erosion and Sedimentation Control requirements of the PA DEP before lot development is initiated.
5. Whenever sedimentation results from stripping vegetation, grading, regrading or other activity, it shall be the responsibility of the person, corporation or other entity causing such sedimentation to remove it from all adjoining surfaces, drainage systems and watercourses and to repair any damage at his expense according to the time frame specified by the Township. (All State-mandated permits shall be obtained by the contractor

before initiating work in a stream or watercourse.)

6. Where construction activities associated with a subdivision or land development propose to disturb five (5) or more acres of land (or as may hereafter be amended by State or Federal statutes), the developer shall apply for and obtain an NPDES Permit for his site runoff and discharge from the PA DEP prior to initiating such activities. A copy of this Permit shall be submitted to the Township as a part of the subdivision or land development plan submission process.

B. Grading

In order to provide suitable building sites, the following requirements shall be met:

1. All lots, tracts or parcels shall be graded to drain stormwater away from buildings; foundations; well heads; sanitary sewer manholes and cleanouts; electric, natural gas, telephone, and cable television utilities and facilities; underground storage tanks; and other physical features that stormwater may adversely impact, in accordance with Section 407 and 408 of this Ordinance.
2. Grading shall not divert water onto adjacent properties without the express permission of the land owner and the Township.
3. Grading equipment shall not enter or cross any stream or watercourse without first obtaining the necessary permit or approval from the PA DEP, U.S. Army Corps of Engineers, or other agencies as appropriate.
4. All excavation and fill activities shall adhere to the following standards.
 - a. Cut and fill slopes shall not be steeper than 2:1 unless stabilized by a retaining wall or cribbing.
 - b. Adequate provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surfaces of fills.
 - c. Cut and fill slopes shall not endanger adjoining properties and shall be graded or tapered so that the bottom edge of the slope is no closer than ten (10) feet to any property line.
 - d. Fills shall be placed, compacted, and stabilized to minimize sliding or erosion.
 - e. Fills shall not encroach on natural watercourses or constructed channels.
 - f. Fills placed adjacent to natural watercourses or constructed channels

shall have suitable protection against erosion during periods of flooding and shall be subject to all applicable floodplain management regulations and all requirements of the PA DEP, Federal Emergency Management Agency (FEMA), and the U.S. Army corps of Engineers. No fill shall be placed in any designated Floodway.

5. Grading shall not accelerate stormwater runoff rates without provision for adequate erosion protection.

408 STORMWATER MANAGEMENT

The management of stormwater from a site, both during and after any subdivision or land development, shall be accomplished in accordance with the standards and provisions of this Ordinance, and any PA Stormwater Management Act (Act 167-1978, or as may hereafter be amended) watershed plan that may be adopted and implemented hereafter. The provisions of this Section are intended to provide protection against improperly managed stormwater runoff, and to assure that downstream property owners and water courses are not adversely affected by increases in stormwater runoff resulting from a subdivision or land development. (In addition, all permitting requirements established in the Federal Clean Water Act relating to stormwater discharges shall be met. See Sub-section A.4 below.)

A. General Requirements

1. A Stormwater Management Plan meeting the criteria outlined in this Section shall be prepared by a registered professional engineer, hydrologist, or other professional of demonstrated capability for all subdivision or land development proposals where:
 - a. disturbance activities that would affect earth resources (such as the creation of impervious surfaces, earth disturbance, or timber harvesting) are proposed that may affect stormwater runoff; streets or other related improvements are proposed which will increase the total impervious area of the tract; or
 - b. slopes of the site or adjacent areas could affect stormwater runoff as the lot (s) within the proposed subdivision are developed; or
 - c. areas of poor drainage or stormwater runoff problems are known to exist within, directly adjacent to, or immediately down gradient from the proposed subdivision.
2. All subdivision and land development proposals shall meet the requirements of any Watershed Stormwater Management Plan or other Stormwater Management Ordinance in effect in the Township or as may hereafter be enacted.
3. Stormwater Management Plans shall be submitted by the developer to the

Township along with preliminary and final subdivision or development proposals, as appropriate. A copy of the Plan will then be forwarded by the Township to their Engineer, the Northumberland County Conservation District, and as necessary, the PA DEP, for review and acceptance prior to approval of the proposed development. All such Plans shall meet the minimum standards suggested by the Conservation District.

4. Where construction activities associated with a subdivision or land development propose to disturb five (5) or more acres of land (or as may hereafter be amended by State or Federal statutes), the developer shall apply for and obtain an NPDES Permit for his proposed stormwater discharge from the PA DEP prior to initiating such activities. A copy of this Permit shall be submitted to the Township as a part of the subdivision or land development plan submission process.

B. Performance Standards

In order to improve the quality and general utility of stormwater management plans, subdivisions and land developments shall be planned, designed, and constructed in accordance with the following principles.

1. Stormwater management control facilities shall be incorporated into the overall design of any subdivision or land development or improvement in such a way that they may serve multiple purposes such as wildlife areas, recreation areas, fire protection ponds, etc.
2. The natural infiltration and water resource potential of the proposed development site shall guide design, construction, and vegetation decisions. Runoff in excess of natural conditions from roofs and other surfaces which are unlikely to contain pollutants shall be recharged to the ground water table or stored for non-potable water uses to the maximum extent possible.
3. Improvements to manage drainage and stormwater runoff within a subdivision or development shall be designed to increase the amount of water which infiltrates into the soil where possible, and to control the rate of runoff released off-site through temporary storage of stormwater on-site. Such improvements may include, but are not limited to, deed covenants which restrict the allowable amount of impervious surface for each lot, the provision of drainage easements, seepage pits, swales and detention and retention basins.
4. Existing trees and shrubs shall be preserved and protected to the maximum extent possible.
5. All natural streams, channels, drainage swales and areas of surface water concentration shall be maintained in their existing condition except where changes can be justified on the basis of other design standards.

6. Stormwater management facilities shall be designed so that the peak rate of runoff from any development or subdivision shall be no greater than the peak rate of runoff from the site in its pre-development condition (unless this general performance standard is specifically modified by a Watershed Stormwater Management Plan).

C. Design Standards

It shall be the developer's responsibility to provide sufficient plans, documentation and other technical data to demonstrate that the capacity of his proposed stormwater management facilities will adequately manage runoff from his development. The following general and technical standards shall be applied when designing such facilities.

1. General Design Criteria

- a. In calculating the pre-development runoff rate the following assumptions shall apply.
 - 1) Woodland shall be used as the prior condition for those portions of the site having trees greater than six (6) inches in diameter measured breast high (DBH) or where trees existed for at least 18 months prior to the development application.
 - 2) Meadow shall be used for all other areas, including areas which are presently covered by impervious surfaces, unless modified by the Township upon recommendation of its Engineer.
- b. Calculations for the design of stormwater management facilities shall also assume that all driveways, traffic areas, and driving surfaces within the development or subdivision will be paved or covered with an impervious surface.
- c. The design for all proposed stormwater management improvements, shall be reviewed and approved by the Township and its Engineer prior to construction of any such proposed improvements. The applicant and/or owner shall reimburse the Township for any and all engineering review charges by the Township Engineer in accordance with the procedure set forth in Section 606 A. of this Ordinance.
- d. Stormwater runoff shall not be concentrated onto adjacent properties unless written approval is given by the property owner and the applicable municipality. When stormwater drainage is to be directed into an adjacent municipality, all provisions for accommodating such drainage shall be submitted to the governing body of that municipality for review prior to approval of the subdivision or land development proposal.

- e. Storm sewers and related installations shall be required by the Township when the stormwater runoff cannot be satisfactorily handled within the street right-of-way, as determined appropriate by PA DOT or the Township, as applicable.
- f. Where existing storm sewers are reasonably accessible and of adequate capacity, subdivisions and land developments may connect to the existing system, subject to approval of the authority or municipality having jurisdiction over the existing system.
- g. Where a subdivision or land development is traversed by a watercourse, drainageway, channel or stream, or such plans propose stormwater management facilities, a drainage easement conforming substantially with the line of such water course shall be provided. The drainage easement shall be of such width (minimum 20 feet) as will be adequate to preserve the unimpeded flow of natural drainage; or for the purpose of widening, deepening, relocating, maintaining, improving or protecting such drainageway; or for the purpose of protecting such watercourse for the purpose of stormwater management or installation of a storm sewer. Any change proposed in the existing drainageway shall be subject to the approval of the PA DEP and the U.S. Army Corps of Engineers.
- h. All storm drainage facilities constructed along or crossing public streets or rights-of-way shall conform to all applicable requirements of the PA DOT related to such drainage facilities.

2. Technical Design Criteria - Stormwater Detention/Retention/Infiltration

- a. Proposed stormwater detention basins shall be designed to reduce future peak runoff rates to existing condition rates for the 1-, 10-, 25- and 100-year design storms. These design storms shall be routed through stormwater detention systems using the modified Puls procedure.
- b. The Modified Rational Method may be used to complete hydrologic computations required for the design of stormwater detention basins involving drainage areas that are less than 30 acres. Runoff coefficients for the Modified Rational Method shall be selected using the attached table (Figure 1 in Appendix C of this Ordinance), (Rawls, et al, 1981). Hydrologic times of concentration are required for the selection of design rainfall intensities in the Modified Rational Method. Such hydrologic times of concentration should be computed using procedures described in Technical Release 55 (TR-55, USDA, SCS, 1986, or as may hereafter be amended). Rainfall intensities used in the Modified Rational Method shall be selected from the PA DOT Storm Intensity-Duration-Frequency chart for Region 3 (Figure 2 in Appendix C of this Ordinance).

- c. The SCS Unit Hydrograph Method or TR-55 should be used to complete hydrologic computations that are required for the design of stormwater detention basins involving drainage areas that exceed 30 acres. Rainfall data for the TR-55 and the SCS Unit Hydrograph Method shall be obtained from the PA DOT Storm Intensity-Duration-Frequency chart for Region 3 (Figure 2 in Appendix C of this Ordinance).
- d. All stormwater detention basins shall be designed to safely discharge the 100-year peak discharge through an emergency spillway, and all other outlets, in a manner that will not damage the integrity of the basin. The invert elevation of the emergency spillway device shall be placed a minimum of one (1) foot above the 100-year design water surface elevation in the stormwater detention basin. The emergency spillway shall be designed to convey the entire 100-year peak discharge. A modified Puls routing of the 100-year design storm through the basin shall be completed assuming that the emergency spillway is the only operable basin outlet device.
- e. All stormwater basins, except those designed to retain water or special vegetation as part of best management practices, shall be designed to completely drain within 24 hours. Allowances for best management practices shall be made if they are designed to the publication, "Controlling Urban Runoff; A Practical Manual for Planning and Designing Urban BMP's" (Metropolitan Washington Council of Governments, 1987, or as may hereafter be amended). Otherwise, low flow channels shall be provided that would extend between points of concentrated inflow to the basin and the basin outlet structure.
- f. Earth fill embankments shall be designed using the following minimum standards:
 - 1) The height of the embankment should not exceed ten (10) feet.
 - 2) The minimum top width of embankments shall be ten (10) feet.
 - 3) The side slopes of the embankment fill should not be steeper than three (3) horizontal to one (1) vertical.
 - 4) The side slopes of areas in a cut should not be steeper than three (3) horizontal to one (1) vertical.
 - 5) A cutoff trench of impervious materials shall be provided under all earth fill embankments exceeding four (4) feet in height.
 - 6) All pipes through embankments shall be constructed with anti-seep collars. The design of such collars shall be in accordance with the attached design procedure and detail specifications (Figure

3 in Appendix C of this Ordinance).

- g. Trash racks may be required at basin outlet structures. These trash racks shall be designed in accordance with recommendations provided in Chapter 11 of "Design and Construction of Urban Stormwater Management Systems" (Water Environment Federation, American Society of Civil Engineers, 1992, or as may hereafter be amended).
- h. Riser outlet structures (where required) shall be constructed on a foundation to prevent floating and movement of the outlet structure due to water and frost action.
- i. Stormwater infiltration devices shall be designed in accordance with recommendations provided in "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMP's" (Metropolitan Washington Council of Governments, 1987, or as may hereafter be amended).
- j. Trees and shrubs shall not be planted along the embankment(s) of stormwater basins.

3. Technical Design Criteria - Conveyance Systems

- a. Stormwater conveyance systems (such as storm sewers) may be designed for storm events other than the 100-year design storm. However, an overland flow path should be provided to convey 100-year storm runoff to a stormwater detention/retention/infiltration facility without incidental flooding of a building, parking area, traffic lane, or pedestrian area.
- b. The Rational Method may be used to compute peak runoff for drainage areas involving less than 100 acres. Runoff coefficients and rainfall intensities used in the Modified Rational Method should be selected as described above for the Modified Rational Method. The SCS Unit Hydrograph Method or TR-55 should be used to compute runoff rates for drainage areas involving more than 100 acres. Rainfall data for TR-55 and the SCS Unit Hydrograph Method shall be obtained from the PA DOT Storm Intensity-Duration-Frequency chart of Region 3 (Figure 2 in Appendix C of this Ordinance).
- c. Detailed hydraulic design computations shall be provided for all storm pipes. Recommended hydraulic computational procedures are described in detail in "Design of Urban Highway Drainage-The State of the Art" (US DOT, FHA, 1979, or as may hereafter be amended) and "Hydraulic Charts for the Selection of Highway Culverts" (Hydraulic Engineering Circular Number 5, US DOT, FHA, 1965, or as may hereafter be amended).

- d. Manufactured end sections shall be provided at terminus ends of all storm pipes.
- e. Energy dissipators shall be placed at the outlets of all storm pipes. Design computations shall be submitted for all proposed energy dissipators. Recommended design procedures are described in "Erosion and Sediment Pollution Control Program Manual" (PA DEP, 1990, or as may hereafter be amended).
- f. Drainage swales shall be designed in accordance with procedures described in "Design of Roadside Channels with Flexible Linings" (Hydraulic Engineering Circular Number 15, US DOT, FHA, 1988, or as may hereafter be amended).
- g. Detailed hydraulic computations shall be provided for stormwater inlet grates. Recommended hydraulic computational procedures are described in detail in "Inlet Grate Capacities for Gutter Flow and Ponded Water" (Neenah Foundry Company, 1987, or as may hereafter be amended) and "Drainage for Highway Pavements" (Hydraulic Engineering Circular Number 12, US DOT, FHA, 1984, or as may hereafter be amended).
- h. Design water surface elevations in stormwater inlets should be at least six (6) inches below the grate elevation, otherwise, the inlet grate may not accept any stormwater runoff.
- i. Profile drawings shall be required for all stormwater conveyance systems.
- j. An engineering evaluation of existing stormwater facilities may be required by the Township Supervisors or the Northumberland County Conservation District.

D. Plan Requirements

1. The Stormwater Management Plan for a proposed subdivision or land development shall include a brief description of the following:
 - a. existing drainage patterns and stormwater runoff characteristics of the site, including any existing drainage or stormwater runoff problems and facilities;
 - b. the anticipated impact that future development of the property will have on existing stormwater runoff and drainage patterns; and,
 - c. the type of structural and nonstructural improvements planned to manage post-development stormwater runoff.

2. The proposed location of both structural and nonstructural improvements shall be shown on the subdivision or development plot plans. The Township shall require the subdivider to provide topographic contour information at such intervals as deemed appropriate on the plot plans in order to better evaluate the proposed stormwater management techniques and/or facilities.
3. Separate, detailed specifications, including complete design calculations, cross-sections, profiles, manufacturer's details, etc. shall be submitted by the developer for all proposed structural stormwater management improvements.
4. The subdivider shall also submit a proposal for ownership and maintenance of all proposed stormwater management improvements within his development, in accordance with the following provisions.
 - a. Where the subdivider proposes to dedicate such improvements to the Township and the Township has agreed to accept the ownership and maintenance responsibilities thereof, a deed which dedicates the land to be used for the stormwater management improvement to the Township shall be submitted as a part of the Stormwater Management Plan. If approved by the Township, the deed of dedication shall be recorded with the final subdivision or development plan.
 - b. Alternately, where no municipal participation is anticipated, an Ownership and Maintenance Agreement, specifying ownership and assigning maintenance responsibilities for the proposed improvements to either the developer or property owners within the subdivision, shall be recorded with the final subdivision or development plan and shall be referenced in the deeds for each property within the subdivision.

The following criteria shall apply to all stormwater management Ownership and Maintenance Agreements.

- 1) The party (or parties) responsible for the maintenance of all stormwater management facilities shall be identified in the Ownership and Maintenance Agreement. The Township may require the developer to organize a Home Owner's Association to own and maintain such facilities, in lieu of an acceptable alternative suggested by the developer.
- 2) A Stormwater Management Maintenance Plan shall be submitted by the developer to the Township for review and approval by the municipality and its Engineer. This Maintenance Plan shall include specific stormwater management maintenance requirements.
- 3) A copy of the applicable Stormwater Management Plan (including the Maintenance Plan), Erosion and Sediment Pollution Control

Plan, and design plan(s) for each subdivision and/or stormwater management facility shall be maintained by the party (or parties) identified above for reference purposes.

- 4) An inspection of all stormwater management facilities shall be conducted at least every six (6) months, and after severe rainfall events by the responsible party (parties). This inspection shall be followed up with a letter report. Copies of this letter report shall be submitted to the Township and to the County Conservation District. Items to be reviewed during this inspection shall include, but need not be limited to, rodent damage, erosion problems, embankment failures, sediment and/or debris accumulation, and vandalism.
 - 5) Any damaged facilities shall be repaired and/or replaced by the responsible party (parties) in accordance with the time frame established by the Township.
 - 6) The Township Supervisors and the County Conservation District shall be contacted immediately in the event of severe damage to any stormwater management facility. In such instances, the Township shall reserve the right to review and approve plans to repair and/or replace severely damaged facilities.
 - 7) When, for any reason, the responsible party (parties) fails to properly maintain any stormwater management facilities identified in their Maintenance Plan, the Township Supervisors shall have the right to enter upon such property as may be necessary to access the facilities and perform the appropriate maintenance. Upon completion of such maintenance, the Township shall assess all property owners of the development for costs associated with the necessary maintenance.
5. A record drawing ("as built") of all stormwater management improvements shall be provided to the Township Supervisors by the developer upon completion of all such construction activities. (See Section 304 C. for required elements of the record drawing.)

409 WETLANDS

- A. No subdivision or land development plan shall be approved by the Township where wetlands are known or are expected to exist until sufficient determination has been made regarding the actual existence and location of such areas. Wetland delineations shall be made utilizing the National Wetland Inventory Maps for Delaware Township and/or shall be located by a wetlands specialist with technical training and expertise in botany, hydrology, soil science, or a related field. Following delineation, a Jurisdictional Determination or verification of the designated wetlands shall be made by the U.S. Army Corps of Engineers.

- B. A statement shall be placed on all plot plans involving wetlands indicating that the location of such wetlands was determined by the developer or his agent and that the Township assumes no liability arising therefrom.
- C. Specific wetland delineations shall be shown on the subdivision or land development plot plans and any additional information or determinations shall be submitted to the Township along with the preliminary or final subdivision or land development plans, as applicable. Subdivision approval may be granted for developments including wetlands, but such approval shall prohibit construction within 25 feet of these areas unless the requirements of Sub-part D. below can be met.
- D. Construction within wetland areas of the Township shall not be permitted unless such development can comply with Section 404 of the Federal Clean Streams Act and Section 105 of the State Regulations for Bodies of Water within the Commonwealth. (Permits to meet both sets of requirements, administered by the U.S. Army Corps of Engineers and the Department of Environmental Protection, respectively, can be applied for using a joint application.) Building Permits shall not be issued by the Township until both the Federal and State regulations have been met.

410 FLOODPLAIN MANAGEMENT

The management and regulation of subdivision or development in identified floodplain areas of Delaware Township shall be accomplished in accordance with the standards and requirements of the National Flood Insurance Program and the PA Floodplain Management Act (Act 166-1978), or as may hereafter be amended. The provisions of this Section are intended to protect property owners from increased flood hazards resulting from inappropriate development of the floodplain, and to protect potential buyers from purchasing land which may not be suitable for development.

A. General Requirements

1. Subdivision and land development proposals for properties located in an identified floodplain area must comply with the requirements of the Township's Floodplain Management Regulations contained in Article 10 of the Delaware Township Zoning Ordinance, enacted April 5, 1994, or as may hereafter be amended.
2. Land areas susceptible to flooding shall be identified using the most current National Flood Insurance Program mapping, prepared by the Federal Emergency Management Agency (FEMA), for the Township. In areas of the Township where detailed flood mapping is not provided by FEMA, the best available elevation and floodway information from Federal, State, and other acceptable sources shall be used to determine the flood hazard area.
3. Subdivision and land development proposals for property located within the

floodplain may be approved by the Township, with the stipulation that any planned or future development of the property shall comply with the standards of the Township's Floodplain Management Regulations contained in Article 10 of the Delaware Township Zoning Ordinance, enacted April 5, 1994, or as may hereafter be amended.

4. The Township may require the subdivider, as a stipulation of subdivision or land development approval, to include a notice on the plot plans and in every deed stating that the subdivision is located in a floodplain and that development of lots within the subdivision must occur in accordance with all Federal, State and municipal floodplain management regulations.

B. Design Standards

All subdivisions or land developments proposed to be located within any identified floodplain area shall be designed in accordance with the standards contained in Article 10 of the Delaware Township Zoning Ordinance, enacted April 5, 1994, or as may hereafter be amended.

C. Plan Requirements

1. All plans for subdivision or development of property located within an identified floodplain must show the location of the 100 year floodplain boundary and the location of the floodway, if available, according to the most current Flood Insurance Program flood mapping for the Township.
2. Where applicable, and as may be required by the PA Department of Community Affairs, a copy of a Special Permit application shall be submitted to the Township for evaluation along with the subdivision or land development plans.

411 MONUMENTS AND MARKERS

Monuments and markers shall be constructed and located as provided below and shall be set by a registered professional land surveyor prior to final plan approval.

A. Material and Size

Monuments and markers shall be constructed of the following materials and shall be of the following sizes:

	<u>Construction Material</u>	<u>Minimum Size</u>
Monument	Concrete or Stone	6" x 6" x 30" or 4" diam. x 30"

(Continued)

	<u>Construction Material</u>	<u>Minimum Size</u>
Monument	Concrete-filled, Cast Iron Pipe	4" diameter x 30"
Marker	Iron Pipes or Iron or Steel Bars	3/4" x 30"

B. Placement; Marking

Monuments and markers must be placed by a registered professional land surveyor so that the scored or marked point coincides exactly with the point of intersection of the lines being monumented. The top of the monument or marker must be level with the surface of the surrounding ground. Concrete monuments shall be marked on top with a copper or brass dowel. Cut stone monuments shall have a point marking. All monuments and/or markers shall be set prior to the granting of final plan approval.

C. Location of Monuments

Monuments must be set at:

1. the intersections of major street right-of-way lines;
2. the intersections of lines forming angles in the boundaries of the subdivision; and
3. such intermediate points as may be required by the Township Supervisors.

In subdivisions or land developments involving five (5) or fewer lots or dwelling units, iron pins set in concrete may be substituted for monuments.

D. Location of Markers

Lot markers must be set at:

1. all points where lot lines intersect curves, either front or rear;
2. all angles in property lines of lots; and
3. all other lot corners, except those monumented.

E. Maintenance or Removal

It shall be the responsibility of the subdivider or developer to see that all monuments or markers are properly maintained until such time as the lot or tract is conveyed. Maintenance of such monuments or markers shall then

become the responsibility of the new owner. Any monuments or markers that are removed shall be replaced by a registered professional land surveyor at the expense of the person(s) removing them.

ARTICLE 5.

LAND DEVELOPMENTS

500 GENERAL REQUIREMENTS

- A. The standards outlined in this Article shall be applied by the Township Planning Commission and Supervisors in evaluating plans for land development proposals. These standards shall be considered minimum standards. The Township may require more restrictive standards be met by the applicant in those circumstances determined appropriate. Plans for land development proposals shall comply with the requirements of this Article as well as all other applicable provisions of this Ordinance, including Section 204.
- B. All land development proposals shall also meet the Design and Construction Standards outlined in Article 4, unless otherwise noted. Proposals for land developments not specifically listed in this Article shall be submitted to the Township for review and action in accordance with the procedures contained in Section 303 of this Ordinance.
- C. Innovative design which will provide for all foreseeable problems and which will enhance the character of the Township may be permitted and will be encouraged. The criteria for review will be the quality of the design and the proposed development.
- D. All proposed land developments shall conform to the provisions of the Delaware Township Zoning Ordinance, adopted April 5, 1994, or as may hereafter be amended.
- E. In addition to the requirements outlined below, land development proposals shall also comply with all State and Federal laws and regulations. Approval of a land development plan by the Township does not absolve the developer from his responsibilities to meet such other requirements as may be applicable.

501 SITE PLANNING REQUIREMENTS

The following site planning requirements shall be utilized in the design of all proposed land developments, as they may be applicable.

- A. Pedestrian Circulation
 1. Pedestrian walkways shall be provided within all multi-family residential developments, commercial, industrial and institutional developments, or in those circumstances deemed appropriate by the Township, in order to promote safe pedestrian circulation throughout the developed area. Width, alignment and gradient of walkways shall provide for the safety and convenience of the intended users.

2. Pedestrian walkways shall be physically separated from all streets and where possible, from vehicle circulation ways within non-residential developments.
3. Parking lots shall be designed to minimize the necessity for pedestrians to walk within and across vehicle circulation ways.
4. Where possible, common open space areas and other residential service areas should be located at the interior of development sites to minimize the necessity for pedestrians to cross streets. Such other safety precautions as deemed appropriate may be required by the Township.

B. Structure Orientation

1. Structure sites shall be clustered whenever possible to ensure the largest, most useable tracts of open space are preserved.
2. All buildings shall be situated so as to assure that the sight distance required for driveways, as set forth in TABLE 3 of this Ordinance, can be met.
3. Commercial structures should be located in reasonable proximity to their parking areas in order to minimize required walking distance for safety and convenience.

C. Landscaping

1. Development shall be planned to minimize the removal of existing trees, shrubs and ground cover and to minimize the percentage of each site covered with structures, paved parking areas, and other impermeable surfaces. (See also Sections 407 and 408 of this Ordinance.)
2. Street trees may be provided in residential development areas to absorb traffic noise. (See also Section 402 I.4 of this Ordinance.)

D. Buffer Yards and Screen Planting

1. Buffer yards shall be provided in accordance with the requirements set forth in Section 11.12 of the Township Zoning Ordinance of 1994, or as may hereafter be amended.
2. Screen plantings shall be provided in the following instances and shall be accomplished in accordance with the standards established in Section 11.13 of the Township Zoning Ordinance of 1994, or as may hereafter be amended.
 - a. where commercial and industrial districts abut and where such zones abut residential districts;

- b. where residential developments abut arterial highways, including reverse frontage lots;
- c. around all open sides of all outdoor storage or display areas; and
- d. any other location determined necessary by the Township or as set forth in the Supplementary Regulations of the Township Zoning Ordinance of 1994, or as may hereafter be amended.

E. Off-Street Parking

Off-street parking spaces shall be provided in accordance with the requirements of Section 11.5 of the Township Zoning Ordinance of 1994, or as may hereafter be amended.

F. Off-Street Loading

Off-street loading berths shall be provided in accordance with the requirements of Section 11.6 of the Township Zoning Ordinance of 1994, or as may hereafter be amended.

G. Street and Outdoor Lighting

1. Where street lights are required by the Township, the developer shall be responsible for making the necessary arrangements with the public utility company involved; provided however, that whether or not street lights are initially installed, the developer shall be responsible for providing utility easements for future street lighting installations upon consultation with the applicable utility company.
2. All on-premises types of outdoor lighting being provided as part of a development proposal shall be mounted and shielded to effectively eliminate direct glare on adjacent properties or on public streets.

502 RESIDENTIAL DEVELOPMENTS

The placement of two or more residential buildings on a lot or tract of land or the division or allocation of space in a single residential structure for the purpose of creating additional residential dwelling units within the building (except the conversion of an existing single-family dwelling into not more than three non-condominium residential units) shall be considered residential land development.

Residential developments shall include, but need not be limited to, multiple family dwellings or developments, cluster developments, planned residential developments, mobile home parks and other similar types of residential developments. The following standards shall apply to the design of all such developments.

A. Single Family Attached and Multiple Family Dwellings

Single family attached and multiple family dwellings may only be located in those zoning districts of the Township as specified in the District Regulations of the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended. Further, the minimum area and density standards, and the open space requirements contained in Sections 6.1 C. 2 and 3 of the Township Zoning Ordinance shall be applied in evaluating plans for single family attached and multiple family dwellings. The following standards shall also be met.

1. General Requirements. All single family and multiple family residential land development plans shall be prepared in accordance with the Plan Requirements contained in Section 204 of this Ordinance and shall also comply with all applicable Design and Construction Standards outlined in Article 4, including the standards for streets and driveways contained in Section 402. Plans for these residential land developments shall be submitted to the Township for review and action pursuant to the procedure set forth in Section 303 of this Ordinance.

Along with all appropriate development plans, the developer shall submit a written description of the type of housing proposed and shall indicate the total number of dwelling units being proposed per structure. In addition, the site planning requirements of Section 501 above shall be applied in the design of single family and multiple family residential developments.

2. Arrangement of Buildings and Facilities.

- a. All of the elements of the site plan shall be harmoniously and efficiently organized in relation to topography, the size and shape of the plot, the character of the adjoining property, and the type and size of the proposed buildings in order to produce a liveable and economic land use pattern.
- b. Buildings shall be arranged in favorable relation to the natural topography, existing desirable trees, views within and beyond the site, and exposure to the sun and other buildings on the site. Grading around the buildings shall be designed to be in harmony with the natural topography, at the same time assuring adequate drainage and safe and convenient access. (See also Sections 407 and 408.)

3. Access and Circulation.

- a. Access to the dwellings and circulation between buildings and other important project facilities for vehicular and pedestrian traffic shall be safe, adequate and convenient for the occupants.
- b. Access and circulation for fire fighting equipment, furniture moving vans, fuel trucks, garbage collection, deliveries and snow removal shall

be planned for efficient operation and maintenance.

- c. Walking distance from the main entrance of a building to a street, driveway or parking area shall be designed to be less than 100 feet. Any exceptions to this standard shall be reasonably justified by compensating advantages, such as desireable views and site preservation through adaptation to topography. In no case however shall the distance exceed 250 feet.
4. Yards. Yards shall assure adequate privacy, desireable views, adequate natural light and ventilation, convenient access to and around the dwelling and other essential facilities or uses.
5. Streets and Access Drives. All streets and access drives within single family and multiple family residential developments shall meet the minimum design and construction standards contained in Section 402 of this Ordinance.
6. Sewer and Water Facilities. Proposed sewage disposal and water supply systems shall be designed and constructed in accordance with the requirements of Sections 404 and 405 of this Ordinance.
7. Solid Waste Collection, Storage and Disposal. Arrangements for the collection, storage and disposal of solid wastes generated by the proposed development shall be made by the developer and submitted to the Township for approval as part of his development plan submission. Where determined appropriate, the Township may request review of the proposed arrangements by the PA DEP prior to granting their approval.
8. Facility and Open Space Maintenance. A proposal for the maintenance of all facilities and/or open space areas which are to be shared by the residents of the development shall be provided by the developer as a part of his plan submission. Where the developer proposes to subdivide and/or convey individual dwelling units of a single structure, i.e. townhouses or condominiums, an agreement which assigns maintenance responsibilities for commonly-owned or used facilities or open space shall be submitted with the development plan, recorded with the final plan, and referenced in the deed for each conveyance. In addition, the developer shall demonstrate to the Township that all other requirements of the PA Uniform Condominium Act will be met where individual units are to be conveyed independent of any land area.

B. Cluster Developments

Cluster developments may only be located in those zoning districts of the Township as specified in the District Regulations of the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended. Further, the minimum area and density standards, and the open space provisions set forth in

Article II of the Township Zoning Ordinance shall be applied in evaluating plans for such developments. In addition, the site planning requirements of Section 501 and all applicable requirements of Section 502 A. above shall be met.

C. Planned Residential Developments

All requirements for planned residential developments, including minimum area and density standards, building relationship criteria, open space provisions, and procedural specifications set forth in Article XII of the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended, shall be applied in evaluating and processing plans for such developments. In addition, the site planning requirements of Section 501 above shall also be met.

D. Mobile Home Parks

Mobile home parks may only be located in those zoning districts of the Township as specified in the District Regulations of the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended. Further, the regulations contained in Section 11.20 of the Township Zoning Ordinance shall be applied in evaluating plans for mobile home parks. The following standards shall also be met.

1. General Requirements. All mobile home park development plans shall be prepared in accordance with the Plan Requirements contained in Section 204 of this Ordinance and shall comply with the applicable Design and Construction Standards outlined Article 4. Plans for mobile home park developments shall be submitted to the Township for review and action pursuant to the procedure set forth in Section 303 of this Ordinance.
2. Permit Requirements. It shall be unlawful for any person, partnership or corporation to initiate construction of, or alter or expand, any mobile home park within the boundaries of Delaware Township unless a valid Building Permit has been issued by the Township. No such Permit shall be issued by the Township until all appropriate aspects of the development have been approved by the PA DEP. Fees for the issuance of such Permit shall be established by Resolution of the Township Supervisors. (See also Section 606 of this Ordinance.)
3. Design Standards. All applicable site planning requirements contained in Section 501 above shall be applied in the design of mobile home park developments, and in addition, the following standards shall be met.
 - a. Minimum Park Area. Each mobile home park shall have a minimum gross area of five (5) contiguous acres of land suitable for development.
 - b. Mobile Home Park Lot Area Requirements.
 - 1) Gross Density. The maximum number of mobile home lots within

every mobile home park shall be no more than seven (7) lots per acre of gross area of the mobile home park.

- 2) Minimum Lot Sizes. Each mobile home lot shall contain no less than 5,000 square feet. The minimum width of any mobile home lot, measured at the building setback line, shall be not less than 50 feet, exclusive of easement or rights-of-way.
 - 3) Mobile Home Lot Access. All mobile home lots shall abut and have frontage on a street of the mobile home park internal street system. (See also Sub-part D.3.h. below for internal street system requirements.)
- c. Mobile Home Lot Pad or Stand. All mobile home lots within the mobile home park shall be improved to provide an adequate foundation for the placement of the mobile home, thereby securing the superstructure against uplift, sliding or rotation, and rendering the lot useable. At a minimum, the following standards shall be met.
- 1) The pad or stand shall be equal to the length and width of the mobile home proposed to use the lot.
 - 2) The pad or stand shall not heave, shift or settle unevenly under the weight of the mobile home due to frost action, inadequate drainage, vibration, or other forces acting on the structure and shall be designed to uniformly support the mobile home in a level position. At a minimum, each pad shall be provided with one frost-proof footer at least 16 inches in width for every ten (10) feet of mobile home length, each footer extending the full width of the pad, unless recommended otherwise by the Township engineer.
 - 3) The pad or stand shall be provided with anchors and tie-downs, such as "deadman" eyelets embedded in a concrete or run-ways, screw augers, arrowhead anchors, or other devices designed to secure the stability of the mobile home. The type, number and location of the tie-downs or anchors shall be as specified by the manufacturer of the mobile home, or where such information is not available, shall be of a type consistent with mobile home industry standards. At a minimum, there shall be no less than one tie-down on each corner of the home, with intermediate tie-downs placed at intervals of no more than 15 feet. Final determination of the adequacy of the proposed tie-down system shall be made by the Township Engineer.
 - 4) Each mobile home pad shall be equipped with properly designed and approved water and sewer connections. Each pad shall also be provided with an approved electrical disconnecting device and over-current protective equipment. The minimum service per outlet

shall be 120/240 volts AC, 100 amperes.

d. Setbacks, Buffer Yards and Screening Requirements.

- 1) Setbacks from Public or Private Streets. All mobile homes and auxiliary park buildings shall be located at least 35 feet from the right-of-way line of any abutting public street and 25 feet from the edge of the right-of-way of any internal park street.
 - 2) Minimum Distance Between Mobile Homes. Each mobile home (including patio) shall be located at least 20 feet from any other mobile home in the mobile home park and no less than 10 feet from the mobile home lot side line.
 - 3) Minimum Distance Between Structures Within the Mobile Home Park. All mobile homes shall be located at least 50 feet from any service or auxiliary park buildings and repair, maintenance, or storage areas or buildings.
 - 4) Park Perimeter Buffer Yards. All mobile homes, service or auxiliary park buildings and other park structures shall be located at least 50 feet from the mobile home park boundary lines. If a suitable, attractive screening, either man-made or of natural plantings, is provided along the perimeter, this minimum buffer yard may be reduced to 25 feet. (See also Sub-part 3.d.5. below.)
 - 5) Park Perimeter Screening Requirements. Each mobile home park shall be provided with screening, either man-made (i.e. fences) or of natural plantings, along all property and street lines separating the park from adjoining uses.
 - 6) Screening Requirements Within the Mobile Home Park. Repair, maintenance, and storage areas or buildings shall be effectively and attractively screened from the mobile home lots, park streets and public roads or streets by man-made screenings or natural plant materials.
- e. Grading and Ground Cover Requirements (Soil Erosion and Sedimentation Control Plans). The ground surface in the park shall be graded and equipped to drain all surface water in a safe, efficient manner. Where any excavating or grading is proposed or where any existing trees, shrubs or other vegetative cover will be removed, plans shall be presented showing what steps will be taken to avoid soil erosion. Exposed ground surfaces in the park shall be paved, stabilized with stone screenings, or otherwise protected with a vegetative cover capable of preventing soil erosion.
- f. Open Space Requirements. A minimum of 10% of the gross park area

shall be reserved by the developer as common open space for the use of all residents of the park. Such space shall be located so as to be free of traffic hazards and to be easily accessible to all mobile homes. Such area shall be maintained free of vegetation and potentially harmful growths. Applications for mobile home parks shall include a proposal regarding the ultimate ownership and maintenance responsibilities for such common open space. (See also Section 403 of this Ordinance.)

- g. Off-Street Parking Requirements. A minimum of two (2) stabilized off-street parking spaces shall be provided for each mobile home lot within the mobile home park. These parking spaces shall be located on the mobile home lot which they are intended to serve. One (1) additional parking space shall be provided for every three (3) mobile home lots within the mobile home park to provide for visitor parking. Such spaces shall be provided in parking lots situated throughout the park. All off-street parking spaces shall be designed in accordance with the standards set forth in Section 11.5 of the Township Zoning Ordinance of 1994, or as may hereafter be amended.
- h. Mobile Home Park Internal Street and Drainage System Requirements. Streets and drainage control systems shall be designed and constructed in accordance with the standards for local streets outlined in Section 402 of this Ordinance.

Each mobile home park shall be provided with two (2) points of ingress and egress. (A minimum distance of 150 feet shall be maintained between centerlines of such access points.) All accesses shall be designed to minimize congestion and hazards at the entrance and exit of the facility and shall allow free movement of traffic on adjacent streets. At both the entrance and exit of the mobile home park, a cartway with a width of 50 feet shall be provided for a distance of 100 feet measured from the centerline of the intersecting street to accommodate the safe movement of vehicles or units into and out of the facility.

- i. Park Lighting. Each mobile home park shall be furnished by the developer with lighting designed to adequately illuminate driveways, walkways, streets, intersections and to provide for the safe movement of vehicles and pedestrians throughout the park at night.

4. Utilities and Park Facilities.

- a. Water Supply System. An adequate, safe and potable supply of water shall be provided by the developer for mobile homes, service buildings and other accessory facilities. Where a public water supply system of satisfactory quantity, quality and pressure is available, connection shall be made to it and its supply shall be used exclusively. Where a satisfactory public water supply system is not available, the developer

shall design, install, and maintain a private water supply system according to the standards of and with the approval of the PA DEP and the requirements of Section 405 of this Ordinance.

- b. Sewage Collection and Disposal System. An adequate and safe sewage system shall be provided by the developer in all mobile home parks for conveying and disposing of sewage from mobile homes, service buildings and other accessory facilities. Mobile home parks shall be connected to public sanitary sewer systems, where possible. Where a satisfactory public sanitary sewage system is not available, the developer shall design, install and maintain an approved private community sewerage system according to the standards of the PA DEP and the requirements of Section 404 of this Ordinance.
- c. Other Utility Systems. Telephone, electric, television cable, natural or bottled gas, fuel oil or other utilities shall be provided by the developer in accordance with plans submitted to and approved by the Township and the appropriate utility company. Underground installation of the utility distribution lines shall be required.

All exposed non-current-carrying metal parts of mobile homes and accessory equipment or appurtenances shall be grounded by means of an approved grounding conductor run with branch circuit conductors with approved metallic wiring. The neutral conductors shall not be used as an equipment ground for mobile homes or other accessory appurtenances.

Where liquified petroleum gas systems or fuel oil supply systems are to be provided for mobile homes, or service or auxiliary buildings, the standards set forth in Sections 11.20 H.6. and 7. of the Township Zoning Ordinance of 1994, or as may hereafter be amended, shall be met.

- d. Solid Waste Collection, Storage and Disposal. Arrangements for the collection, storage and disposal of solid waste generated by residents of the mobile home park shall be made by the developer and submitted to the Township for approval as part of the development plan submission process.
- e. Service and Other Auxiliary Park Buildings. Service, maintenance and management buildings, and recreation or community buildings required for the management, servicing and maintenance of the park and for the well-being of park residents shall be allowed within the mobile home park boundaries. The entire area of these buildings however, shall be used for the management, servicing and maintenance requirements of the park and park residents. No part of a mobile home park shall be used for non-residential purposes other than those described in this Section. Nothing contained herein shall be deemed to prohibit the sale of an individual mobile home located on a lot in the mobile home park.

- f. Park Management. Each mobile home park owner shall designate a resident manager who shall be responsible for maintaining the park in accordance with the requirements of this Ordinance and the terms and conditions of the park's approval.
5. Rules and Regulations of the Park. The developer shall submit a copy of the proposed rules and regulations to be followed by tenants of the mobile home park to the Township for approval as part of the development plan submission process. At a minimum, such regulations shall include the following provisions.
 - a. Each mobile home shall be skirted. (Skirting shall include materials which have been prefabricated for this specific purpose or similar materials, but shall not include bales of hay, straw, interior plywood, or like materials.) Skirting shall be installed around the entire perimeter of the base of the mobile home.
 - b. Garbage and trash shall be placed in appropriate receptacles.
 - c. An enclosed or unenclosed patio or deck may be constructed by an individual tenant of the mobile home park and attached to his mobile home unit, provided that such attachment does not exceed 10 feet x 30 feet and is approved by the resident manager or park owner. (A Building Permit shall be obtained from the Township prior to the construction of any such attachment.)
 - d. One (1) storage building or accessory structure containing a maximum of 120 square feet, provided by the individual tenant, may also be situated on each lot in the mobile home park. (A Building Permit shall be obtained from the Township prior to the placement of any such accessory building or structure.)

503 COMMERCIAL DEVELOPMENTS

The placement of one or more commercial buildings on a lot, regardless of the number of occupants or tenure, shall be considered commercial land development.

Commercial developments shall include, but need not be limited to, retail stores or shopping areas, hotels or motels, automotive service stations and sales facilities, restaurants, business and professional offices, and other personal service activities. (See also Sections 7.1 and 8.1 of the Township Zoning Ordinance of 1994, or as may hereafter be amended, District Regulations for the VC - Village Center District and the HC - Highway Commercial District.) The following standards shall apply to the design of all such developments.

A. General Requirements

All commercial land development plans shall be prepared in accordance with

the Plan Requirements contained in Section 204 of this Ordinance and shall also comply with all applicable Design and Construction Standards outlined in Article 4, including the standards for streets and driveways contained in Section 402. In addition, all requirements established in the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended, regarding such developments shall apply. Plans for commercial developments shall be submitted to the Township for review and action pursuant to the procedure set forth in Section 303 of this Ordinance.

B. Design Standards

All site planning requirements contained in Section 501 above shall be applied in the design of commercial land developments, and in addition, the following standards shall be met.

1. Access to public streets shall be limited to well-defined entrance and exit lanes. Exit lanes shall be separated from entrance lanes by dividers or planting islands.
2. Painted lines, arrows and dividers shall be provided to control parking and vehicular circulation. Customer parking and circulation shall be separated from delivery service drives and loading areas.
3. Drives providing vehicular access to such land developments shall be designed and constructed in accordance with the requirements established in TABLE 3 of this Ordinance.
4. Proposed sewage disposal and water supply systems shall be designed and constructed in accordance with the requirements of Sections 404 and 405 of this Ordinance.
5. Arrangements for the collection, storage and disposal of solid wastes generated by the proposed development shall be made by the developer and submitted to the Township for approval as part of his subdivision or development plan submission. Where determined appropriate, the Township may request review of the proposed arrangements by the PA DEP prior to granting their approval.

504 INDUSTRIAL DEVELOPMENTS

The placement of one or more industrial buildings on a lot, regardless of the number of occupants or tenure, shall be considered an industrial land development.

Industrial developments shall include, but need not be limited to, specified industrial uses, such as, light manufacturing, processing, assembly operations; research or testing laboratories; warehousing facilities or truck terminals; lumber yards; junk yards; and recycling facilities. (See also Section 9.1 of the Township Zoning Ordinance of 1994, or as may hereafter be amended, District Regulations for the

I - Industrial District.) The following standards shall apply to the design of all such developments.

A. General Requirements

All industrial land development plans shall be prepared in accordance with the Plan Requirements contained in Section 204 of this Ordinance and shall also comply with all applicable Design and Construction Standards outlined in Article 4, including the standards for streets and driveways contained in Section 402. In addition, all requirements established in the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended, regarding such developments shall apply. Plans for industrial developments shall be submitted to the Township for review and action pursuant to the procedure set forth in Section 303 of this Ordinance.

B. Design Standards

All site planning requirements contained in Section 501 above shall be applied in the design of industrial land developments, and in addition the following standards shall be met.

1. Access to public streets shall be limited to well-defined entrance and exit lanes. Exit lanes shall be separated from entrance lanes by dividers or planting islands.
2. Painted lines, arrows and dividers shall be provided to control parking and vehicular circulation. Visitor parking and circulation shall be separated from delivery service drives and loading areas.
3. Drives providing vehicular access to such land developments shall be designed and constructed in accordance with the requirements established in TABLE 3 of this Ordinance.
4. Proposed sewage disposal and water supply systems shall be designed and constructed in accordance with the requirements of Sections 404 and 405 of this Ordinance.
5. Arrangements for the collection, storage and disposal of solid wastes generated by the proposed development shall be made by the developer and submitted to the Township for approval as part of his subdivision or development plan submission. Where determined appropriate, the Township may request review of the proposed arrangements by the PA DEP prior to granting their approval.

505 RECREATIONAL DEVELOPMENTS

The division or allocation of space on a lot or tract of land for intermittent recreational use; the placement of two or more recreational buildings or dwelling

units on a lot; or the creation of a recreational complex or facility, whether public or private, shall be considered a recreational land development.

Recreational developments shall include, but need not be limited to, campgrounds or recreational vehicle parks; vacation home developments; outdoor recreational facilities, including playgrounds, riding stables and golf courses. (See also the Township Zoning Ordinance of 1994, or as may hereafter be amended, District Regulations for various recreational uses.) The following standards shall apply to the design of all such developments.

A. General Requirements

All recreational land development plans shall be prepared in accordance with the Plan Requirements contained in Section 204 of this Ordinance and shall also comply with all applicable Design and Construction Standards outlined in Article 4, including the standards for streets and driveways contained in Section 402. In addition, all requirements established in the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended, regarding such developments shall apply. Plans for recreational developments shall be submitted to the Township for review and action pursuant to the procedure set forth in Section 303 of this Ordinance.

B. Design Standards

All applicable site planning requirements contained in Section 501 above shall be applied in the design of recreational land developments, and in addition, the following standards shall be met.

1. Access to public streets shall be limited to well-defined entrance and exit lanes.
2. Drives providing vehicular access to such land developments shall be designed and constructed in accordance with the requirements established in TABLE 3 of this Ordinance.
3. Proposed sewage disposal and water supply systems shall be designed and constructed in accordance with the requirements of Sections 404 and 405 of this Ordinance.
4. Arrangements for the collection, storage and disposal of solid wastes generated by the proposed development shall be made by the developer and submitted to the Township for approval as part of his subdivision or development plan submission. Where determined appropriate, the Township may request review of the proposed arrangements by the PA DEP prior to granting their approval.

C. Campgrounds or RV Parks

In addition to the general requirements set forth above for recreational land developments, the following standards shall be applied to all proposals for a campground or RV park.

1. General Requirements. Campgrounds may be located only in those zoning districts of the Township as specified in the District Regulations of the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended. Such facilities may be open to either tents or recreational vehicles. (See also Section 505 C.5 below regarding campgrounds in floodplain areas.)
2. Permit Requirements. It shall be unlawful for any person, partnership or corporation to initiate construction of, or alter or expand, or operate or maintain any campground within the boundaries of Delaware Township unless a valid Campground Permit has been issued by the Township. No such Permit shall be issued by the Township until all appropriate aspects of the development have been approved by the PA DEP. ALL CAMPGROUND PERMITS SHALL BE RENEWED ANNUALLY. Fees for the issuance of such Permits shall be established by Resolution of the Township Supervisors. (See also Section 606 of this Ordinance.) The Supervisors, or their appointed representative, shall inspect each campground prior to granting a renewal of the annual Permit.
3. Design Standards. All applicable site planning requirements contained in Section 501 above shall be applied in the design of campground developments, and in addition, the following standards shall be met.
 - a. Minimum Campground Area. The maximum gross area provided for a campground shall be as set forth in the Township Zoning Ordinance of 1994, or as may hereafter be amended, for the District in which the site is located.
 - b. Camping Space Requirements.
 - 1) Gross Density. The maximum number of camping spaces within each campground shall be no more than 15 per acre of gross area of the campground.
 - 2) Minimum Camping Space Size. Each camping space shall contain a minimum of 2,000 square feet. The minimum width shall be not less than 40 feet and the minimum depth not less than 50 feet.
 - 3) Camping Space Access. All camping spaces shall abut and have frontage on a street of the campground internal street system. (See also Sub-part C.3.h. below for internal street system requirements.)

- 4) Camping Units. No more than one (1) camping unit (RV, travel trailer, or other similar unit) shall be located on each camping space.
 - 5) Accessory Structures. No permanent accessory structures, including sheds, storage buildings, porches, privies, portable toilets, etc. shall be placed on camping spaces located in floodplain areas.
- c. Setbacks, Buffer Yards and Screening Requirements.
- 1) Setbacks from Public or Private Streets. All camping units and auxiliary campground buildings shall be located at least 50 feet from the right-of-way line of any public street and 15 feet from the right-of-way of any internal campground street.
 - 2) Minimum Distance Between Camping Units. Individual camping units, excluding tents, shall be separated by a minimum of 20 feet.
 - 3) Minimum Distance Between Structures and Camping Spaces. All camping spaces shall be located at least 25 feet from any auxiliary campground building.
 - 4) Campground Perimeter Buffer Yards. All camping units and auxiliary campground structures shall be located at least 50 feet from the campground boundary lines. If a suitable, attractive screening of natural plantings is provided along the perimeter, this minimum buffer yard may be reduced to 25 feet.
- d. Overflow/Visiting Area Requirements. At the discretion of the Township, an overflow/visiting area may be required to be provided in a campground to accommodate additional camping units for short periods of time or during high frequency use occasions, i.e. weekends or holidays. Such area shall be designed, sized and located as may be appropriate for each campground. Campground facilities and utilities must be designed to be able to accommodate this additional, periodic use. Camping units placed in such areas must be removed when not in use.
- e. Grading and Ground Cover Requirements (Soil Erosion & Sedimentation Control Plans). Where any excavating or grading is proposed or where any existing trees, shrubs, or other vegetative cover will be removed, plans shall be presented showing what steps will be taken to avoid soil erosion. Exposed ground surfaces shall be stabilized or otherwise protected with a vegetative cover capable of preventing soil erosion.
- f. Open Space Requirements. A minimum of 20% of the gross campground area shall be reserved by the developer as common open

space for the use of all campers. Such space shall be located so as to be free of traffic hazards and be easily accessible to all camping spaces. Such areas shall be maintained free of vegetation and potentially harmful growths. Applications for campgrounds shall include a proposal regarding the ultimate ownership and maintenance responsibilities for such common open space. (See also Section 403 of this Ordinance.)

g. Off-Street Parking Requirements. A minimum of one (1) stabilized off-street parking space shall be located on each camping space. One (1) additional parking space for every five (5) camping spaces in the campground shall be provided in parking lots located throughout the campground to provide for visitor parking. (Parking for commercial buildings within the campground shall be provided in accordance with the off-street parking requirements contained in Section 11.5 of the Township Zoning Ordinance of 1994, or as may hereafter be amended.) All off-street parking spaces shall be designed in accordance with the standards set forth in Section 11.5 of the Township Zoning Ordinance of 1994, or as may hereafter be amended.

h. Campground Internal Street and Drainage System Requirements. The internal street and drainage system shall consist of private streets designed and constructed as follows:

1) Design Standards. Such streets shall have a cartway no less than 20 feet in width and shall not exceed a maximum grade of 12%.

Each campground shall be provided with at least two (2) points of ingress and egress. (A minimum distance of 150 feet shall be maintained between centerlines of such access points.) All accesses shall be designed to minimize congestion and hazards at the entrance and exit of the facility and shall allow free movement of traffic on adjacent streets. At both the entrance and exit of the campground, a cartway with a width of 50 feet shall be provided for a distance of 100 feet measured from the centerline of the intersecting street to accommodate the safe movement of vehicles or units into and out of the facility.

2) Construction Standards. Such streets shall be constructed with a minimum 6 inch rolled stone base or, in the alternate, an 8 inch rolled shale base.

3) Drainage. Campground internal street proposals shall also include the method(s) to be used to control drainage or stormwater runoff from the site. (See also Section 402 H. of this Ordinance.)

4. Utilities and Park Facilities.

- a. Water Supply and Sewage Disposal Systems. The standards established by the PA DEP for the provision of water and sewage disposal facilities in campgrounds shall be met. Documents and approvals indicating that these standards have been met along with notations on the campground plan showing the location of water sources and restrooms shall be presented to the Township by the developer. (No campground permit shall be issued by the Township until the water supply and sewage disposal systems have been approved by the DEP.) If individual sewage hook-ups are not to be provided for each campsite, a DEP-approved and permitted dump station must be provided by the developer within the campground. (See also Sections 404 and 405 of this Ordinance.)
- b. Other Utility Systems. Where electric or other utilities are to be provided, plans shall be submitted by the developer and approved by the Township and the applicable utility company.
- c. Solid Waste Collection, Storage and Disposal. Arrangements for the collection, storage and disposal of solid waste generated from the campground shall be made by the developer and submitted to the Township for approval as part of the development plan submission process.
- d. Service and Other Campground Buildings. Service, maintenance and management buildings required for the management, servicing and maintenance of the campground may be allowed provided that such buildings are used exclusively for said purposes. No structures may be located within a Floodway District, but may be located within a Flood Fringe District as long as they are adequately floodproofed. (See Article X of the Township Zoning Ordinance of 1994, or as may hereafter be amended, for floodproofing standards.)
- e. Campground Management. During times of operation, each campground owner shall designate a resident manager who shall be responsible for maintaining the facility in accordance with the requirements of this Ordinance and the terms and conditions of the campground's approval.

5. Campgrounds in Floodprone Areas.

- a. Where campgrounds are located within any designated Floodplain area, Campground Permits will only be valid from April 10 through October 10 of each year, or as may otherwise be established by the Federal Emergency Management Agency. All camping units and associated accessory structures or facilities must be removed from the Floodplain during the remainder of the year.

- b. Where campgrounds are located within any designated floodplain area, a workable evacuation plan must be submitted to the Township by the developer as a part of his application for a Campground Permit. Said plan must insure that all units will be removed from the floodplain during flood events and at the conclusion of the camping season.
- c. Anchoring may be required for units being placed permanently in campgrounds located outside of designated floodplain areas. However, units being placed in campgrounds located within a designated floodplain must remain on wheels and must be capable of being towed or transported from the site at all times. Such units may not be placed on blocks or similar supports.

506 INSTITUTIONAL DEVELOPMENTS

The placement of one or more institutional buildings on a lot, regardless of the number of occupants or tenure, shall be considered an institutional land development.

Institutional developments shall include, but need not be limited to, public and private schools, churches and places of worship, municipal buildings, fire stations, hospitals, nursing homes, rehabilitation centers and cultural facilities. (See also the Township Zoning Ordinance of 1994, or may hereafter be amended, District Regulations for various institutional uses.) The following standards shall apply to the design of all such developments.

A. General Requirements

All institutional land development plans shall be prepared in accordance with the Plan Requirements contained in Section 204 of this Ordinance and shall also comply with all applicable Design and Construction Standards outlined in Article 4, including the standards for streets and driveways contained in Section 402. In addition, all requirements established in the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended, regarding such developments shall apply. Plans for institutional developments shall be submitted to the Township for review and action pursuant to the procedure set forth in Section 303 of this Ordinance.

B. Design Standards

All site planning requirements contained in Section 501 above shall be applied in the design of institutional land developments, and in addition, the following standards shall be met.

1. Access to public streets shall be limited to well-defined entrance and exit lanes. Exit lanes shall be separated from entrance lanes by dividers or planting islands.

2. Painted lines, arrows and dividers shall be provided to control parking and vehicular circulation. Visitor parking and circulation shall be separated from delivery service drives and loading areas.
3. Drives providing vehicular access to such land developments shall be designed and constructed in accordance with the requirements established in TABLE 3 of this Ordinance.
4. Proposed sewage disposal and water supply systems shall be designed and constructed in accordance with the requirements of Sections 404 and 405 of this Ordinance.
5. Arrangements for the collection, storage and disposal of solid wastes generated by the proposed development shall be made by the developer and submitted to the Township for approval as part of his subdivision or development plan submission. Where determined appropriate, the Township may request review of the proposed arrangements by the PA DEP prior to granting their approval.

507 OTHER LAND DEVELOPMENTS

Plans for other types of land development not specifically listed shall be prepared in accordance with the Plan Requirements contained in Section 204 of this Ordinance and shall also comply with all applicable Design and Construction Standards outlined in Article 4. In addition, all requirements established in the Delaware Township Zoning Ordinance of 1994, or as may hereafter be amended, regarding such developments shall apply. Plans for such developments shall be submitted to the Township for review and action pursuant to the procedure set forth in Section 303 of this Ordinance.

ARTICLE 6.

ADMINISTRATION AND ENFORCEMENT

600 WAIVERS OR MODIFICATIONS

- A. The provisions of this Ordinance represent minimum standards for the protection of the public welfare.
- B. If any mandatory provision of this Ordinance is shown by the applicant, to the satisfaction of a majority of the Township Supervisors, to be unreasonable and to cause unique and undue hardship as it applies to his proposed subdivision or land development, the Supervisors may grant a waiver or modification in writing to such applicant from such mandatory provision, so that substantial justice may be served and the public interest secured; provided that such waiver or modification will not have the effect of nullifying the intent and purpose of this Ordinance.
- C. In granting waivers or modifications, the Township Supervisors may impose such conditions as will, in their judgement, encourage innovative design and secure substantially the objectives of the standards or requirements so waived or modified.

601 RECORDS

The Township Planning Commission and Supervisors shall maintain an accurate public record of all the plans they review and those upon which they take action and of their findings, decisions, and recommendations in relation thereto.

602 AMENDMENTS

The Township Supervisors may, from time to time, revise, modify, and amend this Ordinance by appropriate action taken at a scheduled public meeting, all in accordance with the applicable provisions of Section 505 of the PA Municipalities Planning Code, 53 P.S. Section 10505, as reenacted and amended in 1988, December 21, P.L. 1329, Act 170, and as further amended by Act 209 of 1990 and Act 131 of 1992, or as may hereafter be additionally amended.

603 PREVENTIVE REMEDIES

- A. In addition to other remedies, the Delaware Township Supervisors may institute and maintain appropriate actions by law or in equity to restrain, correct or abate violations; to prevent unlawful construction; to recover damages; and to prevent illegal occupancy of a building, structure or premises. The description by metes and bounds in the instrument of transfer or other documents used in the process of selling or transferring shall not exempt the seller or transferror

from such penalties or from the remedies herein provided.

- B. As provided by Section 515.1 of the PA Municipalities Planning Code, 53 P.S. Section 10515.1, as reenacted and amended in 1988, December 21, P.L. 1329, Act 170, and as further amended by Act 209 of 1990 and Act 131 of 1992, or as may hereafter be additionally amended, the Delaware Township Supervisors may refuse to issue any permit or grant any approval necessary to further improve or develop any real property which has been developed or which has resulted from a subdivision of real property in violation of the Northumberland County Subdivision and Land Development Ordinance of 1977 or any prior regulations, adopted pursuant to the requirements of the PA Municipalities Planning Code, which may have been in effect in Delaware Township. The authority to deny such a permit or approval shall apply to any of the following applicants:
1. The owner of record at the time of such violation.
 2. The vendee or lessee of the owner of record at the time of such violation without regard as to whether such vendee or lessee had actual or constructive knowledge of the violation.
 3. The current owner of record who acquired the property subsequent to the time of violation without regard as to whether such current owner had actual or constructive knowledge of the violation.
 4. The vendee or lessee of the current owner of record who acquired the property subsequent to the time of violation without regard as to whether such vendee or lessee had actual or constructive knowledge of the violation.
- C. As an additional condition for issuance of a permit or the granting of an approval to any such owner, current owner, vendee or lessee for the development of any such real property, the Township Supervisors may require compliance with the conditions that would have applied to the property at the time the applicant acquired an interest in such real property.

604 ADMINISTRATION

It shall be the duty of the Delaware Township Supervisors to enforce the provisions of this Ordinance. In order to properly carry out this responsibility, the Supervisors may appoint a Subdivision Ordinance Administrator and may grant to this duly appointed individual the power and authority to administer and enforce the provisions of this Ordinance. The Administrator shall be responsible to the Supervisors and shall report to them monthly providing details of work accomplished. The Administrator shall also verify all subdivision information supplied as part of any application for a Building Permit and shall coordinate with the Township Zoning Officer on other matters as necessary or appropriate. In addition, the Administrator shall perform all other tasks as designated in his job

description. In the event that the Subdivision Ordinance Administrator is unavailable to perform the duties and responsibilities assigned herein, the Township Supervisors shall designate another individual to temporarily perform these functions.

605 ENFORCEMENT REMEDIES

- A. Any person, partnership or corporation who or which has violated the provisions of this Ordinance, whether enacted under current law or prior enabling laws, shall, upon being found liable therefore in a civil enforcement proceeding commenced by Delaware Township, pay a judgment of not more than \$500.00 plus all court costs, including reasonable attorney fees incurred by the Township as a result thereof. No judgment shall commence or be imposed, levied or be payable until the date of the determination of a violation by the District Justice. If the defendant neither pays nor timely appeals the judgment, Delaware Township may enforce the judgment pursuant to the applicable rules of civil procedure. Each day that a violation continues shall constitute a separate violation, unless the District Justice determining that there has been a violation further determines that there was a good faith basis for the person, partnership or corporation violating the Ordinance to have believed that there was no such violation, in which event there shall be deemed to have been only one such violation until the fifth day following the date of the determination of a violation by the District Justice and thereafter each day that a violation continues shall constitute a separate violation. All judgments, costs and reasonable attorney fees collected for the violation of this Ordinance shall be paid over to Delaware Township.
- B. In addition to the procedures set forth above, the Delaware Township Supervisors may also utilize the procedures set forth in Section 603 A of this Ordinance as enforcement remedies.
- C. The Court of Common Pleas, upon petition, may grant an order of stay, upon cause shown, tolling the per diem judgment pending a final adjudication of the violation and judgment.
- D. Nothing contained in this Section shall be construed or interpreted to grant to any person or entity other than the Delaware Township Supervisors the right to commence any action for enforcement pursuant to this Section.

606 FEE SCHEDULE

A. Township Fees

All plan processing, improvement design review and inspection fees shall be paid to Delaware Township. Such fees shall be as defined below and shall be designed to cover reasonable and necessary costs associated with processing and evaluating subdivision and land development plans, reviewing proposed designs for site improvements, and conducting inspections of improvement

construction and installations required by this Ordinance.

1. Municipal Plan Processing Fees. Fees for the processing and evaluating of preliminary and final subdivision and land development plans shall be established by Resolution of the Delaware Township Board of Supervisors. Such fees shall be reasonable and shall include all municipal review and processing charges. These fees shall accompany the submission of plans to the Township and shall be nonrefundable.
2. Improvement Design Review Fees. The applicant shall reimburse the Township for all reasonable and necessary charges by the Township Engineer and/or consultant for review of site improvement or development designs. Such engineering and/or consulting fees shall be in accordance with the ordinary and customary charges by the engineer or consultant for similar service in the community, but in no event shall the fees exceed the rate or cost charged by the engineer or consultant to the municipality when fees are not reimbursed or otherwise imposed on applicants. These fees shall be paid to the Township prior to the approval of preliminary or final plans, as applicable.

In the event the applicant disputes the amount of such design review fees, the procedure for resolution of such disputes contained in Section 503 (1) of the PA Municipalities Planning Code, 53 P.S. Section 10503 (1) as re-enacted and amended in 1988, December 21, P.L. 1329, Act 170, and as further amended by Act 209 of 1990 and Act 131 of 1992, or as may hereafter be additionally amended, shall be applied.

3. Improvement Inspection Fees. Where site improvements are required by the Township Supervisors to be installed as a condition of final approval of a subdivision or land development plan, said improvements must be inspected by the Township Engineer in accordance with the procedure set forth in Section 304 C. of this Ordinance upon their completion. The applicant shall reimburse the Township for the reasonable and necessary expense incurred for the inspection of such improvements. Such expense shall be in accordance with the ordinary and customary fees charged by the municipal engineer for work performed for similar services in the community, but in no event shall the fees exceed the rate or cost charged by the engineer to the municipality when fees are not reimbursed or otherwise imposed on applicants. These fees shall be paid to the Township prior to the approval of a final plan or prior to the release of a performance or improvement guarantee.

In the event the applicant disputes the amount of such inspection fee, the procedure for the resolution of such disputes contained in Section 510 (g) of the PA Municipalities Planning Code, 53 P.S. Section 10510 (g) as re-enacted and amended in 1988, December 21, P.L. 1329, Act 170, and as further amended by Act 209 of 1990 and Act 131 of 1992, or as may hereafter be additionally amended, shall be applied.

B. County Plan Review Fees

Fees for County Planning Commission review of plans for proposed subdivision or land development located in Delaware Township shall be established by the Northumberland County Board of Commissioners. Applicants shall be responsible for assuming all costs associated with the County review of subdivision or land development plans, according to the Fee Schedule and procedure established by the County.

ARTICLE 7.

DEFINITIONS

700 GENERAL INTERPRETATIONS

Unless the context requires otherwise, the following definitions shall be used in the interpretation of this Ordinance. In addition, the word "lot" includes the words "plot" and "parcel"; words in the present tense shall include the future; the singular shall include the plural and the plural the singular; the male gender shall include the female; the word "person" shall include a partnership or corporation, as well as an individual; and the term "shall" is mandatory, the word "may" permissive.

701 DEFINITIONS

ACCESS DRIVE: A means, other than a street, across one's property, which provides vehicular access from a street to the lot or property; e.g. a driveway.

ACRE: A measure of land area containing 43,560 square feet.

AGENT: Any person, other than the developer, who, acting for the developer, submits subdivision or land development plans to the Township for the purpose of obtaining approval thereof. (See also DEVELOPER.)

AGRICULTURAL PURPOSES: The use of more than ten (10) acres of land for the purpose of producing agricultural commodities, which shall include but not be limited to: growing grains, fruits, vegetables, nursery plants, Christmas trees, or timber; raising poultry or livestock; or producing agricultural commodities through greenhouse production. In some instances the use of land for agricultural purposes may involve the construction of barns, silos, feed lots and/or farm-related accessory buildings.

AGRICULTURE: The use of land for agricultural purposes, including crop farming, dairying, pasturage, apiculture, horticulture, floriculture, viticulture, aquaculture, forestry, and animal and poultry husbandry, and the accessory uses for packing, treating, and storage of produce; provided however that the operation of any such accessory use shall be secondary to that of the normal agricultural activities.

ANCHORING SYSTEM: A system of tie-downs and anchors designed and installed in mobile home pads in accordance with the standards of this Ordinance and as may be appropriate for floodplain management purposes, the Department of Community Affairs, which are intended to secure the mobile home against uplift, sliding or rotation. (See Section 502 D.)

APPLICATION: The application form and all accompanying documentation required of an applicant by the requirements of this Ordinance for review and approval of a subdivision or land development proposal, whether preliminary or final

in nature.

APPLICANT: A landowner, subdivider, or developer, as hereinafter defined, who has filed an application for subdivision or land development, including his heirs, successors and assigns.

AREA: The surface included within a set of lines.

- a. **Area, Lot:** The area contained within the property lines of individual parcels of land shown on a subdivision or land development plan, excluding any area within a street right-of-way, but including the area of any easement.
- b. **Area, Site:** The total area of a proposed subdivision or land development, regardless of interior lot lines or proposed lots, streets or easements.

BERM: See SHOULDER.

BLOCK: An area bounded by streets.

BUFFER YARD: Land area, either landscaped or planted, used to visibly separate one use from another or to shield or block noise, light, or other potential nuisance.

BUILDING: Any structure, or any part thereof, having a roof supported by columns or walls, which is used or intended to be used for the housing, sheltering, or enclosure of persons, animals or property.

- a. **Building, Accessory:** A detached, subordinate building, the use of which is customarily incidental and subordinate to that of the principal building, and which is located on the same lot as the principal building.
- b. **Building, Principal:** The main structure on a given lot, in which the primary use of the site is conducted.

BUILDING PERMIT: A permit required by the Township Zoning Ordinance of 1994, or as may hereafter be amended, for the construction, alteration or change of use of any building or structure in Delaware Township.

BUILDING SETBACK LINE: A line within a property defining the required minimum distance between any structure and the adjacent street right-of-way, or property lines.

CAMPGROUND: A tract or tracts of land, or any portion thereof, used or intended to be used for the purpose of providing two or more spaces for travel trailers, recreational vehicles, or tents, for the purposed of camping, regardless of whether a fee is charged for the leasing, renting or occupancy of such space. The term "campground" shall also include recreational vehicle parks.

CARTWAY: The surface of a street or alley available for vehicular traffic, including

travelled lanes and parking spaces, but excluding shoulders, sidewalks or drainage swales.

CENTERLINE: A line located exactly in the center of the width of the cartway, right-of-way, easement, access, road, or street.

CHAIRMAN: The Chairman of the Delaware Township Board of Supervisors or Township Planning Commission, as indicated.

CLEAR SIGHT TRIANGLE: An area of unobstructed vision at street intersections defined by two (2) street lines and by a line of sight between points at a given distance from the intersection of the street centerlines.

CLUSTER DEVELOPMENT: A development design technique that modifies the Township's required dimensional standards, thereby allowing the concentration of buildings in specific areas on the site and providing for the remainder of the site to be used for recreation, common open space, and preservation of environmentally-sensitive features. For the purpose of this Ordinance, such developments shall be limited to single family dwellings.

COMPLETELY DRY SPACE: A space which will remain totally dry during flooding; the structure is designed and constructed to prevent the passage of water and water vapor.

CONDOMINIUM: A building, or group of buildings, in which units are owned individually, and the structure, common areas and facilities are owned by all the owners on a proportional, undivided basis.

CONSERVATION DISTRICT: The Northumberland County Conservation District.

CONTOUR: A line that connects the points on a land surface that have the same elevation.

CONVERSION: A single family dwelling converted for residential occupancy by not more than two (2) families.

COUNTY: Northumberland County, PA, unless otherwise specified.

CUL-DE-SAC: See STREET, CUL-DE-SAC.

CURB: A barrier, either concrete or bituminous, marking the edge of a roadway or paved area of the cartway.

CUT: An excavation or material removed in excavation; also, the difference between a point on the original ground and a designated point of lower elevation on the final grade.

DEDICATION: The deliberate appropriation or donation of land or property by its

owner for any general and public uses, reserving to himself no other rights than are compatible with the full exercise and enjoyment of the public uses to which the property has been designated. Acceptance of any such dedication to the Township is at the complete discretion of the Township Supervisors.

DEED: A legal document conveying ownership of real property.

DEED RESTRICTION: A restriction on the use of land set forth in the deed or instrument of conveyance. Said restriction usually runs with the title of the land and is binding upon subsequent owners of the property.

DENSITY: The number of families, individuals, dwelling units, or housing structures permitted to be constructed or situated on a specific unit of land, as may be applicable.

DEP: The PA Department of Environmental Protection.

DETENTION BASIN: A basin or pond designed to retard storm water runoff by temporarily storing the runoff and releasing it at a predetermined rate.

DEVELOPER: Any landowner, agent of such landowner, or tenant with the permission of such landowner, who makes or causes to be made a subdivision of land or a land development. (See also AGENT and SUBDIVIDER.)

DEVELOPMENT: Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, the placement of mobile homes or manufactured housing, streets, utilities, mining, dredging, filling, grading, paving, excavation or drilling operations, and the subdivision of land. (See also LAND DEVELOPMENT.)

DISTURBANCE ACTIVITY: Any activity that could affect effect earth resources, including the creation of impervious surfaces, earth disturbances (grading, filling, etc.), or timber harvesting.

DRAINAGE AREA: The entire region or area in which all surface and/or subsurface stormwater runoff concentrates at a selected point of interest. (See also WATERSHED AREA.)

DRAINAGE EASEMENT: An easement required for the installation of stormwater management facilities or drainage swales, and/or required for the preservation or management of a natural stream or watercourse or other drainage facility.

DRAINAGE FACILITY: Any ditch, gutter, swale, pipe, culvert, storm sewer or other structure or facility designed, intended or constructed for the purpose of diverting surface waters from or carrying surface waters off streets, public rights-of-way, parks, recreation areas, or any part of any subdivision or land development. (See also STORMWATER MANAGEMENT FACILITY.)

DRAINAGEWAY: Any natural or artificial watercourse, trench, ditch, swale or similar depression into which surface water flows.

DRIVEWAY: A minor vehicular accessway across one's property, providing access between a public or private street and a parking area or garage within the lot or property.

DROPPED CURB: A section of curbing which is lowered to the street pavement level to permit access into a property or properties for vehicles or handicapped persons.

DWELLING: A building or structure designed for or occupied exclusively as the residence for one or more families.

- a. Dwelling, Single-Family Attached: A dwelling containing only one (1) dwelling unit from ground to roof, having independent outside access and a portion of one or two walls in common with an adjoining dwelling(s).
- b. Dwelling, Single-Family Detached: A dwelling containing only one (1) dwelling unit from ground to roof, having open space on all sides of the structure.
- c. Dwelling, Mobile Home: See MOBILE HOME.
- d. Dwelling, Multiple Family: A dwelling structure containing three (3) or more dwelling units, not having independent outside access to each unit.
- e. Dwelling, Two Family Attached: An attached or semi-attached structure containing two (2) independent dwelling units which are entirely separated by vertical walls or horizontal floors, unpierced except for access to the outside or to a common basement or cellar.

DWELLING UNIT: One or more rooms in a dwelling structure designed for the occupancy of one (1) family for living, cooking, and sleeping purposes. Recreational vehicles and facilities for transient lodging shall not be considered as dwelling units for the purpose of this Ordinance.

EARTH RESOURCES: Any organic or physical component of the earth, either natural or man-made, including, but not limited to air, soil, water, vegetation, wildlife, etc.

EASEMENT: A defined right of use or privilege granted for a limited use of land for a public or quasi-public purpose, not including roadways.

ELEVATION: 1) A vertical distance above or below a fixed reference level; or 2) A flat scale drawing of the front, rear or side of a building.

ENGINEER: A professional engineer licensed in the Commonwealth of Pennsylvania, duly appointed as the engineer for Delaware Township or for any

applicant/developer.

EROSION: The removal of surface materials by the action of natural elements.

EROSION AND SEDIMENT POLLUTION CONTROL: Temporary or permanent actions or measures taken to reduce erosion and sedimentation and/or to manage stormwater runoff during and after development activities, generally carried out as part of a plan developed prior to the initiation of the disturbance activity.

EROSION AND SEDIMENT POLLUTION CONTROL PLAN: A plan that indicates necessary land treatment measures, including a schedule for installation, which will effectively minimize soil erosion and sedimentation.

ESSENTIALLY DRY SPACE: A space which will remain dry during flooding, except for the passage of some water vapor or minor seepage; the structure is substantially impermeable to the passage of water.

EXCAVATION: Removal or recovery by means whatsoever of soil, rock, minerals, mineral substances or organic substances other than vegetation, from water or land on or beneath the surface thereof, or beneath the land surface, whether exposed or submerged.

FILL: 1) Any act by which earth, sand, gravel, rock or other material is placed, pushed, dumped, pulled, transported or moved to a new location above the natural surface of the ground or on top of the stripped surface and shall include the conditions resulting therefrom; 2) The difference in elevation between a point on the original ground and a designated point of higher elevation on the final grade; or 3) The material used to make a fill.

FINANCIAL SECURITY: A bond, certified check, irrevocable letter of credit, special savings or escrow account, or other form of monetary guarantee satisfactory to the Township which is intended to assure that the developer installs all improvements required as a condition of final subdivision or land development plan approval or which is intended to guarantee the structural integrity of completed improvements. (See also IMPROVEMENT GUARANTEE.)

FLOOD: A temporary inundation of normally dry land areas.

- a. Flood, One Hundred Year: A flood that, on the average, is likely to occur once every 100 years, i.e. that has a one percent chance of being equalled or exceeded in any given year; for the purposes of this Ordinance, the Regulatory Flood.
- b. Flood, Regulatory: The flood that has been selected to serve as the basis upon which the floodplain management provisions of this Ordinance have been based; the 100 year flood.

FLOOD FRINGE: That portion of the 100 year floodplain outside the floodway,

excluding areas shown as approximate 100 year flood zones on the Township's Flood Boundary and Floodway Maps.

FLOOD HAZARD AREA: For the purposes of this Ordinance, the Flood Hazard Area shall be defined the same as the Floodplain.

FLOODPLAIN: 1) A relatively flat or low land area adjoining a stream, river, or watercourse, which is subject to partial or complete inundation; or 2) Any area subject to the unusual and rapid accumulation or runoff of surface waters from any source. The boundary of this area shall coincide with the boundary of the 100 year flood.

FLOODPROOFING: Any combination of structural and non-structural modifications or other changes or adjustments to buildings or their contents, undertaken to reduce or eliminate flood damage.

FLOODWAY: The designated area of a floodplain required to carry and discharge the flood waters of a given magnitude. For the purposes of this Ordinance, the floodway shall be capable of accommodating a flood of a 100 year magnitude.

GENERAL FLOODPLAIN: That portion of the floodplain for which no specific flood profiles exist and which is designated as approximated 100 year floodplain area on the Township's Flood Boundary and Floodway Map.

GOVERNING BODY: The Board of Supervisors of Delaware Township, Northumberland County, PA.

GRADE: The degree of rise or descent of a sloping surface.

- a. Grade, Street: The elevation of the centerline of an existing or proposed street; the percentage of slope.
- b. Grade, Finished: The final elevation of the ground surface after development.

IDENTIFIED FLOODPLAIN AREA: The floodplain area specifically identified in the Delaware Township Zoning Ordinance as being inundated by the 100 year flood, including areas identified as Floodway, Flood Fringe and General Floodplain.

IMPERVIOUS SURFACE: Any surface that reduces or prevents absorption of stormwater into the earth's soil.

IMPROVEMENT AGREEMENT: A formal agreement executed by the developer and the Township Supervisors guaranteeing that the developer will install all improvements required as a condition of final approval of his subdivision or land development plans, and including financial security in an amount and form acceptable to the Township. (See Section 304.)

IMPROVEMENT GUARANTEE: Financial security filed by a developer with the

Township Supervisors in an amount and form acceptable to the Township intended to guarantee the installation of any improvements required as a condition of final subdivision or land development plan approval. (See also FINANCIAL SECURITY.)

IMPROVEMENTS: Those physical additions, installations or changes made to the land which are necessary to produce usable and desirable lots, including but not limited to, streets, curbs, sidewalks, street lights, water mains, sewer lines, fire hydrants, drainage and/or stormwater management facilities, bridges and culverts.

LAND DEVELOPMENT: Any of the following activities:

- a. The improvement of one (1) lot or two (2) or more contiguous lots, tracts or parcels of land for any purpose involving:
 - 1) a group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single non-residential building on a lot or lots regardless of the number of occupants or tenure; or
 - 2) the division or allocation of land or space, whether initially or cumulatively, between or among two (2) or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features; or
- b. a subdivision of land.

Provided however, that the following activities shall be exempted from the definition of land development:

- a. The conversion of an existing single-unit detached dwelling into not more than three (3) residential units, unless such units are intended to be a condominium;
- b. the addition of an accessory building, including farm buildings, on a lot or lots subordinate to an existing principal residential building or agricultural use; and,
- c. the addition or conversion of buildings or rides within the confines of an enterprise which would be considered an amusement park. For the purposes of this Ordinance, an amusement park is defined as a tract or area used principally as a location for permanent amusement structures or rides. This exclusion shall not apply to newly acquired acreage by an amusement park until initial plans for the expanded area have been approved by the proper authorities.

LAND DEVELOPMENT, COMMERCIAL: The subdivision or development of a tract of land into lots or spaces which are designed or intended for commercial purposes, including, but not limited to shopping centers, motels, and other similar types of development.

LAND DEVELOPMENT, INDUSTRIAL: The subdivision or development of a tract

of land into lots or spaces which are designed or intended for industrial purposes, including, but not limited to industrial parks, multi-tenant buildings, and other similar types of development.

LAND DEVELOPMENT, INSTITUTIONAL: The subdivision or development of a tract of land into lots or spaces which are designed or intended for institutional purposes, including, but not limited to schools, hospitals, nursing or personal care homes, municipal buildings, or other similar types of development.

LAND DEVELOPMENT, RECREATIONAL: The subdivision or development of a tract of land into lots or spaces which are designed or intended for intermittent recreational purposes, including, but not limited to campgrounds, vacation home developments, private or public parks or playgrounds, or other similar types of development.

LAND DEVELOPMENT, RESIDENTIAL: The subdivision or development of a tract of land into lots or dwelling units which are designed or intended for full-time residential occupancy, including, but not limited to cluster developments, multiple family dwellings or housing developments, mobile home parks, or planned residential developments.

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

LEASE: A contract or agreement by which one conveys real estate for a specific term, for a specified rent. For the purposes of this Ordinance, such arrangement shall be for a period of six months or more.

LEVELING AREA: A safe stopping area at the intersection of streets or the intersection of a driveway and a street which is designed in accordance with the standards of this Ordinance.

LOADING BERTH: A off-street space, accessible from a street or alley, in a building or on a lot, designed or intended for the temporary parking of a commercial vehicle while loading or unloading merchandise or materials.

LOCATION MAP: A map sketch or diagram included on a subdivision or land development plan showing the relation of the site to all road and highway systems and municipal boundaries in the area surrounding the proposed subdivision or development.

LOT: A designated parcel, tract, or area of land established by a plat or otherwise as permitted by law and to be used, developed or built upon as a unit.

- a. Lot, Add-on: A parcel of ground located immediately adjacent to other property owned by the intended grantee, that is being added to the grantee's existing

lot-of-record. Said lots shall not be subject to the minimum area or soils testing requirements of this Ordinance provided that the grantee is willing to combine both parcels into one description in a new deed and indicate therein that both parcels are to be considered as one for subdivision purposes.

- b. Lot, Area: The area contained within the property lines of a lot as shown on a subdivision plan, excluding space within any street, or street right-of-way, but including the area of any easement.
- c. Lot, Corner: A lot abutting upon two (2) or more public or private streets at their intersection, or upon two (2) parts of the same street forming an interior angle of less than 135 degrees.
- d. Lot, Depth: The average horizontal distance between the front and rear lot lines.
- e. Lot, Double Frontage: An interior lot extending from one street to another, with frontage on both streets.
- f. Lot, Frontage: The length of the front lot line measured at the street right-of-way line.
- g. Lot, Interior: A lot other than a corner lot.
- h. Lot, Reverse Frontage: A lot extending between and having frontage on an arterial or collector street and on a local street or alley, with vehicular access solely from the latter.
- i. Lot, Width: The width of a lot measured at the building setback line.

LOT LINE: Any boundary or property line of a lot, generally described by bearings and distances.

- a. Lot Line, Front: The line separating the lot from a street or street right-of-way, i.e the STREET LINE; or the lot line at the front of the parcel.
- b. Lot Line, Rear: The lot line opposite and most distant from the front lot line.
- c. Lot Line, Side: Any lot line other than a front or rear lot line.

LOT OF RECORD: Any lot which individually or as a part of a subdivision has been recorded in the Office of the Recorder of Deeds of Northumberland County, PA.

MARKER: An iron pipe or iron or steel bar set by a professional land surveyor to permanently mark the beginning and end of curves along property lines, angles in property lines, and lot corners. (See also MONUMENT.)

MEDIATION: A voluntary negotiating process in which parties in a dispute mutually

select a neutral mediator to assist them in jointly exploring and settling their differences, culminating in a written agreement which the parties themselves create and consider acceptable.

MOBILE HOME: A transportable, single family dwelling intended for permanent occupancy, contained in one (1) unit, or in two (2) or more units designed to be joined into one (1) integral unit capable of again being separated for repeated towing, which arrives at a site complete and ready for occupancy except for minor and incidental unpacking and assembly operations, and constructed so that it may be used without a permanent foundation. For floodplain management purposes, the term shall also include park trailers, travel trailers, recreational vehicles and other similar types of manufactured homes placed on a site for a period of time exceeding 180 consecutive days.

MOBILE HOME LOT: A parcel of land in a mobile home park, improved with the necessary utility connections and other appurtenances necessary for the erection thereon of a single mobile home.

MOBILE HOME LOT PAD OR STAND: The part of an individual mobile home lot which has been reserved for the placement of the mobile home, appurtenant structures or additions.

MOBILE HOME PARK: A parcel or contiguous parcels of land which has been so designated and improved that it contains two (2) or more mobile home lots for the placement thereon of mobile homes. For floodplain management purposes, the term shall also include facilities for the placement of two (2) or more park trailers, travel trailers, recreational vehicles, or other similar types of manufactured housing for a period of time exceeding 180 consecutive days.

MODIFICATION: See WAIVER.

MONUMENT: For the purposes of this Ordinance, a monument shall be defined to mean a reinforced concrete or stone monument, or a concrete-filled cast iron pipe, set by a professional land surveyor to permanently identify the intersection of lines forming angles in the boundaries of the subdivision, or at other locations as determined appropriate by the Township.

MUNICIPALITY: Delaware Township, Northumberland County.

OFF-STREET LOADING: See LOADING BERTH.

OFF-STREET PARKING: See PARKING AREA and PARKING SPACE.

OPEN SPACE: Space not occupied, open to the sky, and on the same lot with a building or structure.

- a. Open Space, Public: Any land area set aside, dedicated, designated or reserved for public enjoyment.

- b. Open Space, Common: A specific area of land or water, or a combination of land and water within a development site, which is designed and intended for the principal use or enjoyment of the occupants of the development, not including streets, off-street parking areas, and land dedicated for public or community facilities or use.

PA DEP: The Pennsylvania Department of Environmental Protection.

PA DOT: The Pennsylvania Department of Transportation.

PARCEL: A lot, plot, or tract of land.

PARKING AREA: Any public or private land area designated and used for parking of vehicles including parking lots, garages, private driveways and legally designated areas of public streets.

PARKING SPACE: The space within a building or on a lot or in a parking area, designed or intended to be used for the parking or storage of one (1) vehicle.

PAVEMENT: A sub-base, base course, or surface course placed on a sub-grade to support traffic load.

PEDESTRIAN WALKWAY: A specified easement, walkway, path, sidewalk or other reservation which is designed and used exclusively by pedestrians.

PLAN: A map or plat of a subdivision or land development, whether sketch, preliminary or final. (See also SUBDIVISION PLAN.)

- a. Plan, Sketch: An informal plan, not necessarily to exact scale, indicating salient existing features of a tract and its surroundings and the general layout of a proposed subdivision or land development.
- b. Plan, Preliminary: A general subdivision or land development plan indicating the approximate proposed layout of a subdivision or land development as a basis for consideration prior to preparation of the final plan.
- c. Plan, Final: A complete and exact subdivision or land development plan prepared for official approval and recording as required by statute.

PLANNED RESIDENTIAL DEVELOPMENT: An area of land, controlled by a land owner, to be developed as a single entity for a number of dwelling units, or combination of residential and nonresidential uses, the development plan for which does not correspond in lot size, bulk, type of dwelling, or use, density, or intensity, lot coverage and required open space to the regulations established in any one district created, from time to time, under the provisions of a municipal zoning ordinance.

PLANNING COMMISSION: The Planning Commission of Delaware Township,

Northumberland County, PA.

PLAT: The map or plan of a subdivision or land development, whether preliminary or final. (See also PLAN.)

PLOT: A parcel of land that can be identified and referenced to a recorded plat or map.

PRIVATE: Something owned, operated and supported by private individuals or a private corporation, rather than a government.

PUBLIC: Something owned, operated and controlled by a government agency (Federal, State or local), including a corporation created by law for the performance of certain specialized governmental functions.

PUBLIC HEARING: A formal meeting held pursuant to public notice by the Township Supervisors, Township Planning Commission or Township Zoning Hearing Board, intended to inform and obtain public comment, prior to taking certain actions as required by the PA Municipalities Planning Code.

PUBLIC MEETING: A forum held pursuant to notice under the act of July 3, 1986 (P.L. 388, No. 84), known as the Sunshine Act.

PUBLIC NOTICE: Notice published once each week for two (2) successive weeks in a newspaper of general circulation in the municipality. Such notice shall state the date, time, and place of the hearing and the particular nature of the matter to be considered. The first publication shall not be more than 30 days and the second publication shall not be more than seven (7) days prior to the hearing date.

RECREATIONAL VEHICLE: A portable or mobile vehicle built on a chassis and designed or used as a temporary dwelling for travel, recreation or vacation purposes. Where such vehicles are to be placed on a lot or in a campground located in any designated Floodplain District, they may be on the site for no more than 179 consecutive days and must be fully licensed and ready for highway use at all times.

RECREATIONAL VEHICLE PARK: Any site upon which two (2) or more recreational vehicles are, or are intended to be, located. (See also CAMPGROUND.)

RECREATION AREA: Undeveloped land within a subdivision or development which is set aside or reserved for recreational use in accordance with the requirements of this Ordinance. (See Section 403.)

REGULATORY FLOOD ELEVATION: The 100 year flood elevation plus a freeboard safety factor of one and one-half (1 1/2) feet.

RESIDUAL PROPERTY: The lot or parcel created through subdivision which is the

remaining portion of the parent tract. The residual property shall be considered as an integral part of the proposed subdivision and shall be required to meet the standards of this Ordinance, where determined appropriate or necessary by the Delaware Township Planning Commission or Board of Supervisors.

RETENTION BASIN: A pond, pool or basin used for the permanent storage of stormwater runoff.

RIGHT-OF-WAY: 1) A specific type of easement being limited to use for passage over another person's land; for example, an easement for vehicular passage or public utility passage; or 2) A strip of land acquired by reservation, dedication, prescription, or condemnation which is occupied or intended to be occupied by a road, crosswalk, railroad, electric transmission line, oil or gas pipeline, water lines, sanitary sewer or storm sewer lines or other similar use. (See also STREET, PRIVATE.)

RUNOFF: The surface water discharge or rate of discharge of a given watershed after a rainfall or snowfall that does not enter the soil but runs off the surface of the land.

SANITARY SEWAGE: Any liquid waste containing animal or vegetable matter in suspension or solution, or the water-carried waste resulting from the discharge of water closets, tubs, washing machines, sinks, dishwashers, or any other source of water-carried waste of human origin or containing putrescible material.

SANITARY SEWER: Pipes that carry only domestic, commercial or industrial sewage and into which storm, surface and ground waters are not intentionally admitted.

SCREEN PLANTING: A barrier to visibility, glare, and noise between adjacent properties made of plant materials such as trees or shrubs which shall be of such species that will produce a visual screen at least five (5) feet in height and be of such density as is necessary to achieve the intended purpose.

SEDIMENT: Deposited silt that is being or has been moved by water or ice, wind, gravity or other means of erosion.

SEDIMENTATION: The process by which mineral or organic matter is accumulated or deposited by moving wind, water or gravity.

SERVICE OR AUXILIARY BUILDING: A structure housing operational, office, recreational, maintenance and other facilities usually associated with a land development, i.e. a mobile home park or recreational complex.

SETBACK: The horizontal distance between a structure and a street line or property line. (See also BUILDING SETBACK LINE.)

SEWAGE: A substance that contains the waste products or other discharge from

the bodies of human beings or animals and noxious or deleterious substances being harmful or inimical to the public health, or to animal or aquatic life, or to the use of water for domestic water supply or for recreation, or which constitutes pollution under the Clean Streams Law.

SEWAGE FACILITY: A system of sewage collection, conveyance, treatment and disposal which will prevent the discharge of untreated or inadequately treated sewage or other waste into waters of the Commonwealth or otherwise provide for the safe and sanitary treatment and disposal of sewage or other waste.

SEWAGE SYSTEM, COMMUNITY: A sewage facility, whether publicly or privately owned, for the collection of sewage from two or more lots, or two or more equivalent dwelling units and the treatment or disposal, or both, of the sewage on one or more of the lots or at another site.

- a. **Sewage System, Community On-Lot:** A community sewage system which uses a system of piping, tanks or other facilities for collecting, treating and disposing of sewage into a subsurface soil absorption area or retaining tank.
- b. **Sewage System, Community Sewerage:** A community sewage system which uses a method of sewage collection, conveyance, treatment and disposal other than renovation in a subsurface absorption area, or retention in a retaining tank.

SEWAGE SYSTEM, INDIVIDUAL: A sewage facility, whether publicly or privately owned, located on a single lot and serving one equivalent dwelling unit and collecting, treating and disposing of sewage in whole or in part into the soil or into waters of the Commonwealth or by means of conveyance of retaining tank wastes to another site for final disposal.

- a. **Sewage System, Individual On-Lot:** An individual sewage system which uses a system of piping, tanks or other facilities for collecting, treating and disposing of sewage into a subsurface absorption area or a retaining tank.
- b. **Sewage System, Individual Sewerage:** An individual sewage system which uses a method of sewage collection, conveyance, treatment and disposal other than renovation in a subsurface absorption area, or retention in a retaining tank.

SHOPPING CENTER: A group of commercial establishments, planned, developed, owned and managed as a unit and related in location, size, and type of shops to the trade area that the unit serves; it provides on-site parking in definite relationship to the types and sizes of stores. For the purposes of this Ordinance, the term "shopping center" shall also include "shopping mall".

SHOULDER: That portion of the roadway which is adjacent to the cartway and is provided for lateral support of the pavement, emergency stopping, and a minimal amount of recovery area beyond the pavement edge.

SIDEWALK: A suitably surfaced and leveled area, paralleling but usually separated from the street, used as a pedestrian walkway.

SIGHT DISTANCE: 1) The length of street, measured along the centerline, which is continuously visible from any point four (4) feet above the centerline; or 2) The amount of distance required to be provided at a street or driveway intersection which is considered adequate for a driver to be able to see in order to proceed in a safe manner.

SITE ALTERATION: Any change or adjustment to the grade of an existing site, i.e. any earth-moving activity. Such alterations generally require the completion of a soil erosion and sedimentation control plan. (See also DISTURBANCE ACTIVITIES.)

SITE IMPROVEMENTS: See IMPROVEMENTS.

SITE PLAN: A plan for the development of a single tract of land, whether or not a subdivision is involved, which shows the existing and proposed conditions of the parcel including, but not limited to, topography, drainage, floodplains, wetlands, waterways, open spaces, walkways or pedestrian easements, means of ingress and egress, utility service line locations, landscaping, structures, lighting and screening devices and any other information that may reasonably be required in order that an informed decision can be made by the Township. Such plans are generally required in order to evaluate land development proposals, including multiple family residential, commercial or industrial development submissions.

SLOPE: 1) The face of an embankment or cut section; or 2) Any ground whose surface makes an angle with the plane of the horizon. Slopes are usually expressed as a ratio based on vertical differences in feet per 100 feet of horizontal distances; i.e. "rise over run".

SOLID WASTE: Any waste, including but not limited to, municipal, residual or hazardous wastes, including solid, liquid, semi-solid or contained gaseous materials.

SPECIAL PERMIT: A special approval issued by the Department of Community Affairs or local municipality in accordance with Section 38.6 of the State Floodplain Management Regulations for specific types of development and obstructions which present a special hazard to the health and safety of the public or occupants, or may result in significant pollution, increased flood levels or flows, or debris endangering life on property, when such development or obstructions are located in all or a designated portion of a floodplain.

SQUARE FOOTAGE: The unit of measure used to express the area of a lot, tract, or parcel involved in a subdivision or land development; the length of a lot, in feet, times the width of a lot, in feet.

STABILIZATION: Natural or mechanical treatment of a mass of soil or ground area

to increase or maintain its stability or otherwise improve its engineering properties and resistance to erosion.

STORM SEWER: A conduit that collects and transports runoff.

STORMWATER MANAGEMENT FACILITY: Any structural or non-structural device, or combination thereof, which is designed, constructed and maintained to manage or control stormwater runoff from a development site, including but not limited to drainage swales, easements, seepage pits, culverts, pipes, storm sewers, detention or retention basins, ponds and other similar facilities.

STORMWATER MANAGEMENT MAINTENANCE PLAN: A plan for maintaining all stormwater management facilities installed as part of an approved subdivision or land development.

STORMWATER MANAGEMENT PLAN: A plan for managing stormwater runoff, including data and calculations, prepared by the developer in accordance with the standards of this Ordinance. (See also WATERSHED STORMWATER MANAGEMENT PLAN.)

STREET: A strip of land, including the entire right-of-way, intended for use as a means of vehicular and pedestrian circulation, whether public or private. For the purposes of this Ordinance, the term "street" shall include avenues, alleys, boulevards, highways, freeways, roads or roadways.

- a. **Street, Alley:** A minor street, privately or publicly owned, which provides secondary access to abutting properties primarily for service to the back or sides of such properties.
- b. **Street, Arterial:** A major highway carrying a large volume of vehicles through the Township, used primarily for rapidly-moving traffic. Average daily traffic volumes generally range between 1,000 and 5,000 vehicles per day.
- c. **Street, Cul-de-Sac:** A street intersecting a through street at one end and terminating at the other in a vehicular turn-around.
- d. **Street, Local:** Streets which are used primarily for access to abutting properties, including streets within subdivisions or developments, usually characterized by low operating speeds. Such streets generally carry an average daily traffic volume of less than 500 vehicles.
- e. **Street, Major Collector:** Streets which provide access through the municipality and provide connection to arterial streets and the State Highway Network System. Average traffic volumes generally exceed 1,000 vehicles per day.
- f. **Street, Marginal Access:** Local or minor streets which are parallel and adjacent to arterial or collector streets and which provide access to abutting properties and protection from through traffic.

- g. Street, Minor Collector: Streets which move traffic into and between subdivisions and developments, and provide routes to local or community facilities. Such streets generally carry an average daily traffic volume of between 500 and 1,000 vehicles.
- h. Street, Private: All streets not dedicated, accepted, or maintained as public streets. For the purposes of this Ordinance, such streets shall also be defined as accessways providing for vehicular passage over another person's property. All rights-of-way providing vehicular passage shall be considered as private streets for the purposes of this Ordinance.
- i. Street, Public: All streets open to public use and maintained by, or dedicated to and accepted by the Township, the County, the State or the Federal Government.

STREET LINE: The dividing line between the street right-of-way and the lot.

STREET SYSTEM: All public and private streets intended for use as a means of vehicular circulation.

- a. Street System, Municipal: All public streets maintained by Delaware Township, including local streets and minor and major collector streets.
- b. Highway System, State: All public streets maintained by the PA Department of Transportation, including minor and major collector streets, arterial highways, and Interstate Highways.

STRUCTURAL ALTERATION: Any change or adjustment made to a building affecting the overall area occupied by that structure or that will change the supporting members, bearing walls, beams, girders, or interior walls of the structure. Such alterations generally require a Building/Zoning Permit.

STRUCTURE: Any man-made object having an ascertainable stationary location on or in land or water, whether or not affixed to the ground.

- a. Structure, Accessory: A structure detached from a principal structure, but located on the same lot, which is customarily incidental and subordinate to the principal building, structure or use.
- b. Structure, Principal: The main or primary structure on a given lot.

SUBDIVIDER: Any landowner, agent of such landowner or tenant with the permission of such landowner who makes or causes to be made a subdivision of land or a land development. (See also DEVELOPER.)

SUBDIVISION: The division or redivision of a lot, tract or parcel of land by any means into two (2) or more lots, tracts, parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease,

partition by the court for distribution to heirs or devisees, transfer of ownership, or building or lot development; provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than 10 acres, not involving any new street or easement of access or any residential dwelling shall be exempted.

SUBDIVISION ORDINANCE ADMINISTRATOR: An individual employed by the Township, on a full-time or part-time basis, to administer and enforce the provisions of this Ordinance.

SUBDIVISION OR LAND DEVELOPMENT PLAN: A proposal to subdivide or develop one (1) or more tracts of land. The plan shall include the proposed layout of the subdivision or land development and shall be accompanied by all other supplementary materials required by this Ordinance when submitted for consideration. (See also PLAN.)

SUBSTANTIALLY COMPLETED: Where, in the judgment of the municipal engineer, at least 90% (based on the cost of the required improvements for which financial security was posted) of those improvements required as a condition of final approval have been completed in accordance with the approved plan, so that the project will be able to be used, occupied or operated for its intended purpose.

SUPERVISORS: The Board of Supervisors of Delaware Township, Northumberland County, PA; i.e. the governing body.

SURVEYOR: A professional land surveyor, licensed and registered in the Commonwealth of Pennsylvania.

SWALE: A low lying stretch of land which gathers or carries surface water runoff.

TOWNSHIP: Delaware Township, Northumberland County, PA, unless otherwise specified.

TOWNSHIP SUPERVISORS: The elected governing body of Delaware Township, Northumberland County, PA.

TRACT: An area, parcel, site, piece of land or property which is the subject of a subdivision or land development application.

UNDEVELOPED LAND: Land in its natural state before development.

USE: The specific purpose or activity for which land or a building is designed, arranged, intended or for which it is or may be occupied or maintained.

- a. Use, Accessory: A use subordinate to the principal use of a building on the same lot and serving a purpose customarily incidental to the use of the principal building.
- b. Use, Principal: The primary purpose for which a lot is occupied or utilized.

WAIVER: A modification granted by the Township Supervisors for relief from the strict application of a specific requirement or provision of this Ordinance, which if enforced would cause unique and undue hardship for the applicant.

WATER COURSE: Any river, stream, run, drainageway, lake, pond or other body of water appearing as a permanent or intermittent waterway on United States Geological Survey maps.

WATERSHED AREA: The drainage area of a particular stream or watercourse. (See also DRAINAGE AREA.)

WATERSHED STORMWATER MANAGEMENT PLAN: A plan for managing stormwater runoff from and within a particular watershed area.

WATER SYSTEM: A system for the provision of water to individual lots or the public for human consumption.

- a. Water System, Non-Public: All water systems which are not public water systems.
- b. Water System, Off-Lot: An approved system in which potable water is supplied to a dwelling or other building from a central water source which is not located on the lot with the dwelling or building.
- c. Water System, On-Lot: A well or other approved system designed to provide potable water to a dwelling or building located on the same lot as the source.
- d. Water System, Public: A water system, as defined by the PA Department of Environmental Protection, which has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of a year.

WETLANDS: Areas which are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. For the purposes of this Ordinance, the term includes, but is not limited to, wetland areas listed in the State Water Plan, the U.S. Forest Service Wetlands Inventory of PA, the PA Coastal Zone Management Plan, the U.S. Fish and Wildlife Natural Wetlands Inventory and wetlands designated by a river basin commission.

YARD: An open space which lies on the same lot with a building or structure, unoccupied and unobstructed from the ground upward. The required yard shall be the minimum area or open space required by the Delaware Township Zoning Ordinance to be provided between the front, side or rear property lines and a principal or accessory structure on a lot.

ZONING ORDINANCE: The Zoning Ordinance of Delaware Township, Northumberland County, PA, adopted April 5, 1994, or as may hereafter be amended.

ARTICLE 8.

ENACTMENT AND MISCELLANEOUS PROVISIONS

800 SEVERABILITY AND VALIDITY

The provisions of this Ordinance shall be severable. Should any section, subsection or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance as a whole, or of any part thereof.

801 REPEALER

The Northumberland County Subdivision and Land Development Ordinance (insofar as it related to Delaware Township, Northumberland County), enacted on January 19, 1977, and all other Ordinances or sections thereof, which are inconsistent with any of the provisions herein, are hereby repealed. Nothing in this Ordinance shall be construed to affect any suit or proceeding now pending in any court or any rights accrued or liability incurred or any causes of action accrued or existing under any Ordinance repealed by this Ordinance. Nor shall any right or remedy be lost, impaired, or affected by this Ordinance.

802 ENACTMENT AND EFFECTIVE DATE

ENACTED and **ORDAINED** into an Ordinance this 5TH day of _____
SEPTEMBER, 1995, by the Board of Supervisors of Delaware Township,
Northumberland County, PA.

Said Ordinance shall become effective on the 5TH day of SEPTEMBER,
1995.

DELAWARE TOWNSHIP BOARD OF SUPERVISORS

Jon L. M. Cornick
Chairman
W. Lamar Rathwell
Keith D. Witsmer Supervisor

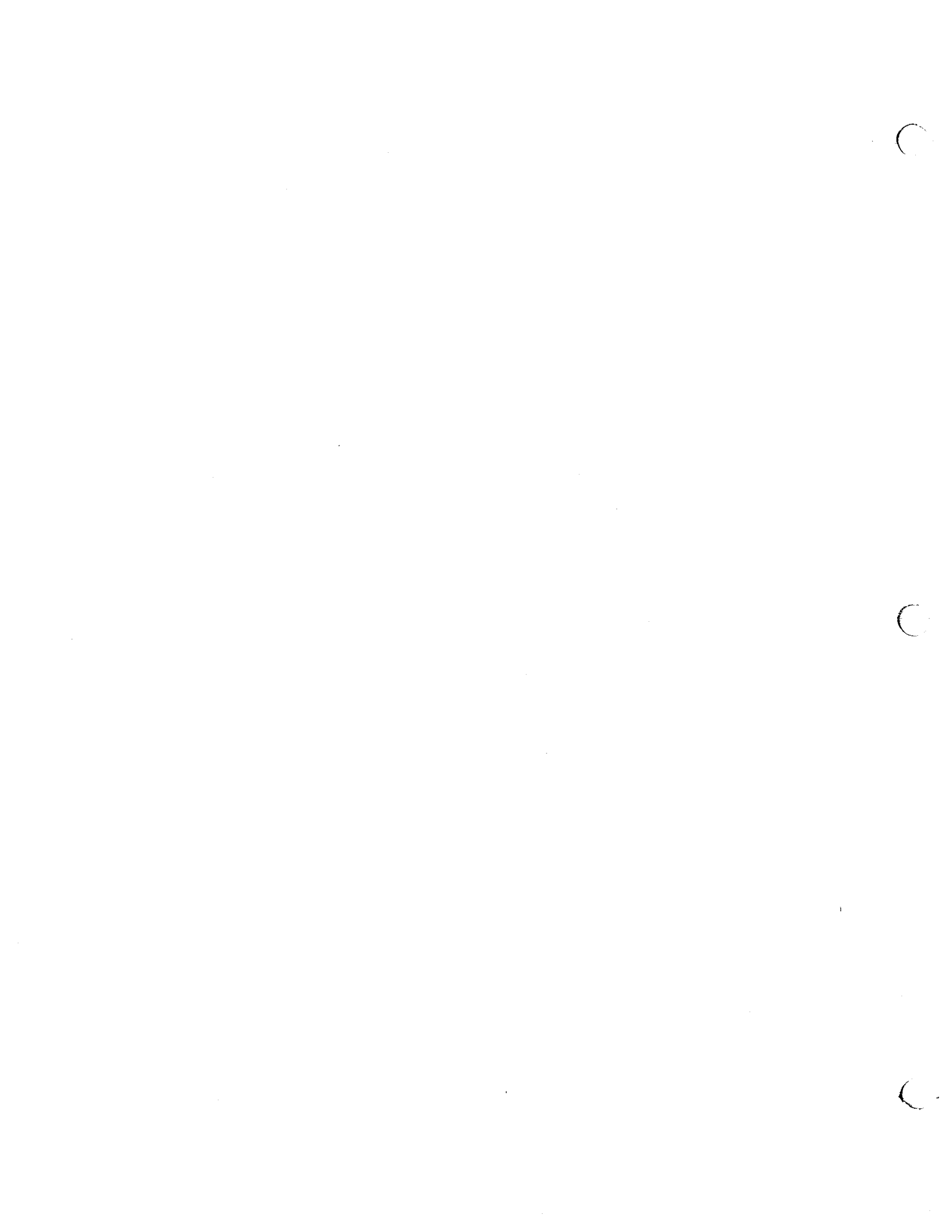
ATTEST:

William M. Michaels
Delaware Township Secretary

SEAL:

APPENDIX A

EXISTING ROAD INVENTORY AND TYPE



**DELAWARE TOWNSHIP
EXISTING ROAD INVENTORY AND TYPE**

WP RTE	STATE RTE	LOCAL NAME	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL STREET	PRIVATE STREET
671		ALLEN ROAD			X	
547		BECK ROAD			X	
669		BEIBER LANE			X	
716		BERKELEY DRIVE			X	
644		BLUE BALL ROAD		X		
670		BREA-LEA LANE			X	
713		BLESSING DRIVE			X	
648		BRIDGE ROAD			X	
502		BYERS LANE			X	
602		CEMETERY ROAD		X		
633		CHERRY STREET			X	
700		CHURCH ROAD		X		
610		CLEMENS ROAD		X		
507		CRAWFORD ROAD		X		
710		CRONRATH ROAD		X		
712		DELAWARE DRIVE			X	
506		DENTLER ROAD		X		
714		DEVON DRIVE			X	
646		DUGAN ROAD			X	
654		EAST DISTRICT ROAD		X		
705		EIGHTH STREET DRIVE	X			
717		FAIRMONT DRIVE			X	
798		FISHER LANE		X		
604		FREDERICK DRIVE		X		
523		FREEMAN ROAD			X	



**DELAWARE TOWNSHIP
EXISTING ROAD INVENTORY AND TYPE**

WP RTE	STATE RTE	LOCAL NAME	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL STREET	PRIVATE STREET
619		FULLERTOWN ROAD			X	
600		GEARHART ROAD			X	
668		GORDNER LANE			X	
637		GOSH DRIVE			X	
632		GRITTNER HOLLOW ROAD		X		
634		GROOVER ROAD		X		
510		HAGENBUCH LANE			X	
639		HALL DRIVE			X	
750		HESTER DRIVE			X	
667		HEWITT ROAD			X	
650		HICKORY GROVE ROAD		X		
649		HOUSER LANE		X		
655		HUGHES ROAD		X		
621		JOHN ROAD			X	
656		KEENER DRIVE			X	
663		LAVERS ROAD			X	
606		LEHMAN DRIVE			X	
718		LYNNEWOOD DRIVE			X	
661		MARQUARDT ROAD			X	
512		MCEWENSVILLE ROAD			X	
635		MCFARLAND STREET			X	
501		MEADOWVALE DRIVE			X	
622		MERRILL DRIVE			X	
647		METZGER ROAD			X	
90		MIDDLETON ROAD			X	



DELAWARE TOWNSHIP
EXISTING ROAD INVENTORY AND TYPE

TWP RTE	STATE RTE	LOCAL NAME	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL STREET	PRIVATE STREET
504		MINCEMOYER LANE		X		
586		MOORE DRIVE		X		
658		MOTOR TRUCK DRIVE			X	
645		NICHOLAS LANE			X	
509		NO NAME			X	
651		NO NAME			X	
608		OAKS LANE			X	
603		ORCHARD DRIVE			X	
511		ORCHARD ROAD			X	
607		PORTMAY ROAD		X		
500		RAUPS DRIVE			X	
30		RIVER ROAD		X		
599		ROVENOLT DRIVE			X	
659		RUPERT LANE			X	
628		RUSSELLS ROAD		X		
508		SCHOOLEY ROAD		X		
652		SEESE ROAD			X	
643		SHANERS LANE			X	
505		SHERMAN DRIVE			X	
641		SHRECK ROAD		X		
715		SPRINGTOWN ROAD		X		
657		STONEY BATTER ROAD		X		
666		SULPHER ROAD		X		
642		TRUCKENMILLER ROAD			X	
525		TRUE BLUE ROAD		X		





APPENDIX B

ILLUSTRATIONS

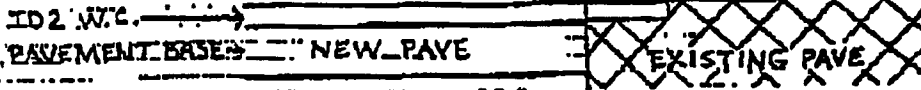
Illustration I. Street Cross Section Detail

Illustration II. Cul-De Sac Detail

Illustration III. Typical Layout of Driveway & Road Intersections



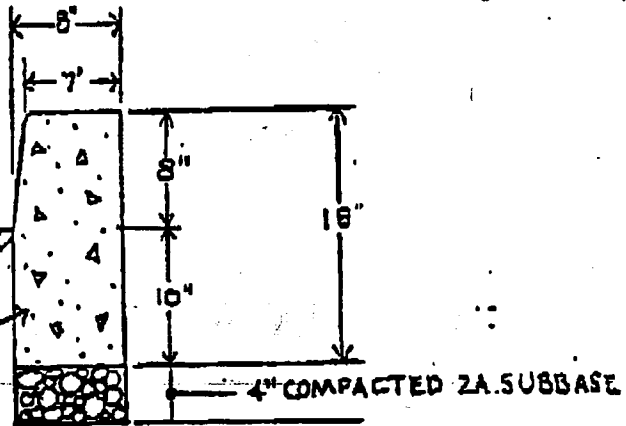
MILL 1" TO 1 1/2" DEPTH OVERLAP (6" TO 12" WIDE)
TACK COAT



(13) EXISTING PAVE. TIE-IN JOINT

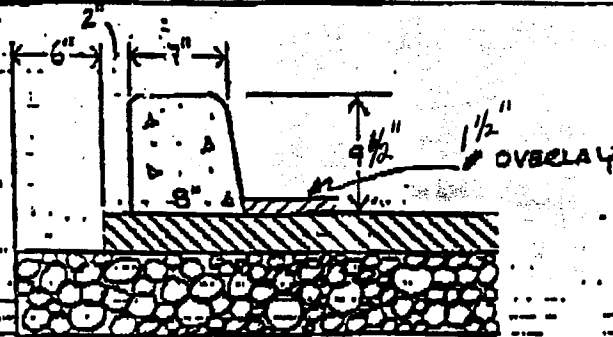
PAVEMENT SURFACE

CLASS "A" CONCRETE



(EC) CEMENT CONCRETE CURB

* NOTE - USE CLASS "AAA" CONCRETE, 1B MIX



(EC-2) HIGH-EXTRUDED CONCRETE CURB



ILLUSTRATION J

STREET CROSS SECTION DETAIL
(NOT TO SCALE)

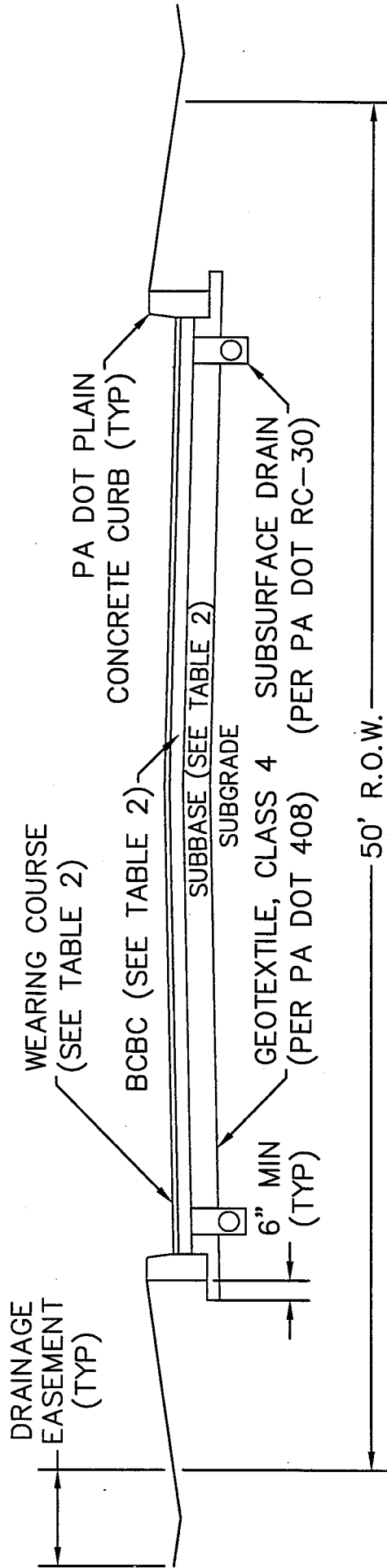
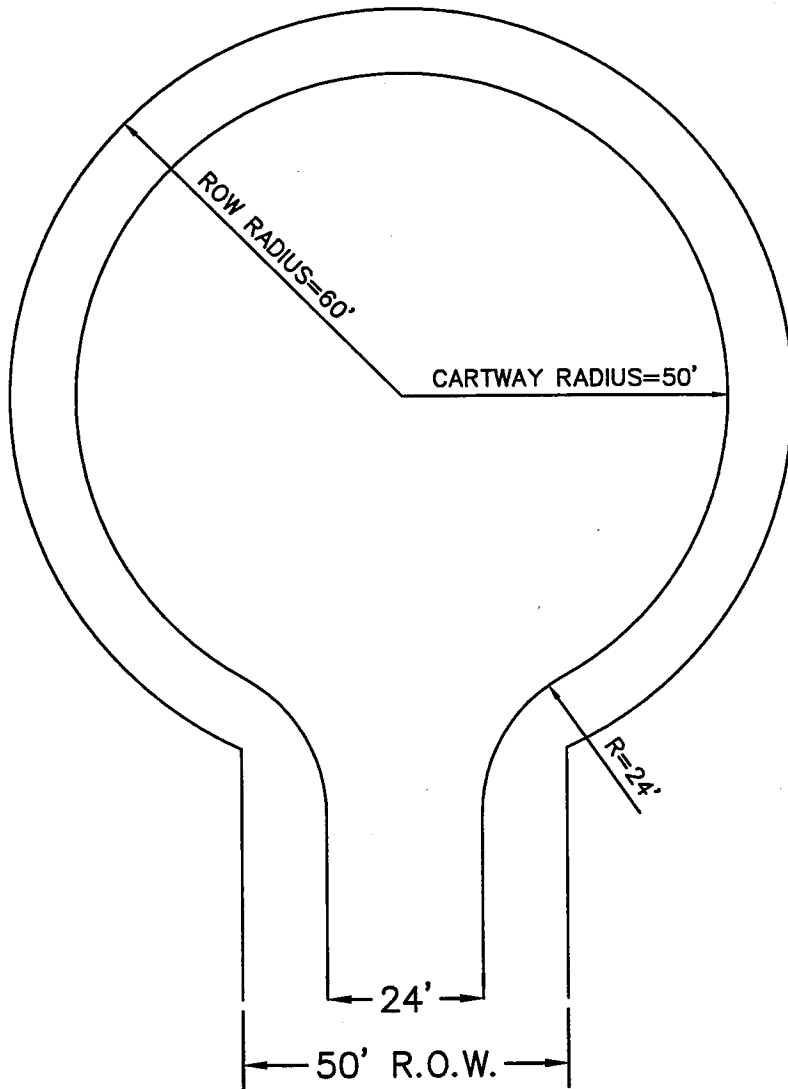




ILLUSTRATION II

CUL-DE-SAC DETAIL
(NOT TO SCALE)

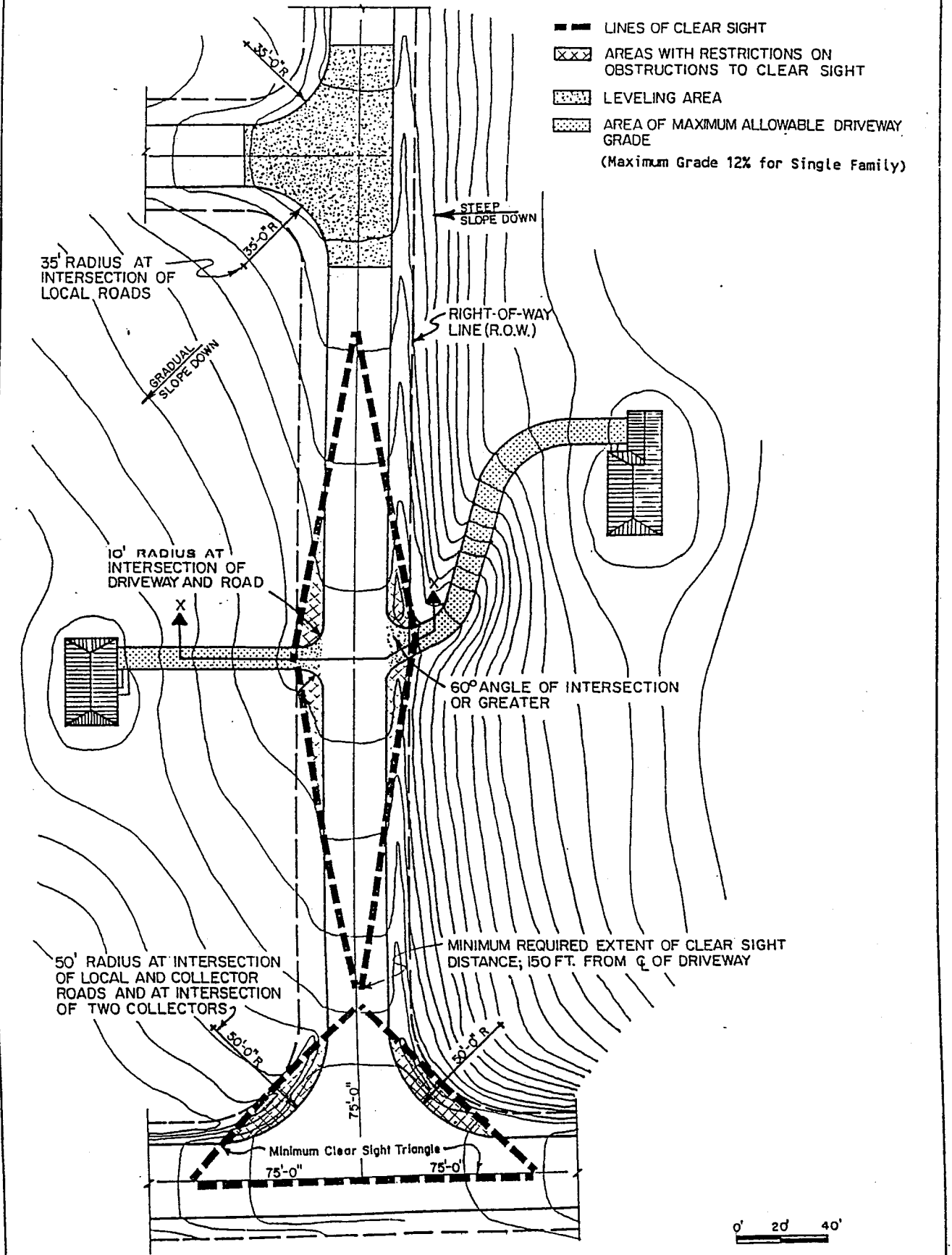


Adopted July 3, 2001



Illustration III

TYPICAL LAYOUT of DRIVEWAY and ROAD INTERSECTIONS





APPENDIX C

STORMWATER MANAGEMENT FIGURES

Figure 1. Runoff Coefficients for the Rational Formula

Figure 2. Storm Intensity-Duration-Frequency Chart for Region 3

Figure 3. Anti-Seep Collar Design



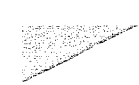
Fig. 1.

Runoff Coefficients for the Rational Formula
By Hydrologic Soil Group and Overland Slope (%)

Land Use	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
Cultivated Land	0.08 ^a 0.14 ^b	0.13 0.18	0.16 0.22	0.11 0.16	0.15 0.21	0.21 0.28	0.14 0.20	0.19 0.25	0.26 0.34	0.18 0.24	0.23 0.29	0.31 0.41
Pasture	0.12 0.15	0.20 0.25	0.30 0.37	0.18 0.23	0.28 0.34	0.37 0.45	0.24 0.30	0.34 0.42	0.44 0.52	0.30 0.37	0.40 0.50	0.50 0.62
Meadow	0.10 0.14	0.16 0.22	0.25 0.30	0.14 0.20	0.22 0.28	0.30 0.37	0.20 0.26	0.28 0.35	0.36 0.44	0.24 0.30	0.30 0.40	0.40 0.50
Forest	0.05 0.08	0.08 0.11	0.11 0.14	0.08 0.10	0.11 0.14	0.14 0.18	0.10 0.12	0.13 0.16	0.16 0.20	0.12 0.15	0.16 0.20	0.20 0.25
Residential Lot Size 1/8 Acre	0.25 0.33	0.28 0.37	0.31 0.40	0.27 0.35	0.30 0.39	0.35 0.44	0.30 0.38	0.33 0.42	0.38 0.49	0.33 0.41	0.36 0.45	0.42 0.54
Lot Size 1/4 Acre	0.22 0.30	0.26 0.34	0.29 0.37	0.24 0.33	0.29 0.37	0.33 0.42	0.27 0.36	0.31 0.40	0.36 0.47	0.30 0.38	0.34 0.42	0.40 0.52
Lot Size 1/3 Acre	0.19 0.28	0.23 0.32	0.26 0.35	0.22 0.30	0.26 0.35	0.30 0.39	0.25 0.33	0.29 0.38	0.34 0.45	0.28 0.36	0.32 0.40	0.39 0.50
Lot Size 1/2 Acre	0.16 0.25	0.20 0.29	0.24 0.32	0.19 0.28	0.23 0.32	0.28 0.36	0.22 0.31	0.27 0.35	0.32 0.42	0.26 0.34	0.30 0.38	0.37 0.48
Lot Size 1 Acre	0.14 0.22	0.19 0.26	0.22 0.29	0.17 0.24	0.21 0.28	0.26 0.34	0.20 0.28	0.25 0.32	0.31 0.40	0.24 0.31	0.29 0.35	0.35 0.46
Industrial	0.67 0.85	0.68 0.85	0.68 0.86	0.68 0.85	0.68 0.86	0.69 0.86	0.68 0.86	0.69 0.86	0.69 0.87	0.69 0.86	0.69 0.86	0.70 0.88
Commercial	0.71 0.88	0.71 0.88	0.72 0.89	0.71 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.90	0.72 0.89	0.72 0.89	0.72 0.90
Streets	0.70 0.76	0.71 0.77	0.72 0.79	0.71 0.80	0.72 0.82	0.74 0.84	0.72 0.84	0.73 0.85	0.76 0.89	0.73 0.89	0.75 0.91	0.78 0.95
Open Space	0.05 0.11	0.10 0.16	0.14 0.20	0.08 0.14	0.13 0.19	0.19 0.26	0.12 0.18	0.17 0.23	0.24 0.32	0.16 0.22	0.21 0.27	0.28 0.39
Parking	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97

^a Runoff coefficients for storm recurrence intervals less than 25 years.
^b Runoff coefficients for storm recurrence intervals of 25 years or more.

Source: Rawls, W.J.; S.L. Wong and R.H. McCuen, 1981, "Comparison of Urban Flood Frequency Procedures," Preliminary Draft, U.S. Department of Agriculture, Soil Conservation Service, Beltsville, MD.



REGION 3

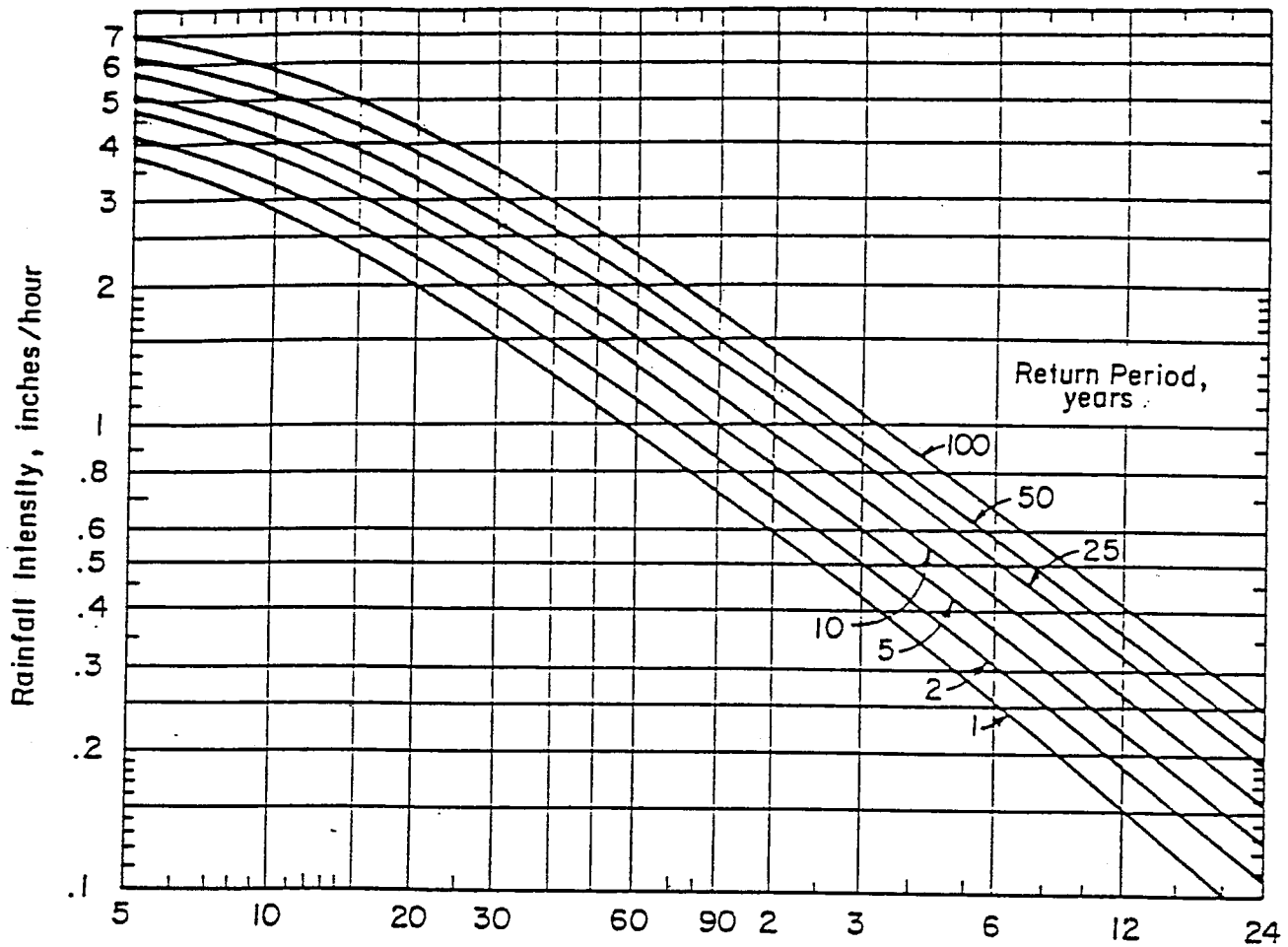
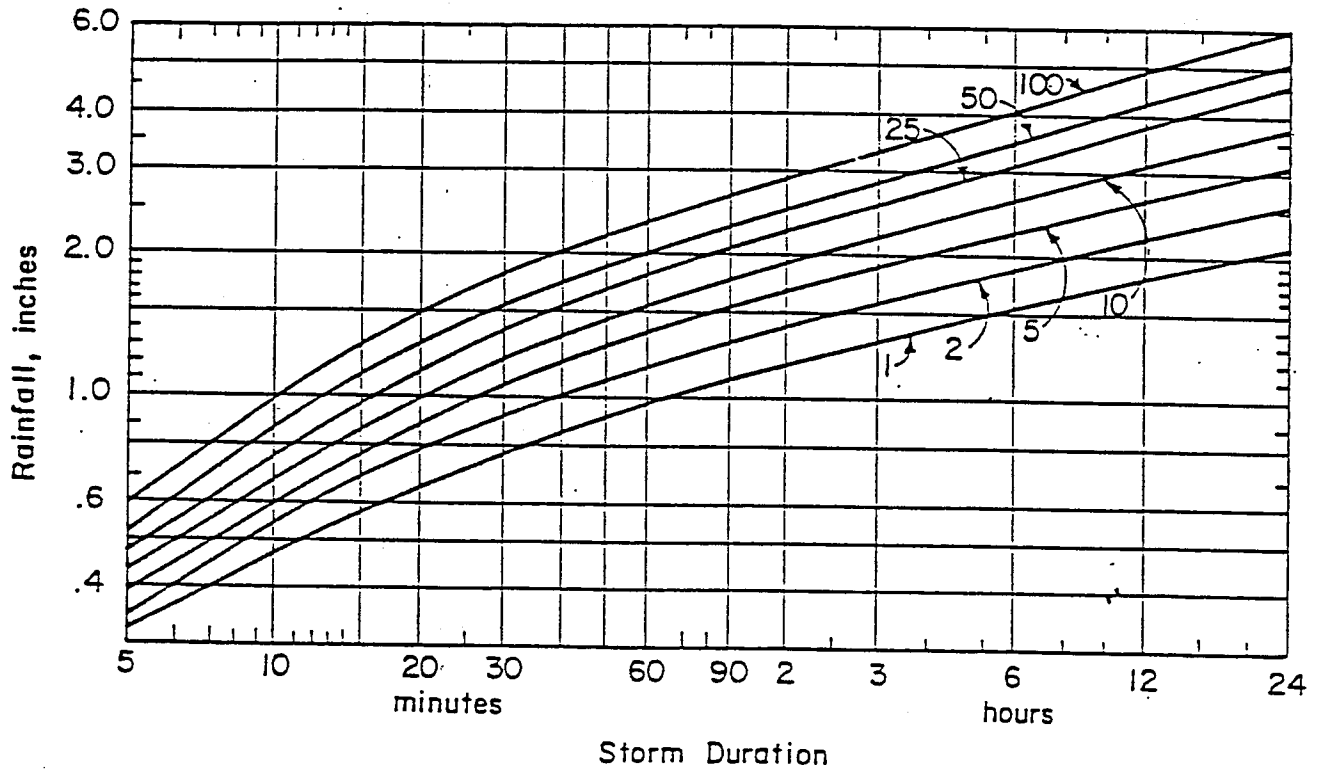


Figure 2.



Design Storm Curves for Region 3.

Source: "Field Manual of Pennsylvania Department of Transportation Storm Intensity-Duration Frequency Charts, PDT-IDF," PA DOT, FHA, May 1986.



Figure 3.

ANTI-SEEP COLLAR DESIGN

This procedure provides the anti-seep collar dimensions for only temporary sediment basins to increase the seepage length by 15% for various pipe slopes, embankment slopes and riser heights.

The first step in designing anti-seep collars is to determine the length of pipe within the saturated zone of the embankment. This can be done graphically or by the following equation, assuming that the upstream slope of the embankment intersects the invert of the pipe at its upstream end. (See embankment-invert intersection on the drawing below:

$$L_s = y (z + 4) \left[1 + \frac{\text{pipe slope}}{0.25\text{-pipe slope}} \right]$$

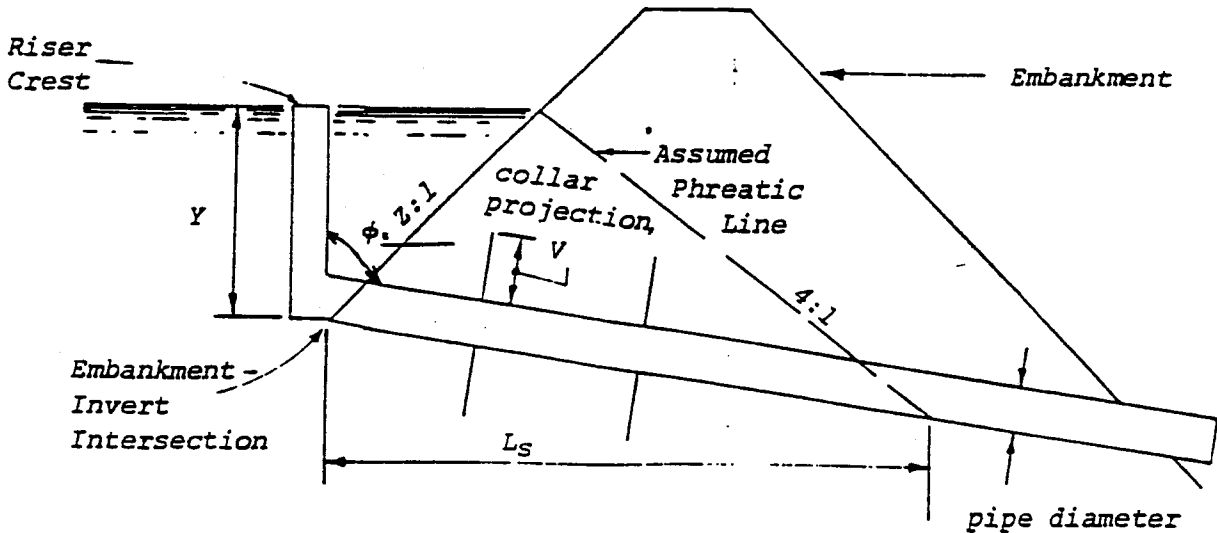
where: L_s = length of pipe in the saturated zone (ft.)

y = distance in feet from upstream invert of pipe to highest normal water level expected to occur during the life of the structure, usually the top of the riser.

z = slope of upstream embankment as a ratio of z ft. horizontal to one ft. vertical.

pipe slope = slope of pipe in feet per foot.

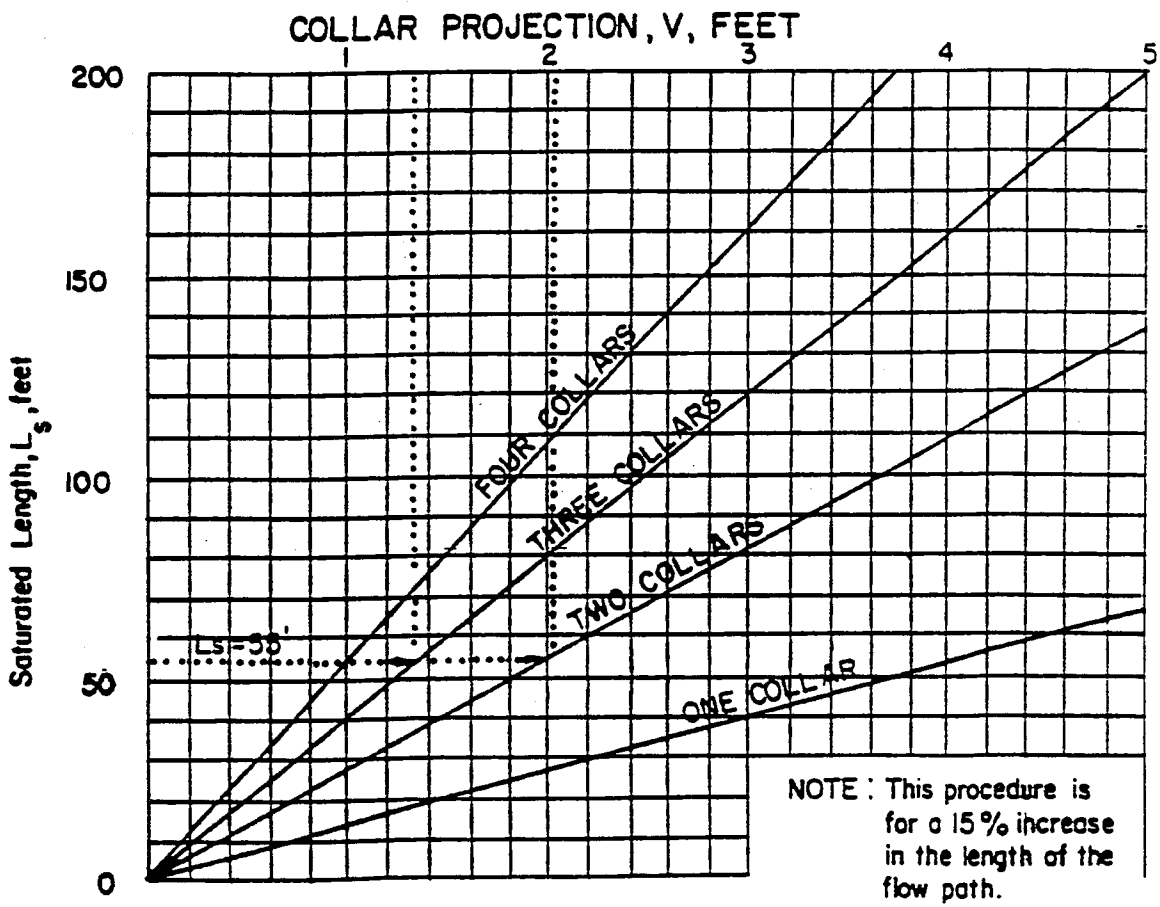
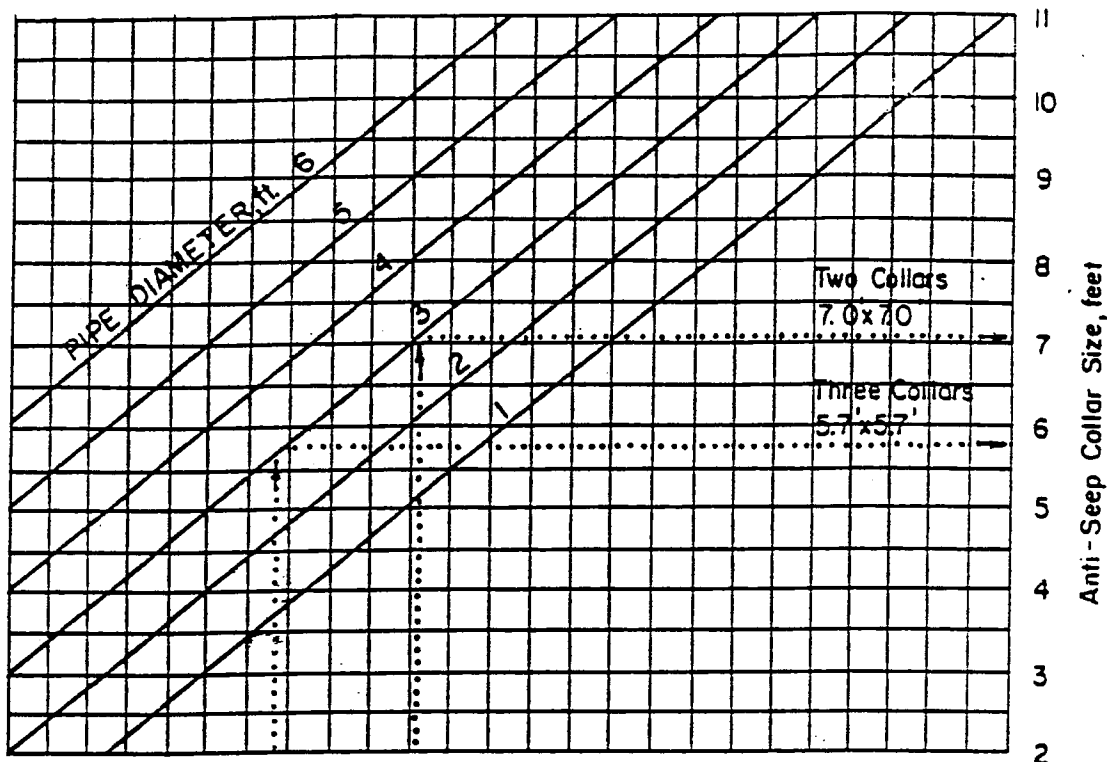
This procedure is based on the approximation of the phreatic line as shown in the drawing below:



SOURCE: "1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control," Maryland Department of the Environment, 1983.



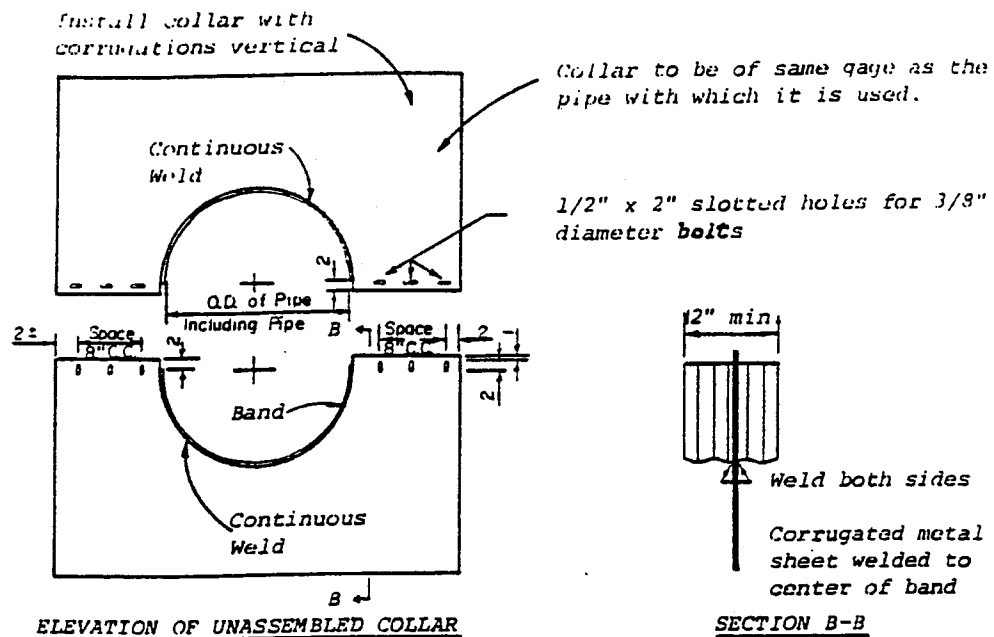
ANTI-SEEP COLLAR DESIGN



SOURCE: "1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control," Maryland Department of the Environment, 1983.



.



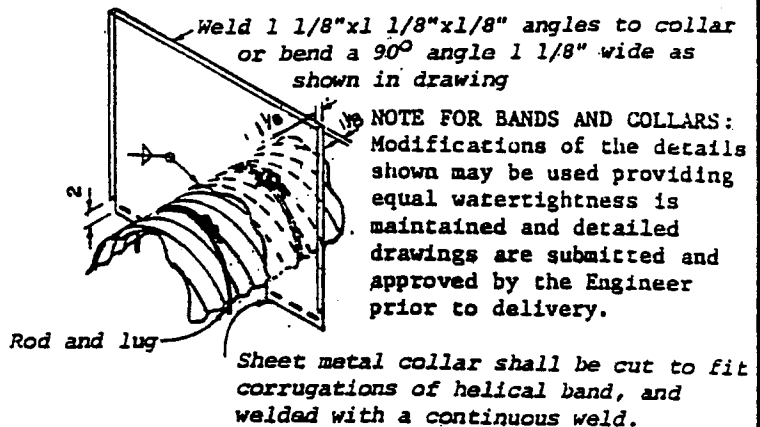
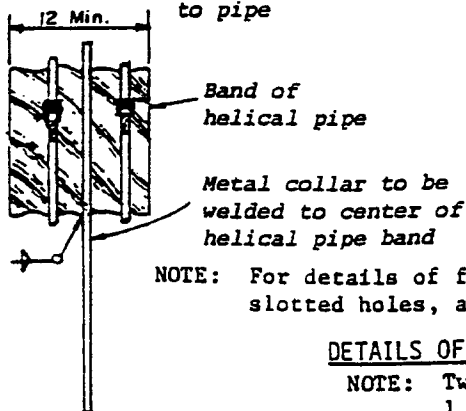
NOTES FOR COLLARS:

1. All materials to be in accordance with construction and construction material specifications.
2. When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
4. The lap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at time of installation.
5. Each collar shall be furnished with two 1/2" diameter rods with standard tank lugs for connecting collars to pipe.

DETAILS OF CORRUGATED METAL ANTI-SEEP COLLAR

Size and spacing of slotted openings shall be the same as shown for CM collar

Use rods and lugs to clamp bands securely to pipe



ISOMETRIC VIEW

DETAILS OF HELICAL PIPE ANTI-SEEP COLLAR

NOTE: Two other types of anti-seep collars are:

1. Corrugated metal, similar to upper detail, except shop welded to a short (4 ft.) section of the pipe and connected with connecting bands to the pipe.
2. Concrete, six inches thick formed around the pipe with #3 rebar spaced 15" horizontally and vertically.

PARTIAL ELEVATION

Ref: Engr. Field Manual

