

ORDINANCE 106

ROADS AND DRAINAGE FACILITIES

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## ORDINANCE 106

ORDINANCE REGULATING THE CONSTRUCTION; OPENING, AND  
DEDICATION OF ROADS, AND THE CONSTRUCTION OF DRAINAGE  
FACILITIES

## 106.1 DEFINITIONS

Definitions of words in this Ordinance are listed alphabetically in the Definitions Dictionary located at the beginning of the combined Ordinances of Delaware Township. These definitions are an integral part of the Ordinances of Delaware Township, which are incomplete without them.

## 106.2 APPROVAL REQUIRED

The plans (including a map or maps) of any road to be constructed, opened, and dedicated to public use must be prepared in duplicate and submitted, with a filing fee, to the Board of Supervisors for approval.

## 106.3 FEES

Fees required under the provisions of this Ordinance shall be set from time to time by resolution of the Board of Supervisors, along with a procedure for collecting them. No application shall be considered filed until all fees are paid.

## 106.4 PLANS

Plans must include whatever details are necessary to show clearly the land conditions where the proposed road will be constructed, including the following information:

1. The typical cross section of the road showing right of way width, pavement width and thickness, base course width and thickness, and shoulder width and thickness,
2. The plans and specifications for bridges.
3. The plans and specifications for drainage structures, including the elevation, capacity, and construction details, as well as the watershed area for which each drainage structure is designed.
4. The center line profile of the road, showing existing ground and finished grade elevations at one hundred (100) foot stations.
5. Identifications of the ground markers that will indicate the location of courses, property lines, and other items shown on maps.
6. Certification of the identity of every property owner along the right of way, together with evidence that every property owner joins in the submission of the plans of approval and releases any right to assert any claim against any person or political subdivision by reason of the construction, opening, dedication, or existence of the road the certification must be made by or behalf of the person(s) requesting approval of the plans and must be supported by appropriate evidence of the authority by which it is made.

106.5 BOND

Applicants must furnish to the Township a bond payable to Delaware Township in an amount equal to fifteen percent (15%) of the cost of construction of any road, drainage facility, or other required improvement dedicated, or to be dedicated, to the Township or, if this amount cannot be ascertained, in an amount agreed upon by the applicant and the Board of Supervisors, for a period of eighteen (18) months following completion of the work covered. The purpose of the bond is to insure the structural integrity and repair of the road or drainage facility. If the work is unsatisfactory, the Township may enforce the bond. If the proceeds of the bond are insufficient to make repairs, the Board of Supervisors may institute legal or equitable action to recover the amount necessary to complete the repairs.

106.6 CONSTRUCTION REQUIREMENTS A.

Road Systems

1. General

a. Roads shall be related to topography to produce reasonable grades, satisfactory drainage, and suitable building sites.

b. Roads in residential subdivisions shall be laid out to discourage through traffic, to continue existing or plotted streets, and to provide for adequate access to adjoining areas suitable for future subdivision by reserving rights of way to them. Wherever a tract to be subdivided borders an existing half or partial road, the other part of the road shall be plotted within the tract.

c. Roads that are extensions of, or obviously in alignment with, existing roads shall bear the names of the existing roads.

d. If lots are large enough to permit further subdivision, or, if a portion of a tract is not subdivided, road right of way adequate to permit further subdivision shall be provided. At least one (1) right of way shall be provided in each one thousand six hundred feet (1,600') of frontage on a public road, or on a collector street within the subdivision, to provide access to undeveloped land.

e. Dead-end roads that extend beyond one (1) lot shall be provided with a temporary turn-around, or shall be improved in accordance with the classification of the road to the full width of the right of way for the last seventy-five feet (75') of their length.

f. Rights of way shall be cleared as needed for road construction, utility installation, and other improvements.

2. Road widths

Road widths shall be measured from lot line to lot line. Width (in feet) by road classification are listed below:

	<u>Right of way</u>	<u>Travelway</u>	<u>Cartway</u>
Minor street	50	20	24
Collector street	60	20	30
Major street	80	24	44
Marginal access street*	40	20	30

\* In addition to the right of way the major street that it parallels

3. Road Alignment

a. Wherever road lines are deflected seven and one half (7 1/2) degrees or more within five hundred feet (500'), connection shall be made into horizontal curves.

b. To insure adequate sight distance, minimum center line radii for horizontal curves shall be as follows:

Minor streets:	one hundred feet (100')
Collector streets:	three hundred feet (300')
Major streets:	five hundred feet (500')

c. Except on minor streets, a minimum tangent of one hundred feet (100') shall be required between curves or deflection points.

d. A long, radius curve shall be preferred in all cases to a series of curves and tangents.

4. Road Grades

a. Parallel ditch grades shall not be less than one-half of one percent (0.5%).

b. Center line grades shall not exceed the following:

Minor streets: twelve percent (12%), but up to sixteen percent (16%) for separate five hundred foot (500') sections.

Collector streets: eight percent (8%), but up to twelve percent (12%) for separate five hundred foot (500') sections.

Major streets: six percent (6%), but up to eight percent (8%) for separate five hundred foot (500') sections.

For minor and collector streets, the maximum grades listed above may be repeated after a grade of eight percent (8%) or less is provided for a distance of at least five hundred feet (500').

c. Vertical curves shall be used at changes of grade exceeding one percent (1%) and to provide the following minimum sight distances for summit vertical curves:

Minor streets:	one hundred and fifty feet (150')
Collector streets:	three hundred feet (300')
Major streets:	five hundred feet (500')

d. Except on minor streets, sag vertical curves shall be a minimum of one hundred feet (100') lengths for each additional four percent (4%) algebraic difference in tangent grade.

- e. A leveling area having not greater than six percent (6%) grades shall be provided at all street intersections for a distance of fifty feet (50') from the center line of the road.

#### 5. Road Intersections

- a. Roads shall be laid out to intersect as nearly as possible at right angles. No road shall intersect another at an angle of less than sixty (60) degrees.
- b. Intersections involving the junction of more than two (2) roads are prohibited.
- c. Rights of way intersections shall be rounded by a tangential arc with a minimum radius of thirty feet (30').
- d. Intersections with major streets shall not be located less than eight hundred feet (800') apart, measured from center line to center line, except in commercial areas where the distance shall be less than five hundred feet (500').
- e. Excepting cul-de-sacs, roads entering opposite sides of another road shall be laid out either directly opposite one another or with a minimum of one hundred and sixty feet (160') between their center lines.

#### 6. Cul-de-sac roads

Roads permanently designed as cul-de-sacs shall not exceed one thousand two hundred feet (1,200') in length, nor service more than twenty-five (25) lots. They shall have at the closed end a turn-around with an outside right of way radius of not less than fifty feet (50'), and shall be improved in accordance with the classification of the road to a cartway radius of not less than forty feet (40').

#### 7. Construction of base and surface.

- a. All roads designed to serve no more than two (2) lots shall be constructed on an eight inch (8") compacted depth base course covered by two (2) coats of tar and chip or better. The base shall be increased in depth if considered necessary by the Township Engineer.
- b. The travelway of all other roads, including roads originally designed to serve not more than two (2) lots whenever any lots in addition to the original two (2) lots are to be served over such roads, must be considered (or reconstructed) in accordance to one of the following:

1. A six inch (6”) thick compacted depth base course of crushed stone or gravel and a two and on-half inch (2-1/2”) thick bituminous surface course of ID-2A in accordance with Pennsylvania Department of Transportation specification Form #408 (latest revision), or
2. A six inch (6”) thick compacted depth base course of crushed stone or gravel and a three inch (3”) thick bituminous surface course of FB-1 in accordance with Pennsylvania Department of Transportation Specification Form #408 (latest version), or

C. Drainage

1. At each road/driveway intersection where surface drainage water must be carried under the intersection, a culvert pipe not less than fifteen (15”) inches in diameter (and whose gauge conforms to current Pennsylvania Department of Transportation requirements) must be installed across the width of the driveway at the depth that drainage and soil conditions at that location mandate, the depth and manner of installation to be subject to approval by the Board of Supervisors.
2. Drainage culverts shall be provided:
  - a. To permit unimpeded flow of natural water courses.
  - b. To insure adequate drainage of all low points along the line of streets.
  - c. To intercept storm water runoff along streets at intervals reasonably related to the extent and grade of the area drained.
3. For watershed areas in excess of three hundred and twenty (320) acres, drainage systems must be designed in accordance with the standards of the Pennsylvania Department of Environmental Resources. The Board of Supervisors may request proof of such compliance,
4. For watershed areas of three hundred and twenty (320) acres or less, "Talbot's Formula" must be used for the computation of storm drainage systems. The coefficient in the formula shall be as follows;

<u>Average slope</u>	<u>Drainage Area</u>	<u>Coefficient “C”</u>
	0% to 3.9%	0.1
	4% to 7.9%	0.2
	8% to 11.9%	0.3
	12% to 15.9%	0.4
	16% to 19.9%	0.5
	20% and over	0.6

In no case shall any pipe of less than fifteen inches (15") diameter be used.

5. Proof of compliance with the standards of the Pennsylvania Department of Environmental Protection is required from the developer as part of the final subdivision plan.

**D. Paving Parking Areas**

1. In the Residential and Rural Residential Zones, all parking/access areas shall, at a minimum, be constructed of not less than six (6) inches of gravel consisting of compacted 2A modified stone.

2. In the Commercial Zone, all parking/access areas shall be constructed of bituminous surface treatment over eight (8") inches of compacted 2A modified in the event the bordering road is constructed of a gravel surface.

3. In the Commercial Zone, all parking/access areas shall be constructed of bituminous surface treatment over eight (8") inches of compacted 2A modified in the event the bordering road is constructed of a Tar and Chip surface.

4. In the Commercial Zone, all parking /access areas shall be constructed of an of eight (8") inch deep compacted base course of crushed stone or gravel and a two and one-half (2 ½") inch bituminous surface course of D-2 A in accordance with Pennsylvania Department of Transportation specification form number 408 (latest revision in the event the bordering road is constructed of a bituminous surface).

5. In the Commercial Zone only, in the event a permitted access road is upgraded, the parking/access area shall be upgraded within two (2) years from the date the road surface is upgraded and the Township of Delaware will entertain applications for extension of the two (2) year requirement contained herein upon showing of a hardship by the applicant who bears the burden of proof,

6. Ordinance is effective to application submitted after April 14, 1999. Existing businesses shall be grandfathered in.

**106.7 RESUBMISSION OF DISAPPROVED PLANS**

The reasons for disapproving plans shall be transmitted in writing to applicants, whereupon amended plans may be submitted to the Board of Supervisors.

**106.8 CONFERENCE WITH SUPERVISORS AND APPEAL**

Applicants may request a conference with the Supervisors to review the reasons for the disapproval of plans, this conference to be scheduled at the earliest date convenient to the Supervisors. If the plans remain disapproved after the conference, applicants may, within thirty (30) days, appeal to the Court of Common Pleas of the 60th Judicial District, Pike County, Pennsylvania.

**106.9 PENALTY**

Any person who violates any provision of the Ordinance or who resists or interferes with any officers, agents, or employees of the Township who, in accordance with the provisions of this Ordinance, are in the performance of their duty, shall, upon conviction thereof in a summary proceeding, be sentenced to pay a fine of not more than one hundred dollars (\$100). Each day's continuance of each violation shall constitute a separate offense. All fines collected for the violation of this Ordinance shall be paid to Delaware Township. See Ordinance 208.