

NOTTINGHAM TOWNSHIP

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

ORDINANCE #32

TABLE OF CONTENTS

| <u>SECTION</u> | | <u>PAGE</u> |
|----------------|---|-------------|
| Section I | Purpose, Authority, Title and Jurisdiction | 1 |
| Section II | Submission Procedures | 2 |
| | 200 General | 2 |
| | 210 Submission of Feasibility Review | 2 |
| | 220 Feasibility Review | 3 |
| | 230 Submission of Preliminary Plan | 4 |
| | 240 Review of Preliminary Plan | 5 |
| | 250 Submission of Final Plan | 5 |
| | 260 Review of Final Plan | 7 |
| | 270 Recording of Final Plan | 8 |
| | 280 Plans Exempted from Standard Procedure | 9 |
| Section III | Plan Requirements | 10 |
| | 300 Feasibility Review | 10 |
| | 310 Preliminary Plan | 11 |
| | 320 Final Plans | 13 |
| Section IV | Design Standards | 16 |
| | 400 Application | 16 |
| | 410 General Standards | 16 |
| | 420 Block and Lot Design Standards | 17 |
| | 430 Street Design Standards | 20 |
| | 440 Sanitary Sewage Disposal | 25 |
| | 450 Water Supply and Distribution Systems | 26 |
| | 460 Storm Drainage Systems | 27 |
| | 470 Underground Utilities and Easements | 31 |
| | 480 Mobile Home Park Standards | 32 |
| | 490 Environmental Protection and Open Space Preservation | 36 |
| Section V | Improvement Specifications | 44 |
| | 500 General Requirements | 44 |
| | 510 Required Improvements | 44 |
| | 520 Improvements Guarantee Procedure | 46 |
| | 530 Approval of Improvements and Release of Performance Guarantee by the Municipal Governing Body | 46 |
| Section VI | Administration | 48 |
| | 600 Amendments | 48 |
| | 610 Appeals | 48 |
| | 620 Penalties | 48 |
| | 630 Validity and Conflict | 48 |
| | 640 Fees | 49 |
| Section VII | Definitions | 50 |

SECTION I - PURPOSE, AUTHORITY, TITLE, AND JURISDICTION

100 **Purpose**

101 The purpose of this Ordinance is to regulate subdivision and land development within the Township of Nottingham, Washington County, Pennsylvania.

110 **Authority and Title**

111 This Ordinance is enacted pursuant to the Pennsylvania Municipalities Planning Code and may be cited as the Nottingham Township Subdivision and Land Development Ordinance.

120 **Jurisdiction**

121 This Ordinance shall apply in the following circumstances:

121.1 To all subdivision and land development plans sub-mitted after the effective date of this Ordinance.

121.2 To all subdivision and land development plans, pre-viously approved in accordance with any law or regulation then applicable, the development of which has not been substantially completed in accordance with the terms of such approval within five (5) years of such approval.

SECTION II - SUBMISSION PROCEDURES

200 General

- 201 **Feasibility Review** - Review materials shall be submitted to the Designated Municipal Official (D.M.O. shall be the Secretary of the Planning Commission) for discussion with the Township Planning Commission as to the suitability of a parcel of land for a specific subdivision or land development use and for direction or advise from the Township Planning Commission. The feasibility review materials shall be submitted to the Township Engineer and the Washington County Planning Commission.
- 202 **Preliminary Plan** - Plans, supplementary data, and fees shall be submitted to the D.M.O. for distribution to various re- view bodies. All reviews shall be submitted to the Township Planning Commission which shall review the plan and recommend action to the township governing body. The township governing body shall take action and advise the applicant in writing of their decision.
- 203 **Final Plan** - Plans, supplementary data, and fees shall be submitted to the D.M.O. for distribution to various review bodies. The final plan shall be submitted within five (5) years of preliminary plan approval. All reviews shall be submitted to the Township Planning Commission which shall review the plan and recommend action to the township governing body. The township governing body shall take action on the plan and advise the applicant in writing of their decision. As a condition of approval, the applicant shall enter into improvement and maintenance agreements with the township governing body. No permits shall be issued until said agreements have been executed and secured to the satisfaction of the Township Solicitor and until the approved final plan has been recorded in the County Recorder of Deeds Office.

210 Feasibility Review Submission

- 211 Feasibility review maps and materials shall be submitted for all proposed subdivisions and land developments, for purposes of discussion between the Township Planning Commission and the developer, and for the review of the Washington County Planning Commission of Washington County.
- 212 Seven (7) copies of all feasibility review maps and materials as set forth in Section 300, shall be submitted to the D.M.O.
- 213 The D.M.O. shall review five (5) copies of feasibility review maps and materials to the Township Planning Commission for its review and recommendations.
- 214 The D.M.O. shall refer one (1) copy of feasibility review maps and materials to the Township Engineer for review and recommendations except for plans exempted from standard procedure.

- 215 The D.M.O. shall refer one (1) copy of feasibility review maps and materials to the Washington County Planning Commission for review and recommendations.

220 Feasibility Review

- 221 When feasibility review maps and materials have been submitted to the Township Planning Commission, the data presented will be reviewed by that body at its next regular meeting, provided that submission has occurred no less than (10) days prior to such scheduled meeting.

- 222 The Township Planning Commission shall review the feasibility review data to determine the development potential of the site, as indicated by the natural features analysis presented. The general development concepts of the developer will be reviewed to determine their compatibility with the development potential of the site and with relevant plans and ordinances. Also, the feasibility review stage is designed to offer the developer an opportunity to informally discuss his plans for the proposed subdivision or land development with the Township Planning Commission.

- 223 No recommendations shall be made by the Township Planning Commission until the Commission has received and considered the written report of the Washington County Planning Commission of Washington County or until forty-five (45) days have passed from the date that the plans were forwarded to the Washington County Planning Commission.

- 224 Within sixty (60) days of submission of feasibility review maps and materials to the Township Planning Commission, the Commission shall make any recommendations to the developer which it deems necessary or advisable in the public interest in order to provide an acceptable subdivision or land development plan for the site. Within fifteen (15) days after such meeting, the Secretary or the Township Planning Commission shall send written notice of the Commission's recommendations to the following:

- 224.1 The developer or his representative;
- 224.2 The township governing body;
- 224.3 The Washington County Planning Commission.

- 225 Within one year after completion of the feasibility review by the Township Planning Commission, the developer shall submit a Preliminary Plan.

230 Submission of the Preliminary Plan

- 231 Preliminary Plans and all required supplementary data for all proposed subdivisions and land developments shall be submitted to the Designated Township Official (also known as the D.M.O.)

- 232 If the Preliminary Plan submission complies with Section 310 of this Ordinance, the Designated Township Official shall accept the Preliminary Plan for distribution to the various review bodies.
- 233 Official submission of a Preliminary Plan to the D.M.O. by a developer shall comprise:
- 233.1 Twelve (12) copies of a completed Application for Review of Preliminary Subdivision Plans;
- 233.2 Submission of twelve (12) black-on-white or blue-on-white prints on paper of the Preliminary Plan which shall fully comply with the provisions of this Ordinance as set forth in Section 310;
- 233.3 Submission of twelve (12) copies of all required supplemental information as set forth in Section 316.
- 234 The D.M.O. shall refer preliminary plan submission materials to the various review bodies as follows:
- 234.1 Twelve (12) applications, twelve (12) plan prints, and twelve (12) copies of the supplemental information to the Township Planning Commission.
- 234.2 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Township Engineer;
- 234.3 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the township governing body.
- 234.4 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the ~~township governing body,~~ ^{Twp. Sewage Enforcement Office LLC}
- 234.5 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Washington County Planning Commission;
- 234.6 One (1) plan print, and one (1) copy of supplemental information relevant to the sewage disposal shall be submitted to the Pennsylvania Department of Environmental Resources.
- 235 Additional copies of the Preliminary Plan materials shall be referred by the D.M.O. to the respective agencies in the following circumstances:
- 235.1 Whenever the property being subdivided or developed abuts a State Legislative Route, one (1) application and one (1) plan permit shall be submitted to the Pennsylvania Department of Transportation District Office;
- 235.2 Whenever a proposed subdivision or land development is located adjacent to another township, one (1) application and one (1) plan print shall be referred to that township.

240 Review of Preliminary Plan

241 By the Township Planning Commission

- 241.1 When a Preliminary Plan has been officially submitted, such plan shall be placed on the agenda of the planning Commission for review at its next regular monthly meeting, provided that such official submission has occurred no less than ten (10) calendar days prior to such regular meeting. The Planning Commission may hold a Public Hearing on the Preliminary Plan at this time.
- 241.2 The Planning Commission shall review the Preliminary Plan to determine its conformance with the standards contained in this Ordinance and other applicable township ordinances, and shall require or recommend such changes and modifications as it deems necessary.
- 241.3 No action shall be taken by the Township Planning Commission with respect to a Preliminary Plan until the Township Planning Commission has received and considered the written report of the Washington County Planning Commission provided, however, that if the Washington County Planning Commission shall fail to report thereon within forty-five (45) days after receipt of a Preliminary Plan, then the Township Planning Commission may officially act without having received and considered such report.
- 241.4 Within sixty (60) days after submission of the Preliminary Plan, the Planning Commission shall recommend to the Township Governing Body, in writing, that the Preliminary Plan be approved, conditionally approved, or disapproved together with the documented findings upon which the recommendation is based.

242 By the Township Governing Body

- 242.1 Within ninety (90) days following the date of the regular meeting of the Planning Commission next following the date of the application (unless the next meeting does not fall in a 30 day period following the date of the application in which case the 90 day period commences on the 30th day following the date of the application), the Township Governing Body shall, in accordance with the provisions of relevant ordinances and considering the recommendations of the Planning Commission, take action by approving conditionally approving or disapproving the Preliminary Plan and document the findings upon which that action is based, in writing to: (however, in no case shall the decision be communicated to the applicant more than fifteen (15) days from the date that the decision has been made).
- 242.12 The D.M.O.;
- 242.13 The Township Planning Commission;
- 242.14 The Township Engineer;
- 242.15 The Township Sewage Enforcement Officer;
- 242.16 The Washington County Planning Commission.

250 Submission of the Final Plan

- 251 Within five (5) years - 60 months after approval of the Pre-

liminary Plan, a Final Subdivision or Land Development Plan and all required supplemental data shall be submitted to the D.M.O. Any extension of time may be granted by the Township Governing Body upon written request. Otherwise, the plan submitted may be considered as a new Preliminary Plan.

- 252 The Final Plan shall conform in all significant respects to the Preliminary Plan as previously reviewed by the Township Planning Commission and approved by the Township Governing Body and shall incorporate all modifications required by the Township Governing Body in its Preliminary Plan approval. The Township Planning Commission may, however, accept a Final Plan modified so as to reflect any substantial changes which have occurred on the site of the proposed subdivision, or in its surroundings, since the time of Preliminary Plan review.
- 253 The Final Plan may be submitted in sections or stages each covering a reasonable portion of the entire proposed subdivision as shown on the reviewed Preliminary Plan, in accordance with the regulations set forth in Section 320. In the case of the Final Subdivisions or Land Development Plan which is to be submitted in sections or stages over a period of years, the time between submission of application for final approval of each stage or section shall be no greater than twelve (12) months.
- 254 Final plans and all required supplementary data set forth in Section 320 for all proposed subdivisions and land developments shall be submitted to the D.M.O.
- 255 Official submission of a Final Plan to the D.M.O. by a developer shall comprise:
- 255.1 Twelve (12) copies of a completed Application for Review of Final Subdivision Plan;
 - 255.2 Submission of Twelve (12) black-on-white or blue-on-white prints on paper of the Final Plan which shall fully comply with the provisions of this Ordinance as set forth in Section 320.
 - 255.3 Submission of twelve (12) copies of all required supplemental information as set forth in Section 320.
- 256 The D.M.O. shall refer Final Plan submission materials to the various review bodies as follows:
- 256.1 Six (6) applications, six (6) plan prints, and six (6) copies of the supplemental information to the Township Planning Commission;
 - 256.2 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Township Engineer;
 - 256.3 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Township Governing Body;
 - 256.4 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Township Sewage Enforcement Officer;
 - 256.5 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Township Solicitor;
 - 256.6 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Washington County Planning Commission.
- 257 Additional copies of the Final Plan materials shall be referred by the D.M.O. to the respective agencies in the following circumstances:

- 257.1 Whenever the property being subdivided or developed abuts a State Legislative Route, and the plan differs from plans previously submitted to Penn Dot with references to access points, proposed external road improvements, or traffic impact, one (1) application and one (1) plan print shall be submitted to the Pennsylvania Department of Transportation District Office.
- 257.2 Whenever the subdivision or land development requires a soil erosion and sedimentation control permit, as described in Section 491.5 of this Ordinance, one (1) application, one (1) plan print, and one (1) copy of supplemental information shall be submitted to the County Conservation District.
- 257.3 Whenever a proposed subdivision or land development is located adjacent to another township, one (1) application and one (1) plan print shall be referred to that township.

260 Review of Final Plan

261 By the Township Planning Commission

- 261.1 When a Final Plan has been officially submitted, such plan shall be placed on the agenda of the Planning Commission for review at its next regular monthly meeting, provided that such official submission has occurred no less than ten (10) calendar days prior to such regular meeting. The Planning Commission may hold a Public Hearing on the Final Plan at this time.
- 261.2 The Planning Commission shall review the Final Plan to determine its conformance with the standards contained in this Ordinance and other applicable township ordinances and shall require or recommend such changes and modifications as it deems necessary.
- 261.3 No action shall be taken by the Township Planning Commission with respect to a Final Plan until the Township Planning Commission has received and considered the written report of the Washington County Planning Commission or until forty-five (45) days have passed from the date that the plans were forwarded to the Washington County Planning Commission.

261.4 Within sixty (60) days after submission of the Final Plan, the Planning Commission shall recommend to the Township Governing body, in writing, that the Final Plan be approved, conditionally approved, or disapproved together with the documented findings upon which the recommendation is based. The action of the Township Planning Commission shall be noted, together with the date of action and signatures of its Chairman and Secretary on the Record Plan.

262 By the Township Governing Body

262.1 Within ninety (90) days following the date of the regular meeting of the Planning Commission next following the date of the application (unless the next meeting does not fall in a 30 day period following the date of the application in which case the 90 day period commences on the 30 day following the date of the application), the Township Governing Body, shall, in accordance with the provisions of relevant ordinances and considering the recommendations of the Planning Commission, take action by approving, conditionally approving or disapproving the Final Plan and document the findings upon which that action is based, in writing to : (however, in no case shall the decision be communicated to the applicant more than fifteen (15) days from the date that the decision has been made).

- 262.11 The developer or his representative;
- 261.12 The D.M.O.;
- 261.13 The Township Planning Commission;
- 261.14 The Township Engineer;
- 261.15 The Township Sewage Enforcement Officer;
- 261.16 The Washington County Planning Commission;

262.2 The action of the Township Governing Body shall be noted, together with the date of action and signatures of its Chairman and Secretary, on the Record Plan.

270 Recording of the Final Plan

271 After completion of the procedures set forth in Section 520 and after the Final Plan is approved by the Township Planning Commission and the Township Governing Body, six (6) copies of the Final Plan shall be endorsed by the Township Governing Body. The signature of the Washington County Planning Commission shall also be placed on the plans indicating Washington County Planning Commission review of the plans.

272 The Record Plan shall be a clear and legible print of a type and material required by the County Recorder of Deeds.

273 After endorsement by the Township Planning Commission, the Township Governing Body, and the Washington County Planning Commission, the developer shall file the Record Plan with the County Recorder of Deeds within ninety (90) days of the date of Final Approval by the Township Governing Body. If the developer fails to record the Final Plan within such period, the action of the Township Governing Body shall be null and void, unless an extension of time is granted in writing by the Township

Governing Body upon written request by the developer.

- 274 At the time the Record Plan is endorsed by the Township authorities, the Township Planning Commission shall receive one (1) reproducible print of the Final Plan approved for their permanent files. The reproducible print for the township shall be a material as required by the Township Planning Commission.
- 275 At the time the Record Plan is signed by the Washington County Planning Commission, the Washington County Planning Commission shall receive one (1) endorsed black-on-white or blue-on-white print of the Final Plan as approved by the Township Governing Body.

280 Plans Exempted From Standard Procedures

- 281 In the case of any proposed residential subdivision which involves no more than three (3) lots and does not involve the provisions of any new street or easement for access (i.e. one in which all proposed lots will have frontage on an existing public street), the following procedure may be followed:
- 281.1 The applicant shall prepare and submit a feasibility review plan in accordance with the requirements of Section 300, Paragraphs 301.1, 301.2, and 301.3 of this ordinance.
- 281.2 The feasibility review will be processed according to the provisions of Section 210 and 220 of this ordinance.
- 281.3 Within one (1) year of the completion of the feasibility review by the Township Planning Commission, the applicant shall submit a Final Plan in accordance with the requirements of Section 321 of this ordinance. An extension of time may be granted by the Township Governing Body upon written request. Otherwise, the plan submitted may be considered as a feasibility review. (Section 321 is under heading Section 320-Final plans).
- 281.4 The final plan submission shall be processed according to the provisions of Section 250 and 260.
- 281.5 If the plan receives final approval, the provisions of Section 270 shall apply.
- 281.6 Location of proposed residential dwelling should be shown on Final Plan.

SECTION III - PLAN REQUIREMENTS

300 Feasibility Review

- 301 Before submission of the Preliminary Plan by the developer maps and materials shall be submitted by the developer to the township. This material will enable the township to determine the potential of the proposed subdivision or land development tract for development and the general feasibility of the developer's plans for the tract. The feasibility review submission will include the following maps and materials.
- 301.1 A key map, for the purpose of locating the property being subdivided, drawn at scale not smaller than one (1) inch equals two thousand (2,000) feet and showing the relation of the property, differentiated by tone or pattern, to adjoining property and to all streets, roads, and township boundaries existing within one (1) mile of any part of the property. The key map shall be based on USGS quad sheet maps.
- 301.2 A map illustrating an analysis of natural drainage patterns and water resources within the proposed sub-division tract, including delineation of streams, natural drainage swales, ponds and lakes, wetlands, flood plains subject to a one hundred (100) year flood frequency, and permanent and seasonal high water table areas. The map shall be based on USGS quad sheets, County Soil Survey Maps, and the flood boundary and floodway map from the Township Flood Insurance Study, when available.
- 301.3 A map illustrating an analysis of types of soils present within the proposed subdivision tract. The map should include delineation of prime agricultural soil areas, soils with shallow depth to bedrock, soils most susceptible to erosion, soils most suitable for urban development, and soils generally suitable for on-lot sewage disposal. The map shall be based on the County Soil Survey.
- 301.4 A topographic map of the site based on USGS quad sheets.
- 301.5 A map delineating additional significant physical features within the proposed subdivision tract, such as woodland areas, large trees, rock outcroppings, and scenic views. The map shall be based on USGS quad sheets and on-site survey work.
- 301.6 Where feasible and legible, the analysis involved in Sections 301.1 through 301.5 may be illustrated on one or a combination of composite maps. The combined impact of the natural characteristics upon the development potential of the tract shall be clearly illustrated on the map or maps.
- 301.7 A letter of intent and a sketch of the proposed sub-division or land development tract at a scale of one (1) inch equals one hundred (100) feet explaining and illustrating the developer's general development concepts for the tract. The type of development, density of development, form of ownership, circulation patterns, and means of providing major utility service should be explained and illustrated. The sketch may be based on deed and tax map information.

310 Preliminary Plan

- 311 ✓ The Preliminary Plan of a proposed subdivision shall be clearly and legibly drawn to a scale of one (1) inch equals fifty (50) feet or one (1) inch equals one hundred (100) feet.
- 312 ✓ The original drawing and all submitted prints shall be made on sheets of one of the following sets of dimensions.
- 312.1 Twenty-four (24) inches by thirty-six (36) inches;
- 313 If the Preliminary Plan requires more than one sheet, a key diagram illustrating relative location of the several sections shall be drawn on each sheet.
- 314.1 Name and address of record owner;
- 314.2 Name of developer if different from owner;
- 314.3 Name of the proposed subdivision;
- 314.4 Name of the township or townships within which sub-division is proposed;
- 314.5 Names of all adjoining subdivisions, if any, and the names of owners of all adjacent unplotted land;
- 314.6 Name, address, license number, and seal of registered engineer, or surveyor responsible for the subdivision plan;
- 314.7 North point, graphic scale, written scale, and date including the month, day and year that the original drawing was completed, and the month, day and year that the original drawing was revised, for each revision.
- 314.8 A key map, for the purpose of locating the property being subdivided, drawn at a scale not smaller than one (1) inch equals two thousand (2,000) feet and showing the relation of the property, differentiated by tone, or pattern, to adjoining property and to all streets, roads and township boundaries, within one (1) mile of any part of the property.
- 314.9 Total tract boundaries of the property being sub- divided, showing bearings and distances, and a state- ment of total acreage of the property;
- 314.10 Tax map sheet, block, and lot numbers within the proposed subdivision tract obtained from the county tax assessor's office;
- 314.11 The zoning district or districts within which the pro- posed subdivision is located;
- 314.12 All existing buildings or other structures within the proposed subdivision tract;
- 314.13 All existing streets, including streets of record (recorded but not constructed), on or adjoining the tract, including names, right-of-way widths, pavement widths and approximate grades;
- 314.14 All existing sewer lines, storm sewers, water lines, fire hydrants, utility transmission lines, culverts, bridges, railroads, or other man-made features within the proposed subdivision tract and within two hundred (200) feet of the boundaries of the proposed subdivision tract;

- 314.15 Location, width, and purpose of existing easements and utility rights-of-way within two hundred (200) feet of the proposed subdivision tract;
- 314.16 Contour lines at vertical intervals of not more than two (2) feet for land with average natural slope of five (5) percent or less, and at intervals of not more than five (5) feet for land with average natural slope exceeding five (5) percent. Location and elevation of the date to which contour elevations refer shall be the closest United States Geologic Survey established benchmark, where available.
- 315 The full plan of proposed development, including:
- 315.1 Location and width of all streets and rights-of-way, with a statement of any conditions governing their use;
- 315.2 Suggested street names;
- 315.3 Utility easement locations;
- 315.4 Building setback lines along each street;
- 315.5 Lot lines with approximate dimensions;
- 315.6 A statement of the intended use of all non-residential lots and parcels.
- 315.7 Lot numbers, a statement of total number of lots and parcels and the lot size in square feet or acres for each lot;
- 315.8 Sanitary and/or storm sewers (and other drainage facilities), with the size and material of each indicated, and any proposed connections with existing facilities;
- 315.9 Parks, playgrounds and other areas dedicated or reserved for public or common use, with any conditions governing such use;
- 315.10 Location, width and purpose of proposed easements and utility rights-of-way;
- 315.11 Copies of the proposed deed restrictions and protective and restrictive rights-of-way;
- 316 The preliminary Plan shall be accompanied by the following supplementary data unless the Township Planning Commission has determined that the submission of such data is not necessary:
- 316.1 Preliminary profiles, typical cross-sections and specifications for proposed street, sanitary sewer, water system improvements, and storm drainage in accordance to the design standards of Section 430, 440, 450, and 460, respectively;
- 316.2 A completed planning module for land development including soil and representative percolation tests, where applicable, and information necessary for the Township Governing Body to make a decision on revising or supplementing the Official Plan for sewage facilities;
- 316.3 A storm drainage plan for the proposed subdivision tract which conforms to design requirements for storm drainage set forth in Section 460;
- 316.4 A landscape plan, where applicable, according to the standards set forth in Section 492.4, Tree Preservation and Planting;

- 316.5 In the case of subdivision or land development plans to be developed in stages or sections, over a period of time, a map delineating each stage, or section of the proposed subdivisions or land development consecutively numbered so as to illustrate phasing of development and a schedule indicating the approximate time for which application for final approval of each stage or section are intended to be filed;
- 316.6 Preliminary designs of any bridges or culverts which may be required. Such designs shall meet all applicable requirements of the Pennsylvania Department of Environmental Resources - Division of Dams and Encroachments and/or the Pennsylvania Department of Transportation;
- 316.7 A map illustrating the entire contiguous holdings of the landowner indicating the area or scope of ultimate proposed subdivision and delineating the area which the Preliminary Plan encompasses;
- 316.8 A sketch map of the proposed road system for the remainder of the area not included in the Preliminary Plan.
- 316.9 In the case of a preliminary plat calling for the installation of improvements beyond the five-year period, a schedule shall be filled by the landowner.

320 Final Plans

- 321 The final plans shall conform to the standards and data requirements set forth for Preliminary Plans in Section 311 through 315 of this Ordinance.
- 322 It shall not be necessary to resubmit supporting maps and data submitted with the Preliminary Plan, as set forth in Section 316 of this ordinance, provided that no change has occurred.
- 323 The following additional data shall be illustrated on the Final Plan:
- 323.1 The latest source of title to the land as shown by the deed, page number and book of the County Recorder of Deeds;
- 323.2 The total tract boundary lines of the area being subdivided with accurate distances to hundredths of a foot and bearing to fifteen (15) seconds. These boundaries shall be determined by accurate survey in the field, to an error of closure not to exceed one (1) foot in ten thousand (10,000) feet. The tract boundary shall be subsequently closed and balanced. The boundary(s) adjoining additional unplatted land of the subdivider (for example, between separately-submitted Final Plan sections), however, are not required to be based upon field survey, and may be calculated. The location and elevation of all boundary line (perimeter) monuments shall be indicated, along with a statement of the total area of the property being subdivided. In addition, the engineer or surveyor shall certify to the accuracy of the survey, the drawn plan, and the placement of the monuments;

- 323.3 All lot lines shall be completely dimensioned in feet if straight, and by designating length of arc and radius (in feet) and central angle (in degrees, minutes, and seconds) if curved. All internal angles within the lots shall be designated to within fifteen (15) seconds.
 - 323.4 The proposed building setback or the proposed placement of each building;
 - 323.5 All easements or right-of-way where provided for or owned by public services and any limitations on such easements or rights-of-way. Rights-of-way shall be shown and accurately identified on the plan. Easements shall either be shown or specifically described on the plan. Easements should be located in cooperation with the appropriate public utilities;
 - 323.6 Such private deed restrictions as may be imposed upon the property as a condition to sale, together with a statement of any restrictions previously imposed which may affect the title to the land being subdivided;
 - 323.7 If the subdivision proposes a new access point to a state legislative route, the feasibility report from Penn Dot for the highway occupancy permit shall be attached.
 - 323.8 A certification of ownership, acknowledgement of plan and offer of dedication shall be lettered on the plan, and shall duly acknowledged and signed by the owner of the property and notarized;
 - 323.9 A signature block for certification of approval of the plan by the Township Planning commission and Township Governing Body;
 - 323.10 A signature block for certification of review of the plan by the Washington County Planning Commission;
 - 323.11 Space shall be left along the lower edge of the sheet, in order that the County Recorder of Deeds may acknowledge receipt and recording of the plan when it is presented.
 - 323.12 If the Final Plan requires more than one sheet, a key diagram showing the relative location of the several sections shall be drawn on each sheet.
- 324 The Final Plan shall be accompanied by the following:
- 324.1 Plans showing:
 - 324.11 Location, size, and invert elevation of all sanitary sewer, water distribution and storm drainage systems and the location of all manholes, inlets, and culverts;
 - 324.12 Final profiles, cross-sections, and specifications for proposed streets, sanitary sewers, water distribution systems, and storm drainage systems shall be shown on one or more separate sheets.

- 324.2 Documentation from the Sewage Enforcement Officer that each lot has been tested for on-lot sewage systems (where applicable).
 - 324.3 A copy of the Department of Environmental Resources acceptance or approval of the planning module.
 - 324.4 A copy of the permit granted by the Pennsylvania Department of Environmental Resources for a private centralized sanitary sewer system, where applicable.
 - 324.5 A copy of an agreement document with the governmental authority or public authority which is to provide the water supply for the public water supply system (where applicable).
 - 324.6 A copy of a permit granted by Pennsylvania Department of Environmental Resources for a private centralized water system (where applicable).
 - 324.7 A completed and executed copy of the Subdivision improvements Agreement as agreed upon by the developer and the Township Governing Body.
 - 324.8 A performance guarantee in the amount of one hundred ten (110) percent of the cost of all required improvements as set forth in Section 520 as estimated by the Township Engineer in a form and with surety approved by the Township Solicitor, guaranteeing the construction and installation of all such improvements with a stated period which shall not be longer than one (1) year from the date on the Final Subdivision Approval. Where the Final Plan is submitted in stages or sections, the amount of the guarantee may also be provided in stages if acceptable to the Township Governing Body.
 - 324.9 A maintenance guarantee in an amount of not less than fifteen (15) percent of the Township Governing Body's estimate of the cost of all required improvements as set forth in Section 520. This guarantee assures that the developer shall maintain all such improvements in good condition for a period of eighteen (18) months after completion of construction and installation of all such improvements and acceptance of all such improvements by the Township Governing Body.
 - 324.10 An erosion and sedimentation control plan developed in accordance with Part IV, paragraph 44 of the Soil Erosion and Sedimentation Control Manual issued by the Department of Environmental Resources.
 - 324.11 A legal description of all areas offered for dedication.
- 325 In the case of a subdivision or land development proposed to be developed in stages or sections over a period of years, Final Plan requirements as listed in Section 321 through 324 shall apply only to the stage or section for which Final Approval is being sought. However, the Final Plan presented for the stage or section must be considered as it relates to information presented for the entire subdivision or land development in the application for Preliminary Approval.

SECTION IV - DESIGN STANDARDS

400 Application

- 401 The design standards and requirements outlined in this section will be utilized by the Township Planning Commission and Governing Body in determining the adequacy of all plans for proposed subdivisions and land developments.
- 402 Development shall be planned, reviewed, and carried out in conformance with all municipal, state, and other applicable laws and regulations.
- 403 Wherever other township ordinance or regulations impose more restrictive standards and requirements than those contained herein, such other regulations shall be observed.

410 General Standards

- 411 Land shall be suited to the purpose for which it is to be subdivided. Land with unsafe or hazardous conditions such as open quarries, unconsolidated fill, steep slopes, or flood prone areas shall not be subdivided unless the subdivision plan provides for adequate safeguards which are approved by the Township Planning Commission and Governing Body.
- 412 Consideration shall be given to applicable provisions of the Township Comprehensive Plan the Washington County Planning Commission's Comprehensive Plan for Washington County, emphasizing future school sites, recreation sites, water supply and sewage treatment systems, highway alignments, and other public facilities. However, consideration must be given to the need for the facilities and utilities mentioned above whether or not they are proposed as part of a comprehensive plan.
- 413 The development of the proposed subdivision shall be co-ordinated with adjacent existing development so that the area, as a whole, may develop harmoniously.
- 414 These design standards and requirements may be altered by the township governing body for the purpose of achieving economy and ingenuity in design in accordance with modern and evolving principles of site planning and development upon presentation of evidence that the intent of such standards and requirements shall be substantially achieved.

420 Block and Lot Design Standards

421 Block Layout

421.1 The length, width and shape of blocks shall be determined with due regard to:

- 421.11 Provisions of adequate sites for buildings of the type proposed;
- 421.12 Township zoning requirements;
- 421.13 Topography;
- 421.14 Requirements for safe and convenient vehicular and pedestrian circulation, including the reduction of intersections with arterial streets;

422 Block Length

- 422.1 Residential blocks shall originally be no less than five hundred (500) feet in length and no more than eighteen hundred (1800) feet in length.
- 422.2 In the design of blocks longer than one thousand (1000) feet, special consideration shall be given to the requirements of satisfactory fire protection.
- 422.3 Where practicable, blocks along arterial and collector streets shall not be less than one thousand (1000) feet long.

423 Block Depth

- 423.1 Single family residential blocks shall be of sufficient depth to accommodate two tiers of lots, except:
 - 423.11 Where reverse frontage lots are required; or
 - 423.12 Where prevented by the size, topographical conditions or other inherent conditions of property, in which case the Township Planning Commission and Governing Body may approve a single tier of lots.

424 Commercial and Industrial Blocks

- 424.1 Blocks in commercial, industrial, multi-family and planned residential developments may vary from the elements of design detailed above if required by the nature of the use. In all cases, however, adequate provision shall be made for traffic and pedestrian circulations, off-street parking, and loading areas.

425 General Lot Design Standards

- 425.1 Within the requirements of the Township Zoning Ordinance, the size, shape, and orientation of lots shall be appropriate for the type of development and use contemplated.

- 425.2 Insofar as practical, side lot lines shall be at right angles to straight street lines or radial to curved street lines.
- 425.3 Where feasible, lot lines shall follow township boundaries rather than cross the township lines, in order to avoid jurisdiction problems.
- 425.4 Generally, the depth of residential lots shall be not less than one (1) or more than three (3) times their width.
- 425.5 Depth and width of parcels intended for non-residential uses shall be adequate for the use proposed and sufficient to provide satisfactory space for on-site parking, loading and unloading, setbacks, and landscaping.
- 425.6 If, after subdividing, there exists remnants of land, they shall be either;
 - 425.61 Incorporated in existing or proposed lots, or
 - 425.62 Legally dedicated to public use, if acceptable to the township.

426 Lot Frontage

- 426.1 All lots shall have direct access to an existing or proposed public street or to a private street if it meets the Street Design Requirements of this Ordinance.
- 426.2 Double or reverse frontage lots may be required to provide separation of residential development from arterial streets or to overcome specific disadvantages of topography or other natural features of the proposed subdivision tract.
- 426.3 All residential reverse frontage lots shall have a rear yard with a minimum depth of seventy-five (75) feet, measured along the shortest distance from the proposed dwelling unit to the ultimate right-of-way and shall, within such rear yard and immediately adjacent to the right-of-way, have a planting screen easement of at least ten (10) feet in width, across which there shall be no right of access.

427 Lot Access

- 427.1 Residential lots having direct access to an arterial street shall be avoided whenever possible. Where direct access to an arterial street cannot be avoided, adequate turnaround space shall be provided behind the right-of-way line.
- 427.2 Where access is permitted to a state road or highway, authorization from the Pennsylvania Department of Transportation must be proven by the display of a valid highway occupancy permit. Driveways to single family residences shall intersect streets at angles of no less than sixty (60) degrees. All other drive-ways or access roads shall intersect street at right angles, where practicable, and in no case less than seventy-five (75) degrees.
- 427.3 Widths of access or driveways shall be in accordance with the following standards:

- 427.31 Access roads for multi-family residential mobile home parks and all non-residential subdivisions shall be no less than twenty-four (24) feet in width, shall not exceed thirty (30) feet in width at the street line and shall be clearly defined by use of curbing;
- 427.32 Driveways for single family residential subdivisions shall be no less than ten (10) feet in width but shall not exceed twenty (20) feet in width at the street line.
- 427.4 To provide safe and convenient ingress and egress, access road and driveway entrances shall be rounded at the following minimum radii:
- 427.41 Access road entrances for multi-family residential developments, mobile home parks, and all non-residential subdivisions shall be rounded at a minimum radius of ten (10) feet;
- 427.42 Driveway entrances for single-family residential subdivision shall be rounded at a minimum radius of five (5) feet.
- 427.5 Access road grades or driveway grades shall not exceed the following grades within fifty (50) feet of intersection with the street:
- 427.51 Seven (7) percent when access is to an arterial street;
- 427.52 Ten (10) percent when access is to a collector or local street.
- 427.6 The centerline of an access road or driveway at the point of access to a street shall not be located closer to a street intersection than the following distances:
- 427.61 Fifty (50) feet for single-family residential units.
- 427.62 For multi-family residential developments, mobile home parks, and all non-residential subdivisions:
- 427.621 One hundred fifty (150) feet if either street is an arterial street;
- 427.622 One hundred (100) feet if either street is a collector street;
- 427.623 Fifty (50) feet if both streets are local streets.
- 427.63 The centerline of an access road or a driveway shall not intersect a street within four hundred (400) feet of an interchange with a limited access highway.

430 Street Design Standards

431 General Requirements

- 431.1 Proposed streets shall be properly related to the road and highway plans of the state, county, and township. Streets shall be designed to provide adequate vehicular access to all lots or parcels and with regard for topographic conditions, projected volumes of traffic, and further subdivision possibilities in the area.
- 431.2 The street system of a proposed subdivision or land development shall be designed to create a hierarchy of street functions which includes collector and local streets.
- 431.3 The street system of a proposed subdivision or land development shall be designed so as to minimize street intersections and pedestrian-vehicular conflict points.
- 431.4 Proposed local streets shall be designed so as to discourage through traffic and excessive speeds.
- 431.5 Where, in the opinion of the township, it is desirable to provide for street access to adjoining property, streets shall be extended by dedication to the boundary of such property. Distances between access points to adjoining property shall be based on Block Length Standards set forth in Section 422.
- 431.6 Where a subdivision abuts an existing street of improper width or alignment, the township may require the dedication of land sufficient to widen the street or correct the alignment.
- 431.7 Where a subdivision abuts or contains an existing or proposed arterial traffic street, the township may require marginal access streets, reverse frontage lots, or other such treatment as will provide protection for abutting properties, reduction in then number of inter- sections with the arterial street, and separation of local and through traffic.
- 431.8 Private streets (streets not to be offered for dedication) may be approved by the township only if they meet the street design and improvement standards set forth in this Ordinance.
- 431.9 If the lots in the 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.

432 Street Right-Of-Way and Cartway Widths

- 432.1 Street right-of-way and cartway widths in proposed subdivisions shall conform to the general standards on the following page:

TABLE 1

| Classification of Streets | <u>STREET DESIGN STANDARDS</u> | | |
|---------------------------|---|--------------------|--------------------|
| | Local | Collector | Arterial |
| Right-of Way Width | 40' - 50' | 50' - 60' | 80' |
| Pavement Width | 20' - 36' | 22' - 38' | 35' - 48' |
| Traffic Lane Width | 10' | 11' | 12' |
| Parking Lane Width | 8' | (when required) | |
| Sidewalk Width | 4' (when required) | 5' (when required) | 5' (when required) |
| Curbing | vertical curb, rolled curb and gutter, or wedge curb. | | |

- 1 Required street right-of-way widths may vary depending upon what is included within the street right-of-way. The main variables in determining the required right-of-way width are the number of traffic lanes required, whether or not parking lanes are required, and whether curbs or drainage swales are required.
- 2 The main variables in determining the required pavement width are the number of traffic lanes, the number of parking lanes, level of service, curvature in the road, and projected traffic volume.
- 3 The main variables in determining whether parking lanes should be required are the amount of traffic generated from the type of development proposed, the density of development proposed, and the amount of off-street parking provided.
- 4 The main variables in determining whether sidewalks should be required are the density and type of proposed development, nature of adjacent development, the presence of sidewalks in adjacent developments, and whether the developer provides an interior pedestrian walkway system as an alternative to sidewalks.
- 5 Curbs shall be installed along all new roads and paved parking lots.

432.2 The general standards set forth in Section 432.1 may be modified by the Township Planning Commission upon the recommendation of the Township Engineer or Penn. Dot when an analysis of proposed development densities, provisions for off-street parking and projected traffic volumes indicate a need for such modification. The burden of proof shall be upon the developer to justify the adequacy of rights-of-way or cartway widths which are less than those set forth in Section 432.1

433 Horizontal Curves

433.1 Whenever street centerlines are deflected more than five (5) degrees within five hundred (500) feet, connection shall be made by horizontal curves.

433.2 Horizontal curves shall be designed to produce the following minimum sight distances:

433.21 Local streets - one hundred fifty (150) feet;

433.22 Collector streets - three hundred (300) feet;

433.23 Arterial streets - six hundred (600) feet.

433.3 A minimum tangent of one hundred (100) feet shall be required between reverse curve on a street and between a curve and a street intersection where one of the intersecting streets is a collector or an arterial street.

434 Street Grades

434.1 There shall be a minimum centerline grade on all streets of seventy-five hundredths (0.75) percent.

434.2 Unless approval is obtained from the township upon recommendation from the Township Engineer, centerline grades shall not exceed the following:

434.21 Local streets - twelve (12) percent;

434.22 Collector streets - eight (8) percent;

434.23 Arterial streets - six (6) percent.

434.3 Intersections shall be approached on all sides by leveling areas. Such leveling areas shall have a minimum length of seventy-five (75) feet (measured from the edge of the cartway of the intersecting road), within which no grade shall exceed a maximum of four (4) percent.

435 Vertical Curves

435.1 Vertical curves shall be used in changes of grade exceeding one (1) percent.

435.2 Vertical curves shall be designed to meet minimum sight distances according to standards set forth by the American Association of State Highway Officials.

436 Street Intersections

- 436.1 Streets shall intersect at right angles whenever practicable. When local streets intersect collector or arterial streets the angle of intersection at the street centerlines shall in no case be less than seventy-five (75) degrees. No two streets shall intersect with an angle of intersection at the centerlines of less than sixty (60) degrees.
- 436.2 Multiple intersections involving the junction of more than two streets shall be prohibited.
- 436.3 Two streets intersecting a third street from opposite sides shall either intersect with a common centerline or their centerlines shall be offset according to the following distances:
- 436.31 The two streets shall be separated by a distance of one hundred fifty (150) feet between centerlines measured along the centerline of the street being intersected when all three streets involved are local streets;
- 436.32 The two streets shall be separated by a distance of three hundred (300) feet between centerlines measured along the centerline of the street being intersected when one or more of the streets involved is a collector street;
- 436.33 The two streets shall be separated by a distance of five hundred (500) feet between centerlines measured along the centerline of the street being intersected when one or more of the streets involved is an arterial street.
- 436.4 Street curb intersections shall be rounded by a tangential arc with a minimum radius of:
- 436.41 Twenty (20) feet for intersections involving only local streets;
- 436.42 Thirty (30) feet for all intersections involving a collector street;
- 436.43 Forty (40) feet for all intersections involving an arterial street.
- 436.5 Street right-of-way lines shall be parallel to (or concentric with) curb arcs at intersections.
- 436.6 Clear sight triangles shall be provided at all street intersections. Within such triangles no object greater than two and one-half (2-1/2) feet in height and no other object that would obscure the vision of the motorist shall be permitted. Such triangles shall be established from a distance of:
- 436.61 Seventy-five (75) feet from the point of intersection of the centerline of two streets where both are local streets;

436.62 One hundred (100) feet from the point of intersection of the centerlines of two streets where one is an collector street.

436.63 One hundred fifty (150) feet from the point of intersection of the centerlines of two streets where one is an arterial street.

436.7 Wherever a portion of the line of such triangles occurs within the proposed building setback line, such portion shall be shown on the Final Plan of the subdivision, and shall be considered a building setback line.

437 Cul-de-sacs

437.1 Dead-end streets are prohibited unless designed as cul-de-sac streets or designed for future access to adjoining properties.

437.2 Any dead-end street which is constructed for future access to an adjoining property or because of authorized stage development, and which is open to traffic and exceeds two hundred (200) feet in length, shall be provided with a temporary, all-weather turning circle. The turning circle shall be completely within the boundaries of the subdivision and the use of the turnaround shall be guaranteed to the public until such time as the street is extended.

437.3 Cul-de-sac streets, permanently designed as such, shall not exceed one thousand (1,000) feet in length and shall not furnish access to more than twenty-five (25) dwelling units. In the case of the industrial parks, a cul-de-sac shall not furnish access to more than one hundred (100) employees. Exemptions from these requirements may be granted where necessary due to unique characteristics of the site.

437.4 All cul-de-sac streets, whether permanently or temporarily designed as such, shall be provided at the closed end with a fully-paved turning circle. The turning circle may be offset to the left but turnarounds offset to the right shall be discouraged.

437.41 If parking will be prohibited on the turning circle, the minimum radius to the pavement edge or curb line shall be fifty (50) feet, and the minimum radius of the right-of-way line shall be sixty (60) feet.

437.42 If parking will be permitted on the turning circle, the minimum radius to the pavement edge or curb line shall be fifty (50) feet, and the minimum radius of the right-of-way line shall be sixty (60) feet.

437.5 The centerline grade on a cul-de-sac street shall not exceed twelve (12) percent, and the grade of the diameter of the turnaround shall not exceed five (5) feet.

438 Half Streets

- 438.1 The dedication of new half streets at the perimeter of a new subdivision is prohibited.
- 438.2 The subdivider shall provide the entire required right-of-way, or as much thereof as is possible, within his property, along all existing streets which traverse or abut the property.

439 Street Names and Street Signs

- 439.1 Proposed streets which are in alignment with others already existing and named shall bear the name of the existing streets.
- 439.2 In no case shall the name of a proposed street duplicate an existing street name in the township and in the postal district, irrespective of the use of the suffix street, road, avenue, boulevard, driveway place, court, lane, etc.
- 439.3 All street names shall be subject to the approval of the Township Governing Body.
- 439.4 Street signs shall be provided at the intersection of all streets. The type, height and design shall be approved by the Township Governing Body.

440 Sanitary Sewage Disposal

- 441 The developer shall provide the most effective type of sanitary sewage disposal consistent with the township's official plan for sewage facilities prepared in accordance with the Pennsylvania Sewage Facilities Act (537) and Chapter 71 of the Pennsylvania Department of Environmental Resources Regulations.
- 442 Connection to a public sanitary sewer system shall be required where such a system is proposed by the township's official plan for sewage facilities, can feasibly be provided to the proposed subdivision tract, and where such a system can adequately fulfill the sewage disposal needs of the subdivision or land development.
- 443 Where a public sanitary sewer system is not yet accessible to the site but is planned for extension within a five (5) year period, the developer shall install sanitary sewer lines within the subdivision boundary to the point where the future connection to a public sewer system will be made. Lateral connections shall be constructed for all lots. Connections shall be available in the structures so as to allow the switch from the use of the on-lot systems to the public system. Such sewer systems shall be capped until ready for use. On-lot disposal facilities shall be provided for interim use.
- 444 In order for a private centralized sanitary sewer system to be approved, the governing body must revise the official plan for sewage facilities by resolution indicating that the system concept is approved.

- 445 In subdivision/land developments where neither connection to a public sewage system nor a private centralized sewage system is contemplated, on-lot sewage disposal systems shall be provided in accordance with the Pennsylvania Sewage Facilities Act, Chapter 73 of DER Regulations and the requirements of the Township Sewage Enforcement Officer.
- 446 Sanitary sewerage systems shall be located and/or designed to minimize flood damage and minimize or eliminate infiltration of flood waters into the system or discharges from the system into flood waters.
- 447 On-lot sewage disposal systems shall be located and/or designed to avoid impairment to them or contamination from them during flooding.

450 Water Supply and Distribution System

- 451 The developer shall provide a water supply and distribution system to service the proposed subdivision through one of the following methods:
- 451.1 Connection shall be made to a public water supply system where such a system can feasibly be provided to the proposed subdivision tract and where the capacity of such a system can adequately fulfill the water supply demands of the proposed subdivision. A distribution system shall be designed to furnish an adequate supply of water to each lot. A copy of the approval document for such a system by the appropriate public authority or utility company shall be submitted with the Final Plan.
- 451.2 Where a public water supply system is planned to serve the proposed subdivision area within ten (10) years, a centralized water system will be provided by the developer where the subdivision involves twenty (20) or more dwelling units unless the average residential lot size is one acre or larger. Whenever such a system is provided, the water distribution lines should be dedicated to the appropriate public authority and the authority will acquire other parts of the water supply system such as wells, pumps and storage tanks that can be integrated into the public system. This will take place after the improvements are completed so that the system can be operated by the public authority. A copy of the approval of such a system by the appropriate public authority shall be submitted with the Final Plan. Also, such a system shall be designed and constructed in a manner that would permit adequate connection to a public water supply system in the future. Design and construction standards for centralized water systems are set forth in Appendix A.
- 451.3 Where a public water supply is not proposed within (10) years in the area of the proposed subdivision and where the average residential lot size is to be provided by the developer unless the subdivision involves less than twenty (20) dwelling units and may be provided otherwise. Design and construction standards for centralized water supply systems are set forth in Appendix A.

- 451.4 All centralized water systems that remain privately owned shall be organized in a manner as to fall within the jurisdiction of the Pennsylvania Utility Commission.
- 451.5 Water supply systems shall be located and/or designed to minimize or eliminate infiltration of flood waters so as to meet Federal Insurance Administration provisions.

460 Storm Drainage Systems

461 Storm drainage systems shall be provided in order to:

- 461.1 Permit unimpeded flow of natural watercourses except as modified by stormwater detention facilities required by Section 463 or open channels pursuant to Section 462.8;
- 461.2 Insure adequate drainage of all low points along the line of streets;
- 461.3 Intercept stormwater runoff along streets at intervals related to the extent and grade of the area drained;
- 461.4 Provide positive drainage away from on-site sewage disposal systems;
- 461.5 Take surface water from the bottom of vertical grades, lead water from springs and avoid excessive use of cross-gutters at street intersections and elsewhere;
- 461.6 Prevent overloading of drainage systems and watercourses downstream as a result of increased rate of runoff caused by the proposed development.

462 General Requirements

- 462.1 A site drainage plan for the proposed subdivision tract shall be prepared which illustrates the following information:
 - 462.11 Mapping of the watershed area or areas in which the proposed subdivision is located;
 - 462.12 Calculations of runoff for all points of runoff concentration within the site;
 - 462.13 Complete drainage systems for the subdivision. All existing drainage features which are to be incorporated in the design shall be so identified. If the subdivision is to be developed in stages, a general drainage plan for the entire subdivision shall be presented with the first stage and appropriate development stages for the drainage system shall be indicated.
- 462.2 The existing points of natural drainage discharge onto adjacent property shall not be altered without the written approval of the affected landowners.