

BOROUGH OF  
**NORTH CATASAUQUA**  
NORTHAMPTON COUNTY, PENNSYLVANIA

---

**SUBDIVISION**  
AND  
**LAND DEVELOPMENT**  
**ORDINANCE**  
OF  
**1996**

February 12, 1996

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## SECTION I

### PURPOSE, AUTHORITY, TITLE, AND JURISDICTION

#### 100 Purpose

- 101 The purpose of this Ordinance is to regulate and control the subdivision of lots and the development of land; the approval of plans, plots or replots of land laid out in building lots; minimum improvements and construction of streets and other required improvements; and the administration of this Ordinance and penalties for the violation of this Ordinance.

#### 110 Authority and Title

- 111 This Ordinance is enacted pursuant to the Pennsylvania Municipalities Planning Code and may be cited as The North Catasauqua Borough Subdivision and Land Development Ordinance of 1995 and may be referred to as S.A.L.D.O..

#### 120 Jurisdiction

- 121 No subdivision or land development of any lot, tract or parcel of land shall be made, and no street, sanitary sewer, water main, gas, or electric transmission line, or other improvements in connection therewith shall be laid out, constructed, opened or dedicated for public use or travel or for the common use of occupants of buildings abutting thereon, except in accordance with this Ordinance.
- 122 No lot in a proposed subdivision or land development may be sold, and no final permit to erect any building upon land in a subdivision or land development may be issued unless and until a final plan has been approved and recorded and either the Township has been assured and recorded and either the Township has been assured by means of an Improvements Agreement acceptable to Borough Council that the improvements will subsequently be installed or the required improvements in connection therewith have been constructed

## SECTION II SUBMISSION PROCEDURES

### 210 Feasibility Review Submission

- 211 Feasibility review maps and materials may be submitted for any proposed subdivisions and land developments, for purposes of discussion between the Borough and the developer.
- 212 Seven (7) copies of all feasibility review maps and materials, as set forth in Section 300, shall be submitted to the Borough Engineer.
- 213 The Borough Engineer shall refer one (1) copy of the feasibility review and materials to the Borough Zoning Officer.
- 214 The Borough Engineer shall refer three (3) copies of the feasibility review and materials to the Borough Planning Committee.
- 215 The Borough Engineer shall refer two (2) copies of the feasibility review and materials to the Borough Council.

### 220 Feasibility Review

- 221 When feasibility review maps and materials have been submitted to the Borough, the data presented will be reviewed by the Borough Planning Committee at its next regular meeting, provided that submission has occurred no less than twenty-nine (29) days prior to such scheduled meeting.
- 222 The Borough Planning Committee shall review the feasibility data and plans 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 Borough Planning Committee.
- 223 In its review of the feasibility data, the Borough Planning Committee shall consider any reports of the Joint Planning Commission, Borough Engineer and the Borough Zoning Officer.
- 224 The review comments shall be made orally at the meeting to the applicant and/or their representatives. In the event that an applicant and/or their representatives are not in attendance at the meeting, the feasibility review shall be conducted at the next scheduled Borough Planning Committee meeting.

## 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 Borough Engineer.
- 232 Official submission of a Preliminary Plan to the Borough Engineer by a developer shall comprise of the following: *(submissions which do not include the material specified in the following subsection may not be accepted as an official submission.)*
- 232.1 Two (2) copies of a completed Application for Review of Preliminary Subdivision Plans;
- 232.2 Eight (8) 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;
- 232.3 Eight (8) copies of all required supplemental information as set forth in Section 316.
- 232.4 The review fee and escrow shall be submitted as set forth in Section 640.
- 233 The Borough Engineer shall refer preliminary plan submission materials to the various review bodies as follows:
- 233.1 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Borough Zoning Officer.
- 233.2 Three (3) plan prints and three (3) copies of the supplemental information to the Borough Planning Committee.
- 233.3 Three (3) plan prints and three (3) copies of the supplemental information to Borough Council.
- 234 It shall be the responsibility of the developer and or land owner to submit plans and supplemental information to the following agencies:
- 234.1 The Lehigh-Northampton County Joint Planning Commission.
- 234.2 Adjacent municipality *(when proposed subdivision or land development is located adjacent to another municipality)*.
- 234.3 Northampton Water Authority.
- 234.4 Borough of Catasauqua *(sewer allocation)*.

240 **Review of Preliminary Plan**

241 By the Borough Planning Committee.

241.1 When a Preliminary plan has been submitted to the Borough Engineer, such plan shall be placed on the agenda of the Planning Committee for review at a meeting to be held within sixty (60) days of the submission, provided that such submission has occurred no less than twenty-nine (29) days prior to such meeting. The Planning Committee may hold a Public Hearing on the Preliminary Plan at this time.

241.2 The Planning Committee shall review the Preliminary Plan to determine its conformance with the standards contained in this Ordinance and other applicable municipal ordinances, and shall recommend such changes and modifications as it deems necessary.

241.3 No action shall be taken by the Borough Planning Committee with respect to the Preliminary Plan until it has received and considered the written report of the Joint Planning Commission provided, however, that if the Joint Planning Commission shall fail to report thereon within thirty (30) days after their receipt of the Preliminary Plan, then the Borough Planning Committee may officially act without having received and considered such report.

241.4 Within sixty (60) days after the first meeting following the submission of the Preliminary Plan, providing that such submission has occurred no less than twenty-nine (29) days prior to such meeting, the Planning Committee shall recommend to Borough Council, in writing, that the Preliminary Plan be approved or disapproved together with the documented findings upon which the recommendation are based.

242 By Borough Council.

242.1 Within ninety (90) days following the date of the regular meeting of the Planning Committee next following the date of the application (unless the next meeting does not fall in a thirty (30) day period following the date of the application in which case the ninety (90) day period commences on the thirtieth (30th) day following the date of the application, the Borough Council shall, in accordance with the provisions of relevant ordinances and considering the recommendations of the Planning Committee, take action by approving or disapproving the Preliminary Plan.

This time period may be extended by action of the Borough Council or Borough Planning Committee upon the receipt of a written request for an extension of time from the applicant. Borough Council shall document the findings upon which that action is based, and communicate them to the applicant and owner (if different) within fifteen (15) days from the date that the decision has been made. This communication shall occur within the period provided for a decision in the first sentence of this section. The decision and findings shall be communicated to:

242.11 the applicant

242.12 the owner

242.13 the Borough Engineer

242.14 the Borough Zoning Officer

250 **Submission of the Final Plan**

- 251 Within twelve (12) months after approval of the Preliminary Plan, a Final Subdivision Plan and all required supplemental data shall be submitted to the staff. An extension of time may be granted by Borough Council or the Borough Planning Committee 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 approved by Borough Council and shall incorporate all modifications required by Borough Council in its Preliminary Plan approval. Borough Council 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 its surroundings, since the time of the 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 Subdivision 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 Borough Engineer.



- 255 Official submission of a Final Plan to the Borough Engineer by a developer shall comprise the following: *(submissions which do not include the material specified in the following subsection may not be accepted as an official submission.)*
- 255.1 Two (2) copies of a completed Application for Review of Final Subdivision Plans;
- 255.2 Eight (8) 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 Eight (8) copies of all required supplemental information as set forth in Section 320.
- 255.4 The review fee and escrow shall be submitted as set forth in Section 640.
- 256 The Borough Engineer shall refer preliminary plan submission materials to the various review bodies as follows:
- 256.1 One (1) application, one (1) plan print, and one (1) copy of the supplemental information to the Borough Zoning Officer.
- 256.2 Three (3) plan prints and three (3) copies of the supplemental information to the Borough Planning Committee.
- 256.3 Three (3) plan prints and three (3) copies of the supplemental information to Borough Council.
- 257 It shall be the responsibility of the developer and or land owner to submit plans and supplemental information to the following agencies:
- 257.1 The Lehigh-Northampton County Joint Planning Commission.
- 257.2 Adjacent municipality *(when proposed subdivision or land development is located adjacent to another municipality)*.
- 257.3 Northampton Water Authority.
- 257.4 Borough of Catasauqua *(sewer allocation)*.
- 257.5 Northampton County Conservation District (if earthmoving is required).

260 **Review of Final Plan**

261 By the Borough Planning Committee.

261.1 When a Final plan has been submitted to the Borough Engineer, such plan shall be placed on the agenda of the Planning Committee for review at a meeting to be held within sixty (60) days of the submission, provided that such submission has occurred no less than twenty-nine (29) days prior to such meeting. The Planning Committee may hold a Public Hearing on the Preliminary Plan at this time.

261.2 The Planning Committee shall review the Final Plan to determine its conformance with the standards contained in this Ordinance and other applicable municipal ordinances, and shall recommend such changes and modifications as it deems necessary.

261.3 No action shall be taken by the Borough Planning Committee with respect to the Final Plan until it has received and considered the written report of the Joint Planning Commission provided, however, that if the Joint Planning Commission shall fail to report thereon within thirty (30) days after their receipt of the Final Plan, then the Borough Planning Committee may officially act without having received and considered such report.

261.4 Within sixty (60) days after the first meeting following the submission of the Final Plan, providing that such submission has occurred no less than twenty-nine (29) days prior to such meeting, the Planning Committee shall recommend to Borough Council, in writing, that the Final Plan be approved or disapproved together with the documented findings upon which the recommendation are based.

262 By Borough Council.

262.1 Within ninety (90) days following the date of the regular meeting of the Planning Committee next following the date of the application (unless the next meeting does not fall in a thirty (30) day period following the date of the application in which case the ninety (90) day period commences on the thirtieth (30th) day following the date of the application, the Borough Council shall, in accordance with the provisions of relevant ordinances and considering the recommendations of the Planning Committee, take action by approving or disapproving the Final Plan.

This time period may be extended by action of the Borough Council or Borough Planning Committee upon the receipt of a written request for an extension of time from the applicant. Borough Council shall document the findings upon which that action is based, and communicate them to the applicant and owner (if different) within fifteen (15) days from the date that the decision has been made. This communication shall occur within the period provided for a decision in the first sentence of this section. The decision and findings shall be communicated to:

242.11 the applicant

242.12 the owner

242.13 the Borough Engineer

242.14 the Borough Zoning Officer

270 **Recording of the Plan**

- 271 After completion of the procedures set forth in Section 520 and after the Final Plan is approved by Borough Council, six (6) paper prints of the Final Plan shall be endorsed by Borough Council.
- 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 Joint Planning Commission, and the Borough, the developer shall file the Record Plan with the County Recorder of Deeds within ninety (90) days of the date of Final Approval by Borough Council. If the developer fails to record the Final Plan within such period, the action of Borough Council shall be null and void, unless an extension of time is granted in writing by Borough Council upon written request by the developer.
- 274 At the time the Record Plan is endorsed by Borough Council, the Borough Engineer, and the Borough Zoning Officer shall receive one (1) Final Plan for their permanent files.

## SECTION III

### PLAN REQUIREMENTS

#### 300 Feasibility Review

301 The feasibility review submission shall include the following maps and materials.

- 301.1 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 (2000) feet and showing the relation of the property, differentiated by tone or pattern, to adjoining property and to all streets, roads and municipal boundaries existing within one-half (1/2) mile of any part of the property. A USGS quad may be used.
- 301.2 A map illustrating an analysis of natural drainage patterns and water resources within the proposed subdivision 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 Municipal Flood Insurance Study.
- 301.3 A topographic map of the site based on USGS quad sheets.
- 301.4 A map delineating additional significant physical features within the proposed subdivision tract, such as woodland areas, large trees, rock out-croppings and scenic views. The map may be based on USGS quad sheets and on-site survey work.
- 301.5 Where feasible and legible, the analysis involved in Sections 301.1 thru 301.4 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.
- 301.6 A letter of intent and a sketch of the proposed subdivision 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 not grader than one (1) inch equals fifty (50) feet.
- 312 The original drawing and all submitted prints shall be made on sheets of one of the following sets of dimensions:
- 312.1 Eighteen (18) inches by twenty-four (24) inches;
- 312.2 Twenty-four (24) inches by thirty-six (36) inches;
- 312.3 Thirty-six (36) inches by forty-eight (48) 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 The Preliminary Plan shall indicate the following data:
- 314.1 Name and address of record owner;
- 314.2 Name of Developer if different than Owner;
- 314.3 Name of the proposed Subdivision;
- 314.4 Name of the municipality or municipalities within which subdivision is proposed;
- 314.5 Names of all adjoining subdivisions, if any, and the names of owners of all adjacent unplatted land, together with the tax map, block and lot number where recorded.
- 314.6 Name, address, license number, and seal of the registered surveyor responsible for the subdivision plan. The surveyor shall sign a statement attesting to the accuracy of the survey conducted in the field.
- 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 one thousand (1000) feet and showing the relation of the property, differentiated by tone or pattern, to adjoining property and to all streets, roads, and municipal boundaries, within one-half (1/2) mile of any part of the property;
- 314.9 Total tract boundaries of the property being subdivided showing bearings and distances, and a statement 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 proposed 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, septic systems, storm sewers, water lines, wells, fire hydrants, utility transmission lines, culverts, bridges, railroads, other man-made features, watercourses and wetlands within the proposed subdivision tract and immediately adjacent to the subdivision tract.
- 314.15 Location, width, and purpose of existing easements and utility rights-of-way within 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 data to which contour elevations refer shall be the closest United States Geologic Survey established benchmark, where available.
- 314.17 A signature block for the Planning Committee and Borough Council approval of the subdivision plan.

- 314.18 The following owner's statement shall be placed on the plan. The owner(s) shall execute the statement before a notary public. The seal of the notary public acknowledging the owner(s) statement shall be impressed on the plan. The statement shall read, "We (I), the owners of this plat of land being duly sworn according to law, depose and say we (I) are (am) the sole owner(s) of this property in peaceful possession of it and there are no suits pending affecting title of same."
- 314.19 Proposed locations of wells (if any), proposed locations of subsurface disposal fields and alternate fields (if any), and the locations of percolation test holes and soil probe pits (if any).
- 315 The full plan of proposed development, including:
- 315.1 Location and width of all streets and right-of-ways, with a statement of any conditions governing their use;
  - 315.2 Suggested street name;
  - 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, invert elevations, 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 right-of-way;
  - 315.11 Copies of the proposed deed restrictions and protective and restrictive covenants referenced to the Preliminary Plan.

- 316 The Preliminary Plan shall be accompanied by the following supplementary data unless the Borough Engineer 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 with the design standards of Sections 430, 440, 450 and 460 respectively.
  - 316.2 A storm drainage plan for the proposed subdivision tract which conforms to design requirements for storm drainage set forth in Section 460;
  - 316.3 A landscape plan, where applicable, according to the standards set forth in Section 492.4, Tree Preservation and Planting;
  - 316.4 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 subdivision 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;
  - 316.5 Preliminary designs of any bridges or culverts which may be required. Such designs shall meet all applicable requirements of the Pennsylvania Department of Transportation;
  - 316.6 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;
  - 316.7 A sketch map of the proposed road system for the remainder of the area not included in the Preliminary Plan;
  - 316.8 When water service to the proposed subdivision is to be provided by an existing public system, the developer shall submit one (1) copy of a letter from the agency, authority or utility which agrees to extend water service, subject to the execution of a service agreement.



### 316.9 Certification of sewage disposal system.

- 316.91 When sewage disposal service to the proposed subdivision is to be provided by an existing public system, the developer shall submit one (1) copy of a letter from the agency, authority or utility which agrees to provide sewer service subject to the execution of a service agreement.
- 316.92 When sewage disposal service for the proposed subdivision is to be by individual on-lot sewage disposal system, the applicant shall submit two (2) copies of the Municipal Sewage Enforcement Officer's approval of the planning module.
- 316.10 When an agency, authority or utility providing sewer or water service to the subdivision has approval authority under its own jurisdiction, a letter which indicates that the plans meet the relevant agency, authority, or utility specifications shall be submitted.
- 316.11 If the subdivision or land development includes wetlands or hydric soils, the applicant shall submit either a written determination from the U.S. Army Corps of Engineers or a qualified professional that the area does not contain wetlands, or copies of permits for the proposed activities from the U.S. Army Corps.
- 316.12 A traffic impact study and report shall be required for proposed developments that meet one or more of the following criteria;

RESIDENTIAL: 50 or more units

COMMERCIAL: Buildings consisting of 20,000 s.f. or more

INDUSTRIAL: " " " " " "

OFFICE: " " " " " "

**Traffic Impact Study;** The study will enable the Borough Planning Committee and Borough Council to assess the impact of a proposed development on the traffic system. Its purpose is to ensure that proposed developments do not adversely affect the traffic network and to identify any traffic problems associated with access from the site onto the existing roads. the study's purpose is also to delineate solutions to potential problems and to present improvements to be incorporated into the proposed development. Traffic impact reports shall be based on the following criteria:

- 316.1201      **General Site Description.** The site description shall include the size, location, proposed land use(s), construction, staging and completion date or types of dwelling units. A brief description of other major existing and proposed land developments within one-half mile of the proposal which shall constitute the study area.
- 316.1202      **Traffic Facilities Description:** The description shall contain a full documentation of the proposed internal and existing highway system. The report shall describe the external roadway system within the area. Major intersections in the area shall be identified and diagramed. All future highway improvements which are part of proposed surrounding developments shall be noted and included in the calculations.
- 316.1203      **Existing Traffic Conditions:** Existing traffic conditions shall be measured and documented for all streets and intersections in the area. Existing traffic volumes for average daily traffic, peak highway hour(s) traffic and peak development-generated hour(s) traffic shall be recorded. Traffic counts at major intersections in the study area shall be included in the report. A volume/capacity analysis based upon existing volumes shall be performed during the peak highway hour(s) and the peak development-generated hour(s) for all streets and major intersections in the study area. Levels of service shall be determined for each major road segment and turning movement. A tabulation of accident locations during a recent 2-year period shall be shown.  
This analysis will determine the adequacy of the existing roadway system to serve the current traffic demand. Roadways and/or turning movements experiencing levels of Service D, E or F, as described in Report 87: Highway Capacity Manual, Highway Research Board, 1965, shall be noted as congestion locations.
- 316.1204      **Traffic Impact of the Development:** Estimation of vehicular trips to result from the proposal shall be computed from the average daily peak highway hour(s). Vehicular trip generation rates to be used for this calculation shall be obtained from the Trip Generation Manual, published by the Institute of Transportation Engineers.

These development-generated traffic volumes shall be provided for the inbound and outbound traffic movements as estimated, and the reference source(s) and methodology followed shall be documented. All turning movements shall be calculated. These generated volumes shall be distributed to the area and assigned to the existing streets and intersections throughout the area. Documentation of all assumptions used in the distribution and assignment phase shall be provided. Traffic volumes shall be assigned to individual access points. Any characteristics of the site that will cause particular trip generation problems shall be noted.

316.1205      **Analysis of Traffic Impact:** The total future traffic demand shall be calculated. This demand shall consist of the combination of the existing traffic expanded to the completion year (*straight line projections based on historical data*), the development-generated traffic and the traffic generated by other proposed development is anticipated, calculations for each stage of completion shall be made. This analysis shall be performed during the peak highway hour(s) for all roadways and major intersections in the study area. Volume/capacity calculations shall be completed for all major intersections.

All access points shall be examined as to the necessity of installing traffic signals. This evaluation shall compare the projected traffic to State Warrant regulations for traffic signal intersection.

316.1206      **Conclusions and Recommendations:** Levels of service for all streets and intersections shall be listed. All streets and/or intersections showing a level of service below C shall be considered deficient, and specific recommendations for the elimination of these problems shall be listed. This listing of recommended improvements shall include, but not be limited to, the following elements: internal circulation design, site access location and design, external roadway and intersection design and improvements, traffic signal installation and operation including signal timing. All physical street improvements shall be shown in sketches.

316.1207      **Costs of Needed Projects:** Approximate costs for all needed transportation improvements shall be developed within a defined impact area.

- 316.1208 The project manager for any traffic impact report shall be a professional traffic engineer or transportation planner, who should be a member of the Institute for Transportation Engineering.
- 316.1209 The Commission may combine contributions for traffic impact studies from more than one applicant to accomplish one major coordinated traffic study.
- 316.1210 **Applicant's Responsibilities:** The applicant shall respond to the traffic impact report by stating to what degree he/she is willing to assist in funding any off-street improvements that are needed and to state what on-site improvements he/she proposes.
- 316.1211 **Future Stages of Development:** The traffic study shall include not only an analysis of one individual project proposed at one point in time, but also the overall projected impacts of future development of all nearby lands owned by the applicant or that the applicant has an option to purchase. The study shall include a projection of the traffic expected from this development, using reasonable alternatives if no definite plans are available.
- 316.1212 **Other Proposed Development:** The study should also take in account traffic that can be expected as a result of other development which has been approved or is being reviewed by the Borough and other development that might reasonably be expected to occur.

320 **Final Plans**

- 321 The final plans shall conform to the standards and data requirements set forth for Preliminary Plans in Sections 311 thru 316 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 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 designated 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 rights-of-way where provided for or owned by public services and any limitations on such easements or rights-of-way. Rights-of-way and easements shall be shown and accurately identified 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 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;
- 323.8 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:
- 324.101 Location, size and invert elevation of all sanitary sewer, water distribution and storm drainage system and the location of all manholes, inlets and culverts;

- 324.102 Final profiles, cross-sections, and specifications for proposed streets, sanitary sewers, water distribution systems, and storm drainage systems shall each be shown on one or more separate sheets.
- 324.2 Documentation from the Sewage Enforcement Officer that each lot has been approved for on-lot sewage systems (where applicable).
- 324.3 A copy of the Department of Environmental Resources acceptance or approval of the planning module (where applicable).
- 324.4 A completed and executed copy of the Subdivision Improvements Agreement as agreed upon by the developer and the Borough Council, public utility and or municipal authority.
- 324.5 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 Borough Engineer, and in accordance with the provisions set forth in the Municipalities Planning Code as amended, in a form and with surety in accordance with the provisions set forth in the Municipalities Planning Code as amended and acceptable to the Borough Solicitor, guaranteeing the construction and inspection of all such improvements within a stated period which shall not be longer than one (1) year from the date of 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 Borough Council, public utility and/or municipal authority.
- 324.6 A maintenance guarantee in an amount of not less than fifteen (15) percent of the actual cost of the installation of the improvements as set forth in Section 520. This guarantee assures the structural integrity of the improvements as well as the functioning of said improvements in accordance with the design and specifications as depicted on the final plat for a period not to exceed eighteen (18) months after the acceptance of all such improvements by the Borough Council, public utility, or municipal authority.
- 324.7 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. A letter shall be secured from the County Soil Conservation Service approving the E & S plan and narrative.

- 324.8 Four (4) copies of deeds of any areas proposed for dedication in relation to the subdivision or land development. The applicant/owner shall provide a copy of the opinion of title as issued by a title insurance company or an attorney.
- 325 In the case of a subdivision or land development proposed to be developed in stages over a period of years, Final Plan requirements as listed in Section 321 thru 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 Planning Committee 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 Borough, State and other applicable laws and regulations.
- 403 Whenever other ordinances 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 Borough Council.
- 412 Consideration shall be given to applicable provisions of the Comprehensive Plan for Leigh and Northampton Counties, emphasizing future school sites, recreation sites, water supply and sewage treatment systems, highway alignments, and other public facilities. Consideration should also be given to the North Catasaugua Zoning Ordinance, latest amendment, in determining layout of proposed subdivisions and land developments.
- 413 The development of the proposed subdivision shall be coordinated with adjacent existing development so that the area, as a whole, may develop harmoniously.
- 414 These design standards and requirements may be altered by Borough Council 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 Municipal zoning requirements;
- 421.13 Topography;
- 421.14 Requirements for safe and convenient vehicular and pedestrian circulation, including the reduction of intersections with arterial, or collector streets.

### 422 Block Length

- 422.1 Residential blocks shall ordinarily be no less than five hundred (500) feet in length and no more than eighteen hundred (1,800) feet in length.
- 422.2 In the design of blocks longer than one thousand (1,000) 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 (1,000) feet in length.

### 423 Block Depth

- 423.1 Single family residential blocks shall be of sufficient depth to accommodate two tiers of lots; except Borough Council may approve a single tier of lots in the following cases:
  - 423.11 Where reverse frontage lots are required; or
  - 423.12 Where two tiers of lots are not possible due to the size, topographical conditions of the property.

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 provisions shall be made for traffic and pedestrian circulation, off-street parking, and loading areas.

425 General Lot Design Standards

425.1 Within the requirements of the North Catasauqua 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 municipal boundaries rather than cross them, in order to avoid jurisdictional problems.

425.4 Generally, the depth of residential lots shall be not less than one (1) nor 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 Borough of North Catasauqua.

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 All driveways or roads (public or access) shall intersect streets at right angles, where practicable, and in no case less than seventy-five (75) degrees.

427.3 Widths of access roads 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 the 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 subdivisions shall be a depressed curb.

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 an intersection of street centerlines 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.

## 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 Borough. 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 streets 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. However, the developer shall provide for the extension and continuation of arterial and collector streets into and from adjoining properties.
- 431.5 Where, in the opinion of the Borough, 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 Borough 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 street which will generate a large amount of traffic, (collector status street or higher), the Borough may require marginal access streets, reverse frontage lots, or other such treatment as will provide protection for abutting properties, reduction in the number of intersections, and separation of local and through traffic.
- 431.8 Private streets (streets not to be offered for dedication) may be approved by Council 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 standards on the following chart:

	<u>LOCAL</u>	<u>COLLECTOR</u>	<u>ARTERIAL</u>
Right-of-Way Width	50'	60'	80'
Pavement Width	32'	36'	as conditions warrent

Vertical concrete curbing is required along all proposed streets.

All streets serving subdivisions with single family attached dwellings shall be designed to collector status criteria.

Concrete sidewalk meeting the specifications of the Borough will be required along all street frontages.

- 432.2 The general standards set forth in Section 432.1 may be modified by Borough Council when an analysis of proposed development densities, provisions for off-street parking, and projected traffic volumes indicate a need for such modifications. The burden of proof shall be upon the developer to justify the adequacy of right-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 curves on a street and between a curve and a street intersection.

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 Council upon recommendation from the Borough Engineer, centerline grades shall not exceed the following:

434.21 Local Streets - ten (10) percent;

434.22 Collector Streets - seven (7) percent;

434.23 Arterial Streets - as per current AASHTO standards.

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. However, where the curve would be a sag curve, vertical curves shall be used in changes of grade exceeding two (2) 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. (AASHTO)

436 Street Intersections

436.1 Streets shall intersect at right angles whenever practicable. All street intersections at the street intersection shall not be less than seventy-five (75) 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 all intersections involving only local streets;

436.42 Twenty-five (25) 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 triangle 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 centerline of two streets where one is a 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.

## 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 (1000) feet in length and shall not furnish access to more than thirty (30) dwelling units. In the case of 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 prohibited.
- 437.1 The minimum radius of the turning circle (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 ten (10) percent, and the grade of the diameter of the turnaround shall not exceed five (5) percent.

## 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 municipality and in the postal district, irrespective of the use of the suffix street road, avenue, boulevard, driveway, place, court or lane.

439.3 All street names shall be subject to the approval of Borough Council.

439.4 Street signs shall be provided at the intersection of all streets. The type, height and design shall be according to the provisions of 511.9.

440 **Sanitary Sewage Disposal**

441 The developer shall provide the most effective type of sanitary sewage disposal consistent with the Borough's official plan for sewage facilities.

442 Connection to a public sanitary sewer system shall be required where such a system is proposed by the Borough'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 on-lot systems to public system. Such sewer system shall be capped until ready for use. On-lot disposal facilities shall be provided for interim use.

444 In subdivision/land development where connection to a public sewage system is not possible, on-lot sewage disposal systems shall be provided in accordance with the Pennsylvania Sewage Facilities Act, Chapter 73 of DEP Regulations, and the requirements of the Municipal Sewage Enforcement Officer.

445 Sanitary sewerage systems shall be located and designed to minimize or eliminate flood damage, infiltration of flood waters into the system, and discharges from the system into flood waters.

446 On-lot sewage disposal systems shall be located and designed to avoid impairment or contamination from flooding.

450 **Water Supply and Distribution Systems**

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.
- 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 if the subdivision involves twenty (20) or more dwelling units unless the average residential lot size is an 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 require other parts of the water supply system such as wells, pumps and storage tanks that can be integrated into the public water system. This will take place after the improvements are completed so that the system can be operated by the public authority. Also, such a system shall be designed and constructed in a manner that will permit adequate connection to a public water supply system in the future. The system shall meet the design and construction standards for centralized water system set forth in Appendix A.
- 451.3 Where a public water supply is not proposed in the area of the proposed subdivision within ten (10) years, the developer shall provide a centralized water system if the subdivision involves twenty (20) or more lots and the average residential lot size is less than one (1) acre. The system shall meet the design and construction standards for centralized water systems 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 Public Utility Commission.
- 451.5 Water supply systems shall be located and 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 within natural watercourses except as modified by stormwater detention facilities required by Section 463 or open channels pursuant to Section 462.8;

- 461.2 Ensure 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 intersections and elsewhere;
- 461.6 Prevent overloading of downstream drainage systems and watercourses 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.
- 462.3 No stormwater runoff or natural drainage shall be so diverted as to overload existing drainage systems, or create flooding or the need for additional drainage structures on other private properties or public lands, without approved provisions being made by the developer for property handling such conditions.

462.4 Storm drainage systems through the subdivision/land development shall be designed to convey the peak runoff that will occur when all tributary areas upstream are developed to the extent reasonably projected during the next forty (40) years. The calculation of this runoff rate shall take into account the land use and development regulations including runoff controls in effect in the tributary areas.

462.5 Where a subdivision is traversed by watercourses other than permanent streams, there shall be provided a drainage easement conforming substantially with the line of such watercourse. The width of the easement shall be adequate to provide for unimpeded flow of storm runoff based on calculations made in conformance with Section 464 and to provide a freeboard allowance of one-half (0.5) foot above the design water surface level. The terms of the easement shall prohibit excavation, the placing of fill or structures, and any alterations which may adversely affect the flow of stormwater within any portion of the easement. Also, periodic cutting of vegetation in all portions of the easement shall be required. These easements shall be secured through covenants attached to the deeds of the affected lot.

462.6 All streets shall be designed so as to provide for the eventual discharge of surface water away from their rights-of-way.

462.7 When it can be shown to the satisfaction of the Borough that, due to topographic conditions, natural drainage swales on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainage swales. Capacities of open channels shall be calculated using the Manning equation as explained in Appendix B.

462.8 Storm drainage facilities and appurtenances shall be so designed and provided as to minimize erosion in watercourse channels and at all points of discharge.

#### 463 Stormwater Detention

463.1 Stormwater detention facilities shall be used whenever increased runoff from the land development would overload drainage systems or cause significant increases in flood levels in any watercourses downstream. This will be determined by comparing the increase in runoff caused by the land development with the existing runoff rates and capacity of downstream drainage systems and watercourses. Any proposed land development within a watershed for which there is an approved Act 167 Stormwater Management Plan shall adhere to the detention/no detention requirements of that Plan.

- 463.2 Whenever stormwater detention facilities are required under Section 463.1, the maximum post-development peak rates of flow shall be governed by the following provisions:
- 463.21 Within watersheds for which there is an approved Act 167 Stormwater Management Plan, the detention facilities shall be designed to discharge post-development peak runoff rates consistent with the Plan criteria except in the instance of off-site detention facilities implemented as per Section 462.23.
- 463.22 Within watersheds for which there is not an approved Act 167 Stormwater Management Plan, the detention facilities shall be designed to provide the peak rate of runoff at all points of discharge from the site, when developed, will not exceed the peak rate of runoff at each of those points prior to development, except in the instance of off-site detention facilities implemented as per Section 463.23.
- 463.23 In certain instances, regional detention facilities to provide runoff control for multiple development sites may be implemented in lieu of individual development site detention basins. Peak runoff rates of discharge from a regional detention basin shall be based upon maintaining existing peak runoff rates for the tributary area, except that other criteria for discharge may apply for regional detention facilities located within a watershed with an approved Act 167 Stormwater Management Plan. Any developer relying upon regional detention facilities in lieu of on-site controls shall pay a fee to the owner of the regional facility (presumably the Borough) in proportion to the share of total storage volume required by the development and provided by the basin.
- 463.3 Where detention facilities are included as part of the storm drainage system, the following provisions will apply:
- 463.31 Detention ponds shall be designed so that they return to normal conditions within approximately twelve (12) hours after the termination of the storm, unless the Borough Engineer finds that downstream conditions may warrant other design criteria for stormwater release;
- 463.32 The developer shall demonstrate that such ponds are designed, protected and located to assure that public safety is maximized and health problems are prevented;

- 463.33 The developer shall verify that the operation of the detention facilities will not aggravate potential downstream peaking conditions, unless the detention facilities have been designed in accordance with an approved Act 167 Stormwater Management Plan for the applicable watershed for which this analysis has already been performed;
- 463.34 Emergency overflow facilities shall be provided for detention facilities to handle runoff in excess of design flows;
- 463.35 If the lands of the proposed land development will remain in common ownership, the developer shall provide written assurances to the Borough that the detention pond will be properly maintained;
- 463.36 If the lands of the proposed land development will be conveyed to two or more separate owners, the developer shall either provide written assurances to the Borough that the detention ponds will be properly maintained, or shall dedicate the land on which the detention ponds are located to the Borough which shall then be responsible for maintaining the detention ponds. If the detention pond(s) are dedicated to, and accepted by the Borough, the developer shall establish an escrow account with the Borough to cover future maintenance costs. -
- 463.37 The developer shall demonstrate that such ponds are designed to the following standards;
- 463.370 Top Berm width shall be a minimum of eight (8) feet.
- 463.371 Side slopes shall be three (3) horizontal to one (1) vertical or flatter.
- 463.372 Any pond that can possibly impound water to a depth in excess of thirty (30) inches shall be enclosed with a four (4) foot high durable chain link fence that includes a ten (10) foot wide gate;
- 463.373 All ponds shall be screened from view with a dense low maintenance year round vegetative screen that will reach a height of four (4) feet within three (3) years.
- 463.374 All ponds shall incorporate an impervious clay liner.

#### 464 Calculations of Runoff and Design Storm Frequency

- 464.1 Storm drainage systems required by this Ordinance shall be designed to provide protection from a ten (10) to a one hundred (100) year storm as determined by the Borough. For those portions of the Borough within watersheds which have approved Act 167 Stormwater Management Plans, the criteria within the applicable plan shall be used. A ten (10) year design storm is appropriate where a storm in excess of the design storm will have minor impact such as inconvenience to traffic on local streets. A twenty-five (25) year design storm is appropriate where a storm in excess of the design storm will cause major inconvenience to people and traffic in high use areas such as business districts and major roadways. A one hundred (100) year design storm is appropriate where a storm in excess of the design storm will cause damage to existing or future structures or their contents.
- 464.2 Stormwater runoff from watersheds of two hundred (200) or less acres shall be calculated by the rational method as described in Manual Number 37 of the American Society of Civil Engineers, except as the watershed size criteria may be modified by an approved Act 167 Stormwater Management Plan. The rational method of runoff calculation is explained in Appendix B.
- 464.3 Stormwater runoff from watersheds of more than two hundred (200) acres shall be calculated using the soil cover complex method developed by the Soil Conservation Service or other appropriate method acceptable to the Borough Engineer, except as the watershed size criteria may be modified by an approved Act 167 Stormwater Management Plan.
- 464.4 The design of any detention facility shall be verified by routing the proposed post-development hydrograph through the basin using a storage indication technique.
- 464.5 The Maning equation explained in Appendix B shall be used in calculating capacities of watercourses and storm sewers, except culverts which shall be designed using methods acceptable to the Borough Engineer.
- 464.6 Complete detailed drainage calculations and applicable charts and nomographs certified by the design engineer shall be submitted to the Borough Planning Committee.

465 Improvement Specifications

465.1 Inlets shall be designed and located to prevent hazardous conditions for vehicles, bicycles or pedestrians.

465.2 The Borough Engineer will supply additional specifications which may be necessary for spacing and type of inlets and manholes, minimum pipe sizes, and materials and construction methods in later sections of this Ordinance.

470 Underground Utilities and Utility Easements

471 In accordance with the Pennsylvania Public Utility Commission Investigation Docket No. 99, as amended from time to time, all electric utility distribution lines shall be installed underground in subdivisions or land developments of five (5) or more dwelling units. In addition, the following design requirements shall be observed:

471.1 Established public utility and state and Federal governmental agency design standards shall be observed in preparing the utility plan;

471.2 Utility lines to be installed within street right-of-way shall be located according to Borough or municipal authority requirements;

471.3 Whenever practicable, telephone and cable TV utilities shall be installed underground in connection with the installation of electric utility distribution lines;

471.4 Street lighting, were required, shall be provided at each intersection of the development and at intervals approved by the local utility company.

471.5 Utility lines shall be installed at the rough grade phase of construction. Utility lines shall be installed according to their depth, with the utility line installed at the greatest depth being installed first.

472 Utility Easements

472.1 Utility easements shall be provided for all utility lines servicing the abutting lots when such utility lines are installed outside street right-of-way. No structures or trees shall be placed within such easements. The location of utility easements shall be acceptable to the appropriate public utility or municipal authority.

472.2 Whenever practicable all utility lines to be installed outside street right-of-way shall share a common utility easement.



472.3 Utility easements shall be located either:

472.31 Abutting the street right-of-way. In this case a minimum easement width of ten (10) feet shall be required;

472.32 Along rear or side lot lines. In this case a minimum easement width of twenty (20) feet, ten (10) feet on each side of the lot line, shall be provided. Where the lot line coincides with the subdivision boundary a minimum easement width of fifteen (15) feet may be required by the Borough.

473 Petroleum and Natural Gas Transmission Lines

473.1 No company intending to install any petroleum, petroleum product or natural gas transmission line shall be allowed to construct the line on less than a fifty (50) foot right-of-way. Such lines are to be installed in the center of the right-of-way, and shall comply with the applicable standards imposed by State and Federal laws and regulations.

473.2 There shall be a minimum distance of twenty-five (25) feet, measured from the right-of-way line, between any proposed dwelling unit and any petroleum, petroleum products or natural gas transmission line which traverses the subdivision.

474 Floodproofing

474.1 Facilities for gas, electric and communication utilities shall be elevated or floodproofed to a level at least one and one-half (1-1/2) feet above the 100-year flood elevation.

480 **Mobile Home Parks**

481 Applicable Standards and Requirements

481.1 The design and development of mobile home parks shall conform to all the general standards and requirements set forth for subdivision and land developments in this Ordinance in addition to the specific design standards set forth herein (Section 480), and the Borough of North Catasauqua Zoning Ordinance of 1995.

## 482 Permits

482.1 It shall be unlawful for any person to construct, alter, or extend any mobile home park or any of the facilities thereof within the limits of the Borough unless such action has been approved by the Borough of North Catasauqua.

482.2 Mobile home park expansions, constructions and alterations shall be approved by Borough Council only after all requirements of this Ordinance and the Zoning Ordinance are met.

## 483 Off-street Parking Areas

483.1 Off-street parking areas shall be provided in all mobile parks for the use of park occupants and guests. A minimum of two (2) off-street parking places for each mobile home unit shall be required.

483.2 Required car parking spaces shall be so located as to provide convenient access to the mobile home, but shall not exceed a distance of one hundred (100) feet from the mobile home that are intended to serve.

483.3 All parking, and other performance standards, shall conform to the North Catasauqua Zoning Ordinance of 1995.

## 484 Pedestrian Walkways

484.1 All parks should provide safe, convenient, all-season pedestrian access between individual mobile homes, the park streets, and all community facilities provided for park residents. Sudden changes in alignment and gradient shall be avoided.

484.2 Where a common walk system is provided and maintained between locations, and where pedestrian traffic is concentrated, such common walks shall have a minimum width of four (4) feet.

484.3 All mobile home stands shall be connected to common walks, streets, driveways or parking spaces connecting to a paved street. Such individual walks shall have a minimum width of three (3) feet.

## 485 Mobile Home Siting

### 485.1 Mobile Home Stand Construction

485.11 The area of the mobile home stand shall be improved to provide an adequate foundation for the placement of the mobile home.

485.12 The stand shall be constructed from either concrete, asphalt concrete or other material sufficient to adequately support the mobile home and to prevent abnormal settling or heaving under the weight of the home. The corners of the mobile home shall be anchored to prevent wind overturn and rocking with tie-down such as concrete "dead men", screw augers, arrowhead anchors, or other devices suitable to withstand a tension of at least two thousand eight-hundred (2,800) pounds. All anchoring shall be in accordance with manufactures requirements.

485.13 After a mobile home has been anchored to the mobile home stand, the hitch which is employed for the transportation of the unit shall be removed, and there shall be a decorative skirt installed around the base of the unit.

#### 486 Common Open Space

486.1 At least twenty (20) percent of the usable site area of the mobile home park must be in common open space. The usable site area is that area which is free of water surfaces, severe high water table, quarries, or slopes over fifteen (15) percent.

486.2 Whenever possible, the common open space shall be designed as a contiguous area with pedestrian and visual accessibility to all residents of the mobile home park

486.3 Recreation areas and facilities shall be provided to meet the anticipated needs of the residents of the park. Not less than ten (10) percent of the usable site area shall be of a size, shape and relief that is conducive to active play.

#### 487 Utilities

##### 487.1 Individual Water Connections

487.11 Individual water-riser pipes shall be located within the confined area of the mobile home stand at a point where the water connection will approximate a vertical position, thereby insuring the shortest water connection possible and decreasing susceptibility to water pipe freezing.

487.12 The water-riser pipe shall have a minimum inside diameter of three-quarter (3/4) inch and terminate at least four (4) inches above the ground surface. The water outlet shall be provided with a cap when a mobile home does not occupy the lot.

- 487.13 Adequate provisions shall be made to prevent freezing of service lines, valves and riser pipe and to protect risers from heaving and thawing actions of ground during freezing weather. Surface drainage shall be diverted from the location of the riser pipe.
- 487.14 A shut-off valve below the frost line shall be provided near the water-riser pipe on each mobile home lot. Underground stop-and-waste valves are prohibited unless the type of manufacture and method of installation are approved by the Borough Engineer.

#### 487.2 Individual Sewer Connections

- 487.21 Each mobile home stand shall be provided with at least a four (4) inch diameter sewer riser pipe. The sewer riser pipe shall be so located on each stand that the sewer connection to the mobile home drain outlet will approximate a vertical position.
- 487.22 The sewer connection shall have a nominal inside diameter of not less than four (4) inches, and the slope of any portion thereof shall be at least one-fourth (1/4) inch per foot. All joints shall be watertight.
- 487.23 All materials used for sewer connections shall be semi-rigid, corrosion resistant, non-absorbent and durable. The inner surface shall be smooth.
- 487.24 Provision shall be made for plugging the sewer riser pipe when a mobile home does not occupy the site. Surface drainage shall be diverted away from the riser. The rim of the riser pipe shall extend at least one-half (1/2) inch above ground elevation.

#### 487.3 Individual Electrical Connections

- 487.31 Each mobile home lot shall be provided with an approved disconnecting device and over-current protective equipment. The minimum service per outlet shall be 120/240 volts AC, 100 amperes.
- 487.32 The mobile home shall be connected to the outlet receptacle by an approved type of flexible cable with connectors and a male attachment plug.

- 487.33 Where the calculated load of the mobile home is more than one hundred (100) amperes either a second outlet receptacle shall be installed or electrical service shall be provided by means of permanently installed conductors.

#### 487.4 Required Electrical Grounding

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

#### 487.5 Natural Gas Systems

- 487.51 Natural gas piping systems when installed in mobile home parks shall conform to the rules and regulations of the American Gas Association.
- 487.52 Each mobile home lot provided with piped gas shall have an approved shutoff valve installed upstream of the gas outlet. The outlet shall be equipped with a cap to prevent accidental discharge of gas when the outlet is not in use.

#### 487.6 Liquefied Petroleum Gas Systems

- 487.61 Liquefied petroleum systems provided for mobile homes, service buildings or other structures shall be installed and maintained in conformity with the rules and regulations of the National Fire Prevention Association Standards NFPA Nos. 57 and 58.
- 487.62 Systems shall be provided with safety devices to relieve excessive pressures and shall be arranged so that the discharge terminates at a safe location.
- 487.63 Systems shall have at least one accessible means for shutting off gas. Such means shall be located outside the mobile home and shall be maintained in effective operating condition.
- 487.64 All liquefied petroleum gas piping outside of the mobile homes shall be well supported against mechanical injury. Undiluted liquefied petroleum gas shall not be conveyed through piping equipment and systems in mobile homes.

487.65 Vessels of more than twelve (12) and less than sixty (60) U.S. gallons gross capacity may be installed on a mobile home lot and shall be securely, but not permanently, fastened to prevent accidental overturning.

487.66 No liquefied petroleum gas vessel shall be stored or located inside or beneath any storage cabinet, carport, mobile home or any other structure.

#### 487.7 Fuel Oil Supply Systems

487.71 All fuel oil supply systems for mobile homes, service buildings, and other structures shall be installed and maintained in conformity with the rules and regulations of the National Fire Protection Association Standard NFPA No. 31.

487.72 All piping from outside fuel storage tanks or cylinders to mobile homes shall be securely, but not permanently, fastened in place.

487.73 All fuel oil supply systems provided for mobile homes, service buildings, and other structures shall have shutoff valves located within five (5) feet from any mobile home exit.

487.74 All fuel storage tanks or cylinders shall be a minimum of five (5) feet from any mobile home exit.

487.75 Storage tanks located in areas subject to traffic shall be protected against physical damage.

### 490 Environmental Protection and Open Space Preservation

#### 491 Erosion and Sedimentation Control

491.1 All earthmoving activities shall be conducted in such a way as to prevent accelerated erosion and the resulting sedimentation.

491.2 No earthmoving or soil disturbance may take place until an erosion and sedimentation control plan has been developed in accordance with Chapter 102, Erosion Control, P.L. 1987. Such a plan is to be maintained on the construction site until all disturbed areas are finally stabilized.

491.3 The erosion and sedimentation control plan shall be developed in the form outlined in the Soil Erosion and Sedimentation Control Manual, issued by the Pennsylvania Department of Environmental Resources.

491.4 All erosion and sedimentation control plans shall be submitted with the final plan as set forth in Section 324.10 of this Ordinance.

491.5 When it has been determined that an earthmoving permit is required, the application for such a permit

491.6 The Borough of North Catasauqua will require an approval letter from the County Conservation District prior to preliminary plan approval.

#### 492 Natural Feature Preservation

492.1 The design and development of all subdivisions and land developments shall preserve, whenever possible, natural features which will aid in providing adequate open space for recreation and conditions generally favorable to the health, safety, and welfare of the residents. Some of these natural features are the natural terrain of the site, woodland areas, large trees, natural watercourses and bodies of water, wetlands, rock outcroppings, and scenic views. More detailed natural features are set forth in the following sections.

#### 492.2 Flood Plain Regulation

492.21 A map illustrating flood elevations for the tract for a 100-year flood, where applicable, shall be submitted as part of the feasibility review materials as set forth in Section 300. The flood elevation map shall be based on the Borough's flood insurance rate map (FIRM). If not available, the map should be based on estimated 100-year flood elevations or estimated areas subject to flooding based on best available data.

492.22 A developer shall adhere to the following standards within areas designated as regulatory floodways and flood fringe areas on the flood elevation map.

492.221 No buildings are to be constructed in regulatory floodways. Other encroachments may be permitted provided that the encroachment will not cause any increase in the 100-year flood elevation at any point. Consideration of the effects of a proposed use shall be based on a reasonable assumption that there will be an equal degree of encroachment extending for a significant reach on both sides of the stream.

- 492.222 Structures may be permitted in flood fringe areas provided that the lowest floor (including basement) is elevated at least one and one-half (1-1/2) feet above the 100-year flood elevation and that the proposed improvements will not increase the water surface elevation of the 100-year flood by more than one (1) foot at any point.
- 492.23 If the Borough determines that only part of a proposed plat can be safely developed, it shall limit development to that part and shall require that development proceed consistent with this determination.
- 492.24 When a developer does not intend to develop the plat himself and the Borough determines that additional controls are required to insure safe development, it may require the developer to impose appropriate deed restrictions on the land. Such deed restrictions shall be inserted in every deed and noted on every recorded plat.
- 492.25 The finished elevation of proposed streets shall not be more than one-half (1/2) foot below the Regulatory Flood Elevation. The Borough may require profiles and elevations of streets to determine compliance with the requirements. Drainage openings shall be sufficient to discharge flood flows without unduly increasing flood heights.
- 492.26 All sanitary sewer systems, whether public or private, shall be flood-proofed up to the Regulatory Flood Elevation.
- 492.27 The installation of sewage disposal facilities requiring soil absorption systems shall be prohibited within designated flood plain areas.
- 492.28 All water systems, whether public or private, shall be flood-proofed up to the Regulatory Flood Elevation.
- 492.29 All other public and private utilities and facilities including gas and electric shall be elevated or flood-proofed up to the Regulatory Flood Elevation.



### 492.3 Lake, Stream, and River Frontage Preservation

- 492.31 Lake, stream and river frontage shall be preserved as open space whenever possible. This area may be credited toward the open space requirement set forth in Section 493, and or the Zoning Ordinance of 1995.
- 492.32 Access to the water and maintenance easement area shall be provided at intervals of not more than one-half (0.5) mile. These access points shall not be less than fifty (50) feet in width.

### 492.4 Tree Preservation and Planting

- 492.41 Trees six (6) inches or more in diameter (measured at a height four and one-half (4-1/2) feet above grade) shall not be removed unless they are located within the proposed cartway or sidewalk portion of a street right-of-way, or within fifteen (15) feet of the foundation area of a new building. Areas in which trees are retained shall remain at original grade level and undisturbed wherever possible.
- 492.42 Where no existing trees are retained along proposed street right-of-way, trees shall be planted at intervals of fifty (50) feet on both sides of the right-of-way, but in no instance shall there be less than one (1) tree per lot.
- 492.43 A landscape plan shall be drawn for all commercial, industrial, planned residential, mobile home park, and multi-family developments. The plan shall show existing and proposed vegetative cover.
- 492.44 The Landscape Plan shall include trees in addition to those required along the street right-of-way. The following standards are to be used as a guide to the number, not the spacing or location, of additional tree required.
  - 492.441 One tree per dwelling unit;
  - 492.442 One tree per fifty (50) linear feet on newly constructed street. (Both sides)
- 492.45 Where the species and size of the plantings is not additionally controlled by the provisions of a landscaping ordinance, consideration shall be given in the species selection to disease and storm resistance.

#### 492.5 Topography

- 492.51 The natural terrain of the proposed subdivision tract will be retained wherever possible with cut and fill operations being kept to a minimum. Subdivisions and land developments shall minimize the disturbance of steeply sloping areas, that is areas with slopes in excess of fifteen (15) percent. Development shall be directed to the lesser sloping portions of the site to the greatest degree possible.

#### 492.6 Topsoil Protection

- 492.61 Topsoil shall not be removed from the development site or used as fill. Topsoil shall be removed from the areas of construction and stored separately. The topsoil shall be stabilized to minimize erosion during storage. Upon completion of the construction, topsoil must be uniformly redistributed on the site.

#### 493 Open Space and Recreation Areas

Subject to the provisions and requirements of the Municipalities Planning Code, the open space and recreation needs of subdivisions and land developments shall be met as follows:

- 493.1 For subdivisions and land developments involving less than forth (40) lots or dwelling units, cash in lieu of recreation space shall be provided as set forth in Section 493.3
- 493.2 For subdivisions and land developments involving forth (40) or more lots or dwelling units, the recreation needs shall be met as follows:
- 493.21 Land may be offered for dedication to the Borough, subject to approval by Council. A minimum of seven hundred fifty (750) square feet per lot or dwelling unit shall be provided. The Borough shall consider the offer relative to the following factors:
- 493.211 The suitability of the size, shape and landform of the tract for appropriate recreational facilities;
- 493.212 Accessibility with the Recreation Element of the Comprehensive Plan;
- 493.214 Availability of nearby recreation facilities for meeting the recreation needs; and
- 493.215 The ability to provide adequate security.

493.22 Cash in lieu of open space and recreation land dedication shall be provided to and used by the Borough as follows:

493.31 The cash in lieu shall be six hundred (\$600) dollars per lot or dwelling unit.

## SECTION V

### IMPROVEMENT SPECIFICATIONS

#### 500 General Requirements

- 501 Physical improvements to the subdivision/land development tract shall be provided, constructed and installed as shown on the Record Plan, in accordance with the requirements of this Ordinance.
- 502 As a condition to review of a Final Plan by Borough Planning Committee, the developer shall agree with the Borough Council, public utility or municipal authority as to installations of all improvements shown on the Plan and required by this Ordinance or the Zoning Ordinance of 1995. Before the Record Plan may be endorsed by the Borough Council, the developer shall submit a completed and executed original copy of the Subdivision Improvements Agreements and performance and maintenance guarantees in the amount required by Section 520.
- 503 All improvements installed by the developer shall be constructed in accordance with the design specifications of the Borough of North Catasauqua, public utility or municipal authority.
- 504 Inspection of the installation of those improvements required by Section 510, shall in all cases be the responsibility of the Borough Engineer. Costs for all inspections shall be the responsibility of the developer.

#### 510 Required Improvements

- 511 Improvements shall be provided, constructed and installed by the developer as stated in the Improvements agreement, shown on the Record Plan, and in accordance with the design standards set forth in Section IV of this Ordinance. The following improvements will be required in all applicable cases:
- 511.1 Street excavating, grading, subgrade preparation, base course paving and surface course paving installed in accordance to Borough of North Catasauqua Specifications;
- 511.2 Concrete curbing of the vertical type shall be installed in accordance with Borough of North Catasauqua specifications;
- 511.3 Concrete sidewalk or interior walkways installed according to Borough of North Catasauqua specifications;

- 511.4 Sanitary sewer system improvements installed according to the Borough of North Catasauqua specifications, and the Department of Environmental Resources;
- 511.5 Water supply and distribution system improvements shall be installed and designed in accordance with the specifications of the Northampton Water Authority, and the Pa. Department of Environmental Resources;
- 511.6 Storm drainage system improvements shall be designed and installed according to the Borough of North Catasauqua specifications.
- 511.7 Monuments shall be installed:
- 511.71 Concrete monuments shall be accurately placed at the intersection of all lines forming angles and at changes in directions of lines in the boundary (perimeter) of the property subdivided.
  - 511.72 Monuments shall be of reinforced concrete with minimum dimensions of four (4) inches by four (4) inches by thirty (30) inches. Concrete monuments shall be scored on top of the copper or brass dowel (with an indented cross).
  - 511.73 All monuments shall be placed by a Registered Professional Land Surveyor so that the scored point shall coincide exactly with the point of intersection of the line being monumented.
  - 511.74 Monuments shall be set with their top level with the finished grade of the surrounding ground, except:
    - 511.741 Monuments which are placed within the lines of existing or proposed sidewalks shall be so located (preferably beneath the sidewalks) that their tops will not be affected by lateral movement of the sidewalks, and
    - 511.742 Where monuments are located beneath a sidewalk, proper access shall be provided for their use.
- 511.8 Fire hydrants installed and positioned according to the Borough of North Catasauqua and the Northampton Water Authority.
- 511.9 Street signs, and stop signs, installed according to Borough specifications.

511.10 Shade trees shall be of nursery stock quality. The average trunk diameter measured at a height of three (3) feet above the finished grade level shall be a minimum of two (2) inches.

520 **Improvement Guarantee Procedure**

521 Before the Borough approves any Final Plan and as a prerequisite for approval, the developer shall deliver to the Borough, and or public utility, or authority, a performance guarantee in the amount of one hundred ten (110) percent of the cost of all improvements required by this Ordinance, as determined in accordance with the procedures set forth in the Municipalities Planning Code as amended, guaranteeing the construction and installation of all such improvements before the date fixed in the formal action of approval or accompanying agreement for completion of the improvements. Upon written application signed by both the obligor and surety of the performance guarantee in a form approved by the Solicitor, the Borough of North Catasauqua, public utility, or municipal authority may, at their discretion, extend said period by not more than three (3) additional years. If the party posting the financial security requires more than one (1) year from the date of posting of the financial security to complete the required improvements, the amount of financial security may be increased by an additional ten (10) percent for each one-year period beyond the first anniversary date from posting of financial security or to an amount not exceeding one hundred ten (110) percent of the cost of completing the required improvements as reestablished on or about the expiration of the preceding one-year period by using the above bidding procedure. In the event of default under a performance guarantee, the proceeds of the performance guarantee received by the Borough, public utility, or municipal authority shall be used to construct and install the improvements.

522 Before the Borough approves any Final Plan and as a prerequisite for approval the developer shall deliver to the Borough, public utility, or municipal authority, a maintenance guarantee in an amount of not less than fifteen (15) percent of the actual cost of the installation of all improvements required by this ordinance, guaranteeing acceptance of all such improvements by the Borough, public utility, or municipal authority.

530 **Approval of Improvements and Release Performance Guarantee by the Municipal Governing Body, Public Utility, or Municipal Authority.**

531 The approval of improvements and release of performance guarantee by the Borough, Pubic Utility or Municipal Authority, and the inspection of the improvements shall occur in conformance with the procedures prescribed by the Municipalities Planning Code.

- 532 In the event that any improvements which may be required have not been installed as provided in this Ordinance or in accord with the approved Final Plan, the Borough, public utility, or municipal authority, is hereby granted the power to enforce any corporate bond, or other security 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 Borough 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 such security, and not for any other municipal purpose.

## SECTION VI

### ADMINISTRATION

#### 600 **Amendments**

601 Amendments to the Subdivision and Land Development Ordinance shall become effective only after a public hearing held pursuant to public notice in the manner prescribed for enactment of a subdivision and land development ordinance by the Pennsylvania Municipalities Planning Code. In addition, in case in case of an amendment other than that prepared by the Joint Planning Commission, the Borough shall submit each such amendment to the Joint Planning Commission for recommendations at least thirty (30) days prior to the date fixed for the public hearing on such proposed amendment.

#### 610 **Appeals**

611 The decisions of the Borough Council with respect to the approval or disapproval of Subdivision or Land Development plans may be appealed directly to court in the same manner and within the same time limitations as is provided for zoning appeals in Article X of the Pennsylvania Municipalities planning Code.

#### 620 **Enforcement Remedies**

621 The enforcement remedies shall apply as is stipulated in the Municipalities Planning Code.

#### 630 **Validity and Conflicts**

631 Should any action or provisions of this Ordinance be declared by the courts to be invalid, such decision shall not affect the validity of the Ordinance as a whole, nor the validity of any other section or provision of the Ordinance than the one so declared.

632 Whenever there is a conflict between minimum standards or requirements set forth in this Ordinance and those contained in other municipal ordinances and regulations, or other applicable laws and regulations, the most stringent standards or requirement shall apply.

#### 640 **Fees**

641 The Borough Council shall establish, by resolution, a collection procedure and schedule of fees to be paid by the developer at the time of filing of the Sketch, Preliminary and Final Plans. No plan shall be accepted for filing unless the required number of plans have been submitted with the supplemental material required, accompanied by the required review fee.



641.1 Charges for field inspection as required by the Borough Council for public improvements shall be based on actual costs incurred for such inspections.

641.2 No Final Plan shall be approved unless all outstanding fees and charges are paid in full.

641.3 No plan shall be filed at the Recorder of Deeds Office unless all fees and charges are paid in full.

650 **Repealer**

650.1 The Northampton County Subdivision Regulations of 1989 and all amendments thereto are hereby repealed. This Ordinance does not repeal other laws or Ordinances except those specifically repealed by this Ordinance.

660 **Modifications and Exceptions**

660.1 The Borough Council of North Catasauqua may grant a modification to the requirements of one or more provisions of this ordinance if the literal enforcement will exact undue hardship because of peculiar conditions pertaining to the land in question, provided that such modification will not be contrary to the public interest and that the purpose and intent of this ordinance is met. All requests for modifications shall be in writing and shall accompany and be a part of the application for development. The requests shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the ordinance involved and the minimum modification necessary.

670 **Effective Date of Ordinance**

This Ordinance shall become effective on this 17<sup>th</sup> day of FEBRUARY, 1996.

## SECTION VII

### DEFINITIONS

- 700 Unless otherwise expressly stated, the following terms shall, for the purpose of these regulations, have the meaning indicated:
- 701 Words in the singular include the plural and those in the plural include the singular.
- 702 Words in the present tense include the future tense.
- 703 The words "person", "developer", "subdivider", and "owner" include a corporation, unincorporated association, a partnership, or other legal entity, as well as an individual.
- 704 The word "building" includes structure and shall be construed as if followed by the phrase "or part thereof".
- 705 The words "should" and "may" are mandatory and directive.
- 710 Other terms or words used herein shall be interpreted or defined as follow:
- 711 **APPLICANT.** A landowner or developer, as hereinafter defined, who has filed an application for development including his heirs, successors and assigns.
- 712 **BLOCK.** Property bounded on one side by a street, and other three sides, by a street, railroad right-of-way, waterway, unsubdivided area, or other definite barrier.
- 713 **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 that occupied by the principal building.
- 714 **BUILDING, PRINCIPAL.** A structure enclosed within exterior walls or fire walls, built, erected, and framed of component structural parts, designed for the housing, shelter, enclosure, and support of individuals, animals, or property of any kind, main structure on a given lot.
- 715 **BUILDING SETBACK LINE.** The line within a property defining the minimum required front yard distance between any building to be erected, and an adjacent right-of-way.
- 716 **CLEAR SIGHT TRIANGLE.** An area of unobstructed vision at street intersections defined by lines of sight between points at a given distance from the intersection of the street center lines.

- 717 **COMMON OPEN SPACE.** A parcel or parcels of land, an area of water, or a combination of land and water within a development site designed and intended for the use of residents of the development, not including streets, off-street parking area, private yard space, and areas set aside for non-residential and public facilities. Common open space shall be substantially free of structures, but may contain such improvements as are appropriate for recreational use by the residents.
- 718 **COMPREHENSIVE PLAN.** The maps, charts, and textual material adopted by the Borough of North Catasauqua in accordance with the Pennsylvania Municipalities Planning Code and designed, as a whole and in its several parts, as a Comprehensive Plan for the continuing development of the Borough.
- 719 **COUNTY.** The County of Northampton.
- 720 **COUNTY CONSERVATION DISTRICT.** The Northampton County Conservation District.
- 721 **CUT.** An excavation. The difference between a point on the original ground and a designated point of lower elevation on the final grade. Also, the material removed in excavation.
- 722 **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.
- 723 **DOUBLE OR REVERSE FRONTAGE LOT.** A lot extending between and having frontage on two generally parallel streets with vehicular access from only one street.
- 724 **DWELLING UNIT.** Any structure, or part thereof, designed to be occupied as living quarters as a single housekeeping unit.
- 725 **EASEMENT.** A right-of-way granted, but not dedicated, for limited use of private land for a public or quasi-public purpose, and within which the owner of the property shall not erect any permanent structures, but shall have the right to make any other use of the land which is not inconsistent with the rights of the grantee.
- 726 **ENGINEER.** A professional engineer licensed as such in the Commonwealth of Pennsylvania.
- 727 **EROSION.** The removal of surface materials by the action of natural elements.

- 728 **EROSION AND SEDIMENTATION CONTROL PLAN.** A plan designed to prevent on-site accelerated erosion and off-site sedimentation through the use of vegetative or mechanical controls. Control measures must be designed to fit the topography, soils, rainfall and land use of the area they are to protect.
- 729 **FLAG LOT.** A lot with direct frontage on a public road which does not meet the required lot width at the minimum required front yard setback line, which consists of an access lane with a minimum width of twenty-five (25) feet and a rectangular area, the dimensions of which exceed the minimum lot width requirement as established in the municipal zoning ordinance, if any.
- 730 **FLOOD, ONE HUNDRED (100) YEAR.** The flood having a one (1) percent chance of being equaled or exceeded in an given year.
- 731 **FLOOD FRINGE.** That portion of the flood plain outside the floodway.
- 732 **FLOOD PLAIN.** The area of normally dry land along a natural watercourse which is periodically inundated by water therefrom.
- 733 **FLOODWAY, REGULATORY.** The channel of a watercourse and the adjacent land area that must be reserved in order to discharge the one hundred (100) year flood. The regulatory floodway is designated on the flood boundary and floodway map of the municipality's flood insurance study prepared by the Federal Insurance Administration.
- 734 **IMPROVEMENTS.** Those physical additions and changes to the land that may be necessary to produce usable and desirable lots.
- 735 **JOINT PLANNING COMMISSION (JPC).** The Joint Planning Commission of Lehigh and Northampton Counties, Pennsylvania.
- 736 **LAND DEVELOPMENT.** Any of the following activities: (1) The improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving, (i) 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 (ii) 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 the purpose of streets, common areas, leaseholds, condominiums, building groups or other features: (2) A subdivision of land.

- 737 **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 having a remaining term of not less than forty (40) years, or other person having a proprietary interest in land, shall be deemed to be a landowner for the purpose of this Ordinance.
- 738 **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.
- 739 **LOT AREA.** The area contained within the property line of a lot (as shown on the Plan), excluding space within all streets.
- 740 **LOWEST FLOOR.** The lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.
- 741 **MAINTENANCE GUARANTEE.** Security in a form in accord with the provisions set forth in the Municipalities Planning Code as amended, which insures the structural integrity of the improvements as well as the functioning of said improvements in accordance with the design and specifications as depicted on the final plat for a period not to exceed eighteen (18) months after the acceptance of said improvements by the Municipal Governing Body, public utility, or municipal authority.
- 742 **MARKER.** A metal pipe or pin of at least three-quarters (3/4) inch outside diameter and at least twenty-four (24) inches in length.
- 744 **MOBILE HOME PARK.** A parcel or contiguous parcels of land which has been so designated and improved that it contains two or more mobile home lots for the placement thereon of mobile homes.
- 745 **MOBILE HOME STAND.** That part of an individual lot which has been reserved for the placement of the mobile home, appurtenant structures or additions.
- 746 **MONUMENT.** A stone or concrete monument with a flat top at least four (4) inches in diameter or square. It is recommended that the bottom sides or radius be at least two inches greater than the top to minimize movements caused by frost. The monument should contain a copper or brass dowel and be at least thirty (30) inches in length.
- 747 **MUNICIPALITIES PLANNING CODE.** The municipality in which the property proposed for subdivision or development is located.

- 748 **OFFICIAL MAP.** The municipal map adopted by Ordinance showing exact locations of existing and proposed lines for public streets, watercourses and public grounds, including widenings, narrowings, extensions, diminutions, opening or closing of same for the entire municipality.
- 749 **OFFICIAL PLAN - SEWAGE FACILITIES.** A comprehensive plan for the provision of adequate sewage systems adopted by a municipality or municipalities possessing authority or jurisdiction over the provision of such systems and submitted to and approved by the State Department of Environmental Resources as provided by the Pennsylvania Sewage Facilities Act, and Chapter 71, Rules and Regulations promulgated thereunder.
- 750 **PAVEMENT WIDTH (ROADWAY).** The portion of a street right-of-way, generally paved, intended for vehicular use.
- 751 **PERFORMANCE GUARANTEE.** Security in a form in accord with the provisions set forth in the Municipalities Planning Code as amended to guarantee that the proper construction of improvements be made by the developer as a condition for the approval of the Plan.
- 752 **PLAN, FEASIBILITY REVIEW.** An initial submission, by the developer, of maps and other materials analyzing the natural features of the site as they relate to its development potential. The proposed concept for development of the tract is included in the submission.
- 753 **PLAN, PRELIMINARY.** A tentative plan, in lesser detail than a Final Plan, showing proposed streets and lot layout and such other information as required by this Ordinance.
- 754 **PLAN, FINAL.** A complete and exact plan prepared for official recording as required by this Ordinance to define property rights, streets and other proposed improvements.
- 755 **PLAN, RECORD.** The copy of the Final Plan bearing the original endorsements of the Borough Council, which is intended to be recorded with the County Recorder of Deeds.
- 756 **PLANNING MODULE FOR LAND DEVELOPMENT.** A document to be prepared by the developer or subdivider, accepted by the municipality, and submitted to the Pennsylvania Department of Environmental Resources to provide proposed development data in order to supplement or revise the municipality's Official Plan for sewage facilities.

- 757 **RESUBDIVISION.** Any replatting or resubdivision of land, limited to changes in lot lines on approved Final Plans or Recorded Plans as specified in this Ordinance. Other replattings shall be considered as constituting a new subdivision of land. See also Subdivision.
- 758 **RIGHT-OF-WAY.** The total width of any land reserved or dedicated as a street, sidewalk, or for other public or quasi-public purposes.
- 759 **RUNOFF.** Water that is derived directly from precipitation and passes over the ground into watercourses.
- 760 **SANITARY SEWAGE DISPOSAL, PUBLIC.** A sanitary sewage collection system in which sewage is carried from individual lots by a system of pipes to a central treatment and disposal plant, generally serving a major portion of a governmental agency, governmental authority, or public utility company.
- 761 **SANITARY SEWAGE DISPOSAL, CENTRALIZED.** A sanitary sewage collection system in which sewage is carried from individual lots by a system of pipes to a central treatment and disposal plant, commonly called a "package treatment plant", generally serving a single land development, subdivision, or neighborhood, and operated by a governmental agency, governmental authority, public utility company, or a developer.
- 762 **SANITARY SEWAGE DISPOSAL, ON-LOT.** Any structure designed to treat sanitary sewage within the boundaries of an individual lot.
- 763 **SEDIMENTATION.** The process by which mineral or organic matter is accumulated or deposited by moving wind, water, or gravity. Once this matter is deposited (or remains suspended in water), it is usually referred to as "sediment".
- 764 **SEWAGE ENFORCEMENT OFFICER.** The municipal official who issues and reviews permit applications and conducts investigations and inspections as are necessary to implement Act 537 and the rules and regulations thereunder.
- 765 **SIGHT DISTANCE.** The required length or roadway visible to the driver of a motor vehicle at any given point on the roadway when the view is unobstructed by traffic. Sight distance measurements shall be made from a point 3.75 feet above the centerline of the road surface to a point 0.5 feet above the centerline of the road surface.
- 766 **SLOPE.** The face of an embankment or cut section; any ground whose surface makes an angle with the plane of the horizon. Slopes are usually expressed in a percentage based upon vertical difference in feet per one hundred (100) feet of horizontal distance.

- 767 **STAFF.** The employee or consultant designated by Borough Council to administer this Ordinance.
- 768 **STREET.** A strip of land, including the entire right-of-way (i.e., not limited to the cartway) intended for use as a means of vehicular and pedestrian circulation to provide access to more than one (1) lot. The word "street" includes street includes street, avenue, boulevard, road, highway, freeway, parkway, alley, viaduct, and any other ways used or intended to be used by vehicular traffic or pedestrians whether public or private. Streets are further classified according to the functions they perform:
- 768.1 **Arterial Street.** A street serving a large volume of comparatively high-speed and long-distance traffic, including all facilities classified as main and secondary highways by the Pennsylvania Department of Transportation.
- 768.2 **Collector Street.** A street which, in addition to providing access to abutting properties, intercepts local streets to provide a route giving access to community facilities and/or other collector and arterial streets (streets in industrial and commercial subdivisions shall generally be considered collector streets);
- 768.3 **Local Street.** A street used primarily to provide access to abutting properties;
- 768.4 **Cul-de-Sac Street.** A local street intersecting another street at one end, and terminating in a vehicular turn-around at the other.
- 768.5 **Half (Partial) Street.** A street, generally parallel and adjacent to a property line, having a lesser right-of-way width than normally required for improvement and use of the street;
- 768.6 **Marginal Access Street.** A local street, parallel and adjacent to a major street ( but separated from it by a reserve strip) which provides access to abutting properties and control of intersections with the major street;
- 768.7 **Service Street (Alley).** A minor right-of-way providing secondary vehicular access to the side or rear of two or more properties.
- 769 **STORMWATER DETENTION FACILITIES.** Basins, ponds, ponding areas, depressions or other structures or features used to temporarily store rainfall and release it at a controlled rate.



- 770 **STORM DRAINAGE SYSTEMS.** All facilities and features, such as pipes, culverts, open channels, ditches, swales, and storm water detention facilities, used to transmit or temporarily store surface water runoff.
- 771 **STRUCTURE.** Any man-made object having an ascertainable stationary location on or in land or water, whether or not affixed to the land.
- 772 **SUBDIVISION.** 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 division of land for agricultural purposes into parcels of more than ten (10) acres, not involving any new street, easement of access, or residence, shall be exempted.
- 773 **SURVEYOR.** A licensed surveyor registered by the Commonwealth of Pennsylvania.
- 774 **SWALE.** A low lying stretch of natural or man-made land which gathers or carries surface water runoff.
- 775 **TESTING ON-LOT SANITARY SEWER SYSTEMS.** Soil tests and percolation tests conducted by the Municipal Sewage Enforcement Officer in compliance with Chapter 73 of Pa. Department of Environmental Resources Regulations in order to determine whether a permit may be issued for installation of on-lot sewage disposal system.
- 776 **TOPSOIL.** Surface soils and subsurface soils which presumably are fertile soils and soil material, ordinarily rich in organic matter or humus debris. Topsoil is usually found in the uppermost soil layer called the A Horizon.
- 777 **WATERCOURSE.** A natural or man-made permanent stream, river, brook, creek, channel, swale, or ditch for water.
- 778 **WATER SUPPLY AND DISTRIBUTION SYSTEM, PUBLIC.** A system for supplying and distributing water from a common source to dwellings and other buildings, generally serving a major portion of a municipality or municipalities, and operated by a governmental agency, governmental authority, or a public utility company.

**779 WATER SUPPLY AND DISTRIBUTION SYSTEM, CENTRALIZED**

A system for supplying and distributing water from a common source to two or more dwellings and/or other buildings, generally serving a single land development, subdivision, or neighborhood, and operated by a governmental agency, governmental authority, public utility company or a developer.

**780 WATER SUPPLY AND DISTRIBUTION SYSTEM, ON-LOT.** A system for supplying and distributing water to a single dwelling or other building from a source located on the same lot.

## **APPENDIX A**

### **STORM DRAINAGE RUNOFF CALCULATIONS**

## APPENDIX A

### STORM DRAINAGE RUNOFF CALCULATION

#### A. Rational Formula

The rational formula used in calculating runoff is  $Q=ciA$ . In this equation, Q is the peak runoff in cubic feet per second, c is a runoff coefficient which depends on the nature of the land cover, i is the intensity of rainfall in inches per hour for a duration equal to the time of concentration for the drainage area involved, and A is the watershed area in acres. The time of concentration is the time required for runoff from the upper reaches of the watershed to reach the point for which runoff rates are being calculated.

##### 1. Values of Coefficient "c"

Runoff coefficients used in the Rational Formula shall be consistent with Table A-1.

##### 2. Values of Rainfall Intensity "i"

Rainfall intensities to be used in the Regional Formula shall be consistent with the Intensity-Duration-Frequency (I-D-F) Curves as shown in Figure A-1. Time of concentration values to be used with the I-D-F curves shall be based upon a segmental velocity/travel time calculation along the most remote path. The flow path should be broken down into flow type (overland, shallow concentrated, open channel) based upon site evaluation and velocities and travel times calculated with methods acceptable to the Township Engineer. The time of concentration would be the sums of the segmental travel times.

#### B. Manning's Equation

1. Manning's equation to determine the velocity of flow in open channels and closed drains not under pressure is listed below. The second equation is used to determine the capacity after the velocity has been determined.

$$V = \frac{1.486}{n} r^{2/3} S^{1/2}$$

v = velocity in feet per second

n = coefficient of roughness

a = cross-sectional area of flow in square feet

p = wetted perimeter, the length of the line of contact between the water and the bottom and sides of the channel or pipe around the cross-section in feet

r = hydraulic radius =  $a/p$   
s = slope of the channel or pipe in feet per foot  
q = capacity of the channel or pipe in cubic feet per second

2. The coefficient of roughness used shall be as follows unless different coefficients are approved by the Township Engineer.

0.012 for concrete pipes and paved channels  
0.012 - 0.027 for corrugated metal pipes  
0.035 for earth ditches  
0.040 for vegetated channels

C. Maximum Stream Velocities in Open Channels

Maximum permissible velocities in channels shall be based upon the DER Soil Erosion and Sedimentation Control Manual, February 1985, Appendix 67, as reproduced in Table A-2.

# RUNOFF COEFFICIENTS FOR THE RATIONAL METHOD\*

## HYDROLOGIC SOIL GROUP AND SLOPE RANGE

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 <sup>a</sup> 0.14 <sup>b</sup>	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

# RUNOFF COEFFICIENTS FOR THE RATIONAL METHOD\* (Cont'd)

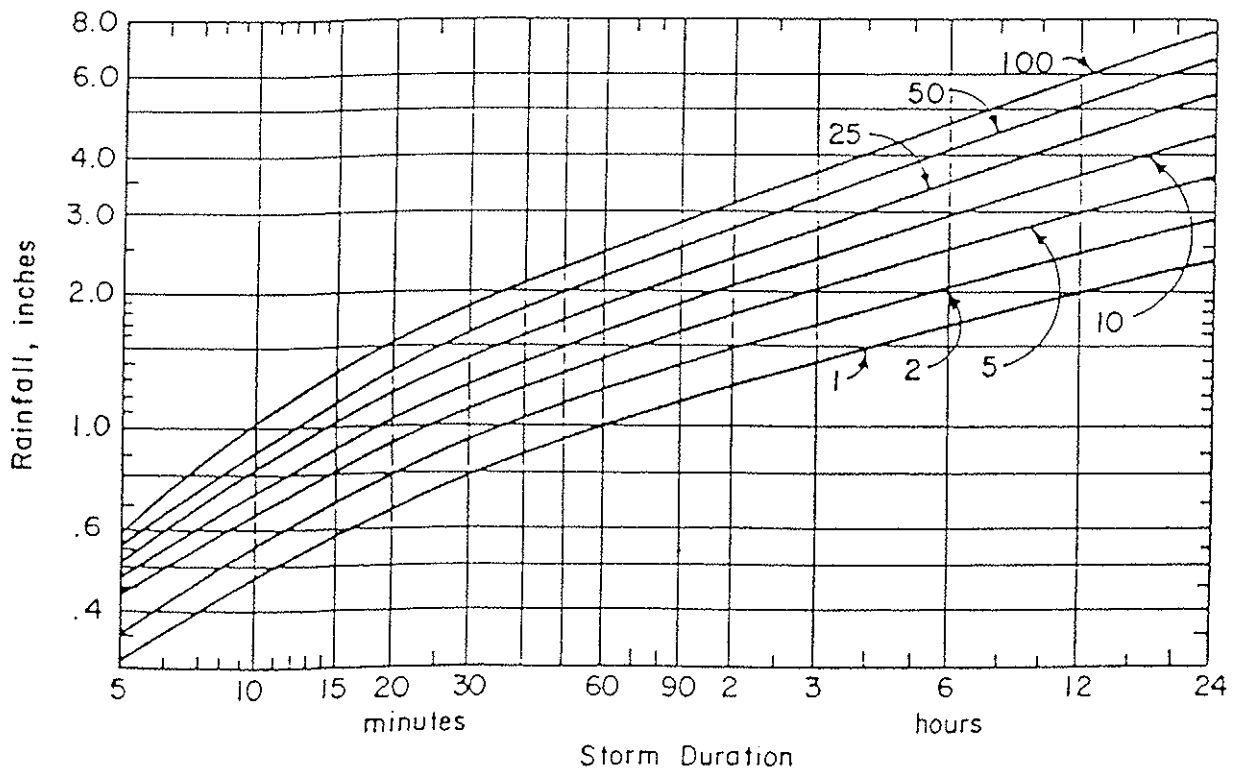
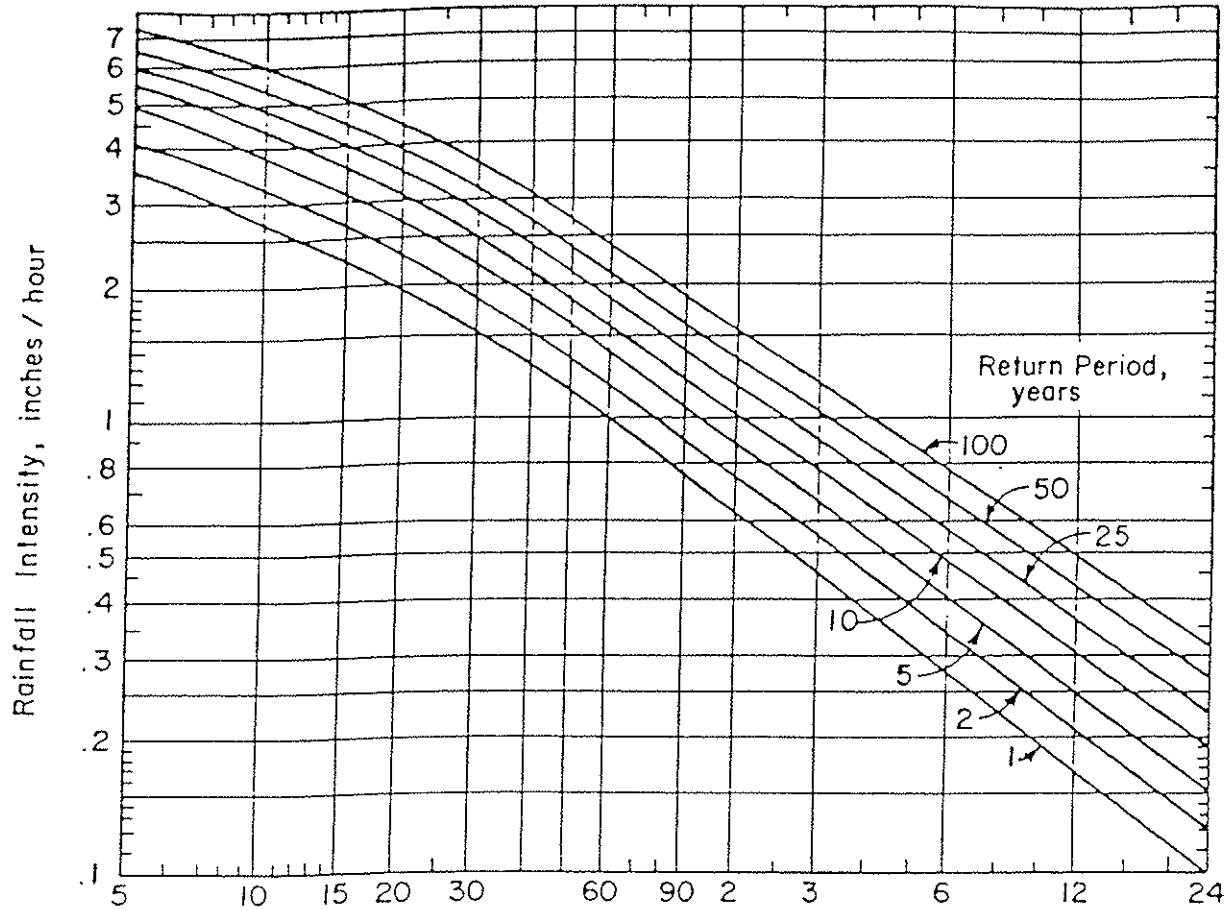
Land Use	A				B				C				D			
	0-2%	2-6%	6%+		0-2%	2-6%	6%+		0-2%	2-6%	6%+		0-2%	2-6%	6%+	
Industrial	0.67	0.68	0.68		0.68	0.68	0.69		0.68	0.69	0.69		0.69	0.69	0.70	
	0.85	0.85	0.86		0.85	0.86	0.86		0.86	0.86	0.87		0.86	0.86	0.88	
Commercial	0.71	0.71	0.72		0.71	0.72	0.72		0.72	0.72	0.72		0.72	0.72	0.72	
	0.88	0.88	0.89		0.89	0.89	0.89		0.89	0.89	0.90		0.89	0.89	0.90	
Streets	0.70	0.71	0.72		0.71	0.72	0.74		0.72	0.73	0.76		0.73	0.75	0.78	
	0.76	0.77	0.79		0.80	0.82	0.84		0.84	0.85	0.89		0.89	0.91	0.95	
Open Space	0.05	0.10	0.14		0.08	0.13	0.19		0.12	0.17	0.24		0.16	0.21	0.28	
	0.11	0.16	0.20		0.14	0.19	0.26		0.18	0.23	0.32		0.22	0.27	0.39	
Parking	0.85	0.86	0.87		0.85	0.86	0.87		0.85	0.86	0.87		0.85	0.86	0.87	
	0.95	0.96	0.97		0.95	0.96	0.97		0.95	0.96	0.97		0.95	0.96	0.97	

\*Source: Rawls, W.J., S.L. Wong and R.H. McCuen, 1981. Comparison of urban flood frequency procedures. Preliminary draft report prepared for the Soil Conservation Service, Beltsville, Maryland.

aRunoff coefficients for storm recurrence intervals less than 25 years.

bRunoff coefficients for storm recurrence intervals of 25 years or more.

# INTENSITY-DURATION-FREQUENCY CURVES\*



\*Source: Pennsylvania Dept. of Transp. Design Rainfall Curves (1986).



# PERMISSIBLE VELOCITIES FOR CHANNELS\*

CHANNEL LINING

PERMISSIBLE CHANNEL  
VELOCITY (FEET PER SECOND)

## Vegetation

Alfalfa	2.5	-	3.5
Bermudagrass	4	-	8
Crabgrass	2.5	-	3.5
Crownvetch	3	-	5
Kentucky Bluegrass	4	-	7
Kentucky 31 Tall Fescue	2.5	-	7
Red Clover or Red Fescue	2.5	-	3.5
Reed Canary	3	-	5
Ryegrass	2.5	-	3.5
Small Grains	2.5	-	3
Smooth Brome	3	-	7
Sudan Grass or Timothy	2.5	-	3.5

## Bare Earth, Easily Eroded

Fine Sand	1.5
Sand Loam	1.75
Silt Loam or Alluvial Silts, Loose	2
Firm Loam	2.25

## Bare Earth, Erosion Resistant

Fine Gravel	2.5
Stiff Clay or Alluvial Silts, Firm	3
Loam to Cobbles (graded)	3.75
Silt to Cobbles (graded or Coarse Gravel)	4
Cobbles and Stones or Shales and Hardpans	5
Durable Bedrock	8

## Other

Plastic	4
6" Rip Rap	6
Asphalt	7
9" Rip Rap	8
12" Rip Rap or Wood	9
Concrete or Steel	12

\*These values, if applied to uniform, straight channels, may be considered in accordance with Chapter 102.12 of the Erosion Control Rules and Regulations. However, slope, soil condition, climate and management must be considered in channel design. If different channel linings exist in a channel, and size and slope do not change, design the channel for the lining with the lower velocity listed. Where velocity ranges are listed, the lower velocity is for design with easily eroded soils and slopes greater than 10%. The higher velocity is for design with erosion resistant soils and slopes less than 5%. Filtration and/or sedimentation in the channel is encouraged. However, this must be considered for velocity determination in the design of the channel cross-section.

Source: Department of Environmental Resources, Soil Erosion and Sedimentation Control Manual, Feb. 1985, Appendix 67.

**APPENDIX B**  
**BOROUGH OF NORTH CATASAUQUA**

**NORTHAMPTON COUNTY**  
**PENNSYLVANIA**

***STANDARDS***  
***FOR***  
***IMPROVEMENTS CONSTRUCTION***

February 1996

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## GENERAL STANDARDS

101 Scope

All improvements required to be built, placed, erected or planted within existing or proposed Borough roads or rights-of-way or on private property eligible for use by the public, shall conform to these standards for improvements construction.

102 References

Throughout these standards, references will be made to various standard specifications. When such standards are referenced, they shall be considered as being fully incorporated into these standards.

103 Control of Work

The Borough and/or its agents, employees or consultants, have no direct or indirect supervisory control over improvements construction. Construction methods, procedures and safety provisions are the responsibility of the developer.

104 Safety

In particular, compliance with all local, state and Federal regulations regarding safety of all operations, of all workers and of the general public, is the responsibility of the developer.

105 Inspection

Borough inspection of improvements construction will be made to check general compliance with the material and workmanship criteria of these standards. Such inspection shall not relieve the developer from full responsibility for the quality of his work product or the layout of improvements to the lines and grades on the approved plans.

106 Notification

It shall be the responsibility of the developer to notify the appropriate inspection consultant for the Borough or designated authority at least twenty-four (24) hours prior to commencing any construction activity.

107 Conflicts

Where a conflict exists between the requirements of these standards and the requirements of another jurisdiction, it shall be the responsibility of the developer to resolve the conflict prior to proceeding with construction.

## STREETS

201 Grading

Streets shall be graded to the full width of the right-of-way, surfaced and improved to the grades and dimensions shown on the plans, profiles and cross-sections submitted by the developer and approved by the Borough Council. In subdivisions or land developments where sidewalks are not required, the sidewalk area shall be graded in the same manner as if sidewalks were to be constructed.

202 Subbase and Underdrain

A three inch (3") compacted subbase consisting of Type "C" or better No. 2A stone shall be constructed on a properly prepared subgrade for all roads. Subbase shall be constructed in accordance with the requirements of Section 350 PennDOT Form 408, latest Specifications. Where subgrade conditions dictate, the use of underdrain may be required when specified by the Borough Engineer. Where required, underdrain shall be constructed in accordance with Section 610 of PennDOT Form 408, latest Specifications.

203 Base Course

For all classifications of streets, base course shall be constructed of five inches (5") compacted depth bituminous concrete base course B.C.B.C. constructed in accordance with Section 305 of PennDOT Form 408, latest Specifications. Unless full depth stone backfill is used for underground utilities construction, a six (6) month lag time shall be required between completion of utilities and placement of base course.

204 Surface Course

Tack Coat - Tack Coat conforming to Section 460 of PennDOT Form 408, latest Specifications, shall be required on all B.C.B.C. surfaces prior to placement of surface course(s) paving, if in the opinion of the Borough Engineer, the base course has become nonadherent.

Arterial Streets - The surface course shall consist of two inches (2") compacted depth binder course and 1-1/2 inches compacted depth wearing course as specified in Sections 420 and 421 of PennDOT Form 408, latest Specifications.

Collector Streets - The surface course shall consist of 1-1/2 inches compacted depth binder course and one inch (1") compacted depth wearing course as specified in Sections 420 and 421 of PennDOT Form 408, latest Specifications.

Local Roads - The surface course shall consist of 1-1/2 inches compacted depth wearing course as specified in Section 420 of PennDOT Form 408, latest Specifications. No binder course shall be required.

## CURBING

301 Type

Curbing shall be plain cement concrete, upright design, having a height of twenty-two inches (22") and tapering from a top width of six inches (6") to a base width of eight inches (8"). A six inch (6") expose shall be used unless otherwise directed by the Borough Engineer.

302 Subgrade

The subgrade shall be substantially dry, unfrozen, firmly compacted soil. Thorough compaction shall be attained by using an approved pneumatic compactor or self-contained compactor, capable of delivering 800 to 1,000 pounds at the shoe.

303 Forms

Forms shall be made of approved substantial material, preferably of steel, and shall be smooth, free of warp and sufficiently rigid and supported to resist springing out of shape. These forms shall be of a depth equal to that of the proposed curb. Prior to pouring the concrete, all forms and templates shall be thoroughly cleaned and treated with an approved material to prevent the concrete from adhering thereto. Material which will adhere to or discolor the concrete shall not be used.

304 Concrete

Concrete shall meet the requirements of PennDOT Form 408, latest Specifications, Section 704 for Class A Cement concrete. No concrete shall be mixed or placed when the air temperature is below 50°F or above 90°F.

305 Pouring

Curbs shall be carefully poured monolithically without segregation of constituents, tamped and screeded true to grade and section, eliminating all voids and bring sufficient mortar to the surface for finishing in a smooth, neat, even manner using approved tools.

306 Joints

Each curb section shall be constructed in lengths of ten feet (10') where practicable; in no case shall a section be less than five feet (5') long. Each section shall be separated when pouring by a 1/8 inch steel template equal to the full depth of the curb.



Expansion joints of approved 1/2 inch premoulded bituminous material shall be placed for the full curb depth at all points adjoining sidewalk and existing curb, at point of tangency of street returns and intersecting curbs, and in no case more than thirty feet (30') apart.

307 Finishing

Forms may be removed no earlier than twelve (12) hours after placement of the concrete. All construction joints shall then be filled with approved dry, sharp sand. Minor defects and honeycombing shall be corrected by patching with mortar; no plastering will be permitted. All exposed concrete shall be rubbed to a smooth surface and edges at joints finished with a suitable tool.

## SIDEWALKS

401 Subgrade

The subgrade shall substantially be dry, unfrozen, firmly compacted soil. Thorough compaction shall be attained by using an approved pneumatic compactor or self-contained compactor capable of delivering 800 to 1,000 pounds at the shoe.

402 Base

A stone bed shall be placed and thoroughly compacted to a depth of four inches (4") using the above-mentioned compactors. The stone shall be AASHTO No. 57.

403 Forms

Forms shall be made of approved substantial material, preferably of steel, and shall be smooth, free of warp and sufficiently rigid and supported to resist springing out of shape. These forms shall be of a depth equal to that of the proposed curb. Prior to pouring the concrete, all forms and templates shall be thoroughly cleaned and treated with an approved material to prevent the concrete from adhering thereto. Material which will adhere to or discolor the concrete shall not be used.

404 Concrete

Concrete shall meet the requirements of PennDOT Form 408, latest Specifications, Section 704 for Class A Cement concrete. No concrete shall be mixed or placed when the air temperature is below 50°F or above 90°F.

405 Pouring

Sidewalk shall be carefully poured monolithically without segregation of constituents to a depth of five inches (5") and cross-overs six inches (6") - see details, and screeded true to grade and sections, eliminating all voids and bringing sufficient mortar to the surface for finishing in a smooth, neat, even manner using approved wood floats.

406 Construction

Sidewalk shall slope toward the street at the rate of 1/4" per foot. It shall be constructed in separate slabs of thirty feet (30') in length, except for

closures. These slabs shall be separated for their full depth by expansion joints of approved 1/2 inch premoulded bituminous material. This premoulded material shall also be placed longitudinally at the joint where sidewalk slabs abut concrete curb and existing sidewalk. Between the transverse expansion joints, the slabs shall be divided into blocks five feet (5') in length by using 1/8 inch steel templates equal in depth to that of the slab. Where existing light standards, poles, fire hydrants, etc., are within the sidewalk area, concrete around such structures shall be scored to a depth of 1/4 the slab thickness, in a block eight inches (8") wider than the maximum dimension of the structure at a sidewalk elevation. Prior to placing the concrete, 1/4 inch premoulded expansion joints shall be placed completely around the structures for the full depth of the sidewalk. All joints shall be edged with an edger having a 1/4 inch radius.

#### 407 Handicapped Ramp

At all intersections, sidewalks shall be extended through the planting strip to abut depressed concrete curbing on the curve return, to facilitate a handicapped ramp to the cartway.

## SANITARY SEWERS

501 Specifications

Materials, workmanship and acceptance criteria shall be in accordance with the latest revision of the "Specifications For Sanitary Sewers and Appurtenances" of the Borough of North Catasauqua.

502 North Catasauqua Borough Pre-emption - Backfill

After proper installation of the pipe and special envelope, backfilling with select material may be performed. All backfill shall be compacted through the use of approved mechanical tampers and water jetting as directed. In existing roads and the first six (6') feet of shoulder areas or 16-1/2 feet from centerline, whichever is greater, the entire width and depth shall be backfilled with PennDOT No. 2-A Modified crushed stone and shall be mechanically tamped in layers not to exceed twelve (12") inches. In new developments where new roads are being constructed, the trench may be backfilled with earth backfill material which shall not contain rock pieces in excess of six (6") inches in any dimension and shall be mechanically tamped in six (6") inch layers. The trench, backfilled with earth, shall be allowed to settle for at least 180 days, after which the bituminous coated base course may be applied. If this 180 day lag time is not acceptable, the full stone backfill requirement shall apply.

## WATER SUPPLY AND DISTRIBUTION

601 Specifications

Materials, workmanship and acceptance criteria shall be in accordance with the latest revision of the "General Specifications for Water System Construction" of the Northampton Water Authority.

602 Borough of North Catasauqua Pre-emption - Backfill

After proper installation of the pipe and special envelope, backfilling with select material may be performed. All backfill shall be compacted through the use of approved mechanical tampers and water jetting as directed. In existing roads and the first six (6') feet of shoulder areas or 16-1/2 feet from centerline, whichever is greater, the entire width and depth shall be backfilled with PennDOT No. 2-A Modified crushed stone and shall be mechanically tamped in layers not to exceed twelve (12") inches. In new developments where new roads are being constructed, the trench may be backfilled with earth backfill material which shall not contain rock pieces in excess of six (6") inches in any dimension and shall be mechanically tamped in six (6") inch layers. The trench, backfilled with earth, shall be allowed to settle for at least 180 days, after which the bituminous coated base course may be applied. If this 180 day lag time is not acceptable, the full stone backfill requirement shall apply.

**STORM DRAINAGE SYSTEM**

Storm drainage systems shall be installed in accordance with the design standards and requirements set forth in Section 770 of the Subdivision and Land Development Ordinance.

**701 Storm Piping**

Storm sewers shall have a minimum diameter of eighteen inches (18") and shall be made of reinforced concrete. The Manning Equation shall be employed in computing pipe capacities. Sewers shall be installed on sufficient slopes to provide a minimum velocity of three feet (3') per second when flowing full.

**702 Inlets and Manholes**

Inlets shall be placed at points of abrupt changes in the horizontal or vertical directions of storm sewers, at points where the flow in gutters exceeds three inches (3"), and at a maximum distance of six hundred feet (600') apart. In streets, inlets shall normally be located along the curb line at or beyond the curb radius points. For the purpose of inlet location at corners, the depth of flow shall be considered for each gutter. At intersections, the depth of flow across through streets shall not exceed one inch (1"). The Manning Equation shall be used to calculate the capacities of gutters. Pennsylvania Department of Transportation 2' x 4' and 2' x 6' special inlets or equivalents should be used and can be considered to have capacities of 3.0 c.f.s. and 5.0 c.f.s., respectively. Inlets shall be depressed two inches (2") below the grade of the gutter or ground surface. Manholes may be substituted for inlets at locations where inlets are not required to handle surface runoff.

Inlets and manholes shall be of precast or poured in place concrete construction in accordance with Section 605 of PennDOT Form 408 Specifications, latest edition, except that masonry inlets or manholes are specifically prohibited.

**703 Headwalls/Wingwalls**

Headwalls shall be used where storm runoff enters the storm sewer horizontally from a natural or manmade channel. The capacity of such storm sewers shall be calculated for both steady flow and culvert design.

The lower values of the two (2) shall be used to determine the capacity of the storm sewer.

Headwalls and wingwalls shall be of precast or poured in place concrete construction in accordance with Section 605 of PennDOT Form 408 Specifications, latest edition. The headwall length shall not be in accordance with PennDOT standards, but shall be long enough to facilitate a transverse return from the culvert invert to the top of embankment behind the wall at a slope not exceeding three (3) horizontal to one (1) vertical.

#### 704 Open Channels

Open channels shall be designed to handle, without overflowing, the calculated runoff from a storm of ten (10) year to one hundred (100) year frequency, as specified in Section 773.15. The capacities of any modifications to natural channels shall be computed using the Manning Equation.

#### 705 Installation

All pipe laying shall carefully progress uphill with hubs up and ends fully and closely jointed. Trench widths shall not exceed the outside diameter of the pipe plus sixteen inches (16"), and depths shall be as required. Trench walls shall be vertical and bottoms shall be horizontal.

#### 706 Bedding

Prior to laying the pipe in the trench, a bedding of AASHTO No. 57 crushed stone shall be placed on the trench bottom. This material shall be a minimum of four inches (4") in depth and thoroughly compacted with approved mechanical tampers. The bedding shall be graded by and to provide a uniform and continuous bearing support for the pipe throughout its entire length. Bell holes shall be provided at the ends of pipe length to prevent bearing on the joints.

#### 707 Backfilling

After proper installation of the pipe and special envelope, backfilling with select material may be performed. All backfill shall be compacted through the use of approved mechanical tampers and water jetting as directed. In existing roads and the first six (6') feet of shoulder areas or 16-1/2 feet from centerline, whichever is greater, the entire width and depth shall be backfilled with PennDOT No. 2-A Modified crushed

stone and shall be mechanically tamped in layers not to exceed twelve (12") inches. In new developments where new roads are being constructed, the trench may be backfilled with earth backfill material, which shall not contain rock pieces in excess of six (6") inches in any dimension and shall be mechanically tamped in six (6") inch layers. The trench, backfilled with earth, shall be allowed to settle for at least 180 days after which the bituminous coated base course may be applied. If this 180 day lag time is not acceptable, the full stone backfill requirement shall apply.



## EROSION AND SEDIMENTATION CONTROL

Improvements installed to control soil erosion and sedimentation shall be in accordance with design standards set forth in the Subdivision and Land Development Ordinance and the Northampton County Soil Conservation Service.

801 Responsibilities

The responsibility for soil erosion and sedimentation control during the installation of improvements and the development of subdivision or land development shall be in accordance with the following requirements:

801.1 Sedimentation Control

Whenever sedimentation is caused by stripping vegetation, regrading or other development, 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 water courses and to repair any damage at his expense as quickly as possible.

801.2 Facilities Maintenance

Maintenance of all drainage facilities and water courses within any subdivision or land development is the responsibility of the developer until they are accepted by the Borough Council or some other official agency, after which they become the responsibility of the accepting agency.

801.3 Restoration .

It is the responsibility of any person, corporation or other entity doing any act on or across a communal stream, water course or swale, or upon the flood plain or right-of-way thereof, to maintain as nearly as possible in its present state the stream, water course, swale, flow plain or right-of-way during the pendency of the activity and to return it to its original or equal condition after such activity is completed.

801.4 Maintenance on Private Property

Maintenance of drainage facilities or water courses originating and completely on private property, are the responsibility of the owner to their point of open discharge at the property line or at a communal water course within the property.

801.5 Encroachment Prohibited Without Permit

No person, corporation or other entity shall block, impede the inflow or alter, construct any structure, or deposit any material or thing, or commit any act which will affect normal or flood flow in any stream or water course without having obtained prior approval from the Borough Council or the Pennsylvania Department of Environmental Protection, whichever is applicable.

900 TREE PLANTING AND LANDSCAPING

901 Landscape Plan

A landscape plan shall be required for all subdivision and land developments which locates and provides specifications for all trees, shrubs or other features planned by the developer.

902 Plant Materials

Street trees, conifers and shrubs shall be of nursery stock quality, grown under the same climatic conditions as at the development site. All materials shall be of the size indicated on the plans and required by the Subdivision and Land Development Ordinance. They shall be of hearty and symmetrical growth, free of insect pests and disease.

903 Planting

All planting shall be at the location and spacing indicated on the plans and required by the Borough Zoning and/or Subdivision and Land Development Ordinances and shall be done in conformance with good nursery and landscape practice.

904 Ground Cover and Seeding

904.1 Detention Basins

Detention basin subgrade shall be sealed with a top course of impermeable clay over the entire pond bottom and returning a minimum of one foot (1') up to the pond banks. A minimum of six inches (6") of topsoil shall then be placed and fine graded to the design grades. Seed on the pond bottom shall be PennDOT Formula "D" placed at 21 pounds per square yard with PennDOT Formula "C" at 9 pounds per square yard on the side slopes and berm. Fertilization and mulching shall be in accordance with PennDOT Form 408 Specifications, latest edition.

904.2 Planting Strips and Recreation Areas

A minimum of four inches (4") of topsoil shall be placed and fine graded to the design grades. PennDOT Formula "B" seed mix at 21 pounds per square yard shall be placed. Fertilization and mulching shall be in accordance with PennDOT Form 408 Specifications, latest edition.

1000

## MISCELLANEOUS IMPROVEMENTS

### 1001 Monuments

Permanent stone or concrete monuments shall be accurately placed, at the intersection of all lines forming angles and at changes in directions of lines in the boundary of the property subdivided, and along all interior streets at changes in direction, at beginning and end of curves and at intermediate points where topographical considerations make it impossible to sight between two (2) adjacent monuments.

Monuments shall be of reinforced concrete construction, a minimum of four inches (4") in diameter and a minimum of thirty inches (30") long.

Monuments shall be set flush with adjacent grade.

All monuments shall be set by a Registered Professional Surveyor in the Commonwealth of Pennsylvania.

### 1002 Markers

Markers consisting of a minimum 3/4 inch diameter pipe, bar or reinforcing rod at least thirty inches (30") long shall be set at all lot corners not occupied by a concrete or stone monument.

Markers shall be set flush with adjacent grade.

### 1003 Street and Traffic Control Signs

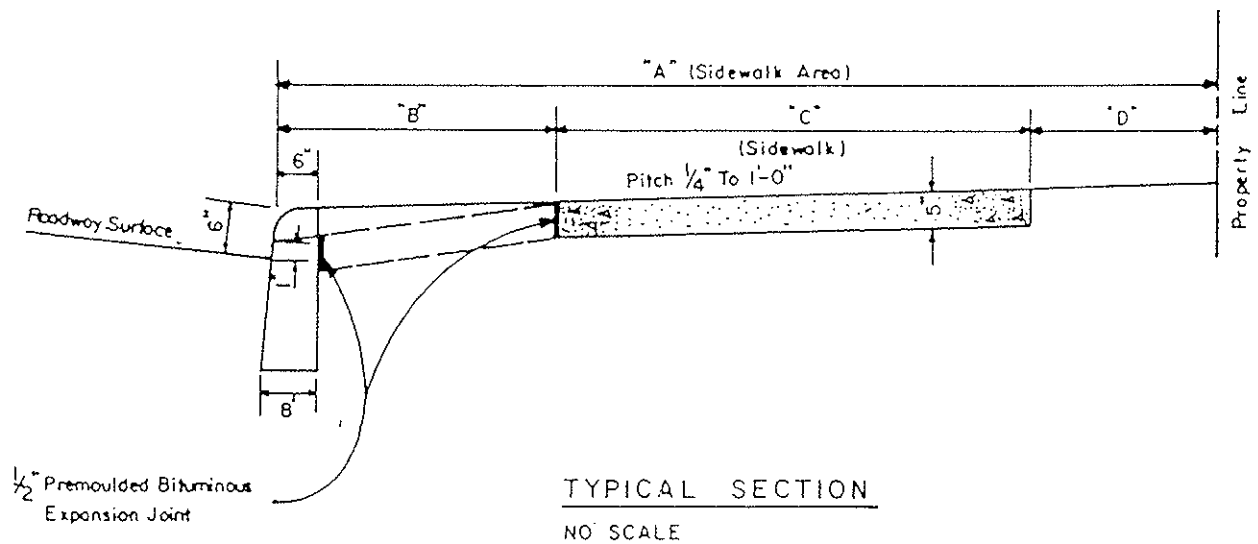
Street name signs shall be installed at all street intersections. Traffic control signs shall be set at all locations shown on the approved plans. The placement of all signs shall be subject to PennDOT standards or, in the event no standard applies, signs shall be set at the locations requested by Borough Council.

### 1004 Street Lights

Street lighting consisting of along-street public pole lighting or private on-lot post lighting shall be provided as determined by the Borough Council.

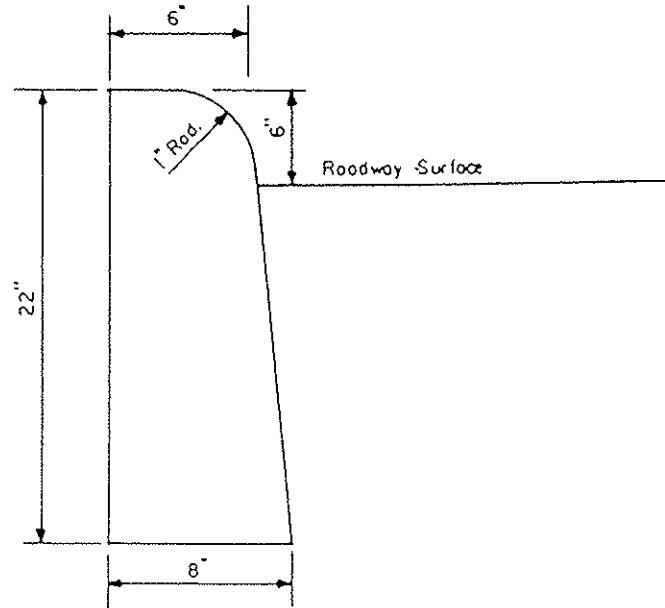
Where public pole lighting fixtures might possibly be required in the future, but not as part of the improvements to be constructed by the developer, the distribution capability shall be designed and installed in accordance with the standards of Pennsylvania Power and Light Company.

STANDARD DETAIL  
FOR  
RESIDENTIAL DRIVEWAY CROSSOVERS



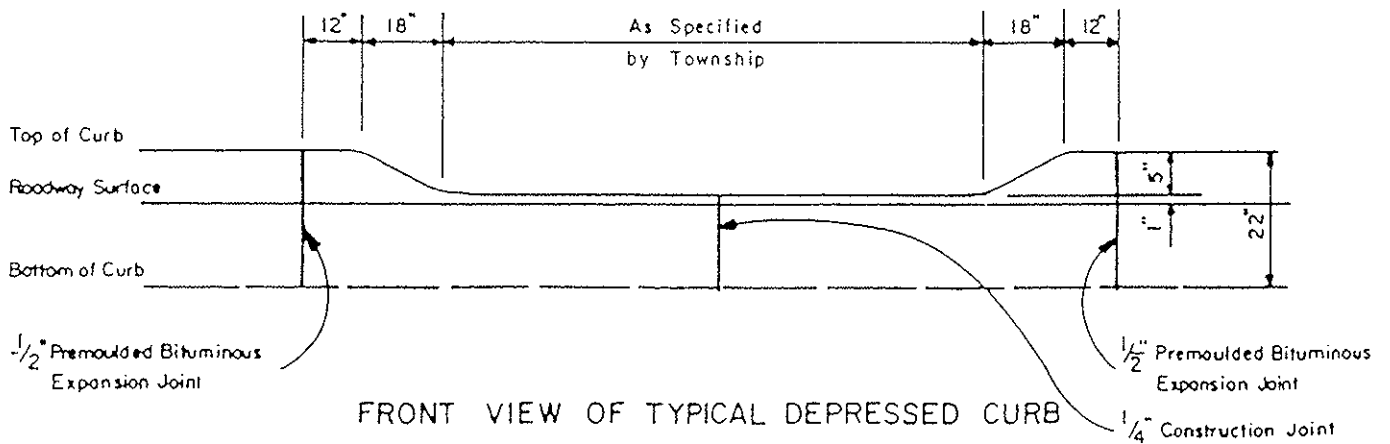
ALL LETTERED DIMENSIONS SHALL BE SPECIFIED BY THE

# STANDARD DETAIL FOR VERTICAL CURB



TYPICAL SECTION

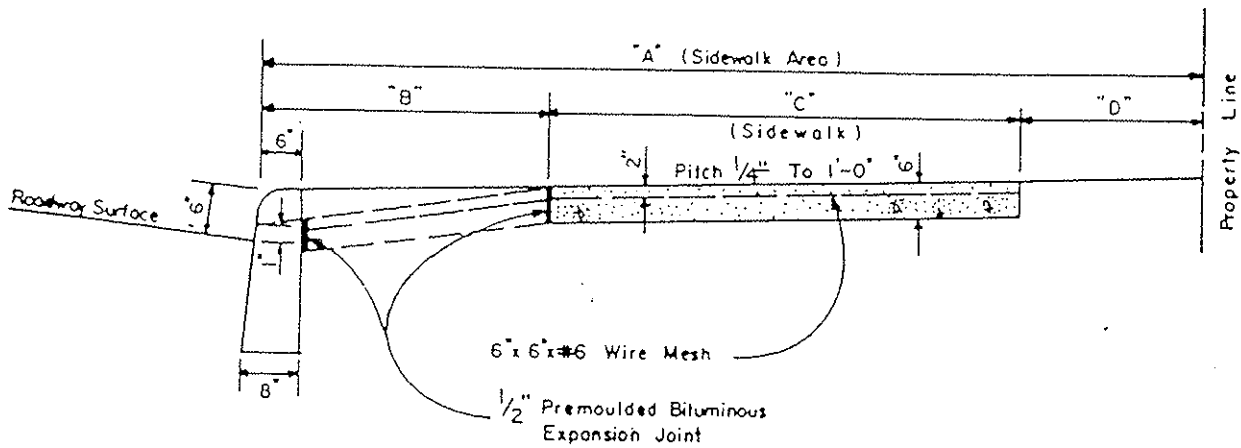
NO SCALE



FRONT VIEW OF TYPICAL DEPRESSED CURB  
AT CROSSOVER

NO SCALE

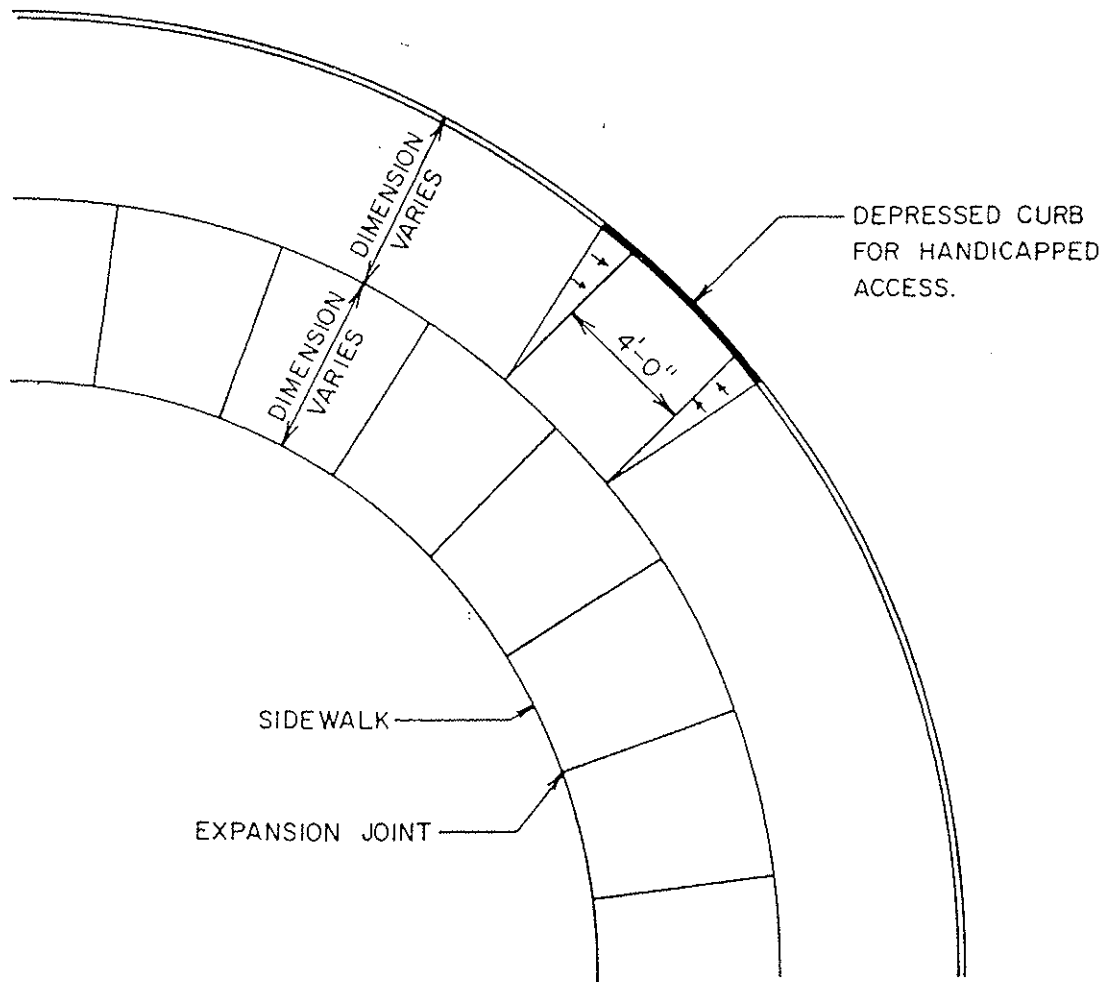
# STANDARD DETAIL FOR COMMERCIAL DRIVEWAY CROSSOVERS



TYPICAL SECTION  
NO SCALE

ALL LETTERED DIMENSIONS SHALL BE SPECIFIED BY THE

STANDARD DETAIL  
FOR  
HANDICAPPED RAMP



NOT TO SCALE