fumes, dust,
traffic, glare, etc. to emanate from such permitted uses and which are attendant and accessory to or
arise from the conduct of such permitted uses."

(Ord. 02-43)

Chapter 16.14

APPLICATION FILING PROCEDURES

Sections:

16.14.010	**General procedures for subdivision and site plan approval.**
16.14.020	**Waivers of site plan review.**
16.14.030	**Minor developments--Minor site plans and minor subdivisions.**
16.14.040	**Major developments--Site plan and subdivision review.**
16.14.050	**Variances, major and minor site plans and subdivision approval-- General provisions.**

16.14.010 General procedures for subdivision and site plan approval.

Any applicant wishing to develop land within the township shall apply for and obtain the approval of the planning board in accordance with the following procedure. The applicant or his or her agent shall appear at all regular meetings of the planning board whenever the application is being considered. Failure to appear shall give the planning board the right to postpone action on the application for that particular meeting if the absence of the applicant or his or her agent deprives the planning board of information necessary to make a decision. No development shall take place within the township nor shall any lands be cleared or altered, nor shall any watercourse be diverted or its channel or floodplain dredged or filled, nor shall any parking or loading areas or drives, accessory or otherwise, be constructed, installed or enlarged, nor shall any outside storage commence, nor shall any building permit, zoning permit, certificate of occupancy, conditional use permit or other required permit be issued with respect to such structure, land or parking area, except in accordance with an approval of such development granted pursuant to this chapter, unless exempted in accordance with subsection G of this section or Section 16.14.020.

A. Filing and Referral. The administrative officer shall review each application for completeness in accordance with this title. If the application is found to be incomplete, applicant shall be so notified within forty-five (45) days of original submission to the administrative officer and shall be advised in writing of the reasons why the application is found incomplete. If complete, the application shall be referred to the development review advisory committee, if one has been established, the county planning board as appropriate, and other agencies or officials as required by law and as designated by the planning board. The applicant shall be notified of the hearing date so that the applicant can comply with any public notice requirements. Refer to Section 16.02.030 for the definition of a "complete application."

B. Conditional Approvals.

1. In the event that a developer submits an application for approval proposing a

development that is barred or prevented, directly or indirectly, by a legal action instituted by any state agency, political subdivision or other party to protect the public health and welfare, or by a directive or order issued by any state agency, political subdivision or court of competent jurisdiction to protect the public health and welfare, the planning board shall process such application in accordance with this title and, if such application complies with all township regulations, the planning board shall approve such applications conditioned on removal of such legal barrier to development.

2. In the event that development proposed by an application for approval requires an approval by a governmental agency other than the planning board, the planning board shall, in appropriate instances, condition its approval upon the subsequent approval of such governmental agency. The planning board shall make a decision on any application for approval within the time period provided in this title or within an extension of such period as has been agreed to by the applicant unless the planning board is prevented or relieved from so acting by the operation of law.

C. Period of Approval Extended. In the event that, during the period of approval heretofore or hereafter granted to an application for approval, the developer is barred or prevented, directly or indirectly, from proceeding with the development otherwise permitted under such approval by a legal action instituted by any state agency, political subdivision or court of competent jurisdiction to protect the public health or welfare, and the developer is otherwise ready, willing and able to proceed with the development, the running of the period of approval, under this title shall be suspended for the period of time such legal action is pending or such directive or order is in effect.

D. Approving Authority.

1. Planning Board. The provisions of this title shall be administered by the planning board of the township, except as noted in subsection (D)(2) of this section.

2. Zoning Board of Adjustment: The provisions of this title shall be administered by the zoning board of adjustment in applications before the board involving a use variance provided for in N.J.R.S. 40:55D-76(2)b of the Municipal Land Use Law.

E. County Planning Board Action. Where review or approval of the application by the county planning board is required by N.J.R.S. 40:27-6.6, the township planning board shall condition any approval that it grants upon the timely receipt of a favorable report by the county planning board. The absence of a report from the county planning board within the review period shall be considered an approval by the county planning board.

F. Certificate of Approval. Certificates of approval shall be issued by the administrative officer in accordance with the Municipal Land Use Law. R.S. 40:55D-56.

G. Exceptions From Site Plan Review.

1. Farm structures on farms (excluding farm stands and other sales buildings), single-family and two-family residential structures, and structures and uses incidental thereto permitted as of right under applicable zoning regulations are exempt from site plan review requirements of this title, unless otherwise required by the floodplain ordinance.

2. Issuance of a certificate of occupancy or zoning permit for a change of use from one permitted use to another permitted use on premises or in any existing structure which complies with all zoning requirements for the new use, including but not limited to use, bulk, area, parking, hard surface requirements, coverage and floor area requirements. This provision does not apply to the change from a residential or farm use to a nonresidential use, or the change from a commercial use to an office use or an industrial use, and the converse in any combination. (Prior code § 15-5.1)

16.14.020 Waivers of site plan review.

The planning board may waive the requirement of site plan review if the proposed development:

A. Secured previous site plan approval under the terms of this title and the proposed development has insignificant impact; or

B. Involves normal repair, maintenance or replacement such as a new roof, painting, new siding or similar activity; or

C. Does not affect existing circulation, drainage,
building arrangements, landscaping buffering, lighting, and other considerations of site plan review. (Prior code § 15-5.2)

16.14.030 Minor developments--Minor site plans and minor subdivisions.

A. Distribution of Plats. If an application is classified as a minor site plan or minor subdivision, two copies of the plats shall be retained by the board and copies of the plat shall be forwarded to the following for review and comment:

1. Raritan Township municipal utilities authority;
2. Township engineer;
3. County planning board, three copies;
4. Township health officer;
5. Township construction official;
6. Township tax assessor;
7. Environmental commission;
8. Other agencies as may be determined by the planning board or as required by law.

B. Action on a Minor Development Application. The planning board shall act on a minor development or sketch plat application within forty-five (45) days after acknowledgement of a complete application to the planning board. If approved, a notation to that effect shall be made on the plat, and it shall be signed by the planning board chairman and the planning board secretary and returned to the applicant within one week following the next regular meeting of the planning board. If rejected, the reasons for rejection shall be noted on all copies of the application form, one of which shall be returned to the applicant. The planning board may attach conditions of approval to any minor development application.

C. Filing of Minor Subdivisions with County Recording Officer. If approved as a minor subdivision, a plat drawn in compliance with Chapter 141 of the Laws of 1960, R.S. 46:23-9.9 et seq., or a deed stamped with the date of planning board approval shall be filed by the applicant with the county recording officer within one hundred ninety (190) days from the date of approval. Failure to file within one hundred ninety (190) days shall void such subdivision approval.

D. Dedications. When right-of-way, sight, drainage, conservation, floodplain or other dedications or easements are required by the planning board, the applicant shall execute the appropriate township easement form for recording with the county recording officer and shall attach a metes and bounds description of the easement or dedication or shall attach an eight and one-half by fourteen (14) inch map showing the easement or dedication and all distances and bearings of easement or dedication boundaries. The map shall indicate the purpose of the easement or dedication.

E. Lands Resulting From Minor Subdivisions. Any lands, lots or parcels resulting from a minor subdivision shall not be resubmitted as a minor subdivision for a twelve (12) month period from the date of initial approval as a minor subdivision.

F. Approved Minor Subdivision--Municipal Distribution. The secretary shall distribute copies of the approved subdivision to each of the following:

1. Township clerk;
2. Township engineer;
3. Township building inspector;
4. Township tax assessor;
5. Tax collector.

G. Effect of Minor Development Approval. The granting of minor development approval shall guarantee that the zoning requirements and general terms and conditions, whether conditional or otherwise, upon which minor approval was granted, shall not be changed for a period of two years after the date of approval; provided that, in the case of a minor subdivision, it shall have been duly recorded as provided in subsection C of this section. (Prior code § 15-5.3)

16.14.040 Major developments--Site plan and subdivision review.

A. Sketch Plat Review. Applicants for development approval are encouraged to submit sketch plats for discussion and recommendations. The sketch plats shall be used as a basis for changes and redesign, and to avoid undue expense and delay in preparing more detailed preliminary plats and specifications. The planning board shall not be governed by any statutory time limits in a review of sketch plats, and it is expressly understood that sketch plat approval shall not bind the planning board or applicant in subsequent deliberations. Applicants may submit informal plans for purposes of discussion with the development review advisory committee; however, formal action on a sketch plat by the planning board requires a submission in accordance with this section.

B. Submission of Sketch Plats.

1. Procedure. An applicant for the development of land shall submit to the administrative officer an application for subdivision or site plan, together with a certificate from the tax collector that no taxes or assessments for local improvements are due or delinquent as of the date set forth in the application, the required application fee as specified in Section 16.08.090, and fifteen (15) copies of a sketch plat containing the information required in Chapters 16.18 or 16.20 at least two weeks prior to a regular meeting of the planning board. The administrative officer shall inform the applicant in writing of any deficiencies.

2. Classification. The administrative officer shall review the plat for completeness in accordance with this title and other appropriate chapters and checklists. If the application is found to be incomplete, the applicant shall be so notified within forty-five (45) days of the original submission to the administrative officer. If complete, the application shall be referred to the agencies or individuals noted in Section 16.14.030(A). Upon receipt of a complete notification from the administrative officer, the planning board shall acknowledge receipt of the application, shall rule on any application submission waiver requests, and shall classify it. On-site inspections may be scheduled by the board.

C. Application by Corporation or Partnership. A corporation or partnership applying to a planning board or a board of adjustment shall list the names and addresses of all stockholders or individual partners owning at least ten percent of its stock of any class or at least ten percent of the interest in the partnership, as the case may be.

D. Disclosure of Ownership Interest of Corporation or Partnership. If a corporation or partnership owns ten percent or more of the stock of a corporation, or ten percent or greater interest in a partnership subject to disclosure pursuant to subsection C of this section, that corporation or partnership shall list the names and addresses of its stockholders holding ten percent or more of its stock, or greater interest in the partnership, as the case may be; and this requirement shall be followed by every corporate stockholder or partner in a partnership until the names and addresses of the noncorporate stockholders and individual partners, exceeding the ten

percent ownership criterion established in this act, have been listed.

E. Preliminary Approval. The planning board shall act upon, at a hearing within the time period provided, every application for preliminary approval.

F. Effect of Preliminary Approval. Preliminary approvals shall, except as provided in subsection G of this section, confer upon the applicant the following rights for a three-year period from the date of the preliminary approval:

1. That the general terms and conditions on which preliminary approval was granted shall not be changed, including but not limited to use requirements; layout and design standards for streets, curbs and sidewalks; lot size, yard dimensions, and on-site and off-tract improvements; and any requirements peculiar to the specific plan. The township may modify by ordinance such general terms and conditions of a preliminary approval as they may relate to public health and safety, provided that such modifications are in accord with amendments adopted by ordinance subsequent to approval;

2. That the applicant may submit for final approval on or before the expiration date of preliminary approval the whole or section or sections of a particular plan.

G. Extension of Preliminary Approval. The applicant may apply for and the planning board may grant extensions on such preliminary approval for additional periods of at least one year, but not to exceed a total extension of two years, provided that if the design standards have been revised by ordinance, such revised standards may govern.

In the case of a plan for an area of fifty (50) acres or more, the planning board may grant the rights referred to above for such period of time, longer than three years, as shall be determined by the planning board to be reasonable, taking into consideration the number of dwelling units and nonresidential floor area permissible under preliminary approval; economic conditions; and the comprehensiveness of the development. The applicant may apply for thereafter and the planning board may thereafter grant an extension to preliminary approval for such additional period of time as shall be determined by the planning board to be reasonable, taking into consideration the number of dwelling units and nonresidential floor area permissible under preliminary approval; the potential number of dwelling units and nonresidential floor area of the section or sections awaiting final approval; economic conditions; and the comprehensiveness of the development, provided that if the design standards have been revised, such revised standards may govern.

H. Exhibits Required of Major Subdivisions Prior to Public Hearing. The following shall be submitted to the planning board by the applicant:

1. Copy of Advertisement. A copy of the advertisements required under Section 16.08.070.

2. Affidavit. Affidavit of notice of public hearing to persons and agencies served giving a list of the names, addresses, and lot and block number of owners so notified, how served, date of service, and copy of the notice and mail receipt.

3. Water Supplier. If public water is to be used, a letter from the water supplier stating that the water system as proposed is adequate for the development and all future extensions thereof.

4. Sewerage Authority. Where public sewers are required or proposed to be installed, a letter from the township municipal utilities authority approving the proposed sewer plans shall be submitted to the planning board.

I. Final Site Plan Review Simultaneous with Preliminary Site Plan Review. The planning board may grant final approval at the time of preliminary approval, provided that all of the requirements for final approval are met at the time of preliminary approval. Large scale developments or very detailed developments are discouraged from this procedure in order to save the applicant the expense of prematurely preparing costly detailed final plats before the conceptual arrangement of the development has been finalized and agreed upon.

J. Final Approval. The final plan shall be submitted to the planning board for final approval within three years from the date of preliminary plan approval or within such extensions as

provided in subsection G of this section. One original tracing, one translucent cloth copy, two cloth prints, and ten black and white prints in the case of a major subdivision; and fifteen (15) prints in the case of a site plat, with three copies of an application for final approval and the appropriate fees as required in Section 16.20.050 shall be submitted to the administrative officer at least two weeks prior to the regular meeting of the planning board.

Unless the preliminary plan was approved without changes, the final plan shall have incorporated all changes or modifications required by the planning board including conditions of preliminary approval. The applicant shall submit an affidavit indicating no changes or those changes noted.

1. Distribution. Copies of the final plat shall be distributed to the following:

a. Township engineer;

b. County planning board, three copies;

c. Township construction official;

d. Township tax assessor;

e. Township health officer;

f. Raritan Township municipal utilities authority;

g. Other municipal, county agencies or authorities as may be required.

2. Variances and Conditional Use Permits. Applicants for use variances and conditional use permits may submit an application for formal sketch plat approval in accordance with subsection B of this section along with the use variance or conditional use application, rather than submit a plat meeting the requirements for preliminary approval. Separate action may first be taken on the use variance aspects if requested by the applicant. Upon receipt of the variance or conditional use, the applicant shall then develop and submit applications for preliminary and for final plan review as appropriate. (Prior code § 15-5.4)

16.14.050 Variances, major and minor site plans and subdivision approval-- General provisions.

A. Complete Applications. A complete application for the various stages of plan approval shall consist of the submission of the following maps, documents and fees:

1. Completed municipal application and fees;

2. Completed county application and fees;

3. The required number of plats containing the minimum information required by Chapters 16.18 and 16.20 for the appropriate type of development and approval stage;

4. Letters, certifications or other appropriate documents as required by Chapters 16.18 and 16.20;

5. Certification form from the tax collector's office that all taxes, sanitary sewer user charges or other assessments have been paid to date of application on the entire tract;

6. Variance applications as required by the zoning permit officer to permit application for variances from the zoning ordinance;

7. Any applicant electing to submit a separate application requesting approval of variance under the provisions of 40:55D-70d of the Municipal Land Use Law and a subsequent application for any required approval of a subdivision, site plan and/or conditional use shall submit the following prior to such application being deemed complete.

a. Application fee,

b. Escrow amount,

c. Wetlands delineation and report.

A wetlands delineation and report shall be performed to identify wetlands as defined by the Freshwater Wetlands Protection Act, P.L. 1987, C. 156, to identify the wetlands by type

(ordinary, intermediate and exception resource value) and to specify the required transition area. On-site wetlands and transition areas required for on-site wetlands shall be delineated. A transition area may be located and required by the Freshwater Wetlands Protection Act, P.L. 1987, C. 156 on a property even though the freshwater wetlands adjacent to that transition area is located on a different property. In such case, the transition area as required shall be delineated. A report from the person or firm preparing the wetlands analysis shall be prepared and submitted identifying the above or stating that no wetlands and/or transition areas affect the subject site. Alternatively, a letter of interpretation from the state of New Jersey Department of Environmental Protection determining the absence or presence of wetlands will be acceptable. If the letter of interpretation determines the presence of wetlands, a delineation shall be prepared. In accordance with the Freshwater Protection Act rules a delineation of a wetlands boundary for a parcel of less than one acre may be by letter of interpretation.

d. If the applicant submits a concept plan, sketch plan or similar schematic layout with such bifurcated application, a traffic analysis and report shall be submitted consisting of the following:

i. Estimate of trip generation from the proposed subdivision or site plan indicating estimated twenty-four (24) hour trip generation, estimated peak hour trip generation from the development and estimated trip generation during commuter peak hours of the street system in the area,

ii. Directional assignment of estimated trip generation to the existing and any proposed street system, as appropriate,

iii. Review of traffic volumes existing on streets in the area. (Existing acceptable traffic volumes may be utilized. If such do not exist, traffic volume counts at fifteen (15) minute intervals must be taken),

iv. Review of other development activity in the area and consideration of trip generation from these other proposed developments,

v. Project future background traffic volumes on affected streets for build-out and intermediate development phase,

vi. Review of street, intersections, jughandles, ramps, etc., in terms of traffic carrying capacity (such may be expressed as a level of service) as may be affected by the proposed development activity. No-build, build-out and intermediate phases should be examined where appropriate,

vii. Identification of streets, intersections, jughandles, ramps, etc., which anticipated levels of service or other engineering considerations indicate a need for improvement. Level of Service D or better is to be maintained through build-out,

viii. Recommend improvements to mitigate impacts,

ix. Review of proposed on-site street system or on-site circulation system. Review should include but not be limited to access, circulation, emergency access, trucking and parking,

x. Preparation of a report with supporting data signed by the responsible person.

B. Review. The officials and agencies cited in Section 16.14.040(J)(1) shall forward their views and recommendations in writing to the planning board within thirty (30) days from the receipt of the plat. A full report of all recommendations and discussions shall be forwarded to the planning board within thirty (30) days after receipt of the plat by the agency.

C. Review Time Periods--Decisions. Upon submission to the administrative officer of a complete application which involves ten acres or less and ten dwelling units or less in the case of a site plan, and ten or fewer lots in the case of a subdivision, the planning board shall grant or deny preliminary approval within forty-five (45) days of the date of such submission or within such further time as may be consented to by the applicant; except that if the application also involves an application for a variance pursuant to Section 16.04.030, the board shall grant or deny preliminary approval within ninety-five (95) days of the submission of a complete application to

the administrative officer or within such further time as may be consented to by the applicant.

Upon the submission of a complete application which involves more than ten acres or more than ten dwelling units, or for a conditional use approval in the case of a site plan, and more than ten lots in the case of a subdivision, the planning board shall grant or deny preliminary approval and/or conditional use approval ninety-five (95) days of the date of such submission or within such further time as may be consented to by the applicant.

The required time in which the planning board must act on an application shall run from the date the application was submitted as complete, no matter what date the administrative officer reviews the application and finds it complete.

If the planning board requires any substantial amendment in the layout of improvements proposed by the developer that have been the subject of a hearing, an amended application for development shall be submitted and proceeded upon, as in the case of the original application for development.

D. Time Limitation. The planning board shall act within forty-five (45) days of submission of a completed application for final approval at a regular meeting or within such further time as may be mutually agreed upon, except that in the case of a simultaneous submission of a preliminary and final site plan, the time limit for preliminary review shall govern. If the planning board approves the final plan, a notation to that effect shall be made on each plat and signed by the chairman and secretary of the planning board. Failure of the planning board to act within the aforementioned time period shall be deemed to be favorable approval and the administrative officer shall issue a certificate to that effect.

E. Filing. A final subdivision plat approval shall be filed by the subdivider with the county recording officer within ninety-five (95) days from the date of such approval. If any final plat is not filed within that period, the approval shall expire. For good cause, the planning board may extend the time for the filing of the plat for an additional period not to exceed ninety-five (95) days.

No plat shall be accepted for filing by the county clerk unless it has been duly approved by the township planning board and signed by its chairman and secretary, and approved by the county planning board and signed by an authorized official.

F. Effect of Final Approval.

1. The zoning requirements applicable to the preliminary approval first granted and all other rights conferred upon the developer pursuant to Section 16.14.040(F) is amendatory, whether conditionally or otherwise, shall not be changed for a period of two years after the date of final approval; provided that in the case of major subdivision the rights conferred by this chapter shall expire if the plat has not been duly recorded within the time period provided in subsection E of this section. If the developer has followed the standards prescribed for final approval, and, in the case of a subdivision, has duly recorded the plat as required in subsection E of this section, the planning board may extend such period of protection for extensions of one year but not to exceed three extensions. Notwithstanding any other provisions of this chapter, the granting of final approval terminates the time period of preliminary approval pursuant to Section 16.14.040(F) for the section granted final approval.

2. In the case of a subdivision or site plan for a planned development of fifty (50) acres or more, conventional subdivision or site plan for one hundred fifty (150) acres or more, or site plan for development of a nonresidential floor area two hundred thousand (200,000) square feet or more the planning board may grant the rights referred to in subsection (F)(1) of this section for such period of time, longer than two years, as shall be determined by the planning board to be reasonable taking into consideration: (1) the number of dwelling units and nonresidential floor area permissible under final approval; (2) economic conditions; and (3) the comprehensiveness of the development. The developer may apply for thereafter, and the planning board may thereafter

grant, an extension of final approval for such additional period of time as shall be determined by the planning board to be reasonable taking into consideration: (1) the number of dwelling units and nonresidential floor area permissible under final approval; (2) the number of dwelling units and nonresidential floor area remaining to be developed; (3) economic conditions; and (4) the comprehensiveness of the development.

G. Conditions of Final Approval. The planning board may, as a condition of final approval:

1. Grant final approval only for designated geographic sections of development;

2. Grant final approval for certain work but require resubmission for final approval for designated elements such as, but not limited to, landscaping, signs, street furniture, etc., and require approval of these elements as a prerequisite for a certificate of occupancy;

3. Condition the granting of a certificate of occupancy (temporary or permanent) or zoning permit subject to the applicant or developer or subsequent heirs or assignees meeting certain requirements within a designated period of time, not to exceed one year, from the date of issuance of the temporary certificate of occupancy or zoning permit. This may include, but is not limited to, the installation of landscaping, erection of signs, installation of improvements, re-evaluation of circulation pattern, etc.

H. Time Limits for Applications Involving "d" (40:55-70d) Variances Before the Zoning Board of Adjustment.

1. If a variance is granted under the provisions of 40:55D-70 d of the Municipal Land Use Law ("d" variance), and the application is bifurcated under provisions of 40:55D-76 b. of the Municipal Land Use Law, subdivision or site plan approval shall be secured within twelve (12) months of the date of approval of the "d" bifurcated variance.

Should the applicant fail to obtain subdivision or site plan approval within the twelve (12) month period, it shall be conclusively presumed that the applicant has waived, withdrawn and abandoned his or her application and all approvals, permissions, permits and variances granted to the applicant shall lapse and be void. For good cause the board of adjustment may, upon written application in advance of the expiration and stating the reasons therefore, extend such twelve (12) month time limit.

2. Any preliminary subdivision or preliminary site plan approval granted by the board of adjustment shall be valid for a period of not more than three years unless extended under the provisions of 40:55D-49 of the Municipal Land Use Law.

Should the applicant fail to obtain final subdivision or final site plan approval within such three-year period or extension thereto granted by the board of adjustment, it shall be conclusively presumed that the applicant has waived, withdrawn and abandoned his or her application and all approvals, permission, permits and variances granted to the applicant shall lapse and be void.

3. Any final site plan that has been approved by the board of adjustment shall be valid for not more than two years unless extended under the provision of 40:55D-52 of the Municipal Land Use Law. During such two-year period or extension thereof as may be granted by the board of adjustment, the applicant shall have obtained a construction permit and shall have commenced work on the project and shall complete such project within one year from the date of securing such construction permit. For good cause, the board of adjustment may, upon written application in advance of the expiration and stating the reasons therefore, extend the time period for obtaining a construction permit, commencing work on the project and completing work on the project.

If during such two-year period from the date of approval or any extension thereof which may be granted by the board of adjustment a construction permit has not been secured and/or work on the project has not commenced and/or the project has not been completed within twelve (12) months of such extended period granted by the board of adjustment it shall be conclusively presumed that the applicant has waived, withdrawn and abandoned his or her application and all approvals, permission, permits and variances granted to the applicant shall lapse and be void.

I. Conditional Approval Time Limits.

1. When any application for development before the planning board or board of adjustment is approved subject to specified conditions intended to be fulfilled before the approval becomes effective, said conditional approval shall lapse and become null and void unless all specified conditions are fulfilled within one hundred ninety (190) days of the date such conditional approval is granted.

The fulfillment of all such conditions intended to be fulfilled before the approval becomes effective shall be reported to the municipal agency, which may cause such reports to be verified in an appropriate manner. Only upon fulfillment of all conditions shall any subdivision map or site plan be signed or any required building permit, occupancy permit or zoning permit be issued or any on-site construction commence.

2. Nothing herein contained shall be construed as preventing the municipal agency from specifying a longer period of time within which any specific condition must be fulfilled, or from granting, upon written application in advance of the expiration stating the reasons therefore, an extension of time for good cause shown.

3. For purposes of calculating the time period within which conditions must be fulfilled such time period shall commence from the date of the original action taken by the board, and not the date of the memorialization thereof. (Ord. 91-13 §§ 3--8; prior code § 15-5.5)

Chapter 16.16

GUARANTEES AND IMPROVEMENTS

Sections:

16.16.010 Performance guarantees.
16.16.020 Maintenance guarantees.
16.16.030 Acceptance of subdivision improvements into the township system.
16.16.040 Widening of existing streets.
16.16.050 Maintenance of improvements.
16.16.060 Off-tract improvements required.
16.16.070 Transportation improvement district one (TID-1).

16.16.010 Performance guarantees.

A. Requirements for Subdivision Approval-- Determination of Performance Guarantee. No final plat shall be approved by the board until the completion of all such required improvements have been certified in writing to the board by the township engineer, unless the subdivider shall have filed with the township a performance guarantee sufficient in amount to cover all the costs of such improvements or incomplete portions thereof as estimated by the township engineer and assuring the installation of such incomplete improvements on or before an agreed date in accordance with the time set forth in subsection D of this section. An additional amount of twenty (20) percent of the estimate of the engineer shall be included in the total amount of the performance guarantee to cover legal, engineering and other costs in the event that the subdivider or developer shall fail to complete the required improvements and the township is required to install the improvements.

B. Requirements for Site Plan Approval. As a condition of final site plan approval, the planning board may require guarantees in accordance with the standards adopted in this chapter for the purpose of assuring the installation and maintenance of on-tract improvements and landscaping.

No certificate of occupancy shall be issued until a performance guarantee has been filed with the township in an amount sufficient to cover all the costs of such improvements or incomplete portions thereof as estimated by the township engineer and assuring the installation of such incomplete improvements on or before an agreed date in accordance with the time set forth in subsection D of this section. An additional amount of twenty (20) percent of the estimate of the engineer shall be included in the total amount of the performance guarantee to cover legal, engineering and other costs in the event that the developer shall fail to complete the required improvements and the township is required to install the improvements. In the event that other governmental agencies or public utilities automatically will own the utilities to be installed or the improvement are covered by a performance or maintenance guarantee to another governmental agency, no performance guarantee shall be required by the township for such utilities or improvements.

C. Type of Guarantee. A minimum of ten percent of the performance guarantee shall be in the form of cash or a certified or cashier's check to be deposited with the township. The remaining portion of the performance guarantee shall be:

1. Cash, or certified or cashier's check; or

2. A surety bond issued by a bonding company authorized to do business in the state of New Jersey and in the form as approved by the township attorney; or

3. A letter of credit which is issued by a New Jersey bank whose financial condition and size, in relation to the letter of credit, satisfies the municipal auditor; and which is irrevocable, unconditional, subject to all requirements of the Raritan Township development ordinance, and in a form acceptable and approved by the township attorney.

D. Time of Guarantee. Performance guarantees shall run for a term not to exceed twenty-four (24) months. Performance guarantees, with the consent of the principal and surety, if there be a surety, may be extended by the township committee by resolution for an additional period not to exceed eighteen (18) months. As a condition or as part of any such extension, the amount of any performance guarantee shall be increased or reduced, as the case may be, to an amount not to exceed one hundred twenty (120) percent of the cost of the installation as determined as of the time of the passage of the resolution.

E. Acceptance of Performance Guarantee. The planning board shall recommend to the township committee acceptance of the performance guarantee only after the following requirements are completed:

1. Letter from Township Engineer. Letter from the township engineer containing a list of all items to be guaranteed and costs thereof, and stating that all plans and specifications meet applicable township ordinances.

2. Letter from Township Attorney Recommending Approval of Forms and Amount of Guarantee. After approval and acceptance of the performance guarantee by the committee, a letter stating that fact shall be sent to the planning board before the final plats are signed and filed with the county.

F. Township Completion of Improvements. If the required improvements have not been installed in accordance with the required standards and specifications of the township within the time limit or extension thereof as described in subsection D of this section and the requirements of the performance guarantees, the obligor and surety shall be liable thereon to the township for all reasonable cost of the improvements not installed, and upon receipt of the proceeds thereof, the township shall install such improvements and/or the township may use such portions of the performance guarantees as have been deposited in cash with the clerk to assure the completion of the improvements in accordance with the terms of this title and any applicable agreement.

G. Items and Procedures Required Before Releasing the Performance Guarantee.

1. When all the required improvements have been completed, the obligor shall notify the governing body in writing by certified mail, addressed in care of the township clerk, of the completion of the improvements, and shall also notify the owners of the real property as shown on the current tax duplicates which was the subject of the application for development and located in the Site and within 200 feet in all directions of the real property which was the subject of the application for development. Notice of the completion of the improvements shall be given by (1) serving a copy thereof on the property owner as shown on the said current tax duplication, or his agent in charge of the property, or (2) mailing a copy thereof by certified mail to the property owner at his address as shown on the said current tax duplicate. Obligor shall also send a copy of the notice of completion to the township engineer in accordance with subsection H of this section. Thereupon, the township engineer shall inspect all of the improvements and file a detailed list and report, in writing, with the governing body in accordance with the provisions of subsection H of this section. (Ord. 04-42 § 1)

2. An affidavit from the developer that there are no liens or other legal encumbrances on any of the improvements or utilities proposed to be deeded to the township or other governmental agency or authority to the township.

3. Receipt of a written statement from the Raritan Township municipal utilities authority

shall be submitted to the township committee and administrative officer confirming that all public sewerage facilities have been installed with the approved plans and any amendments thereto, and in accordance with applicable township ordinances and specifications.

4. The developer's or applicant's engineer shall certify that all improvements have been constructed and installed, and are operating in accordance with the approved final site plan and any approved amendments thereto.

5. Estimate by the township of the maintenance guarantee to be furnished before release of all or portions of the performance guarantee pursuant to Section 16.16.020.

6. Recommendation from the planning board that all or portions of the performance guarantee be released as requested by the obligor.

H. Procedures for Reduction of Performance Guarantee. Upon substantial completion of all required street improvements (except for the top course) and appurtenant utility improvements, and the connection of same to the public system, the obligor may request of the governing body in writing, by certified mail addressed in care of the municipal clerk, that the township engineer prepare, in accordance with the itemized cost estimate prepared by the township engineer and appended to the performance guarantee pursuant to the Municipal Land Use Law (40:55D-1 et seq.), a list of all uncompleted or unsatisfactorily completed improvements. If such a request is made, the obligor shall send a copy of the request to the township engineer. The request shall indicate which improvements have been completed and which improvements remain uncompleted in the judgment of the obligor. Thereupon the township engineer shall inspect all improvements covered by the obligor's request and shall file a detailed list and report, in writing, with the governing body, and shall simultaneously send a copy thereof to the obligor not later than forty-five (45) days after receipt of the obligor's request.

The list prepared by the township engineer shall state, in detail, with respect to each improvement determined to be incomplete or unsatisfactory, the nature and extent of the incompleteness of each incomplete improvement or the nature and extent of, and remedy for, the unsatisfactory state of each completed improvement determined to be unsatisfactory. The report prepared by the township engineer shall identify each improvement determined to be complete and satisfactory together with a recommendation as to the amount of reduction to be made in the performance guarantee relating to the completed and satisfactory improvement, in accordance with the itemized cost estimate prepared by the township engineer and appended to the performance guarantee.

The governing body, by resolution, shall either approve the improvements determined to be complete and satisfactory by the township engineer, or reject any or all of these improvements upon the establishment in the resolution of cause for rejection and shall approve and authorize the amount of reduction to be made in the performance guarantee relating to the improvements accepted, in accordance with the itemized cost estimate prepared by the township engineer and appended to the performance guarantee. This resolution shall be adopted not later than forty-five (45) days after receipt of the list and report prepared by the township engineer. Upon adoption of the resolution by the governing body, the obligor shall be released from all liability pursuant to its performance guarantee, with respect to those approved improvements, except for that portion adequately sufficient to secure completion or correction of the improvements not yet approved; provided that thirty (30) percent of the amount of the performance guarantee posted may be retained to ensure completion and acceptability of all improvements.

I. If any portion of the required improvement is rejected, the approving authority may require the obligor to complete or correct such improvements and, upon completion or correction, the same procedure of notification, as set forth in this chapter shall be followed.

J. Nothing herein, however, shall be construed to limit the right of the obligor to contest by legal proceedings any determination of the governing body or the township engineer. (Ord. 92-6

§§ 1--5; Ord. 88-21 § 1; Ord. 87-7 §§ 1, 2; prior code § 15-6.1)

16.16.020 Maintenance guarantees.

All improvements required by the planning board shall be covered by a maintenance guarantee running in favor of the township in the amount of fifteen (15) percent of the estimated cost of the improvements as estimated by the township engineer. The maintenance guarantee shall run for a period of two years and provide for the proper repair and/or replacement of any such improvements during such period. The two-year period shall be from the date of the release of the performance guarantee on the improvement, and no performance guarantee shall be released by the township until such time as the maintenance guarantee herein required has been posted with the township.

The maintenance guarantee shall be in the form of:

A. A surety bond issued by a bonding company authorized to do business in the state of New Jersey and in the form as approved by the township attorney; or

B. A letter of credit which is issued by a New Jersey bank whose financial condition and size, in relation to the letter of credit, satisfies the municipal auditor; and which is irrevocable, unconditional, subject to all the requirements of the Raritan Township development ordinance, and in a form acceptable and approved by the township attorney. (Ord. 88-21 § 2: Ord. 87-7 § 3: prior code § 15-6.2)

16.16.030 Acceptance of subdivision improvements into the township system.

The township committee shall accept subdivision improvements such as streets, roads, trails, public easements, drainage and conservation easements, utility easements, etc., and other lands dedicated to public use, into township ownership only after the following requirements have been met:

A. Receipt by the township committee of a written certification from the township engineer that all improvements to be accepted into township ownership have been properly maintained through the maintenance guarantee period, and are functioning properly in accordance with the approved plans, specifications and any amendments thereto;

B. An affidavit of title from the developer that there are no liens or other legal encumbrances on any of the improvements or utilities proposed to be deeded to the township or other governmental agency or authority of the township;

C. Receipt of a written statement from the Raritan Township municipal utilities authority to the township committee and administrative officer confirming that any public sewage facilities which have been installed on the tract or within the improvement, have been installed in accordance with the approved plans and any amendments thereto, and in accordance with applicable township ordinances and specifications;

D. The developer and the developer's engineer shall certify in writing that all improvements have been constructed, installed and maintained and are operation in accordance with the approved plans and any amendments thereto;

E. Deeds, free and clear of all encumbrances, for all streets, roads, trails, public easements, drainage and conservation easements, utility easements, and other lands dedicated to public use and any improvements to be dedicated or deeded to the township or other public agency, shall be forwarded to the municipal clerk, and approved as to form and content by the township attorney and engineer.

Upon satisfactory compliance as aforesaid, the maintenance guarantee posted by the developer may be released by resolution of the township committee. The township committee need not accept any roads or other improvements if the roads or other improvements will be used

by the developer to complete other portions of the tract or development. (Ord. 88-21 § 3: prior code § 15-6.3)

F. Submission of as-built plans (including the complete drainage system) geo-referenced to the New Jersey State Plan Coordinate System NAD 83 on CD or other acceptable electronic format. (Ord. 06-11 § F)

16.16.040 Widening of existing streets.

Developments that include or front on existing streets which do not conform to pavement and/or right-of-way widths as shown on the master plan or official map shall dedicate and improve to township specifications the additional width from the center line of the road abutting the property being subdivided. If the subdivision adjoins one side of an existing road which does not meet standard, one-half of the required extra width shall be dedicated and improved to township specifications.

When in the interests of traffic safety, health, convenience and good planning, a postponement of the installation or construction of a widened roadway is desirable, the planning board may authorize such postponement, provided that the developer shall deposit with the township the cost of the improvement in lieu of actually constructing or installing same in the same manner as required in this chapter. (Prior code § 15-6.4)

16.16.050 Maintenance of improvements.

A. Maintenance of On-Tract Improvements-- Developer/Landowner Responsibility. During the course of development of a tract and construction of improvements, the developer/landowner shall be responsible to insure the safety and proper, on-going maintenance of the facilities and improvements on the tract. The performance guarantee as required by these development regulations and N.J.S. 40:55D-53 are posted to insure the proper installation and maintenance during the performance period, of all improvements installed by the developer/landowner in accordance with the approved plans, specifications and any amendments thereto required for approval of the development by the planning board/board of adjustment.

All on-tract improvements shall be maintained by the developer/landowner as a condition of continued development, use and occupancy of the property. On-tract drainage facilities, including detention and/or retention basins, shall be maintained by the developer/landowner unless accepted by the municipality at the satisfactory termination of the performance period. All drainageways or drainage structures shall be contained within the drainage easement to permit access by municipal maintenance personnel for inspections of the facilities and for emergency repair of such drainage facilities. Said easements or emergency repair shall not be deemed or in any way construed that the municipality is accepting a dedication or responsible for the maintenance of the drainage facilities.

B. Snow Removal--Salting/Sanding. Until such time as the privately owned, on-tract improvements installed by the developer have been accepted into township ownership as set forth in these development regulations or deeded and turned over to a private homeowners' association, the developer/landowner shall be responsible for the removal of snow and sanding and/or salting of streets, roadways and other areas or rights-of-way for passage. The developer/landowner shall also be responsible for sweeping the streets, roadways, and rights of way as soon as feasibly possible after the application of salt and/or sand to remove any excess from the road surface. (Ord. 06-11 § B)

C. Performance Guarantee Period. During the time period when the developer/landowner is constructing improvements (performance guarantee period), the developer/landowner shall remove all snow, and salt and/or sand the roadway, street and right-of-way areas within the tract

to insure safe passage by all persons and vehicles. Failure to fulfill such responsibility shall be deemed a breach and default of the performance guarantee. If the township, in the sole discretion of its agents and employees, determine that the health, safety or welfare of persons or property may be affected by the breach of responsibility and performance by the developer/landowner, the township in such emergency situation shall be authorized to plow and remove snow and sand and/or salt the road, street or right-of-way areas within the development.

All costs incurred in the emergency action undertaken by the township shall be charged against and deducted from the performance guarantee posted by the developer/landowner as a default of their responsibility and obligations to perform under the guarantee. Any such emergency action by the township shall not be construed as undertaking of any of the developer/landowner's continued obligations or responsibilities; and shall further not be deemed or construed as an acceptance of any proposed dedication of the improvement. The developer/landowner shall indemnify and hold the township harmless for any damages or injuries to persons or property of the developer, the township, or others resulting from such emergency action, and such damages shall likewise be charged against and deducted from the performance guarantee.

D. Billing. The township public works department shall keep detailed records of the time, materials, equipment and men utilized for such services within the developer/landowner's tract and same shall be submitted to the chief financial officer for billing the cost of such snowplowing, sanding or salting at the current rate established by resolution for such services by the township public works department and on file in the municipal clerk's office. The township chief financial officer shall forward the bill for services to the developer/landowner indicating the deduction to be made from the performance guarantee.

E. Indemnification. The developer's agreement executed between the township and any developer shall provide that the developer:

1. Authorizes deductions from the escrow account for services under this chapter; and

2. Acknowledges that arterial or through roads of the township receive top priority in snow plowing over secondary or development roads and that the township shall not be held liable by the developer/landowner for any delays in plowing; and

3. Agrees to hold harmless and indemnify the township and its employees from any liability or damage to persons or property resulting during the course of the township fulfilling the developer's responsibility in removing snow and sanding or salting of the streets and roadways within the development or delays in providing these services; and

4. Acknowledges that the providing of snow plowing, sanding or salting services is not an acceptance and shall not be construed as an acceptance of a dedication of any improvements from the developer/landowner, nor shall such services be deemed as the township exercising any dominion or control of or over the developer/landowner's property, but rather such services are being provided on an interim basis to protect and insure the public health, safety and welfare of persons due to the stage of development of the tract.

F. The street clearing activity by the township under this chapter shall not apply to streets which are to remain in private ownership in planned residential developments (P.R.D.'s) since their homeowners' association must undertake the road maintenance responsibility. (Ord. 96-35 § 1: Ord. 88-21 § 4: prior code § 15-6.5)

16.16.060 Off-tract improvements required.

Every developer, as a condition of approval, shall be required to pay his or her pro rata share of the cost of providing reasonable and necessary street improvements and water, sewerage and drainage facilities, and easements therefor, located outside the tract limits of the development but

necessitated or required by construction or improvements within such development. The off-tract improvements for which the developer must contribute shall be based on the circulation plan and the utility service plan elements of the master plan. If no other property would obtain a significant benefit from such improvements, the developer shall pay the entire cost thereof. If other property within a related and common area would obtain a benefit from such improvements, then the planning board shall determine the proportionate cost of each element of the improvements which shall be born by each developer or owner within such area. Where a developer pays the amount determined as his or her pro rata share under protest, he or she shall institute legal action within one year of such payment in order to preserve the right to a judicial determination as to the fairness and reasonableness of such amount. Any site plan requiring off-tract improvements shall comply with the provisions and design standards of this title and the subdivision chapter as appropriate. Performance and maintenance guarantees shall be provided in accordance with Sections 16.16.010 and 16.16.020 as appropriate. Extensions of existing roads, waterlines and sanitary and storm sewers required as a condition of final approval to service the development shall not be considered an off-tract improvement.

A. Circulation Improvement. Street widening, alignment, corrections, channelization of intersections, construction of barriers, new or improved traffic signalization, signs, curbs, sidewalks, trees, utility improvements not covered elsewhere, the construction of new streets and other similar street or traffic improvements. The owner or developer's proportionate cost shall be in the ratio of the estimated peak-hour traffic generated by the proposed development. The ratio thus calculated shall be increased by ten percent for contingencies.

B. Water Distribution Facilities. As required by franchised water supplier.

C. Stormwater and Drainage Improvements. Stormwater and drainage improvements, including the installation, relocation or replacement of storm sewers, culverts, bridges, catch basins, detention and retention ponds, and the installation, relocation or replacement of other appurtenances associated therewith. The owner's or subdivider's proportionate cost shall be in the ratio of the estimated peak surface runoff as proposed to be delivered into the existing system measured in cubic feet per second to the sum of the deficient existing peak flow in cubic feet per second for the existing system and the estimated peak flow as proposed to be delivered. For the purposes of calculations, the standards set forth in Section 16.84.040(B), the stormwater control and floodplain subchapter of this ordinance shall be used. The ratio thus calculated shall be increased by ten percent for contingencies.

D. Sanitary Sewer Facilities. As required by the Raritan Township municipal utilities authority.

E. Escrow Account. Where the proposed off-tract improvement is to be undertaken at some future date, the moneys required for the improvement shall be deposited to the credit of the township in an interest-bearing account until such time as the improvement is constructed. If the off-tract improvement is not begun within ten years of deposit, all moneys and interest shall be returned to the applicant. (Prior code § 15-6.6)

16.16.070 Transportation improvement district one (TID-1).

A. Purpose. The township committee finds that:

1. The township is responsible for and committed to the provision of an adequate system of transportation within the township.

2. New residential and nonresidential development is aggregated in certain development areas. Such development causes and imposes demands on the township transportation system.

3. Planning projection indicate that such development will continue and will place ever increasing demands on the township's transportation system.

4. To the extent that such development in aggregated areas place demands on the existing transportation system, these demands which will necessitate significant improvements should be shifted in a fair and reasonable manner from the public at large to the developments actually creating the demands.

5. The township committee after careful consideration finds and declares that it is necessary to establish a transportation improvement district (TID-1) and that the TID-1 contribution imposed upon residential and nonresidential development in order to finance transportation improvements within the TID-1 area, the demand for which is created by both the residential and nonresidential development, is in the best interest of the general welfare of the township and its residents and is equitable.

B. Intent. This section is intended to impose a TID-1 contribution at the time of certificate of occupancy issuance, (and as a condition precedent to such issuance) in an amount based upon variables to reflect expected trip generation from non--residential development, and number of units of residential development, and to finance transportation improvements, the demand for which is generated by new developments within the TID-1 area. The township is responsible for meeting its fair share of such improvements reflecting existing development and traffic volumes. After studies by the township's traffic consultant (Travers Associates, Inc.and Rocciola Engineering)) published in a report entitled Raritan Transportation Improvement District No. 1, dated June, 1990 (hereinafter referred to as The Travers Study - June, 1990) which was subsequently amended by Rocciola Engineering and summarized in a memorandum report dated June 25, 2001, the township's share has been established as seventy-eight (78) percent of the amount specified in subsection E of this section. Only needs created by new development will be met by such TID-1 contribution. The TID-1 contribution shall be spent on transportation improvements that substantially benefit those developments within the TID-1 area. (Ord. #01-25)

C. Applicability. This section shall be uniformly applicable to development that occurs within the designated TID-1 area.

D. Establishment of TID-1. Pursuant to N.J.S. 40:55D-39 there is established a transportation improvement district (TID-1) which shall include the area bounded by:

Voorhees Corner Road (C.R. 650) on the north;

Old York Road between Voorhees Corner Road and Clover Hill Road on the east;

Clover Hill Road between Old York Road and Amwell Road on the east;

Amwell Road and Old York Road to Route 202/31 on the south;

Route 202/31 and Route 202 between Old York Road and Voorhees Corner Road on the west.

The establishment of such TID-1 is in accordance with the recommendations of the master plan of the township of Raritan.

E. Improvements Costs. Based upon a traffic engineering review of the TID-1 area as described, nine million five hundred nineteen thousand dollars ($9,519,000.00) of street and traffic control improvements are deemed necessary within this area in current 2001 dollars. The Travers Associates Study - June, 1990 was amended by Rocciola Engineering and summarized in a memorandum report dated June 25, 2001; both documents are on file in the planning and zoning office of the Township of Raritan. In 2001 dollars, after accounting for TID-1 funds currently collected as of June 15th, 2001, the total remaining cost is eight million seven hundred ninety-two thousand seven hundred sixty-one dollars and ninety-three cents ($8,792,761.45. That sum is broken down to six million eight hundred fifty-eight thousand three hundred fifty-three dollars and ninety-three cents ($6,858,353.93) as the Township responsiblity and one million nine hundred thirty-four thousand four hundred seven dollars and fifty-two cents $1,934,407.52) as the allocation that shall be borne on a pro rata basis as set forth in subsection F of this section. (Ord. #01-25)

F. Calculation of Contribution. Based upon counts of existing traffic volumes and projected trip generation of uses within the TID-1, the following is deemed the pro rata amount of the cost of such improvements that shall be borne by each developer or owner with respect to development applications within the TID-1 district. (Ord. #01-25)

TID FEE SCHEDULE
2000 Dollars

Land Use	Unit	Cost	
Residential	Home	$1,076.00	
Retail	S.F. GLA	$3.98	($1.00 Highway)
Office	S.F. GLA	$1.57	($0.39 Highway)
Medical Office	S.F.	$3.86	($0.96 Highway)
Building Materials	S.F.	$2.20	($0.55 Highway)
Quality Restaurant	Seat	$110.61	($27.69 Highway)
High Turn-over Restaurant	Seat	$291.43	($72.80 Highway)
Fast Food Restaurant w/Drive thru	S.F.	$17.66 ($4.12 Highway)	

For uses not listed above the fee is calculated as follows:

TID FEE = $1055.13 x T x P x H

Where: $1055.13 = Cost per Trip
T = Peak Trip Hours
P = Percent of Primary Trips
H = 0.25 Highway Access Factor, where applicable

Combination of uses as part of a development shall be divided into component parts based upon the appropriate formula above.

The methodology to determine the appropriate cost trip generation shall be as established by the Travers Study - June, 1990 and as amended by the Rocciola Engineering Memorandum dated June 25, 2001.

Where the property which is the subject of a development application falls within TID-1, the pro rata amount of the cost of off-tract street and traffic control improvements shall be borne by each developer or owner with respect to such development application within the TID-1. The TID-1 contribution shall be determined by the formula specified in the TID fee schedule.

Any calculation based upon square footage of floor area shall be deemed to be gross square footage which shall for the purposes of this section extend to the exterior perimeter of such building or structure. Any change of use necessitating a development application shall be subject to a TID-1 contribution based upon the difference between the existing trip generation and the

anticipated trip generation based upon the formula set forth herein when the anticipated trip generation is greater than the existing trip generation. (Ord. #01-25)

G. Findings and Approvals. The municipal agency, in deliberation with respect to any application for preliminary approval with regard to property located within TID-1, shall consider, and make appropriate findings, in concept form, as to amounts to be covered in a developer's TID-1 contribution agreement.

A condition to any final approval shall be that the applicant enter into an agreement with the township of Raritan (developers TID-1 contribution agreement) based upon the findings of facts and conditions of such approval, that will provide for the following:

1. Payment of a TID-1 contribution fee representing the applicant's fair share of street and traffic control improvements in accordance with the standards set forth in this section including provision for adjustment of such fee due to inflation.

Such fee shall be adjusted annually in January by applying the construction cost index as published by McGraw-Hill Publishers in the "Engineering News Record," or if such periodical is no longer published, as published in another publication of similar reputation and reliability. If, as of any relevant date, the Index is no longer published or issued, the Federal Highway Administration's bid price index or such other index as accurately reflects the effects of general economic conditions and influences upon the cost of constructing road improvements in New Jersey shall be used and employed in the place and stead thereof;

2. A description of improvements to be made by or at the expense of the developer, in lieu of a fee contribution or some combination thereof, if any, and the timing or sequencing of such installation. Such improvements shall only be permitted by the municipal agency in lieu of TID-1 contribution if the board finds, after consultation with the township engineer, that such improvements are a part of the TID-1 improvements set forth by the township engineer in the Cost Estimate Breakdown dated April 20, 1989 as as amended by the Revised Table 4 (TID Improvement Cost Estimate) prepared by the Township Engineer and dated December 12, 2000 and that such improvements are such that traffic operating characteristics will be safe and adequate following completion of such improvement.

3. Such other matters as may be recommended by the municipal agency. (Ord. #01-25)

H. Use of Funds Collected. Any funds collected by way of TID-1 contribution shall be maintained in a separate escrow account credited to the township. Such funds shall be used only for improvements referred to in The Travers Study - June, 1990 as amended by the Rocciola Engineering Memorandum dated June 25, 2001 and specifically the Cost Estimate Breakdown dated April 20, 1989 as amended by the Revised Table 4 (TID Improvement Cost Estimate) prepared by the Township Engineer and dated December 12, 2000. The Township shall publish a yearly notice in the official newspsper of the Township indicating where TID-1 funds have been spent. (Ord. #01-25)

I. Effect of Transportation District on Development Applications with Prior Approvals. An applicant who has obtained preliminary or final approval prior to the effective date of the ordinance codified in this section with respect to a development application located within the TID-1 area, provided such approvals are valid, and provided such applicant has not agreed via a planning board resolution and/or written communication to TID contribution shall not be subject to the provisions of this section.

All applicants whose preliminary or final approval resolution incorporates a TID contribution or who have provided written communication agreeing to a TID contribution, or who shall hereafter make an application for approval of a development application shall be subject to the provisions of this section.

J. Low and Moderate Income Housing. Development applications containing proposals for low and moderate income housing, as defined by ordinance, shall be subject to this section except

that any computations with respect to the number of units shall exclude units which are approved as low and moderate income units.

K. Exemption for Public Buildings. Development applications made by a public agency for the construction of a public building such as federal, state, county, municipal, school, emergency service facility or building shall be exempt from this section provided that the township committee finds that the proposed building will serve a public purpose and promote the public health, safety and welfare.

L. Payment--In Lieu Agreement. No certificate of occupancy shall be issued for a development in the designated TID-1 area as herein defined unless the TID-1 contribution as imposed by this section and calculated as per this section has been paid to the township, and unless the municipal agency and the township have specifically made an arrangement with the developer through a developer's TID-1 contribution agreement that such TID-1 contribution may take the form of physical improvements.

M. Contingencies. The pro rata amounts within subsection F of this section shall not be subject to be increased by ten percent for contingencies as set forth in this section. (Ord. 90-5 § 1: prior code § 15-6.6a)

Chapter 16.18

LAND SUBDIVISION STANDARDS

Sections:

16.18.010 **Minimum requirements.**
16.18.020 **Exceptions.**
16.18.030 **Checklist waivers.**
16.18.040 **Certificate of approval.**
16.18.050 **Required subdivision application fees.**
16.18.060 **Construction permits and certificates of occupancy.**
16.18.070 **Exhibits Required for Subdivision Applications**
16.18.080 **Subdivision and Site Plan Distribution**
16.18.090 **Plat details.**
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16.18.110 **Design standards.**
16.18.120 **Wetlands delineation.**
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16.18.140 **Aquifer test and analysis--For major subdivisions.**
16.18.150 **Aquifer test and analysis--For nonresidential use site plans.**
16.18.160 **Natural Resource Inventory Report and Map**

16.18.010 Minimum requirements.

These rules, regulations and standards shall be considered the minimum requirements for the protection of the health, safety and welfare of the citizens of the township. (Prior code § 15-7.1)

16.18.020 Exceptions.

The planning board, when acting upon applications for minor or preliminary subdivision approval, shall have the power to grant such exceptions from the requirements for subdivision approval as may be reasonable and within the general purpose and intent of this title if the literal enforcement of one or more provisions of this title is impracticable or will exact undue hardship because of peculiar conditions pertaining to the land in question. (Prior code § 15-7.2)

16.18.030 Checklist waivers.

If it can be demonstrated that because of peculiar conditions relating to the property or proposed construction, any of the required plat details are not necessary to properly evaluate the plan, the planning board may waive specific requirements. A written request and explanation for the waiver request must accompany the application submission. (Prior code § 15-7.3)

16.18.040 Certificate of approval.

Certificate of approval shall be issued by the administrative officer in accordance with the Municipal Land Use Law, R.S.40:55D-56. (Prior code § 15-7.4)

16.18.050 Required subdivision application fees.

The following nonrefundable fees shall be submitted with applications for the following types of subdivision applications:

A. Boundary adjustment (subdivision/merger) not creating any new lots, one hundred dollars ($100.00). When any new lots are created, the fee shall be one hundred dollars ($100.00), plus the applicable fees for the new lot.

B. Minor subdivision plat creating one or more new lots, five hundred dollars ($500.00), plus one hundred dollars ($100.00) for each new lot.

C. Sketch plat for a major subdivision, five hundred dollars ($500.00), plus twenty dollars ($20.00) per lot for succeeding lots.

D. Preliminary plat for a major subdivision, two thousand dollars ($2,000.00) plus two hundred dollars ($200.00) per lot for succeeding lots involving attached housing units.

E. Final plat for a major subdivision, one thousand dollars ($1,000.00), plus fifty dollars ($50.00) per lot for succeeding lots.

F. Conditional use in conjunction with a subdivision application, one hundred dollars ($100.00), plus subdivision and site plan approval application fees.

G. Zoning variance in conjunction with a subdivision application, variance application fee as set forth in Section 16.78.050 of the zoning ordinance, plus the applicable minor subdivision or preliminary subdivision application fee.

H. Filing of easement, twenty-five dollars ($25.00) per easement document (sight, right-of-way, conservation, drainage, etc.). Said fees for easements shall be paid prior to the signing of deeds and/or plats for a development application.

I. Where a fee is not stated, it shall be the cumulative fees of each request made to the applicable board or boards. (Ord. 06-14 § B, C, D & E; Ord. 90-20 § 5; Ord. 86-4 § 1; prior code § 15-7.5)

16.18.060 Construction permits and certificates of occupancy.

A. Construction Permits Before Final Approval. No construction permit shall be issued by the construction official for any dwellings, buildings or structures within a subdivision until final approval is granted in the case of major subdivision or approval is granted in the case of minor subdivision.

B. Construction Permits Before Installation of Improvements. No construction permit shall be issued by the construction official for any dwellings, buildings or structures within a subdivision until all improvements have been installed as shown on the minor subdivision plat or preliminary subdivision plat, except that the planning board may waive this requirement partially or totally and provide for the posting of a performance guarantee for all uncompleted improvements as set forth in Section 16.16.010.

C. Construction Permits Before Payment of All Fees. No construction permits shall be issued until all applicable fees have been paid to the agencies of the county and township, including all hookup fees to the township municipal utilities authority.

D. Certificate of Occupancy. No certificate of occupancy for any dwelling, building or structure shall be granted until all required improvements have been installed or completed and certified by the township engineer except as herein noted. A certificate of occupancy may be issued by the construction official if all improvements have been installed or completed, except the finish course of the road, and the township engineer warranties that the township's interest is best served by delaying completion of the road until after all structures and dwellings are completed. The maintenance guarantee required by Section 16.16.020 shall not begin until the finish course has been installed.

The planning board may authorize the issuance of a temporary certificate of occupancy due to conditions, such as weather, which are beyond the control of the developer if landscaping, permanent sidewalks and other minor improvements specified by the board have been guaranteed but not yet installed. Prior to the issuance of more than fifty (50) percent of the temporary certificates of occupancy for a subdivision, all improvements except the finish course of the road, if postponed by the township engineer, shall have been constructed or installed.

If cases of planned residential developments or other large subdivisions, the planning board may by resolution develop requirements for the issuance of permanent and temporary certificates of occupancy other than those stated heretofore if such flexibility promotes a more reasonable and logical development scheme and serves the best interest of the township. (Prior code § 15-7.6)

16.18.070 Exhibits Required for Subdivision Applications

All applications shall include the information as follows, except that the Planning Board may waive any requirement upon written request, or may request additional information, where it is clearly appropriate to the particular application. Failure to comply shall render such application incomplete.

A. Minor Subdivisions.

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat:

2. Twenty-five (25) copies of a Wetlands Analysis and Report in accordance with Section 16.18.120.

3. When the development is to be located in the sanitary sewer service area, written communication from the RTMUA that adequate sewage treatment capacity has been reserved for the development shall be submitted along with a copy of the reservation agreement and/or proof of payment of deposit on connection fee.

4. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.

5. Twenty-five (25) copies of completed Raritan Township Subdivision application form.

6. Twenty-five (25) copies of completed Raritan Township Minor Subdivision checklist form.

7. Township Application fee.

8. Township Escrow payment.

9. Twenty-five (25) copies of a completed Raritan Township Variance application form (if variances from Township ordinance are requested or required).

10. When the development is located in the public water service area, twenty-five (25) copies of correspondence from the public water company indicating service can be provided.

11. Certification from Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.

12. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.

13. Two (2) copies of all existing protective covenants, deed restrictions, or easements that apply to tract.

14. Completed W-9 form.

15. Twenty-five (25) copies of the Minor Subdivision Plan in accordance with Section 16.18.090.

16. Two (2) copies of an affidavit stating that any and all lots parts of the subdivision application have not been part of another minor subdivision within the past 12 months.

B. Sketch and Exempt Subdivision.

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat.

2. Twenty-five (25) copies of a Wetlands analysis and Report in Accordance with Section 16.18.120.

3. When the development is to be located in the sanitary sewer service area, written communication from the RTMUA that adequate sewage treatment capacity has been reserved for the development shall be submitted along with a copy of the reservation agreement and/or proof of payment of deposit connection.

4. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.

5. Twenty-five (25) copies of completed Raritan Township Subdivision application form.

6. Twenty-five (25) copies of completed Raritan Township Sketch/Exempt Subdivision checklist form.

7. Township Application fee.

8. Township Escrow payment.

9. When the development is located in the public water service area, twenty-five (25) copies of the correspondence from the public water company indicating service can be provided.

10. Certification from the Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.

11. Two (2) copies of all existing protective covenants, deed restrictions, or easements that apply to tract.

12. Completed W-9 form.

13. Where common open space is to be provided; two (2) copies of a letter detailing the proposed use and ownership of said open space.

14. Twenty-five (25) copies of the Sketch Subdivision Plan in accordance with Section 16.18.090.

15. Twenty-five (25) copies of current New Jersey Department of Environmental Protection Letter of Interpretation.

16. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.

C. Preliminary Subdivisions.

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat.

2. Two (2) copies of a letter of intent stating the type of structure to be erected. approximate start date of construction, and any phasing plan for subdivision.

3. Twenty-five (25) copies of a Wetlands Analysis and Report in Accordance with Section 16.18.120.

4. Twenty-five (25) copies of an Aquifer Test Analysis and Report in accordance with Section 16.18.140, unless public water is proposed.

5. Twenty-five (25) copies of a Traffic analysis and report in accordance with Section 16.18.130.

6. When the development is to be located in the sanitary sewer service area two (2) copies of written communication with the RTMUA that indicates that adequate sewage treatment capacity has been reserved for the development shall be submitted along with a copy of the reservation agreement and/or proof of payment of deposit on connection fee.

7. Twenty-five (25) copies of current New Jersey Department of Environmental Protection Letter of Interpretation.

8. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.

9. Twenty-five (25) copies of completed Raritan Township Subdivision application form.

10. Twenty-five (25) copies of completed Raritan Township Preliminary Subdivision checklist form.

11. Township Application fee.

12. Township Escrow payment.

13. Twenty-five (25) copies of completed Raritan Township Variance application form (if variance from Township ordinance are requested or required.

14. When the development is located in the public water service area, twenty-five (25) copies of correspondence from the public water company indicating service can be provided.

15. Certification from the Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.

16. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.

17. Two (2) copies of all existing and proposed protective covenants, deed restrictions, or easements that apply to the tract.

18. Where common open space is to be provided; two (2) copies of a letter detailing the proposed use and ownership of said open space.

19. Five (5) hardcopies and one (1) pdf copy of the site development storm water management plan in accordance with Chapter 16.84.

20. Completed W-9 form.

21. Twenty-five (25) copies of the preliminary plat in accordance with Section 16.18.090.

22. Twenty-five copies of Natural Resource Inventory in accordance with Section 16.18.160.

23. Pre-application Meeting to be held with Township Engineer and Township Planner.

24. In addition to paper plans, initial plan sets shall be submitted on CD (or other acceptable archivable electronic format) in the most recent version of Auto CAD and in pdf format. Subsequent revisions shall be submitted paper format and pdf (via e-mail acceptable). The final approved revision shall be submitted in paper, AutoCAD and pdf formats on CD (or other acceptable archivable electronic format). (Ord. 06-11 §19, 22, 23 & 24)

25. Two copies of the Affordable Housing Production Plan in accordance with Section 16.11.070.A. (Ord. 06-21 § 25)

D. Final Subdivisions.

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat.

2. Certification from the Raritan Township Planner that all conditions of preliminary approval have been met and that the preliminary plats have been stamped and signed by the Raritan Township Planning Board.

3. Two (2) copies of all approved Federal, State, County permits required under preliminary approval.

4. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.

5. Twenty-five (25) copies of completed Raritan Township Subdivision application form.

6. Twenty-five (25) copies of completed Raritan Township Final Subdivision checklist form.

7. Township Application Fee.

8. Township Escrow payment.

9. Certification from Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.

10. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.

11. Two (2) copies of all existing and proposed protective covenants, deed restrictions, or easements that apply to tract.

12. Completed W-9 form.

13. Submission of two (2) copies of any and all existing and/or proposed homeowners association documentation, where applicable.

14. A CAD drawing, prepared by a New Jersey Licensed Land Surveyor on a compact disc in .dxf format. All required information appearing on the final plat shall appear on separate layers of the drawing. Text shall appear on separate layers of the drawing. Text shall also appear on a separate layer of the drawing. The file must be drawn at its real New Jersey Plan Coordinates NAD83 (or the most current New Jersey State Plan coordinate system) position and the view must be un-rotated so that the NJPCS North points orthographically up (vertical) in the screen. The drawing shall identify, at a minimum, three (3) monument markers distributed around the corners of the tract. These monument markers shall be identified in US Survey feet.

15. Twenty-five (25) copies of the final plat in accordance with Section 16.18.190. (Please not that two (2) mylar copies and eleven (11) paper copies of the final plat will be required to be submitted to the Planning Board after filing with the County Clerk.). (Ord. 03-7 § 16.18.070)

16.18.080 Subdivision and Site Plan Distribution

The planning board or its appointed representative shall schedule the application for a hearing if it finds it to be complete and shall forward copies of the plat and exhibits to the following persons or agencies:

A. Township engineer;

B. Township health officer;

C. Township construction official;

D. Hunterdon County planning board;

E. Environmental commission;

F. Tax assessor;

G. Raritan Township Fire Department;

H. Flemington-Raritan Fire Aid Squad;

I. Raritan Township Local Historians Committee;

J. Raritan Township Police Department;

K. Raritan Township Municipal Utilities Authority;

L. Any other official or agency which shall be affected by the proposed subdivision or required to be notified by law.(Ord. 03-7 § 16.18.080)

16.18.090 Plat details.

A. General. All maps, plats and sketch plats required to be submitted by this title shall conform to one of the following size configurations: eight and one-half (8-1/2) by thirteen (13) inches, fifteen (15) by twenty-one (21) inches, or twenty-four (24) by thirty-six (36) inches.

B. Minor Subdivision. All plats shall be based on accurate information at a scale of

not more than one inch equals one hundred (1"=100') feet. The plat shall be designed in compliance with the provisions of Section 16.18.110 and shall show or be accompanied by the following information and information listed in Section 16.18.070, except that the Planning Board may waive any requirement or request additional information where it is clearly appropriate to the particular application. Failure to comply shall render such application incomplete.

1. **Location and Key Map.** The entire tract to be subdivided, giving the accurate location of all existing and proposed property and street lines, rights-of-way, and including a key map at a scale where one inch equals not more than one thousand (1,000) feet showing the entire subdivision and its relation to all features shown on the official map and master plan and located within one-half mile of the extreme limits of the subdivision. The plat shall indicate that all boundary corners of the proposed lots have been set with iron pins and shall show their location. This requirement shall also apply to boundary adjustments.

2. **Structures, Wooded Areas and Topography.** The location of existing houses, buildings and other structures within the portion to be subdivided and two hundred (200) feet thereof, with accurate dimensions from all existing and proposed lot lines, wooded areas and isolated shade trees more than six inches in diameter, breast high and two inches in diameter, breast high for flowering and small trees Sufficient elevations and contours at five feet vertical intervals for slopes averaging ten percent or greater, and at two-foot vertical intervals for land of lesser slope to determine the general slope and natural drainage of the land, and the high and low points for the portion to be subdivided, and for a distance of two hundred (200) feet thereof. All elevation and contours shall be verified in the field to accurately represent the grade involved and shall be based upon U.S.C. and G.S. datum.

3. **Owners.** The name and address of the owner and/or subdivider, and the name of all adjoining property owners and those across existing or proposed streets as disclosed by the most recent municipal tax records.

4. **Other Information.** The tax map sheet, date of original preparation and revisions, block and lot numbers, zone district, old name if submitted under a different title, north arrow, written and graphic scales and acreage of the entire tract and those areas to be subdivided.

5. **Streets, Easements, Watercourses and Rights-of-Way.** The location of existing or proposed streets, roads, easements, public rights-of-way, streams, wetlands, wetland transition areas, state open waters, bridges, culverts, drainage ditches and natural water-courses in and within five hundred (500) feet of the subdivision.

6. **Lots.** The original and proposed lot layout, lot dimensions, all required setback lines, and lot area of each lot in square feet and acreage. Lots shall be designated by the official lot number designations from the township tax assessor.

7. **Endorsements and Certificates.** Plats being submitted for minor subdivision approval shall be a boundary survey map drawn by a licensed New Jersey land surveyor and so certified on the plat, to be drawn from an actual boundary survey. The plat shall contain a four by five inch blank box outlined, located adjacent to the title block, which shall be reserved for the planning board's review stamp. The specific purpose and restrictions of any easement or land reserved or dedicated for any use shall be indicated on the plat and shall be included in any deeds conveying title to the properties in question. Minor subdivisions requiring improvements shall contain the following certification:

"This is to certify that the engineering plans for all improvements are based upon topographical data that has been verified in the field by a N.J. licensed

land surveyor."

_____
Signature of N.J. Professional Engineer/Land Surveyor

8. **Utility Information.** Within the public water and sanitary sewer service areas, the plat shall include the location of existing and proposed lines and connections.

9. **Percolation and Soil Logs.** In the event public sewers are not available and individual septic systems are proposed, the plat shall show the following information:

At least two passing percolation tests and one acceptable soil log shall be conducted on each proposed lot. The percolation tests and soil log shall be located at least twenty (20) feet from each other, but not more than forty (40) feet from each other, and within the area of the proposed septic field. "Proposed septic field" means that area so designated by the design engineer and located at a lower elevation than the proposed structure containing the waste water facilities and proposed well, and conforming to distances established by R.S. 2A: 11-9 et seq. and provisions of this code. It is further intended that all septic systems shall be gravity systems unless undue hardship shall prevent same, as determined by the planning board.

10. **Other Requirements.**

a. minor subdivisions shall show the location and indicate the results of all passing, unsatisfactory and abandoned percolation and soil log tests. The date the percolation tests and soil logs were taken shall be indicated on the plats as well as the name of the township witness.

b. Where an existing dwelling is part of the subdivision, the plat shall indicate the exact location of the existing well and septic field. No percolation test or soil log shall be required for the dwelling.

c. No percolation test or soil log shall be located closer than one hundred (100) feet of the highest elevation of seasonal surface water.

d. All percolation tests and soil logs shall be performed at the applicant's expense by a person authorized by state law to undertake such tests and shall be witnessed by a representative of the township engineer's office who shall be notified at least forty-eight (48) hours prior to the conducting of any tests.

e. A passing percolation test shall be one which meets the requirement of R.S. 2A. 11-9 et seq., and where the water level does not drop faster than one inch in one minute.

f. Septic fields shall not be located on slopes greater than fifteen (15) percent and on slopes six to fifteen (15) percent, the fields shall be placed perpendicular to the slope.

11. **Floodplain Delineations.** Minor subdivisions shall indicate flood hazard area delineations for all permanent streams based upon State Department of Environmental Protection delineations or for the one hundred (100) year flood as directed by the township engineer.

12. **Steep slope calculations** in accordance with Section 16.64.130.

13. **Plats** shall meet the requirements of the Map Filing Law if plats rather than deeds are to be filed with the County Clerk.

C. **Sketch Plats and Exempt Subdivision.** All plats shall be based on accurate information at a scale of not more than one inch equals one hundred (1"=100') feet. The plat shall be designed in compliance with the provisions of Section 16.18.110 and shall show or be accompanied by the following information and information listed in Section 16.18.070,

except that the Planning Board may waive any requirement or request additional information where it is clearly appropriate to the particular application. Failure to comply shall render such application incomplete.

1. **Location and Key Map.** The entire tract to be subdivided, giving the accurate location of all existing and proposed property and street lines, rights-of-way, and including a key map at a scale where one inch equals not more than one thousand (1,000) feet showing the entire subdivision and its relation to all features shown on the official map and master plan and located within one-half mile of the extreme limits of the subdivision.

2. **Structures, Wooded Areas and Topography.** The location of existing houses, buildings and other structures within the portion to be subdivided and two hundred (200) feet thereof, with accurate dimensions from all existing and proposed lot lines, wooded areas and isolated shade trees more than six inches in diameter, breast high and two inches in diameter, breast high for flowering and small trees and topography within the portion to be subdivided and within two hundred (200) feet thereof shown at two-foot contours.

3. **Owners.** The name and address of the owner and/or subdivider, and the name of all adjoining property owners and those across existing or proposed streets as disclosed by the most recent municipal tax records.

4. **Other Information.** The tax map sheet, date of original preparation and revisions, block and lot numbers, zone district, old name if submitted under a different title, north arrow, written and graphic scales and acreage of the entire tract and those areas to be subdivided.

5. **Streets, Easements, Watercourses and Rights-of-Way.** The location of existing or proposed streets, roads, easements, public rights-of-way, streams, bridges, culverts, drainage ditches and natural water-courses in and within five hundred (500) feet of the subdivision.

6. **Lots.** The original and proposed lot layout, lot dimensions, all required setback lines, and lot area of each lot in square feet and acreage. Lots shall be designated by consecutive numbers for major subdivisions until given official lot number designations by the township tax assessor.

7. **Endorsements and Certificates.** Plats being submitted for exempt subdivisions shall be a boundary survey map drawn by a licensed New Jersey land surveyor and so certified on the plat, to be drawn from an actual boundary survey. The plat shall contain a four by five inch blank box outlined located adjacent to the title block, which shall be reserved for the planning board's review stamp. The specific purpose and restrictions of any easement or land reserved or dedicated for any use shall be indicated in the plat and shall be included in any deeds conveying title to the properties in question.

8. **Utility Information.** Where public water or public sewer connections are proposed, the sketch plat shall include the location of existing and proposed lines and connections.

9. **Percolation and Soil Logs.** In the event public sewers are not available and individual septic systems are proposed, the sketch plat shall show the following information:

a. Sketch Plat Major Subdivisions. At least one passing percolation test and one soil Log shall be made for each five acres to indicate the suitability of the area for individual septic systems.

10. **Other Requirements.**

a. Sketch plats shall show the location and indicate the results of all passing, unsatisfactory and abandoned percolation and soil log tests. The date the percolation tests and soil logs were taken shall be indicated on the plats as well as the name of the township

witness.

b. Where an existing dwelling is part of the subdivision, the sketch plat shall indicate the exact location of the existing well and septic field. No percolation test or soil log shall be required for the dwelling.

c. No percolation test or soil log shall be located closer than one hundred (100) feet of the highest elevation of seasonal surface water.

d. All percolation tests and soil logs shall be performed at the applicant's expense by a person authorized by state law to undertake such tests and shall be witnessed by a representative of the township engineer's office who shall be notified at least forty-eight (48) hours prior to the conducting of any tests.

e. A passing percolation test shall be one which meets the requirement of R.S. 2A. 11-9 et seq., and where the water level does not drop faster than one inch in one minute.

f. Septic fields shall not be located on slopes greater than fifteen (15) percent and on slopes six to fifteen (15) percent, the fields shall be placed perpendicular to the slope.

11. Floodplain Delineations. Sketch plats for major subdivisions shall indicate flood hazard area delineations for all permanent streams based upon the most recent H.U.D. Flood Boundary Maps or Natural Resource Inventory Flood Plain/Soils Maps for Raritan Township, whichever places greater restrictions on the use of land. When more accurate information is available, it shall be utilized and indicated on the plat as to boundaries and source.

D. Plat Submitted for Preliminary Approval. The preliminary plat shall be clearly and legibly drawn or reproduced at a scale of not less than one inch equals one hundred (100) feet. Preliminary plats shall be drawn by a licensed New Jersey professional engineer or land surveyor. Construction sheets shall be drawn, signed and sealed by a licensed N.J. Professional Engineer. Contour maps and preliminary construction plans including road profiles and utility plans shall be submitted as part of the preliminary plat. Separate maps may be required by the board for topography, utilities and road details. A soil erosion and sedimentation control plan, a grading plan and landscaping plan shall be included. The plat shall be designed in compliance with the provisions of Section 16.20.040 and shall show or be accompanied by the following information and information listed in Section 16.18.070, except that the Planning Board may waive any requirement or request additional information where it is clearly appropriate to the particular application. Failure to comply shall render such application incomplete:

1. Location and Key Map. The entire tract to be subdivided giving the accurate location of all existing and proposed property and street lines, and including a key map at a scale where one inch equals not more than one thousand (1,000) feet showing the entire subdivision and its relation to all feature shown on the official map and master plan, and located within one-half mile of the extreme limits of the subdivision, and the zoning classification of the proposed subdivision and of adjacent land.

2. Lots. Lot layout, lot dimensions, all required setback lines and dimensions, individual lot areas in square feet, minimum improvable lot area in sq. ft., and the acreage and square footage of right-of-way easements and dedications. Lots shall be designated by official block and lot numbers as obtained from tax assessor.

3. Other Contents. The tract name, tax map sheet and revision date, block and lot numbers, date of plat preparation and any revisions, reference meridian, written scale, graphic scale and the following names and addresses:

a. Record owner or owners of property to be subdivided; if other than an individual, the corporate officers or partners or other statutory agent;

b. Subdivider;

c. Person who prepared map, official seal and license numbers;

d. Owners of property within two hundred (200) feet of entire tract being subdivided.

4. **Acreage.** Acreage of entire tract and those portions to be subdivided to nearest hundredth of an acre.

5. **Elevations and Contours.** Sufficient elevations and contours at five-foot vertical intervals for slopes averaging ten percent or greater, and at two-foot vertical intervals for land of lesser slope, to determine the general slope and natural drainage of the land, and the high and low points for a distance of two hundred (200) feet around the entire tract boundary. All elevations shall be verified in the field to accurately represent the grades involved and shall be based upon U.S.C. and G.S. datum.

6. **Existing and Proposed Locations.**

a. Utilities and Roadways: The location and sizes, where appropriate, of existing and proposed property lines, streets, buildings, water-courses, railroads, bridges, culverts, drain pipes, sanitary sewers, water mains, gas mains, and power lines.

b. Natural features such as rock outcroppings, wooded areas, shade trees over eight inches in diameter at breast height and two inches in diameter at breast height for flowering and small trees, wetlands, wetland transition areas, streams, state open waters, lakes, ponds, or other significant natural features. This data may be determined by field and/or photogranimetric survey. In forest areas of intense growth, where no construction or clearing is proposed, the vegetative perimeter need only be indicated. Where more detailed information is available and/or is required elsewhere in this title it shall be utilized.

7. **Streets.** Preliminary plans and profiles at a scale of not more than one inch equals fifty (50) feet horizontally, and one inch equals five feet vertically including cross-sections every fifty (50) feet or as specified by the township engineer of all proposed streets, curbs and gutters within the subdivision and proposed connection with existing or future continuing streets. The distance and radii of all curves along all street lines shall be hown.

8. **Gas, Telephone and Electric.** Preliminary plans and profiles of proposed utility layouts shall be supplied to the township at appropriate scales approved by the applicable utility for gas, telephone and electrical service showing connections to existing or proposed systems. All utilities shall be located underground.

9. **Potable, Sanitary and Stormwater Management Plans.**

a. Applicant shall submit potable water, sanitary sewer and stormwater management plans as part of the exhibits required for preliminary plat approval. Plans and profiles shall be at a scale of one inch equals fifty (50) feet horizontally and one inch equals five feet vertically for all proposed and existing sanitary sewers, storm drains, drainage ditches, and streams within the subdivision, together with the location, sizes, elevations, grades and capacities of any existing sanitary sewer, storm drain, drainage ditch, stream or watercourse to which the proposed facility shall be connected.

b. The potable water plan shall be designed to provide each lot within the subdivision with an adequate and continuous supply of potable water. Where a property is located in the public water service area , all lots shall be connected thereto. In the event that the Planning Board determines that such a system is not reasonably accessible, individual wells shall be installed on each lot, but the subdivider may be required by the planning board to install within the subdivision a complete water distribution system including provisions for connection to each structure or provide performance bonds necessary to cover the future construction of the system. Until such time as the system is capable of becoming operable, it shall be capped.

c. The sanitary sewerage disposal plan shall be designed to convey sanitary waste

from each lot through laterals and interceptors of sufficient size, material and capacity to collectors and then to trunk sewers to public treatment facilities. Where a development is located outside the sanitary sewer service area, approved individual septic systems shall be installed for each lot except as noted below. Where a public sanitary sewerage disposal system is not now reasonably accessible as determined by the Planning Board as per Section 16.18.100(D)(3), but is located within the sanitary sewer service area, the subdivider shall install within the subdivision a complete sewer pipe system including provisions for the connection thereto at each structure. Until such time as the public sanitary sewage disposal system is capable of becoming operable, individual septic systems or other appropriate and approved waste treatment facilities shall be required.

d. The stormwater management plan shall be designed in accordance with the standards found in Chapter 16.84. (Ord. 06-11)

10. Percolation Tests and Soil Logs. No subdivision or part thereof proposed to be serviced by individual sewage disposal systems shall be approved where results of the percolation tests do not meet with the established requirements of this section or other applicable ordinances or regulations, nor shall any subdivision or part thereof be considered where other physical characteristics of the land would cause septic conditions unsanitary to the public, or contrary to the requirements of this title or other applicable ordinances or regulations. Any remedy proposed to overcome such situations shall first be approved by the appropriate local and state health agency. The following requirements shall be met:

a. Two passing percolation tests and one acceptable soil log shall be conducted on each proposed lot at the applicant's expense by a person authorized by state law to conduct such tests.

b. The percolation tests shall be witnessed by a representative of the township engineer who shall be notified at least forty-eight (48) hours prior to the conducting of any tests.

c. The location and results of all passing, unsatisfactory and abandoned percolation and soil log tests shall be indicated on the preliminary plat. The date the percolation tests and soil logs were taken shall be indicated on the plats as well as the name of the township witness.

d. A passing test shall be one meeting the standards set forth in R.S. 2A:11-9, et seq., as amended, and one where the water level does not drop more than one inch in one minute.

e. The percolation tests and soil log shall be located at least twenty (20) feet from each other but within forty (40) feet of each other within the area of the proposed septic field. "Proposed septic field" shall mean that area so designated by the design engineer and located at a lower elevation than the proposed structure containing the waste water facilities and proposed well, and conforming to distances established by R.S. 2A:1 1-9, et seq., and provisions of this code. It is further intended that all septic systems shall be gravity systems unless undue hardship shall prevent same as determined by the planning board.

f. No percolation test or soil log shall be located closer than two hundred (200) feet of the highest elevation of seasonal surface water.

g. Septic fields shall not be placed on slopes greater than fifteen (15) percent, and on slopes six to fifteen (15) percent, the fields shall be placed perpendicular to the slope.

h. In areas where on-site or on-tract recharge of stormwaters is proposed, additional percolation tests may be required by the township engineer or planning board.

i. In areas of questionable percolation, the township health officer may establish the conditions under which the percolation tests may be undertaken, including the

month of the year and location.

j. Where an existing dwelling is part of the proposed subdivision, the exact location of the well and septic field shall be shown. No percolation tests or soil log shall be required for that dwelling.

k. The applicant and/or subdivider shall conduct all tests in accordance with Chapter 17 of the General Ordinances of Raritan Township.

11. Off-Tract Improvements. When the development of the subdivision or improvements within the subdivision are contingent upon improvements outside the boundaries of the subdivision, information shall be supplied by the subdivider prior to planning board consideration for preliminary approval that the improvements outside the subdivision are installed and shall be available to the subdivider, or that the provisions of Section 16.16.060 have been complied with.

12. Setback Lines. All front, rear and side yard setback lines shall be shown and dimensioned on all lots.

13. Open Space. Any open spaces proposed to be dedicated for public use or playgrounds or other public purpose, and the location and use of all such property, shall be shown on the plat. Any improvements proposed for the open space shall be shown on the plat along with the appropriate construction details related to those improvements.

14. Support Capability. When deemed necessary to determine the suitability of the soil to support new construction, the planning board shall require test holes or borings to be made by a New Jersey licensed engineer or an approved testing laboratory at the expense of the subdivider under the direction of the township engineer.

15. Conservation Plans. Plans showing measures designed to minimize soil erosion and sedimentation, such as berms, siltation ponds, sediment traps, detention and-retention basins, landscaping, natural cover, energy dissipators, and riprap. Plans shall also include, where applicable:

a. A storm drainage schedule, including a description of all temporary and permanent structures and other techniques for the control of stormwaters, together with a timetable for the construction or installation of such structures, or other techniques;

b. A schedule containing the timing of and description of temporary and permanent soil stabilization measures, including tracking, scarification, serration of slopes, roughening, mulching, hilting, chemical binders and other suitable methods of soil stabilization;

c. The location and description of water interception and diversion measures, such as diversion ditches, dikes, barriers, and disposal structures such as flexible or sectional down drains, flumes, lineal spreaders and the like.

d. Lot Grading.

16. Landscaping Plans. Plans showing the location of proposed shade trees, detention basin landscaping and other landscaping, including preservation of existing vegetation. The provisions of Section 16.18.100(D)(9) shall be complied with.

17. Easements and Dedications. The specific purpose and restrictions of any easement or land reserved or dedicated for any use shall be indicated on the plat and the proposed use of sites (other than residential) shall be noted.

18. Certifications. The following certifications shall appear on all preliminary plats:

"This is to certify that the engineering plans contained herein for all improvements are based upon topographical data that has been verified in the field by a N.J. licensed land surveyor."

_____
Signature of N.J. Professional Engineer/Land Surveyor

19. **Floodplain Delineations.** Preliminary plats for major subdivision shall indicate flood hazard area delineations for all permanent streams based upon State Department of Environmental Protection delineations or for the one hundred (100) year flood as directed by the township engineer.

20. **Fire Protection Systems.** Plans shall show the location and construction details of proposed fire protection system in accordance with Section 16.18.100(D)(10).

21. **Steep slope** calculations in accordance with Section 16.64.130.

22. **The plat** shall contain a four inch by five inch blank box outlined, located adjacent to the title block which shall be reserved for the Planning Board review stamp.

23. **Sight, conservation and drainage easement** shall be shown on the plat as required elsewhere in this Chapter.

E. **Final Plat.** The plat shall be drawn in compliance with the provisions of the state map filing act, and shall show or be accompanied by the following information and information listed in Section 16.18.070, except that the Planning Board may waive any requirement or request additional information where it is clearly appropriate to the particular application. Failure to comply shall render such application incomplete.

1. **Identification.** Date, name and key map of the subdivision, name of owner, written scale, graphic scale, and reference meridian. The final plat shall be drawn at a scale of not more than one inch equals one hundred (100) feet.

2. **Other Contents.** Tract boundary lines, rights-of way, lines of streets, street names, easements and other rights-of-way, land to be reserved or dedicated to public use, all lot lines with accurate dimensions, bearings, distances, arc lengths, central angles, tangents, and radii of all curves, building setbacks and areas of each lot in square feet.

3. **Easement and Dedications.** The specific purpose and restrictions of any easement of land reserved or dedicated for any use shall be indicated, and the proposed use of sites other than residential shall be noted. Floodplain delineations for the flood hazard area shall be shown on the plat as indicated on the approved preliminary plat or as directed by the township engineer.

4. **Block and Lots.** All block, lot and house numbers shall be approved by the township engineer and the tax assessor, and shall be related to existing block and lot numbers as shown on the official tax map of the township.

5. **Monuments.** Location and description of all monuments shall be shown as per the Map Filing Law.

6. **Consent of Owner.** Certification that the applicant is agent of owner of the land, or that the owner has given consent to file the map.

7. **Approval.** When approval of a plat is required by an officer or body, whether municipal, county or state, approval shall be certified on the plat.

8. **Certifications.** The following certifications shall appear on the final plat:

a. "I hereby verify that this map and the survey have been made under my immediate supervision and comply with the provisions of the "Map Filing Law." (Include the following, if applicable).

I do further certify that the monuments as designated and shown herein have been set."

_____
Licensed Land Surveyor (Affix Seal) Date

If monuments are to be set at a later date, the following endorsement shall be shown on the map:

"I certify that a bond has been given to the Township of Raritan guaranteeing the future setting of the monuments shown on this map and so designated."

_____

Township Clerk Date

b. "I hereby certify that all of the requirements of the Raritan Township health ordinances have been complied with."

_____

Health Officer

c. I have carefully examined this map and find it conforms with the provisions of the "Map Filing Law" and the municipal ordinances and requirements applicable thereto.

_____

Municipal Engineer (Affix Seal)

d. This application No. _____ is approved by the Raritan Township Planning Board as a major subdivision.

_____

Chairman

_____

Secretary

9. The final plat shall contain a four by five inch blank box, outlined, which shall be reserved for the County Planning Board review stamp.

10. Each final plat submission shall include a map clearly and legibly drawn at a scale of one inch equals four hundred (1"=400') feet showing proposed street rights-of-way, tract boundary lines, easements, land to be reserved or dedicated to public use, and all lot lines for the area covered by the final plat. Such map at a scale of one inch equals four hundred (1"=400') feet need not be filed with the Hunterdon County recording officer.
(Ord. 03-7 § 16.18.090)

16.18.100 Improvements.

A. General. Prior to the granting of the final approval, the subdivider shall have installed improvements required by the planning board except as provided in Section 16.16.010. The planning board may solicit local, county, state, federal, public or semi-public agencies and knowledgeable individuals on what improvements shall be required. Improvements recommended by other agencies, such as a utilities authority, county, state or other governmental agencies, may be required by the planning board as a condition of final approval. The following construction standards and improvements are necessary to protect the health, safety, welfare and convenience of

the residents and public, as well as needed to meet local, county, regional, state and national goals and objectives, all of the improvements listed below may not be appropriate or needed. These items may then be waived in accordance with Section 16.18.020.

B. Construction Standards.

1. Township Standards. All standards and specifications of the township as now or hereafter adopted, and applicable ordinances, shall govern the design, construction and installation of all improvements. Failure of the subdivider, developer, his or her contractor or agent to conform to the specifications shall be just cause for the suspension of the work being performed. No subdivider shall have the right to demand or claim damages from the township, its officers, agents or servants by reason of the suspension.

2. Other Standards. In the event the township has not adopted standards and specifications for a specific type of improvement, then generally accepted engineering standards as set forth in engineering and construction manuals as may be approved and modified by the township engineer for a specific situation, shall be used. Gas, electric, telephone and similar utilities shall be installed in accordance with applicable company, state and federal requirements.

3. Grades. All construction stakes and grades shall be set by a licensed land surveyor in the employ of the subdivision, developer or contractor. One copy of all cut sheets signed by an L.S. or P.E. shall be filed with the township engineer forty-eight (48) hours prior to the commencement of any construction.

4. Township Engineer. Prior to the start of the construction or installation of such improvements, the subdivider shall advise the township engineer forty-eight (48) hours prior to the commencement of such work. No underground installation shall be covered until inspected and approved by the appropriate official. If, during installation of any of the required improvements, the subdivider fails to meet specification requirements, or to correct unacceptable work, the subdivider shall be notified in writing by certified mail by the township engineer that the subdivider has failed to comply with specifications or to correct unacceptable work properly, and the notice shall set forth in detail what has not been properly installed. Should any underground structure be covered prior to inspection, it shall be uncovered as directed by the township engineer at the expense of the subdivider for reinspection.

If, within ten days after mailing of such notice, the subdivider has failed to perform in accordance with the notice the township engineer shall then cause the notice of failure-to-comply to be served upon the subdivider, and a copy shall be sent to the township committee and planning board. All work shall cease on the site immediately upon notification.

5. Raritan Township Municipal Utilities Authority. Prior to the start of the construction or installation of public sanitary sewerage improvements, the subdivider shall advise the Raritan Township municipal utilities authority forty-eight (48) hours prior to the commencement of such work. No underground installation shall be covered until inspected and approved by the appropriate official. If, during installation of any of the required improvements, the subdivider fails to meet specification requirements or to correct unacceptable work, the subdivider shall be notified in writing by certified mail by the Raritan Township municipal utilities authority that the subdivider has failed to comply with the specifications or to correct unacceptable work properly, and the notice shall set forth in detail what has not been properly installed. Should any underground structure be covered prior to inspection, it shall be uncovered as directed by the Raritan Township municipal utilities authority at the expense of the subdivider for reinspection. If, within ten days after mailing of such notice, the subdivider has failed to perform in accordance with the notice, the Raritan Township municipal utilities authority shall then cause the notice of failure-to-comply to be served upon the subdivider, and a copy shall be sent to the township engineer, township committee, and planning board. All work shall cease on the site immediately upon notification.

6. Additional Improvements. If, during construction, additional improvements are needed, or changes required in the location or construction of previously approved improvements, the township engineer shall have the authority to require the changes. All changes shall be indicated on the as-built plans.

C. Site Conditions.

1. Maintenance Required. During construction, the site shall be maintained and left each day in a safe and sanitary manner; and any condition which could lead to personal injury or property damage shall be immediately corrected by the subdivider upon an order by the township engineer or construction official or other authorized personnel.

2. Disposal of Dead Trees, Litter and Building Materials. Development areas shall be cleared of all stumps, litter, rubbish, brush, weeds, dead and dying trees, roots, debris, and excess or scrap building materials shall be removed or destroyed immediately upon the request of and to the satisfaction of the building inspector prior to issuing an occupancy permit.

3. Earth Removal and Top Soil. No top soil shall be removed from the site or used as spoil unless approved as part of the soil erosion and sediment control plan. At least six inches of top soil shall be provided within twenty-five (25) feet of the structure or paved areas, and be appropriately landscaped. Stabilization shall proceed promptly in accordance with the specifications and requirements of the approved soil erosion and sediment control plan.

4. Changes in Elevation. No change or contour shall be made to any lot of site unless approved as part of a development application. All development shall respect the natural contours of the site. Changes may be made to the natural contours of a property only for public health and safety purposes. (Ord. 06-11 § 4)

5. Temporary Improvements. Prior to or during construction, the township engineer may require the installation or construction of improvements to prevent or correct temporary conditions on the site which could cause personal injury, damage to property or constitute a health hazard. These conditions may result from erosion and landslide, flooding, heavy construction traffic, creation of steep grades and pollution. Improvements may include berms, mulching, sediment traps, detention and retention basins, grading, plantings, retaining walls, culverts, pipes, guardrails, temporary roads, and others appropriate to the specific condition. All temporary improvements shall remain in place and in operation until otherwise directed by the township engineer.

D. Improvements.

1. Stormwater. The stormwater disposal system shall include all or some of the following: curbs, catch basins, culverts, pipes, stormwater drains, swales, drainage rights-of-way, channel improvements, rip-rap, retention, and detention basins, constructed wetlands, vegetated filter strips, rain gardens, bio-retention basins, infiltration basins, manufactured treatment devices, pervious pavement systems, dry wells, sand filters, wet ponds or any combination thereof. It may also include any vegetation and landscaping association with those improvements.

i. In all new residential subdivisions, all storm water detention and retention facilities, with the exception of individual on-site underground systems, shall be placed on individual lots which shall contain no other structures except those accessory to the storm water facilities. Said lots will not be required to meet the minimum lot size, lot width, or other associated requirements of the underlying zoning district.

ii. In all new residential subdivisions, all storm water detention facilities, when located on individual lots, shall be owned and maintained by a homeowners association. (Ord. 06-11 § D.1)

2. Individual On-Site Systems. An individual on-site sanitary waste disposal system shall include all or some of the following: septic tank, distribution box, drainage tiles, drainage field, ground mound.

3. Public Systems. Any subdivision located within the sanitary sewer service area as

identified in the most recent Township Master Plan shall only be connected with and use the facilities of the Raritan Township Municipal Utilities Authority sanitary sewer system to the exclusion of any other system or methods for the collection and disposal of sanitary sewage. If the Planning Board determines that the existing Raritan Township Municipal Utilities Authority sanitary sewer system is not reasonably accessible either due to such reasons as the distance required, the level of improvements required, or lack of available sewer treatment capacity to allow the economically feasible development of the property, the applicant shall install within the subdivision a complete sewer pipe system including all necessary easements and provisions for the connection thereto at each structure. Until such time as the connection to the public sanitary sewage disposal system is capable of becoming operable, individual septic systems or other appropriate and approved waste water treatment facilities shall be required. (Ord. #02-9 & Ord. #02-14)

4. Water. A water system shall include all or part of the following: pipes and necessary appurtenances of sufficient size, material and capacity, pumps, valves, pumping stations, standpipes and fire hydrants. Fire hydrants shall be of a design and type approved by the township engineer and be installed in accordance with township regulations.

5. Private Utilities. Gas lines, telephone lines, electrical service, cable television, and similar utilities when installed shall consist of those elements required by the private utility, federal, state or local law.

6. Vehicular and Pedestrian Improvements. Such improvements shall include all or part of the following: street paving, curbs, gutters, concrete sidewalks, bituminous concrete driveway aprons, street lighting, traffic signs, traffic control devices and guardrails, and other street improvements.

a. Streets. Streets shall meet the design specifications established in Section 16.18.110.

b. Street Signs. The design and location of all street signs shall be approved by the planning board. The name of all new streets shall be approved by the township committee or its designee.

c. Sidewalks. Sidewalks, where required, shall be a minimum of four feet in width. Sidewalks shall be provided along the frontage of lots fronting on major arterial, collector, and marginal access roads, and located within 1.5 miles of a school. Such sidewalks shall be at least four feet wide and at least three feet from the curb or edge of pavement within the right-of-way lines.

d. Traffic Signs and Control Devices. These improvements, such as "stop," "yield," "one-way," signs, etc., shall be designed and installed in accordance with applicable federal, state and county regulations in accordance with the Manual on Uniform Traffic Control Devices adopted by the U.S. Department of Transportation. Recommendation as to their installation may be made by the police department or other competent agency.

e. Guide Rails. These shall be designed to deter vehicles from leaving the road. They shall be installed where danger exists to the traveling public due to steep topography, narrow roadways, location of drainage ditches or other similar conditions.

7. Natural Improvements. These improvements shall include all or some of the following: shade trees, topsoil, earth removal, borrow and fill, improvements to prevent erosion and landslides, and improvements to prevent damage to adjacent property and to protect vistas and existing natural growth.

8. Monuments. Monuments shall be of such size and shape and properly located as required by the map filing law.

9. Shade Trees.

a. Existing trees on any site shall be preserved and shall not be removed from any proposed subdivision unless they are dead, hazardous or diseased, or shall be located where improvements or structures are proposed to be constructed, or where extensive grading shall take place. The planning board may require the developer, at his or her sole expense, to retain a qualified forester

to report to the board as to what measures are necessary to preserve existing trees.

b. For each major subdivision, the applicant shall submit a shade tree planting plan which shows the location, size and species of all trees to be preserved and those proposed to be planted. Wooded areas may be shown as a mass with key perimeter trees located as above. The shade tree planting plan shall indicate the location, size and botanical and common names of all proposed trees and shall conform to all requirements as set forth in this section.

c. The number of trees required and their location is determined as follows: tree species shall be selected from the table of allowable shade trees, spaced in accordance with the table of shade tree spacing and located in accordance with the diagram of shade tree locations and patterns. At least two shade trees shall be planted in the center island of all cul-de-sac turnarounds where such are proposed. All planting plans shall be approved by the planning board with the advice and assistance of the environmental commission.

d. Trees shall be installed between the front setback line and the street right-of-way, and not closer than twenty-five (25) feet from any existing or proposed street light or street intersection. Trees shall be installed so as not to interfere with utilities, roadways, sidewalks or bicycle paths.

e. Trees shall be nursery-grown stock of not less than one and three-fourths inches caliper, as measured six inches above the roots, staked, guyed and planted in accordance with township specifications or as otherwise approved, by the planning board.

f. Trees shall be maintained for two years after final acceptance and replaced as necessary. The township engineer, with the advice of the environmental commission, shall determine which trees are to be replaced.

10.Fire Protection Systems. While recognizing that it may not be possible to assure complete fire protection in every given case, in order to provide the Raritan Township fire company with some minimum fire fighting capability, all major subdivisions shall provide for a source of water for fire fighting purposes in systems approved by the township fire marshal and fire chief and in accordance with the following criteria:

a. Where an existing public water supply is available and has been approved by the Raritan Township fire company for minimum fire fighting purposes, fire hydrants shall be installed at appropriate locations. In residential developments, a water supply system and fire hydrants shall be installed in accordance with the New Jersey Residential Site Improvement Standards (Subchapter 5). In other than residential developments, a water supply system and fire hydrants shall be installed as recommended by the township fire marshal and fire chief and accepted by the Raritan Township governing body. The public water supply system in nonresidential developments shall be capable of supplying the needed fire flow at all times for a minimum duration of one hour for flows of one thousand five hundred (1,500) gpm or less at a minimum of twenty (20) psi residual pressure or for two hours for flows greater than one thousand five hundred (1,500) gpm at a minimum of twenty (20) psi residual pressure. Hydrants shall be spaced to provide the necessary fire flow as indicated in Attachment "A" entitled Fire Flow Requirements for the Township of Raritan, attached to the ordinance codified in this section and on file for public inspection. The allowance for each fire hydrant at twenty (20) psi residual pressure used to deliver the fire flows listed in the above table is as follows:

Allow up to one thousand (1,000) gpm for each hydrant within three hundred (300) feet of the building;

Allow up to six hundred seventy (670) gpm for each hydrant within three hundred one (301) to six hundred (600) of the building;

Allow up to two hundred fifty (250) gpm for each hydrant within six hundred one (601) to one thousand (1,000) of the building;

Allow zero gpm for each hydrant greater than one thousand (1,000) feet from the building.

Hydrants shall be installed in accordance with standards set forth in ANSI/AWWA, Dry

Barrel Fire Hydrants, latest edition; painted as directed by the township fire marshal and fire chief; and tested in accordance with NFPA 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants, latest edition, to ensure compliance with fire flow requirements. Acceptance test data shall be provided to the township fire marshal and fire chief for review and approval. In areas where public water supply is available, but such water supply does not have the capacity to satisfy the foregoing minimum standards, such public water supply system shall be supplemented with additional measures to satisfy the minimum fire protection requirements of the township. Such additional measures may involve any one or a combination of the following: installation of booster pumps with appurtenances, installation of water storage tanks with appurtenances, creation of drafting points with appurtenances, or such other means of increasing fire fighting capability as may be recommended and approved by the township fire marshal and fire chief.

b. Where public water supply is not available, underground water storage tanks shall be installed to provide a source of water for fire fighting. For subdivisions in residential zoning districts, underground water storage tanks shall be located and installed so that no dwelling is farther than one thousand (1,000) linear feet from any such tank as measured along the street, either public or private, and the access driveway to the dwelling. In no event shall the distance between tanks be greater than two thousand (2,000) linear feet. At least one tank shall be installed for each two thousand (2,000) linear feet of street length or fraction thereof. The minimum capacity of every underground water storage tank within residential zoning districts shall be fifteen thousand (15,000) usable gallons.

The locations of all fire protection systems and appurtenances shall be approved by the township fire marshal or fire chief. Unless an equivalent alternate fire protection system is authorized by the planning board and the township fire company, underground water storage tank systems shall be provided and shall be constructed and installed in accordance with design standards and specifications on file in the township engineering department.

In all cases where a fire protection system is required, no construction permit shall be issued for a dwelling or principal structure upon any lot within the subdivision until, to the extent necessary to afford fire protection to such dwelling or principal structure, such system is installed and its operability tested and approved by the township fire marshal and fire chief.

11.Street Lighting. Street lights shall be required at every street intersection and on the end of each cul-de-sac. In addition, street lights may be required in other locations as determined by the Planning Board. If the street has a sidewalk along one side, the street lights will generally be limited to the sidewalk side of the street. (Amended during 3/01/03 supplement; Ord. 98-12; prior code § 15-7.10; Ord. 02-21§ 11)

16.18.110 Design standards.

A. General. The subdivider shall observe the following requirements and principles of land subdivision in the design of each subdivision or portion thereof. To assist developers in good design techniques, several sketches illustrating design standards are attached to and made a part of this title by reference. Such sketches shall be on file in the office of the planning board.

1. Development Patterns. The subdivision plat shall conform to design standards of this ordinance and should reflect the desire for a more natural layout respecting existing natural features. (Ord. 06-11 § A.1)

2. Reservation of Public Areas. If the master plan or the official map provides for the reservation of designated streets, public drainageways, flood control basins, bikeways, walkways or public areas within the proposed development, before approving a subdivision, the planning board may further require that such streets, ways, basins or areas be shown on the plat in

locations and sizes suitable to their intended uses. The planning board may reserve the location and extent of such streets, ways, basins or areas shown on the plat for a period of one year after the approval of the final plat or within such further time as may be agreed to by the developer. Unless during such period or extension thereof the township shall have entered into a contract to purchase or institute condemnation proceedings according to law for the fee or a lesser interest in the land comprising such streets, ways, basins or areas, the developer shall not be bound by such reservations shown on the plat and may proceed to use such land for private use in accordance with applicable development regulations. The provisions of this section shall not apply to the streets and roads, flood control basins or public drainageways necessitated by the subdivision or land development and required for final approval.

The developer shall be entitled to just compensation for actual loss found to be caused by such temporary reservation and deprivation of use. In such instance, unless a lesser amount has previously been mutually agreed upon, just compensation shall be deemed to be the fair market value of an option to purchase the land reserved for the period of reservation; provided that determination of such fair market value shall include, but not be limited to, consideration of the real property taxes apportioned to the land reserved and prorated for the period of reservation. The developer shall be compensated for the reasonable increased cost of legal, engineering, or other professional services incurred in connection with obtaining subdivision approval or site plan approval, as the case may be, caused by the reservation.

B. Street.

1. General. The arrangement of streets not shown on the master plan or official map shall be such as to provide for the appropriate extension of existing streets and, where necessary in order to promote the orderly flow of traffic, and for the safety, welfare and convenience of the public, shall be such as to provide for the appropriate extensions to adjoining properties.

2. Right-of-Way and Pavement Widths. The right-of-way and pavement widths shall be measured from abutting lot line to abutting lot line and shall not be less than the following:

a. Arterial and primary roads: right-of-way,
as required by the state or county.

b. Secondary roads: right-of-way, as required by the state or county.

c. Collector streets: right-of-way, fifty (50) to sixty (60) feet; pavement, thirty (30) to forty (40) feet.

d. Non-residential minor and marginal access streets: right of way 50 feet; pavement width 26 to 30 feet. (Ord. 06-11§ d)

e. Cul-de-sac Turnarounds. Cul-de-sac turnarounds shall have a minimum radius of 25 feet and minimum right of way radius of 30 feet. A landscaped island should be provided where appropriate. (Ord. 06-11§ e)

f. Internal or Service Roads. The right-of-way and pavement widths for internal roads in multifamily, commercial and industrial developments shall be determined by the planning board on an individual basis, and shall in all cases be of sufficient width and design to safely accommodate the maximum traffic, parking, loading and access for emergency equipment, but in no case shall the pavement be less than the twenty-four (24) feet in width for two-way traffic.

g. Residential access streets shall meet the requirements of the Residential Site Improvement Standards with the minimum roadway width being 22 feet. (Ord. 06-11§ g.)

C. Widening Existing Streets. Subdivisions that include existing streets which do not conform to pavement and/or right-of-way widths as shown on the master plan or official map, shall dedicate and improve to township specifications the additional width from the centerline of the road abutting the property being subdivided. If the subdivision adjoins one side of an existing road which does not meet standards, only one-half of the required extra width shall be dedicated and improved to township specifications.

When in the interests of traffic safety, health, convenience and good planning a postponement of the installation of construction of a widened roadway is desirable, the planning board may authorize such postponement providing the developer shall deposit with the township the cost of the improvement in lieu of actually constructing or installing same in the same manner as required in Section 16.16.010.

D. Street Design Standards.

1. Grades. Grades of arterial, primary and secondary roads shall be determined by the state or county. Collector streets shall not exceed seven percent. Grades on other streets shall not exceed nine percent. No street shall have a minimum grade of less than one percent.

The township engineer may waive the minimum and maximum grade requirements under particular circumstances.

2. Intersections. Street intersections shall be laid out as nearly at right angles as possible and in no case shall be less than sixty (60) degrees. The block course at intersections shall be rounded at the right-of-way line with a twenty-five (25) foot radius curve and at the curb line with a curve having a radius of not less than thirty-five (35) feet.

3. Jogs. Street jogs with centerline offsets of less than one hundred fifty (150) feet shall be prohibited.

4. Reverse Curves. A tangent at least one hundred (100) feet long shall be introduced between reverse curves on arterial and collector streets.

5. Connecting Streets. When connecting street lines deflect from each other at any one point by more than ten degrees and not more than forty-five (45) degrees they shall be connected by a curve with a centerline radius of not less than three hundred (300) feet for minor streets and six hundred (600) feet for arterial and collector streets.

6. Grade Changes. All changes in grade shall be connected by sag and crest vertical curves and vertical curves shall not be less than one hundred (100) feet in length unless approved by the township engineer.

7. Dead-End Streets/Cul-de-Sacs. Dead-end streets shall not be longer than one thousand two hundred (1,200) feet unless authorized to be longer by the planning board. They shall have a turnaround installed with a curb radius of forty (40) feet and shall be tangent wherever possible to the right side of the street. The dead-end street should extend to the adjoining property line to permit its extension to serve adjacent properties with adequate provision made for the future extension of the street to meet township standards. Stub streets, those providing connections to abutting properties shall be improved to the property line.

8. Names. Streets shall not have a name which will duplicate or so nearly duplicate as to be confused with the names of existing streets. The continuation of an existing street shall have the same name. All street names shall be approved by the planning board.

E. Blocks.

1. General. Block length and width or acreage within bounding roads shall be such as to accommodate the size of the lot required in the area by the zoning ordinance and to provide adequately for sewage disposal, convenient access, circulation, control and safety of street traffic.

2. Pedestrian Crosswalks. In blocks over one thousand (1,000) feet long, public rights-of-way through the blocks may be required in locations deemed necessary by the planning board such as schools, recreation areas and public buildings. Such rights-of-way shall be at least ten feet wide and may be improved by paving if so deemed by the planning board. Block sizes for group housing, business or industrial use shall be sufficient to meet all area and yard requirements for such use.

3. Easements. Rights-of-way and easements within blocks in commercial, business or industrial areas shall be not less than thirty (30) feet in width.

F. Lots.

1. General. Lot dimensions, front, side and rear yards and total area in square feet shall not be less than the requirements of the zoning ordinance of the township.

2. Side Lines. Insofar as is practical, side lot lines shall be a right angles to streets and radial to curved streets.

3. Frontage. Each lot shall front upon a street and the frontage shall not be less than required by the zoning ordinance as measured along the building setback line and street right-of-way line. The minimum frontage along a cul-de-sac shall be measured at minimum required building setback line.

4. Setbacks. Where land has been dedicated for a widening of existing streets, lots shall begin at such new street line as may have been established, and all setbacks shall be measured from such line.

5. Substandard Suitability. Where there is a question of the suitability of a lot or lots for their intended use due to factors such as rock formations, flood conditions, high water table, sewage disposal, excessive topographic slope or similar circumstances, the planning board may, after adequate investigation, with professional assistance, if deemed necessary, withhold approval of such lots.

6. Driveways. Driveways shall not be located where visibility is impaired because of curves or topography. They shall be constructed in accordance with Chapter 12.20.

7. Lots on Arterial or Collector Streets. Lots fronting on arterial or collector roads shall, at the discretion of the planning board, be serviced by a marginal access road or reverse frontage, to be required to provide driveways with turnarounds as indicated in the design sketches attached to this title by reference.

G. Public Use, Service Areas, and Utility Placement.

1. Utility Easements. As determined by the Planning Board, easements may be required for utility installation, existing or future. Such easements shall be at least 20 feet wide and located after consultation with the utility companies. Where underground utilities are proposed outside of the right of way, a 20 foot underground utility easement shall be provided.

2. Drainage, Conservation and Historic Preservation Easements.

a. Wetlands and Wetland Buffer/Transition Areas. Where property to be subdivided contains wetlands and their associated transition areas as confirmed by the State of New Jersey under a Letter of Interpretation, said wetlands and transition area shall be placed into conservation easements. Where a property has wetlands, but the areas have not been confirmed by the NJDEP under a Letter of Interpretation, the Wetlands Transition area shall be 150 ft. and shall be placed into a conservation easement with the restrictions lister hereafter.

b. Water-Courses. Where a property contains a watercourse, said watercourse and an Riparian Buffer as required under Section 16.64.110.A of this Chapter shall be placed into Drainage and Conservation Easements.

c. Other Significant Physical Features. Where a property to be subdivided contains significant features including but not limited to wooded areas, steep slopes, aquifer recharge areas, wildlife habitat, rock out-croppings, vistas, soil conditions, or other significant horticultural, environmental, or natural features determined by the Environmental Commission and/or Planning Board to be desirous to preserve shall be placed in a drainage and/or conservation easement.

d. Historic Structures. Any subdivision containing a structure listed on, or determined to be eligible to be listed on the National Register for Historic Places as listed within the Township Historical Survey, Hunterdon County Historical Survey, the New Jersey Register of Historical Places or the National Register of Historic Places or as may be further recommended by the Raritan Township Local Historians Committee, an easement preventing the demolition or substantial remodeling of the structure shall be given to the township.

e. Cemeteries and Burial Places. Any property to be developed containing an unused or historical cemetery or burial place shall provide an easement to the Township preventing the removal or alteration of the cemetery or burial place.

f. Easement Preparation. The Township Attorney shall be responsible for the preparation of any easements dedicated to the Township. The applicant will be responsible for providing the Township with the following:

i. One copy of the approved plan.

ii. Easement descriptions approved by the Township Engineer.

iii. One copy of the resolution of approval.

iv. One copy of a deed for the property showing the current property owner.

(Ord. 06-11 § G)

H. Bufferyards.

1. Where residential lots are proposed adjacent to existing higher intensity residential uses and/or zones (as defined under Section 16.20.040), non-residential uses or existing non-residential zones, bufferyards shall be provided between such uses in accordance with Section 16.20.040 of this Chapter.

2. Where provided between such uses, said bufferyards may be placed on separate lots. Said lot(s) would not be required to meet other lot requirements found elsewhere in this chapter. Said lot(s) would be required to be permanently deed restricted from further development.

3. Any bufferyard shall be permanently covered by an appropriate easement or similar restriction preventing the removal or destruction of said bufferyard.

4. If a bufferyard is to be located on an individual and/or separate lot, the Planning Board shall require the establishment of a homeowners' association to own and maintain said bufferyard. (Ord. 02-54 § H)

I. State Open Waters.

No structure shall be built within fifty (50) feet and no disturbance of soil or vegetation shall occur within twenty-five (25) feet of the top of the bank of any State Open Waters (as defined or determined by the N.J. Department of Environmental Protection). Should the water course meet the definition of both state open waters and an existing stream carrying water on an average of six (6) months of a year, and/or shown on a United States Department of the Interior Geological Survey quadrangle, then the large of the riparian buffer requirements found within section 16.64.110 shall be met. (Ord. 06-21 § I)

16.18.120 Wetlands delineation.

A. A wetlands analysis shall be performed to identify wetlands as defined by the Freshwater Wetlands Protection Act, P.L. 1987, C. 156, to identify the wetlands by type, (ordinary, intermediate and exception resource value) and to specify the required transition area. On-site wetlands and transition areas required for on-site wetlands shall be delineated. A transition area may be located and required by the Freshwater Wetlands Protection Act, P.L. 1987, c. 156 on a property even through the freshwater wetlands adjacent to that transition area is located on a different property. In such case, the transition area as required shall be delineated on the subdivision plat or site plan. A report from the person or firm preparing the wetlands analysis shall be prepared and submitted identifying the above or stating that no wetlands and/or transition areas affect the subject site. Alternatively, a letter of interpretation from the state of New Jersey Department of Environmental Protection determining the absence or presence of wetlands will be acceptable. If the letter of interpretation determines the presence of wetlands, a delineation shall be prepared. In accordance with the Freshwater Protection Act rules a delineation of a wetlands boundary for a parcel of less than one acre may be by letter of interpretation.

Such wetlands and transition areas shall be identified by metes and bounds description on a minor subdivision plat, preliminary plat of a major subdivision, minor site plan and preliminary and final site plan.

When the applicant intends to request a transition area waiver or intends to utilize a transition area averaging plan, such shall either be approved and granted by N.J.D.E.P. or the applicant shall show the required transition area (without transition waiver and/or transition area averaging) and note on the submission the area of waiver and/or averaging plan to be requested by N.J.D.E.P.

B. The wetlands area shall be placed within a conservation easement to be dedicated to the township or other appropriate governmental agency and such shall be indicated on a minor subdivision plat, preliminary subdivision plat, final subdivision plat, minor site plan, preliminary site plan and final site plan.

C. The responsible person who prepared the wetlands analysis shall certify that the delineation on a subdivision or site plan is a true and accurate delineation of the wetlands condition identified by field investigation.

D. If the Environmental Commission notifies the municipal agency that it is not satisfied with the wetlands delineation and/or classification of wetlands by type, the municipal agency may condition any favorable action on such application on receipt of a letter of interpretation from N.J.D.E.P. for verification of a wetlands boundary. (Ord. 90-6 § 3: prior code § 15-7.12)

16.18.130 Traffic analysis.

A traffic analysis and report shall consist of at least the following:

A. Estimate of trip generation from the proposed subdivision or site plan indicating estimated twenty-four (24) hour trip generation, estimated peak hour trip generation for development and estimated trip generation during commuter peak hours;

B. Directional assignment of estimated trip generation to the existing and any proposed street system, as appropriate;

C. Review of traffic volumes existing on streets in the area. (Existing acceptable traffic volumes may be utilized. If such do not exist, traffic volume counts at fifteen (15) minute intervals must be taken);

D. Review of other development activity in the area and consideration of trip generation from these other proposed developments;

E. Project future background traffic volumes on affected streets for build-out and intermediate development phase;

F. Review of street, intersections, jughandles, ramps, etc., in terms of traffic carrying capacity (such may be expressed as a level of service) as may be affected by the proposed development activity. No-build, build-out and intermediate phases should be examined where appropriate;

G. Identification of streets, intersections, jughandles, ramps, etc., which anticipated levels of service or other engineering considerations indicate a need for improvement. Level of Service D or better is to be maintained through build-out;

H. Recommend improvements to mitigate impacts;

I. Review of proposed on-site street system or on-site circulation system. Review should include but not be limited to access, circulation, emergency access, trucking and parking;

J. Preparation of a report with supporting data signed by the responsible person. (Ord. 90-6 § 4: prior code § 15-7.13)

16.18.140 Aquifer test and analysis--For major subdivisions.

Applications for Major subdivision approval shall follow the well testing requirements found in Chapter 16.21. (Ord. 05-4)

16.18.150 Aquifer test and analysis--For nonresidential use site plans.

Applications for Minor, Preliminary, and Preliminary and Final Site Plan approval shall follow the well testing requirements found in Chapter 16.21 (Ord. 05-4)

16.18.160 Natural Resource Inventory Report and Map

Natural Resource Inventory Report and Map(s) showing and describing on and within 1000 feet of property boundary:

A. Intermittent and perennial streams, lakes, state open waters, and other water bodies, including their classification and environmental condition;

B. 100 year and 500 year floodplain;

C. Wetlands and transition areas;

D. Soils with legend showing soil names and characteristics;

E. Aerial extent of forest and tree cover;

F. Location of any contaminated areas;

G. The presence of any historic or cultural resources that are listed on the Township Historical Survey, Hunterdon County Historical Survey, The New Jersey Register of Historical Places or the National Register of Historical Places.

H. The presence of any known cemetery(s) or burial sites;

I. The presence of any known archaeological sites;

J. The location of any known current or historical mining operations;

K. HUC-14 boundaries;

L. C-1 Waterways and Special Water Resource Protections Areas;

M. Wellhead Protection Areas;

N. Groundwater Recharge Areas;

O. Sanitary Sewer Service Area

P. Public Water Service Area; and

Q. The presence or absence of rare, threatened, or endangered plants or animals as evidenced on the site or as listed by the Natural Heritage Program. (Ord. 06-21 & Ord. 06-11 § 16.18.160)

Chapter 16.20

SITE DEVELOPMENT STANDARDS

Sections:

16.20.010 Interpretation of provisions--Waivers.
16.20.020 Site Plan Submission Requirements
16.20.030 Site plan performance standards.
16.20.040 Design standards.
16.20.050 Site plan review and inspection fee schedule.
16.20.060 Construction procedures.
16.20.070 Temporary certificates of occupancy.
16.20.080 Certificates of occupancy.
16.20.090 Site plan conformance.
16.20.100 Enforcement.
16.20.110 Wetland delineation, traffic analysis and aquifer test and analysis.

16.20.010 Interpretation of provisions--Waivers.

A. The standards set forth in this chapter shall be considered the minimum requirements for the protection of the public health, safety and welfare of the citizens of the township. If, however, the applicant can clearly demonstrate that, because of peculiar conditions pertaining to his or her land, the literal enforcement of this chapter is impracticable or will exact undue hardship, the planning board may permit such waivers as may be reasonable and are within the general purpose and intent of the rules, regulations and standards established by this chapter.

B. Checklist Waivers. If it can be demonstrated that, because of peculiar conditions relating to the property or proposed construction, any of the required plat details are not necessary to properly evaluate the plan, the planning board may waive specific requirements. A written request and explanation for the waiver request must accompany the application submission.

C. Reservations of Public Areas.

1. If the Master Plan or the official map provides for the reservation of designated streets, public drainageways, flood control basins or public areas within the proposed development, the planning board, before approving a site plan, may further require that such streets, ways, basins or areas be shown on the plan in locations and sizes suitable to their intended uses. The planning board may reserve the location and extent of such streets, ways, basins or areas shown on the plan for a period of one year after the approval of the final plan or within such further time as may be agreed to by the developer. Unless during such period or extension thereof the township shall have entered into a contract to purchase or institute condemnation proceedings according to law for the fee or a lesser interest in the land comprising such streets, ways, basins or areas, the developer shall not be bound by such reservations shown on the plan and may proceed to use such land for private use in accordance with applicable development regulations.

2. The provisions of this chapter shall not apply to the streets and roads, flood control basins or public drainageways necessitated by the land development and required for final approval.

3. The developer shall be entitled to just compensation for actual loss found to be caused by such temporary reservation and deprivation of use. In such instance, unless a lesser amount has previously been mutually agreed upon, just compensation shall be deemed to be the fair market value of an option to purchase the land reserved for the period of reservation, provided that

determination of such fair market value shall include, but not be limited to, consideration of the real property taxes apportioned to the land reserved and prorated for the period of reservation. The developer shall be compensated for the reasonable increased cost of legal, engineering or other professional services incurred in connection with obtaining site plan approval caused by the reservation. The procedure for the payment of all compensation payable under this chapter shall be provided for in other ordinances. (Amended during 3-00 supplement; prior code § 15-8.1)

16.20.020 Site Plan Submission Requirements

A. General. All maps and plans required to be submitted by this title shall conform to one of the following size configurations: eight and one-half by thirteen (13) inches, fifteen (15) by twenty-one (21) inches, or twenty-four (24) by thirty-six (36) inches. All applications shall include the information as follows, except that the Planning Board may waive any requirement or request additional information where it is clearly appropriate to the particular application. Failure to comply shall render such application incomplete.

B. Minor Site Plans. A minor site plan application shall include the following information:

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat.
2. Twenty-five (25) copies of a Wetlands Analysis and Report in Accordance with Section 16.18.120.
3. When the development is to be located in the sanitary sewer service area, written communication from the RTMUA that adequate sewage treatment capacity has been reserved for the development shall be submitted along with a copy of the reservation agreement and/or proof of payment of deposit on connection fee.
4. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.
5. Twenty-five (25) copies of completed Raritan Township Site Plan application form.
6. Twenty-five (25) copies of completed Raritan Township Minor Site Plan checklist form.
7. Township Application fee.
8. Township Escrow payment.
9. Twenty-five (25) copies of a completed Raritan Township Variance application form (if variances from township ordinance are requested or required).
10. When the development is to be located in the public water service area, twenty-five (25) copies of correspondence from the public water company indicating service can be provided.
11. Certification from Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.
12. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.
13. Two (2) copies of all existing protective covenants, deed restrictions, or easements that apply to tract.
14. Completed W-9 form.
15. Aquifer test and analysis when the development on the site is to be served by an onsite well or wells. Such aquifer test analysis and report shall be submitted in accordance with Section 16.18.150 of this title.
16. Twenty-five (25) copies of the Minor Site Plan Plat including the following details and information:
    a. Name of development;
    b. Name and mailing address of owner and applicant;
    c. Name of person preparing plat;

d. Location and Key Map. The entire tract to be developed, giving the accurate location of all existing and proposed property and street lines, rights-of-way, and including a key map at a scale where one inch equals not more than one thousand (1,000) feet showing the entire site and its relation to all features shown on the official map and master plan and located within one-half mile of the extreme limits of the site;

e. Date prepared and all revision dates

f. North arrow;

g. Zoning district and that of adjoining properties;

h. Written and Graphic Scale used. Scale shall be no greater than one inch equals one hundred feet (1"=100');

i. Tax Map Sheet, Block and lot numbers of the tract in consideration;

j. Acreage of tracts proposed for development;

k. Location of existing and proposed structures on tract;

l. Streets, Easements, Watercourses and Rights-of-Way. The location of existing or proposed streets, roads, easements, public rights-of-way, streams, wetlands, wetland transition areas, state open waters, bridges, culverts, drainage ditches and natural water-courses on the tract;

m. Existing and proposed drives and parking areas with sufficient dimensions to show widths of pavement and parking area dimensions;

n. Existing streets, rights-of-way and easements;

o. Name of owner, description of use, and estimated impervious surface (except residential properties) of surrounding properties;

p. Location of any existing and proposed utilities;

q. Location of any existing and proposed septic systems and wells.

r. Floodplain Delineations. Minor site plans shall indicate flood hazard area delineations for all permanent streams based upon State Department of Environmental Protection delineations or for the one hundred (100) year flood as directed by the township engineer.

C. Information Required for Sketch Site Plans. A formal sketch site plan application shall contain the following information:

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat.
2. Twenty-five (25) copies of a Wetlands Analysis and Report in Accordance with Section 16.18.120.
3. When development is to be located in the sanitary sewer service area, written communication from the RTMUA that adequate sewage treatment capacity has been reserved for the development shall be submitted along with a copy of the reservation agreement and/or proof of payment of deposit on connection fee.
4. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.
5. Twenty-five (25) copies of completed Raritan Township Site Plan application form.
6. Twenty-five (25) copies of completed Raritan Township Sketch Site Plan checklist form.
7. Township Application fee.
8. Township Escrow payment.
9. When development is to be located in the public water service area, twenty-five (25) copies of correspondence from the public water company indicating service can be provided.
10. Certification from Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.
11. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.

12. Two (2) copies of all existing protective covenants, deed restrictions, or easements that apply to tract.

13. Completed W-9 form.

14. Twenty-five (25) copies of the Sketch Site Plan Plat including the following details and information:

a. Name of development;

b. Name and mailing address of owner and applicant;

c. Name of person preparing plat;

d. Location and Key Map. The entire tract to be developed, giving the accurate location of all existing and proposed property and street lines, rights-of-way, and including a key map at a scale where one inch equals not more than one thousand (1,000) feet showing the entire site and its
relation to all features shown on the official map and master plan and located within one-half mile of the extreme limits of the site;

e. Date prepared and all revision dates;

f. North arrow;

g. Written and Graphic Scale used. Scale shall be no greater than one inch equals one hundred feet (1"=100');

h. Tax Map Sheet, Block and lot numbers of the tract in consideration;

i. Acreage of tracts proposed for development;

j. Zoning district and that of adjoining properties;

k. Location of existing structures on and within 200 ft. of the tract;

l. Streets, Easements, Watercourses and Rights-of-Way. The location of existing or proposed streets, roads, easements, public rights-of-way, streams, wetlands, wetland transition areas, state open waters, bridges, culverts, drainage ditches and natural water-courses on and within 200 ft. of the tract;

m. Existing and proposed drives and parking areas with sufficient dimensions to show widths of pavement and parking area dimensions;

n. Name of owner, description of use, and estimated impervious surface (except residential properties) of surrounding properties;

o. Location of any existing and proposed utilities;

p. Location of any existing and proposed septic systems and wells.

q. Floodplain Delineations. Sketch site plans shall indicate flood hazard area delineations for all permanent streams
based upon State Department of Environmental Protection delineations or for the one hundred (100) year flood as directed by the township engineer.

r. Existing topography as taken from United States and Geodetic Survey maps at twenty (20) foot intervals and within two hundred (200) feet of tract boundaries. The topography should be supplemented by field observation to generally locate drainage divides, ditches, swales and major topographic features which may not be indicated on the United States Coast and Geodetic Survey sheets;

s. General location of existing vegetation and general indication of vegetation types (turf, brush, mixed hardwood, evergreens, shrubs, etc.);

t. Proposed structures;

u. Soils pursuant to the Hunterdon County Soil Survey;

2. Additional Information required for office and industrial parks and shopping centers:

a. A site analysis which shall indicate existing site features, including:

i. Soils per the Hunterdon County soil survey, published by the Soil

Conservation Service, with descriptions and suitability for development,

ii. Existing vegetation including fields, wetlands, isolated tree areas, wooded areas and general description of vegetation species,

iii. Geology including the location and description of aquifer recharge areas and rock outcroppings,

iv. Slopes at intervals of zero percent to five percent, over five percent to ten percent, over ten percent to twenty (20) percent; topography at two-foot contour intervals from field survey and utilizing United States Coast and Geodetic Survey datum,

v. Location of all streams, swales (wet and dry weather), ponds, wetlands and areas of poor drainage,

vi. Direction of summer and winter winds,

vii. Areas of cold air drainage and channelized wind,

viii. Views to be preserved or screened,

ix. Location of nearest sanitary sewer and storm sewer, water and electric service,

x. Location, width and condition of pavement of roads adjoining project,

xi. Location of all structures within two hundred (200) feet of tract boundaries;

b. A traffic study indicating:

i. Existing traffic flow and volume on surrounding intersections,

ii. Capacity of existing roads and intersections,

iii. Proposed traffic flow and volume on surrounding roads and intersections,

iv. Analysis of internal project traffic flow and volume,

v. Recommendations for upgrading surrounding roads and intersections to meet increased traffic from the project;

c. A community facilities impact study including the impact on police, fire and emergency agencies, including equipment and manpower.

3. Additional Information required for PRDs and senior citizen developments:

a. All information required for office and industrial parks and shopping centers;

b. Expanded community facilities impact study including impact on school facilities in terms of additional children in elementary, middle, junior high school, resulting from the project. The analysis shall be coordinated with the proposed phasing plan for the project, if any;

c. A population analysis, which shall include the total number of residents of the project and general age breakdown. The analysis should be coordinated with the proposed phasing plan for the project;

d. Tentative subdivision and site plan arrangements including:

i. Lot arrangement,

ii. Vehicular circulation system including right-of-way and pavement widths,

iii. Bicycle and pedestrian circulation system including sidewalks, trails, paths and crosswalks and their general widths,

iv. Recreation areas showing proposed active and passive recreation facilities,

v. Open space plan, including total acreage by phase,

vi. General stormwater and soil erosion and sediment control plan,

vii. Parking, including number of parking spaces and the dwelling units and facilities to be served by each area,

viii. Building locations in multifamily, recreation and commercial areas,

ix. Large-scale conceptual landscaping plan,

x. Architectural theme of buildings,

xi. Signing plan for vehicular control,

xii. Phasing plan and unit mix per phase,

xiii. Schedule indicating total acreage; acreage of dwelling unit types, commercial area, open space, roads, active recreation areas. The schedule should show conformance with zoning ordinance requirements when appropriate.

D. Preliminary Site Plans and Combined Preliminary and Final Site Plan applications. The preliminary site plan application and/or a combined preliminary and final site plan application shall include the following minimum information:

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat.
2. Two (2) copies of a letter of intent stating the type of structure to be erected and its use, the approximate start date of construction, and any proposed phasing plan for site plan.
3. Twenty-five (25) copies of a Wetlands Analysis and Report in Accordance with Section 16.18.120.
4. Twenty-five (25) Copies of an Aquifer Test and Analysis and Report in accordance with Section 16.18.150, when the application is proposed to be serviced by on-site wells.
5. Twenty-five (25) copies of a Traffic analysis and report in accordance with Section 16.18.130.
6. When the development is to be located in the sanitary sewer service area two (2) copies of written communication from the RTMUA that indicates that adequate sewage treatment capacity has been reserved for the development shall be submitted along with a copy of the reservation agreement and/or proof of payment of deposit on connection fee.
7. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.
8. Twenty-five (25) copies of completed Raritan Township Site Plan application form.
9. Twenty-five (25) copies of completed Raritan Township Preliminary/Final Site Plan checklist form.
10. Township Application fee.
11. Township Escrow payment.
12. Twenty-five (25) copies of a completed Raritan Township Variance application form (if variances from township ordinance are requested or required).
13. When development is to be located in the public water service area, two copies of correspondence from the public water company indicating service can be provided.
14. Certification from Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.
15. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.
16. Two (2) copies of all existing protective covenants, deed restrictions, or easements that apply to tract.
17. Where common open space is to be provided; two (2) copies of a letter detailing the proposed use and ownership of said open space.

18. Five (5) hard copies and one pdf copy of the site development storm water management plan in accordance with Chapter 16.84 (Ord. 06-21§ 18)
19. Completed W-9 form.
20. Twenty-five (25) copies of the site plan plat in accordance with the following:
    a. Name of development;
    b. Name and mailing address of the applicant and the owner;
    c. Name, mailing address, seal, signature and professional designation of the person preparing the plat;
    d. Name of owners and block and lot numbers of all contiguous land and of property directly across the streets and railroads as shown by the most recent tax records of all municipalities in which such properties lie or to which they are adjacent;
    e. Location map showing the entire tract and the relationship to all features within one-half mile of the extreme limits of the tract as shown on the adopted master plan or official map of the township and Hunterdon County. Scale of the map shall be shown;
    f. Date prepared and all revision dates;
    g. North arrow;
    h. Written and graphic scale;
    i. Plat scale shall not be smaller than one inch equals sixty (60) feet. Where it is physically impossible to show the entire tract on one sheet of maximum size of twenty-four (24) by thirty-six (36) inches, a separate sheet of a smaller scale may be utilized to show the entire tract to supplement the more detailed sheets at the larger scale;
    j. Lot dimensions and bearings based on the boundary survey;
    k. Tax map sheet, block and lot numbers;
    l. Zoning district and zoning of surrounding properties;
    m. Area of tracts proposed for development in square feet and acres;
    n. Location of all waterways, ditches, swales, wetlands, wetland transition areas, state open waters, and water bodies;
    o. Floodplains for all permanent streams and intermittent streams with flood potential as delineated for the floodway and flood hazard area by the New Jersey Department of Environmental Protection or, in the absence of such information, for the one hundred (100) year flood pursuant to a method approved by the township engineer;
    p. Location and dimensions of existing and proposed buildings, structures, Street pavement, walks, rights-of- way, easements, drives, parking areas, loading areas, paved areas, fire lanes, utility poles, etc;
    q. Building setbacks as required by the zoning ordinance, dimensioned distances from all existing and proposed buildings to the nearest property line, existing and proposed building entrances, corner grade elevations, existing and proposed square footage of building;
    r. Floor area ratio, if applicable, pursuant to Schedule I located in the Appendix to this title;
    s. Area of hard surfaces including gravel areas;
    t. Floor plans and elevations of each new or altered building facade. Height of proposed structures;
    u. Location of drives and streets within two hundred (200) feet of the tract;
    v. All existing physical features on the site and within two hundred (200) feet of the site boundaries including streams, watercourse, wetlands, wetland transition areas, state open waters, water bodies, existing woodlands, and shrub areas, existing isolated trees eight inches in diameter at breast height, and ornamentals two inches in diameter, measured four and one-half feet above existing grade, and significant soil and hydrological conditions, such as swamps, rocks and water flows;
    w. Topography showing existing and proposed contours at five-foot intervals for slopes

averaging ten percent or greater, and at two-foot intervals for land of lesser slope to determine the general slope and natural drainage of the land and the high and low points for the tract being developed and for a distance of two hundred (200) feet. Topography shall be supplemented with sufficient grades along curbs, road center lines, buildings, property corners, tops of stream banks, and at other pertinent locations to clearly delineate the proposed grading. All elevations and contours shall be instrument verified and shall be based on United States Coast and Geodetic Survey data;

x. Steep slope calculations in accordance with Section 16.64.130.

y. Soil types and boundaries pursuant to the Hunterdon County soil survey including an analysis for development capability. Information concerning fill material shall be supplied for any filled soil areas;

z. Parking, loading and unloading areas shall be indicated with dimensions, traffic patterns, access aisles and curb radii;

aa. A schedule shall be shown indicating the proposed number of motor vehicle and bicycle parking spaces and the number required by the zoning ordinance or requirements of this title;

bb. A chart indicating the square footage of new or altered space and the square footage of new or altered parking areas and other hard or pervious surface area;

cc. Improvements such as roads, curbs, pavement, retaining walls, fences and walls shall be indicated with cross sections, construction details and dimensions;

dd. Improvements such as fences, dumpster enclosures, wheel stops, benches, play equipment, lighting, trash receptacles, etc., shall be indicated with the construction details and dimensions as appropriate;

ee. Location and design of existing and proposed stormwater management systems including drainage area map and calculations of runoff and detention; septic systems; sanitary sewer lines; hydrants; wells; public water supply lines; utilities above and below grade; and methods of solid waste storage and disposal;

ff. Items or features which are to remain or be removed both above and below grade;

gg. The results and location of all abandoned, failed and passing percolation tests; the location and results of all soil logs; the date percolation tests and soil logs, were witnessed; and the name of the township witness;

hh. The specific purpose of any easement or land reserved or to be dedicated for any use;

ii. Detailed landscaping and buffering plan indicating what will remain and what will be planted, including botanical and common name, size, quantity, time of planting, planting and staking/guying details, maintenance plans, mulched areas specifying type, thickness and edge of mulched areas, and whether plants are container, balled and burlapped (B and B) or bare root. A schedule containing the following information shall be included on the landscaping sheets; botanical and common names, quantities, size, type of transplants (container, B and B, bare root), and whether staked and guyed, and landscaping calculations as per Section 16.20.040(D);

jj. Soil erosion and sediment control plan in accordance with the soil erosion and sediment control ordinance of Raritan Township;

kk. Lighting details as per Section 16.20.040.(G);

ll. Detailed sign plan pursuant to Chapter 16.72, including location, dimensions, area, style, lettering style, color, construction, materials, etc., of all signs where ground, roof, wall or of other sign type;

mm. Barrier-free construction details and facility locations;

nn. Staging and construction access plan for large projects;

oo. The following legends and certifications shall be included on the preliminary plat and appropriately completed and/or signed prior to submission:

i. Preliminary site plan of
Block _____ Lot _____ Zone _____ Date _____

Applicant _____
Mailing Address _____
Owner _____
Mailing Address _____

ii. I consent to the filing of this site plan with the (planning board)(zoning board of adjustment) of Raritan Township.
Owner _____ Date _____
(The map preparer shall insert the name of the _____ board reviewing the site plan)

iii. I hereby certify that I have prepared this site plan and that all dimensions and
information are correct, and plans for all improvements are based upon topographical data that has been instrument verified in the field.
Name _____
Title and License No. _____

iv. Four-by-five inch blank box for township review stamp on right side of plat;

v. Four-by-five inch blank box for county planning board review stamp adjacent to township review stamp box;

pp. Location and capacity of all petroleum, fuel or other storage tanks both above and below grade. Indicate type of substance stored in the tanks.

qq. Applicants for PRDs, senior citizen housing, shopping centers, office and industrial parks which did not make a sketch plat application submission, shall submit all preliminary and sketch plat information when applying for preliminary approval;

rr. Fire Protection Systems. Plans shall show the location of proposed fire systems and appropriate construction details in accordance with Section 16.20.030(P);

ss. Current use and estimated impervious surface of all developed adjacent properties.

tt. The site plan shall be based on a boundary survey not older than five years.

uu. The size of the plat shall conform to the Map Filing Law.

21. Two copies of the Affordable Housing Production Plan in accordance with Section 16.11.070.A (Ord. 06-5 § 21)

22. Twenty-five (25) copies of a Natural Resource Inventory in accordance with Section 16.18.160;

23. Pre-application Meeting to be held with Township Engineer and Township Planner;

24. In addition to paper plans, initial plan sets shall be submitted on CD (or other acceptable archivable electronic format) in the most recent version of AutoCAD and in pdf format. Subsequent revisions shall be submitted in paper format and pdf (via e-mail acceptable). The final approved revision shall be submitted in paper, AutoCAD and pdf formats on CD (or other acceptable electronic format). (Ord. 06-21 § 18, 22, 23 & 24)

E. Information Required for Final Site Plan.

1. Two (2) copies of an affidavit of ownership or letter from the owner authorizing submission of the plat.

2. Certification from Raritan Township Planner that all conditions of preliminary approval have been met and that the preliminary site plan have been stamped and signed by the Raritan Township Planning Board.

3. Two (2) copies of all approved Federal, State, County permits required under preliminary approval.

4. Two (2) copies of ownership interest of corporation, limited liability company, or partnership in accordance with the Municipal Land Use Law.

5. Twenty-five (25) copies of completed Raritan Townhip Site Plan application

6. Twenty-five (25) copies of completed Raritan Township Final Site Plan checklist form.

7. Township application fee.

8. Township escrow payment.

9. Certification from Raritan Township Tax Collector that all taxes, sewer charges, or other assessments on the entire tract have been paid to date.

10. Copy of Hunterdon County Planning Board application form as submitted to the Hunterdon County Planning Board.

11. Two (2) copies of all existing protective covenants, deed restrictions, or easements that apply to tract.

12. Completed W-9 form.

13. Submission of two (2) copies of any and all homeowners association documentation, where applicable.

14. When the development is to be located in the sanitary sewer service area two (2) copies of written communication from the RTMUA that indicates that adequate sewage treatment capacity has been reserved for the development shall be submitted along with a copy of the reservation agreement and/or proof of payment of deposit on connection fee.

15. When the development is to be located in the public water service area, two copies of correspondence from the public water company indicating service can be provided.

16. Twenty-five (25) copies of detailed, colored elevations, including the height of the buildings, and floor plans of each building facade for new or altered existing buildings;

17. Twenty-five (25) copies of the final site plan plat in accordance with section 16.20.020.C. subparagraph 25, with the exception that the plans shall be entitled final site plan. (Ord. 03-7 § Section 16.20.020, subsections A, B, C, D and E)

16.20.030 Site plan performance standards.

A. Planning Board Review. In reviewing any site plan and prior to preliminary approval thereof, the planning board shall find that the below listed performance standards have been met.

B. Site Design. The design and arrangement of buildings and parking areas should provide an aesthetically pleasing design and efficient arrangement. Particular attention shall be given to safety and fire protection, and the visual and functional impact on surrounding development and contiguous and adjacent buildings and lands. Compatibility of architectural design with the historic design features of adjacent buildings and areas shall be considered.

C. Circulation and Parking.

1. Consideration shall be given to pedestrian, bicycle and vehicular traffic movement within and adjacent to the site with particular emphasis on the provision and layout of parking areas, off-street loading and unloading, movement of people, bicycles, goods and vehicles from access roads, within the site, between buildings, and between buildings and vehicles. The planning board shall determine which roads shall be public and which shall remain private in multifamily, townhouse and industrial park developments.

2. The planning board shall ensure that all parking areas are appropriately landscaped and spaces are easily usable and are safely and conveniently arranged.

3. Access to the site from adjacent roads shall be designed so as to interfere as little as possible with traffic flow on these roads and to permit vehicles a rapid and safe ingress and egress on the site. Major access improvements in critical environmental areas are to be discouraged. The location and provisions of bikeways, sidewalks and other pedestrian linkages shall be encouraged.

D. Landscaping.

1. Landscaping shall be provided as part of the overall site plan design and integrated into

building arrangements, topography, parking and buffering requirements. Landscaping should include trees, bushes, shrubs, ground cover, perennials, annuals, plants, sculpture, art and the use of building and paving materials in an imaginative manner.

2. The existing sense and appearance of the semirural, natural scenic qualities of the township should be encouraged in site development. Such techniques as clustering, ample setbacks from main roads, retention of existing vegetation and narrow minor widths are encouraged as appropriate.

3. Landscaping should favor native species appropriate to the site. (Ord. 06-11 § 3)

E. Buffers and Fences.

F. Open Space.

1. Open space shall be provided as part of any planned development. The open space should be classified as developed (recreational, passive or active) or undeveloped (natural) space. Open space can serve as a buffer or help integrate buildings and uses. A recreation facility or park can be used to integrate a project with the surrounding neighborhood.

2. Developed open space used for active recreational use should not be less than two thousand (2,000) square feet in area and should be located in close proximity to the dwelling units it is intended to serve. Developed open space generally should not be isolated in one corner of a project, and all developed open space should be linked to all other open spaces by pathway systems.

3. Undeveloped open space should have as a prime objective the preservation of a site's natural amenities. Ponds, rock outcroppings, wooded areas, vistas, steep slopes, ravines and stream beds are appropriate for undeveloped open space.

G. Lighting. Lighting of a type and style to ensure safe movement of persons and vehicles and for security purposes shall be provided. Lighting fixtures should be coordinated with the architectural theme of the site. Lighting shall be placed so as to minimize glare and reflection onto adjacent properties, streets and drives. For additional requirements see Section 16.20.040.G. (Ord. 02-21)

H. Signs. Signs shall be designed to be harmonious with other signs and architectural features on the site, and located and sized so as to achieve their purpose without hazards to vehicles and pedestrians.

1. Design Theme. There should be a consistent sign design theme throughout a particular project. The design theme would include style of lettering, construction, material, type of pole or standard (wood or metal, for example), size and lighting. Color of letters and background is also important and should be carefully considered in relation to the color of the material of buildings or where the signs are proposed to be located.

2. Location. For safety, signs should be located so as not to create a hazard, particularly at driveway and street intersections. The location of signs should be selected in terms of visibility. Signs designed to be seen from vehicles should be perpendicular to the line of travel, while signs designed to be read on foot can be perpendicular or parallel with walks.

I. Utilities. Storm drainage, sanitary waste disposal, water supply and other required utilities shall be reviewed and considered. Particular emphasis shall be given to the protection of delineated floodplains, reservations of stream corridors, establishment of drainage rights-of-way, the adequacy of existing systems and the need for improvements, both on-site and off-site, to control the rate, volume and velocity of storm drainage, to provide for treatment of effluent and to maintain an adequate supply of potable water at sufficient pressure.

J. Solid Waste Facilities. Garbage disposal provisions shall be reviewed for adequacy of storage facilities, vermin and rodent control, location, screening, serviceability, maintenance and related aesthetic considerations.

K. Environmental Considerations. Environmental elements relating to prevention of soil erosion, protection of significant vistas or views, preservation of trees, protection of watercourses and resource, noise, topography, soil and animal life shall be reviewed, and the design of the plan

shall minimize any adverse impact on these elements. Natural resource inventory data and environmental impact information shall be used in reviewing the design character of development in areas having serious environmental constraints.

L. Street Furniture. The site plan shall provide for those elements of street furniture made of the same or similar materials to ensure design continuity and be appropriate to the particular use. These may include phone booths, benches, bike racks, trash receptacles, bus shelters, kiosks, planters and site directories.

M. Energy Conservation. The site plan should be designed to take advantage of features of the site which will reduce energy usage in the structures placed on the site, as well as utilizing features to ameliorate undesirable microclimates on the site itself. Features of interest include slope, exposure, wind, humidity, glare, canopy cover and the placement of objects and plantings to take advantage of or ameliorate site conditions.

N. Engineering Design Considerations. The site plan shall be designed in accordance with accepted engineering design practice to produce a safe, efficient and easy to maintain system of roads, utilities and drainage, which function appropriately during and after construction.

O. Other Considerations. All site plan designs shall include provisions for barrier-free design, maintenance of proposed improvements and construction access.

P. Fire Protection Systems. The site plan shall provide for a source of water for fire fighting purposes in systems approved by the township fire company in accordance with criteria set forth in Section 16.20.040. (Ord. 98-1 § 4; prior code § 15-8.4)

16.20.040 Design standards.

A. Purpose of Design Standards.

1. The purpose of the design standards set forth in this title are to implement the performance standards established in Section 16.20.030. The performance standards provide a general frame of reference for the applicant in preparing his or her site plan and also provide guidance for the township in reviewing the proposed development. The planning board must find that these standards have been met before an application is approved. These design standards are intended to implement the performance standards. The applicant may propose and utilize an alternative design standard if it can be demonstrated to the planning board that it will satisfactorily implement the applicable performance standard.

2. The municipal planner and township engineer will be available by appointment to discuss the design standards contained herein with respect to any site plan application. In addition, they are available to meet for presubmission conference with all applicants. Presubmission conferences are encouraged for all applicants at sketch, preliminary and final stages of approval.

B. Site Design. In reviewing site plans for a multifamily residential development, the following design and building layout principles should be followed, except where zoning requirements provide for greater distances or stricter standards.

1. Minimum spacing between buildings:

a. Between similar structures: in development groups (more than one building or structures on tract), the following distances should be maintained between similar use structures:

i. End wall (no openings) to end wall: one-half height of highest wall; fifteen (15) feet minimum.

ii. Any building face to street curb: height of building face for first thirty (30) feet; one and one-half times building height for over thirty (30) feet; twenty-five (25) feet minimum.

iii. Any building face to parking; one-half height of highest building face; fifteen (15) feet minimum.

iv. End wall to window wall; one and one-half height to highest wall; thirty (30) feet minimum.

v. Window wall to window wall; two times height of highest wall; forty (40) feet minimum.

b. Between buildings of different types:

i. Where buildings of different types will be developed as a single development group, such as single-family and townhouses, an appropriate buffer shall be used. This may include fencing, facing similar uses toward each other, natural areas, parks or recreation facilities or uses providing gradual density changes between the two dissimilar uses.

ii. Actual building spacing between the two types of uses should be equal to the height of the lower density use times the difference in the net density of the two uses. Where a development abuts existing single-family detached housing, the requirements for buffers as set forth in the zoning ordinance shall be applied.

2. Townhouses:

a. Maximum of eight units in a single row; minimum width of unit: eighteen (18) feet; offset of a minimum of four feet between every two units.

b. Townhouses should be grouped in clusters with a maximum of thirty (30) per cluster. Private parking should be located near the entrances and outdoor living areas or patios adjoining open space or paths leading to open space. Units should not front on a through street excluding minor horseshoe-shaped streets.

c. Maximum density of townhouses should be as required by the zoning ordinance. Each unit should have two means of ingress and/or egress. End units should have at least a ten-foot side yard. Units should be at least fifty (50) feet from all tract boundary lines unless abutting the same or higher density area, then thirty-five (35) feet is permitted exclusive of required buffers.

d. Townhouses in each cluster should be consistent in terms of architectural style and major design elements such as materials, windows, roof lines, roof design, etc. Design approval shall rest with the planning board.

3. Garden apartments:

a. Maximum of sixteen (16) units in any structure; and maximum length of structures: one hundred sixty (160) feet. Maximum density shall be as permitted in the zoning ordinance.

b. Garden apartment structures should be grouped in clusters with architectural design consistence in each cluster. Each unit should have two means of access, one directly from the unit to the outside and the other as approved by the planning board. A minimum of four-foot building offset should be provided at least every forty (40) feet.

c. Recreation facilities such as swimming pools, tennis courts and other game courts, are encouraged and shall be carefully located to avoid problems of noise, lights and similar nuisance elements affecting residential units. They shall be located not less than fifty (50) feet from any boundary, exclusive of buffers.

C. Circulation and Parking.

1. Off-Street Parking. In all zones, in connection with every industrial, business, institutional, recreational, residential or any other use, there shall be provided, at the time any building, structure or use is erected or is enlarged or increased in capacity, off-street parking for automotive and other vehicles in accordance with the requirements set forth herein. Such facilities shall be completed prior to the issuance of a certificate of occupancy. The applicant shall also meet the requirements of P.L. 1975, 221, requiring parking spaces for the handicapped.

2. Design Standards for Off-Street Parking Areas.

a. Number of Parking Spaces Required: The number of off-street parking spaces required and the size of parking stalls shall be as set forth in the zoning ordinance. All reversed parking spaces shall be indicated to evaluate the need for additional parking spaces.

b. Parking areas should be curbed with granite or belgian block or concrete curbing. Pressure-treated timber curbing may be utilized where appropriate in small parking lots as approved by the township engineer except on lots with access to or fronting on a state highway.

c. Curbs may be used as wheel stops, provided that a three-feet overhang is provided. The length dimensions of parking spaces may be adjusted by two feet when overhangs are utilized. Hard surfaces should be utilized in overhang situations.

d. Hairpin or double parking space markings should be used to delineate spaces. Lines should be four inches wide.

e. Parking areas should be properly lighted, paved and drained.

f. If a one-way traffic system is utilized, it should flow in a counterclockwise direction. Angle parking should be used to direct cars in the property direction. Provisions shall be made for vehicles to circulate through a filled lot without having to enter again from the street.

g. All parking spaces shall have clear sight distance for backing out of the space.

h. Large parking areas should have raised sidewalks or planting beds between bays at appropriate intervals. The walks or bed should allow for car overhang and shall be a minimum of ten feet in width.

i. Parking lots and access drives are to be set back at least twenty-five (25) feet from residential zones, at least twenty (20) feet from street right-of-way lines, and at least fifteen (15) feet from all other property lines to provide for adequate room for earth berms and screening and buffering of the parking lot. The provisions of Section 16.70.020(E)(3) shall be observed.

j. When guardrails are required, they shall be constructed of wood rails supported by wooden or Corten steel posts, as approved by the township engineer, utilizing the detail approved for use on the Garden State Parkway.

k. Off-Street Parking Requirements for a Combination of Uses. The parking requirement for each use shall be computed separately and then added together to compute the total number of required parking areas. In all questionable or doubtful cases, or for uses not enumerated, the planning board shall determine the required number of spaces, utilizing as a standard the requirements for the uses which are specifically enumerated.

3. Parking Area Design Standards.

a. Access. There shall be adequate provisions for ingress and egress to all parking spaces. The width of access drives or driveways shall be determined as part of site plan review depending on use, topography and similar consideration and as determined by Chapter 16.70.

b. Size of Aisles. The width of all aisles providing direct access to individual parking stalls shall be in accordance with the requirements set forth below. Only one-way traffic shall be permitted in aisles serving single-row parking spaces placed at an angle other than ninety (90) degrees.

	Parking Angle (degree)		**Aisle Width (feet)**
	0	(parallel parking)	12
	30		14
	45		14
	60		18
	90	(perpendicular parking)	25

c. General Location. No off-street loading area shall be located in a minimum required front yard. All parking shall be located in bays generally perpendicular to driveways or roads. Paving should not abut a building unless necessary for loading or for pedestrian circulation.

d. Location in Different Zones. No access drive, driveway or other means of ingress and egress shall be located in any residential zone to provide access to uses other than those permitted to such residential zone.

e. Sidewalk and Curbing. Sidewalks between parking areas and principal structures, along aisles and driveways, at the head of parking stalls and wherever pedestrian traffic shall occur, shall be provided with a minimum width of four feet of clear passable area and shall be raised six inches or more above the parking area, except when crossing streets or driveways for barrier-free access. Guardrails and wheel stops permanently anchored to the ground shall be provided in

appropriate locations. Parked vehicles shall not overhang or extend over sidewalk areas, unless an additional sidewalk width of three feet is provided to accommodate such overhang.

f. Traffic and Pedestrian Island. Heavily utilized parking lots shall have dividing islands as required by the planning board between bays at appropriate intervals to provide pedestrian safety and to confine vehicles to marked travel aisles within the parking lot. Islands shall be at least ten wide and shall be landscaped with shade and ornamental trees or pedestrian walks as required.

g. Landscaping and Drainage.

i. Parking areas shall be suitably landscaped to minimize noise, glare and other nuisance characteristics as well as to enhance the environment and ecology of the surrounding area. Large parking lots shall be broken down into separate lots of not more than three hundred (300) cars and separated from other sections by landscaping, and similar elements. Said parking areas shall have suitable drainage facilities as required by the township engineer and shall conform to the requirements of subdivision (3)(e) and (f) above.

ii. Off-tract drainage facilities and structures requiring enlargement, modification or reconstruction resulting in part from, or totally as the result of, the proposed development shall be subject to off-tract improvement requirements and standards as established by the township.

h. Lighting. Lighting standards for parking areas shall follow the requirements of Section 16.20.040 paragraph G. (Ord. 02-21)

i. Markings and Access. Parking stalls, driveways and aisles shall be clearly marked and delineated. The planning board may require that certain areas be maintained for fire fighting or other emergency purposes, and these areas shall be appropriately designated.

4. Circulation Systems for High-Density Residential Developments. High-density residential developments should be serviced by a complete loop street system of at least thirty (30) feet in width affording at least two means of ingress/egress to the site. Crossovers between the legs of the loop should be provided. When a complete loop system is not practical, a thirty-four (34) to forty (40) foot wide street with a divided roadway as the entrance should be provided or some other means of ensuring access for emergency vehicles.

5. General Circulation and Parking Design Principles.

a. Parking space allocations should be oriented to specified buildings.

b. Parking areas would be designed to focus on major walkways.

c. Where pedestrians must cross service roads or access roads to reach parking areas, crosswalks should be clearly designated by pavement markings or signs, or by placing a different pavement materials. Crosswalk surfaces should be raised slightly to indicate them to drivers, unless drainage problems would result. A one-way car movement (to the left or counterclockwise) should be encouraged. A major loop should be developed around the parking areas and parking bays should run perpendicular off the road.

d. Driveways should approach from the right to permit passengers to alight to or from the sidewalk.

e. Whenever possible, one-way traffic should be established at building entrances.

f. Where buses are a factor, bus shelters and bus indentation slots off the roadway should be provided.

g. Roads and driveways from main roads should be located at grade and not below the crest of vertical curves.

h. Parking spaces should be kept at least fifty (50) feet from the intersection of the ingress access with the street.

i. An indented area for last car maneuvering shall be provided.

j. Ingress and egress for the site should be minimized and provided with acceleration/deceleration lanes with large curb radii to permit ease of access to the parking lot or main road without backing up traffic.

k. Design of islands should consider snow removal operations and not create an undue hindrance for this operation.

l. All sidewalk intersections should be flared beginning twenty-four (24) inches before the intersection on all legs of the intersection.

6. Off-Street Loading Requirements.

a. In any zone, in connection with every building or buildings, group or part thereof, hereafter erected which is to be occupied by industrial, office, laboratory, commercial or distribution uses, there shall be provided and maintained, on the same lot with such building, off-street loading berths in accordance with the requirements set forth below.

b. Each loading space shall be no less than twelve (12) feet in width, fifty (50) feet in length and fourteen (14) feet in height, and may not occupy any part of any required front, side or rear yard; provided, however, that on lots on which the rear or side yard abuts a railroad, such loading space may occupy the rear or side yard.

Uses	Floor Area (square feet)	Load Berths
Schools	15,000 or more	1
Hospitals and nursing homes (in addition to space for ambulances)	from 10,000 to 30,000 for each additional 30,000 or fraction thereof	1 1 additional
Undertakers and funeral parlors	5,000 for each additional 5,000 or fraction thereof	1 1 additional
Hotels and offices	from 10,000 or more	1
Retail, commercial, planned commercial and industrial groups, wholesaling, manufacturing and industrial uses	from 5,000 to 15,000 over 15,000 and up to 30,000 over 30,000 and up to 50,000 over 50,000 and up to 75,000 for each additional 100,000 or fraction thereof	1 2 3 4 1 additional

7. Joint Facilities for Off-Street Parking or Loading. Off-street parking and loading facilities for separate uses may be provided jointly if the total number of spaces so provided is not less than the sum of the separate requirements for each use; provided, however, that if the time of use of such spaces by a participating use does not overlap with the time of use by any other participating use, the number of spaces may be reduced to the number required for the most intensive use or uses.

8. Maintenance of Off-Street Parking and Loading Area. Every parcel of land hereafter used as a public or private off-street parking or loading area shall be maintained in good condition, free of hazards and deterioration. All pavement areas, sidewalks, curbs, drainage facilities, lighting, bumpers, guardrails, markings, signs, landscaping and other improvements shall be maintained in workable, safe and good condition.

9. Waiver of Parking and Off-Street Loading and Unloading Requirements. If any applicant can clearly demonstrate to the planning board that, because of the nature of his or her operation or use, the parking and/or loading and unloading requirements of this section are unnecessary or

excessive, the planning board shall have the power to approve a site plan showing less paved parking or unloading area than is required by this chapter; provided, however, that a landscaped area of sufficient size to meet the deficiency shall be set aside and reserved for the purpose of meeting future off-street parking or unloading requirements in the event that a change of use of the premises shall make such additional off-street facilities necessary.

10. Location of Driveways.

a. All entrance and exit driveways shall be located to afford maximum safety to traffic, to provide for safe and convenient ingress and egress to and from the site, and to minimize conflict with the flow of traffic.

b. Any exit driveway or driveway lane shall be so designed in profile and grading, and located to provide the following minimum sight distance measured in each direction. The measurements shall be from the driver's seat of a vehicle standing on that portion of the exit driveway with the front of the vehicle a minimum of ten feet behind the curbline or edge of the shoulder with the height of the eye three and seventy-five hundredths feet to the top of an object four and five-tenths feet above the pavement.

Allowable speed of Road	**Required Sight Distance in Feet**	
(mph)	**Left Turn**	**Right Turn**
25	250	200
30	350	260
35	450	350
40	530	440
45	630	550
50	740	700

c. Where a site occupies a corner of two intersecting roads, no driveway entrance or exit shall be located within fifty (50) feet of the point of tangency of the existing or proposed curb radius of that site or from the right-of-way line of the intersecting street, whichever is greater.

d. No part of any driveway shall be located within a minimum of fifteen (15) feet of a side property line. However, the planning board may permit a driveway serving two or more adjacent sites to be located on or within ten feet of a side property line between the adjacent site.

e. No entrance or exit driveway shall be located on a rotary ramp of an interchange or within one hundred (100) feet of the beginning of any ramp or other portion of an interchange or jughandle.

f. Where two or more two-way driveways connect a single site to any one road, a minimum clear distance of one hundred (100) feet measured along the right-of-way line shall separate the closest edges of any two such driveways. If one driveway is two-way and one is one-way driveway, the minimum distance shall be seventy (70) feet.

g. Driveways for uses on adjacent lots shall be no closer than forty (40) feet at the closest edges of the driveway as measured at the right-of-way line.

11. Driveway Angle.

a. Two-Way Operation. Driveways used for two-way operation shall intersect the road at an angle to as near ninety (90) degrees as site conditions will permit and in no case will be less than sixty (60) degrees.

b. One-Way Operation. Driveways used by vehicles in one direction of travel (right-turn only) shall not form an angle smaller than forty-five (45) degrees with a road, unless acceleration

and deceleration lanes are provided.

12.Driveway Dimensions. The dimensions of driveways shall be designed to accommodate adequately the volume and character of vehicles anticipated to be attracted daily onto the land development for which a site plan is prepared. The required maximum and minimum dimension for driveways are indicated below. Driveways serving large volumes of daily traffic or traffic of over fifteen (15) percent truck traffic shall be required to utilize high to maximum dimensions.

	One-Way Operation Driveways* Width (feet)	**Two-Way Operation Driveways* Width (feet)**
3 to 10 family residence	10-15	18-26
10 family or over	15-25	24-30
Commercial and industrial	15-30	25-40
* NOTE: All driveways shall be six feet wider at the curb line, and this additional width shall be maintained for a distance of twenty (20) feet into the site. Driveway curb radii shall be designed to permit vehicles using the site to turn into or out without encroaching on an adjacent land of either the driveway or the intersecting road. Channelization islands should be greater than fifty (50) square feet in area and curbed. Smaller islands should be painted.		

13.Driveway Surfacing. The surface of any driveway shall be constructed with a permanent pavement of a type specified and approved by the township engineer and shall normally be four inches bituminous stabilized base topped with two inches FABC surface. Such pavement shall extend to the paved portion of the road and shall extend throughout the area defined by the required driveway dimensions specified above.

14.Driveway Profile. Any vertical curve on a driveway shall be flat enough to prevent the dragging of any vehicle undercarriage. Should the sidewalk be so close to the curb at a depressed curb driveway as to cause the ramp to be too steep and be likely to cause undercarriage drag, the sidewalk shall be appropriately lowered to provide a suitable ramp gradient.

15.Driveway Grades. Driveways shall not have a grade in excess of ten percent over the entire length. The first twenty-five (25) feet of driveway should grade toward the intersecting road and not exceed six percent unless otherwise approved by the planning board. Driveways shall not be located where visibility is limited because of curves or topography. The maximum difference between grades should not exceed eight percent.

16.Acceleration Lanes. Where a driveway serves right-turning traffic from a parking area providing two hundred (200) or more parking spaces and the road has peak hour traffic volume exceeding seven hundred fifty (750) vehicles per hour, an acceleration lane shall be provided which is at least two hundred fifty (250) feet long and at least ten feet wide measured form the road curb line. A minimum thirty-five (35) foot curb return radius shall be used from the

driveway to the acceleration lane.

17. Deceleration Lanes.

a. Where a driveway serves an entrance to land development providing one hundred (100) or more parking spaces, a deceleration lane shall be provided for traffic turning right into the driveway from the road. The deceleration lane shall be at least two hundred (200) feet long and at least ten feet wide measured from the road curb line. A minimum thirty-five (35) foot curb return radius shall be used from the deceleration lane into the driveway.

b. In instances where there is insufficient frontage to accommodate the required length of acceleration or deceleration lane, a separate right turn ramp eighteen (18) feet in width having a turning radius of seventy-five (75) feet is to be provided. If an island is provided, the throat width is to be twenty-three (23) feet onto or out of the site.

18. Reverse-Frontage Roads. Reverse-frontage or parallel access roads shall be required by the planning board upon analysis and recommendation of the township engineer where the volume of traffic or configuration of the road and adjoining intersections requires same for safety and to keep traffic easily flowing.

D. Landscaping.

1. A detailed landscaping plan shall be submitted with each final site plan application. The plan shall identify existing and proposed trees, shrubs, bushes, plant material and ground cover, and natural features such as boulders and rock outcroppings. It should show where they are or will be located, and the planting details and specifications.

2. Landscaping shall be specific as to the location, size, spacing, quantity and species (botanical and common name) of all plants, as well as the location, perimeter outline, type and thickness of all mulches. Size, quantity, species and other pertinent information shall also be listed in the form of a schedule on the landscaping plan. Where turf is anticipated, topsoiling, seeding or sodding, fertilizing, liming and water specifications shall be provided. Planting details (staking, fertilizing, watering, soil mixture, etc.) specific to soil conditions and the exposure of the site shall also be provided.

3. When existing natural growth is proposed to remain, the applicant shall include in the plans proposed methods to protect the existing trees and growth during and after construction. These shall include fences, berms, curbing, tree wells and similar devices.

4. The following principles should be followed:

a. Locate landscaping to provide for climate control. For example, shade trees on the south to shield the hot summer sun, and evergreens on the north and northwest for windbreaks;

b. Use landscaping to accept and complement buildings. For example, groupings of tall trees to break up long, low buildings and lower plantings for taller buildings;

c. Landscaping should be provided in public areas, recreation sites and adjacent to buildings;

d. Vines and climbing plants should be considered for large expanses of walls for reducing heat build-up and aesthetics;

e. Consider massing trees as critical points rather than in a straight line at predetermined intervals along streets. Vary types by neighborhood. At least two types of trees should be used for environmental diversity;

f. Groundcover may be used extensively to reduce erosion and is encouraged on slopes;

g. Provide for a variety and mixture of landscaping. The variety should consider susceptibility to disease, colors, season, texture, shapes, blossoms and foliage;

h. Local soil conditions and water availability should be considered in the choice of landscaping;

i. Consider the impact of any proposed landscaping plan at various time intervals. Shrubs may grow and eventually block sight distances. Foundation plants may block outbuildings;

j. It is preferable to have fewer large specimens than more smaller ones;

k. Deciduous trees should be at least one and three-fourths-inch to two-inch caliper at planting, and evergreens should be at least four feet tall. Shrubs should be at least eighteen (18) to

twenty-four (24) inches tall at planting. All plantings should be balled and burlapped unless otherwise approved by the planning board;

l. Street trees should be selected to fit the space provided, wide spreading trees planted where there is room, and small or narrow trees in restricted areas;

m. Entrance to sites deserve special landscaping treatment;

n. Existing large trees should be saved by not varying the grade around the trees by more than six inches to twelve (12) inches, by construction of tree wells and walls, and by erecting protective fences during construction activities. Maximum effort should be made to save groups of trees rather than individual ones;

o. Off-street parking lots designed to accommodate more than twenty-five (25) vehicles shall be landscaped so that landscaping equal to at least fifteen (15) percent of the parking area is provided in the manner specified below.

The parking area is that area devoted to parking spaces, aisles and space back up area and shall generally consist of such areas within curbing but excluding building, access aisles leading from a street to the parking area, pedestrian walkways and landscaped areas.

In calculating the landscaped area the following may be included:

i. Landscaping within the parking area consisting of landscaped islands between rows of parking spaces and islands at the end of parking rows,

ii. Landscaped areas which may extend into the parking area from the perimeter of the paved area even though such may be outside of the parking lot curbed area; and landscaped areas where parking lot curbed areas as extended would intersect. Examples of such are attached. Proposed use of landscaped areas other than those illustrated may also be used as part of the required landscaping if approved by the planning board.

In determining whether to include such other areas as part of the required parking lot landscaping, the planning board shall find that such area is so located and landscaped as to contribute to the objective that parking areas be landscaped,

iii. Up to, but not to exceed, one-third of the required fifteen (15%) percent of landscaping in the parking area may be included in a landscaped area along a street right of way line located between the street right of way and parking spaces when such parking spaces are proposed in the front and/or side yard abutting a street are located between a building and street right of way. Such area may include any such bufferyard required between the street right of way and parking spaces when such parking spaces are proposed in the front and/or side yard abutting a street and located between a building and street right of way (see Section 16.20.040.E). In no case shall landscaping along the building face and/or foundation be included as part of the required landscaping within a parking area. Building facade or building foundation landscaping between a building and a sidewalk generally paralleling such building, or if no sidewalk generally parallels such budling, shall be landscaping between fifteen (15) feet of the building facade and/or foundation. (Ord. 02-36)

iv. To be included as part of the required parking lot landscaping such areas shall include trees and/or shrubs as well as appropriate surface treatment,

v. At least one landscaping island containing a canopy tree shall be planted every eight (8) spaces within the parking lot. Should the Board determine that the use precludes the planting on trees within the parking area then the developer shall be required to provide twice the number of trees that would have been required in the parking area elsewhere on site if possible, or off site in a separate location to be approved by the Board if sufficient area on site is not available. (Ord. 06-11 § *v.*)

p. It is the intent to have parking lots canopied with trees to reduce stormwater runoff. Light standards should also be located in these islands or walkways;

q. Parking lot landscaping should be designed and located to withstand the effects of snowplowing;

r. All landscaping in parking areas should be carefully located so as not to obstruct vision. A

variety of different types of trees should be grouped to break up the mass of cars;

s. Plantings should be chosen to match the particular microclimate and space restrictions to which they will be exposed. For example, drought-tolerant plants should be located where a plant will be surrounded by pavement, and maples and other trees would not be located where their roots can raise sidewalks;

t. Select trees that can withstand an urban environment in parking lot locations;

u. All parking areas shall be screened from the street and adjoining or adjacent properties. Screening shall include planting, dropped or depressed parking lots, earth berms, masonry walls or fences, or a combination of these elements;

v. Landscaping designed as buffers or screening on combination with other screening devices should be a minimum of three feet high at the time of planting and should consist of a majority of evergreen plant materials. Screening shall be carefully placed so as not to impair visibility or vehicles entering or exiting parking areas;

w. Shade trees shall be located along all streets and drives but outside all public road rights-of-way where possible. Applicants should follow the shade tree planting plan requirements as outlined in subsection (D)(4) of this section.

x. The provisions of Section 16.20.040.E Buffers, Fences and Bufferyards and of Chapter 16.74 the performance standards of the zoning ordinance shall be observed. (Ord. 02-36)

E. Buffers, Fences and Bufferyards.

1. Any new non-residential use or high intensity residential use (see footnotes of Tables I and II of this section), or change in a non-residential use to a more intensive class of use, or expansion of an existing non-residential or high intensity residential use by at least twenty-five (25%) percent of the floor area and/or impervious surface associated with the use that is proposed, on a lot adjoining a lot containing a less intensive class of existing use or a vacant lot zoned for less intensive uses shall provide a transitional bufferyard and screening meeting the requirements of this section. In the case of an expansion of an existing use, where the degree of expansion does not exceed fifty (50%) percent, such expansion need only provide a transitional bufferyard and screening that meets the requirements of this section to a degree proportional to the degree of expansion. For example, a thirty (30%) percent expansion of an existing use shall provide a transitional bufferyard meeting thirty (30%) percent of required bufferyard depth and plant density requirements. These transitional bufferyard regulations apply whether or not the adjoining lot is in the same zoning district. (Ord. 02-36)

2. Location of Transitional Bufferyard and Screens. Transitional bufferyards and screens shall be located:

a. Along the perimeter of a lot or parcel, but not within any portion of an existing or proposed road right of way; or

b. In instances where the area represented by a site plan is significantly less than the total area of the lot(s) of record, the Board may permit the screening required between the proposed use and the adjacent lot (s) to be located in a transitional bufferyard surrounding the smaller area provided that:

i. The depth of the transitional bufferyard and type of screening provided for the smaller area is equal to or greater than required by Table I and II of this Section; and

ii. The transitional bufferyards required in Table I of this Section are also provided around the perimeter of the lots(s) of record; and

iii. The total area of the lot(s) of record, less the smaller area represented by the subject site plan, could meet the minimum requirements within the applicable zoning district, if considered as if they were independent lot(s) of record. (ord. 02-36)

3. Depth of Transitional Bufferyards.

a. Required Bufferyard Depth. Transitional bufferyard depth requirements are set forth in Table I of this Section. To determine the required bufferyard depth, first identify the class of the proposed new, changed, or expanded use. Then identify the class of each adjoining existing use

and the zoning of each adjoining vacant lot. Then use the matrix in Table I to identify the required bufferyard depth (shown at the intersection of the row associated with the proposed use and the column associated with the adjoining use or vacant lot zoning).

b. Overlap with Other Yards. In the event that a transitional bufferyard depth requirement conflicts with yard requirements within an applicable zoning district, the more stringent shall apply.(Ord 02-36)

4. Screening Required within Transitional Bufferyards.

a. Required Screening. Minimum screening requirements are set forth in Table II of this section. To determine the required screening type, first identify the class of the proposed new, changed, or expanded use. Then identify the class of each adjoining existing use and the zoning of each adjoining vacant lot. Then use the matrix in Table II to identify the required screening type (shown at the intersection of the row associated with the proposed use and the column associated with the adjoining use or vacant lot zoning). Required screening may be composed of existing vegetation, planted vegetation, a fence, a wall, a landscaped earthen berm, or any combination of these screening measures. Examples and plantings guidelines are on file with the Planning Board in the Planning and Zoning Office and are referenced as "Bufferyard Planting Guidelines".

b. Types of Screens.

i. Type A Opaque Screen: A screen that is opaque year round from the ground to a height of at least 10 feet, with intermittent visual obstructions from the opaque portion to a height of at least 20 feet. The opaque screen is intended to exclude all visual contact between uses and to create a strong impression of spatial separation. A Type A screen may be composed of fencing, walls, berms, landscaping or any combination thereof as may be appropriate to the specific site and use in question.

ii. Type B Broken Screen: The broken screen is intended to create the impression of spatial separation between uses without necessarily eliminating visual contact between the spaces.

A screen composed of either:

- One (1) canopy tree per thirty (30) lineal feet of bufferyard;
- One (1) under-story tree per twenty (20) lineal feet of bufferyard;
- One (1) shrub per five (5) lineal feet of bufferyard;
- Any combination of the above; or
- Any other screening that meets or exceeds the degree of screening achieved by the above.

5. Alternative Transitional Bufferyards and Screening. Recognizing that a transitional bufferyard is defined by both its depth and the density of screening within it, the Board may allow a transitional bufferyard's depth to be reduced by up to fifty (50%) percent from that specified in Table I if the density of screening within the bufferyard is increased to an equivalent degree - provided the bufferyard remains deep enough to accommodate the healthy growth and protection of the proposed screen plantings. Similarly, the Board may also allow a transitional bufferyard's screening density to be reduced by up to fifty (50%) percent from that specified in Table II if the bufferyards depth is increased to an equivalent degree.

6. Additional Transitional Bufferyards and Screening Required.

a. In addition to any screening requirements found elsewhere in this Title, any outside storage of junk, refuse, salvage, or discarded materials shall be screened from adjacent rights-of-way by means of Type A screening.

b. Whenever a use is proposed along a collector street, county or state road, a ten feet deep transitional bufferyard and Type B screening shall be required adjacent to the right of way. (Ord. 02-54)

c. Whenever a non-residential use is proposed next to a residential use and is separated from the residential use by a public road, a ten feet deep transitional bufferyard and Type B screening shall be provided adjacent to the public right of way.

7. Uses and Structures Permitted within the Transitional Bufferyards.

a. A transitional bufferyard may contain utility lines, driveways, or pedestrian or bicycle paths, provided that:

i. The proposed locations of such uses are necessary for their proper functioning, and such uses cross the bufferyard where feasible, rather than lie along the length of the bufferyard; and

ii. The total width of the bufferyard is maintained; and

iii. No screen required by this ordinance is reduced or eliminated.

b. Signs shall be permitted within transitional bufferyards provided that:

i. They are completely screened from view from any point on adjacent residential properties; and

ii. Placement of such signs shall not violate other provisions of this Code.

c. Transitional bufferyards shall not be used for parking, loading, storage, or any activity that is either part of or accessory to the proposed use.

d. A transitional bufferyard may contain all or part of a storm water management system provided that:

i. Said system meets requirements found in Section 16.20.040 of this Chapter;

ii. No screen required by this section is reduced or eliminated;

iii. Any detention basin shall be sufficiently landscaped and graded so as to be aesthetically pleasing;

iv. The geometric or other man-made appearance of such facilities shall be discouraged.

8. Requirements for Plants used for Screening.

a. Use of Existing Vegetation Encouraged. Existing vegetation that meets or exceeds applicable screening requirements may be used to satisfy the requirements of this Section, provided the transitional bufferyard contains sufficient area surrounding the vegetation to ensure its protection from encroachments that may threaten its continued healthy growth.

b. Location and Spacing. Plants shall be staggered or clustered as necessary to maximize screening objectives and to meet the needs of the particular species of plants for root space, water, light and circulation.

c. Minimum Height at Planting. Plantings shall follow minimum planting guidelines as found in referenced document entitled "Bufferyard Planting Guidelines" on file with the Planning Board and available for review at the Planning and Zoning office.

d. Minimum Height at Maturity.

i. Canopy trees, understory trees, and hedge plants shall be of a variety that has a minimum mature height which will meet the minimum screening requirements for which they were chosen.

ii. Shrubs shall be of a variety that has an average mature height of at least three (3) feet.

9. Requirements for Fences, Walls and Berms used for Screening.

a. Fences and Walls. Fences and walls shall be screened over at least fifty (50%) percent of their exterior face area by plantings which provide year round screening to obstruct the view of the fence or wall from adjacent properties. This may be achieved with a tight evergreen hedge that is on-half (1/2) the height of the fence or wall; or by using plants other than the evergreen hedge meeting the above requirement, provided that figures on the average mature height and spread of each species to be planted are submitted with the site plan for approval by the Board.

b. Berms. Berms shall be planted with trees, shrubs, vines, grasses, or other groundcover. Part of a berm may be devoted to a non-living screen such as a fence or wall.

10. Maintenance of Screenings. All screening shall be maintained to continue its effectiveness. All plantings shall be guaranteed for a period of two years after installation.

11. Clear View of Intersections. Transitional bufferyards and screens shall not impede sight lines at driveways or intersections.

12. Conflict with Other Regulations. In the event that a regulation of this Section conflicts with one found elsewhere in this Ordinance the more stringent regulation shall apply.

13. Reduction of Screening Requirement. When a condition such as unusual topography, elevation in relation to adjacent properties, size or shape of the parcel involved, or any other condition exists which would make strict adherence to this ordinance impractical or impossible, the Board may reduce the transitional bufferyard and screening requirements.

14. Fencing as an Accessory Use. Fencing shall be considered as an accessory use to a principal permitted use and are permitted in all zones as set forth in Section 16.64.120.

15. Waivers and Exceptions. The Board may grant a waiver for a reduction in any bufferyard standard as may be reasonable and within the intent of the general purposes and provisions of this section and if the literal enforcement of this section is impracticable or will exact undue hardship because of peculiar conditions pertaining to the land involved, as determined by the Board.

TABLE I

Required Depths of Transitional Bufferyards in Feet[6]	**Residential**		**Non-residential**		
	Lower Intensity[1]	**Higher Intensity**[2]	**Lower Intensity**[3]	**Medium Intensity**[4]	**High Intensity**[5]
Class of Adjacent Existing Use					
Lower Intensity Residential[1]	n/a	25	50	75	100
Higher Intensity Residential[2]	25	n/a	50	75	100
Low Intensity Non-residential[3]	50	50	n/a	50	50
Medium Intensity Non-residential[4]	75	75	n/a	n/a	25
High Intensity Non-residential[5]	100	100	n/a	n/a	n/a
Zoning of Adjacent Lot					
R-1, R-1A, R-2, R-3, R-4	n/a	25	50	75	100
R-5, R-6, R-6LM, R-7, R-8, R-9	25	n/a	50	75	100
B-1, B-5, P, H	50	50	n/a	50	50
B-2, B-3, B-4, O-1	75	75	n/a	n/a	25
O-2, I-1, I-2	100	100	n/a	n/a	n/a

n/a - no bufferyard required.

1 A lower intensity residential use is a residential use with a density of less than 4 dwelling units per acre.

2 A higher intensity residential use is a residential use with a density of more than 4 dwelling units per acre.

3 A low intensity non-residential use is a non-residential use with a floor area ratio no greater than 15% and an impervious surface coverage no greater than 30%. This category shall include public schools regardless of their FAR or impervious surface coverage.

4 A medium intensity non-residential use is a non-residential use with a floor area ratio greater than 15% but not greater than 30%, or an impervious surface coverage greater than 30% but no greater than 60%.

5 A high intensity non-residential use is a non-residential use with a floor area ratio greater than 30% or an impervious surface coverage greater than 60%.

6 The depth of a transitional bufferyard may be reduced by up to 50% at the discretion of the Board if the planting density is increased to the same degree. Please see item 5 under this section for additional information.

TABLE II

Types of Screening Required Within Transitional Bufferyards	Class of Proposed Use: Residential		Non-residential		
	Lower Intensity[1]	Higher Intensity[2]	Lower Intensity[3]	Medium Intensity[4]	High Intensity[5]
Class of Adjacent Existing Use					
Lower Intensity Residential[1]	n/a	B	A	A	A
Higher Intensity Residential[2]	B	n/a	A	A	A
Low Intensity Non-residential[3]	A	A	n/a	B	B
Medium Intensity Non-residential[4]	A	A	n/a	n/a	B
High Intensity Non-residential[5]	A	A	n/a	n/a	n/a
Zoning of Adjacent Lot					
R-1, R-1A, R-2, R-3, R-4	n/a	B	A	A	A
R-5, R-6, R-6LM, R-7, R-8, R-9	B	A	A	A	A
B-1, B-5, P, H	A	A	n/a	B	B
B-2, B-3, B-4, O-1	A	A	n/a	n/a	B
O-2, I-1, I-2	A	A	n/a	n/a	n/a

n/a - no bufferyard required

1 A lower intensity residential use is a residential use with a density of less than 4 dwelling units per acre.

2 A higher intensity residential use is a residential use with a density of more than 4 dwelling units per acre.

3 A low intensity non-residential use is a non-residential use with a floor area ratio no greater than 15% and an impervious surface coverage no greater than 30%. This category shall include public schools regardless of their FAR or impervious surface coverage.

4 A medium intensity non-residential use with a floor area ratio greater than 15% but not greater than 30% or an impervious surface

coverage greater than 30% but no greater than 60%.

5 A high intensity non-residential use is a non-residential use with a floor area ratio greater than 30% or an impervious surface coverage greater than 60%.

(Ord. 02-54)

F. Open Space.

1. General Requirements. At least twenty-five (25) percent of any tract proposed for planned development shall be in common open space and distributed generally as follows:

a. A minimum of ten percent of the gross tract area shall be in formal recreation facilities, such as tennis courts, playgrounds, swimming pools, ball-fields, and similar facilities.

b. A minimum of ten percent of the gross tract area shall be in natural features, vistas, significant wooded areas, vegetation and in other usable open space which shall be defined as lands other than in channels, floodways and on slopes in excess of twenty-five (25) percent or water bodies, whether used for recreation, retention or detention purposes.

c. Five percent of the gross tract area may include all lands excluded in subsection (F)(1)(b) above and water bodies.

2. Recreation Facilities. The following recreational facilities should be considered as part of any, but not necessarily all, planned developments:

a. Trails: use to connect open space, between recreational facilities and between buildings and other uses.

b. Bikeways: minimum width of six feet, optimum of eight feet, and ten feet where paths are also used for emergency vehicle access. Keep grades under ten percent, lower if for any length. Machine-laid asphalt surface of four-inch bituminous stabilized base over an approved subbase are required. All turning radii should be at least twelve (12) feet with thirty-seven (37) foot radii required where bicycle speeds approach fifteen (15) miles per hour. Curb cuts and signing should be provided.

c. Playlots: minimum of two thousand (2,000) square feet for toddlers and up to five thousand (5,000) square feet for older children. Primarily for use by pre-school-age children. Facilities include swings, slides, play sculptures and benches for parents. Effective service radius of one block or one-eighth of a mile. Approximately one playlot for each four hundred (400) persons or one hundred (100) children.

d. Playgrounds: designed for a variety of uses, and the equipment should reflect the patronage. Sandboxes and play sculpture for young children, basketball courts or backboards for older youths, paved areas for various activities, and sunny and quiet areas for the elderly should be provided. The size of the playgrounds should be based on population as follows:

Population	Size (acres)
2,000	3.25
3,000	4.0
4,000	5.0
5,000	6.0

e. Tennis: one for each one hundred (100) dwelling unit. Parking should be provided on the basis of four per court.

f. Swimming pools: provide three square feet of pool area for each resident above three years of age. Provide for wading pools.

3. Other Considerations.

a. Orientation of recreational facilities generally should run in a northeast-southwest direction.

b. Carefully orient passive recreational facilities. The southerly exposure is the warmest and captures the short fall, winter and spring sun. During the summer, it can be uncomfortable, but

this can be relieved by landscaping.

c. Small garden plots are also valid recreational opportunities, particularly for the elderly. Orient toward the south.

d. Recreational facilities should be operated for the residents of the development. They should not be commercial enterprises open to anyone who pays a fee.

G. Lighting.

1. Submission of Plans. Plans and evidence of compliance shall include the following:

a. Description of outdoor lamp/luminaire combinations including component specifications such as lamps, reflectors, optics, angle of cutoff, supports, poles and include manufacturers catalog cuts.

b. Locations and description of every outdoor light fixture and hours of operation, their aiming angles and mounting heights.

c. Computer generated photometric grid showing footcandle readings every ten feet and the average footcandles for the site.

d. Foundation details for light poles.

2. The style of the light and light standard shall be consistent with the architectural style of the principal building and should be coordinated with the landscaping for the site.

3. Maximum Height of Lights:

a. The light shall be measured from ground level to its highest point and shall include the base.

b. The maximum height in residential parking lots and in off street residential situations is fifteen (15) feet.

c. The maximum height in non-residential uses is twenty-five (25) feet, but in no case shall be higher than the building(s).

4. Freestanding lights shall be so located and protected to avoid being easily damaged by vehicles.

5. Lighting should be located along streets, parking areas, at intersections and where various types of circulation systems merge, intersect or split.

6. Lighting of Walkways/Bikeways and Parks. Where special lighting is to be provided for walkways, bikeways, or parks, the following requirements shall apply:

a. The walkway, pathway, or ground area shall be illuminated to a level of no more than 0.5 foot-candles.

b. The vertical illumination levels at a height of five (5) feet above grade shall be no more than 0.5 foot-candles.

c. Lighting fixtures shall be designed to direct light downward, and the light sources shall have an initial output of no more than 1000 lumens.

7. Stairways and sloping or rising paths, building entrances and exits require illumination.

8. All non-essential outdoor lighting fixtures, including display lighting, shall be turned off after close of business, unless needed for safety or security, in which case the lighting shall be reduced to a minimum level necessary as determined by the Board (non-essential may apply to: display, aesthetic, parking and sign lighting).

9. Light Trespass. The maximum illumination at five feet inside an adjoining residential parcel or public right-of-way or beyond, from an artificial light is 0.25 horizontal footcandles and 0.25 vertical footcandles. Said illumination likewise measured inside an adjoining commercial or industrial parcel or on a public roadway, or beyond, shall not exceed 0.5 horizontal footcandles or 0.5 footcandles. No line of sight to a glaring light source is permitted from 5 feet or more inside a residential or public right-of-way property line by an observer viewing from a position that is level with or higher than the ground below the fixture. Compliance is achieved with fixture shielding, directional control designed into the fixture, fixture location, fixture height, fixture aim, or a combination of these factors.

10. General Lighting Design. The bulbs in outdoor light fixtures emitting from 600 to 1200

lumens shall be frosted glass or covered by frosted glass or other similarly translucent cover. An outdoor fixture emitting more than 1200 lumens except motion detector activated lighting, shall be full cutoff and fully shielded to an observer at the property line. This can be achieved with fixture location, mounting height, natural or artificial barriers on the fixture owner's property, fixture shielding, and other fixture design features.

A spotlight of less than 1800 lumens need not be full cutoff or covered by a translucent cover if its center beam is aimed at a point not beyond any property lines and no higher than forty-five (45) degree below horizontal, and is motion detector activated and cycles off after five minutes.

Generally, luminaries should not be located closer to the property line than a distance equal to three times the fixture's mounting height above grade at the property line.

11. Emergency lighting and traffic control lighting is exempt.

12. The use of search lights, laser lighting, or lights that pulse, flash, rotate or simulate motion for advertising or promotions is prohibited.

13. Tower lighting shall not be permitted unless required by the FAA. Required lighting shall be of the lowest allowed intensity and red unless specifically forbidden under FAA requirements.

14. With the exception of structures having exceptional symbolic significance such as churches, public buildings or buildings of historic significance in the community, exterior buildings and other vertical structures shall not be illuminated. When buildings and other structures having symbolic or historic significance are to be illuminated, the design for the illumination must be approved by the Planning Board.

15. Buildings and other vertical structures.

a. The maximum illumination on any vertical surface or angular roof surface shall not exceed 5.0 foot-candles.

b. Lighting fixtures shall be carefully located, aimed, and shielded so that light is directed only onto the building surface. Lighting fixtures shall not be directed toward adjacent streets or roads.

c. Lighting fixtures mounted on the building and designed to "wash" the building surface with light are preferred.

d. To the extent practicable, lighting fixtures shall be directed below the horizontal rather than above the horizontal plane.

16. Landscaping. When landscaping is to be illuminated, the Planning Board shall first approve a landscape lighting plan that presents the purpose and objective of the lighting, shows the location of all lighting fixtures and what landscaping each is to illuminate, and demonstrates that the installation will not generate excessive light levels, cause glare, or direct light beyond the landscaping into the night sky.

17. Lighting of Exterior Display/Sales Areas. Lighting levels on exterior display/sale areas shall be adequate to facilitate the activities taking place in such locations. Lighting of such areas shall not be used to attract attention to the business. Signs allowed under local Ordinance are to be used for the purpose. The applicant shall designate areas to be considered display/sale areas and areas to be used as parking or passive vehicle storage areas. The designation must be approved by the Planning Board.

a. Areas designated as parking or passive vehicle storage areas shall be illuminated in accordance with the requirements for parking areas suggested elsewhere in this section.

b. Areas designated as exterior display/sales areas shall be illuminated so that the maximum illumination level is 35 foot-candles in feature display areas and 20 foot-candles in general display areas. In no case shall the illuminance in any exterior selling areas exceed 10 times that of the surrounding area.

c. Light fixtures shall be cut-off fixtures, and shall be located, mounted, aimed, and shielded so that direct light is not cast onto adjacent streets or properties.

d. Fixtures shall be mounted no more than 20 feet above grade, and mounting poles shall

be located either inside the illuminated area or no more than ten (10) feet away from the outside edge of the illuminated area.

18.Lighting of Outdoor Facilities. Outdoor nighttime facilities (concerts, athletic contests, etc.) have unique lighting needs. Illumination levels vary, depending on the nature of the activity. The regulations in this section are intended to allow adequate lighting for such events while minimizing sky glow, reducing glare and unwanted illumination of surrounding streets, properties, and reducing energy consumption. The design plan shall include a discussion of the lighting requirements of various areas and how those requirements will be met.

19.Lighting of Gasoline Station/Convenience Store Aprons and Canopies. Lighting levels on gasoline station/convenience store aprons and under canopies shall be adequate to facilitate the activities taking place in such locations. Lighting of such areas shall not be used to attract attention to the business. Signs allowed under local Ordinance are to be used for the purpose.

a. Areas on the apron away from the gasoline pump islands used for parking or vehicle storage shall be illuminated in accordance with the requirements for parking areas set forth elsewhere in this section. If no gasoline pumps are provided, the entire apron shall be treated as a parking area.

b. Areas around the pump islands and under canopies shall be illuminated so that the minimum horizontal illuminance at grade level is no more than 5.5 foot-candles. The ration of average to minimum illuminance shall be no greater than 4:1. This yields an average illumination level of no more than 22.0 foot-candles.

c. Light fixtures mounted on canopies shall be recessed so that the lens cover is recessed or flush with the bottom surface of the canopy and/or shielded by the fixture or the edge of the canopy so that light is restrained to no more than 85 degrees beyond the vertical plane.

d. Lights shall not be mounted on the top or sides of the canopy, and the sides of the canopy shall not be illuminated.

20.Parking Lot Lighting. Parking lot lighting shall be designed to provide the minimum lighting necessary to ensure adequate vision and comfort in parking areas, and to not cause glare or direct illumination onto adjacent properties or streets.

a. All lighting fixtures serving parking lots shall e cut-off fixtures.

b. Mounting heights of lighting fixtures shall no exceed 25 feet.

c. The minimum illumination level shall be 0.25 foot-candles. The ratio of the average illumination to the minimum illumination shall be 4:1. (Ord. 02-21 § G)

H. Signs.

1. Signing plan. A signing plan for all signs including traffic control signs is required as part of all site plan submissions. Section 16.72.050(D) spells out township objectives with respect to signs.

2. Lighting. Internally lit, plastic signs are not recommended. Painted, externally lit signs are preferred which blend with the rural character of the municipality.

3. Traffic Signs and Control Devices. Improvements, such as "stop," "yield," "one-way," signs, etc., shall be designed and installed in accordance with applicable federal, state and county regulations in accordance with the Manual on Uniform Traffic Control Devices adopted by the United States Department of Transportation.

4. Street signs. The design and location of all street signs shall be approved by the planning board. The name of all streets shall be approved by the planning board.

I. Utilities.

1. The design and location of all utilities shall be underground and shall be based on township standards and those standards of the public utility(s) having primary jurisdiction. All plans shall be approved by the Township engineer and the appropriate authority. (Ord. 02-9)

2. Any development located within the sanitary sewer service area as identified in the most recent Township Master Plan shall only be connected with and use the facilities of the Raritan Township Municipal Utilities Authority sanitary sewer system to the exclusion of any other

system or methods for the collection and disposal of sanitary sewage. If the Planning Board determines that the existing Raritan Township Municipal Utilities Authority sanitary sewer system is not reasonably accessible either due to such reasons as the distance required, the level of improvements required, or lack of available sewer treatment capacity to allow the economically feasible development of the property, the applicant shall install within the development a complete sewer pipe system including all necessary easements and provisions for the connection thereto at each structure. Until such time as the connection to the public sanitary sewage disposal system is capable of becoming operable, individual septic systems or other appropriate and approved waste water treatment facilities shall be required. (Ord. #02-9)

J. Solid Waste Facilities.

1. Disposal containers are to be conveniently located to trash-producing portions of buildings and shall be provided with their own means of access.

2. Disposal containers are to be screened by solid wood fencing, berms or dense evergreen plantings. Plantings should be large enough and of a type to provide immediate screening.

3. Trash containers should be located at the entrances of each business as appropriate and appropriately spaced in parking areas, if necessary.

4. No litter is to escape from disposal containers.

5. The provisions of Section 16.74.050(B) shall be observed.

K. Environmental Considerations.

1. The site plan shall be designed in accordance with applicable township regulations, designed to protect the environment. The township has passed a stormwater control and floodplain ordinance and soil erosion and sediment control ordinance. Applicants should be prepared to document conformance with the provisions of these ordinances to the satisfaction of the township engineer.

2. It is the responsibility of any person causing any activity on or across a stream, watercourse or swale, or upon the floodway or right-of-way thereof, to maintain as nearly as possible in its present state the stream, watercourse, swale, floodway or right-of-way during the duration of such activity and to return it to its original or equal condition after such activity is completed.

3. No person shall block, divert, disturb, impede the flow of, alter or construct any structure or deposit any material or thing, or commit any act which will affect normal or flood flow in any communal stream or watercourse without having obtained prior approval from the township of Raritan and the New Jersey Department of Environmental Protection, Division of Water Resources.

4. Stream setbacks shall be maintained as per Section 16.64.110. (Ord. 06-11 § 4)

5. No person, firm or corporation shall strip, excavate or otherwise remove topsoil for sale or other use other than on the premises from which taken, except in connection with the construction or alteration of a building on such premises, and excavating or grading incidental thereto or except as hereinafter specified.

6. Site Conditions.

a. During Construction. During construction, the site shall be maintained and left each day in a safe and sanitary manner, and any condition which could lead to personal injury or property damage shall be immediately corrected by the developer upon an order by the building inspector or other authorized personnel. The developer shall make provisions for disposal of oil and grease from equipment. The site area should be regularly sprayed eliminate dirt from construction activity. Dust should be controlled with calcium chloride.

b. Disposal of Dead Trees, Litter and Building Materials. Developed areas shall be cleared of all stumps, litter, rubbish, brush, weeds, dead and dying trees, roots and debris, and excess or scrap building materials shall be removed or destroyed to the satisfaction of the construction official, prior to issuance of an occupancy permit.

c. Changes in Elevation. No change shall be made in the elevation or contour of any lot or

site by the removal of earth to another lot or site by the removal of earth to another lot or site other than shown on an approved site plan. Minimal changes in elevations or contours necessitated by field conditions shall be shown on the final plat and indicated as a change from the preliminary, or if final approval has been granted, said changes shall be shown on the as-built plans.

d. Temporary Improvements. Prior to or during construction, the township engineer may require the installation or construction of improvements to prevent or correct temporary conditions on the site which could cause personal injury, damage or property or constitute a health hazard. These conditions may result from erosion and landslide, flooding, heavy construction traffic, creation of steep grades and pollution. Improvements may include berms, mulching, sediment traps, detention and retention basins, grading, plantings, retaining walls, culverts, pipes, guardrails, temporary roads and others appropriate to the specific condition. All temporary improvements shall remain in place and in operation until otherwise directed by the township engineer.

L. Street Furniture.

1. Street furniture is the manmade element of an urban landscape. These are the functional elements of the environment and include phone booths, benches, planting boxes, mail and meter boxes, water towers, lighting standards, directional signs, bollards (posts), fire hydrants, power lines, fences and walls, water fountains and pools, drinking fountains, trash receptacles, bike racks, sculptures, paving and steps, and bus shelters. The street furniture plan should include location, size, lighting and design relationship.

2. Certain street furniture is functional in nature and should be located where the demand is. Bike racks should be located in front or to the rear of multifamily areas, and with easy access to bike trails. They also should be placed near service areas, by recreational activities and outside all major public and commercial or office buildings as appropriate.

3. Bus shelters may be required at major intersections. The stops themselves should be on the far side of the intersection so as not to block other vehicles or limit passage through the intersection. It is desirable to provide indentations to accommodate the buses off the main travel routes. The shelter should be designed to keep rain off those waiting for the buses and to break the wind. They should not be entirely enclosed to allow the interiors to be readily observed.

4. Trash receptacles should be located near recreational activities, at street corners, at entrances and exits to buildings and where people naturally congregate such as near bus stops and under street lights. Open-weave receptacles should be avoided because wind blows small bits of paper and debris from them.

5. Dog waste receptacles shall be located near trails, sidewalks and other walkways as determined by the Planning Board. (Ord. 06-11§ 5)

M. Engineering Design Considerations.

1. Pavement in parking areas and driveways in normally four-inch bituminous stabilized base with two-inch FABC surface course and subbase. Applicants are encouraged to use decorative and porous paved surfaces other than asphalt if they meet with the approval of the township engineer and the planning board and are appropriate to the location and use.

2. Engineering and construction details for all improvements shall be made part of the site plan submission.

3. Place storm drains on the high side of the roadway to intercept groundwater before pavement section. Cross-crossing the road to avoid manholes shall not be permitted.

4. Storm drain outlets are to be twenty-five (25) feet or more from a stream. Discharge at five feet per second or less into a riprap channel. The channel is to meet the main stream at forty-five (45) degrees or less.

5. All inlets are to have an eight-inch head or
two inches greater than curb face. Castings are to be stream-flow type for efficiency.

6. Minimum lot grades are to be two percent; maximum side slopes of three to one. Grading

should blend with the surroundings. Abrupt grade changes should not be apparent.

7. Provide overland relief for stormwater in roads with sump condition for storms in excess of design frequency.

8. The first twenty-five (25) feet of driveways are to drain toward the street. As an alternate to asphalt pavement, driveway aprons may be constructed of six-inch thick concrete.

9. Velocities in swales are not to exceed five feet per second, unless grouted riprap is proposed. Riprap must have a filter blanket for stability.

10. All vertical curbs are to be a minimum length allowed by the American Association of State Highway Officials to lessen flat spots in gutters.

11. Minimum storm drain size shall be fifteen (15) inch R.C.P. (reinforced concrete pipe). C.M.P. (corrugated metal pipe) shall be fully coated with paved invert and shall be used outside roadway rights-of-way.

12. All drainage inlets are to have a concrete invert, and all pipes are to be cut flush with walls. Inlets to be self-scouring under low flow conditions.

13. All nomenclature should agree with New Jersey Department of Transportation specification designations.

14. Profile of minor roads should meet gutter elevation of arterial roads to avoid bumps or thank-you-ma'am at intersection.

15. Underdrains should be expected and noted on plans to be "as directed by the township engineer." This would apply to pavement as well as on lot drainage.

16. All roads are to be constructed of four-inch Type 5, Class A road stone subbase material, four inches of one and one-half inch Quarry Blend as approved by the township engineer.

17. At intersections and points of ingress and egress to sites, the approach grades should be minimized to under two percent to allow a relatively level stopping area for one hundred (100) feet, plus or minus. Handicapped ramps shall be installed at intersections.

18. Where road widths exceed thirty (30) feet, an eight-inch curb face will be required. Where roads are thirty (30) feet in width, a six-inch curb face will be required. On twenty-four (24) foot or narrower width roads, a six-inch sloping curb will be required (six-inch vertical height).

19. Right-of-way lines at intersections must have a radius similar to curb return. Angle points in right-of-way will not be permitted.

20. All intersections are to be provided with sight triangles, and such areas are to be cleared and graded prior to project completion. Sight easements in other locations will be required as conditions warrant. Sight triangles are normally right triangles of thirty (30) by one hundred (100) feet.

21. Double inlets are to be provided with a double wall on exterior walls and castings supported by 6WF20 beam in the center. All other roadway inlets shall be of double wall construction for roadway walls.

22. Stakeout of horizontal and vertical curves are to be at twenty-five (25) foot intervals. A minimum of two stakes shall be used for inlet stakeout.

23. Detention and retention basins shall be of a free-form configuration with three to one (3:1) slopes maximum. A lot flow channel should be provided with two percent bottom grading to the channel. Recreational use of such basins shall be considered. Geometric or other manmade appearance of such facilities is discouraged. Location of detention basins should not be adjacent to roadways unless sufficiently landscaped and graded so as to be aesthetically pleasing.

24. Islands in cul-de-sacs should contain low-maintenance landscaping, such as shade trees, pines and other tree form evergreens.

25. Minor residential streets shall be limited to a minimum centerline radius of one hundred (100) feet. As designated by the township engineer, tight horizontal curves shall be expanded to thirty (30) feet on twenty-four (24) foot wide roads, and to forty (40) feet on thirty (30) foot wide roads to accommodate restricted turning movements, occasional parking and supportive emergency services. All other roads of collector or arterial type shall be designated in accordance

to American Association of State Highway Officials standards to accommodate the design volumes and speeds.

26. In using the rational formula, a "C" value of twenty hundredths (0.20) is the minimum to represent woodland and the maximum for undeveloped land shall be thirty hundredths (0.30).

27. Sidewalks and underground utilities are to be located in the lower side of the roadway in the area behind the curb.

28. Gas, water, storm and sanitary sewers shall be constructed within the paved portion of the roadway (curb to curb).

29. Where soil conditions permit, sump-type inlets are required to recharge the aquifer.

30. Prior to paving of roadways, all curbs, concrete driveway aprons and grading of slopes in the right-of-way shall be completed.

31. Sidewalks crossing driveways shall be six inches thick and shall not drop, but shall continue as a straight grade parallel to the centerline profile. Driveway aprons shall meet the sidewalk edge, thus providing a positive slope toward the gutter.

32. Curbing at driveways shall also be eighteen (18) inches in overall depth. The depressed curb will necessitate increasing the depth of the bottom of the curbing at these locations.

33. In addition to the above requirements, the design of the drainage system shall follow those standards found in N.J.A.C. 7:8-5 et seq. and N.J.A.C. 7:8-6 et seq., and in the New Jersey Department of Environmental Protection New Jersey Stormwater Best Management Practices Manual. The best management practices selected shall be based upon the specific conditions of the property in question after consultation with the Township Engineer. (Ord. #04-16 § 33)

N. Other Considerations.

1. Energy Conservation.

a. Buildings should be located to best take advantage of the site; winds, sun, cold air drainage, humidity, vegetation, landforms, etc.

b. Plantings and structures should be located to block undesirable winds and sun, and increase wind and ventilation where desirable.

c. Water bodies should be considered for reflecting light and cooling.

d. Snow drifting should be considered.

e. Applicants should consult a publication entitled Landscape Planning and Energy Conservation before designing site plans.

2. Tree Protection During Construction.

a. The tree protection area shall be located at least 15 feet from the trunk of the tree(s) to be retained. Where there is a group of trees or woodlands, the tree protection area shall be the aggregate of the protection areas for the individual trees.

b. Tree protection areas shall be shown on the landscape plan and the grading plan.

c. Prior to any site work, clearing, tree removal, grading or construction the tree protection area shall be delineated.

d. Where groups of trees are to be preserved the area shall be delineated with tree protection fencing as follows:

i. All woodland and forest areas proposed for preservation must be fenced with blaze orange fencing with a warning sign placed every 100 linear feet along the fenced area.

ii. No clearing, grading, or land disturbance may begin until the tree fencing has been installed and inspected by the Township Engineer or their designee.

iii. No construction, stockpiling, storage, dumping, or heavy machinery may take place inside the fenced area.

e. Where individual trees are to be preserved they shall be marked and tree protection fencing erected a minimum of 15 feet from the trunk of the tree.

f. Any tree protection fencing shall be maintained and remain in place until all construction on site is completed.

g. Trees being removed shall not be felled, pushed or pulled into a tree protection area or into trees that are to be retained.

h. No vehicles, construction equipment, construction materials, or waste materials shall be placed within the protection areas.

i. No toxic materials shall be placed within 100 feet of the tree protection area.

j. When tree stumps are located within ten (10) feet of the tree protection area they shall be removed with a stump grinder.

k. Trees shall not be used for roping, cables, signs or fencing. Nails and spikes shall not be driven into trees.

(Ord. 06-11 § 2)

3. Performance Standards of the Zoning Ordinance. The provisions of Chapter 16.74, shall be observed. As a condition of any of approval and the continuance of any use, occupancy of any structure and operation of any process or equipment, the applicant shall supply written evidence, satisfactory to the planning board or its designated representative, that the proposed use, structure, process or equipment will conform fully with all of the applicable performance standards.

4. Barrier-Free Design. The provisions of the New Jersey Administrative Code, Title 17, Chapter 19A, pertaining to barrier-free design, shall be observed in the design of all improvements as appropriate.

5. Maintenance. The provisions of Chapter 16.74 and other appropriate sections of this code, and all conditions of site plan approval, including maintaining all site improvements as approved or intended, shall be constantly observed as a condition of continued occupancy of and use of premises or structures.

6. Construction Access. In order to assure public health, welfare and safety through residential areas and to preserve the structural integrity of pavements designed for residential loadings, prior to preliminary approval, the developer shall stipulate means for construction access to the proposed development for all road and building materials, equipment, supplies and manpower. Construction access may be categorized as direct external access to the site and internal access through the site or adjoining sites.

a. Direct External Construction Access. In most cases, small nonsectionalized developments will not require a separate construction access, provided that there is direct construction access to the site from a state highway. Where construction access to a site is only available via roads of a lesser category than a municipal arterial road, or where construction access must be through earlier improved sections of the same or other developments, the applicant shall be responsible for off-site and/or off-tract improvements to said access route in the form of sidewalks, structural repairs and additional macadam surface coursing as necessary to permit the access route to withstand or be repaired from the abnormal loading of the road or roads, and to assure pedestrian safety along the route. In lieu of physical improvements to this type of construction access route, the planning board may require, as an alternate, the posting of a performance bond to cover the cost of damage to less than arterial construction access routes.

b. Internal Construction Access. Construction access for staged projects shall, when possible, be via a separate construction route which avoids improved sections of the development and adjoining developed properties. The construction access may take a different route as succeeding sections of the development are constructed. Such an internal construction access route shall be maintained by the developer for the duration of the project to such a standard as to permit access for materials and equipment and shall normally consist of five inches of two and one-half inch quarry blend topped with two inches of three-fourth-inch road stone. All sectioned developments

shall have the sectioning plan designed with construction access as a primary determinant in the sequence of development of the site.

O. Related Standards.

1. Applicants shall observe all recommendations of the township engineer and standards set forth in Title 12 of this code in the design, construction and installation of improvements. Percolation test requirements shall be governed by Chapter 17.12 of this code regarding preliminary plats and the township board of health requirements set forth in ordinances adopted by that board.

2. The requirements of the township zoning ordinance, including all applicable standards for parking, performance standards, location of structures, setback, bulk, height and coverage, shall apply to site plan review.

3. The design criteria established in the land subdivision ordinance shall apply, where appropriate, to site plans.

4. All applicable requirements and standards of other township ordinances shall apply to site plans as appropriate.

5. Applicants are encouraged to obtain copies of the following publications which contain design standards which will supplement the design standards contained within this title:

a. New Jersey Department of Community Affairs, Division of Local Government Services, Site Plan Manual, Department of Community Affairs, Trenton, 1976;

b. New Jersey Department of Community Affairs, Division of Local Government Services, A Guide for Residential Design Review, Department of Community Affairs, Trenton, 1976.

6. In the event that the township has not adopted standards and specifications for a specific type of improvement, then generally adopted engineering standards set forth in engineering and construction manuals as may be approved and modified by the township engineer for a specific situation shall be used. Gas, electric, telephone and similar utilities shall be installed in accordance with applicable company, state and federal requirements.

P. Easements. The following easements, as appropriate, shall be granted to the township as a condition of final site plan approval. The Township Attorney shall be responsible for the preparation of any easements to be dedicated to the Township. The applicant will be responsible for providing the Township Attorney with the following:

i. One copy of the approved subdivision or site plan.

ii. Easement descriptions approved by the Township Engineer.

iii. One copy of the resolution of approval.

iv. One copy of a deed for the property showing the current property owner.

1. Utility Easements. As determined by the planning board, easements may be required for utility installation, existing or future. Such easements shall be at least twenty (20) feet wide and located after consultation with the utility companies.

2. Drainage and Conservation Easement.

a. Wetlands and Wetland Buffer/Transition areas. Where property to be developed contains wetlands and their associated transition areas as confirmed by the State of New Jersey under a Letter of Interpretation, said wetlands and transition area shall be placed into conservation easements. Where a property has wetlands, but the areas have not been confirmed by the NJDEP under a Letter of Interpretation, the Wetlands Transition area shall be 150 Feet and shall be placed into a conservation easement.

b. Water-Courses. Where a property contains a watercourse, said watercourse and any Riparian Buffer as required under Section 16.64.110.A. of this Chapter shall be placed into Drainage and Conservation Easements.

c. Other Significant Physical Features. Where a property to be developed contains significant features including but not limited to wooded areas, steep slopes, aquifer recharge areas, wildlife habitat, rock out-croppings, vistas, soil conditions, or other significant horticultural, environmental, or natural features determined by the Environmental Commission

and/or Planning Board to be desirous to preserve shall be placed in a drainage and/or conservation easements.

3. Historic Structures. Any property to be developed containing a structure determined to be eligible to be listed on the National Register for Historic Places as listed within the Township Historical Survey, Hunterdon County Historical Survey, The New Jersey Register of Historical Places or the National Register of Historic Places or as may be further recommended by the Raritan Township Local Historians Committee, an easement preventing the demolition or substantial remodeling of the structure shall be given to the Township.

4. Sight Easement.

a. At street intersections, horizontal and vertical curves, and where access drives intersect streets, sight easements shall be required, as appropriate, by the planning board. The sight easement shall be kept clear of vegetation, structures, fences or topographic features or objects which block vision at a height of two feet to ten feet above the elevation of the surface of the edge of the adjoining road. It is the responsibility of the property owner to maintain the area within the easement as stated above.

b. Sight easements shall be generally triangular in shape with the sides adjoining streets or drives being one hundred (100) feet and thirty (30) feet, respectively, unless road conditions warrant a larger or greater size, in the manner determined by the planning board. When necessary, the planning board may consult with the municipal engineer prior to requiring and/or fixing the area of a sight easement.

5. Right-of-Way Easement. Developments that front on existing streets which do not conform to right-of-way widths as set forth in the master plan or on the official map, shall dedicate along the frontage of the tract, as appropriate, the additional right-of-way from the center line necessary to conform to the desired width. Where a development adjoins along one side of an existing road which does not meet standards, only one-half of the required extra right-of-way width shall be dedicated. A minimum of a twenty-five (25) foot right-of-way return shall be provided at all street intersections. Within the easement, the municipality may authorize or build, widen, improve and repair the township road, including such bridges, culverts, slope and drainage facilities, guardrails, sidewalks and other protections and such other devices and facilities as it may see fit; and the township may also permit the installation, repair, maintenance and removal of such public utility wires, pipes and renovating of such entrances as it may see fit and including the use by the township of all earth, soil aggregate, vegetation and trees as may be required for road construction.

6. Cemeteries and Burial Places. Any property to be developed containing an unused or historical cemetery or burial place shall provide an easement to the Township preventing the removal or alteration of the cemetery or burial place.

(Ord. 06-11 § P.1, 2, 3 & 6)

Q. Fire Protection Systems. While recognizing that it may not be possible to assure complete fire protection in every given case, in order to provide the township fire company with some minimum fire fighting capability, all preliminary and preliminary/final site plans shall provide for a source of water for fire fighting purposes in systems approved by the township fire marshal and fire chief and in accordance with the following criteria:

1. Where an existing public water supply is available and has been approved by the township fire company for minimum fire fighting purposes, fire hydrants shall be installed at appropriate locations as recommended by the township fire marshal and fire chief. Hydrants shall be spaced to provide the necessary fire flow as indicated in Attachment "A" entitled Fire Flow Requirements for the Township of Raritan attached to the ordinance codified in this subsection and file for public inspection.

The allowance for each fire hydrant at twenty (20) psi residual pressure used to deliver the fire flows listed in the above table is as follows:

Allow up to one thousand (1,000) gpm for each hydrant within three hundred (300) feet of the

building;

Allow up to six hundred seventy (670) gpm for each hydrant within three hundred one (301) to six hundred (600) of the building;

Allow up to two hundred fifty (250) gpm for each hydrant within six hundred one (601) to one thousand (1,000) of the building;

Allow zero gpm for each hydrant greater than one thousand (1,000) feet from the building.

Hydrants shall be installed in accordance with the standards of ANSI/AWWA, Dry Barrel Fire Hydrants, latest edition; painted as directed by the township fire marshal and fire chief; and tested in accordance with NFPA 291, Recommended Practice for Fire Flow Testing and Marketing of Hydrants, Flow Testing and Marketing of Hydrants, latest edition, to ensure compliance with fire flow requirements.

Acceptance test data shall be provided to the township fire marshal and fire chief for review and approval. In areas where public water supply is available, but such water supply does not have the capacity to satisfy the foregoing minimum standards, such public water supply system shall be supplemented with additional measures to satisfy the minimum fire protection requirements of the township. Such additional measures may involve any one or a combination of the following: installation of booster pumps with appurtenances, installation of above ground or underground water storage tanks with appurtenances, creation of drafting points with appurtenances, or such other means of increasing fire fighting capability as may be recommended and approved by the township fire marshal and fire chief.

2. Where public water supply is not available, surface, underground or above groundwater storage facilities shall be installed to provide a source of water for fire fighting. For site plans, such water storage facilities shall be located and installed not farther than five hundred (500) feet from any principal structure.

Storage capacities for nonresidential developments shall be approved by the township fire marshal and fire chief and shall be based on the degree of hazard of the proposed structures to be protected but shall in no event be less than fifteen thousand (15,000) usable gallons.

The locations of all fire protection systems and appurtenances shall be approved by township fire marshal and fire chef. Unless an equivalent alternate fire protection system is authorized by the planning board and the township fire company, water storage facilities shall be provided and where underground water storage tanks are proposed shall be constructed and installed in accordance with design standards and specifications on file in the township engineering department. (Ord. 98-1 § 5; Ord. 91-22 § 1; prior code No structure shall be built within fifty (50) feet and no disburbanc of soil or vegetation shall occur within twenty-five (25) feet of the top of the bank of any State Open Waters (as defined or determined by the N.J. Department of Environmental Protection). Should the water course meet the definition of both state open waters and an existing stream carrying water on an average of six (6) months of a year, and/or shown on a United States Department of the Interior Geological Survey quadrangle, then the large of the riparian buffer requirements found within this section shall be met. No structure shall be built within fifty (50) feet and no disturbance of soil or vegetation shall occur within twenty-five (25) feet of the top of the bank of any State Open Waters (as defined or determined by the N.J. Department of Environmental Protection). Should the water course meet the definition of both state open waters and an existing stream carrying water on an average of six (6) months of a year, and/or shown on a United States Department of the Interior Geological Survey quadrangle, then the large of the riparian buffer requirements found within this section shall be met. No structure shall be built within fifty (50) feet and no disturbance of soil or vegetation shall occur within twenty-five (25) feet of the top of the bank of any State Open Waters (as defined or determined by the N.J. Department of Environmental Protection). Should the water course meet the definition of both state open waters and an existing stream carrying water on an average of six (6) months of a year, and/or shown on a United States Department of the Interior Geological Survey quadrangle, then the large of the riparian buffer requirements found within this section shall be

met.

R. State Open Waters.

No structure shall be built within fifty (50) feet and no disburbanc of soil or vegetation shall occur within twenty-five (25) feet of the top of the bank of any State Open Waters (as defined or determined by the N.J. Department of Environmental Protection). Should the water course meet the definition of both state open waters and an existing stream carrying water on an average of six (6) months of a year, and/or shown on a United States Department of the Interior Geological Survey quadrangle, then the large of the riparian buffer requirements found within section 16.64.110 shall be met. (Ord. 06-21 & R)

16.20.050 Site plan review and inspection fee schedule.

A. Waived site plan approvals: no fee.

B. Minor site plan: five hundred dollars ($500.00).

C. Sketch site plan review, general development: two hundred fifty dollars ($250.00).

D. Sketch site plan review, residential site plans: fifteen dollars ($15.00) per dwelling unit.

E. Sketch site plan review, office and industrial parks, shopping centers, large-scale commercial, industrial or office developments: twenty dollars ($20.00) per store or tenant, or four hundred dollars ($400.00), whichever is greater.

F. Preliminary site plan review: fifteen hundred dollars ($1,500.00) plus ten cents ($0.10) per square foot of new or altered GFA; $0.05 for GFA in excess of 100,000 square feet, plus $0.02 per square foot of new or impervious surface.

G. Final site plan review: five hundred dollars ($500.00).

H. Review of ground sign: when not submitted as part of a site plan application or when submitted after site plan review has been granted, a fee of twenty-five dollars ($25.00) shall be charged for the review of ground signs.

I. Conditional uses in conjunction with site plan application: two hundred dollars ($200.00) plus site plan review application fee. (Ord. 06-14 § I)

J. Filing of easement: fifteen dollars ($15.00) per easement document (sight, right-of-way, conservation, drainage, etc.). The easements shall be filed by the municipality and the fee shall be paid prior to the signing of deeds and/or plats for an application.

K. Filing of easement: Twenty-five dollars ($25.00) per easement document (sight, right-of-way, conservation, drainage, etc.). The easements shall be paid prior to the signing of deeds and/or plats for a development application. (Ord. 06-14 § B, C, F & G; Ord. 90-20 § 6; Ord. 86-9 § 2; prior code § 15-8.5)

16.20.060 Construction procedures.

A. Prior to commencing construction, a preconstruction meeting shall be held with the township engineer's office and other appropriate officials to review project details in order to avoid any misunderstandings. At this meeting, the township engineer's office shall present the construction estimate of quantities and costs, which shall be the basis for bonds, sureties and inspection fees in accordance with the township ordinances. The construction estimate shall be determined after submission of an itemized estimate of quantities and materials submitted by the applicant's engineer. All bonds, sureties, inspection fees, etc., shall be posted prior to commencing construction.

B. Unless site improvements are in major disagreement with the approved site plan or a matter of imminent hazard, the project will not be shut down. Any deviation from the approved development plan without written approval of the township engineer shall be at the owner/contractor's risk subject to the review of the planning board prior to final approval/acceptance.

C. Field revisions may be permitted with the approval of the township engineer, provided

that the developer's engineer shall make such revisions to the approved site plan as may be required, forwarding copies of the revisions to the township engineer.

D. Major engineering deviations shall be reviewed prior to constructing after receipt of the revised plans. Work may not proceed until the township engineer's approval has been secured.

E. Any major map or deviation from the approved site plan shall require planning board approval prior to construction of the affected improvements. Minor items may be approved by the township engineer or municipal planner as appropriate prior to construction.

F. Inspectors from the township engineer's office shall be charged with general road, storm and sanitary sewer construction observation. The inspectors are supervised by professional engineers who bear the responsibility of the service.

G. Supplemental inspection services shall be made for landscaping, grading, sidewalks, bikeways, etc.

H. The developer's engineer is to maintain a record of all changes, change orders, revisions, etc., and to incorporate same in the as-built construction plans prior to final acceptance or approval of improvements by the township. The developer shall present the township with a duplicate set of tracings certified to be as-built conditions.

I. Prior to the start of the construction or installation of such improvements, the developer shall advise the township engineer forty-eight (48) hours prior to the commencement of such work. No underground installation shall be covered until inspected and approved by the appropriate official. If, during installation of any of the required improvements, the developer fails to meet specification requirements or to correct unacceptable work the developer shall be notified in writing by certified mail by the township engineer that the developer has failed to comply with the specifications or to correct unacceptable work properly, and the notice shall set forth in detail what has not been properly installed. Should any underground structure be covered prior to inspection, it shall be uncovered as directed by the township engineer at the expense of the developer for reinspection. If, within ten days after mailing of such notice, the developer has failed to perform in accordance with the notice, the township engineer shall then cause the notice of failure to comply to be served upon the developer, and a copy shall be sent to the township committee and planning board. All work shall cease on the site immediately upon notification.

J. It should be noted that work undertaken without inspection shall not be approved and may require removal and/or reconstruction.

K. All construction stakes and grades shall be set by a licensed land surveyor in the employ of the developer or contractor. One copy of all cut sheets signed by an L.S. or P.E. shall be filed with the township engineer forty-eight (48) hours prior to the commencement of any construction.

L. Prior to the start of the construction or installation of public sanitary sewerage improvements, the developer shall advise the Raritan Township municipal utilities authority forty-eight (48) hours prior to the commencement of such work. No underground installation shall be covered until inspected and approved by the appropriate official. If, during installation of the required improvements, the developer fails to meet specification requirements or to correct unacceptable work, the developer shall be notified in writing by certified mail by the Raritan Township municipal utilities authority that the developer has failed to comply with the specifications or to correct unacceptable work properly, and the notice shall set forth in detail what has not been properly installed. Should any underground structure be covered prior to inspection, it shall be uncovered as directed by the Raritan Township municipal utilities authority at the expense of the developer for reinspection. If, within ten days after mailing of such notice, the developer has failed to perform in accordance with the notice, the Raritan Township municipal utilities authority shall then cause the notice of failure to comply to be served upon the developer; and a copy shall be sent to the township engineer, township committee, and planning board. All work shall cease on the site immediately upon notification. (Prior code § 15-8.6)

16.20.070 Temporary certificates of occupancy.

A. The planning board may, after granting final approval, authorize the construction official to issue a temporary certificate of occupancy for the subject structure and site development based upon the recommendation of the township engineer, construction official, planner and compliance with the Uniform Construction Code.

B. The temporary certificate of occupancy shall be granted for a specified period of time not exceeding one year if winter weather or other conditions beyond the control of the applicant prevent compliance with the conditions of final site plan approval before occupancy is needed.

C. The site and structure shall be completed to a point designated by the planning board to protect the health, safety and general welfare of the public and the tenants before the temporary certificate of occupancy is issued.

D. All incomplete site improvements which were required by the final site plan approval which may not have been previously guaranteed shall have a performance guarantee posted in accordance with Section 16.16.010.

E. A temporary certificate of occupancy shall not be issued by the construction official until the land use enforcement officer has issued a certificate of development compliance setting forth the planning board's conditions associated with the granting of the temporary certificate of occupancy. (Prior code § 15-8.7)

16.20.080 Certificates of occupancy.

A permanent certificate of occupancy shall be issued by the construction official only after:

A. All site improvements have been completed in accordance with the approved final plans and any approved amendments thereto.

B. The applicant's or developer's engineer has certified in writing that all improvements have been constructed and installed and are operating in accordance with the approved final plans and any approved amendments thereto.

C. Written confirmation from the township engineer that all improvements have been constructed and installed and are operating in accordance with the approved final plans and any approved amendments thereto.

D. All inspection fees or other outstanding fees have been paid.

E. All conditions required by the planning board prior to issuance of a certificate of occupancy have been met.

F. The land use enforcement officer shall issue a certificate development compliance setting forth that subsections A through E of this section have been satisfied. (Prior code § 15-8.8)

16.20.090 Site plan conformance.

A. If at any time any person fails to adhere to any of the conditions of site plan approval subsequent to receiving a certificate of occupancy, this shall be construed as being in violation of this title and shall reasonably be grounds for the revocation of the certificate of occupancy until compliance is achieved. Revocation shall be by written notice sent by certified mail by the land use enforcement officer. However, the land use enforcement officer may make the same effective at a future date, and if prior to said date, such compliance is achieved, the notice may be withdrawn.

B. The approved site plan shall be binding upon the applicant. Any changes from the approved final plat shall require resubmission and reapproval by the planning board, except as set forth in Section 16.20.080. (Prior code § 15-8.9)

16.20.100 Enforcement.

A. The land use enforcement officer is given the duty, power and authority to enforce this article.

B. Zoning Permit. No building permit shall be issued by the construction official for any development which has been the subject of site plan review until a zoning permit has been issued by the zoning permit officer.

C. Certificate of Development Compliance.

1. Purpose. To ensure compliance with the provisions of this title, no certificate of occupancy shall be issued for any development requiring site plan review until the proper certificate of development compliance or certificate of waiver of site plan review has been issued by the township planner.

2. Issuance. It shall be the duty of the township planner to issue:

a. A certificate of waiver of site plan review when site plan review has been waived by the planning board; or

b. A certificate of development compliance when he or she is satisfied that the improvements and conditions of occupancy set forth by the planning board as a result of their site plan review of a development have been satisfied pursuant to the procedure set forth in Section 16.20.080.

D. Violations. In case any building or structure is erected, constructed, altered, repaired, converted or maintained; or any building, structure or land is used in violation of this article; or other regulation made under authority conferred hereby, the township committee, the land use enforcement officer or an interested party, in addition to other remedies, may institute any appropriate action or proceeding to prevent such unlawful erection, construction, maintenance or use, to restrain, correct or abate such violation to prevent the occupancy of the building, structure or land; or to prevent any illegal act, conduct, business or use in or about such premises. (Prior code § 15-8.10)

16.20.110 Wetland delineation, traffic analysis and aquifer test and analysis.

For regulations, requirements and procedures regarding wetlands delineation, analysis, traffic analysis, and aquifer test and analysis for major subdivisions and nonresidential use site plans, see Sections 16.18.120, 16.18.130, 16.18.140 and 16.18.150, respectively. (Ord. 99-6 § 5 (part); Ord. 90-6 § 6: prior code § 15-8.11)

Chapter 16.21

WELL TESTING

Sections:

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16.21.010 Administration

A. Administration

1. Procedures and Sequence:

Submission of copies of the final well testing report are required to be submitted under sections 16.18.070 (subdivisions) and 16.20.020 (site plans). Steps in the preparation of the well testing are as follows:

a) Submit 2 copies of the "Preliminary Hydrogeologic Report/Aquifer Test Plan" for review by the municipality's appointed hydrogeologist, along with $750 in escrow funds, a completed W-9 form, and a completed Aquifer Test Plan Application application form.

b) After approval of the test plan, conduct notification of proximate well/spring owners and prepare their water sources as observation wells for the aquifer test.

c) Perform three phases of the aquifer test, specifically:

i. Background Monitoring
ii. Pumping Test
iii. Recovery Monitoring

d) Sample representative wells for selected drinking water qualify parameters.

e) Prepare and submit "draft Hydrogeologic Report" for review by the municipality's appointed hydrogeologist.

f) Respond to comments from reviewers and finalize report. (Ord. 05-4)

16.21.020 Definitions

Act, State: Refers to the Private Well Testing Act, P.L. 2001, c. 40; N.J.S.A. 58:12A-26 et seq., which applies to buyers, sellers and leaser of certain real property as follows:

(a) All contracts of sale for any real property in which the potable water supply is a private well located on the property, or for any other real property in which the potable water supply is a well that has less than 15 service connections or that does not regularly serve an average of at least 25 individuals daily at least 60 days out of the year, shall include a provision requiring the testing of that water supply for certain parameters as set forth in the Act.

(b) The leaser of any real property in which the potable water supply is a private well for which testing of the water is not required pursuant to any other State law. The leaser shall test that water supply for certain parameters as set forth in the Act. Testing of the

water is required at least once every five years. In addition, within 30 days after receipt of the test results, a written copy of the results must be provided to each rental unit and each new lessee.

Aquifer: A formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield economic quantities of water to wells and springs.

Aquifer, Confined: An aquifer that is overlain by a confining bed. The confining bed has a significantly lower hydraulic conductivity than the aquifer. Artesian aquifer is a synonym.

Aquifer, Semi-confined: An aquifer overlain by a low-permeability layer that permits water to slowly migrate through to the aquifer. Also termed leaky artesian or leaky confined aquifer.

Aquifer, Unconfined: An aquifer in which there are no confining beds between the zone of saturation and the ground surface. Water-table aquifer is a synonym.

Aquifer Test: A three-part test conducted to obtain background, pumping, and recovery data/information from a pumping well and observation wells in order to determine aquifer hydraulic characteristics and assess potential water-level drawdown (well interference) to nearby wells.

Applicant: A developer or property owner submitting an application for development or permit to install or use a well.

Application for Development: The application form and all accompanying documents required by ordinance for approval of a subdivision plat, site plan, planned development, conditional use, zoning variance, or direction of the issuance of a permit pursuant to N.J.S.A. 40:55D-34 or N.J.S.A. 40:55D-36.

Certified Laboratory: Any laboratory, facility, consulting firm, government or private agency, business entity or other person that the NJDEP has authorized pursuant to the Regulations Governing The Certification of Laboratories and Environmental Measurements, N.J.A.C. 7:18, to perform analysis in accordance with the procedures of a given analytical method using a particular technique as set forth in a certain methods reference document, and to report the results from the analysis of environmental samples in compliance with a NJDEP regulatory program.

Cone of Depression: The area around a pumping well in which the head (water level) in the aquifer has been lowered by pumping action.

Confining Bed: A body of low hydraulic conductivity material that is stratigraphically adjacent to one or more aquifers.

Contaminant: Any physical, chemical, biological, or radiological substance or matter that has an adverse affect on air, water or soil quality.

Developer: The legal or beneficial owner or owners of a lot or of any land proposed to be included in a proposed development including the holder of an option or contract to purchase, or other person having an enforceable proprietary interest in such land.

Drawdown: The lowering of the water table of an unconfined aquifer or the potentiometric surface of a semi-confined or confined aquifer caused by pumping of groundwater from a well or

wells. Drawdown is determined by subtracting the depth to water during pumping from the static water level determined prior to the start of pumping.

Drinking Water Quality Standard: A standard that applies to a constituent or contaminant that is required to be tested pursuant to the New Jersey Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq. including a maximum contaminant level, recommended limits, or in the case of lead, an action level.

Exceedance: The concentration of a constituent or contaminant that is greater than an MCL, action level, standard or recommended upper limit for that given constituent or contaminant.

Fracture Trace: The surface representation of a fracture zone as determined from an analysis of aerial photographs in stereo pair.

Groundwater: Water in the ground that is in the zone of saturation from which wells, springs and stream baseflow (dry weather streamflow) are supplied.

Head, static: Static head is the height above a standard datum of the surface of a column of water that can be supported by the static pressure at a given point. In a groundwater system, it is composed of elevation head and pressure head.

Hydraulic Conductivity: The capacity of a geologic formation to transmit water. It is expressed as the volume of water at the prevailing density and viscosity that will move in unit time under a unit hydraulic gradient through a unit area measured at right angle to the direction of flow.

Hydraulic Gradient: The change in static head per unit of distance measured in a given direction.

Hydrogeology: The study of groundwater with particular emphasis given to its chemistry, mode of migration, and relation to the geologic environment.

Infiltration: The flow of water downward from the land surface into and through the upper soil layers.

Irrigation System: Equipment including but not limited to pumps, piping, and sprinkler heads used to distribute water to grasses, landscape materials, crops, and other vegetation.

Local Health Authority: A county, regional or municipal health agency that serves as the lead point of contact with the Department on environmental issues. This agency would ordinarily be the local health agency certified pursuant to the County Environmental Health Act (CEHA), N.J.S.A. 26:3A2-21 et seq. In those counties that do not have a certified CEHA health agency, the local health authority is the agency that serves as the lead for administering the Local Information Networks and Communication System (LINCS) as designated by the Department of Health and Senior Services.

Maximum Contaminant Level (MCL): The maximum permissible concentration of a constituent in drinking water. Maximum contaminant levels shall apply to public and non-public water systems, in accordance with the New Jersey Safe Drinking Water Act, N.J.S.A.58:12A-1 et seq. and implementing rules at N.J.A.C. 7:10.

NJDEP: The New Jersey Department of Environmental Protection.

Observation Well: A non-pumping well used to observe the elevation of the water table or the potentiometric surface. An observation well is generally constructed similar to a pumping well. Observation wells are also referred to as monitoring wells. Observation wells are required to measure water-level drawdown during the aquifer pumping test and also for the calculation of aquifer hydraulic characteristics. The specific requirements for observation wells for both residential and commercial developments are provided in Appendix B – Observation Well Requirements – Well Testing of this Ordinance.

Parameter: A general term that includes other terms such as contaminant, constituent, substance, metal, organic/inorganic chemical, and characteristics that are used to designate an analyte, group of analytes, attribute, or physical property.

Point-of-Entry Treatment (POET) Device: A water treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed to the entire house or building. Examples of POET include devices such as calcite filters and ion exchange (water softeners).

Porosity: The voids or openings in rock and soil. Porosity may be expressed quantitatively as the ratio of the volume of openings in a rock or soil to the total volume of the rock or soil.

Porosity, Primary: The porosity that represents the original pore openings when a rock or sediment was formed.

Porosity, Secondary: The porosity that has been caused by fractures or weathering in a rock or sediment after it has been formed.

Porosity, Effective: The amount of interconnected pore space available for fluid transmission.

Potable Water: Any water used, or intended to be used, for drinking and/or culinary purposes which is free from impurities in amounts sufficient to cause disease or harmful physiological effects, and complies with the bacteriological and chemical quality standards of the New Jersey Safe Drinking Water Act rules at N.J.A.C. 7:10.

Private Well: A potable water well that serves a dwelling unit and is located on the same real property as the dwelling unit.

Pumping Test: A test made by pumping a well for a period of time and observing the change in water levels (hydraulic head) in pumping and observation wells in the aquifer.

Pumping Test, constant rate: A pumping test during which the discharge rate from the pumping well is maintained at a constant rate for the duration of the test.

Qualified Hydrogeologist: An individual who has received a minimum of a bachelor's degree in Geology at an accredited institution or has completed an equivalent of thirty (30) semester hours of geological education (including at least 2 accredited courses in hydrogeology) while obtaining a Bachelor's or Master's degree in a related field of engineering or science at an accredited institution. Such a person must also demonstrate eight years of professional work experience in the practice of applying geologic and hydrogeologic principals to interpretation of groundwater conditions and in the running of aquifer tests and the analysis of aquifer test data. The individual shall provide a resume or curriculum vitae to document education and experience requirements.

Recharge Area: An area in which there are downward components of head (water levels) in an aquifer. Infiltration moves downward to deeper parts of an aquifer in a recharge area.

Recovery: The rate at which the water level in a well rises after the pump has been shut off. Recovery is the inverse of drawdown.

Secondary Parameter: A drinking water contaminant regulated for aesthetic purposes rather than health affects under the SDWA rules at N.J.A.C. 7:10. Secondary parameters include pH, iron and manganese.

Static Water Level: The depth to water in a well prior to the commencement of pumping.

Storage Coefficient (Storativity): The volume of water an aquifer releases or takes into storage per unit surface area of the aquifer per unit change in head. It equals the product of specific storage and aquifer thickness. Also known as storativity.

Transmissivity: The rate at which water of a prevailing density and viscosity is transmitted through a unit width of an aquifer under a unit hydraulic gradient. Transmissivity equals hydraulic conductivity times aquifer thickness.

Water Table: The surface in an unconfined aquifer or confining bed at which the pore water pressure is atmospheric. It is defined by the levels at which water stands in wells that penetrate the water body just far enough to hold standing water.

Well: A hole or excavation larger than four inches in diameter or a hole or excavation deeper than 10 feet in depth that is drilled, bored, cored, driven, jetted, dug, or otherwise constructed for the purpose of removal or emplacement of, or investigation of, or exploration for, fluids, water, oil, gas, minerals, soil, or rock.

Well Interference: The result of two or more pumping wells, the drawdown cones of which intercept. At a given location, the total well interference is the sum of the drawdown due to each individual pumping well.

Well Permit: Refers to a written approval issued by the NJDEP, pursuant to Well Construction and Maintenance at N.J.A.C. 7:9D, to a licensed well driller which authorizes a licensed well driller of the proper class to construct a well or wells.

Well Record: The form provided by the NJDEP that depicts the construction details of a well, which is completed by the well driller subsequent to well permit issuance and well installation. (Ord. 05-4)

16.21.030 Water Quality Evaluation

1. Purpose and Intent. The objective of the water quality evaluation is to assess if the proposed water supply sources to a development or commercial establishment meet NJDEP drinking water quality MCLs. In the event that one or more constituents do not meet the applicable MCLs, standard treatment systems need to be readily available.
2. Groundwater Quality Determination.
   a. Groundwater quality will be determined for the pumping well and on-site observation wells as part of this program. Groundwater samples from the

pumping well, used for the aquifer pumping test, will be collected during the pumping phase of that test.

b. The water samples from the on-site observation wells can be collected either 3 days in advance or 3 days after the pumping test has been completed. The samples must be collected in accordance with the NJDEP Field Procedures Manual. At a minimum, the samples shall be analyzed by an NJDEP-certified laboratory for: hardness, gross alpha particle activity, arsenic, iron, manganese, copper, lead, nitrate, and total and fecal coliform bacteria. The samples shall also be analyzed for volatile organic compounds for which the United States Environmental Protection Agency or NJDEP has determined maximum contaminant levels using USEPA Method 524.2.
c. During the pumping test, field measurements of pH, conductivity/total dissolved solids and temperature shall be made with calibrated instruments.
d. If site conditions or the site history indicate the potential historic use of materials containing heavy metals, pesticides, herbicides, or other volatile or semi-volatile organic compounds at or near the site, these analyses must also be conducted.
e. Based on past historical operations at the site or at nearby properties, the Board, at its discretion, may require additional analyses of the groundwater to assess current and potential future impacts. The results of the water sample analyses will be used to assess background (pre-development) water quality conditions.

(Ord. 05-4)

16.21.040 Hydrogeologic Report Requirements

A hydrogeologic report must be submitted with each application for subdivision of two or more lots and all site plans. This report shall document the design and implementation of the aquifer test and include the following data, information and analysis:

1. Calculations of aquifer characteristics such as transmissivity and storage coefficient, calculations of the cone of depression, potential impacts to adjacent well owners, and an evaluation of the long-term sustained yield for the wells.
2. All water-level measurements obtained during the three phases of the aquifer test in electronic format acceptable to the Township.
3. A detailed hydrogeologic description of the aquifers encountered beneath the site and adjacent properties.
4. A detailed evaluation of the water-supply demand for an average and peak day. This demand should be supported with information on anticipated population, expected unit density, size of units, lawn and garden irrigation needs, pool filling requirements, and other anticipated water uses.
5. An inventory of all wells within 1,000 feet of the proposed subdivision/site plan boundaries appended and placed on a base map of the site area. This inventory must be submitted in electronic format acceptable to the Township.
6. Figures depicting site geology, topography, surface water bodies, water-level elevations, groundwater flow, and development plans.
7. All laboratory water-quality sampling data tabulated and summarized. One copy of the laboratory reports is necessary for filing with the Township.
8. A detailed evaluation of potential impacts from subsurface sewage disposal systems on groundwater quality. A site plan depicting topography, actual and planned well locations, septic leach field locations, and fracture trace locations at a minimum scale of 1-inch equals 200 feet should be included. For any and all locations where a fracture or set of fractures intersects one or more wells and/or septic leach fields, a

detailed assessment of treatment technologies should be included. The treatment technologies should provide adequate assurances that any and all groundwater pumped from the wells will satisfy Federal and New Jersey Drinking Water Standards (MCLs) and will not be degraded by the septic leach field discharges.

9. The hydrogeologic report shall be prepared and signed by a qualified hydrogeologist using applicable sections of GSR 29 or successor document as a guide.
10. The hydrogeologic report shall include the name and license number of the well driller and pump installer. The report shall include the names of the persons and firm responsible for collecting the water-level measurements. In addition, the report shall include copies of the completed NJDEP Well Records.

16.21.050 Evaluation Results

1. Precipitation. A test conducted during a period in which 0.5 inches or more of precipitation are recorded at or near the site must be repeated or technical documentation provided that the precipitation event had no impact on water levels 24 hours before, during, and 24 hours after the test.
2. Background Phase. Antecedent influences must be determined, and, if necessary, water-level data from the pumping phase and recovery phase must be corrected. Insufficient data to assess these influences will require repetition of all three phases of the aquifer test.
3. Pumping Phase.
    a. If the pumping rate does not exceed the average daily demand by 120 percent or the peak-day demand cannot be pumped within a 24-hour period, the aquifer beneath the site may be deemed insufficient to meet the proposed demands and the applicant may need to review and adjust the site demand and development units. Some alternatives include:
        i. Repeating the pumping test with 2 or more pumping wells to achieve average or 24-hour peak-day demand for a development. This may be particularly applicable for large developments in low yielding bedrock aquifer systems.
        ii. Decreasing the number of developed lots.
        iii. Re-arranging the lot configuration.
    b. If the pumping rate varies by more than 10 percent of the average flow rate, the entire test shall be repeated.
    c. If the pump shuts down during the pumping phase, the entire test must be repeated.
    d. If water levels in the pumping and/or observation wells exceed the measurement capacity of the devices used for measuring changes in water levels and measurements are not recorded with other devices in accordance with the schedule listed in Appendix A, the test must be repeated.
    e. If the pumping data indicate a change in aquifer transmissivity as a result of fracture dewatering, all analyses of the potential radius of influence and impacts to neighbors, streams, and wetlands must be conducted using the lower value of aquifer transmissivity. If this lower aquifer transmissivity indicates that the anticipated demand cannot be supported by the aquifer beneath the site, the applicant will need to review and adjust the site demand and development units as outlined in 3(a) above.
4. Recovery Phase. For purposes of evaluating water-level recovery, the recovery phase duration will be equal to the pumping phase duration. For example, if the pumping phase is 8 hours in duration, water levels 8 hours after the pump has been turned off will be

compared to the pre-pumping static water level to assess recovery magnitude and degree of recovery.

a. If water-level recovery is less than 90% of full recovery at the end of a recovery phase of similar duration as the pumping phase, the applicant must show through standard/recognized aquifer test analytical methods and calculations that the well or wells are capable of full recovery. If full recovery cannot be shown or groundwater mining/dewatering has occurred, the applicant will need to review and adjust the site demands and development units as outlined in 3(a) above.

5. Neighboring Well.
   a. If the drawdown is measured or projected to be more than 1 foot at any existing adjacent property well or along the subdivision boundary, the applicant' s hydrogeologist must evaluate long-term potential impacts to adjacent properties based on the actual operating condition of wells in that zone or along that portion of the subdivision/site plan boundary.
   b. If a drawdown of 5 feet or more (This may be adjusted by a Township Hydrogeologist and should take lot sizes into account) is noted in any existing adjacent property well, or is projected at any property boundary, then the aquifer will be deemed to have insufficient transmissivity and capacity to support the proposed subdivision/site plan. The applicant will need to review the site demand, development units, and well locations to ensure that drawdown will not exceed 5 feet at any site boundaries.
6. Impacts to Streams and Wetlands. If drawdown is measured or projected to induce leakage from streams or wetlands such that base flow in these streams will be directly reduced or wetlands partially or entirely dewatered, then the demand and development units must be reduced to prevent adverse impacts to stream flow and wetlands.
7. Additional Testing. Any test that must be repeated, restarted, or re-conducted at a reduced demand, must satisfy all the requirements of this ordinance including but not limited to re-notification of all property owners within 500 feet and resubmission of an aquifer test plan for Board approval prior to implementation of the test.

(Ord. 05-4)

16.21.060 Aquifer Test Procedures

1. The first test phase will involve the collection of background water levels prior to the start of the test. The second test phase will involve the pumping of water from the well and the monitoring of water-level drawdown in the observation and pumping wells. The third test phase will involve the measurement of water-level recovery in the observation and pumping wells after the pump has been shut down. This third phase of the test must, at a minimum, be the same length as the pumping phase.
2. The aquifer test (all three phases) shall not be conducted during a precipitation event or events in which total precipitation equals or exceeds 0.5 inches. Precipitation must be recorded with a National Weather Service acceptable rain gauge on site during all phases of testing and measurements for each day must be included in the hydrogeologic report. If precipitation occurs during the test, the applicant shall provide precipitation amounts and sufficient data to show that the precipitation did not recharge the aquifer during the test and impair the test results. If precipitation amounts exceeding 0.5-inches are recorded, the test may have to be repeated.
3. The pumping equipment must be installed in the pumping well at least 24 hours prior to the start of the background phase.
4. Prior to starting the background phase, water levels in the test well and observation wells must be permitted to stabilize for a minimum of three days after all drilling activities are

completed.

5. During the background phase, water levels should be collected at a minimum of one measurement per hour for the 24-hour period prior to the start of the pumping test. It is the applicant' s responsibility to collect sufficient data to determine background conditions and to ensure that antecedent influences can be fully characterized. Barometric measurements and additional water-level measurements can be made by the applicant to evaluate the change in water levels resulting from barometric pressure changes and/or influences from off-site pumping.
6. On the day of the pumping phase, water levels shall be collected from the pumping and observation wells to determine static water level conditions prior to the start of pumping. Water levels in wells on neighboring properties should be allowed to stabilize to at or near static prior to the start of pumping. For any observation well which has been pumped within the 24 hours preceding the test, two depth-to-water measurements, at least 1 hour apart, shall be collected to assess if the well has fully recovered prior to the start of pumping.
7. When the aquifer test is started, the pumping flow rate shall be adjusted, within the first several minutes of pumping, to a uniform (constant) pumping rate as required for a constant-rate test and in accordance with the approved aquifer test plan. The flow rate shall not vary by more than 10 percent throughout the test. If the flow rate fluctuates more than 10 percent, the test may be deemed invalid and the applicant will be required to repeat the notification and testing process.
8. Water-level measurements during the pumping phase of the test shall be collected in accordance with Table A-1. This same schedule shall be followed for the recovery phase of testing upon shut down of the pump in the test well.

Table A-1: Minimum Frequency of Water-Level Measurements in Wells During Pumping and Recovery Phases of Aquifer Test

Time Since Pumping Began or Stopper	Test Well	Observation Well
0 to 5 Minutes	0.5 Minutes	0.5 Minutes
5 to 10 Minutes	1 Minute	1 Minute
10 to 30 Minutes	2 Minutes	2 Minutes
30 to 60 Minutes	5 Minutes	5 Minutes
60 to 120 Minutes	10 Minutes	10 Minutes
2 to 24 Hours	30 Minutes	30 Minutes

9. Aquifer Pumping Test Rate and Duration. The rate and duration of the aquifer test will depend upon the size of the proposed development and expected average and peak daily demands for water.
   a. The average daily and average yearly water demand for human consumption within the subdivision or site plan must be determined according to the guidelines in N.J.A.C. 7:10-12.6. Demand calculations must include irrigation systems, if proposed, and water usage for filling of swimming pools and all other demands. The peak-day demand is twice the average daily demand. For non-residential developments, peak-day demand must include seasonal factors.
   b. The pumping phase must simulate peak-day demand and therefore, the pumping phase duration is not to extend more than 24 hours. The minimum pumping rate is calculated by dividing the peak-day demand by 1440 minutes per 24-hour period. If the well yield is sufficient, shorter pumping periods can be used, but should be no

less than 8 hours in duration.

c. If the demand exceeds 100,000 gallons per day, a New Jersey Water Allocation Permit must be obtained from the New Jersey Department of Environmental Protection.
d. For mixed developments containing both residential and nonresidential properties, each portion will be tested separately. Wells installed for the residential portion must be used as observation wells for the nonresidential testing and wells installed for nonresidential use must be used as observation wells for the residential testing.
e. The pumping rate will be determined by equipping the discharge pipe with a calibrated flow meter to measure flow rate and determine total volume pumped from the well.
f. The discharge shall be directed so that it leaves the site without infiltrating to the aquifer. The pumped water discharge location must be at least 200 feet from the pumping well. Any and all permits required by the NJDEP and/or local authorities for the discharge of pumped water must be obtained prior to starting the test.

(Ord. 05-4)

16.21.070 Observation Well Requirements - Well Testing

1. The number of observation wells required per aquifer test will depend on the number of dwelling units and/or commercial water demand. New and existing observation wells may be located such that they can be used as future water-supply wells but they shall be located in such a manner that will yield the most accurate information concerning the aquifer.
2. Observation wells should be completed to similar depths as the pumping well.
3. Observation wells must be located parallel and perpendicular to strike of the primary regional fractures and those intersected by the tested well. Additional observation wells should be located to evaluate potential secondary fractures and impacts to adjacent properties.
4. A fracture trace analysis showing the location and orientation of fracture lineaments must be included with the Aquifer Test Plan. This same analysis with additional information regarding septic system locations must be included in the Final Hydrogeologic Report. The fracture trace analysis must be used to identify all observation wells on the site and to identify neighboring property owner' s wells to be monitored during the test.
5. All wells must be located in accordance with the minimum distances required by N.J.A.C. 7:10 12.12.
6. One observation well should be located within 200 feet of the test well and at least one observation well should be located along a fracture trace or preferential fracture direction between 200 and 500 feet from the pumping well.
7. For residential developments of two new residential units or more, the number of observation wells shall be as shown in Table B-1.
8. Non-Residential Developments: For non-residential developments with anticipated daily demands exceeding 800 gallons per day, the number of observation wells shall be as shown in Table B-2.
9. The observation wells and the pumping well must have a geologic log describing the depth and types of soils and rocks encountered and the depth and yields of all water-bearing fracture zones. The logs must include static water-level measurements and total yield estimates for each well.

Table B-1: Observation Well Requirements for Residential Subdivisions

Number of Proposed New Units	Number of Observation Wells
2 to 5	2 (minimum of 1 new well within proposed development)
6 to 25	3 (minimum of 2 new wells within proposed development)
26 to 49	5 (minimum of 4 new wells within proposed development)
50 or more	Test proposal submitted to Board and NJDEP for review and approval

Table B-2: Observation Well Requirements for Nonresidential Developments.

Average Demand (Gallons Per Day)	Number of Observation Wells
800 to 1,999	2 (minimum of 1 new well within proposed development)
2,000 to 9,999	3 (minimum of 2 new wells within proposed development)
10,000 to 99,999	5 (minimum of 2 new wells within proposed development)
100,000 or more	Obtain NJDEP Water Allocation Permit

(Ord. 05-4)

16.21.080 Nearby Well/Spring Owners Notification Requirements & Procedures

1. Notification.
   a. Owners of existing wells and springs on lots located within 500 feet of the subdivision/site plan boundary shall be given an opportunity to have their wells/springs monitored during the aquifer test.
   b. Such opportunity shall be given by the applicant by notice via certified mail and shall state the time and place of the aquifer test and any other additional information as may be required by the Planning Board. A notice acceptable to the Township of Raritan is included in the aquifer test application package.
   c. The notice shall indicate that such existing well may be monitored, if agreed to by the well owner, provided the well is readily accessible. Such notice shall indicate that the existing well owner must respond within seven (7) days of notice receipt and the applicant's responsibility is to monitor up to three (3) wells on properties within 500 feet of the subdivision boundaries.
   d. The applicant shall provide a certificate of insurance for itself and all contractors utilized and pay all costs associated with the monitoring of any existing residential well.
   e. Prior to monitoring, all buried wells must be raised to a minimum of twelve inches above grade to allow access and retrofitted with pitless well adapters etc. per N.J.A.C. 7:10-12.20 well head requirements.
   f. All wells shall be chlorinated each time they are opened for service or monitoring, unless the owner specifically waives the requirement of chlorination in writing.
   g. The costs of extending, restoring or replacing a well damaged as a result of testing shall be the responsibility of the applicant.
   h. The applicant shall indemnify and hold the Township and its consultants and representatives harmless from any liability in connection with these testing requirements.
2. Response:
   a. If the owner of the lot within 500 feet of the subdivision boundaries decides to participate by agreeing to have their existing well monitored, they shall notify the

applicant by certified mail.

b. Such response shall be provided within 7 days of receipt of the certified notice from the applicant.
c. If the applicant receives no response within the time provided, the response shall be deemed to be negative.
d. Protection of Monitored Wells and Selection of Wells for Monitoring.
    i. All reasonable efforts must be made to protect the potability of water from the monitored well.
    ii. In the case when more than three property owners within 500 feet of the subdivision boundaries decide to participate and to have their existing wells monitored, only three must be monitored.
    iii. However, if any of the property owners requesting monitoring have wells completed to a depth less than 100 feet, these wells must also be monitored in addition to three other wells.
    iv. A map depicting the location of all wells to be monitored and a list of all property owners within 500 feet of the subdivision boundary that requested monitoring is to be submitted to the Board' s hydrogeologist for review and approval prior to implementing the test.
    v. The observation wells on neighboring properties should be selected to assess water-level drawdown impacts from the pumping well will extend beyond the subdivision boundary in any direction.
    vi. The Board reserves the right to retain a qualified hydrogeologist to review the proposed monitoring locations and to make recommendations to revise the locations to be monitored.

(Ord. 05-4)

16.21.090 Sample Notice of Acquifer Test

J. Sample Notice of Aquifer Test. Sample Notices shall follow the form as recommended and approved by the Township Planning Board. An application package containing the recommended form shall be kept on file in the Planning Board office.

(Ord. 05-4)