

PART 4: DESIGN STANDARDS

All land development applications shall conform to the following land design requirements, standards, principles, and specifications as well as other applicable ordinances of the Township.

Developers may request design waivers or exceptions when the application of any particular standard is unreasonable or unwarranted by site conditions. Applicants shall support any waiver request with sufficient information for the Planning Board to determine whether a design waiver is warranted under particular conditions. Design waivers will only be granted if the standard does not apply, the intent of the standard is satisfied in another manner, or there are particular site conditions that make the application of the standard unreasonable.

ARTICLE XIV: SUBDIVISION/SITE LAYOUT

§ 255-76 Lot Configuration

- A. Purpose. The intent of this section is to establish letting design criteria that will result in an orderly pattern of land development in the Township.
- B. All lots shall satisfy the minimum area and yard requirements for the applicable zoning district with land situated entirely within Riverside Township. Undersized lots shall not be created except if there are sufficient reasons for the Planning Board to grant a variance without impacting the zone plan.
- C. Insofar as is practical, side lot lines shall be either at right angles or radial to street lines.
- D. All lots shall front upon an approved public street except where private streets are shown on an approved site plan or subdivision plan.
- E. Through lots with frontage on two streets shall only be permitted under the following conditions:
 - 1. Where the lot abuts an arterial or major collector street and access to a street of lower importance would improve traffic flow;
 - 2. Where the length of the lot between both streets is of a length that future division of the lot into two lots is improbable; or,
 - 3. Where access will be gained from the street of lower classification and access to the street of higher importance is prohibited on the development plan and in the deed.
- F. Where extra width has either been dedicated or provided for widening of existing streets, lots shall begin at such new street line and all setbacks shall be measured from such line.
- G. All lots shall be suitable for their intended purpose. The Planning Board may withhold approval of any lots that are not deemed suitable for their intended purposes due to factors such as steep slopes, poor drainage conditions, flooding conditions, unique natural features, or other substantive environmental condition. If the approval of any lot is withheld due lot suitability concerns, the Planning Board shall specify the reasons for this action in the resolution.

§255-77 Blocks.

- A. Purpose. The intent of this section is to establish block design criteria to be applied throughout the Township in major development.
- B. Block length, width and acreage within the block's boundary roads shall be sufficient to accommodate the size lot required in that zoning district and to provide for convenient access, circulation control and traffic safety.
- C. Residential blocks in excess of one thousand (1,000) feet are discouraged. If blocks of this length are proposed, pedestrian crosswalks or bikeways between lots may be required in locations deemed necessary by the Planning Board. They shall be at least ten (10) feet wide and be straight from street to street. Blocks over one thousand five hundred (1,500) feet in residential areas shall be prohibited.
- D. For commercial and industrial uses, block lengths shall be sufficient to meet area and yard requirements for such uses and to provide proper street access and circulation patterns.
- E. Block End Planting. In cases where lot and block design results in undesirable sighting down rear property lines from block ends, a landscape screen of evergreen trees not less than six (6) feet in height shall be provided as block ends by the developer. The screen shall be a minimum of thirty (30) feet in length and centered on the rear property line and at six (6) feet from the edge of sidewalk. The screen shall not affect any sight triangles.

§255-78 Natural Features.

- A. Purpose. The intent of this section is to preserve the natural features that are present on the development site to the extent possible.
- B. Existing Conditions. The existing conditions plan shall identify the important natural features on the proposed development site including, but not limited to, trees, watercourses, wetlands, hilltops, unique natural habitats, and scenic vistas.
- C. Trees. Existing trees shall be preserved by the developer to the fullest extent possible. Special consideration shall be given to the layout of the subdivision or land development and the positioning of dwelling or structures to ensure that existing trees are preserved. Special precautions shall also be taken to protect existing trees during the process of grading lots and roads. On individual lots, care shall be taken to preserve selected trees to enhance soil stability and the landscape treatment of the area.
- D. Watercourses. Where a development is traversed by, or abuts, a lake, pond or stream, the boundaries or alignment of said watercourse shall be preserved and shall conform substantially with the natural alignment or boundary.
- E. Unique Features. Unique physical features such as historic landmarks, rock outcroppings, hilltop lookouts and similar features shall be preserved if possible. The Planning Board may, after proper investigation, withhold approval of the lotting of such area or areas.

- F. Wooded Buffer Strips. Buffer stripes may be required on all wooded tracts around the perimeter or rear of the development. Such buffer stripes, however, may be used in calculating the area of individual lots.
- G. Replacement of Trees. In the event that any tree which is shown on the approved site plan or subdivision plan as being preserved is removed or killed during development of the property and prior to issuance of a certificate of occupancy, the Zoning Officer shall issue a written order to the owner of the property directing that the tree, including the stump, shall be entirely removed and replaced with one or more trees of equivalent landscape value as determined in accordance with the current International Shade Tree Evaluation Chart. The replacement tree shall have a diameter of not less than two inches measured at a point four feet above the top of the root ball. The number of replacement trees shall be based on the diameter of the destroyed tree with one replacement tree to be provided for each 12 inches or part thereof of diameter of the destroyed tree. At the time that a replacement tree is planted, the owner of the property shall furnish a maintenance guarantee conditioned upon survival of the tree for a period of one year or one full growing season, whichever is longer, in the amount of \$200 per replacement tree.
- H. Treatment of Injured Trees. In the event that any tree which is shown on a site plan or subdivision plan as being preserved is injured during development of the property and prior to issuance of a certificate of occupancy, such tree shall be promptly treated in accordance with accepted tree care practices.

§ 255-79 Conservation Easements.

- A. Where the Master Plan or Official Map of the Township delineates floodplains, wetlands, and other critical areas, conservation easements shall be delineated on the land development plan. The removal of trees and ground cover within a conservation easement shall be prohibited, except for the following purposes:
 - (1) The removal of dead or diseased trees.
 - (2) Limited thinning of trees and growth to encourage the most desirable growth.
 - (3) The removal of trees to allow for structures designed to impound water or in areas to be flooded in the creation of ponds or lakes.
- B. Conservation easements shall be shown on the land development plans in such a manner that their boundaries can be accurately determined. The boundary line of any easement shall be monumented at its intersection with all existing or proposed street lines. Such easement dedication shall be expressed on the plat as follows: "Conservation easement granted to the Township of Riverside as provided for in the Land Use Ordinance of the Township of Riverside."

§ 255-80 Monuments.

Monuments shall be the size and shape required by N.J.S.A. 46:23-9.11 and shall be placed in accordance with the statute and indicated on the final plan or plat.

ARTICLE XV: CIRCULATION DESIGN

§ 255-81 Site Access Design

A. Subdivision Access Design.

1. Subdivisions abutting arterial streets shall provide a marginal service road or reverse frontage lots with planted buffer strips or such other means of separation of through and local traffic as the Planning Board may determine appropriate.
2. No subdivisions showing reserve strips controlling access to streets shall be approved except where the control and disposal of land comprising such strips has been approved by the Planning Board.

§ 255-82 Street Design

A. General Street Design Criteria.

1. All land development shall be served by paved public streets with an all-weather base and adequate crown in accordance with an approved subdivision and/or site plan application. The arrangement of streets that are not shown on the Township Master Plan shall be such as to provide for the appropriate extension of existing streets and should conform with the topography to the extent practicable.
2. Local streets shall be planned so as to discourage through traffic.
3. When land development adjoins land capable of being subdivided or developed, suitable provisions shall be made for optimum access from the remaining or adjoining lands to existing or proposed streets. If there is any question regarding the suitability of access to the remaining or adjoining lands, the Planning Board shall require the applicant to submit a concept plan that demonstrates an acceptable land access arrangement.

B. Street Hierarchy and Design Criteria.

1. All residential streets shall be classified and designed in accordance with the street hierarchy specified in the RSIS.
2. All non-residential streets shall be classified as local streets, minor or major collector roads, or arterial roads in accordance with the definitions of these terms and shall be designed to conform to the following design standards:

*Table 2
Road Design Criteria*

<i>Design Criteria</i>	<i>Local Street</i>	<i>Minor Collector</i>	<i>Major Collector</i>	<i>Arterial</i>
Design speed (mph)	35	50	60	70
Maximum degree of curve	16°	7.5°	5°	3.5°
Minimum sight distance (ft)	240	350	475	600
Minimum center line grade	0.5%	0.5%	0.5%	0.5%
Maximum center line grade	8.0%	8.0%	4.0%	4.0%

3. Street Design and Construction Reference Standards. All road design shall be in accordance with:
 - a. Standard Specification for a Policy on Geometric Design of Highways and Streets, American Association of State Highway Officials, 1990 edition;
 - b. New Jersey Department of Transportation Design Manual-Roadway; New Jersey Department of Transportation; 1995 edition;
 - c. Standard Specifications for Road and Bridge Construction; New Jersey Department of Transportation; current edition;
 - d. Current Manual on Uniform Traffic Control Devices, Federal Highway Administration, United States Department of Transportation.

C. Street Right-of-Way/Cartway Width

1. In the event that a development adjoins or excludes existing streets that do not conform to widths as shown on the adopted Township Master Plan or Official Map or the street width requirements of this chapter, additional land along either or both sides of the street, sufficient to conform to the right-of-way requirements, shall be dedicated for the location, installation, repair and maintenance of streets, drainage facilities, utilities and other facilities customarily located on street rights-of-way. If the development is along one side only, one-half of the required extra width shall be dedicated and shall be improved, including excavation, base course and surfacing, in accordance with the approved application. Final approval of a development application shall not be construed as the acceptance of a street or portion thereof dedicated to public use.
2. The right-of-way and cartway width of all residential streets shall conform to the right-of-way and cartway width standards specified in the RSIS as well as the intent of this Ordinance.
3. In all non-residential land development, the minimum public street right-of-way shall be measured from lot line to lot line and shall be in accordance with the following schedule:

*Table 3
Right-of-Way/Cartway Width Requirements*

Road Class	Right Of Way	Lanes	Lane Width	Shoulder Width	Cartway width
Arterial	66 feet	2	13 feet	10 feet	46 feet
Major Collector	60 feet	2	12 feet	8 feet	40 feet
Minor collector	54 feet	2	12 feet	5 feet	34 feet
Local	50 feet	2	12 feet	3 feet	30 feet

- a. Right-of-way and/or cartway width may be required to be more within and approaching intersections.
 - b. On-street parking shall be prohibited on arterial or major collector roads. If on-street parking is permitted on minor collectors, additional right-of-way or cartway may be required.
 - c. Shoulder areas shall be paved on all classes of roads.
4. The right-of-way for internal roads and alleys in commercial and industrial development shall be determined on an individual basis by the Planning Board and shall in all cases be of sufficient width and design to safely accommodate expected traffic movements and parking and loading needs.
 5. A new street that is a continuation of an existing street shall be continued at the same width as the existing street except if there are substantive changes in the road classification and the related design criteria. The design criteria for a new street shall be determined based on the highest classification of any road segment.

D. Street Intersections.

1. Angle of Intersection. Street intersections shall be as nearly at right angles as possible and in no case shall be less than 75°.
2. Approaches. Approaches to all intersections involving collector or arterial roads shall follow a straight line or a curve with a radius of not less than 700 feet for at least 100 feet.
3. Intersecting Streets. No more than two streets shall meet or intersect at any one point.
4. Street Offsets. New intersections along one side of an existing street shall, if possible, coincide with an existing intersection on the opposite side of the street and the centerlines of both intersecting streets shall pass through a common point. Where necessary, street jogs shall be at least 150 feet between right-of-way centerlines.
5. Access to Major Streets. Any development abutting an existing street classified as an arterial or major collector shall be permitted only one new street connecting with the same side of the existing street, except where the frontage is sufficient,

more than one street may intersect the arterial or major collector street, provided that the streets shall not intersect with the same side of the existing street at intervals of less than 800 feet.

6. Block Corners. The block corners of intersections shall be rounded at the curbline with the street having the highest radius requirement as outlined below determining the minimum standards for all curbines:
 - a. Arterials: 40 feet;
 - b. Collectors: 35 feet;
 - c. Local streets: 25 feet.
7. Horizontal Curves. A tangent of at least 100 feet long shall be introduced between reverse curves on arterial or collector streets. When connecting street lines deflect from each other at any one point, they shall be connected by a curve with a radius conforming to standard engineering practice as contained in the NJDOT referenced standard.
8. Vertical Curves. Vertical curves shall be designed in accordance with the AASHTO and NJDOT referenced standard.
9. Deceleration Lanes. Where a driveway serves as an entrance to a development providing 100 or more off-street parking spaces and the abutting road is classified as an arterial or collector road, a deceleration lane shall be provided in accordance with the AASHTO referenced standard. The deceleration lane shall be at least 200 feet long and 13 feet in width measured from the abutting road centerline. A minimum curb return radius of forty feet shall be used from the deceleration lane into driveways.
10. Acceleration Lanes. Where a driveway serves right turning traffic from a parking area providing 200 or more parking spaces and the abutting road is classified as an arterial or collector road, an acceleration lane shall be provided in accordance with the AASHTO referenced standard.

E. Dead End and Cul-de-sac Street Design. Cul-de-sac streets for residential development are governed by RSIS but should be designed in conformance with the following design guidance to the extent practicable. Dead-end streets for non-residential development shall conform to these design criteria.

1. Dead-end or cul-de-sac streets shall only be permitted when loop streets are not feasible and when the applicant demonstrates that such streets will not have an adverse impact on public safety, overall project design, or the provision of municipal services.
2. Cul-de-sac streets shall be no more than 600 feet in length (excluding the turnaround) and shall provide access to no more than 20 dwelling units where such access is to single-family detached dwellings only or to no more than 60 dwelling units where access is to other than single-family detached dwellings.
3. A turnaround shall be provided at the end of the cul-de-sac with a radius of 50 feet on the curbline plus a utility and planting strip of 10 feet around the entire

cul-de-sac. The center point for the radius shall be the centerline of the associated street or, if offset, offset to a point where the radius becomes tangent to the right curblineline of the associated street.

4. If a cul-de-sac is temporary, the turnaround shall be provided temporarily with provisions for the future extension of the street and reversion of the excess right-of-way to adjoining properties.

F. Driveway Access. Driveways for single and two family structures shall conform to the following standards:

1. The minimum width of a driveway shall be 12 feet.
2. No driveway access shall be permitted on a collector or arterial road on a traffic circle, on a ramp of an interchange; or within 30 feet of an intersection;
3. Driveway grades shall not exceed 10% and shall be designed to prevent bottoming out of vehicles;
4. Concrete aprons shall be provided at the end of all driveways;

G. Street Names. No street shall have a name which will duplicate or so nearly duplicate the name of an existing street name so that confusion results. The continuation of an existing street name shall have the same name. Curvilinear streets shall change their name only at street intersections. The Board reserves the right to approve or name streets within a proposed development.

H. Pavement Design. The pavement materials and construction methods on county and state roads shall conform to the standards of the appropriate jurisdiction. The pavement construction materials and construction methods for Township streets shall conform to the following standards:

1. General. All materials, equipment and methods of construction shall conform to the latest edition of the *Standard Specifications for Road and Bridge Construction* issued by the New Jersey Department of Transportation. Each stage of construction shall be approved by the Township Engineer prior to commencing the next stage.
2. Subgrade or Gravel Base. The subgrade or gravel base shall be in a properly finished condition conforming to the proper line and grade and free of any soft spots or other deficiencies. Within 24 hours prior to the commencement of paving, the subgrade or gravel base course shall be tested by running a roller of a weight as great or greater than that to be used in the paving operation over the entire pavement area. When, in the opinion of the Township Engineer or his representative, such testing results in excessive deformation, the subgrade or gravel base course shall be stabilized in a manner that is satisfactory to the Township Engineer. Adequate underdrains shall be constructed where the normal groundwater table is within two feet of the surface of the subgrade.
3. Subbase. If the subgrade has a California Bearing Ratio (CBR) value of 20 or greater (as determined by the ASTM Bearing ratio of Laboratory Compacted

Soils-ASTM Designation D1883), no subbase course is required. Subgrade soil Types A-1, A-2-4 and A-2-5 as determined by the AASHTO Classification System for soils (AASHTO Designation M145) will not normally require a subbase course. Subgrade soils of other types will normally require a subbase course of Soil Aggregate Type 2, Class A or B with a minimum thickness of four inches to provide the require CBR value. All subgrades shall be considered poor unless the developer proves otherwise through CBR or soil testing methods or field evaluation of soil classification. All test results shall be submitted to the Township Engineer.

4. Gravel Base Course Construction. When a granular base course is used, it shall be dense graded aggregate conforming to Section 901.08 or soil aggregate designation I-5 conforming to Section 901.09 and shown in Table 901-2 of the NJDOT *Standard Specifications for road and Bridge Construction*. The granular base course shall constructed in full conformance with these specifications.
5. Base Course Thickness. All streets classified as local streets shall have a bituminous stabilized base course four inches thick or in the alternative five inches of a dense graded aggregate and three inches of bituminous stabilized base course on an acceptable subgrade. All streets classified as collector or arterial streets shall have a bituminous stabilized base course five inches thick or in the alternative six inches of a dense graded aggregate and four inches of bituminous stabilized base course on an acceptable subgrade. Greater thicknesses may be required by the Township Engineer when warranted by subgrade conditions.
6. Stabilized Base Course Construction. Bituminous-stabilized base course materials shall conform to Sections 301.02 and 304.02 of the NJDOT *Standard Specifications for Road and Bridge Construction* and the stabilized base course shall be constructed in conformance with those specifications. Upon completion, uniformly selected core samples intact for full thickness of the base course shall be provided at the rate of one sample for every 1,000 square yards of base course, at the expense of the developer. Where deficiencies in required thicknesses are noted, at least two (2) additional cores will be required to determine the extent of the deficiency. When the pavement, as indicated by the core sample, shows a deficiency of ¼ inch or more from the required thickness, the Township Engineer, may at his option require direct the developer to remove and replace the bituminous-stabilized base course to the correct thickness or construct an overlay of bituminous concrete to correct the thickness deficiency.
7. Surface Course Materials. Surface course materials shall conform to sections 401.02 and 404.02 of the New Jersey Department of Transportation *Standard Specifications for Road and Bridge Construction* and shall be placed over a properly installed and, where needed, repaired base course. Prior to the construction of the surface course, a tack coat, as specified in the *Standard Specifications*, shall be applied.
8. Surface Course Construction. Upon completion of the surface course, the developer shall provide core samples therefrom in accordance with the procedures outlined above for the base course sampling. The average thickness of the surface course, as determined from the core samples, shall be not less than two inches. When the pavement, as indicated by any core samples, indicates a

deficiency of ¼ inch or more from the required thickness, the Township Engineer may at his option direct the developer to remove and replace the surface course to the correct thickness or construct an overlay of bituminous concrete, suitable to the Engineer, to correct the thickness deficiency.

9. When a local street is proposed within a development which either ends in a cul-de-sac or loops through the development to provide two intersections with local, collector or arterial streets within the Township, said local street shall not extend across municipal boundaries.

§ 255-83 Off-street Parking and Loading.

- A. Purpose. The intent of this section is to ensure that land development provides off-street parking and loading areas that are sufficient to accommodate the traffic generated by the proposed use; efficiently arranged for safe and convenient use; provide for the separation of pedestrian and vehicular movement; ensure public safety and fire protection; and have no adverse impacts on adjacent properties.
- B. Access Design.
 1. Access Drives. The access drives to off-street parking or loading areas shall be designed to satisfy the following requirements:
 - a. Access drives shall be limited to a maximum of two (2) drives to any one street and the centerlines of the access drives shall be spaced at least 65 feet apart; except when the width of the property exceeds five hundred feet in length, one access drive shall be permitted for every 250 feet of road frontage;
 - b. Access drives shall be located at least twenty feet from any property line;
 - c. Access drives shall be located at least fifty feet, or one-half of the lot frontage, whichever is less, from the street line of an intersecting street;
 - d. Access drives shall handle no more than two lanes of traffic;
 - e. The width of the curb cut shall be determined by the type and lanes of traffic; The design basis of curb cuts over 24 feet in width will be carefully reviewed based on the extent and direction of traffic flow with particular attention to curb radii, dividers and curb cut width;
 - f. Curbing shall either be depressed or have curb radii at the intersection with the public street;
 2. Internal Access. The access to off-street parking and loading spaces shall be designed to satisfy the following requirements:
 - a. Each parking and loading space shall be served by internal onsite driveways designed to enable each vehicle to access the parking or lading space without requiring the movement of another vehicle;

- b. Each parking space shall be designed so that vehicles will not encroach on the public right-of-way when backing out of the space;
- c. Parking spaces shall be set back at least 15 feet from the right-of-way line;

C. Parking and Loading Area Location.

- 1. Parking and loading spaces shall be provided off the street and on the same lot as the use being served unless a cooperative arrangement is approved by the Planning Board.
- 2. No off-street parking space shall have direct access from a street.
- 3. No off-street loading and maneuvering areas shall be located in any front yard nor require any part of a street.
- 4. Loading spaces shall abut the building being served and shall be located to directly serve the building for which the space is being provided.
- 5. No loading and parking spaces shall be located in any required buffer area.
- 6. Parking spaces located to service residential uses shall be within one hundred fifty (150) feet of the entrance of the building. Parking spaces located to service commercial or industrial uses shall be within three hundred (300) feet of the building entrance.
- 7. Parking spaces for residential uses may be located in any yards as designated for individual structures within a complex, but parking shall be discouraged from being located in the yard space between the existing public streets and the setback line but, when located within this yard area, shall be set back from the street a minimum of one hundred (100) feet.
- 8. No parking shall be permitted in designated fire lanes, streets, driveways, aisles, sidewalks or turning areas.
- 9. Parking spaces for shopping centers may be located in any side or rear yard, and if approved by the Planning Board, the front yard.
- 10. No more than twenty percent (20%) of the total number of parking spaces required for office buildings (other than offices in a shopping center) may be located in the front yard.
- 11. No commercial motor vehicle, school bus, dump truck, walk-in van or construction equipment shall be parked or stored anywhere in a Residential zoning district, except when the vehicle is being used in the transaction of business with the owner or occupant of the property. Commercial motor vehicles shall include all commercially licensed vehicles and all trucks or vans with a gross registered weight in excess of eleven thousand (11,000) pounds. The provisions of this subsection shall not apply to the parking or storage of school

buses and school vans on public school, private school or parochial school property.

D. Minimum Dimensional Standards

1. Off-street Parking Space.

- a. Residential. The dimensions of the off-street parking for multi-family residential development shall conform to the RSIS.
- b. Non-residential. Off-street parking spaces shall be a minimum of 10 feet wide and 20 feet in length for commercial businesses, visitor areas, or any other locations where high turnover is anticipated. Applicants may petition the Planning Board to reduce the parking space size in low turnover areas such as employee parking but in no case shall off-street parking spaces be less than 9.5' in width and 18 feet in length. Parallel spaces shall be twenty-five (25) feet long.
- c. Handicapped spaces. The design of the handicapped parking shall comply with the requirements of the American with Disabilities Act, Public Law 101-336 and the New Jersey Barrier Free Access Code.

2. Drive Aisles.

- a. Residential. The dimensions of the drive aisles in off-street parking areas for multi-family residential development shall conform to the RSIS.
- b. Non-residential. The drive aisle width in parking lots serving non-residential uses shall conform to the following:

Parking Spaces Ten Feet Wide		
Angle of Parking	One-Way Aisle (feet)	Two-Way Aisle (feet)
90°	22	25
60°	18	22
45°	15	22
30°	12	22
Parallel	12	22

- 3. Off-street Loading. Off-street loading spaces shall have a minimum vertical clearance of fifteen feet and shall be designed in accordance with the following schedule.

Loading Space		Combined Apron and Aisle Length	
Length (feet)	Width (feet)	90° (feet)	60° (feet)
60	10	72	66
60	12	63	57
60	14	60	54

- E. Minimum Off-street Parking Requirements. Adequate off-street parking spaces shall be provided for all residential, commercial, and industrial uses in accordance with the following requirements:
1. The required parking shall be measured exclusive of interior driving lanes and maneuvering areas.
 2. When the computation of the number of required parking spaces results in a fraction, such fractions shall be resolved to the next highest whole number.
 3. Residential. The number of off-street parking spaces required for residential uses shall be determined based on the RSIS.
 4. Non-Residential. The number of parking spaces required for non-residential uses shall be determined by the amount of gross floor area as defined in this chapter or such other measure indicated in Table 4. Where a particular site or facility contains more than one (1) use, the total parking requirements shall be the sum of the component parts, unless indicated otherwise.
 5. Handicapped Parking. The number of off-street parking spaces designated for the disabled shall comply with the requirements of the American with Disabilities Act, Public Law 101-336 and the New Jersey Barrier Free Access Code. These spaces are to be included within the total number of parking spaces required for the particular use.

*Table 4
Off-street Parking Requirements for Non-Residential Uses*

Use	Minimum Off-street Parking Requirement
Assembly Operation	One space per 1,000 square feet of GFA
Auto body/repair	One space per 500 square feet of GFA; plus 1 per vehicle used onsite
Auto dealer, new/used	2.5 spaces per 1000 square feet of GFA plus 110% of maximum vehicle inventory plus requirement for auto repair area;
Bowling Alley	Four (4) spaces per alley
Car Wash, Full Service	Eight (8) spaces per washing lane
Car Wash, Self Service	One per bay plus one per employee
Church/Synagogue/House of Worship	One space per three seats
Commercial recreation, indoor (excluding bowling alleys)	One space per 100 square feet of GFA plus one space per employee maximum shift
Commercial recreation, outdoor	One space per 100 square feet of outdoor area used by patrons plus one space per employee;
Community swimming pool	One space per 15 square feet of pool surface area
Child Day care center	One space per 60 square feet of GFA
Fiduciary Institutions	One space per 250 square feet of GFA
Home occupation	One space per 200 square feet of net floor area devoted to occupation plus one (1) space per non-resident employee
Hospital	One and one-half (1½) spaces per bed
Industrial (Manufacturing, assembly, fabrication)	One space per 1,000 square feet of GFA
Library	One space per 300 square feet of GFA
Medical Office; Center*	One space per 200 square feet of GFA
Mortuary; Funeral Home	Ten spaces per viewing room (including chapel)
Nightclub	One space per 60 square feet of GFA
Nursing homes, Assisted living	0.75 space per bed plus one per employee maximum shift
Personal Service*	One space per 200 square feet of GFA
Professional Office; Center*	One space per 250 square feet of GFA
Research facility	One space per 800 square feet of GFA
Restaurant, sit down	One space per three seats plus 1 per employee maximum shift
Restaurant, take-out	One space per 50 square feet of GFA
Retail store	One space per 200 square feet of GFA
School	Greater of one per employee or 2.5 spaces per classroom
Service Station (fuel only)	0.5 per fill area plus one per employee maximum shift
Service Station (full service)	Four spaces per service bay
Tavern	One space per two seats
Theater (movie, performing arts)	One space per three seats
Veterinary hospital	Six (6) spaces per examination room
Warehousing; shipping, receiving	One space per 5,000 square feet of GFA

**Note: The parking standards for these uses does not apply to home occupation uses. (see home occupation standard)*

F. Minimum Off-street Loading Requirements. Adequate off-street loading and maneuvering space shall be provided for every use. The minimum number of loading

spaces shall be based on Table 5. Those uses not listed shall provide sufficient spaces as determined under site plan review:

1. A minimum of one (1) space per use, except that where more than one (1) use shall be located in one (1) building or where multiple uses are designed as part of a shopping center or similar self-contained complex, the number of loading spaces shall be based on the cumulative number of square feet within the building or complex, shall be dispersed throughout the site to best serve the individual uses and shall have site plan approval.
2. There shall be a minimum of one (1) trash/garbage pickup location, separate from the parking and loading areas, located either within or outside of a building in steel-like, totally enclosed containers, located and screened to be obscured from view from parking areas, streets and adjacent residential uses or zoning districts. If located within the building, the doorways may serve both the loading and trash/garbage collection functions. If a container is used for trash/garbage collection functions and is located outside the building, it may be located adjacent to or within the general loading areas, provided that the containers in no way interfere with or restrict the loading and unloading functions.
3. Where any use is located on a tract of at least fifty (50) acres and no portion of a loading area, including maneuvering areas, is closer than two hundred (200) feet to any property line and where the length of the driveway connecting the loading area may be less than the number required by the above schedule provided, the applicant, as part of the site plan application, shall indicate on his site plan and shall document to the Planning Board how the number of spaces to be provided will be adequate to meet the needs of the specific use proposed.

Table 5
Off-street Loading Requirements for Non-Residential Uses

Use	Minimum Off-street Loading Requirement
Hospital	One space for the first ten thousand (10,000) square feet of GFA and one space for each additional one hundred thousand (100,000) square feet of GFA
Industrial (Manufacturing, assembly, fabrication)	One space for the first five thousand (5,000) square feet of GFA and one space for each additional forty thousand (40,000) square feet of GFA
Mortuary; Funeral Home	One space per ten thousand (10,000) square feet of GFA
Nightclub;	One space for the first ten thousand (10,000) square feet of GFA and one space for each additional twenty five thousand (25,000) square feet of GFA
Restaurant, sit down	One space for the first ten thousand (10,000) square feet of GFA and one space for each additional twenty five thousand (25,000) square feet of GFA
Retail store	One space for the first ten thousand (10,000) square feet of GFA and one space for each additional forty thousand (40,000) square feet of GFA
Warehousing; shipping; receiving	One space for the first five thousand (5,000) square feet of GFA and one space for each additional forty thousand (40,000) square feet of GFA

- G. Variances from Minimum Parking or Loading Requirements. The Planning Board may allow an applicant to provide fewer parking or loading spaces for a proposed development than required, upon application for a bulk variance and with public notice in accordance with the following:
1. No variance from parking or loading space requirements shall be approved unless the applicant proves entitlement to such variance in accordance with criteria applicable to bulk variances. The factors to be taken into account by the Planning Board shall include, but not be limited to the following:
 - a. Amount of land available on the site to provide parking or loading spaces.
 - b. Availability of adjacent land to enlarge the site.
 - c. Feasibility of space-conserving alternatives such as underground or aboveground parking.
 - d. Adequacy of existing parking on the site.
 - e. Severity of existing traffic and traffic congestion at and near the site.
 - f. If the applicant also requires a variance to enlarge a nonconforming use or structure, an analysis of the particular benefits to Florence Township to be gained from such enlargement compared with the disadvantages.
 - g. Any facts pertaining to the particular site, its existing and proposed use, its history, its needs for parking and loading spaces, and the area surrounding the site.
 2. Expert Testimony. The Planning Board may require the applicant to submit written and oral traffic studies, engineering studies, designs, plans or any other form of expert testimony which it deems necessary or helpful in order to reach an informed decision on the matter.
 3. Limitation. In the case of vacant or unimproved land, the municipal agency shall not approve an application for development that provides less than seventy-five percent (75%) of the parking or loading spaces required by this chapter. In all other cases, no application for development that provides less than seventy-five percent (75%) of the required parking or loading spaces shall be approved without a showing by the applicant of extraordinary and compelling justification.
 4. Landscaped Parking. The applicant shall compensate for any reduction in required parking or loading spaces by providing suitable landscaping, additional drainage or percolation area open space or better aesthetics for the site. If the site permits, an amount of land equal in square footage to that contained in the number of parking or loading spaces not provided by the applicant as a result of bulk variance applied for under this section shall be set aside as "landscaped parking" and specifically noted on the plan. Such "landscaped parking" shall not be built upon nor considered in calculating front, side or rear yard areas or buffer area.

- H. Curbs. Off-street parking and loading areas shall be required to have concrete or Belgian block curbing around the perimeter of the parking and loading areas and to separate major interior driveways from parking spaces. Curbing shall also be installed within the parking or loading areas to define segments of the parking or loading areas. Concrete wheel blocks shall be located within designated parking or loading spaces. All curbing shall be located in conjunction with an overall drainage plan. Curbing installed at locations requiring pedestrian or bicycle access over the curbing shall be designed with breaks in the curb height with ramps from the street grade to the sidewalk. The breaks shall be either opposite each traffic lane or no less frequent than one (1) every sixty-five (65) feet along the curb.
- I. Drainage. All parking and loading shall have drainage facilities installed in accordance with good engineering practice as approved by the municipal agency engineer. Where subbase conditions are wet, springy or of such nature that surfacing would be inadvisable without first treating the subbase, these areas shall be excavated to a depth of six (6) inches to twelve (12) inches below the proposed finished grade and filled with a suitable subbase material as determined by the Township Engineer. Where required by the Engineer a system of subsurface drains shall be constructed beneath the surface of the paving and connected to a suitable drain. After the subbase material has been properly placed and compacted, the parking area surfacing material shall be constructed.
- J. Pavement Design.
1. Base Course- Heavy Traffic Areas. Areas of ingress and egress, loading and unloading areas, major interior driveways and aisles and other areas likely to experience similar heavy traffic shall have the same base course construction as that specified for arterial and collector streets in Section DS7H5&6.
 2. Base Course- Light Traffic Areas. Parking space areas and other areas likely to experience light traffic shall have the same base course construction as that specified for local streets in Section DS7H5&6.
 3. Surface Course. Parking and loading areas shall have a surface course that conforms to Section DS7H7&8.
- K. Buffers. Parking and loading areas for commercial and industrial uses shall be buffered from adjoining streets, existing residential uses or any residential zoning district in accordance with the buffer and screening requirements of this chapter.
- L. Landscaping. Landscaping in parking and loading areas shall be shown on the landscaping plan. Trees shall be staggered or spaced so as not to interfere with driver vision, have branches no lower than six (6) feet and be placed at the rate of at least two (2) trees for every ten (10) parking spaces. All areas between the parking area and the building shall be landscaped per approved drawings. Any plant material not surviving for a period of two (2) years shall be replaced with the same or equivalent size species. A majority of the parking area shall be screened from streets by buildings, landscaped berms, natural ground elevation or plantings singularly or in combination.

§ 255-84 Curbs and Gutters.

- A. Curbing Requirement. Curbs or curb and gutter shall be provided along all public streets, off-street parking and off-street lading areas unless specifically exempted by RSIS or by a design waiver granted by the Planning Board in accordance with Paragraph D below.
- B. Curb Type. The only types of curbing permitted in the Township shall be concrete curb, monolithic curb and gutter, or granite block curbing. Granite block curbing may be required by the Planning Board whenever it would enhance the appearance of a residential, commercial, or industrial development.
- C. Curb Construction. All curbing shall be constructed in accordance with the following:
 - 1. Standard monolithic concrete curbs and gutters will be required along the pavement edge of streets in conformance with the Standard Specifications of the New Jersey Department of Transportation, as amended. Class B Concrete shall be used in the construction of the curb and gutter.
 - 2. Expansion joints shall be provided at intervals of 20 feet or when new construction abuts existing construction. The expansion joints shall be filled with one-half-inch-thick cellular material conforming to the requirements therefore contained in the Standard Specifications of the New Jersey Department of Transportation, as amended to date, to within ½ inch of the top and face of the curb and to within ¼ inch to the top of the gutter. All joints shall extend the full depth of the structure.
 - 3. Finished curbs and gutters shall be true to applicable grades, lines, dimensions and curvatures. Exposed edges shall be neatly rounded to a one-half inch radius. Depressed curb ramps for the handicapped shall be installed at all radii in accordance with the laws of the State of New Jersey. Completed work shall be protected by curing methods approved by the Township Engineer for at least three days. Damaged, broken or cracked work shall be renewed by the contractor at his expense.
- D. Design Waiver. If a developer requests a design waiver from the curb or curb and gutter requirement, the Planning Board shall consider the following guidelines in considering the waiver request:
 - 1. Curbs or curb and gutters shall be required for any commercial or industrial development generating large volumes of vehicular traffic or lying in close proximity to such development and at all street intersections.
 - 2. Curbs or curbs and gutters shall be required in conjunction with any multifamily residential development and with higher density single- or two-family subdivisions having average lot sizes of ½ acre or less.
 - 3. Curbs or curbs and gutters shall be required in any case where, in the opinion of the Township Engineer, low gradients, unusual soil, structural problems or other conditions indicate susceptibility to poor surface water flow or lack of uniformity in shoulder grades.

4. Curbs or curbs and gutters shall be required along existing or proposed municipal streets or roads in conjunction with any proposed development that would otherwise, in the opinion of the Township Engineer, contribute to an adverse drainage condition, soil erosion or watercourse siltation.

§ 255-85 Pedestrian Access Design (Sidewalks/Walkways)

- A. Purpose. The purpose of this section is to require the provision of sidewalks and walkways that are necessary for the creation of a pedestrian network throughout the Township. Land development shall be designed to encourage pedestrian activity along public thoroughfares and other appropriate destinations.
- B. Sidewalk Requirement. Sidewalks (and related aprons) shall be required along all streets and shall be constructed by the developer in accordance with the following criteria:
 1. Existing sidewalks shall be extended throughout all areas of the Township when the roads upon which they are located are extended;
 2. Sidewalks shall be provided on both sides of all local streets within residential land developments except when specifically exempted by RSIS.
 3. Sidewalk linkages shall be provided throughout all areas of the Township between existing and/or previously approved sidewalks unless specifically waived in specific locations by the Planning Board in accordance with Paragraph D below.
 4. Sidewalks may be located in the traditional manner between the proposed edge of the pavement and right-of-way line of the street, or, in the alternative, the Board may require that the sidewalks be set back further from the proposed edge of the pavement and be constructed in a meandering pattern. In such instances, the sidewalks ordinarily will be located both within the street right-of-way and an additional five feet of the ten-foot strip of land adjacent the street right-of-way otherwise provided for the location of underground utilities and street trees where required.
 5. When sidewalks are constructed in the traditional manner set back approximately five feet from and parallel to the street right-of-way line, street trees shall be required between the edge of pavement and the sidewalk. However, when the meandering pattern of sidewalk construction is required, trees and shrubs shall be planted in concentrated areas at locations where the sidewalk turns as well as at other locations required and approved by the Planning Board.
- C. Sidewalk Construction.
 1. Sidewalks, aprons and sidewalks at aprons shall be concrete and shall be constructed in accordance with the Standard Construction Details promulgated by the Township Engineer. Sidewalks shall be at least four feet wide, shall be constructed of Class C Portland cement, and shall adhere to the construction details set forth for curbs in Section DS10 above. Additionally, where subgrade is yielding or otherwise unsatisfactory in the opinion of the Township Engineer,

all unsuitable material shall be removed, and suitable material shall be applied until the subgrade is nonyielding to the satisfaction of the Township Engineer.

2. The Planning Board may permit the use of bituminous concrete sidewalks, according to specifications and subject to approval of the Township Engineer, in low traffic locations outside of public right-of-ways and areas where they would be more conducive to the site design such as walking/jogging paths in common open space areas.
 3. Finished sidewalks shall be true to specified lines, grade, dimensions and curvatures. Completed work shall be adequately protected from traffic and the elements.
- D. Design Waiver. In those cases where a developer requests a waiver from the requirements of sidewalks as set forth in this section, the Board, in considering such waiver, shall take into account the guidelines that sidewalks should be required in the case of any development or portion thereof lying in close proximity to school sites and other pedestrian movement generators, including but not limited to recreational facilities, churches, clubs, eating establishments and retail shopping centers. Design waivers shall only be granted for good cause, such as the existence or proposed alternate linkages for pedestrian movement and/or a determination that such specific linkages will not be utilized or other specific reasons;

§ 255-86 Bikeways.

- A. Purpose. The intent of this section is to require the establishment of bikeways at appropriate locations. Separate bicycle paths and lanes shall only be required where such bike paths or lanes have been shown in the Township master plan or on the official map.
- B. Bicycle Lanes. Bicycle lanes, where provided, shall be placed in the outside lane of a roadway, adjacent to the curb or shoulder. When on-street parking is provided, the bicycle lane shall be between the parking lane and the outer lane of moving vehicles. Lanes shall be delineated with striping and the appropriate logo.
- C. Bicycle Grates. Bicycle-safe drainage grates shall be used in the construction of all residential and commercial streets.
- D. Bikeway Construction. Bikeways shall be constructed in accordance with the latest edition of the New Jersey Department of Transportation's Planning and Design Guidelines for Bicycle Compatible Roadways and Bikeways and the AASHTO Guide for the Development of Bicycle Facilities.

ARTICLE XVI: GRADING /DRAINAGE

§ 255-87. Grading and Filling.

- A. Purpose. The regulations of grading and filling promote the protection of environmental interests and protect the rights of adjacent property owners. All grading and filling operations are to be closely reviewed to protect the interests stated.

- B. Design Criteria. Sites shall be graded and filled in accordance with the following design criteria:
1. All lots where fill material is to be deposited shall have clean fill or topsoil deposited, which shall be graded to allow complete surface drainage of the lot into local storm sewer systems or natural drainage courses.
 2. All imported fill shall be analyzed for environmental quality before the material is brought to the site. The test protocol for the imported fill or topsoil soil shall be approved by the Township Engineer.
 3. No soil shall be removed from a site unless the soil removal was authorized by the terms of land development approval and the disposition of the soil has been approved by the Township Engineer. Soils that are being excavated and removed from the site must be analyzed for environmental quality except if these soils were included in testing undertaken as part of an environmental site assessment.
 4. No regrading of a lot shall be permitted which would create or aggravate water stagnation or a drainage problem on the site or on adjacent properties or which will violate the provisions regulating soil erosion and sediment control, soil removal or floodplains contained in this Chapter.
 5. Grading shall be limited to areas shown on approved site plans or subdivisions. Any topsoil disturbed during approved excavation and grading operations shall be redistributed throughout the site.
 6. Any land development of property that is below the elevation of the top of curb of the adjacent public street shall require the submission and approval of a site grading plan.
 7. All applications for major development shall include cut and fill calculations indicating the estimated quantity of soil to be removed from the site and imported to the site. The Board Engineer shall review the data as part of the development review process to determine if the quantities to be removed or imported can be reduced.

§ 255-88 Stormwater Management Ordinance

- A. Purpose. The purpose of this Section is to establish minimum stormwater management requirements and controls for land development in the Township.
- B. Applicability. The stormwater management design standards and requirements of this section shall apply to land development that will ultimately disturb more than one acre or increase impervious surfaces by more than 10,890 square feet.
- C. Design Objectives. The State of New Jersey has adopted Stormwater Management Regulations (NJAC 7:8 et. seq.) that establish the design objectives of stormwater management throughout the state. These regulations require the use of nonstructural best management practices (BMPs) and structural BMPs to achieve specific performance standards. The stormwater management design objectives can be summarized as follows:

- Nonstructural BMPs or low impact techniques should be considered for flood control, groundwater recharge, and pollutant reduction before the use of structural BMPs;
- Structural BMPs should be integrated with nonstructural stormwater management measures and proper maintenance plans;
- Multiple stormwater management BMPS may be necessary to achieve the established performance standards for water quality, water quantity, and groundwater recharge.
- Nonstructural measures include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site;
- Source control plans should be developed based upon physical site conditions and the origin, nature, and anticipated loading, of potential pollutants.

D. Technical Guidance. The design engineer shall rely on the following documents for technical guidance in the preparation of the stormwater management system design:

1. New Jersey Stormwater Best Practices Manual, as amended, prepared by the New Jersey Department of Environmental Protection.
2. Stormwater Management Facilities Maintenance Manual, as amended, prepared by the New Jersey Department of Environmental Protection.
3. Standards for Soil Erosion and Sediment Control in New Jersey promulgated by the State Soil Conservation Committee and incorporated into NJAC 2:90.
4. GSR-32 A Method for Evaluating Ground Water Recharge Areas in New Jersey prepared by the New Jersey Geological Survey.

E. General Design and Performance Standards. Stormwater management measures for land development shall be developed to meet the Stormwater Management Standards of this Section. The Stormwater Management Standards are intended to minimize the impact of stormwater runoff on water quality and water quantity in receiving water bodies and to maintain groundwater recharge in accordance with the following standards.

1. To the maximum extent feasible, these standards shall be met by incorporating nonstructural stormwater management strategies into the design. If these strategies alone are not sufficient to meet the specified standards, structural stormwater management measures necessary to meet these standards shall be incorporated into the design.
2. Residential land development that is regulated under the Residential Site Improvement Standards (RSIS) at NJAC 5:21 shall be governed by RSIS except to the extent that the RSIS are superceded by the Stormwater Management Regulations (NJAC 7:8 et. seq.) that are the basis of this Section.

3. Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Environmental Impact Statement, particularly with regard to *Helonias bullata* (swamp pink) and/or *Clemmys muhlnebergi* (bog turtle).

F. Stormwater Management Standards. This section contains minimum design and performance standards to control erosion, encourage and control infiltration and groundwater recharge, and to control stormwater runoff quantity and quality impacts.

1. Erosion Control Standard. The minimum design and performance standards for erosion control are those established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq. and implementing rules.
2. Groundwater Recharge Standards. The land development shall be designed to provide for groundwater recharge in accordance with the following requirements:
 - a. Recharge Standard. The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations specified in this Section, either demonstrate that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the site or demonstrate that the increase of stormwater runoff volume from pre-construction to post construction for the 2-year storm is infiltrated.
 - b. Impact. The design engineer shall assess the hydraulic impact of the groundwater recharge measures on the groundwater table and site design so as to avoid adverse hydraulic impacts. Potential adverse hydraulic impacts include, but are not limited to, exacerbating a naturally or seasonally high water table so as to cause surficial ponding, flooding of basements, or interference with the proper operation or subsurface sewage disposal systems and other subsurface structures in the vicinity or down gradient of the groundwater recharge area.
 - c. Exemptions. This groundwater recharge standard does not apply to:
 - (1) Projects that qualify as "urban redevelopment";
 - (2) Stormwater from areas of high pollutant loading; (High pollutant loading areas are areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied, areas where pesticides are loaded/unloaded or stored; areas where hazardous materials are expected to be present in greater than 'reportable quantities' as defined by the United State Environmental Protection Agency (EPA) at 40 CFR 302.4; areas where recharge would be inconsistent with Department approved remedial action work plan or landfill closure plan and areas with high risks for spills of toxic materials, such as gas stations and vehicle maintenance facilities); and

- (3) Industrial stormwater exposed to "source material"; ("Source material" means any material(s) or machinery, located at an industrial facility, that is directly or indirectly related to process, manufacturing or other industrial activities, which could be a source of pollutants in any industrial stormwater discharge to groundwater. Source materials include, but are not limited to, raw materials; intermediate products; final products; waste materials; by-products; industrial machinery and fuels, and lubricants, solvents, and detergents that are related to industrial activities that are exposed to stormwater.)

3. Stormwater Runoff Standard. In order to control stormwater runoff quantity impacts, the site design shall comply with one of the following requirements:
 - a. The post construction runoff hydrographs for the 2, 10 and 100 year storm events for stormwater leaving the site do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events;
 - b. There is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the 2, 10, and 100 year storm events and the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site. This analysis shall include the analysis of impacts of existing land uses and projected land uses assuming full development under existing zoning and land use ordinances in the drainage area; or
 - c. The post construction peak runoff rates for the 2, 10 and 100 year storm events are designed to be 50, 75 and 80 percent, respectively, of the pre-construction peak runoff rates. The percentages apply only to the post construction stormwater runoff that is attributable to the portion of the site on which the proposed development or project is to be constructed. The percentages shall not be applied to post-construction stormwater runoff into tidal flood hazard areas if the increased volume of stormwater runoff will not increase flood damage below the point of discharge.
4. Stormwater Runoff Quality Standards. The stormwater management measures shall be designed to reduce the post construction load of total suspended solids (TSS) in stormwater runoff by 80 percent of the anticipated load from the developed site, expressed as an annual average in accordance with the following requirements:
 - a. Stormwater management measures shall only be required for water quality control if an additional ¼ acre of impervious surface is being proposed on a development site.
 - b. The requirement to reduce TSS does not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollution Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement.

- c. Water Quality Calculations. The water quality design storm is defined as 1.25 inches of rainfall in two hours distributed in the manner reflected in Table 6. The calculation of the volume of runoff may take into account the implementation of non-structural and structural stormwater management measures.

<i>Table 6: Water Quality Design Storm Distribution</i>			
Time (Minutes)	Cumulative Rainfall (Inches)	Time (Minutes)	Cumulative Rainfall (Inches)
0	0.0000	65	0.8917
5	0.0083	70	0.9917
10	0.0166	75	1.0500
15	0.0250	80	1.0840
20	0.0500	85	1.1170
25	0.0750	90	1.1500
30	0.1000	95	1.1750
35	0.1330	100	1.2000
40	0.1660	105	1.2250
45	0.2000	110	1.2334
50	0.2583	115	1.2417
55	0.3583	120	1.2500
60	0.6250		

- d. Total Suspended Solid (TSS) Reduction Calculations. The presumed removal rates for certain BMPs designed in accordance with the New Jersey Stormwater Best Management Practices Manual are presented in Table 7. TSS reduction shall be calculated based on the specified removal rates for the BMPs. Alternative removal rates and methods of calculating removal rates may be used if the design engineer provides documentation demonstrating the capability of these alternative rates and methods to the satisfaction of the Board Engineer.

<i>Table 7: TSS Removal Rates for BMPs</i>	
Best Management Practice	TSS % Removal Rate
Bioretention Systems	90
Constructed Stormwater Wetland	90
Extended Detention Basin	40-60
Infiltration Structure	80
Manufactured Treatment Device	See Section 5.C
Sand Filter	80
Vegetative Filter Strip	60-80
Wet Pond	50-90

- e. If more than one BMP in series is necessary to achieve the required 80% TSS reduction for a site, the applicant shall utilize the following formula to calculate TSS reduction:

$$R = A + B - (AXB)/100$$

Where:

R = total TSS percent load removal from application of both BMPs, and
 A = the TSS percent removal rate applicable to the first BMP
 B = the TSS percent removal rate applicable to the second BMP

- f. If there is more than one on-site drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a calculation using a weighted average.
- g. Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post construction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm. In achieving reduction of nutrients to the maximum extent feasible, the design of the site shall include nonstructural strategies and structural measures that optimize nutrient removal while still achieving the Stormwater Management Standards.

G. Calculation of Stormwater Runoff and Groundwater Recharge. Stormwater runoff and groundwater recharge shall be calculated in accordance with the following:

1. The design engineer shall calculate stormwater runoff using one of the following methods:
- a. The USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in the NRCS National Engineering

Handbook Section 4 - Hydrology and Technical Release 55 - Urban Hydrology for Small Watersheds; or

- b. The Rational Method for peak flow and the Modified Rational Method for hydrograph computations.
2. Runoff Coefficients. For the purpose of calculating runoff coefficients and groundwater recharge, the design engineer shall presume that the pre-construction condition of a site or the portion thereof has a wooded land use with good hydrologic condition. A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or portion of the site for at least five years without interruption prior to the time of application. If more than one land cover have existed on the site during the five years immediately prior to the time of application, the land cover with the lowest runoff potential shall be used for the computations. In addition, there is the presumption that the site is in good hydrologic condition (if the land use type is pasture, lawn, or park), with good cover (if the land use type is woods), or with good hydrologic condition and conservation treatment (if the land use type is cultivation).
 3. In computing pre-construction stormwater runoff, the design engineer shall account for all significant land features and structures, such as ponds, wetlands, depressions, hedgerows, or culverts, that may reduce pre-construction stormwater runoff rates and volumes.
 4. In computing stormwater runoff from all design storms, the design engineer shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site. To calculate runoff from unconnected impervious cover, urban imperious area modifications as described in the NRCS Technical Release-55, Urban Hydrology for Small Watersheds and other methods may be employed.
 5. If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design of structural stormwater management measures.
 6. Groundwater recharge shall be calculated in accordance with the New Jersey Geological Survey Geological Survey Report GSR-32 *A Method for Evaluating Groundwater Recharge Areas in New Jersey*, incorporated herein by reference, as amended and supplemented.

H. Stormwater Management Exemptions

1. Exemption. The following linear development projects are exempt from conforming to the Stormwater Management Standards:
 - a. The construction of an underground utility line provided that the disturbed areas are revegetated upon completion;

- b. The construction of an above ground utility line provided that the existing conditions are maintained to the maximum extent practicable; and
 - c. The construction of a public pedestrian accessway, such as a sidewalk or trail with a maximum width of 14 feet, provided that the accessway is made of permeable material.
2. Design Waiver. A waiver from strict compliance from the Stormwater Management Standards may be granted for the enlargement of an existing public roadway or railroad; or the construction or enlargement of a public pedestrian accessway, provided that the following conditions are met:
- a. The applicant demonstrates that there is a public need for the project that cannot be accomplished by any other means;
 - b. The applicant demonstrates through an alternatives analysis, that through the use of nonstructural and structural stormwater management strategies and measures, the option selected complies with the Stormwater Management Standards to the maximum extent practicable;
 - c. The applicant demonstrates that, in order to meet the Stormwater Management Standards, existing structures currently in use, such as homes and buildings would need to be condemned; and
 - d. The applicant demonstrates that it does not own or have other rights to areas, including the potential to obtain through condemnation lands within the upstream drainage area of the receiving stream that would provide additional opportunities to mitigate for the Stormwater Management Standards that were not achievable on-site.
- I. Nonstructural Stormwater Management Strategies. To the maximum extent practicable, the Stormwater Management Standards shall be met by incorporating nonstructural stormwater management strategies into the design in accordance with the following:
- 1. The applicant shall identify the nonstructural measures incorporated into the site design in the Stormwater Management Report.
 - 2. If the applicant contends that it is not feasible for engineering, environmental, or safety reasons to incorporate any nonstructural stormwater management measures into the site design, the applicant shall identify the strategies considered and provide a basis for the contention that these strategies did not apply.
 - 3. Nonstructural stormwater management measures incorporated into site design shall:
 - a. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss;

- b. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces;
- c. Maximize the protection of natural drainage features and vegetation;
- d. Minimize the decrease in the “time of concentration” from preconstruction to post construction. (“Time of concentration” is defined as the time it takes for runoff to travel from the hydraulically most distant point of the watershed to the point of interest within a watershed.)
- e. Minimize land disturbance including clearing and grading.
- f. Minimize soil compaction;
- g. Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides;
- h. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas;
- i. Provide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runoff including, but not limited to:
 - (1) Site design features that help to prevent accumulation of trash and debris in drainage systems;
 - (2) Site design features that help to prevent discharge of trash and debris from drainage systems;
 - (3) Site design features that help to prevent and/or contain spills of other harmful accumulations of pollutants at industrial or commercial developments; and
 - (4) When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules.

5. Any land area used as a nonstructural stormwater management measure to meet the Stormwater Management Standards shall be dedicated to the Township, subject to a conservation easement filed with the County Clerk, or subject to an approved equivalent restriction that ensures that measure or an equivalent stormwater management measure approved by the Planning Board is maintained in perpetuity.

J. Structural Stormwater Management Measure Standards. Structural stormwater management measures shall be designed in accordance with the following requirements:

1. The structural measures shall be designed to account for existing site conditions, including, environmentally critical areas, wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; drainage area and drainage patterns; and the presence of solution-prone carbonate rocks (limestone).
2. The structural measures shall be designed to minimize maintenance, to facilitate maintenance and repairs, and to ensure proper functioning.
3. Structural measures shall be designed, constructed, and installed to be strong, durable, and corrosion resistant. Measures that are consistent with the relevant portions of the Residential Site Improvement Standards at N.J.A.C. 5:21-7.3, 7.4, and 7.5 shall be deemed to meet this requirement.
4. Trash racks shall be installed at the intake to the outlet structure and shall be designed in accordance with Paragraph J of this Section.
5. At the intake to the outlet from the stormwater management basin, the orifice size shall be a minimum of two and one-half inches in diameter.
6. Manufactured treatment devices may be used to meet the requirements of this subchapter, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department.

K. Stormwater Management Basin Safety Standards. Stormwater water management basins shall be designed in accordance with the following requirements to protect public safety;

1. Trash Racks. A trash rack is a device designed to catch trash and debris and prevent the clogging of outlet structures. Trash racks shall be installed at the intake to the outlet structure to ensure proper functioning of the basin outlets in accordance with the following design requirements:
 - a. Trash racks shall have parallel bars with one-inch (1") spacing between the bars to the elevation of the water quality design storm. For elevations higher than the water quality design storm, the parallel bars at the outlet structure shall be spaced no greater than one-third (1/3) the width of the diameter of the orifice or one-third (1/3) the width of the weir, with a minimum spacing between bars of one-inch and a maximum spacing between bars of six inches.
 - b. The trash rack shall be designed so as not to adversely affect the hydraulic performance of the outlet pipe or structure.
 - c. The average velocity of flow through a clean trash rack is not to exceed 2.5 feet per second under the full range of stage and discharge. Velocity is to be computed on the basis of the net area of opening through the rack.
 - d. The trash rack shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 lbs/sq. ft.

2. Overflow Grate. An overflow grate is designed to prevent obstruction of the overflow structure. If an outlet structure has an overflow grate, such grate shall meet the following requirements:
 - a. The overflow grate shall be secured to the outlet structure but removable for emergencies and maintenance.
 - b. The overflow grate spacing shall be no less than two inches across the smallest dimension.
 - c. The overflow grate shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 lbs/sq. ft.

3. Escape Provisions. Escape provisions means the permanent installation of ladders, steps, rungs, or other features that provide easily accessible means of egress from stormwater management basins. Stormwater management basins shall include escape provisions as follows:
 - a. If a stormwater management basin has an outlet structure, escape provisions shall be incorporated in, or on, the structure. A freestanding outlet structure may be exempted from this requirement with the approval of the Board Engineer.
 - b. Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet. Such safety ledges shall be comprised of two steps. Each step shall be four to six feet in width. One step shall be located approximately two and one-half feet below the permanent water surface, and the second step shall be located one to one and one-half feet above the permanent water surface. See Section 7.E for an illustration of safety ledges in a stormwater management basin.
 - c. In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than 3 horizontal to 1 vertical.
 - d. Design Waiver from Safety Standards. A variance or exemption from the safety standards for stormwater management basins may be granted only upon a written finding by the Board Engineer that the variance or exemption will not constitute a threat to public safety. This finding shall be included in any resolution of approval.

- L. Stormwater Management Measure Maintenance and Repair. All land development shall incorporate a maintenance plan for the stormwater management measures that are to be incorporated into the site design. Maintenance guidelines for stormwater management measures are available in the New Jersey Stormwater Best Management Practices Manual. The design engineer shall submit a maintenance plan for the stormwater management measures for review and approval by the Board Engineer that adheres to the following requirements:

1. The maintenance plan shall contain specific preventative maintenance tasks and schedules; cost estimates, including estimated cost of sediment, debris, or trash removal;
2. The maintenance plan shall identify the name, address, and telephone number of the person or persons responsible for preventative and corrective maintenance and equipment replacement, referred to herein as the 'Stormwater System Operator'.
3. If the maintenance plan identifies a Stormwater System Operator other than the developer (for example, a public agency or homeowners' association), the plan shall include documentation of such person's agreement to assume this responsibility, or of the developer's obligation to dedicate a stormwater management facility to such Stormwater System Operator under an applicable ordinance or regulation.
4. Maintenance responsibility shall not be assigned or transferred to the owner or tenant of an individual property in a residential development or project, unless such owner or tenant owns or leases the entire residential development or project.
5. If the Stormwater System Operator is not a public agency, the maintenance plan and any future revisions shall be recorded upon the deed of record for each property on which the maintenance described in the maintenance plan must be undertaken.
6. Preventative and corrective maintenance shall be performed to maintain the function of the stormwater management measure, including repairs or replacement to the structure; removal of sediment, debris, or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; and repair or replacement of nonvegetated linings.
7. The Stormwater System Operator shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders. The maintenance plan and the required documentation shall be made available, upon request, by any public entity with administrative, health, environmental, or safety authority over the site.
8. The Stormwater System Operator shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed.
9. In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is in need of maintenance, the municipality shall so notify the Stormwater System Operator in writing. Upon receipt of that notice, the Stormwater System Operator shall have fourteen (14) days to effect maintenance and repair of the facility in a manner that is approved by the Township Engineer. If the responsible person fails or refuses to perform such

maintenance and repair, the Township may immediately proceed to do so and shall bill the cost thereof to the Stormwater System Operator.

10. The Planning Board shall require the posting of a performance and maintenance bond for all drainage and stormwater management improvements. The Township shall have the option of calling the bond to ensure that any necessary repairs are undertaken during the term of the maintenance bond.

ARTICLE XVII: LANDSCAPING

§255-89 Landscaping

- A. Purpose. The intent of the landscaping plan is to preserve elements of the existing landscape worthy of protection; to improve the overall appearance of the site and the structural elements; and to provide appropriate buffering and screening, where warranted.
- B. Landscaping Plan Scope. Landscaping shall include trees, bushes, shrubs, ground cover, perennials, annuals, plants, land forms, sculpture, art and the use of building and paving materials in an imaginative and aesthetic manner. Landscaping shall be integrated into building arrangements, topography, parking and buffering requirements. Landscaping plans for major site plan or subdivisions shall be prepared by a certified landscape architect.
- C. Landscaping Design Criteria. The general landscaping design criteria to be applied in the Township are as follows;
 1. Natural Setting. Landscaping plans shall preserve a natural setting consistent with prevailing community standards. Recognizing that a major community asset lies in the preservation of the natural condition of property, all efforts in the area of landscaping shall be exercised to provide consistent landscaping proposals with existing foliage. Natural topography and vegetation shall be integrated into the landscaping plan;
 2. Site Clearing. Every reasonable attempt shall be made to save mature existing trees. Clumps of trees should be saved over single trees. Site disturbance should be minimized where trees are to be preserved. In the event that trees need to be removed, replacement trees will be required.
 3. Grading. Slopes in excess of three to one (3:1) shall be avoided unless necessitated by unusual site limitations. All slopes shall be permanently stabilized in an acceptable manner.
 4. Off-street Parking/Loading. Off-street parking and loading areas shall be landscaped to separate them from adjacent roadways.
 5. Buffers. Site buffers shall be provided around site perimeters. Zone buffers shall be provided wherever non-residential or multi-family residential development abuts single family detached or attached residential neighborhoods. The extent and depth of the buffer will vary depending upon the nature of the use and the adjacent existing or proposed use as indicated in §255-92.

6. Screening. Tall dense screens shall be required along nonpenetrable side lines, and rear property lines where commercial or industrial development will abut residences or residential zones. All screening shall be in accordance with §255-92.
7. Driveways. The areas adjacent to the driveways shall be planted with low plants or grass. Appropriate low plants include but are not limited to, butterfly bush, Sargent juniper, inkberry, Japanese barberry or shrubby cinquefoil.
8. Other Required Landscaped Areas. Where a development plan indicates raised walkways between opposing rows of cars, areas at the end of bays or, where proposed or required by the municipal agency, specific planting islands are indicated, these areas shall be landscaped. Planting strips may be as narrow as five feet, with a fifteen to twenty-foot width most desirable. All should be raised and protected by permanent concrete curbing.

§ 255-90 Street Trees.

- A. Purpose. The intent of this section is to provide for the installation of street trees along all public streets. Where streets are devoid of trees, deciduous street trees shall be installed in accordance with this section. Where street trees are present, the health and suitability of the existing trees shall be evaluated to determine which trees should be retained and replaced.
- B. Street Tree Design Criteria. Street trees shall be provided in accordance with the following design criteria:
 1. Shade (deciduous) trees shall be planted along both sides of the street within the right-of-way between the sidewalk and curblineline. The width of the planting strip shall be sufficient for the proposed tree species.
 2. Street trees shall be planted so as not to interfere with utilities, roadways, sidewalks, sight easements or streetlights. Tree location, landscape design and spacing plan shall be approved by the Planning Board as part of the landscaping plan.
 3. Street trees may be planted outside of the right-of-way line if it would prevent conflicts with overhead utility lines on new streets or on streets that are devoid of trees. If trees are to be planted outside of the right-of-way, they shall be planted within a landscaping easement dedicated to the Township no wider than 12 feet.
 4. Street trees shall be planted at intervals ranging from 40 to 60 feet but averaging 50 feet on center. The range is meant to enable the tree locations to avoid conflicts and to 'frame' structures. If a street canopy effect is desired, trees may be planted closer together, based on the recommendations of a certified landscape architect.
 5. Street trees shall not be located within any defined sight triangle easement of closer than thirty (30) feet from the intersection of the street right-of-way lines.

6. The caliper of the street trees shall be a minimum of two and one-half (2½) inches measured four feet above the ground. The standing height shall be a minimum of ten (10) feet.
7. All trees shall be brought to the site balled and burlapped (or other acceptable means), free from insects and disease, and true to species and variety.
8. Stripping trees of vegetation or changing the grade within the drip line by more than six (6) inches shall not be permitted unless it is demonstrated by the developer that these actions are necessary for proper site design. If these actions cause the existing trees to die, the trees should be replaced with the same species and size up to a maximum caliper of 3 ½ inches to reestablish the tone of the area and to conform to adjacent lots.
9. Dead or dying trees which have been planted or transplanted based on the requirements of this section shall be replaced by the developer during the next recommended planting season.
10. Landscaping plans shall include a graphic tree-planting detail which shall address the following:
 - a. The thinning of branches and foliage by one-third (1/3). The leader shall not be cut.
 - b. The staking of a deciduous tree by three (3) stakes. The minimum size of stakes shall be two by three (2 x 3) inches.
 - c. The support of tree shall be a double strand of 12-gauge wire. A tree shall be protected from injury due to wire by a rubber hose or acceptable equal.
 - d. The trunk shall be protected by a tree wrap.
 - e. A tree shall be mulched with three (3) inches of approved organic material.
 - f. A three-inch saucer shall be constructed around the planting area.
 - g. The top of the burlap shall be untied and removed.
 - h. The ball shall rest on compacted soil.
 - i. The diameter of the hole shall be two (2) feet larger than the diameter of the ball.
11. Street Tree Species. The species and variety of street trees shown on the Landscaping plan shall be reviewed and approved by the Township Planner. Suitable street tree species recommended for planting on Township streets shall include, but are limited to, those species listed in Table 8.

§255-91 Shade Trees

- A. A minimum of three (3) deciduous shade trees, not including street trees, shall be provided on each proposed lot within residential developments. This requirement may be waived by the Planning Board when a building lot contains adequate shade or canopy and measures have been taken to preserve the trees that provide those qualities.
- B. Landscape plans shall be prepared by a certified landscape architect and include a planting schedule which describes the quantity, common name, botanical name, size and comments for each species.
- C. Ornamental trees need not have straight trunks, but must conform in other respects with the provisions for trees and tree plantings outlined in this section.

§ 255-92 Buffering and Screening.

- A. Purpose. The intent of this section is to establish design criteria for the use of buffering and screening.
- B. Terms. Buffering refers to the use of a landscaped strip of land to visually separate one use from another or from the street and to mitigate any impacts on adjacent properties. Screening is a method of shielding or obscuring all or a portion of a development site from view using densely planted vegetation, fences, walls, and berms. The two terms are not synonymous since screening refers to a more intense and effective buffer that is used in particular situations.
- C. Buffer Area Design Criteria. The landscaping plan shall be designed in accordance with the following buffer area design criteria:
 - 1. No structure, activity, storage of materials or parking of vehicles shall be permitted in a buffer area.
 - 2. Buffer areas shall be developed in an aesthetic manner for the primary purpose of buffering or screening views and reducing nuisance perception (i.e., noise, light) beyond the lot line. The intent of these buffer area design criteria is to provide sufficient design flexibility to achieve effective and visually interesting buffer areas.
 - 3. Site buffers refer to the buffering of similar uses or activities from each other. The purpose of site buffers is to define the limits of the uses and to separate uses. Site buffer widths shall vary depending upon the type of activity. The minimum site buffer width shall be 15 feet or that width specified in the applicable zoning district measured horizontally and perpendicular to lot and street lines. Site buffers shall be designed, planted, graded and landscaped to provide an aesthetically pleasing separation of similar uses. The site buffer width may be increased by the Planning Board to that necessary to achieve the appropriate buffering of the proposed use.
 - 4. Zone Buffers shall be provided along all lot lines and street lines which separate a multi-family residential use (townhouses, apartments, condominiums) or a nonresidential use from an existing single family detached or attached residential

dwelling or a district zoned for these units. Zone buffers shall be designed, planted, graded and landscaped to provide an aesthetically pleasing separation of dissimilar uses. In meeting this standard, the applicant may employ a landscaped berm, fencing or wall screening in landscaped areas or evergreen tree or shrubbery screening in a landscaped area.

5. The location and design of buffers and screens shall consider the use of the portion of the property being screened; the distance between the use and the adjoining property line; the difference in elevations; the type of buffer, such as dense planting, existing woods, a wall or fence; buffer height; buffer width; and other combinations of man-made and natural features. The landscaped buffer shall be designed based on the general guideline that the closer a use or activity is to a property line or the more intense the use, the more effective the buffer area must be in obscuring light and vision and reducing noise beyond the lot.
6. The preservation of natural wooded areas shall be an integral part of all development plans. Natural wooded areas located along a boundary with a residential zone district shall be integrated into the required zone buffer area, provided that the growth is of sufficient density and the area of sufficient width to serve the purpose of a buffer. Additional plants may be required by the Planning Board to supplement the natural wooded areas and to establish an effective buffer.
7. If the Planning Board determines that the landscaping plan does not provide sufficient buffers for the proposed use, the Planning Board may require the development plan to be modified to increase the buffer area, to relocate structures of facilities, or to fundamentally change the landscaping methods to achieve the desired buffering effect.

D. Screening Design Criteria.

1. Screening shall be provided within buffer areas as required in this chapter to provide an effective year-round visual and partial acoustical barrier to conceal the view or sounds of various utilitarian operations and uses from the street or adjacent properties.
2. Screening vegetation shall be so placed that at maturity it will not be closer than three feet to any street or property line. Screening vegetation shall be broken at points of vehicular and pedestrian ingress and egress to assure a clear-sight triangle at all street and driveway intersections.
3. Screening shall consist of the following materials:
 - a. Solid masonry. A solid masonry wall not less than six feet above ground level.
 - b. Solid fencing. A solid fencing, uniformly painted or of a naturally durable material such as cedar, cypress or redwood, not less than six feet above ground level and open to the ground to a height of not more than four inches above ground level.

§ 255-93 Fences.

- A. Purpose. The intent of this section is to regulate the use of fences. The use of fences is appropriate for site definition and security. However, fences must be located and designed so that they are an asset to the property and the community.
- B. No fence shall be erected within the municipality unless the owner of the premises or his representative has first obtained a zoning permit.
- C. All fences shall be of quality materials and installed in a good workmanlike manner. All fences shall be maintained by the owner.
- D. Exemptions. The following fences shall be exempt from the requirements of this section, relative to permit, fees, construction or materials:
 - 1. Fences accessory to farm operations, except that the exemption shall not extend to that percentage of farm property set aside for residential purposes as delineated upon the property record cards of the township.
 - 2. Fences accessory to any public facility, park, playground or school premises.
- E. Residential Zones. Regulations for fences in residential zones.
 - 1. No fence shall be erected unless the property owner shall have obtained a zoning permit certifying that the fence is in accordance with all applicable zoning regulations. No zoning permit shall be issued unless the applicant has filed the application provided by the Zoning Officer and has attached to the application a survey of the property on which shall be shown the specific location, height and design of the proposed fence.
 - 2. No fences shall be allowed in the front yard, which shall, for the purposes of this provision, mean the area between the front wall of the building and the street.
 - 3. For residential properties which are located on a "corner," which is defined as having frontage on two separate streets, there shall not be any fences in the "primary front yard," which, for the purposes of this provision, shall be defined as the area along the street which serves as the postal address for the property. A fence, not exceeding 72 inches in height above ground level, may be erected along the "secondary street frontage," which, shall for the purposes of this provision, shall be defined as the area along the street which does not serve as the postal address for the property. Any fence along the secondary street frontage shall be located no closer to the street than one foot from the right-of-way line or the sidewalk, whichever is farther from the paved portion of the street along the secondary street frontage. No fence on a corner property shall be placed or constructed of materials which, in the determination of the Chief of Police, would create a safety hazard by obstructing the view of vehicular traffic at the intersection.
 - 4. For residential properties, other than those located on a corner, fences not exceeding six feet in height above the ground level may be erected between the

front building line to the side property lines and to the rear of the property (rear yard). They may be of solid construction.

5. No fence shall be located within any alley shown on any plan unless permission has been granted by resolution of the Township Council and subject to any conditions established by the Township Council.
6. No permit shall be denied for a fence which will be located in a utility easement area, provided that no fence shall be erected within a drainage swale or where the fence would obstruct the flow of water in the easement area. The responsibility for removing and replacing any fence constructed in a utility easement area shall be on the property owner and, there shall be no liability on the utility holding the easement where the fence is removed in order to provide access to the easement area in accordance with the terms of the easement.
7. Fences shall be installed with the finished side of the fence facing the outward perimeter of the property, with all supporting appurtenances on the inside of the barrier.
8. Not more than one fence shall be located on any common property line or within 24 inches of any existing fence.

F. Nonresidential Zones. Regulations for fences in nonresidential zones.

1. Fences shall be no closer than one foot to the township right-of-way.
2. Fences shall not be less than four feet nor more than eight feet in height.
3. Fences shall be installed with the finished side of said fence facing the outward perimeter of the property, with all supporting appurtenances on the inside of the barrier.

- G. Upon discovery of an alleged violation of this section, the Zoning Officer shall serve written notice, either by personal service or certified mail, return receipt requested, to the owner of the fence and/or the owner or lessee of the property where the fence is located, ordering the fence to be brought into conformity with provisions of this chapter, or its removal, within 30 days of the date of the notice. The notice shall include notification that if the fence is not brought into conformity or removed within such time, a summons and/or complaint will be issued.

ARTICLE XVIII: LIGHTING

§ 255-94 Street and Site Lighting.

- A. Purpose. The intent of this section is to provide for a street and site lighting plan that adheres to recommended lighting design practices by achieving adequate illumination for the specific land use while not causing adverse site or offsite conditions or excessive operating costs.

remote from residential and commercial zones where they will not be visible from the traveled way.

3. General illumination of the exterior of buildings, including the roof, is discouraged unless the lighting is properly designed in accordance with IESNA standards.
4. Spotlight-type fixtures attached to buildings are to be avoided.
5. Objectionable spill, to the exterior, of bright and glaring interior building light shall be avoided by the use of low-brightness lenses on interior lighting.

F. Light Pollution or Light Intrusion. Light pollution or intrusion shall be minimized by conformance to the following design standards:

1. Directional lights shall be arranged so as to minimize glare and reflection on adjacent properties.
2. The maximum cutoff angle shall be used to shield light source glare and unwanted light from adjacent properties and motorists approaching on bounding roads and highways.
3. Adequate shielding shall be employed to protect properties, streets and highways from the glare of such illumination, including luminaires for illuminating entrances and driveways for parking areas.
4. Conflicts with lighting of adjacent (parking areas) properties shall be avoided. For example, if one (1) or more adjacent areas with established lighting systems are using mercury-vapor lamps, the submitted area shall conform to the same lamp type, but not necessarily the same type luminaire. However, other HID (high intensity discharge) lamps may be considered when there's ample reason for employing such lamps and ample proof that a suitable method can be employed to reduce color conflict.
5. Security lighting. All parking areas and appurtenant passageways and driveways shall be illuminated for safety and security reasons from sunset to sunrise.

G. Lighting Details. The following information shall be submitted for review and approval of all Street/Site Lighting Plans:

1. The lighting plan shall show existing and proposed streetlights within one hundred (100) feet of the property area to be lighted; location of all poles and luminaries; illumination levels using photometric curve plotting.
2. When warranted by site conditions, the Planning Board Engineer shall require a point-by-point lighting plan showing footcandles of illumination at each point including all canopy, site, street, and building lights. The point-by-point plan shall indicate the minimum, average, and maximum footcandles maintained with a Light Loss Factor (LLF) of 0.75; the uniformity ratio; and the illuminance levels for the proposed activity recommended by the Illuminating Engineering Society of North America (IESNA).

3. Details of the luminaries shall be provided indicating the type and wattage of the lamp, the mounting height, and manufacturer's data.
4. Details of the light standards and manufacturer's data.
5. Pole base and foundation design and details. Anchor bolts shall be in accordance with the manufacturer's recommendations.
6. Photometric data and isofotcandle curves of the luminaire and lamp proposed. Photometric data shall be from an independent testing laboratory. Photometric curves shall be drawn to the same scale as the site plan scale and shall show maintained footcandle levels of illumination. The luminaire data shall include data on light source corrections; Lamp life lumen depreciation factor; Coefficient of utilization; Luminaires dirt depreciation factors; Maintenance factor correction.

ARTICLE XIX: UTILITIES

§ 255-95 Water Mains, Culverts, Storm Sewers and Sanitary Sewers.

All such installations shall be properly connected with an approved system and shall be adequate to handle all present and probable future development. The township may require easements or rights-of-way of sufficient width along drainage and utility courses for vehicular access and maintenance needs.

§ 255-96 Public Utilities.

- A. All public services shall be connected to an approved public utilities system where one exists.
- B. For all major subdivisions and site plans the developer shall arrange with the servicing utility for the underground installation of the utility's distribution supply lines and service connections in accordance with the provisions of the applicable standard terms and conditions incorporated as a part of its tariff as the same are then on file with the State of New Jersey Board of Regulatory Commissioners, and the developer shall provide the township with three (3) copies of a final plat showing the installed location of these utilities.
- C. Lots which abut existing streets where overhead electric or telephone distribution supply lines and service connections have heretofore been installed may be supplied with electric and telephone service from those overhead lines, but the service connections from the utility's overhead lines shall be installed underground.
- D. In the case of existing overhead utilities, should a road widening or an extension of service or other such condition occur as a result of the development and necessitate the replacement or relocation of such utilities, such replacement or relocation shall be underground. An installation under this subsection to be performed by a servicing utility shall be exempt from the provisions of Article XIII, § 91-66, requiring performance guaranties and inspection and certification by the Township Engineer.

- E. Where natural foliage is not sufficient to provide year-round screening of any utility apparatus appearing above the surface of the ground other than utility poles, the applicant shall provide sufficient live screening to conceal such apparatus year round.
- F. On any lot where, by reason of soil conditions, rock formations, wooded area or other special condition of land, the applicant deems it a hardship to comply with the provisions of this subsection, the applicant may apply to the Planning Board for an exception from the terms of this subsection in accordance with the procedure and provisions of Article XIII, § 91-66.
- G. Where overhead lines are permitted as the exception, the alignments and pole locations shall be carefully routed to avoid locations along horizons, avoid clearing swaths through tree areas by selective cutting and a staggered alignment by planting trees in open areas at key locations to minimize the views of the poles and alignments, by following rear lot lines and interior locations and similar design and location considerations to lessen the visual impact of overhead lines.
- H. Utility easements. Easements along rear property lines or elsewhere for utility installation may be required in large-scale developments. Such easements shall be at least 15 feet wide and located in consultation with the utility companies or township departments concerned and, to the fullest extent possible, be centered on or adjacent to rear or side lot lines.

ARTICLE XX: SIGNS

§ 255-97 Signs.

- A. No person shall erect, alter or relocate any sign without a sign permit, unless exempted under the following provisions. Applications for a sign permit shall be made to the Construction Official. A sign permit shall be obtained whenever a sign is changed in any manner. Normal maintenance and the removal of a sign shall not require a permit. The permit fee for sign permits shall be in accordance with the Township Fee Schedule (see Article XXIII).
- B. General regulations shall be as follows:
 - 1. Animated, flashing and illusionary signs. Signs using mechanical and/or electrical devices to revolve, flash, change intensity of illumination or display movement or the illusion of movement are prohibited.
 - 2. Attached signs. Signs parallel to walls shall be no more than fifteen (15) inches from the surface of the wall. Signs perpendicular to walls shall extend no more than five (5) feet from the surface of the wall, shall not exceed ten (10) square feet in area, shall be supported in a structurally sound manner approved by the Township Engineer and Construction Official and shall have a clearance of at least nine (9) feet between bottom of the sign to the finished grade.
 - 3. Height. The height of a sign shall be measured from the finished grade to the uppermost part of the sign. The lowest portion of any sign which projects over a driveway shall be at least fourteen (14) feet above the finished grade and projects over a sidewalk shall be at least nine (9) feet above the finished grade. Roof

mounted signs are prohibited. Freestanding signs shall not exceed a height of twenty (20) feet.

4. **Illuminated Signs.** All lighted signs shall have the light source shielded from adjoining or nearby lots, streets and interior drives and shall have translucent fixtures.
5. **Sign Area and Dimension.** "Sign area" shall include all lettering, wording, coloring and accompanying designs and symbols, together with the background, whether open or closed, but not including the supporting framework and bracing incidental to the display itself. All internally illuminated panels or translucent fixtures, whether or not they contain lettering, wording, designs or symbols, shall be considered to be part of sign area.
6. **Exemptions from Sign Permits.** Street number designations, highway signs, postal boxes, family names on residences, on-site traffic directional and parking signs, signs posting property as "private property," "no hunting," "danger," "warning" or for similar purposes are permitted but are exempt from other sign area limits as set forth in this chapter, so long as said signs do not exceed two (2) square feet each.
7. **Temporary Signs.**
 - a. **Construction Signs, Non-residential.** No more than one (1) sign naming the project under construction and the participating firms and individuals is permitted on the construction site, beginning with the issuance of a building permit and terminating with the issuance of a certificate of occupancy or the expiration of the building permit, whichever comes first. Such signs shall not exceed an area of thirty-two (32) square feet.
 - b. **Construction Sign, Residential.** Not more than two (2) temporary ground signs for an approved residential development shall be permitted, provided that each sign does not exceed twelve (12) square feet, shall be no closer than fifteen (15) feet to any street or side lot line and shall be removed within thirty (30) days after all lots or units have been sold or rented.
 - c. **Real Estate Signs.** Real estate signs shall be set back at least ten (10) feet from the edge of the street paving and ten (10) feet from all property lines and shall not exceed four (4) square feet on each side. Signs shall be removed at the expense of the advertiser within fifteen (15) days after the termination or completion of the matter being advertised. They do not require a permit. No more than one (1) sign shall be permitted along each street. Real estate signs shall be permitted only on the lot that the sign is advertising.
 - d. **Political Signs.**
 - (1) Political signs shall not exceed sixteen (16) square feet in area. There shall be no more than one (1) sign per lot, and the sign shall have the consent of the owner of the lot. No such sign shall

be erected more than forty-five (45) days prior to the election and shall be removed within fourteen (14) days following such election.

- (2) If a sign is located within a public right-of-way and has not been registered with the Township Clerk or Administrator as to the person responsible for the removal of the sign or does not carry the identification of the person responsible for the removal of the sign, the Zoning Officer shall be empowered to remove such a sign at any time.
- e. Mechanics and Artisans. Each mechanic and artisan is permitted to erect one (1) sign during the period when the mechanic or artisan is actively performing work on the lands or premises where the sign is placed. The sign shall have a maximum of six (6) square feet, and it shall not be placed in such a way that it interferes with visibility for motorists exiting the premises.
8. Public and Quasi-Public Uses. One (1) wall or ground sign not exceeding twelve (12) square feet may be located on the premises of places of worship, school buildings, libraries, parish houses, government buildings and public recreational and community center buildings and grounds. No fee shall be required in connection with the permit for such a sign.
9. Automotive Service Stations. Automotive service stations may display the following special signs:
 - a. One (1) freestanding sign advertising the name of the station, including the company or brand name, insignia or emblem, provided that such sign shall not exceed fifty (50) square feet on a side and shall be at least fifteen (15) feet from the property line. Said sign shall not exceed the height requirements established herein for freestanding signs. One (1) freestanding sign shall be permitted for each street frontage. The freestanding sign may have a supplementary price sign, provided that it is mounted on the same support structure as the freestanding sign, that the price sign does not exceed twenty-five (25) square feet in sign area and that the lowest part of the price sign is at least eight (8) feet above the finished grade.
 - b. Incidental signs advertising services, trade information, credit cards, prices and information other than product advertising are permitted, provided that no one (1) sign exceeds ten (10) square feet, there is no more than one (1) such sign per street frontage and all are set back at least twenty (20) feet from the curb line.
 - c. In addition to the freestanding sign permitted herein, gasoline service stations that have a canopy over the fuel dispensing islands shall be permitted one (1) sign on the canopy, with the area of the sign limited to no more than ten percent (10%) of the longest façade of the canopy.

- d. In addition to the freestanding sign, the incidental sign and the sign on the canopy, the principal building shall be permitted to have one (1) attached or wall sign in accordance with the provisions of § 255-17C(2).

10. Prohibited Signs.

- a. Bare-bulb external sign illumination.
- b. Banner-type signs, except in celebration of public events and erected with the approval of the governing body.
- c. Billboards.
- d. Mobile signs, including signs that are not permanently attached to a building, or not placed in the ground in such a fashion as to be permanent in a manner conforming to the Uniform Construction Code, or signs mounted on wheels, trailers or unregistered motor vehicles. A registered vehicle that has as its principal purpose the advertising of a business from a site as opposed to serving as a delivery or service vehicle for other business purposes of this section.

