

CHAPTER 8 - DESIGN STANDARDS

SECTION 8.1 -- Purpose

- A. The purpose of this Chapter is to provide design standards for improvements that are proposed or required as part of site plan, subdivision, variance, and other applications for development made pursuant to this Ordinance. These standards will apply to all matters that are not subject to the requirements of the New Jersey Site Improvement Standards.

SECTION 8.2 – New Jersey Residential Site Improvement Standards

- A. Residential subdivision, site plan and variance applications are subject to the New Jersey Residential Site Improvement Standards (RSIS), codified at *N.J.A.C. 5:21-1, et seq.* Applicants who wish to deviate from the RSIS must apply for exceptions or waivers pursuant to RSIS requirements. If recommended by the Planning Board Engineer, the Planning Board may apply the RSIS design specifications and other requirements to commercial or industrial major subdivision, site plan, variance, or other applications for development of non-residential projects.

SECTION 8.3 – Review Criteria

Subject to the requirements of the Residential Site Improvement Standards, and applying generally accepted design standards and principles, the following factors shall be considered in the review and development of all subdivision, site plan, variance, and other applications for development:

- A. **Site Design.** The design and layout of structures and improvements shall be reviewed so as to provide aesthetically pleasing design, efficient arrangement, and proper function. In the orientation and placement of structures and improvements the unique characteristics of the site shall be taken into account with consideration given to relating structures and improvements to the natural terrain and other site features, creating desirable focal points, preserving natural views, and respecting the established character of the neighborhood and areas reserved for public use. The development plan shall provide for a unified design with features that tie principal and accessory structures together and relate site features successfully and harmoniously to similar elements and surrounding buildings, using generally accepted design standards and principles in conformance with the requirements of this Ordinance and the Township Master Plan.
- B. **Circulation.** Proposed pedestrian and vehicular traffic movement within and adjacent to the site shall be reviewed applying generally accepted design standards and principles with particular emphasis on the provision and layout of properly designed parking areas, off-street loading and unloading areas, and the movement of people, goods and vehicles within and near the site. The Planning Board shall ensure that all parking spaces and driveways are useable, and safely and conveniently arranged. Access to the site from adjacent roads shall be designed so as to interfere as little as possible with traffic flow on these roads and to permit vehicles a rapid and safe entrance and exit to and from the site. Streets and driveways in a subdivision or other development must be of sufficient width and suitable grade and suitably located to accommodate prospective traffic and to provide access for firefighting and emergency equipment to buildings. New streets meeting all requirements of this Ordinance and other applicable laws must be coordinated with the official map, if any, and the circulation element of the master plan, if any, and oriented so as to permit, consistent with the reasonable utilization of land, the buildings constructed thereon to maximize solar gain. Streets wider

than 50 feet will not be required unless the street is an extension of an existing street at the greater width, or already has been shown on the master plan at the greater width, or already has been shown in greater width on the official map. The site also must conform to applicable State and County and municipal highway/road/street access management codes. Upon recommendation of its Engineer, the Planning Board may require a traffic study for any application for development.

C. **Off-Street Parking.** Any new or changed use, structure, or other development which is the subject of an application pursuant to this Ordinance must meet the following off-street parking requirements:

1. Parking Area Design standards:

- a. Parking spaces must be a minimum of 9 feet wide and 18 feet long.
- b. Parking areas must be no less than 50 feet from driveway intersection with public road or street.
- c. No parking spaces are allowed in a driveway, unless it is wide enough to prevent vehicles from backing into the travel lane.
- d. Curbing and guttering is required to ensure adequate drainage, delineate the borders of the parking area and separate parking spaces from driveways and aisles.
- e. Off-street parking for more than 2 vehicles must be designed so no vehicles will back into the street.
- f. Aisles within parking areas must meet the following minimum width requirements:
 - i. Parallel parking: 12 feet
 - ii. 30 degree or less angle parking: 12 feet
 - iii. 30 to 45 degree angle parking: 13 feet
 - iv. 34 to 60 angle degree parking: 18 feet
 - v. 60 to 90 degree angle parking: 25 feet
 - vi. Parking spaces, driveways, and aisles must be clearly marked. Areas must be designated for fire-fighting and emergency equipment and must be clearly marked as such.
- g. One-way internal circulation system is required in all parking areas having 20 or more parking spaces.
- h. Parking areas may not be located within side or rear yard setback areas, or within 10 feet of any street.
- i. At least 5 percent of the parking area must be landscaped along walkways, center islands and at the end of bays, in addition to the general landscaping requirement per site plan, subdivision or other development approval.

- j. Double-loaded parking bays having more than 20 parking spaces must provide a suitably landscaped strip, at least 10 feet wide between aisles. The strip should include a 4-foot walkway, unless walkways are provided elsewhere.
- k. New parking must not reduce the number of existing off-street parking spaces.
- l. Parking areas must be paved according to generally accepted standards and specifications.
- m. Two or more uses or structures may share a parking area if the total number of spaces provided equals or exceeds the combined total of all of the spaces that are required for each use or structure.
- n. Off-street parking must be on lot or contiguous to the lot and adjacent to the principal uses. For non-residential uses in commercial districts, parking may be up to 150 feet away, measured from the nearest point of the parking facility to the nearest point of the principal building.
- o. New off-street loading must not affect existing off-street loading in a way that would make it deficient for the uses served.
- p. Surface must be asphaltic or Portland cement concrete. Off-loading spaces must be designed so that no vehicles will back into public streets or internal access roads or a parking area.
- q. Loading areas must be located or screened so they can not be seen from adjacent land uses or from the public street and they must not encroach into any required yards.
- r. Parking lots containing fifty (50) or more spaces must provide a deceleration lane for traffic turning right into the driveway from the street. The deceleration lane must be at least two hundred (200) feet long and at least thirteen (13) feet wide. A minimum forty (40) foot curb radius will be used from the deceleration lane into the driveway. When a deceleration lane is used, the driveway angle may be less than seventy-five (75) degrees.
- s. Parking lots containing two hundred (200) or more parking spaces and adjacent to a road with a peak hour traffic volume exceeding one thousand (1,000) vehicles per hour, must provide an acceleration lane to improve traffic merging and sight conditions. The acceleration lane must be at least two hundred (feet long and thirteen (13) feet wide).
- t. Areas of ingress and egress, loading and unloading areas, major interior driveways, aisles and other areas likely to experience similar heavy traffic shall be constructed with (a): four (4") inches of compacted dense graded aggregate in accordance with Section 301, Soil Aggregate Base Coarse and Dense Graded Aggregate Base Coarse, of the New Jersey Department of Transportation Standard Specifications (NJDOTSS) for Road and Bridge Construction (2001) and amendments thereto and (b): with not less than five (5") inches of compacted base course of plant-mixed bituminous stabilized base course, NJDOT Mix I-2, constructed in layers not more than three (3") inches compacted thickness, or an equivalent, and prepared and constructed in accordance with Section 304, Bituminous Stabilized Base Coarse, Mix I-2 of the NJDOTSS for Roads and Bridge Construction (2001) and amendments thereto, and (c): a minimum two (2") inch thick compacted wearing surface of bituminous concrete surface coarse, NJDOT Mix I-5 or equivalent shall be constructed thereon in accordance with Section 404, Bituminous Concrete Surface Coarse, Mix I-5 of the NJDOTSS for Roads and Bridge Construction (2001) and amendments thereto.

- u. Parking space areas and other areas likely to experience light traffic shall be constructed with (a) four (4") inches of compacted dense graded aggregate constructed in accordance with Section 301, Soil Aggregate Base Course and Dense Graded Aggregate Base Course, of the NJDOTSS for Road and Bridge Construction (2001) and amendments thereto and (b) paved with not less than three (3") inches of compact base course of plant-mixed bituminous stabilized base course, NJDOT Mix I-2, or an equivalent, prepared and constructed in accordance with Section 304, Bituminous Stabilized Base Course of the NJDOTSS for Roads and Bridge Construction (2001) and amendments thereto, and (c) at least two (2") inches NJDOT Mix I-5 surface of bituminous concrete surface coarse or equivalent, shall be constructed thereon in accordance with Section 404, Bituminous Concrete Surface Coarse of the NJDOTSS (2001) and amendments thereto.

D. **Drainage.** The drainage system should be adequate to convey the storm water and natural drainage water which originates not only within the developed lot's boundaries, but also that which originates from the total natural watershed surrounding the property in question.

1. The drainage system shall be designed to control the amount and rate of storm water runoff. A general principle for development design shall be to not increase the parcel's rate of stormwater runoff by the use of structural and non-structural measures.
2. Whenever possible, any development's drainage system shall be designed for the recharge of ground water and the retention of stormwater on-site.
3. Provisions shall be made to limit the amount of sedimentation and other pollutants that may enter a natural water course as a result of the development.
4. Where possible, a development's stormwater management design shall preserve stream channels, floodplains, and wetlands in their natural condition to act as buffers against flooding and pollution.
5. No stormwater run-off or natural drainage water shall be so diverted as to overload existing drainage systems, create flooding, or require the construction of additional drainage facilities in other private or public lands without proper and approved provisions being made for remedying these off-site or off-tract conditions.
6. For all developments, land subject to periodic or occasional flooding (floodplain areas) shall not be plotted for residential occupancy nor for any other purpose which may endanger life or property or aggravate the flood hazard. Such land within a plat shall be considered for open land use.
7. All streets shall be provided with catch basins and pipes where necessary for proper surface drainage. Dry wells are specifically prohibited as alternatives to catch basins, or as a method of recharge.
8. The materials used for drainage facilities and appurtenances shall be in conformance with *N.J.A.C. 5:21-7.4*, as same may be revised from time to time, particularly with low points in the streets and no overland relief. Otherwise, such materials shall be in conformance with Standard Specifications for Road and Bridge Construction of the New Jersey Department of Transportation, 1983, and all addenda. The technique for calculations and design parameters shall be by the rational method for drainage sheds less than four acres and the Soil Conservation

Service method for drainage sheds above four acres. The following recurrence interval parameter shall be adhered to:

- a. Minor inlets: 2 years
 - b. Low points: 5 years
 - c. Sump inlets: 10 years
 - d. Minor stream structure (50 acres or less): 10 years
 - e. Major stream structures with no headwaters: 25 years
 - f. Major stream structures with maximum headwater: 100 years
9. For stormsewer design, a 10-year to 25-year storm frequency consistent with localized circumstances should be considered as a minimum, unless special circumstances are involved such as inadequate downstream stormwater facilities, lack of positive overland relief, or evidence of local flooding. In such special circumstances, engineers shall design facilities to accommodate, as a minimum, the following storm frequencies:
- a. Ten-year storm drain systems where excess flow can continue downgrade in the street or parking lot and not exceed the gutter capacity. Also, ten-year storms shall be used at low points in storm drain systems with overland relief.
 - b. Twenty-five-year storm where flow in a storm drain is totally carried by pipe when conditions above do not apply.
 - c. Twenty-five-year storm for culvert design where the culvert will be located in streams shown as a blue line on the New Jersey State Atlas or the United States Coast and Geodetic Survey Maps. Culverts with an upstream drainage area of 50 acres or more shall be designed to accommodate a 100-year frequency storm in accordance with Flood Hazard Area Control Regulations, *N.J.A.C. 7:13-2.16*.
 - d. Twenty-five-year storms for open channels where the upstream drainage area is less than 50 acres. When the upstream drainage area is 50 acres or more, design engineers shall design open channels to accommodate the 100-year storm in accordance with Flood Hazard Area Control Regulations, *N.J.A.C. 7:13-2.16*.
10. Storm drain inlets installed as part of new development and redevelopment projects (public or private) that disturb one acre or more are subject to the requirements of this subparagraph 9. In addition, retrofitting of existing storm drain inlets to this standard is required where such inlets are in direct contact with repaving, repairing, reconstruction or alterations of facilities owned or operated by the Township. For exemptions to this standard see "Exemptions" below.
- a. Grates in Pavement or Other Ground Surfaces:
 - i. Design engineers shall use either of the following grates whenever they use a grate in pavement or another ground surface to collect stormwater from that surface into a storm drain or surface water body under that grate:
 - (1) The New Jersey Department of Transportation (NJDOT) bicycle safe grate, which is described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (April 1996).
 - (2) A different grate, if each individual clear space in that grate has an area of no more than seven (7.0) square inches, or is no grater than 0.5 inches across the smallest dimension. (In regard to whether the different grate must also be bicycle safe, the

Residential Site Improvement Standards include requirements for bicycle-safe grates.)

- ii. Examples of grates subject to this standard include grates in grate inlets, the grate portion (non-curb-opening portion) of combination inlets, grates on storm sewer manholes, ditch grates, trench grates, and grates of spacer bars in slotted drains. Examples of ground surfaces include surfaces or roads (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels, and stormwater basin floors.
- b. Curb-Opening Inlets (Including Curb-Opening Inlets in Combination Inlets):
- i. Whenever design engineers use a curb-opening inlet, the curb opening shall be divided (except as provided below) by bars or other means into individual clear spaces. Each such clear space shall have an area of no more than seven (7.0) square inches, or be no greater than two (2.0) inches across the smallest dimension.
 - ii. At sag points, the curb opening may consist of one or more larger clear spaces if the review agency determines that such a curb opening is required for adequate hydraulic performance.
- c. Exemptions:
- i. Hydraulic Performance Exemptions:
 - (1) New Development and Redevelopment Projects. Where the review agency determines that this standard would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets that meet these standards.
 - (2) Retrofitting of existing storm drain inlets. Where the review agency determines that this standard would cause inadequate hydraulic performance.
 - ii. Alternate Device Exemptions:
 - (1) Where flows from the water quality design storm as specified in *N.J.A.C. 7:8* are conveyed through any device (e.g., end of pipe netting facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:
 - (a) A rectangular space four and five-eighths inches long and one and one-half inches wide (this option does not apply for outfall netting facilities); or
 - (b) A bar screen having a bar spacing of 0.5 inches.
 - (2) Where flows are conveyed through a trash rack that has parallel bars with one-inch (1") spacing between the bars, to the elevation of the water quality design storm as specified in *N.J.A.C. 7:8*.

- iii. Note: The preceding exemptions do not authorize any infringement of requirements in the Residential Site Improvement Standards for bicycle-safe grates in new residential development (*N.J.A.C. 5:21-4.18(b)2 and 7.4(a)*).
11. Single Type “B” inlets shall not be designed to catch more than five and one-half cubic feet per second, regardless of head, but shall not be spaced greater than five hundred feet center to center. Discharge and collection systems shall not be designed for inlet head under any circumstances.
 12. Drainage structures that are located on State or County highway rights-of-way shall be approved by the State or County highway engineer’s office, and a letter from that office indicating such approval shall be directed to the Township Planning Board and shall be received prior to the final plat approval. Drainage structures proposed on a brook or stream with drainage area of one-half square mile, three hundred twenty area or greater shall be approved by the New Jersey Division of Water Policy and Supply, and a letter from the office shall be directed to the Planning Board Chair.
 13. All proposed developments abutting a brook or stream whose drainage area, up to and including the subdivision or other development, is greater than fifty acres shall be required to secure a stream encroachment permit from the New Jersey Division of Water Policy and Supply, Bureau of Floodplain Management, prior to the authorization of final approval. Furthermore, a copy of the permit shall be forwarded to the Planning Board and shall be attached to the final engineering plans of same.
 14. Road drainage. The use of swales for road drainage purposes may be permitted at the discretion of the Township Planning Board for all development projects, provided that road drainage for subdivision projects must be reviewed according to the following provisions: In the case of subdivisions of fewer than twenty lots, the minimum lot sizes must be greater than one acre, and the swale grade must not exceed six percent or less than one-half of one percent. In the case of subdivisions with more than twenty lots, swales may only be permitted along roads in which reverse frontage has been provided. Where these conditions are not met or where drainage conditions warrant, curbing and guttering shall be required along all existing and proposed streets. In minor subdivisions, curbing and guttering may be required where drainage or traffic conditions warrant or when the subdivision is in proximity to existing curbed and guttered areas.
 15. Land drainage. All surface drainage shall be piped unless the developer demonstrates that the use of swales is a more appropriate form of conveyance to the satisfaction of the Township Planning Board. The use of swales is discouraged where the adjacent lot sizes on the same tract are 25,000 square feet or less.
 16. Swales, where permitted, shall be designed according to the following standards:
 - a. Swales shall have a parabolic or trapezoidal shape.
 - b. Side slopes of a swale along a road shall not be steeper than 4:1 adjacent to the road and 2:1 on the slope away from the road. Side slopes of swales not along a road shall not exceed 3:1.
 - c. Trees, brush, and stumps, as well as other objectionable material are to be cleared and disposed of so as not to interfere with construction or proper functioning of the waterway.
 - d. Separate areas filled are to be compacted as needed to prevent unequal settlement that will cause damage in the completed waterway.

- e. Waterways and outlets shall be protected against erosion by vegetative means as soon after construction as practical before diversions or other channels are outletted into them. Seeding, fertilizing, mulching, and sodding shall be in accordance with the applicable standards as determined by the Soil Conservation Service of the State of New Jersey.
17. Storm sewer pipe shall be installed in accordance with proper engineering practices and shall be designed according to the following standards:
- a. The pipe shall be concrete or aluminum as required by the Planning Board engineer. Non-reinforced concrete pipe shall conform to A.A.S.H.O.M.—86 for specified diameter and strength class. Aluminum alloy pipe shall conform to A.A.S.H.O.M.—170 for specified diameter and strength class. Aluminum alloy pipe shall conform to A.A.S.H.O.M.—197 for specified diameter and strength.
 - b. All drainage pipes shall have a minimum diameter of fifteen inches. The pipe shall be laid in straight alignment, between manholes. All transitions in slope, change of direction, or pipe size shall be confined to manholes, catch basins, or other accessible structure.
 - c. The size of the pipe, slope, and invert elevations shall be submitted on a final drainage plan.
 - d. In those areas where the groundwater elevation is such that roadway subbase instability could occur from same the Planning Board engineer shall reserve the right to require extra strength porous concrete pipe in lieu of either reinforced concrete or corrugated aluminum storm sewer conduit for the purpose of adequately under-draining the surrounding soil and stabilizing the affected subbase.
 - e. Slotted drainpipe shall not be permitted.
18. Any area occupied or to be occupied by a municipal watercourse, surface, or subsurface drainage way, channel or stream, must be established by easement to the Township. The width of the drainage easement shall be determined by the Township engineer based upon the width needed to accommodate future stormwater runoff and to allow sufficient area for maintenance or construction activities. A minimum width of all drainage easements shall be forty feet or twenty feet from the edge of the watercourse.
- E. **Lighting.** Adequate lighting shall be provided to ensure safe movement of persons and vehicles and for security purposes. Lighting standards shall be a type approved by the approving authority. Directional lights shall be arranged so as to minimize glare and reflection on adjacent properties. Street lighting shall be provided in accordance with the recommendations of the Planning Board engineer and as required by the Township Planning Board. Adequate lighting shall be provided at all intersections and along all roads classified as Township collectors. The developer shall pay to the Township the costs of operation of said street lights (as determined by the standard rates of the utility) until the street upon which said street lights are installed is accepted by the Township Committee as a public street. All subdivision, site plan, variance, and other applications for development must include plans for proposed exterior lighting, including location, type, pole height, and luminaire mounting height (all must be depicted in plan detail), radius of light and intensity in footcandles, and designed in accordance with the following and other generally accepted standards:

1. The style, light standard, and height of the light must be consistent with the architectural style of the principal building. Light height cannot exceed thirty-five (35) feet. Lights must be shielded to restrict maximum illumination apex to 150 degrees and to prevent glare to adjacent land uses.
2. There must be lighting along streets, parking areas, at all intersections, and at all building entrances/exits. Sidewalks must have low or mushroom-type lighting. Freestanding lights must be designed so as not to cause a roadside safety hazard.
3. No spotlight fixtures attached to building will be permitted except for security purposes in the rear of buildings.
4. Upon the recommendation of the Planning Board Engineer, the Planning Board will determine the appropriate intensity and type of lighting. To provide applicants with a guideline to prepare the plans for initial Planning Board submission and notes for consideration, the following lighting intensity values are proposed:

| <u>Use</u> | <u>Average Footcandles</u> |
|---|----------------------------|
| High activity: | |
| Parking lots/walkways in business and similar areas | 2 fc |
| Commercial loading areas | 10 fc |
| Playgrounds (general) | 5 fc |
| Medium Activity: | |
| Street lighting at intersections | 1.2 fc |
| Street lighting at mid-block and similar locations | 0.6 fc |
| Low Activity: | |
| Lighting along rural roads and similar locations | 0.8 fc |

5. In areas of “high activity” the Planning Board may require a reduction in lighting after certain hours.
 6. Streetlights in residential areas must be installed at either end of all curves with a radius less than 350 feet. Site Plan Lighting information must be provided on a designated lighting plan which is to be prepared in conjunction with a landscape plan to determine the correct location of canopy trees. All existing lights within 100 feet of the site in question, including location of all poles and luminaries must be shown on the lighting plan.
- F. **Buffering and Screening.** Buffering shall be located around the perimeter of the site to minimize headlights of vehicles, noise, light from structures, the movement of people and vehicles, and to shield activities from adjacent properties when necessary. Buffering may consist of fencing, evergreens, shrubs, bushes, deciduous trees or combinations thereof to achieve the design objectives. All buffering must meet generally accepted standards and specifications.
1. Buffering or screening is required along the entire perimeter of all development projects. Buffers also may be required to shield parking areas. When a commercial or industrial land use abuts an existing or proposed residential land use, a dense natural barrier or screen will be required. Screening also may be required around garbage areas, loading bays, and where interior roads run parallel with exterior roads.

2. Windbreaks are required where necessary to prevent wind-borne debris from leaving the site.
3. Fences used for screening must complement the architectural design of the principal buildings. Transparent fences will not be considered sufficient unless accompanied by landscaping. Opaque fences may be used only for screening, not for buffering. Landscaping techniques, such as terracing and creation of berms must be utilized for buffering and screening.

G. Landscaping; Trees. Every effort shall be made to preserve the landscape in its natural state or to improve existing site conditions in keeping with adjacent areas. Landscaping shall be provided as part of the overall project design and integrated into building arrangements, topography, parking and buffering requirements. Landscaping shall include trees, bushes, shrubs, ground cover, perennials, annuals and plants, and shall be designed according to generally accepted standards. A landscaping plan must be submitted with each development application. The landscaping plan must identify and locate existing and proposed trees, shrubs, bushes, plants and ground cover. It also must indicate proposed alterations to the terrain. Additionally, the following principles should be followed:

1. Landscaping must accent and complement buildings and promote with interior climate control.
2. The impact over time of proposed landscaping shall be considered so that shrubs or trees do not grow to block sight distances, especially at driveway entrances and in parking areas.
3. Factors to consider include species' texture, color, and shape as well as resistance to disease, litter, and maintenance requirements.
4. The preservation of existing trees and vegetation is encouraged. Trees greater than fifteen (15) inches in diameter shall be incorporated into the landscaping plan. The grade around exiting trees may not be varied more than six (6) inches unless properly designed trees wells are constructed.
5. The clearing of woodland shall be strictly controlled. The stripping of trees from a lot and the filling, or the alteration of the water table in wooded areas, shall be prohibited except if an extensive replacement tree planting program has been approved by the Township Planning Board. All development projects shall be designed to have minimal impact on existing woodland. The siting of structures shall be such as to preserve the maximum number of trees over fifteen inches in diameter and all trees over twenty-four inches in diameter.
6. Shade trees. In all development projects including major subdivisions, shade trees shall be provided along the frontage. Two trees properly planted, staked, and fertilized shall be provided for every one hundred feet of road frontage except if an equivalent number of trees are preserved within fifty feet of the right-of-way. All shade trees shall meet the following requirements:
 - a. Trees shall be a deciduous variety (oak, hard maple) native to the area and shall be approved by the Planning Board.
 - b. Trees shall be nursery grown and shall have a mini-caliper of one and one-half inches measured three feet above the ground.
 - c. Trees shall be planted where required by the Planning Board in a planting strip ten feet from the edge of the shoulder when the road has been designed according to the approved cross-sections.

- d. To prevent problems with underground utilities and impacts to the sidewalks, shade trees must be placed 5' – 10' behind sidewalk. Street trees shall be planted forty (40) to sixty (60) feet apart, parallel to the curb and directly outside any utility easements which border the project's ROW. A ten (10') foot wide shade tree easement shall be created if required by the Board. Trees shall not be placed in the grass strip between the curb and sidewalk.
 - e. Trees shall be balled and burlapped, nursery grown, free from insects and disease and true to species and variety.
- H. **Signs.** In addition to complying with all applicable zoning requirements, signs must be designed so as to be aesthetically pleasing, harmonious with other signs on the site, and located so as to achieve their purpose without constituting hazards to vehicles and pedestrians.
- I. **Utilities.** Sanitary waste disposal, water supply and solid waste disposal shall be reviewed to confirm conformity with public safety regulations. Storm water drainage and detention facilities, storm water management plans, and all applicable laws and regulations shall be reviewed and considered, particularly with respect to land designated as subject to flooding, to avoid danger to life or property. Particular emphasis shall be given to the adequacy of all existing utility systems, and the need for any on-site or off-site improvements. Adequate fire protection systems must be included in all plans. Solid waste disposal must be adequate to minimize infestation by vermin and rodents, and must conform to all applicable Township recycling ordinances and other applicable laws and regulations.
- 1. Plans must include depictions of all public services being connected to an approved public utilities systems. Development applicants must submit written approval from each serving utility to confirm compliance with this section.
 - 2. Applicants shall arrange with the serving utility for the underground installation of the utilities, distribution supply lines, and service connection. Service connections shall be made underground for all developments. Whenever the widening or extension of a street requires the replacement or relocation of utilities, such replacement or relocation shall be underground. Common trenches shall be utilized where appropriate according to generally accepted standards.
 - 3. Utility easements along rear or side property lines may be required. Such easements shall be at least twenty feet wide and, to the extent possible, be centered on or adjacent to rear or side lot lines.
- J. **Environmental Considerations.** Environmental elements relating to soil erosion, preservation of trees, protection of watercourses, topography, soil, and wildlife shall be reviewed and the design of the plan shall minimize any adverse impact on these elements. Whenever possible, the natural features of a site are to be preserved, floodplains respected, and excessive cut or fill avoided. In reviewing a development application, the Planning Board shall take into consideration the effect of the development upon all aspects of the environment as outlined in the Environmental Impact Statement requirements, as well as the sufficiency of applicant's proposal in the Environmental Impact Statement for dealing with any immediate or projected adverse effects. The reviewing authority may require, as a condition of approval or the application, that steps be taken to minimize all adverse environmental impacts during and after construction, and no final approval shall be issued until all such requirements shall have been complied with or compliance is guaranteed by a performance guarantee meeting the standards, requirements and procedures set forth in Section 9.3 of this ordinance.

- K. **Natural Features.** The important natural features of a site shall be preserved in the design of all development projects in accordance with generally accepted standards. Natural features that shall be protected include the natural terrain, wetlands, wooded area, vistas, natural drainage-ways, and lakes. A developer shall only be permitted to significantly alter or encroach on the existing natural features if the Planning Board is convinced that the alteration is the minimum necessary to allow the use of the land for the intended purpose and that there are no alternative to the development project design which would eliminate or mitigate any adverse impact on natural features.
- L. **Topsoil Protection.** No topsoil shall be removed from the site or used as spoil. Topsoil moved during the course of construction shall be redistributed within the development project so as to provide at least four inches of cover to all areas of the development project and shall be stabilized by seeding or planting.
- M. **Lot Configuration.**
1. Lot dimensions and area shall not be less than the requirements of the Zoning Ordinance unless approved by variance.
 2. Insofar as practical, side lot lines shall be at right angles to straight streets and radial to curved streets.
 3. Where additional right-of-way has been required to bring existing right-of-ways up to standard, lots shall begin at the proposed right-of-way line and all setbacks shall be measured from that line.
 4. For proper development of the land within the Township, lots shall have an average length no greater than two hundred fifty percent of the average width, except where the width exceeds three times the zoning requirements.
 5. Where there is a question as to the suitability of a lot or lots for their intended use due any failure to meet the above lot configuration standards, or due to factors such as poor drainage conditions or where percolation tests or test borings show the ground conditions to be inadequate for proper on-lot sewage treatment, the Planning Board may, after adequate investigation, withhold approval of such lots. If approval is withheld, the Planning Board shall specify the reasons for such denial in its memorializing resolution.
- N. **Monuments.** Monuments shall be installed in compliance with the requirements of the Map Filing Law (*N.J.S.A. 46:23-9.9, et seq.*). All lot corners shall be marked with a durable metal alloy pin.
- O. **All Improvements Within Municipal Boundaries.** No cul-de-sac or loop street, or any part thereof, or any building or site improvements for any site plan or subdivision project may extend from Pennsville Township into another municipality, or from another municipality into Pennsville Township. All streets and portions thereof, including cul-de-sac streets, loop streets, and portions of all other types of streets within Pennsville Township, must provide access only to lots that meet all applicable lot area, dimension and configuration requirements.