SECTION X DESIGN STANDARDS

10.0 BASIC REQUIREMENTS

The subdivider shall observe all design standards for land division as hereinafter provided. These standards shall be considered minimum standards and may be varied from or waived by the Board only as provided in these Rules and Regulations. State Construction Standards shall be followed, and all matters left open or undefined in those Standards shall be specified by the Board on a case-by-case basis.

10.1 RELATIONSHIP TO TOWN PLANS

The design and layout of a proposed subdivision shall be guided by the goals and objectives of any existing Master Plans, Strategic Plans, or statements of goals and objectives for the Town of West Springfield.

10.2 LOT SIZE AND CONFIGURATION

10.21 All lots created shall be of such size and dimensions as to meet at least the minimum requirements of the Zoning Ordinance. All lots shall be described in metes and bounds on the Definitive Plan.

10.22 It is the recommendation of the Planning Board that all lots be configured so as to have frontage on minor streets. It is further recommended that lot lines be configured to intersect roadways at ninety degree angles and to be rectangular in design.

10.3 PROTECTION OF SIGNIFICANT FEATURES

All significant features such as trees of over 8" Diameter Breast High (DBH), identified Heritage features, water courses, one hundred year flood plains, wetlands, ponds and other waterbodies, marshes, stone walls, scenic points, and historic sites may be preserved in the following manner:

10.31 Wetlands, water courses and 10 and 100 year flood plains shall be located to the rear or along the side property boundaries. Easements may be utilized as provided by these regulations.

10.32 Stone walls shall be preserved by locating property boundaries along the existing line of the walls.

10.33 Scenic points as identified in the Massachusetts Landscape Inventory and historic sites identified by the Massachusetts Historical Commission shall be preserved by incorporating them within public open space or easements as provided by these regulations.

10.34 Trees greater than 8" DBH in size shall be preserved by retaining natural grades and locating houses to minimize tree removal.

10.4 ACCESS THROUGH ANOTHER MUNICIPALITY

In cases where access to a subdivision crosses land in another municipality, the board shall require certification from appropriate authorities that such access is in accordance with the Master Plan, zoning and subdivision requirements of such municipality and that a legally adequate performance bond has been duly posted or that such access is adequately improved to handle prospective traffic. In general, lot lines should be laid out so as not to cross municipal boundary lines.

10.5 STREETS AND WAYS

10.51 Location and alignment

10.511 All streets in the subdivision shall be designed so that in the opinion of the Board, they will provide safe vehicular, bicycle and pedestrian travel. Due consideration shall also be given by the subdivider to the attractiveness of the street layout in order to obtain the maximum livability and amenity of the subdivision.

10.512 The proposed streets shall conform to the Master Plan and other planning documents as adopted in whole or in part by the Board and Town.

10.513 Provision satisfactory to the Board shall be made for the proper projection of streets, or for access to adjoining property that is not yet subdivided.

10.514 Reserve strips prohibiting access to streets or adjoining property shall not be permitted.

10.515 Streets shall be laid out so as to intersect as nearly as possible at right angles. No street shall intersect any other street at less than sixty (60) degrees.

10.516 Streets shall be continuous and in alignment with existing streets so far as practicable and shall comprise a convenient system with inter-connections to insure free circulation of vehicular, bicycle and pedestrian traffic. This section is intended to enable the Board to ensure both adequate access to the subdivision from adjacent streets and continuity of travel within the subdivision itself. (See Section 10.6 of these Regulations concerning adequate access from a public way.)

10.517 The paved surface of proposed subdivision streets shall be designed no closer than forty (40) feet from an existing residential dwelling unit. If access from the proposed subdivision roadway to the existing dwelling is not intended to be provided, then a landscaped buffer not less than five (5) feet in height shall be planted along the boundary of the right-of-way and the affected property with the approval of the affected landowner and the Tree Warden.

10.52 Dead-end Streets

10.521 Any dead-end street shall be provided with a circular turn-around at the end having an outside paved roadway diameter not less than one hundred (100) feet, and property line diameter of at least one hundred forty (140) feet. (See Appendix B).

10.522 A dead-end street shall be no longer than one thousand (1,000) feet, including the turnaround unless, in the opinion of the Board, a greater length is necessitated by topography or other local conditions. The length shall be measured from the end of the turnaround to the point where the proposed street intersects an existing street having two (2) distinct and separate points of access and in the opinion of the Board, will be adequate for safe, vehicular passage (see Appendix B for graphical representation).

10.523 Any thoroughfare that joins or intersects a dead-end street shall have adequate access at both ends from a Town, County, or State public way adjacent to the

subdivision. (See Section 10.6 concerning adequate access from public way).

10.524 The Board must be satisfied that there is adequate access to all lots on the dead-end street for fire engines, ambulances and other emergency equipment, even if the street is blocked (such as by events including but not limited to a fallen tree or automobile accident).

10.525 A dead-end street shall not have a grade of greater than three (3) percent for the last one hundred and twenty feet (120).

10.526 The interior of a cul-de-sac shall include a low-maintenance landscaped island containing appropriate trees, shrubs, and ground cover as approved by the Tree Warden and the Board. The Town shall not be responsible for maintenance of the landscaped area of the cul-de-sac. The applicant shall provide by proper covenant or other instrument, that the owners of lots abutting the cul-de-sac shall be responsible for maintenance of the landscaping.

10.53 Width and Grade

This section consists of a chart entitled "Right-of-Way and Street Design Standards" and tables related to Sight Distance that are included in these Regulations and incorporated herein by reference. The Board may, in its discretion, establish minimum design speeds and maximum grades on a case-by-case basis which exceed the minimum standards but which serve the public interest.

RIGHT-OF-WAY AND STREET DESIGN STANDARDS

Type of Street	Right–of–way	Pavement Width	Minimum Radius of Curvature	Maximum Grade See Note 2	Sidewalk Width (minimum)	Minimum Length Vertical Curve	Design Speed
Place	60′	26′	150′	8%	5′	See	20 mph
Lane	60′	26′	225′	8%	5′	Note 1	25 mph
Sub-Collector	60′	28′	325′	8%	5′	Below	30 mph
Collector	60′	30′	400′	5%	5′		35 mph
Arterial	60′	To be determined by the Planning Board on an individual basis					

Note 1: Based upon the most recent edition of the American Association of State Highway and Transportation Officials (AASHTO) Policy on the Geometric Design of Highways and Streets.

Note 2: Minimum grades on all streets shall be 0.5%.

10.54 Sight Distance

10.541 Subdivision roadways shall provide adequate Stopping Sight Distance at all locations along the proposed subdivision roadway. Table 10-A presents the minimum values for Stopping Sight Distance (SSD).

10.542 At the intersection of the proposed subdivision roadway and an existing street, Stopping Sight Distance along the existing roadway shall be provided at the intersection approaches. Table 10-B presents the minimum values for Stopping Sight Distance at the intersection. In addition to Stopping Sight Distance, Intersection Sight Distance (ISD) shall be provided for the three conditions presented in Tables 10-C, 10-D and 10-E.

10.543 If the grade of the roadway differs from what is presented in the sight distance tables, then the sight distance shall be calculated by the project proponent using methodology in the most current copy of the AASHTO "A Policy on the Geometric Design of Highways and Street" and shall be used as the minimum.

10.544 Speed used shall be the 85^{th} percentile speed of the roadway in the vicinity of the proposed subdivision intersection or the legal and enforceable posted speed limit in close proximity plus 5 MPH, whichever is greater. If the legal and enforceable speed limit is not posted, a speed of not less than 30 MPH may be assumed. The 85^{th} percentile speed shall be measured for a 24-hour period on an average weekday other than a Monday or Friday. It shall also be measured on a Saturday for a 24-hour period.

10.545 If site conditions such as grade or the number of travel lanes are different than what is described within the sight distance tables, then sight distance shall be calculated by the project proponent using the methodology in the most current AASHTO "A Policy on the Geometric Design of Highways and Streets" consistent with the appropriate conditions and shall be used as the minimum.

10.55 Slopes within and abutting the right-of-way shall not exceed a 1:3 maximum slope; a 1:4 slope is preferable. Slope easements shall be obtained for land adjacent to the right-of-way to provide a 1:3 slope from the edge of the right-of-way to the final grade within the abutting land.

TABLE 10-A
SUBDIVISION ROADWAY STOPPING SIGHT DISTANCE

Type of Street	**Speed**	**0.0% Grade**	**3.0% Grade**	**6.0% Grade**	**8.0% Grade**
Place	20 mph	115′	116′	120′	124′
Lane	25 mph	155′	158′	165′	170′
Sub-Collector	30 mph	200′	205′	215′	223′
Collector	35 mph	250′	257′	271′	282′
Arterial	To be determined by the Board on an individual basis				

TABLE 10-B
STOPPING SIGHT DISTANCE ON EXISTING ROAD INTERSECTED BY THE SUBDIVISION ROAD

Speed	**0.0% Grade**	**3.0% Grade**	**6.0% Grade**	**9.0% Grade**
20 mph	115′	116′	120′	126′
25 mph	155′	158′	165′	173′
30 mph	200′	205′	215′	227′
35 mph	250′	257′	271′	287′
40 mph	305′	315′	333′	354′
45 mph	360′	378′	400′	427′
50 mph	425′	446′	474′	507′
55 mph	495′	520′	553′	593′
60 mph	570′	598′	638′	686′

TABLE 10-C
INTERSECTION SIGHT DISTANCE (ISD)

Condition 1 – Vehicle making a left turn from stop position from the subdivision road onto a two-lane roadway with no median (for grades of 3% or less)

Speed	ISD
20 mph	225′
25 mph	280′
30 mph	335′
35 mph	390′
40 mph	445′
45 mph	500′
50 mph	555′
55 mph	610′
60 mph	665′

TABLE 10-D
INTERSECTION SIGHT DISTANCE (ISD)

Condition 2 – Vehicle making a right turn from stop position from the subdivision road onto a two-lane roadway with not median (for grades of 3% or less)

Speed	ISD
20 mph	195′
25 mph	240′
30 mph	290′
35 mph	335′
40 mph	385′
45 mph	430′
50 mph	480′
55 mph	530′
60 mph	575′

TABLE 10-E
INTERSECTION SIGHT DISTANCE (ISD)

Condition 3 – Vehicle making a left turn from an existing undivided roadway crossing one opposing travel lane into the subdivision road (for grades of 3% or less)

Speed	ISD
20 mph	165′
25 mph	205′
30 mph	245′
35 mph	285′
40 mph	325′
45 mph	365′
50 mph	405′
55 mph	445′
60 mph	490′

10.56 Intersections

10.561 Rights-of-way shall be laid out so as to intersect as nearly as possible at right angles. No right-of-way shall intersect any other right-of-way at less than sixty (60) degrees. The vertical grade of the road shall not exceed a slope of three (3) percent for a minimum distance of 100 feet from the intersection.

10.562 Horizontal curves on the street centerline shall not begin or end within 100 feet of the centerline of the intersecting street.

10.563 Property lines at intersections of Major and Secondary Streets shall be cut back to provide for curb radii of not less than twenty-five (25) feet. For Minor Streets a radius of not less than fifteen (15) feet is required.

10.564 Streets entering opposite side of another street shall be laid out either directly opposite each other or with a minimum offset of one hundred and fifty (150) feet between their centerlines. Streets entering from the same side as another shall be laid out with a minimum offset of three hundred (300) feet between their centerlines. This minimum offset shall be observed whenever

one or more streets entering another street are existing or proposed.

10.57 Street Names

The name of a new street shall not duplicate existing public or private street names in the Town of West Springfield, or approximate such names in spelling, sound or pronunciation, or by the use of alternate suffixes such as lane, way, drive, court, avenue or street. New streets shall bear the same name of any continuation of, or when in alignment with, an existing public or private street. All street names shall be approved by the Planning Board before the approval of definitive plan.

10.58 Street Signs

10.581 Street name signs, constructed to such standards as the Planning Board and Department of Public Works shall specify, shall be provided and erected by the Developer at each street intersection near the inside edge of the curb, subject to approval of the Department of Public Works. The post of such signs shall be buried in concrete blocks ten (10) inches diameter and twenty-four (24) inches in length.

10.582 Dead end streets shall be clearly marked as such with proper signage.

10.583 Traffic control signs shall be designed and installed where necessary (including existing public and private ways providing access to the subdivision) at the cost of the developer. The design and installation of all signs shall conform to the most recent edition of the Manual on Uniform Traffic Control Devices adopted by the Massachusetts Highway Department District II office.

10.6 ADEQUATE ACCESS FROM PUBLIC WAY

10.61 Where the street system within a subdivision does not connect with or have, in the opinion of the Board, adequate access from a Town, County or State public way, the Board shall require, as a condition of approval of a plan, that such adequate access be provided by the subdivider, and/or that the subdivider make physical

improvement of access to and within such a way, in accordance with the provisions of these Regulations, either from the boundary of the subdivision to a Town, County or State public way, or along such public way for a distance which, in the opinion of the Board, is sufficient to provide adequate access to the subdivision.

10.62 Where the physical condition or width of a public way from which a subdivision has its access is considered by the Board to be inadequate to either provide for emergency services or carry the traffic which is expected, in the opinion of the Board, to be generated by such subdivision, the Board may require the subdivider to dedicate a strip of land for the purpose of widening the abutting public way to a width at least commensurate with that required within the subdivision, and to make physical improvements to and within such public way to the same standards required within the subdivision. Any such dedication of land for purpose of way and any such work performed within such public way shall be made only with permission of the governmental agency having jurisdiction over such way, and all costs of any such widening or construction shall be borne by the subdivider.

10.63 Where the configuration of the land allows, no house lots shall have a direct access onto a major street, a four lane or divided highway. Such residences shall be provided with either a frontage or service road, or may have their back or side yards towards the road in question. Access shall be onto the lesser traveled of two streets for corner lots.

10.7 EASEMENTS AND RESTRICTIONS

10.71 Layout of Easements

10.711 Easements shall be continuous from lot to lot and from street to street unless, in the opinion of the Board, topography or other special conditions make such continuity impossible. Such easements shall be along rear or side lot lines; and shall create as few irregularities as possible.

10.712 Utility and drain easements shall follow lot lines, and shall be not less than 20 feet in width.

10.713 Easements for different purposes (such as utility or drainage easements) may be adjacent, but shall not overlap or occupy the same area.

10.72 Conservation Restrictions

10.721 Watercourses, drainage ways, channels or streams may be located within easements conforming substantially with the lines of their courses, whose width shall be not less than 20 feet and whose boundaries shall not be closer than 6 feet horizontally from the one hundred year flood plain. Wetlands may be located within easements whose boundaries shall be not closer than one hundred (100) feet from the boundaries of the wetlands. No building shall be constructed and no paving or other activity shall be permitted within such easement except as permitted under the Zoning Ordinance and under the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, Sec. 40).

10.722 In any subdivision, the developer may grant to the Town a conservation restriction over any portion of the subdivision providing the area subject to the restriction has the approval of the Conservation Commission and the Mayor.

10.8 OPEN SPACE

10.81 Before approval of a plan, the Board may also require the plan to show a park or parks suitably located for playground of recreation purposes. The park or parks shall be of reasonable size, but not less than five (5) percent of the area of the land to be subdivided or 10,000 square feet, whichever is greater. The Board shall, by appropriate endorsement on the plan, require that said land shall not be developed for a period of not less than three (3) years from the date of recording of the plan without the approval of the Board. If this land is not conveyed to the Town by sale or gift within three years after the recording of the Definitive Plan, then such land may be incorporated into a subsequent subdivision.

10.82 No more than 5% of said land designated for open space or park purposes shall contain wetlands, ledge, slopes greater than 15% and other land unsuitable for playground or recreation use without the approval of the Planning Board.

10.83 Any open space, park, or playground shall be provided with a minimum of one hundred feet (100) continuous frontage on a street. Pedestrian ways will be required to provide access from each of the surrounding streets, if any, on which the open space, park, or playground has no frontage. Further, such parks and playgrounds may be required to have maintenance provided for by covenants and agreements acceptable to the Board, until such time (if any) as public acquisition may be accomplished by the community, but in no case longer than three (3) years.

10.9 GENERAL UTILITIES

10.91 All utilities shall be located underground in accordance with the Typical Street Cross-Section standards.

10.92 All utilities shall be installed to the end of all proposed rights-of-way.

10.93 No utilities shall be installed between the sidewalk and the edge of the right-of-way.

10.94 All laterals for utilities shall be installed to the property boundaries prior to the laying and compaction of the base gravel course.

10.95 All above-ground utility boxes shall be screened through the use of vegetative plantings. The subdivision plan shall note the species and size of the proposed plantings.

11.0 SEWERAGE

11.01 All lots within a subdivision shall be serviced by the municipal sewer system where physically feasible.

11.02 The developer shall apply for a sewer extension permit as outlined in these Rules and Regulations.

11.03 The developer shall be responsible to confirm the adequacy of the existing municipal water, sanitary and storm water system to accommodate the proposed development.

11.04 The proposed sanitary sewers shall be designed so that the velocity of the flow will be at least two (2) feet per second during periods of peak flow. The sizing of sanitary sewers shall be approved by the Department of Public Works.

11.05 All sanitary sewer lines shall be gravity fed except as allowed by the Department of Public Works. Sewage pumping stations or lift stations, where necessary and allowed, shall meet with the approval of the Department of Public Works. The costs of operating and maintaining a station shall not be assumed by the Town until one year from the date of completion of the last house in the last section of the subdivision.

11.06 The maximum distance between utility manholes shall be three hundred (300) feet.

11.07 All sewer lines shall be true to line and grade with no horizontal or vertical curvature permitted.

11.08 In areas where sanitary sewers are not presently available but where provisions are made for their future construction in the Town's Master Plan, Capital Improvement Program and/or other Town plans, a capped sanitary system, including laterals, may be required to be installed.

11.09 All proposed lots shall be provided with a service lateral that extend perpendicular from the sanitary sewer main to the property line.

11.1 STORM DRAINAGE

11.11 Design storm intensity for surface run-off shall be calculated according to the methodology set forth in Technical Release Number 55, entitled "Urban Hydrology for Small Watersheds," by the Soil Conservation Service of the U. S. Department of Agriculture, or such other methodology as the Board may, in its discretion, approve. All tributary

areas shall be assumed to be fully developed in accordance with the Zoning Ordinance unless publicly owned or deed restricted. Water velocities in pipes and paved gutters shall be between three (3) and ten (10) feet per second, and not more than five (5) feet per second on unpaved surfaces. Facility design shall be as follows:

11.111 Street surface drainage (storm sewers, swales)--25 year storm

11.112 Detention basins--50 year storm

11.113 Watercourses, drainage ways, channels or streams--100 year storm

11.114 Culverts, bridges, other water crossings--100 year storm

11.12 Surface water from the lots shall not be deposited directly into the ways through the use of piping, conduits, channels, swales or other concentrating method. The area within the front setback line may be graded to sheet drain toward the street line. All other surface water from individual lots shall be handled insofar as possible within the lots themselves. Developers may provide for lot surface drainage by a system separate from drainage of the street, by the use of swales, culverts, retention ponds, yard drains and piping, rip-rapped outlets at the water body, etc., in a manner that shall protect the natural water table. The total design of the system shall also meet with the approval of the Department of Public Works.

11.13 Minimum size of pipe for surface run-off shall be twelve (12) inches ID. Footing drains and subdrain connection pipe size shall be a minimum of six (6) inches ID.

11.14 Connection of footing drains, roof drains, or storm drains to a septic disposal system is prohibited.

11.15 The maximum distance between manholes shall be 300 feet. The maximum distance for street run-off to travel along a berm or gutter to a catch basin shall be 300 feet. The maximum distance between a catch basin and a manhole shall be 300 feet.

11.16 Catch basins shall be placed at all street intersections to intercept surface run-off, and

will be placed to prevent water from crossing the streets.

11.17 Proper drainage design includes appropriate storm lines and channels to accommodate properties "upstream" and appropriate structures to preclude "downstream" damage to adjacent properties.

11.18 Water quality shall be preserved by directing all stormwater to a vegetated detention/retention basin or swale. These basins shall be designed to filter out sediments, oils and greases, heavy metals and other nutrients from stormwater prior to its discharge to wetlands, waterbodies or ground water. A maintenance program for the basins/swales shall be prepared to ensure long-term filtration integrity. All methodology implemented for water quality protection shall follow the standards and guidelines of the following documents: Stormwater Management, Volume One: Stormwater Policy Handbook, MA DEP, MA CZM, March 1997; Stormwater Management, Volume Two: Stormwater Technical Handbook, MA DEP, MA CZM, March 1997; Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, Franklin, Hampden, Hampshire Conservation Districts, March 1997; all as revised.

11.19 All retention/detention basins and swales shall be located within easements given to the Town of West Springfield. Management plans for said water quality systems shall be submitted to the Department of Public Works for approval. The management plan shall be recorded concurrent with the recording of the subdivision plan and shall require that the property owner whose land contains the water management system shall be responsible for all maintenance of the system. Failure of the property owner to maintain the system may result in a municipal lien being placed on the property to cover the Town’s cost of maintenance.

11.20 Pre-development hydrological conditions shall be maintained in post-development conditions. There shall be no increase in run-off due to development. Storm drainage shall be directed, when appropriate in the opinion of the Board, to retention basins in order to artificially recharge the ground water system.

11.21 Peak stream flows and run-off at the boundaries of the subdivision development shall be no greater following development than prior to development.

11.22 Where property adjacent to the subdivision, but within the same watershed, is not developed, provision shall be made for proper projection of the drainage systems by continuing appropriate drains and easements to the exterior boundaries of the subdivision at such size and grade as will allow for such projection. Drainage rights that are appropriate, sufficient, and necessary to handle drainage from the subdivision and adjacent areas shall be secured for the Town.

11.3 WATER SUPPLY

11.31 Water

11.311 All lots shall be serviced by the municipal water system where physically feasible and shall be approved by the Department of Public Works.

11.312 In order to ensure adequate fire protection and water service, all new water lines shall be looped and tied back into the existing municipal system.

11.313 The developer shall confirm the adequacy of water pressure and quantity of water (i.e. fire protection) at the existing municipal system to accommodate the increase in demand from the proposed development.

11.314 Where connection to municipal services is not feasible for the development of residential or commercial structures, on-site water wells may be approved by the Board of Health to provide potable water. To ensure adequate fire protection services are provided in the subdivision, fire hydrants tied into the municipal water system shall be required within the development.

11.315 Adequate water pressure and volume shall be provided for residential and commercial development and also for fire protection purposes meeting all pressure and volume standards as adopted by the West Springfield Fire Department. A measurement of adequacy of

the water system for residential and commercial construction can be defined by the use of Town wide GIS system. Elevations below 255’ and/or having a least an existing static water pressure of 40lbs or greater may provide adequate water pressure and volume. Developments without access to the municipal water system or are above the recommended elevation of 255’ will have to seek alternatives to an adequate water source for residential and commercial potable water. The exception would be the Northwest District, said district is bounded from the north by the West Springfield - Holyoke municipal boundary, from the west the West Springfield - Westfield municipal boundary, from the south by the Massachusetts Turnpike and the from the east by Interstate 91. In the Northwest District, a measurement of adequacy of the water system can be defined by an elevation below 380’ and/or having at least a static pressure of 40lbs or greater. Developments without access to the municipal water system or are above the recommended elevation of 380’ will have to seek alternatives to an adequate water source for residential and commercial potable water.

11.316 The minimum size of all water mains shall be eight (8) inches ID (inside diameter). Any deviation from this requirement shall require approval from the Department of Public Works.

11.32 Fire Hydrants

11.321 Maximum distance between hydrants shall be five hundred (500) feet measured along the access route, provided however, that at least one hydrant shall be located at each street intersection.

11.322 Minimum size of hydrant branch is six (6) inches ID (inside diameter).

11.323 Maximum distance from any structure to a hydrant shall be five hundred (500) feet measured along the street.

11.4 SOLAR ENERGY

The purpose of this Section is to encourage the use of solar energy systems and protect to the extent feasible the access to direct sunlight of active and passive solar energy systems. The applicant may utilize passive solar energy techniques that maximize solar heat gain, minimize heat loss during the heating season and minimize heat gain and provide for natural ventilation during the cooling season. These passive solar energy techniques may include, but are not limited to, the following:

11.41 The street and layout plan shall, as far as practicable, provide for east-west street orientations to facilitate the development of properly oriented passive solar buildings. For purposes of this regulation an east-west street refers to any street with its axis within thirty (30) degrees of true east.

11.42 In so far as practicable, side lot lines shall be perpendicular to the street line unless that purpose of the lot line orientation is to provide greater solar access protection.

11.43 Proposed buildings may be located and oriented so that the longest side of the building faces within thirty (30) degrees of true south.

11.44 Proposed buildings may be located to avoid shadows cast by other buildings, vegetation and natural and manmade topographical features whenever practicable.

11.45 Provided soil and topographic conditions permit, primary and reserve leaching fields may be planned and located to the south of a proposed house locations whenever such location enhances solar access to the south wall due to regrading and tree removal associated with the installation of the sewage disposal system.

11.46 Each lot within the subdivision may be evaluated to determine if south wall solar access protection is available meeting any solar access requirements of the Zoning Ordinance.

11.47 At the discretion of the Board, taking into consideration the need for solar access protection, the applicant may be required to include solar easements or restrictive covenants with the deeds of each lot.

11.5 SIDEWALKS AND BICYCLE PATHS

11.51 Unless the Board determines that pedestrian movement is otherwise provided for, sidewalks shall be constructed between the roadway and the right-of-way line as described in Appendix B. At a minimum, all streets shall be provided with sidewalks on one side of the street. Streets with an ADT greater than 100 vehicles per day may be required to install sidewalks on both sides of the street. Pedestrian access other than by routes parallel with roadways may be permitted, provided easements are established.

11.52 The Planning Board may require bicycle paths designed and constructed in accordance with the design manual entitled Building Better Bicycling from the Mass Highway Department, 1999 edition (and any subsequent revision thereto). In certain cases, at the discretion of the Planning Board, all or part of the sidewalk requirements may be waived where bicycle paths are provided.

11.53 Wherever a sidewalk or bicycle path intersects a roadway, barrier-free curb cuts shall be provided. Roadways, berms, curbs, curb cuts, and shoulders should be constructed in accordance with State Construction Standards. With respect to bicycle paths, automobile barriers shall be provided.

11.6 EROSION CONTROL

11.61 General soil erosion of the proposed development site shall be minimized by integrating the development into the existing terrain by retaining natural grades and soil cover.

11.62 During grading and construction of all improvements, including all residential and commercial structures associated with the subdivision, erosion of soil shall be minimized by implementing the guidelines and methodology outlined in the document entitled Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas prepared by the Franklin,

Hampden, Hampshire Conservation Districts dated March 1997, as revised.

11.63 All paved roadway surfaces within the subdivision and providing access to the development shall remain free of dirt and debris. Periodic street sweeping, especially after storm events, shall be implemented to control dirt and dust.

11.7 PROPOSED DEVELOPMENT OF CONTIGUOUS LAND

The Board shall not approve a plan of a subdivision if the applicant or parties related to the applicant own land contiguous to that shown on the plan and fail to furnish sufficient data to enable the Board to relate the proposed subdivision to the remaining land. Such data shall include the lines of proposed way and lots and approximate grades and such other detail as the Board may reasonably require.