

ARTICLE 5: DESIGN STANDARDS

SECTION 5.00 APPLICABILITY

- A. All definitive plans shall conform to the standards and requirements noted herein. Failure to comply with these standards without the benefit of a waiver granted by the Board pursuant to Section 4.00 of these regulations shall be considered reason for denial of the definitive plan.
- B. Design standards not specifically addressed herein, shall comply with the standards set forth in the most recent edition of the Standard Specifications For Highways And Bridges printed by the Commonwealth of Massachusetts Department of Transportation (MASSDOT)), herein after referred to as the "State Specs".

SECTION 5.01 STREETS

- A. Location and Alignment -
 - 1. All streets shall be designed so that, in the opinion of the Board, they will provide safe vehicular travel. Consideration should also be given to creating an aesthetically designed street layout.
 - 2. Street layouts shall be designed to allow for access to adjoining property which is not yet subdivided. Unless approved by the Board, all layouts shall continue to property lines. Street construction within these layouts may not be mandatory, but the ways shall be laid out and bounded for acceptance along with those streets constructed.
 - 3. Reserve strips which prohibit access to streets or adjoining property shall not be allowed unless the Board determines that they are in the public interest.
 - 4. Property lines at street intersections shall follow the approved curb radii.
 - 5. The minimum center line radius of curved streets shall be two hundred (200) feet. Greater radius may be required for principal streets. The minimum sag curve shall be twenty (20) inch curve.
 - 6. 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. The minimum curb line radii at intersection shall be thirty-five (35) feet.
 - 7. Streets shall not be located within 200 feet of one another, as measured from center line to center line, when they intersect on the same side of a street.
- B. Driveway curb cuts shall not be permitted within fourteen (14) feet of the centerline of a catch basin, a hydrant, a traffic control sign, or a tree.
- C. Prior to signature by the Planning Board the Applicant shall petition the Board of Selectman to approve the street name(s). All intersections shall contain a street sign containing the roadway name, a stop sign and a stop line constructed to the current Foxborough DPW standards.

SECTION 5.02 STREET WIDTH & GRADES

- A. Street layouts shall be a minimum of fifty (50) feet. Street layouts within non-residential or mixed use developments shall be sixty (60) feet.

- B. The width of dead end residential streets with no possibility of extension shall be based upon the criteria in Table 5-1. The width of the through ways in a subdivision shall *be twenty-four (24) feet*. These widths may differ for ways within Residential Compounds or Open Space Residential Developments.

**TABLE 5-1
MINIMUM PAVEMENT WIDTHS OF DEAD-END STREETS**

<u># of lots served</u>	<u>Road width</u>
1-5	20 ft.
6-12	22 ft.
12+	24 ft.

- C. Pavement widths for streets within non-residential subdivisions shall be a minimum of 30 feet.
- D. Grades –
1. The center line grade of residential streets shall not be less than 0.5% nor more than 6%. For non-residential subdivision streets, the grade shall not be more than 3%. The grades of ways within fifty feet of an intersection shall not exceed 3%.
 2. All summits of vertical curves shall be so graded as to provide two hundred (200) feet of clear, non-passing sight distance to drivers.
 3. The maximum super elevation for runoff on horizontal curves shall be 1/4”/ft.
- E. Where the grade of any street at the approach to an intersection exceeds three (3) percent, a leveling area with a grade of the centerline or of any vertical curve tangent not exceeding one (1) percent shall be provided for a distance of not less than fifty (50) feet.

SECTION 5.03 DEAD END STREET REQUIREMENTS

- A. A dead end street is a street which does not allow through traffic.
- B. Any proposed street which intersects solely with a dead end street (existing or proposed) shall be deemed to be an extension of the dead end street (existing or proposed).
- C. A street shall not be looped or circle back onto itself unless another access is provided off of it connecting with a through street which shall allow egress from the subdivision at a separate location than the access.
- D. Dead end streets shall be measured from the edge of the layout line of the street where the dead end initiates to the end of the pavement in the cul-de-sac. This distance shall not exceed eight hundred (800) feet. An extension of the layout beyond this 800' may be approved; and may be used to obtain legal frontage as approved by the Board.
- E. Dead end streets require cul-de-sacs with a minimum layout diameter of one hundred ten (110) feet, and must be laid out for future extensions where applicable. A circular area with a radius of not less than fifty (50) feet from the center of the layout shall be excavated, prepared and paved.

1. In a cul-de-sac with the minimum radius of 50 feet the Center Island shall not exceed 20' in radius.
2. The applicant shall identify on the design plan an area within the cul-de-sac designate for snow storage. The snow storage area shall have a minimum of 20 feet of circumferential distance at the pavement edge and be without hydrant, light pole, or any other infrastructure which could be damaged by plow operations.

SECTION 5.04 STREET CURBING & SIDEWALKS

- A. Granite curbing shall be installed on both sides of all roadways and rotary circles, and shall blend into the driveway entrances. It shall be set after the bituminous concrete base course has been set and prior to the placing of the wearing course.
 1. The following types of curbing may be used within a subdivision as noted in Appendix B:
 - a. Sloped granite edging Type SA.
 - b. Vertical granite curb Type VA-4.
 2. Transition curbs shall be used when change in type occur. (re. vertical granite to sloped granite or at granite curb inlets).
 3. Granite curb shall be set on a 3-inch thick continuous bed of dry concrete mix. Granite curb shall be backed up with a continuous concrete backing behind the curb. The minimum height of the concrete backing shall be to the top of the base coat of asphalt pavement. Refer to exhibits 3 and 4 of this regulation.
 4. Before proceeding with any further work adjacent to the curb, the curb shall be backfilled with material approved by the Board's inspector and the backfill material shall be thoroughly compacted.

- B. A sidewalk with a width of five (5) feet shall be required on one side of the street and shall be placed five (5) feet back of the edge of the road. The area between the back of the curb and the sidewalk shall be loamed and seeded. Driveway entrances shall be constructed according to the requirements found in Appendix B.
 1. Handicapped ramps shall be constructed in accordance with the requirements of the latest edition of the MassDOT Construction Standards w/red detectable tiles.
 2. The transition slope of a sidewalk at the intersection with a driveway shall be at a grade of not greater than 1:12

SECTION 5.05 BLENDING AREA

- A. The blending area is that area adjacent to the street which has been disturbed due to the removal of deposition of soil to create the required side sloping. These areas commonly extend outside of the street layout depending on the required cuts and fills. They are considered a part of the subdivision and are subsequently controlled by these regulations. Where applicable, temporary slope easements shall be recorded and shown on the definitive plan. These easements shall grant the applicant the right to enter on the land in question to perform required work.
 1. The side slopes within the layout shall be blended into the abutting property at a maximum slope of three feet horizontal to one foot vertical. The Board may require that the horizontal slope distance be increased to retain existing trees and to better blend slopes into the surrounding natural terrain.
 2. Six inches of loam shall be the minimum cover on all slopes, and the slopes shall be seeded. The developer may propose an alternative slope treatment method.

3. All side slopes shall be treated and stabilized prior to release of the abutting lot from the covenant.
4. Guardrails are required where there are 2:1 side-slopes or depth of fill over 10 feet.

SECTION 5.06 STORM WATER MANAGEMENT

- A. General - The proposed drainage system shall be designed in accordance with the latest edition of the Massachusetts DEP Stormwater Management Standards and the Town of Foxborough Stormwater Management Bylaw.
- B. Requirements - Surface and sub-surface drainage of roadways, houses and adjoining lands shall be provided where necessary. Design specifications for sizes and types of pipe, drainage structures, proposed depths, grades and locations of all appurtenances shall conform to the following regulations.
 1. Capacity of all street drains shall be determined on the basis of a twenty-five (25) year storm intensity.
 - a. Catch basins shall be located so that surface water shall not run over three hundred (300) feet on a street (this includes from the high point in a street). No basins shall be located within driveway curb cuts or at sidewalk handicapped ramps.
 - b. All storm water pipe shall be a minimum of 12 inch, reinforced concrete and covered with a minimum of three feet of fill.
 2. Where natural drainage courses are encountered, open swales or similar methods shall be employed to restore natural drainage. They shall be designed for a 25 year storm event. Wherever possible, the Board promotes the use of natural drainage courses, open swales and other Low Impact Development methods of storm-water management.
 - a. Scuppers or swales from the roadway onto adjacent lots must be designed to direct flows away from any existing or proposed homes.
 - b. Wherever practical, scuppers and swales should be grassed to promote aesthetics and the removal of contaminants. Rip- rap or trap rock shall be used in all other locations.
 3. All drainage computations shall be clearly organized, detailed and accompanied by a written narrative.
 - a. The use of existing or proposed off site drainage systems require the submission of legal easements or agreements with the applicable land owner as well as an access easement in Town's favor (Form L) suitable for recording at the Registry. It must comply with these regulations and computations proving adequate storage capacity exists shall be provided.
 4. Stormwater from all building roofs shall be infiltrated into the ground on their individual lots. This shall be designed to handle stormwater from a 2" storm event.
 5. All facilities shall be designed to blend into the landscape to obviate the need for fencing and screening. Wherever possible they shall follow the natural contours present and not create large disturbed areas, steep slopes or walls. Slopes shall not exceed 3:1.
 - a. Basins over four (4) feet deep are discouraged unless they blend into the landscape. If they exceed four feet with a slope steeper than 4:1, they shall be enclosed by a fence at least four (4) feet high.
 - b. The Board may require a fence around any basin, pre-treatment marsh or swale if the Board finds that it is in the interest of public safety.
 6. Access to these facilities shall be adequate for mechanized equipment. Easements shall be granted to the Town of Foxborough for future maintenance purposes.

7. The Board may require that a separate performance guarantee be posted to secure the completion and satisfactory functioning of any drainage basin or pre-treatment facility. This performance guarantee may be required for a specified time period to ensure the proper growth of plant species pursuant to 310 CMR (10.55).
8. Basins may not be located in a front or side yard, unless topography or soil conditions can prove that this is the best location. When basins are proposed to be located on a residential building lot, they shall be located at least 50 feet from an existing or proposed structure. If a basin is proposed on a residential building lot the building site shall be identified on the plan for this lot and all abutting lots to help in determining and maintaining proper setbacks from the basin. This restrictive building lot area shall be identified in the deed conveying the subject lots.

SECTION 5.07 WATER & SEWER DISTRIBUTION SYSTEMS

- A. All subdivisions shall be supplied with municipal water for adequate fire protection and service to the structures on each building lot.
 1. All required water supply facilities shall be sized and approved by the Board of Water and Sewer Commissioners.
- B. If available, the municipal sewer system shall be sized and approved by the Board of Water and Sewer Commissioners.

SECTION 5.08 PUBLIC/PRIVATE UTILITIES

- A. All electrical, telephone and other wires shall be properly sized and installed below ground.
- B. All subdivisions shall have street lighting pursuant to these requirements.
 1. Lights shall be installed at the following locations within the subdivision; at intersections of two (2) or more streets unless there is an existing street lamp within 50 feet of the site, at distances no greater than every 400 feet along a street, and at the end of all cul-de-sacs.
 2. The Board reserves the right to modify the location of lights to best serve public safety, after a site inspection of the subdivision.
 3. It is the responsibility of the developer to contact the current electric utility providing services to the Town of Foxborough to arrange the installation of the lighting scheme upon receiving approval of the definitive plan. Wattage shall comply with the Town's policy concerning such.
 - a. A list of approved light poles and fixtures can be requested from the Director of Public Works or Town Engineer.
 - b. Lights and poles shall be owned by the developer with a maintenance agreement through the utility company.
 4. Any changes in the approved street lighting plan shall be reviewed by the Board prior to the poles being installed. The current electric utility providing services to the Town of Foxborough may require the Board to review its lighting plan before it will install the poles. It is the responsibility of the developer to initiate this review.
 5. Light pole bases shall be installed and inspected by the current electric utility providing services to the Town of Foxborough prior to the issuance of building permits.

Street lighting shall be installed and functional before occupancy permits are issued to structures therein. The developer shall be responsible for the lighting costs until the street is accepted as a public way.

C. Street Signage -

1. The developer shall be responsible for installing (or causing to be installed) traffic safety signs, speed limit signs and street signs as required. These signs shall be installed to the specifications of the Public Works Department prior to lot release. The developer is responsible for maintaining all street signage until the road is accepted by Town Meeting or until a homeowners association is established.

D. Easements -

1. Utility or drainage easements shall be provided where necessary and shall, insofar as possible, be centered on side or rear lot lines. Such easements shall not be less than thirty (30) feet wide. Form L, as noted in Appendix A shall be used.
2. Bounds shall be installed, as determined by the Board, to sufficiently identify the easement(s).

SECTION 5.09 PUBLIC SHADE TREES

- A. The Planning Board recognizes well-planned and maintained shade trees can filter air, provide wind protection, create habitat for birds and small mammals, increase property values, and enhance the historic, scenic, and small town character of Foxborough. Well-maintained shade trees form tree canopies and pleasant streetscapes, promote traffic calming, provide shade for pedestrians and vehicles, and improve the visual quality of town streets. Shade trees further mitigate the urban heat island effect from pavement and maximize the benefits from the urban forest ecosystem.

B. Specifications:

Ideally, shade trees shall be deciduous, appropriate to the USDA plant hardiness zone rating for Foxborough, have a deep root system to avoid pavement damage and a relatively high salt tolerance. A list of trees approved by the Tree Warden can be requested from the Department of Public Works. Other species of native trees may be substituted upon written request to the Tree Warden. Developers are encouraged to use several species along a street to avoid a monoculture and enhance diversity of tree stock in town.

All subdivision streets shall have shade trees planted on both sides of the street. Each side will have an average density of at least one tree every fifty feet. Tree locations shall be shown on the definitive plan. Shade trees shall be at least 2.5 inches in diameter and 10 feet high and planted on private property at least 5 feet from paved areas, including sidewalks, but within 10 feet the street layout line. Tree locations shall be staked in the field and may be adjusted by the Tree Warden to address site-specific conditions, such as locations of driveways, utilities, and other amenities. Stock must be approved by the Tree Warden prior to planting. Gator bags or equivalent shall be used until the tree is capable of sustaining itself. New trees shall be planted and inspected prior to issuance of a Certificate of Occupancy, but earlier is preferable. A waiver to postpone the planting of an individual tree till after Certificate of Occupancy may be considered if submitted in writing to both the Tree Warden and Planning Board. Every effort should be made to plant the trees as early in the process as feasible.

Suitable existing trees may be preserved as shade trees upon approval of the Planning Board and Tree Warden. Approved trees shall be designated on the site plan or

subdivision and appropriate measures as determined by the Board taken to preserve these trees. If trees designated for preservation do not survive construction or the one-year waiting period before street acceptance, they must be replaced with new trees. If existing trees are used as shade trees, a contribution determined by the Planning Board per tree preserved shall be deposited in the Street Tree Fund.

The developer shall be responsible for maintaining the health of trees until the street is accepted as public way. Any trees that are judged not viable by the Town shall be replaced by the Developer prior to acceptance at Town Meeting.

SECTION 5.10 EROSION CONTROL REQUIREMENTS

- A. To reduce erosion accompanying the installation of ways, utilities and drainage, and to prevent the pollution of streams and wetlands, an erosion control plan shall be submitted with each application. The plans shall include a Construction Period plan and a Long Term Operation and Maintenance Plan that are prepared in accordance with the DEP Stormwater Management Standards and the Town of Foxborough Stormwater Management Bylaw.
- B. Approved erosion control plans shall be referenced in and considered a part of any definitive plan approval.

SECTION 5.11 IMPROVEMENTS OUTSIDE THE SUBDIVISION

When existing streets, as defined in the Foxborough Zoning Bylaw, and utilities to service a new subdivision are deemed inadequate to handle the impact of the development, the Applicant may be required to complete, at the Applicant's expense, improvements outside the boundaries of the subdivision to insure adequate access that is safe and convenient to travel and for securing adequate provisions for drainage and other requirements as may be necessary. Said roadway and utility improvements outside the boundaries of the subdivision shall not exceed fifty percent (50%) of the total cost of the roadway and utility costs within the subdivision and shall be limited to a distance of one thousand (1,000) feet from any entrance to the subdivision unless otherwise agreed upon by the Town and Applicant.

SECTION 5.12 UNITED STATES POSTAL SERVICE CLUSTER BOX UNITS FOR CENTRALIZED MAIL DELIVERY

- A. United States Postal Service (USPS) Cluster Box Units (CBUs) shall be installed by the developer if the United States Postal Service has not approved the use of individual mailboxes for the subdivision.
- B. USPS CBUs shall be installed by the developer in the location(s) approved by the Planning Board and identified on the definitive plan. For residential developments, CBUs must be installed prior to the final inspection of the first dwelling unit (not including the model homes). The responsibility of maintenance, replacement and repairs of the CBUs is that of the developer until the subdivision is completed and the street is accepted as a public way, after which, the responsibility of maintenance, replacement, and repairs of the CBUs will be of the homeowners.

- C. CBUs shall comply with the handicap accessibility requirements of the latest version of the Americans with Disabilities Act (ADA) Guidelines.
- D. The CBUs and supporting structures shall be located so that they do not create a traffic hazard, sight hindrance or other safety hazard per the American Association of State Highway and Transportation Officials' (AASHTO's) "Intersection Sight Distance" methodology, as presented in the most current revision adopted by the State of Arizona of "A Policy on Geometric Design of Highways and Streets" and are 25 feet clear of any driveways, alleys or vehicular access locations.