**Salisbury, MA**

**2016 MS4 Permit Compliance –** **Recommended Regulatory Language Modifications**

Following this page, are the contents of the Planning Board Rules and Regulations for Subdivision of Land. Recommended modifications to the Rules and Regulations have been highlighted in red and emboldened. Only an excerpt from Articles IX and X, Design and Construction Standards and Required Improvements for Approved Subdivision, has been provided, as those are the sole location of recommended modifications for Subdivision of Land.

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ARTICLE IX

# Design and Construction Standards

**§ 465-29. Streets and underground utilities.**

1. Location.
	1. All streets in the subdivision shall be designed so that, in the opinion of the Board, they will provide safe vehicular 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.
	2. The proposed streets shall conform so far as applicable with the Salisbury Master Plan of 1969.
	3. Provision satisfactory to the Board shall be made for the proper projection of streets, or for access to adjoining property which has not been subdivided.
	4. Reserve strips prohibiting access to streets or adjoining property shall not be permitted, except where, in the opinion of the Board, such strips shall be in the public interest.
2. Cross sections. Cross sections shall be in accordance with the standards as shown in Table 68.**1**
3. Alignment, grade, dead-ends and intersections. These shall be in accordance with the standards in Table 69.**2**
4. Bridges. Bridges shall be designed in accordance with the standards shown in Table 70.**3**
5. Utility installation, grading and surfacing. The construction of streets and the installation of public utilities shall conform to the standards in the following subsections:
	1. Underground utilities.
		1. All water mains shall have a minimum of four feet of cover, laid to line and grade in a workmanlike manner and all necessary fittings, valves, low-point drains, hydrants and other necessary features installed.
6. **Editor's Note: Table 68 is included at the end of this chapter.**
7. **Editor's Note: Table 69 is included at the end of this chapter.**

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* + 1. Sanitary sewers shall have a minimum of four feet of cover. However, depth will be as required to adequately sewer the subdivision. Sewers shall be laid to true line and grade.
		2. Unsuitable material below normal pipe inverts shall be removed and replaced by material approved by the appropriate public officials. Unsuitable material shall not be used for trench backfill.
		3. Width of trench shall be equal to 4/3 diameter of the pipe plus 18 inches.
		4. Sheeting, if used, shall be cut off 12 inches above the top of pipe.
		5. Pipe shall be surrounded by six inches of compacted screen gravel if set in earth and 12 inches if set in rock.
		6. Backfill shall be compacted to 90% of the maximum dry density of the material as determined by the American Association of State Highway Officials, Designation T-180D.
		7. All underground utilities shall be tested and approved prior to installation of base course(s) and pavement.
		8. All lot connections shall be installed to the right-of-way line and so marked or surveyed so as to be easily located in the future.
	1. Street grading.
		1. The entire area within the right-of-way lines shall be cleared and grubbed. All topsoil shall be removed and all rock shall be removed to the depth indicated for the appropriate street type in Table 71.**4**
		2. All unsuitable material shall be removed and shall be replaced by a bank-run gravel or material designated by the Massachusetts Department of Public Works Standard Specifications for Highways, Bridges and Waterways (1967), Section 170.
		3. All materials used for roadway embankments shall conform to the Massachusetts Department of Public

**4. Editor's Note: Table 71 is included at the end of this chapter.**

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Works Standard Specifications for Highways, Bridges and Waterways (1967), Section 150.

* + 1. Before the base is spread, the subgrade shall be shaped to a true surface conforming to the proposed cross section of the road and shall be compacted to the percentage of the maximum dry density of the material as indicated in Table 71.
	1. Surfacing.
		1. Materials and methods of construction for roadway surfaces shall conform to Table 71.**5**
		2. In Type I subdivisions, collector streets shall conform to the standards for medium traffic in Table 71. Minor, or feeder, streets shall conform to the standards for light traffic in Table 71.
		3. In Type II subdivisions, collector streets shall conform to the standards for heavy traffic in Table 71. Minor, or feeder, streets shall conform to the standards for medium traffic in Table 71.
		4. In Type III subdivision, all streets shall conform to the standards for heavy traffic in Table 71.
		5. If a question arises as to the standards required for particular roadways, the Planning Board shall have the authority to make a determination.

# § 465-30. Shoulders.

1. In subdivisions where shoulders are allowed, a stabilized grassed shoulder having a width of at least four feet may, at the option of the subdivider, be constructed within the roadway at its outer edge (except near certain intersections, as hereinafter provided). In no case, however, shall the total width of the pavement plus shoulder(s) be less than the roadway width for the type of street, as specified in § 465-29B.
2. Such shoulders shall consist of a layer of select gravel mixed with good quality loam in the ratio of two parts gravel and one part loam, placed on the side of the pavement surface, on top of the base layer, rolled and compacted to a transverse grade meeting that of the finished pavement, and seeded with hayseed applied in

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sufficient quantity to assure adequate coverage. The seed shall be rolled in when the soil is moist.

# § 465-31. Curbing.

Curbing required in § 465-42C shall be either standard granite or precast concrete, at the election of the subdivider, except in Type III subdivisions where standard granite curbing shall be required.

# § 465-32. Sidewalks.

1. Sidewalks shall have a finished grade of 2.0% sloping toward the roadway. When unusual physical land characteristics or topographic conditions require, the Board may approve the placement of a sidewalk at a greater distance from the roadway or at a higher or lower elevation in relation thereto, provided such variation is indicated on the definitive plan.
2. In constructing all sidewalks, the material shall be removed for the full width of the sidewalk to a subgrade at least 10 inches below the approved finished grade, and also all soft spots and other undesirable material below such subgrade shall be replaced with a good binding material and rolled with a two-ton roller or equivalent. Unless the applicant elects to install cement concrete sidewalks (built according to specifications of Massachusetts Department of Public Works), the excavated area shall be filled with at least eight inches of select gravel containing some binding material and compressed and rolled to a surface slope of 2%. Sidewalks shall then be paved to a thickness of three inches with bituminous concrete pavement, applied in two courses of 1 1/2 inches.

# § 465-33. Planting strips.

1. Planting strips shall be of a width required by § 465-29B.
2. The finished grade of such planting strips shall be 2.0%, sloping toward the roadway. Where unusual physical land characteristics or topographic conditions exist, the Board may approve the construction of a planting strip at a slope greater than 2%, provided the finished slope will not project above or below a plane sloped two horizontal to one vertical upward or downward from the edge of the roadway.
3. No trees or other obstruction shall be placed or retained within the planting strip so as to be closer than two feet to the edge of the roadway.

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1. The top four inches of side slopes shall consist of good quality loam, screened, raked, and rolled with a hand roller to grade. The loam shall be seeded with lawn grass seed applied in sufficient quantity to assure adequate coverage, rolled when the loam is moist.

# § 465-34. Side slopes.

1. The area in back of the sidewalk or, where no sidewalk is constructed, in back of the required planting strip shall be graded to a point where it coincides with the finished grade of abutting lots in such a manner that no portion thereof within the right-of- way lines of the street will project above a plane sloped two horizontal to one vertical from the edge of the sidewalk or grass lot, or be below a place sloped two horizontal to one vertical downward.
2. The top four inches of side slopes shall consist of good quality loam, screened, raked, and rolled with a hand roller to grade. The loam shall be seeded with lawn grass seed applied in sufficient quantity to assure adequate coverage, rolled when the loam is moist.

# § 465-35. Monuments and markers.

1. Granite or concrete monuments three feet six inches in length dressed or six inches at the top with a three-eighths-inch drill hole in the center and not less than six inches square at the bottom shall be set to finish grade as shown on plans.
2. No permanent monuments shall be installed until all construction which could destroy or disturb the monuments is completed.

# § 465-36. Drainage.

1. The construction of the drainage system, including methods of construction and quality of materials used, shall be in conformity with the definitive plan and the details shall conform to the details of the Massachusetts Department of Public Works Specifications and Standards, unless specifically excepted by the Board.
2. The quantity of stormwater carried by drains normally shall be determined by the rational method, unless an engineer shows evidence that another approach is more appropriate in a specific case. However, in no event shall the protection provided be for a lower design storm that specified below. The design storm shall be five years in normal cases involving Type I and II subdivisions,

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10 years for Type III subdivision, and 50 years for bridge openings.

1. Drain and channel sizes.
	1. Pipe drains, where used, shall have a minimum diameter of 12 inches. In general, they should be designed to flow full with the hydraulic gradient at the crown. However, in flat slope areas surcharge may be allowed to one foot below ground surface. In determining the capacity of concrete pipe drains, the Manning formula should be used with the coefficient of friction "n" equal to 0.013. The minimum velocity at design flows should be 2.5 feet per second and the maximum, 15 feet per second.
	2. In cases where earth, grass-lined and stone-paved open channels are used, side slopes should be designed to ensure soil stability and to provide for the safety of children. A typical section of the channel should have a flat bottom and side slopes of one vertical on two horizontal with the top of the slope at least one foot higher than the design water surface. The maximum allowable design velocity should be three feet per second in earth or grass-lined channels and eight feet per second in stone-lined channels or open earth channels. A coefficient of friction "n" equal to 0.030 should be used for both the earth and stone-paved channels.
2. Connection to public system.
	1. Where feasible, stormwater should be directed to enter the nearest open stream channel. Stormwater shall not be permitted to cross any roadway unless piped underground. Stormwater runoff in street gutters shall not be permitted to flow upon the surface for a longer distance than 400 feet before it enters the underground system. Catch basins shall be located on both sides of the roadway on continuous grades at intervals of not more than 400 feet, at all sags in the roadway, and near the upstream corners of the roadway at intersecting streets unless the intersection is at the top of a vertical curve.
	2. Proper connections shall be made with the existing public drainage system naturally serving the subdivision. Where adjacent property is not subdivided and no public drainage exists, provisions shall be made for extension of the system at such size and grade as required by the design criteria.

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* 1. Wherever drainage systems are located in lands not publicly owned, proper easements shall be taken for their access and maintenance by Town personnel.
1. Design Standards. All Stormwater management systems for newly developed or redeveloped subdivision projects that disturb one acre or more or are part of a larger plan of development disturbing one acre or more shall conform to the design standards outlined in Article III, §465-13 of these regulations.
2. Natural drainage systems. No open water body or swampy area shall be filled in unless it can be shown to the Board that provision has been made in the downstream drainage system for the removal of the additional runoff caused by this change.

# § 465-37. Water.

1. Public water mains shall not be less than 10 inches in Type III subdivisions and not less than eight inches in Type I and Type II subdivisions except on short cross-connections of 500 feet or less, in which case they may be reduced to six inches. A hydrant shall be located not more than 500 feet from any existing or potential building in Type I or Type II subdivisions, and not more than 250 feet from any existing or potential building in Type III subdivisions.
2. Each hydrant shall be served directly from the water main through a six-inch lateral connection. It shall be gated with a five- inch bottom valve and shall have two-and-one-half-inch hose outlets and one five-inch pump outlet. Valves shall be located in such number and locations that lines by individual block may be isolated from maintenance purposes.
3. Private on-lot water systems shall be designed in conformity with the standards presented in Table 72.**6**
4. Community-type systems or the joint use of wells shall be subject to the standards of the Massachusetts Department of Public Health.

# § 465-38. Sewerage.

1. Where public sewers are required by § 465-42J(1) or (2) of these regulations, the following design standards shall apply:
	1. Public sewers shall be designed according to professional engineering practices.
	2. Public sewers shall be not less than eight inches in diameter.
	3. Manholes shall be located at every change in grade or horizontal alignment but not more than 300 feet apart. Sump

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pumps may be permitted at the discretion of the Board of Health.

1. If the developer is required by § 465-42J(3) to provide other than public sewerage disposal, and if he does elect to develop a communal sewerage system, this communal system shall be subject to the approval of the Massachusetts Department of Public Health.
2. Private on-lot sewerage systems shall be designed in conformity with Article XI of the Sanitary Code of the Department of Public Health of the Commonwealth of Massachusetts.

# § 465-39. Easements.

1. Easements for utilities across lots or centered on rear or side lot lines shall be provided where necessary and shall be at least 12 inches wide.
2. Where a subdivision is traversed by a watercourse, drainageway, channel or stream, the Board may require that there be provided stormwater easement or drainage right-of-way of adequate width to conform substantially to the lines of such watercourse, drainageway, channel or stream and to provide for construction or other necessary purpose.

# § 465-40. Open spaces.

Before approval of a plan the Board may also in proper cases require the plan to show a park or parks suitably located for playground or recreation purposes or for providing light and air. The park or parks shall not be unreasonable in area in relation to the land being subdivided and to the prospective uses of such land. The Board may by appropriate endorsement on the plan require that no building be erected upon such park or parks for a period of not more than three years without its approval.

# § 465-41. Protection of natural features.

Due regard shall be shown for all natural features, such as large trees, watercourses, scenic points, historic spots, and similar community assets, which, if preserved, will add attractiveness and value to the subdivision.

**Article X**

**Required Improvements for Approved Subdivision**

**§ 465-42. Duty of subdivider; specific improvements required.**

Streets shall be constructed and municipal services installed by the subdivider. The following specific improvements are required within a subdivision:

A. Streets and underground services.

1. Underground services.

(a) All water pipes; sewers; light, power, and telephone conduits; and gas mains shall be installed underground according to the standards specified in § 465-29E(1).

(b) The installation of these underground services shall be inspected as hereinafter provided (first inspection) prior to any backfilling of trenches or other covering of structure.

1. Street grading.
2. Street grades shall be formed according to the standards specified in § 465-29E(2).
3. The roadway subgrade shall be inspected (second inspection) prior to any further roadway construction.
4. Roadway surfacing.
5. Roadway surfaces shall be formed in accordance with the standards specified in § 465-29E(3).
6. Roadways shall be constructed for the full length and width. The center line of such roadways shall coincide with the center line of the street rights-of-way, unless a minor variance is specifically approved by the Board.
7. Following the construction of the base layer(s), the roadway again shall be inspected as hereinafter provided (third inspection).

B. Shoulders.

1. Shoulders shall be constructed in accordance with the standards specified in § 465-30.
2. Upon completion of the pavement and any shoulders, the roadway shall again be inspected as hereinafter provided (fourth inspection).

C. Curbing.

1. Curbing materials shall conform to the standards specified in § 465-31.
2. In Type II and III subdivisions, curbings shall be installed along each edge of the roadway in all streets.
3. In Type I subdivisions, curbing shall be installed at nonlocal street intersections or where a street intersects another street built to Type II or III standards, then along the circumference of the roadway for the full length of the rounded curve plus a straight section at the end of the curve at least six feet long.
4. When curbed intersections involve one or more streets having a grassed shoulder, the curbing shall be placed at the edge of the roadway and the pavement on the street or streets with such shoulders shall be widened to the full width of the roadway (thus meeting the curb) within 50 feet of the intersection, tapering down to normal width within 75 feet thereof.

D. Sidewalks.

1. Sidewalks shall be constructed in accordance with the standards specified in § 465-32.
2. Sidewalks of a width specified by § 465-29B shall be constructed on both sides of the roadways in subdivision Types II and III and on one side of roadway in subdivision Type I.

E. Planting strips. Planting strips shall be provided on each side of the roadway, between the cartway and the sidewalk, where sidewalks are required, in accordance with the standards specified in § 465-33.

F. Side slopes. The area in back of the sidewalk or planting strip shall be formed, graded, and loamed in accordance with the standards specified in § 465-34.

G. Monuments. Monuments of materials specified in § 465-35 shall be installed at all street intersections, at all points of change in direction or curvature of streets and at other points as shown on § 465-42 § 465-42:52 the definitive plan and where, in the opinion of the Board, permanent monuments are necessary.

H. Drainage. The drainage system shall be provided and constructed in accordance with the definitive plan and in conformance with the standards specified in § 465-36 of these regulations.

I. Water. If a public water system is located within 400 feet of the subdivision, the subdivider shall connect all lots to the public water system. If a public water system is not located within 400 feet, the subdivider may install private on-lot water systems, provided they are constructed in accordance with the standards of the Massachusetts Department of Public Health.

J. Sewerage.

1. If a public sewerage system is located within 400 feet of the subdivision, the subdivider shall connect all lots to the public sewerage system.
2. If a public sewerage system is planned to be installed within 400 feet of the subdivision within five years of the date of submission of the definitive plan, the subdivider shall install in the street end to every lot sewerage laterals which can be connected to the public sewerage system. In order for the subdivider to determine whether such laterals are required and to design and install them properly if required, the Town shall be responsible for establishing and following a definite plan of public sewerage installation and for providing the subdivider, at the subdivider's expense, the necessary specifications and design standards of the sewerage plan.
3. If public sewerage connections are not required according to Subsection J(2) above, or if the planned public sewerage system has not yet been installed to within 400 feet of the proposed subdivision, the subdivider shall provide other means of sewage disposal which meet the standards of the Massachusetts Department of Public Health.
4. Sewers or sewerage systems shall be constructed in accordance with the standards specified in § 465-38.

K. Cleaning up.

1. The entire area must be cleaned up so as to leave a neat and orderly appearance free from debris and other objectionable materials. All catch basins shall be properly cleaned out.
2. Following the completion of this and all other items of work, a final inspection (fifth inspection) shall be made.

L. As-built plans. As-built plans showing the location, grades, and other significant information regarding utilities, including all stormwater conveyance and treatment structures, shall be prepared by the subdivider and turned over to the Town Clerk following the final approval of the improvements as hereinafter provided. As-built plans shall be submitted no later than two years following the completion of construction.