

11.3.2

The following design standards apply according to street classifications:

Description	Arterial	Collector	Minor	Private	Industrial	
<u>Right-of-Way</u>		<u>Commercial</u>				
<u>Minimum Right-of-Way Width</u>		80'	50'	50'	50'	60'
<u>Minimum Traveled Way Width</u>		44'	24'	20'	18'	30'
<u>Minimum Width of Shoulders (each side)</u>		5'	3'	3'	3'	5'
<u>Maximum Grade Within 75 ft. of Intersections</u>		3%	3%	3%	3%	3% 5
<u>Minimum Right-of-Way Radii at Intersections</u>		20'	10'	10'	10'	20'
<u>Sidewalk Width (where required)</u>		8'	5'	5'	n/a	8'
<u>Minimum Grade</u>		.5%	.5%	.5%	n/a	.5%
<u>Maximum Grade 1</u>		5%	6%	8%	8%	5%
<u>Minimum Centerline Radius (without superelevation)</u>		500'	280'	280'	175'	400'
<u>Minimum Centerline Radius (with Superelevation)</u>		350'	175'	175'	110'	300'
<u>Roadway Crown 2</u>		.25"/ft	.25"/ft	.25"/ft	Note 3	.25"/ft
<u>Minimum Angle of Street Intersections 4</u>		90o	90o	75o	75o	90o
<u>Minimum Curb Radii at Intersection *</u>		30'	25'	20'	n/a	30'

1 Maximum grade may be exceeded for a length of two hundred (200) feet or less

2 Roadway crown is per foot of land width.

3 Gravel surfaces shall have a minimum crown of ¾ inch per foot of land width.

4 Street intersection angles shall be as close to 90o as feasible, but not less than the listed angle.

5 Should be based on turning radii of expected commercial vehicles, but not less than thirty (30) feet.

* Note: Where applicable

<u>Description</u>	<u>Type of Street</u>
<u>Collector</u>	<u>Minor</u>

Minimum Right of way Width	50'	50'
Minimum Pavement Width	22'	20'
Sidewalk Width	4'	4'
Minimum Grade	0.5%	0.5%
Maximum Grade	6.0%	10%
Minimum Centerline Radius	200'	150' Minimum
Tangent Between Curves of Reverse Alignment	200'	200' Roadway
Crown	1/4" /ft.	1/4" /ft.
Slope of Shoulder from Pavement	1/2" /ft.	1/2" /ft.
Slope of Sidewalk from Street	1/8" /ft.	1/8" /ft. Minimum
Angle of Street Intersections	60 degrees	60 deg. Maximum Grade at
Intersection (within 75' of Intersection)	3%	3%
Minimum Curb Radii at Intersection 90 degrees	20'	15' Minimum
Width of Shoulders (each side)	4'	4' Minimum
Sight Distance (in all directions)	200'	100'

11.3.3 The centerline of the roadway shall be the centerline of the right-of-way.

Dead End Streets. In addition to the design standards in the preceding table, dead end streets shall be constructed to provide a turn-around with the following requirements:

- a. Hammerhead. Property line: sixty (60) feet; outer edge of pavement: fifty (50) feet; inner edge of pavement: thirty (30) feet. Over all length of road shall not exceed two thousand five hundred (2,500) linear feet. All road surfaces must be asphalt in accordance with NFPA (National Fire Protection Agency) 1 Fire Dept Access.
- b. Cul-de-sac. Diameter shall be Seventy (70) feet; outer edge of pavement. All road surfaces must be Asphalt (the entire Cul-de-sac). In accordance with NFPA (National Fire Protection Agency) 1 Fire Dept Access.
- c. Where the road cannot be extended, the Board may require the reservation of a twenty (20) foot easement in line with the street to provide continuation of pedestrian traffic or utilities to the next street.
- d. The Board may also require the reservation of a fifty (50) foot easement in line with the street to provide continuation of the road where future subdivision is possible.

~~11.3.4 Dead-end Streets shall be constructed to provide a turn-around with the following requirements for radii. To the property line 65'; to the outer edge of pavement 50'; to the inner edge of pavement 30'.~~

~~11.3.5~~ 11.3.4 Intersections, and Sight Distances

- 1) Cross (four-cornered) street intersections shall be avoided insofar as possible, except as shown on the Comprehensive Plan or at other important traffic intersections. A distance of at least two hundred (200) feet shall be maintained between center lines of offset intersecting streets.
- 2) Street intersections and curves shall be so designed as to permit adequate visibility for both pedestrian and vehicular traffic. That portion of any corner lot which is necessary to allow 25-foot sight lines between intersecting streets shall be cleared of all growth (except isolated trees) and obstructions above the level two (2) feet higher than the center line of the street. If desired, ground shall be

excavated to achieve visibility.

11.4 Street Construction Standards

Minimum thickness of materials after compaction: shall meet the specification in the following table:

11.4.1

Street Materials	Arterial Collector	Minor	Private Right-of-Way	Industrial - Commercial	
<u>Aggregate Sub-Base Course</u> (Maximum sized stone 6")					
Without Base Gravel	24"	18"	18"	15"	24"
With Base Gravel	20"	15"	15"	12"	20"
<u>Crushed Aggregate Base Course</u> (if necessary)	4"	3"	3"	3"	4"
<u>Hot Bituminous Pavement</u>					
Total Thickness	3"	3"	3"	n/a	4"
Surface Course	1 ¼ "	1 ¼ "	1 ¼ "	n/a	1 ¼ "
Base Course	1 ¾ "	1 ¾ "	1 ¾ "	n/a	1 ¾ "
Surface Gravel	n/a	n/a	n/a	3"	n/a

~~11.4.1~~

<u>Street Materials</u>	<u>Minimum Requirements</u> -Collector	Minor
Aggregate Sub-base Course (Max. sized stone—4")	18"	18"
Crushed Aggregate Base Course	3"	3"
Hot Bituminous Pavement (after compaction) Total Thickness (after compaction)	2 ½ "	2 ½ "

Note: Road construction must be designed by a professional engineer licensed in Maine and constructed in accordance with the plans.

E.2. Preparation

1. The center line and sidelines of the new road shall be staked or flagged at approximately fifty (50) foot intervals.
2. Before grading is started, the entire area within the right-of-way necessary for traveled way, shoulders, sidewalks, drainage ways, and utilities shall be cleared of all stumps,

roots, brush, and other objectionable material. All shallow ledge, large boulders and tree stumps shall be removed from the cleared area.

3. All organic materials or other deleterious material shall be removed to a depth of two (2) feet below the sub-grade of the roadway. Rocks and boulders shall also be removed to a depth of two (2) feet below the sub-grade of the roadway. On soils which have been identified by the engineer as not suitable for roadways, either the subsoil shall be removed from the street site to a depth of two (2) feet below the sub-grade and replaced with material meeting the specifications for gravel aggregate sub-base below, or a Maine Department of Transportation approved stabilization geotextile may be used.
4. Except in a ledge cut, side slopes in the right-of-way shall be not steeper than a slope of three (3) feet horizontal to one (1) foot vertical, and shall be graded, loamed, limed, fertilized, and seeded according to the specifications of the erosion and sedimentation control plan.

Where a cut results in exposed ledge, a side slope no steeper than one (1) foot horizontal to four (4) feet vertical is permitted.

5. All underground utilities shall be installed prior to paving to avoid cuts in the pavement. Building sewers and water service connections shall be installed to the edge of the right-of-way prior to paving.

E.3 Bases and Pavement

1. Bases/Sub-base. (See page 44 23)

2. Pavement Joints. Where pavement joins an existing pavement, the existing pavement shall be cut along a smooth line and form a neat, even, vertical joint.

3. Pavements

- (i) Minimum standards for the base layer of pavement shall be the Maine Department of Transportation specifications for plant mix grade B with an aggregate size no more than three quarters (3/4) inch maximum and a liquid asphalt content between 4.8% and 6.0% by weight depending on aggregate characteristics. The pavement may be placed provided the air temperature in the shade at the paving location of 35° F or higher and the surface to be paved is not frozen or unreasonably wet.
- (ii) Minimum standards for the surface layer of pavement shall be the Maine Department of Transportation specifications for plant mix Grade C or D with an aggregate size ~~not less~~ more than one half (1/2) inch maximum and a liquid asphalt content between 5.8% and 7.0% by weight depending on aggregate characteristics. The pavement may be placed provided the air temperature in the shade at the paving location of 50° F or higher.

- E.4. Surface Gravel. Private rights-of-way need not be paved and may have a gravel surface. Surface gravel shall be placed on top of the aggregate sub-base, and shall have no stones larger than two (2) inches in size.

- E.5. If paving is required, then stages of pavement shall be completed in three stages. Occupancy permits may be issued for the first 25% of lots with a gravel sub-base; 75% with

pavement base layer; and the final 25% with pavement surface layer.

A. Clean Up

Following street construction, the developer or contractor shall conduct a thorough clean up of stumps and other debris from the entire street right-of-way. If on-site disposal of the stumps and debris is proposed, the site shall be indicated on the plan, and be suitably covered with fill and topsoil, limed, fertilized and seeded.

B. Sign Off

Completed paved streets shall require a professional engineer's review and approval.

Liquid Asphalt: Two applications of asphalt applied at not less than 1 gallon per square yard each.

Hot Bituminous Pavement conforming to the standards set herein shall be used on all streets within town or village centers. Hot Bituminous Pavement also shall be used on heavily trafficked streets, through streets, and where deemed necessary by the Planning Board. Liquid Asphalt may be used in more rural areas where traffic volume is low and where through traffic is minimal. The final determination of the paving materials shall be made by the Planning Board.

11.4.2 Preparation

Tree stumps and other organic materials shall be removed to a depth of 2 feet below the sub-grade of the roadway. Rocks and boulders should also be removed to depth of 2 feet below the subgrade of the roadway. Soils which are designated as being Poor or Very Poor for road fill by the "Soil Suitability Guide for Land Use Planning in Maine," as revised in February, 1975 shall be removed from the street site to a depth of two (2) feet below the subgrade and shall be replaced where necessary with soils listed by the Soil Suitability Guide as being good and fair for road fill.

Side slopes shall not be steeper than a slope of 3 feet horizontal to 1 foot vertical, graded fertilized and seeded with a conservation mix meeting the standards of York County Soil and Water Conservation District.

11.4.3 Pavement

Any paved roads built in association with the subdivision must meet the following requirements with respect to Pavement Joints: 1. Where payment placed joins an existing pavement, the existing pavement shall be cut along a smooth line and to a neat, even, vertical joint, which joint shall be sealed with liquid tar. 2. Joints shall be overlapped not less than 6" with the application of successive layers.

11.5 Storm Drainage Design Standards

11.5.1 Adequate provision shall be made for disposal of all storm water collected in streets and areas tributary to the street system and underground water through ditches, culverts, underdrain and / or storm water drainage system. All storm water systems shall be designed to meet the criteria of a twenty-year storm based on rainfall data

from the weather bureau records in Portland. Asphalt coated steel culverts and asphalt coated steel pipes or equivalent shall be used where drainage is required.

- 11.5.2** Existing or future down-stream drainage requirements shall be studied to determine the effect on proposed drainage. The applicant shall demonstrate that the storm drainage will not, in any way, overload existing or future storm drainage systems downstream from the proposed development.

11.6 Storm Drainage Construction Standards

- 11.6.1** All material utilized for storm drain construction shall be in conformity with State of Maine Specifications for Highways and Bridges, revision 1968, or latest revision thereof.

11.6.2 General Construction Requirements

- 1) Trenching shall be accomplished in accordance with all appropriate state and federal safety requirements.
- 2) Manholes shall be provided at abrupt changes in alignment, and at all junctions. In straight runs, manholes shall be placed at a maximum of 400 feet intervals.
- 3) Outlets shall be terminated in an endwall of concrete construction, or shall be rip-rapped, or other appropriate measures taken, to prevent erosion.

11.7 Additional Improvements and Requirements

~~11.7.1 Cleanup: Following street construction, the developer or contractor shall conduct a thorough cleanup of stumps and other debris from the entire road or street right-of-way.~~

~~11.7.2~~**11.7.1** .Street Name, Street Signs, and Street Lights: Streets which join and are in alignment with streets of abutting or neighboring properties shall bear the same name. Names of new streets shall not duplicate, nor bare phonetic resemblance to the names of existing streets within the municipality and shall be subject to the approval of the Planning Board. Street name signs shall be furnished and installed by the developer. The type, size, and location shall be subject to the approval by the Planning Board. Street lighting shall be installed as required by the Planning Board. All such streets shall be designated as private ways by the use of a sign in accordance with Paragraph 11.7.2.

11.8 Design and Construction Plans

- 11.8.1** Prior to the commencement of each major phase of construction, the Building Inspector shall be notified.

- 11.8.2** Upon completion of street construction and prior to a vote by the Selectmen to submit a proposed town way to a town meeting, a written certification signed by a professional engineer registered with the State of Maine shall be submitted to the Selectmen at the expense of the applicant, certifying that the proposed town way meets the design and construction requirements set forth herein.

11.9 Performance Bonds

11.9.1 At the time of the approval of the application, the applicant shall tender either a certified check payable to the Town or a performance bond payable to the Town issued by a surety company in the amount of ~~100-150~~ percent of the cost of street construction, which includes furnishing installing, connecting and completing all grading, paving, storm drainage and utilities specified in the application. The bond shall be for a period of one year or such other period as the Planning Board may determine to be appropriate.

11.9.2 The Planning Board may approve plans to develop a major subdivision in separate and distinct phases. This may be accomplished by limiting final approval to those lots abutting that section of the proposed subdivision road which is covered by performance quarantines. When development is phased, road construction shall commence from the public way. Final approval of house lots in subsequent phases shall be given only upon satisfactory completion of all requirements pertaining to the first phase of development.

11.9.3 Prior to the release of such check or bond, the Planning Board shall determine to its satisfaction, in part by the written certification required pursuant to Section 11.8.2, that the proposed street meets the design and construction requirements set forth herein.

ARTICLE 12 - ~~Release of Guaranty Check or Bond~~ Performance Guarantees

12.01 Type of Guarantees

Upon approval of the Final Plan and prior to any construction, the applicant shall provide to the CEO one of the following performance guarantees for an amount adequate to cover the total construction costs of all required improvements, taking into account the time span of the construction schedule and the inflation rate for construction costs:

A. Either a certified check payable to the municipality or a savings account or certificate of deposit naming the municipality as owner, for the establishment of an escrow account.

B. A performance bond payable to the municipality issued by a surety company, approved by the municipal officers.

C. An irrevocable letter of credit from a financial institution establishing funding for the construction of the subdivision from which the municipality may draw if construction is inadequate, approved by the municipal officers.

D. The Planning Board may choose not to require a performance guarantee for a minor subdivision.

E. The conditions and the amount of the performance guarantee shall be determined by the Board with advice of the municipal officers and the CEO.

12.02 Contents of Guarantee

The performance guarantee shall contain a construction schedule, cost estimates for each major phase of construction taking into account inflation, provisions for inspections of each phase of construction,

