

**TOWN OF CUSHING
PUBLIC ROAD DESIGN AND CONSTRUCTION ORDINANCE**

ARTICLE 1 PURPOSE

1.1 To assure public safety, this ordinance establishes standards for design, construction and re-construction of all public roads.

ARTICLE 2 APPLICATION

2.1 All roads to be owned and maintained by the Town shall meet all design and construction standards of this Ordinance and shall be paved the full width of the travel way.

2.2 An applicant proposing acceptance of any road for public ownership and maintenance shall provide the Town with certification by a Professional Engineer licensed in the State of Maine that the road meets all design and construction standards for public roads before a warrant for a vote of acceptance by the legislative body of the Town can be prepared.

ARTICLE 3 AUTHORITY

3.1 The authority for this ordinance is Title 30A, M.R.S.A., Chapter 141, Section 3001.

ARTICLE 4 DESIGN STANDARDS

4.1 The following design standards apply to all roads:

DESCRIPTION	DIMENSION
Minimum Right Of Way Width serving over 5 lots	50'
Minimum Right Of Way Width serving 5 lots or fewer	40'
Minimum Travel Way Widths:	
Roads serving 20 or more lots	20'
Roads serving 6 to 19 lots	16'
Roads serving 3 to 5 lots	14'
Shoulder Width	3'
Maximum Grade	10%
Maximum Grade within 75' of Intersections	3%
Minimum Centerline Radius on Curves	100'
Minimum Tangent Between Curves of Reverse Alignment	50'
Paved Roadway Crown	1/4" /ft.
Angle of all Road Intersections	70° min.

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

4.3 Dead-end roads shall provide a turn-around in the shape of a T, Y or cul-de-sac.

a. Each leg of a T or Y turn shall have a fifty (50) foot wide right-of-way, a forty (40) foot long length outside the road right-of-way, and an eighteen (18) foot wide travel way. The travel way radius into each leg shall be not less than thirty five (35) feet.

- b. A cul-de-sac shall have a sixty five (65) foot property line radius, fifty (50) foot outer edge of travel way radius, and a twenty-six (26) foot travel way. The entry and exit radius from the roadway into the cul de sac shall be not less than thirty five (35) feet.
- c. Maximum grade in the turn area shall not exceed 5%.

4.4 Grades, intersections and sight distances

- a. Grades of all roads shall conform in general to the terrain, so that cut and fill are minimized while maintaining the grade standards above.
- b. All changes in grade shall be connected by vertical curves to provide for the minimum sight distances below.
- c. Maximum speed shall be posted.

Design speed (mph)	20	25	30	35	40	45
Sight distance (feet)	155	200	250	305	360	425

- d. Where new road intersections or driveway access points are proposed, sight distances, as measured along the road onto which traffic will be turning, shall be based upon the posted speed limit and conform to the table above: Where necessary, lots shall be cleared of all growth and sight obstructions, including ground excavation, to achieve the required visibility.
- e. Cross (four-cornered) road intersections shall be avoided insofar as possible.

4.5 Driveway and entrance aprons

- a. New driveway aprons shall be
 1. no less than ten feet wide at the edge of the right of way,
 2. twenty feet wide over the culvert, and
 3. no less than 30 feet wide at the edge of the travel way.
- b. New entrance aprons shall be
 1. No less than twenty feet wide at the edge of the right of way,
 2. no less than thirty six feet wide at the edge of the travel way.

ARTICLE 5 CONSTRUCTION STANDARDS

5.1 Application

- a. New construction within rights of way shall comply with the following standards.
- b. The Road Commissioners may authorize reconstruction to vary from these standards.

5.2 Minimum thickness of material after compaction:

Road materials	
Aggregate sub-base course	15"
Aggregate base course	3"
Hot bituminous pavement	
Total Thickness	3"
Surface Course	1"
Base Course	2"

5.3 Preparation

a. Before any clearing has started on the right of way, the centerline and sidelines of the new road shall be staked or flagged at fifty (50) foot intervals.

b. Before subgrade construction is started, the right-of-way shall be cleared of all stumps, roots, brush, and other objectionable material. All ledge, large boulders, and tree stumps shall be removed from the right-of-way and disposed of as set forth in approved construction plans.

c. All organic materials shall be removed to a depth of two (2) feet below the subgrade of the roadway. On subsoils which have been identified as not suitable for roadways, one of the following methods shall be employed prior to placement of sub-base material:

1. the subsoil shall be removed from the roadway to a width determined by projecting the roadway shoulder crown downward and outward at a slope of 1:1, and to a depth of two feet below the subgrade, and replaced with granular borrow, or

2. a geotextile approved by Maine Department of Transportation shall be installed directly on the unsuitable material according to the manufacturer's instructions.

d. All underground utilities shall be installed prior to paving to avoid cuts in the pavement.

e. Compaction of roadway materials

1. For materials located below subgrade, materials shall be compacted to 90% of compaction standard D-598 of the American Society of Testing Materials.

2. For materials located above subgrade, materials shall be compacted to 95% of compaction standard D-1557 of the American Society of Testing Materials.

5.4 Bases

a. The Aggregate Sub-base Course shall be sand or gravel of hard durable particles free from vegetative matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a three (3) inch square mesh sieve shall meet the following grading requirements:

Sieve designation	Percentage by weight passing square mesh sieve
1/4 inch	25-70%
No. 40	0-30%
No. 200	0-7%

Aggregate for the sub-base shall contain no particles of rock which will not pass the three (3) inch square mesh sieve.

b. The Aggregate Base Course shall be screened or crushed gravel of hard durable particles free from vegetative matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a two (2) inch square mesh sieve shall meet the following grading requirements:

Sieve designation	Percentage by weight passing square mesh sieve
1/2 inch	45-70%
1/4 inch	30-55%
No. 40	0-20%
No. 200	0-5%

Aggregate for the base shall contain no particles of rock which will not pass the two (2) inch square mesh sieve.

5.5 Pavement:

a. Minimum standards for the base layer of pavement shall be the M.D.O.T. specifications for plant mix grade B with an aggregate size no more than three quarter (3/4) inch maximum, applied in a two inch (2") minimum compacted thickness.

b. Minimum standards for the surface layer of pavement shall meet the M.D.O.T. specifications for plant mix grade C with an aggregate size no more than one half (1/2) inch maximum, applied in a one inch (1") minimum compacted thickness.

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

d. All roads abutting paved roads shall have a twenty (20) foot long paved apron at the intersection of the two roads.

5.6 Side slopes, ditches and culverts

a. Side slopes less than or equal to a slope of three (3) feet horizontal to one (1) foot vertical shall be graded, limed, fertilized, and seeded to produce a vigorous stand of vegetation. Side Slopes greater than 3 to 1 shall be engineered using best management practices that are acceptable to the Road Commissioners.

b. Ditches and culverts shall be sized to carry anticipated runoff. Ditch depth shall be at or below the depth of the road sub-base. For new roads, ditch depth shall be not less than 24 inches below the surface of the travel way.

c. Culverts shall provide continuous drainage at intersections, driveways and entrances. Culverts shall be at least 15" in diameter. At driveways, culverts shall be 30 feet long. At intersections and entrances, culverts shall extend at least 5 feet beyond the edge of pavement.

5.7 Apron areas

- a. Construction of new driveway and entrance aprons within the right of way, whether paved or not, shall comply with all road construction standards, and shall be at lot owner expense. At least ten days prior to construction, written notice of intent to construct a driveway shall be provided to the Town Clerk to inform the Code Enforcement Officer.
- b. Activities performed by Town employees with respect to drive/entrance culverts within the right-of-way of a Town road shall include
 1. When a culvert has become plugged by natural causes, such as the gradual accumulation of debris or ice, or has failed to the point where water can no longer be effectively conveyed, the Town is responsible for restoring adequate flow through the culvert.
 2. When the Town undertakes a capital or ditching project that requires the replacement or relocation of driveway/entrance culverts, the Town is responsible for culvert replacement/relocation and driveway/entrance restoration.
 3. When a natural event causes regional or localized flooding and washouts, causing a culvert to fail and/or a driveway/entrance to wash out, the Town will replace or reinstall the culvert, or at the Town's option, reestablish access to the property.
- c. Activities that are the responsibility of the owner/abutter shall include:
 - a. Culvert replacement not described above.
 - b. Driveway repairs of any type (excepting damage caused by natural events as described in 5.7.b.3 above). This includes such items as bumps or depressions that may develop over a culvert, erosion of the driveway/entrance side slopes, and potholes that may develop as a result of deterioration of a pipe prior to replacement.
 - c. Restoring flow when the culvert is obstructed, either directly or indirectly, by the actions of the abutter or their agents (such as intentionally depositing leaves or other debris into a ditchline).

ARTICLE 6 CONSTRUCTION DRAWINGS

6.1 Drawings for new road construction bearing the signature and seal of a licensed Professional Engineer shall show all road and associated storm water management improvements at a scale of not more than 100 feet to the inch, on 24" x 36" sheets where practical. Drawings shall include:

- a. Date, scale, and magnetic or true north point.
- b. Plan, profile and typical and critical cross-sections of roads.
- c. Road right-of-way, edge of travel lanes, edge of shoulder.
- d. Road intersections, turning radii and centerline gradients.
- e. Complete road curve data.
- f. Storm water drainage and any treatment structures.
- g. All existing and proposed utility components.
- h. Erosion and sediment control plan details

ARTICLE 7 CLEANUP

7.1 Following road construction, the developer or contractor shall conduct a thorough clean-up of stumps and other debris resulting from road construction. 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.

ARTICLE 8 ROAD NAMES AND SIGNS

8.1 Road names and name sign specifications shall conform to the requirements of the Town of Cushing Addressing Committee. Traffic control devices shall conform to the Manual of Uniform Traffic Control Devices to the satisfaction of the Town of Cushing Road Commissioners. The applicant shall furnish and install all required signs for road names, traffic safety, and speed limits.

ARTICLE 9 INSPECTION AND CERTIFICATION OF CONSTRUCTION

9.1 A Professional Engineer retained by the applicant shall inspect the construction of all roads proposed for acceptance by the Town and certify their compliance with applicable requirements.

9.2 On completion of construction, the Engineer shall submit a signed report to the Road Commissioners certifying the extent to which the required improvements comply with design and construction requirements.

ARTICLE 10 WAIVER

10.1 The Road Commissioners may waive portions of the standards to permit a more practical design or construction provided that public health, safety and welfare are protected and the waiver does not have the effect of nullifying the intent and purpose of any ordinance or regulation.

ARTICLE 11 ENFORCEMENT

11.1 These provisions will be enforced by the Code Enforcement Officer pursuant to Title 30A § 4452, which also addresses penalties.

ARTICLE 12 SEVERABILITY

12.1 If any section, subsection, clause, phrase or word of this ordinance is found to be invalid, that finding shall not invalidate any other section, subsection, clause, phrase or word of this ordinance.

ARTICLE 13 AMENDMENT

13.1 These regulations may be amended by the voters of Cushing following a public hearing.

ARTICLE 14 DEFINITIONS

Access. An access is the location at which a driveway, entrance or road connects with an existing road.

Driveway. A private way for on-road vehicles serving one of the following land uses: residential uses up to two dwelling units, home occupations, forest management activities, farming, low impact industrial uses such as utility substations, or other similar uses.

Entrance. A private way for on-road vehicles serving one of the following land uses: residential uses or developments serving three or more dwelling units; retail, office, or service business uses including convenience stores, gas stations, auto repair shops, restaurants, or similar uses.

Road. A right-of-way for use by on-road vehicles.

Date of adoption: March 17, 2008.

Amended November 2, 2010, November 8, 2011

Certificate of adoption

I hereby attest that this is a true copy of the Site Plan Review Ordinance of the Town of Cushing, Maine, duly adopted by the legislative body of the Town of Cushing, Maine, on November 8, 2011.

Town Clerk

Date