MEMORANDUM

TO: Lisbon Town Council

CC: Glenn Michalowski, Town Manager

From: Kate Burch, AICP, Senior Planner, North Star Planning

RE: Lisbon Roads Ordinance – Ordinance Changes – Chapter 70, Chapter 66

Date: December 23, 2024

Overview

Lisbon has no unified standards for road design and construction for roads built outside of a subdivision. The existing road standards lack dead end, driveway, turnaround, and fire prevention requirements for roads.

Road standards serve several purposes:

- Allow for well-planned, connected development to occur over time
- Protect public safety through emergency access and fire prevention, lessening strain on volunteer fire department
- Support municipal capacity by ensuring roads are well-constructed with plans for maintenance, and limit demand on public works, school busing, garbage collection, and other public services
- Proactive approach to prevent long-term issues of road quality and maintenance

The following road standards were developed by North Star Planning in consultation with Lisbon's Town Manager, Assistant Town Manager, Public Works, Fire Chief, and Code Enforcement Officer, as well as the technical standards (beginning page 5) developed with input from consulting engineer Mandy Holway, PE of Olver Associates. The Town Attorney, Kristen Collins, has reviewed this ordinance language. These standards also include some ordinance clean-up in the impacted sections.

Planning Board workshops discussing these ordinance standards were held at the April 11, June 27, and July 11 2024 meetings. The Board held a first reading of new ordinance standards on October 10, 2024. The Board approved the changes on November 14, 2024.

Proposed Changes - Chapter 70, Zoning

Section 70-1 Definitions

Arterial Street means a public roadway classified on the most recent functional classification map generated by the Maine Department of Transportation as a major or minor arterial street. These are streets

which serve primarily as major trafficways for travel between and through towns. Route 9, Route 125, and Route 196 are Arterial Streets.
Collector Street means a public roadway that complies with the standards in Table 70-618 and is classified on the most recent functional classification map generated by the Maine Department of Transportation as a collector street. These streets serve as feeders to arterial streets, as collectors of traffic from minor streets and for circulation and access in commercial and industrial areas. Bowdoinham Road, Burrough Road, Edgecomb Road, Ferry Road, Fisher Road, Frost Hill Avenue, Gould Road, King Road, Littlefield Road, Pine Woods Road, Store Road, Summer Street, Upland Road, Webster Road and Wing Street are Collector Streets.
Dead end street means a street with a single common ingress and egress.
Driveway means a route that provides access to no more than two lots from either a public or private right-of-way. A driveway shall not be used to provide lot frontage.
Local street means a street designed for public acceptance or a public roadway shown on the most recent functional classification map generated by the Maine Department of Transportation as a local street providing direct access within identifiable neighborhoods and lands, where through traffic is usually discouraged.
Major Street means a street that complies with the standards in Table 70-618 and serves more than 10 lots.
Minor Street means a street that complies with the standards in Table 70-618 and serves less than 10 lots.
Public Street means a public way established by or maintained under public authority, or a recorded way no less than 49.5 feet wide that is platted and dedicated for public use.
Street means a public or private road or way such as an alley, avenue, boulevard, highway, road, or other right-of-way, as well as an area on a subdivision plan designated as a right-of-way for vehicular access. A street shall exclude a driveway, as defined.
Private Way means a street that has not been accepted by the Town of Lisbon as a Public Street. Private ways do not include driveways or accessways typically referred to as "tote roads" or "woods roads."
~~*Street-arterial* means Route 9, Route 125 and Route 196.~~
~~*Street-collector* means Bowdoinham Road, Burrough Road, Edgecomb Road, Ferry Road, Fisher Road, Frost Hill Avenue, Gould Road, King Road, Littlefield Road, Pine Woods Road, Store Road, Summer Street, Upland Road, Webster Road and Wing Street.~~
Street line means a dividing line between a lot, tract or parcel of land and a contiguous street.
~~*Street-minor* means all streets other than arterial streets or collector streets.~~

Sec. 70-612 Roads and Driveways in the shoreland zone

Sec. 70-617 Roads and Driveways
The following standards shall apply to the construction of roads and/or driveways in all zoning districts.

(a) Street Classification

(b) Streets shall be classified as arterial, collector, local, major or minor streets, or private ways, according to the definitions set forth in Section 70-1.

(c) Standards

1) All streets shall meet the design and construction standards in the table in Sec. 70-618, Design & Construction Standards for Road and Driveways.
2) Streets shall be designed to integrate with the topography and natural features and provide safe travel for all users of the street.
3) Streets shall be designed for safe vehicle, pedestrian, and bicycle movement.
4) Any new street or road applied for through the development review process shall not be approved unless recommended by the Public Works Director, Fire Chief, and Police Chief,

who shall review the project for safety and the capacity to serve all users without undue risk of deterioration.

5) Streets for public acceptance must meet the standards in Chapter 46, Article III, Street Acceptance Standards.
6) Permanent survey monumentation (four-inch by four-inch by four-foot granite monument or approved equivalent) shall be provided and set by a State of Maine Professional Land Surveyor along the street at all changes in direction (including point of curvature and point of tangency for curved) on both sides of the street. Monument location and type at all other points must conform to standard State of Maine survey practices.
7) *Fire Prevention.*
    a. Streets with public water access shall provide fire hydrants every 1,000 feet.
    b. Streets without public water access with dwellings located more than 1,000 linear feet from a functioning fire hydrant shall provide a dry hydrant, fire pond, or dwellings on these streets must have a National Fire Protection Association (NFPA) 13D monitored sprinkler system installed.
    c. Hydrants, ponds, and sprinklers shall be approved by the Lisbon Fire Chief or designee.
    d. Hydrants, ponds, and sprinklers shall be routinely inspected by the Town of Lisbon and Lisbon Water District.
    e. Dead-end private roads not supplied with public water shall have hammerhead turnarounds installed every 1,000 linear feet.
8) *Performance bond.*
    a. The developer shall submit either a performance guarantee in an amount to be determined by the town manager, upon consultation with any staff or consultants deemed necessary, to be equal to the costs of furnishing, installing, connecting and completing all aspects of the street grading, construction, all layers of paving, storm drainage and utilities required within one year from the date of the guarantee. The performance guarantee may be in the form of a performance bond, letter of credit, or escrow deposit with a corresponding escrow agreement between the developer and the Town. The performance guarantee shall be renewed, subject to approval by the town manager, until the project is complete and has been satisfactorily inspected, or the permit has expired.
9) *Inspections.* The developer shall coordinate the construction of streets, drains, sewers, and utilities with the following responsible agencies:
    a. The Code Enforcement Officer and the town's consulting engineer shall work with the developer to schedule a preconstruction meeting and schedule of inspections based upon the developer's intended construction program. At a minimum, the Director of Public Works (and/or designee), the Code Enforcement Officer (and/or designee), and the town's consulting engineer shall be contacted by the developer to schedule inspections.
    b. When a minimum length of 300 feet (or the entire length of a street if it is less than 300 feet in length) has been excavated to subgrade and properly prepared for the placement of gravel, the Public Works Department shall be called to perform an inspection and approval granted before gravel is placed. Gravel shall be placed in compacted layers of not more than 8 inches. Before any surface material is placed in

any area, the work shall again be inspected by the Director of Public Works. The placement of bituminous concrete shall be done in accordance with this chapter, and be inspected by the Department of Public Works.

c. Prior to any water or sewer construction, necessary approvals shall be obtained from the Lisbon Water and Sewer Departments. A representative of each department shall be present whenever an existing sewer is to be cut, entered, or in any way disturbed. The Departments shall be notified immediately if any of its lines are damaged or in need of repair. If any municipal road is to be opened, approval must be obtained from the Town Council in advance of the work. All utilities shall certify in writing that the work has been accomplished to their satisfaction prior to acceptance by the Town of any street or way.

(d) Private Streets

1) All new private streets shall meet, at minimum, the standards for a Minor Road outlined in the table in Sec. 70-618, Design & Construction Standards for Road and Driveways.
2) No building permit shall be issued for a new primary dwelling unit with primary access from a private street serving a total of ten (10) or more lots, unless the street has been or will, as a condition of approval, be built or upgraded to meet the Major Street standards. These standards may be modified only where (1) the easement serving the property was conveyed prior to [date] and is not of sufficient width or contains other physical or legal restrictions which prevent the standards from being met; or (2) prior conveyances or construction abutting the private street make it impossible to meet the standards due to undue hardship.
3) Private roads that are part of a subdivision or site plan application, or that are intended for use to support a development requiring Planning Board review, shall be reviewed by the Planning Board.
4) Private roads not part of a subdivision or site plan application:
    a. *Submission requirements*. An application form and plan set shall be prepared by a Maine licensed engineer. At a minimum, the plan shall include the location and width of the right-of-way, a plan view and profile view of the roadway, the location and size of culverts and proposed drainage features.
    b. *Review authority.* All private road application forms and plans shall be submitted to and approved by the Code Enforcement Officer.

(e) Dead-end Streets

1) Cul-de-sacs and dead-end streets shall be provided with a suitable turning circle or turnaround, as follows:
    a. A hammerhead turnaround shall be constructed at a distance of 50 feet from the roadway edge at ninety degrees (90°) to the street it serves. Larger dimensions may be required by the Code Enforcement Officer to accommodate larger design vehicles anticipated to use the turnaround.
    b. All turning circles shall be paved to specified street standards and have the following minimum diameter:
        i. Right-of-way: 100 feet.

ii. Outer pavement edge: 85 feet.
iii. Inner pavement edge: 65 feet.

2) Temporary turnarounds may be allowed where future road extensions are planned if designed to allow discontinuance of the turning circle while not creating any lots with less than the required frontage for the zone in which located.
3) Driveways shall not be located off the ends of hammerhead turnarounds.
4) In the LR, GR, V districts, no dead end shall exceed 1,500 linear feet, or 15 lots.
5) In the RR, LRR, ROS-I, and ROS-II districts, no dead end shall exceed 2,500 linear feet, or 15 lots.

(f) Driveways

1) The maximum length of a driveway shall not exceed 1,000 feet.
2) All driveways serving more than 1 dwelling unit in excess of 150 feet shall contain at least one turnaround. The exact location of the turnaround shall be reviewed by the Fire Department.

Sec. 70-618, Design & Construction Standards for Road and Driveways

Standards	Collector Streets	Major Street	Minor Street
Road Type	Paved	Paved	Paved or Gravel
Maximum lots on dead-end street	15	15	10
Minimum width of right-of-way	60 feet	50 feet	50 feet
Minimum width of travel way	20' (add 8' of width for each lane of on-street parking)	18'	16'
Shoulder type	paved	paved	gravel
Shoulder width	5 feet	3 feet	2 feet
Sidewalks	Both Sides	One Side	None
Sidewalk Width Minimum (where required)	5 feet	5 feet	5 feet
Technical Standards			
Minimum grade	0.50%	0.50%	0.25%
Maximum grade	8%	8%	8%
Maximum grade at intersection and turnarounds	3 percent within 75 feet of intersection or turnarounds		

Minimum angle of intersections	90 degrees	90 degrees	70 degrees
Minimum tangent length between reverse curves	200 feet	100 feet	0 ft
Bituminous paved:			
Surface compacted	1 1/2 inch	1 1/2 inch	1 1/2 inch (if paved)
Base compacted	2 1/2 inch	2 1/2 inch	2 inch (if paved)
Road crown (minimum)	1/4"/ft.	1/4"/ft.	1/4"/ft.
Shoulder slope	3/4 inch—1 inch	3/4 inch—1 inch	3/4 inch—1 inch
Side slopes (drop to run)	1—3 min.	1—3 min.	1—3 min.
Base course (gravel)*	24 inches	18 inches	18 inches
Design speed	45 mph	25 mph	25 mph
Radius of turnaround at enclosed end:			
Property line (minimum)	65 feet	65 feet	65 feet
Pavement (minimum)	65 feet	65 feet	65 feet
Property line radii at intersection (minimum)	20 feet	20 feet	20 feet
Curb radii at intersections:			
90 degree intersections	25 feet	25 feet	25 feet
Less than 90° intersections	30 feet	30 feet	30 feet

Sec. 70-619 Additional construction standards for roads and driveways.

(a) *Typical Cross Section and Underdrain.* In lieu of an enlarged right-of-way, or drainage easements along the proposed street right-of-way, an underdrain may be used to provide drainage for surface water and/or water from the subbase of the street. Included with the submittal of the preliminary plan shall be a profile and cross section of the underdrain system and arrangement of the filter media surrounding the pipe. The selection of drain size and arrangement of the surrounding filter media shall be designed by a licensed professional

engineer, and the engineer's statement to this effect shall accompany the plan for approval. When underdrain is used, the base and subbase shall extend to the right-of-way line as much as possible. The surface drainage shall be handled satisfactorily and separate from the underdrain.

1) *Specification of Materials: Sub-base.* 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. Aggregate for the sub-base shall contain no particles of rock exceeding six (6) inches in any dimension. The gradation shall meet the following grading requirements:

Sieve Designation	**Percentage of Weight Passing Square Mesh Sieves**
4-inch	100%
¼-inch	25—70%
No. 40	0—30%
No. 200	0—7%

2) *Base*. The aggregate base course shall be sand or gravel of hard durable particles free from vegetative matter, lumps, or balls of clay and other deleterious substances. Aggregate for the base shall contain no particles of rock exceeding three (3) inches in any dimension. The gradation shall meet the following grading requirements:

Sieve Designation	**Percentage of Weight Passing Square Mesh Sieves**
3-inch	100%
1/2 inch	45—70%
¼-inch	30—55%
No. 40	0—20%
No. 200	0—5%

3) *Pavement*.

a. *Base mix.* A base mix layer is required which meets the most recent MDOT Standard Specifications for plant mix grade B.
b. *Surface mix*. A surface mix layer is required which meets the most recent MDOT Standard Specifications for plant mix for grade C or grade D and liquid asphalt.

Proposed Changes - Chapter 66, Subdivision

DIVISION 3. – STREETS

Sec. 66-171. - Street names, signs and street lighting.

(a) *Names.* Streets which join or are in alignment with streets of abutting or neighboring properties shall bear the same name. Names of new streets shall not duplicate nor bear phonetic resemblance to the names of existing streets within the town and shall be subject to the approval of the E-911 addressing officer.

(b) *Signs.* Street name, traffic safety, and control signs shall be furnished and installed by the Subdivider. The type, size and location shall comply with town specifications.

(c) *Street lights.* Street lighting shall be installed as approved by the board.

(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-172. - Classification.

In accordance with a comprehensive plan of the town and for the purposes of this article, streets are classified by function as Arterial, Collector, Major or Minor Streets, all as defined in Section 70-1.

~~(1) *Arterial streets.* These are streets which serve primarily as major trafficways for travel between and through towns.~~

~~(2) *Collector streets.* These are streets which serve as feeders to arterial streets, as collectors of traffic from minor streets and for circulation and access in commercial and industrial areas.~~

~~(3) *Minor streets.* These are streets which are local streets used primarily for access to abutting residential, commercial or industrial properties.~~

(C.M. of 3-16-2010, V. 2010-43)

~~**Sec. 66-173. - Comprehensive plan.**~~

~~Proposed streets shall conform, as far as practical to such comprehensive plan or policy statement as may have been adopted, in whole or in part, prior to a preliminary plan being determined to be pending pursuant to 1 M.R.S.A. § 302.~~

~~(C.M. of 3-16-2010, V. 2010-43)~~

Sec. 66-174. - Safety.

All streets in the subdivision shall be so designed that, in the opinion of the planning board, they will provide safe vehicular, bicycle, and pedestrian travel while discouraging movement of through traffic in residential areas.

(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-175. - Compatibility with area, other streets and proposed use.

The arrangement, character, extent, width, grade and location of all streets shall be considered in their relation to existing or planned streets, to topographical conditions, to public convenience and safety, and their appropriate relation to the proposed use of the land to be served by such streets.

(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-176. - Dead-end streets.

~~When dead-end streets are approved by the planning board, the planning board may require the reservation of a 20-foot-wide easement in the line of the street to provide continuation of pedestrian traffic or utilities to the next street. The planning board may also require the reservation of a 50-foot easement in line with the street to provide continuation of the street where future subdivision is possible.~~

(a) All proposed roads shall be designed as through roads, and shall connect at both ends to different public roads or provide an easement to allow a future connection. This provision may be waived by the Board under the following circumstances:

1) Lot location and/or configuration does not provide for connection to an existing public road;
2) Existing natural features and resources are located in such a fashion to prevent connections to a public road; or
3) Valuable open spaces or natural resources can be preserved by eliminating a second entrance into the property.

(b) When the Board waives the dead-end restriction, the following standards shall apply:

1) In the LR, GR districts, no dead end shall exceed 1,500 linear feet, or 15 lots.
2) In the RR, LRR, ROS-I, and ROS-II districts, no dead end shall exceed 2,500 linear feet, or 15 lots.
3) Dead ends shall be designed with a hammerhead or cul-de-sac turn around. Dead ends shall include 50-foot-wide right-of-way extensions to adjoining parcels at the approximate half way point, and at the end of the dead end.
4) Driveways shall not be located off the ends of hammerhead turnarounds.
5) The planning board may require the reservation of a 20-foot-wide easement in the line of the street to provide continuation of pedestrian traffic or utilities to the next street.
6) The planning may also require the reservation of a 50-foot easement in line with the street to provide continuation of the street where future subdivision is possible.

(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-177. - Reserve strips.

Intentional use of private property or unaccepted rights-of-way as reserve strips to control access to streets shall be prohibited except where their control is definitely placed in the town under conditions approved by the planning board.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-178. - Reserved.

Sec. 66-179. - Off-street loading.

Adequate off-street loading space, suitably surfaced, shall be provided in connection with lots designed for commercial use (i.e., large enough to accommodate parking or unloading, without blocking the traveled way).
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-180. - Railroad right-of-way.

Where a subdivision borders on or contains a railroad right-of-way, the planning board may require a street approximately parallel to end on each side of that right-of-way, at a distance suitable for the appropriate use of the intervening land, as for park purposes in residential districts. Such distance shall also be determined with due regard for approach grades and future grade separations.

(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-181. - Widening existing streets.
Where a subdivision borders an existing narrow street (below standards set forth in this article) or when the comprehensive plan indicates plans for realignment or widening or a street that would require use of some of the land in the subdivision, the subdivider shall be required to show areas for widening or realigning such streets on the plan marked "Reserved for Street Realignment (or Widening) Purposes." It shall be mandatory to indicate such reservation on the final plan when a proposed widening or realignment is indicated in the comprehensive plan. Land reserved for such purposes may not be counted in satisfying setback or yard or area requirements of Chapter 70.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-182. - Abutting arterial streets.
Where a subdivision abuts or contains an existing or proposed arterial street, the planning board may require marginal-access streets (streets parallel to arterial streets providing access to adjacent lots), reverse frontage (that is, frontage on a street other than the existing or proposed arterial street) with screen planting contained in a nonaccess reservation along the rear property line, or such other treatments as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-183. - Subdivisions containing 15 or more lots.
Subdivisions containing 15 lots/dwelling units or more shall have at least two street connections with existing public streets or streets on an approved subdivision plan for which a bond has been filed.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-184. - Entrances; collector and arterial streets.
Entrances shall comply with Chapter ~~63, Driveway Access Standards.~~ 46, Article V, Entrances onto Public Ways.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-185. - Minor streets.
Minor streets in a subdivision shall be so laid out that their use by through traffic will be discouraged.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-186. - Design and construction standards.
All streets shall be designed and constructed to meet the standards in Section 70-618 and 70-619. ~~following standards for streets according to their classification as determined by the planning board:~~
~~DESIGN AND CONSTRUCTION STANDARDS FOR STREETS~~

~~Item~~		~~Collector Streets~~	~~Minor Streets~~	~~Mobile Home Park~~
~~(1)~~	~~Minimum width right-of-way~~	~~60 feet~~	~~50 feet~~	~~20 feet~~
~~(2)~~	~~Minimum width of pavement~~	~~24 feet~~	~~20 feet~~	~~20 feet~~

Item		Collector Streets	Minor Streets	Mobile Home Park
(3)	Minimum grade	0.5 percent	0.5 percent	0.5 percent
(4)	Minimum grade	6 percent	8 percent	
(5)	Maximum grade at intersection and turnarounds	3 percent within 75 feet of intersection or turnarounds		
(6)	Minimum angle of intersections	90 degrees	90 degrees	90 degrees
(7)	Width of shoulders (paved)	4 feet	2 feet	N.A.
(8)	Minimum tangent length between reverse curves	200 feet	100 feet	100 feet
(9)	Bituminous paved:			
	Surface compacted	1 inch	1/2 inch	1/2 inch
	Base compacted	1 1/2 inch	1 1/2 inch	1 1/2 inch
(10)	Road crown (minimum)	1/4"/ft.	1/4"/ft.	1/4"/ft.
(11)	Shoulder slope	3/4 inch—1 inch	3/4 inch—1 inch	N.A.
(12)	Side slopes (drop to run)	1—3 min.	1—3 min.	1—3 min
(13)	Sidewalks (at option of planning board):			
	Width (minimum where required)	5 feet	5 feet	
	Base course (gravel)	8 inches	8 inches	

Item		Collector Streets	Minor Streets	Mobile Home Park
	Surface	2 inches bituminous hot top		
(14)	Dead-end or cul-de-sac streets:			
	Width		50 feet	
	Radius of turnaround at enclosed end:			
	Property line (minimum)		65 feet	65 feet
	Pavement (minimum)		65 feet	65 feet
(15)	Property line radii at intersection (minimum)		20 feet	20 feet
(16)	Curb radii at intersections:			
	90 degree intersections	25 feet	25 feet	25 feet
	Less than 90° intersections	30 feet	30 feet	30 feet
(17)	Design speed	50 mph	30 mph	30 mph

(18) Vertical curves in the profile of streets, shall be governed by the following criteria, the most stringent governing:

a. Length of vertical curve formula:

Expand

L	=	KA
L	=	Length of curve
A	=	Algebraic difference in intersecting slopes
K	=	Factor taken from table below

Values for K		
Design mph	30	50
For crest curves	28	85
For sag curves	35	75

b. The minimum length of any vertical curve shall be equal in feet to a number equal to three times the design speed.
c. Vertical curves shall be required at all changes of slope in vertical alignment of proposed streets.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-187. - Typical street cross section, underdrain.
In lieu of an enlarged right-of-way, or drainage easements along the proposed street right-of-way, an underdrain may be used to provide drainage for surface water and/or water from the subbase of the street. Included with the submittal of the preliminary plan shall be a profile and cross section of the underdrain system and arrangement of the filter media surrounding the pipe. Selection of drain size and arrangement of the surrounding filter media shall be designed by a licensed professional engineer, and his statement to this effect shall accompany the plan for approval. When underdrain is used, the base and subbase as much as possible shall extend to the right-of-way line. It should be understood that surface drainage will still have to be handled satisfactorily and separate from the underdrain.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-188. - Bases and pavement.
(a) Minimum thickness of material after compaction:

	Collector	Minor	Mobile Home Parks
Aggregate Sub-base Course	24″	18″	18″
Crushed Aggregate Base Course	3″	3″	3″
Hot Bituminous Pavement			
Total Thickness	2½	2″	2″
Surface Course	1″	½″	½″
Base Course	1½″	1½″	1½″

(b) *Specification of materials.*

~~(1) *Sub-base.* 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 four-inch square mesh sieve shall meet the following grading requirements.~~

~~Sieve Designation~~	~~Percentage of Weight Passing Square Mesh Sieves~~
~~4-inch~~	~~100%~~
~~¼-inch~~	~~25—70%~~
~~No. 40~~	~~0—30%~~
~~No. 200~~	~~0—7%~~

~~Aggregate for the sub-base shall contain no particles of rock exceeding 6 inches in any dimension.~~
~~2. *Base*. The aggregate 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 1½-inch square mesh sieve shall meet the following grading requirements.~~

~~Sieve Designation~~	~~Percentage of Weight Passing Square Mesh Sieves~~
~~½-inch~~	~~100%~~
~~2-inch~~	~~45—70%~~
~~¼-inch~~	~~30—55%~~
~~No. 40~~	~~0—20%~~
~~No. 200~~	~~0—5%~~

~~Aggregate for the base shall contain no particles of rock exceeding three inches in any dimension.~~
~~3. *Pavement.*~~
~~a. *Base mix.* A base mix layer is required which meets MDOT specifications for plant mix grade B with an aggregate size no more than ¾″ maximum, and a liquid asphalt content between 5.2 percent and six percent by weight.~~
~~b. *Surface mix.* A surface mix layer is required which meets MDOT specifications for plant mix for grade C or grade D with an aggregate size no greater than ½″ and a liquid asphalt content between six percent and seven percent by weight.~~
~~(C.M. of 3-16-2010, V. 2010-43)~~

~~Sec. 66-189. - Grades.~~

~~(a) Grades of all streets shall conform in general to the terrain and shall not be less than one-half of one percent nor more than six percent for collector streets, or ten percent for minor streets, but in no case more than three percent within 75 feet of any intersection or turnaround.~~
~~(b) All changes in grade shall be connected by vertical curves of such length and radius as specified in this division so that clear visibility shall be provided.~~
~~(C.M. of 3-16-2010, V. 2010-43)~~

Sec. 66-190. - Intersections, generally.
Intersections of streets shall be at angles as close to 90 degrees as possible, and in no case shall two streets intersect at an angle smaller than 60 degrees. To this end, where one street approaches another between 60 to 90 degrees, the smaller street should be curved approaching the intersection.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-191. - Cross street intersections.
Cross-street (four-cornered) intersections shall be avoided insofar as possible except as shown on the comprehensive plan or at other important traffic island sections. A distance of at least 200 feet shall be maintained between centerlines of off-set intersecting streets.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-192. - Street lines at intersections.
Street lines at intersections shall be cut back to provide for curb street if not less than 25 feet for 90-degree intersections and 30 feet for intersections less than 90 degrees.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-193. - Visibility.
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 three feet above the centerlines between intersecting streets shall be cleared of all growth (except isolated trees) and other obstructions. If directed, the ground shall be excavated to achieve visibility.
(C.M. of 3-16-2010, V. 2010-43)

Cross reference— Visual obstruction and interference, § 46-1; traffic and vehicles, ch. 50.

Sec. 66-194. - Dead-end street; turnaround.
A suitable turnaround shall be provided at the closed end of a dead-end street or cul-de-sac according to the standards of Sec. 66-176 and Sec. 70-618.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-195. - Drainage.
All streets shall be provided with adequate drainage facilities to provide for the removal of stormwater to prevent flooding of the pavement and erosion of adjacent surface.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-196. - Side slopes.
Side slopes shall not be steeper than three feet horizontal to one foot vertical graded, loams, (six inches compacted) and seeded as required.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-197. - Rough grading.

Before grading is started, the entire right-of-way, width necessary for travelway, shoulders, sidewalks, drainageways, and utilities shall be cleared of all stumps, roots, brush, and other objectionable material. All shallow ledge, large boulders, and tree stumps protruding above the natural profile of the land shall be removed from the travelway, shoulders, sidewalks, and drainageways.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-198. - Responsibility for shoulders and drainage.
Where curb and gutter are not required, stabilized shoulders and proper drainage shall be the responsibility of the subdivider in compliance with the requirements in this article until such time as the street is accepted as a townway.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-199. - Supervision by town. ~~**manager.**~~
All streets shall be constructed according to street specifications in ~~this article~~ Chapter 70 and inspected by the town according to the standards in Sec. 70-617(b)(9). ~~the town manager.~~
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-200. - Seasonal water table.
All streets shall be constructed so that the minimum depth of street base material will be above the normal seasonal high water table of the soils upon which the street is constructed.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-202. - Underground utilities.
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.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-203. - Public acceptance of streets.
The approval by the planning board of a proposed public street shall not be deemed to constitute or be evidence of any acceptance by the town of the street. Final acceptance of a proposed public street shall be by an affirmative vote of the council. Streets for public acceptance must meet or exceed the standards of Chapter 46, Article III, Street Acceptance Standards.
(C.M. of 3-16-2010, V. 2010-43)

Sec. 66-204. - Privately-owned streets.

(a) Where streets are to remain privately-owned, the following words shall appear on the recorded plan: All streets shall remain private streets to be maintained by the developer or the lot owners and shall not be accepted or maintained by the town.

(b) The applicant shall provide evidence that the private road will be maintained either by the applicant or by the lot owners or a homeowners' association or pursuant to a formal written road maintenance agreement. In the event that a homeowners' association is formed, each lot deed shall refer to the association by deed or other recorded instrument and shall designate the lot owner as an eligible member of the association. No road will be maintained by the Town until the Town has accepted the road, except where the Town holds a public easement over the road. No private road shall be offered to the Town for acceptance until it meets the design requirements in Sec. 70-617.

(C.M. of 3-16-2010, V. 2010-43)