

**TOWN of SHELBURNE
SUBDIVISION APPENDIX A**

TYPICAL ROAD/DRIVEWAY DESIGN AND CONSTRUCTION STANDARDS

I) ROAD DESIGN STANDARDS

The purpose of these minimum standards is to ensure safe vehicular and pedestrian travel on streets within the Town of Shelburne. Proper design requires the blending of sound roadway layout and grade with minimization of impacts on the existing terrain and environment. These minimum standards are intended to be flexible in consideration of different traffic volumes and terrain conditions.

A) Arrangement of Streets

The streets in a subdivision shall be properly arranged and coordinated with other existing or planned streets. This may require that streets be extended to the property line when there is a possibility of future development of adjoining property or to tie into streets in an adjoining property.

B) Rights-of-Way

No street or highway right-of-way shall be less than 50 feet in width and may be required to be more if a greater width is warranted. The apportioning of the street widths among roadway, sidewalks, and possible grass strips shall be subject to the approval of the Planning Board after review by the Town Road Agent. To the maximum extent possible the streets will be centered in the right-of-way.

Utility (easements/rights-of-way) included in the street right-of-way shall be located near the outside edge of the right-of-way.

C) Dead-end Streets/Cul-de-Sacs

Dead-end streets shall not have traffic volumes in excess of 200 ADT and shall be equipped with a turn-around roadway at the closed end, typical examples are shown in Exhibit 2 following. The maximum grade through a cul-de-sac should not exceed 5%.

D) Intersections

Street intersections shall have a minimum angle of intersection of 60 degrees, with a preferable angle being 90 degrees within 75 feet of the intersection. Property line radius at intersections shall be no less than 20 feet. Refer to Table 1 for other requirements.

Multiple intersections involving a junction of more than two streets shall be prohibited. If at all possible, four-way intersections shall be avoided on all local and collector streets.

E) Street Names

1) Streets that extend or are in alignment with streets of abutting or neighboring properties shall bear the same names of existing streets within the Town of Shelburne.

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- 2) Other street names shall be approved by the Planning Board during the approval process, after agreement with the Selectmen.
- 3) Precautions shall be taken to ensure street names are not duplicated or so similar to other street names as to cause confusion.

F) Existing Street Conditions

Where a subdivision requires undue expenditures by the Town to improve existing streets to conform to minimum requirements, the Planning Board may disapprove such subdivision until the Selectmen shall certify that funds for the improvements have been assured by the municipality.

G) Minimum Design Requirements

- 1) New roads shall be classified by the Board and designed to conform to the minimum standards established in Table 1 below and as shown on the attached Typical Roadway Cross Section (Exhibit 1). The roadway designs are based on average daily traffic volumes (ADT).

**TABLE 1:
MINIMUM ROAD DESIGN STANDARDS***

*These standards may be adjusted if conditions warrant as long as the safety intent of the standards is maintained.

Street Type	Min. Local	Local	Major Local	Collector
ADT	20-60	60-400	400-1500	>1500
Approximate # of Dwelling Units	Up to 6	7-40	41-150	151-500
Minimum Width of Right of Way	50	50	Variable	Variable
Design Speed	15	25	30	
Roadway Width	20'	20'	22'	24'
Minimum Shoulder Width (each side)	2'	4'	4'	4'
Minimum Horizontal Curve Radii (FT)	45	90	165	200
Minimum Length of Vertical Curve (FT)	80	80	150	150
Horizontal Sight Distance	150	200	200	250
Sight Distance @ Road Intersections	200	300	350	400
Profile Grade				
Minimum:	0.5%	0.5%	0.5%	0.5%
Maximum:	10%	9%	8%	5%
Minimum Platform @ Road Intersections	2%-50'	2%-75'	2%-100'	2%-100'
Minimum Pavement Radius @ Road Intersections	30'	30'	35'	40'

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- 2) ADT in the above table assumes 10 trips per day per dwelling unit.
- 3) Where streets have the potential for extension through to other lands or other potential street networks, appropriate increases in the traffic volume estimates may be required at the discretion of the Planning Board. The Planning Board shall have the right and authority to increase design standards in such cases and in other cases where it is deemed appropriate.
- 4) For streets serving commercial/industrial areas, the Planning Board may require more restrictive requirements than shown in Table 1. (These commercial/industrial roads shall at least meet the requirements of a "collector road.")

H) Drainage

Drainage design must be adequate to provide for the removal of storm water to prevent flooding of the pavement and erosion of adjacent surfaces. Roadway drainage shall be sized to accommodate the 25-year rain event. Culverts must be at least 15 inches in diameter when used under roadways and 12 inches in diameter when used under driveways. Drainage structures - catch basins, manholes, grates & frames and under drain details shall conform to Exhibits 6 through 9.

I) Curbing

Curbing may be required by the Planning Board where it is deemed appropriate and necessary for the purposes of drainage, slope stability and/or pedestrian safety. Curbing allowed includes straight granite and sloped granite.

J) Sidewalks

When the Planning Board determines that sidewalks are necessary, they shall not be less than four (4) feet in width. They shall conform to NH DOT design standards.

K) Bicycle Paths

Based on subdivision density, traffic volumes, proximity to schools, parks, and other features, the Planning Board may determine that bicycle paths shall be provided as part of the proposed development. Such paths shall be a minimum of five (5) feet in width or, in cases where bicyclists and pedestrians would share a path; the minimum shall be eight (8) feet in width.

L) Steep Grades

Where roadway profiles exceed 5%, special consideration will be given to drainage, sedimentation and erosion protection. This may require curbing and special measures such as rip-rap or other erosion protection. Grades should not exceed 5% within at least 50 feet of an intersection. This may be modified on the basis of site conditions as long as the safety intent of these standards is maintained.

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II) CONSTRUCTION STANDARDS

The recommended road design of the developer/consulting engineer will be reviewed by the Town Road Agent respecting locations of culverts, drainage, and type and quality of culverts, fill and subfill.

A) SUBGRADE :

- 1) All trees and roots shall be stripped to below the base course for the full width of the proposed pavement and shoulders.
- 2) All soft spots, peat, organic material, spongy soil, and other unsuitable materials shall be removed and replaced by material approved by the Road Agent and the Planning Board.
- 3) Boulders and/or ledge shall be removed to a depth of 6 inches below the subgrade level shown on the Typical Road Section (Exhibits 1 or 3). After removal to this depth they shall be covered by a fill material approved by the Road Agent and the Planning Board and graded and compacted to the subgrade level.
- 4) The subgrade shall be graded in the general cross slope configuration shown on the Typical Roads Section (Exhibits 1 or 3).

B) BASE COURSE :

- 1) Bank-run gravel of good quality shall be spread over the entire width of the proposed pavement and shoulders to a depth of 12 inches, plus six (6) inches of crushed gravel screened to (1.5 Inch).
- 2) The bank-run gravel and crushed gravel each shall be placed in lifts not exceeding six (6) inches and in the cross slope configuration shown on the attached Typical Roadway Section (Exhibits 1 or 3).

C) COMPACTION :

Roadway subgrade and base courses shall be compacted to 95% of maximum density proctor method in accordance with NHDOT standards.

D) ROAD PAVING STANDARD (MINIMUM) :

- 1) "Base Course" of two (2) inches conforming to Type-B of the NHDOT specifications.
- 2) "Wearing Course" of one (1)inch conforming to Type E of the NHDOT Specifications.
- 3) Thickness is measured after compaction

E) GRADES :

Grades of all streets shall generally conform to the terrain and shall so far as practicable not exceed the values shown in Table 1. Where practical,

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lots shall be graded toward the streets.

F) SHOULDERS :

All slopes shall be graded, loamed, seeded and mulched. No slope, cut or fill will be greater than two horizontal to one vertical in ledge, or three horizontal to one vertical (3:1) in all other materials.

G) DRAINAGE

All proposed drainage facilities and culverts shall be installed. Natural watercourses shall be cleaned and increased in size where necessary to take care of storm runoff. Drainage swales at least three (3) feet in width and 16 inches in depth at its midpoint below centerline grade shall be constructed in the street right-of-way on both sides of the paved roadway. Drainage facilities must be adequate to provide for the removal of storm water to prevent flooding of the pavement and erosion of adjacent surfaces. Roadway drainage shall be sized to accommodate the 25-year rain event; internal drainage shall be sized to accommodate the 10-year rain event.

H) AS BUILT DRAWINGS

As built drawings shall be provided to the Town for all roads, sidewalks, and bike paths constructed within a subdivision. The drawings shall include certification that the roads have been constructed in accordance with these standards.

III) DRIVEWAY STANDARDS

- A) All curb cuts on town streets or private roads require a driveway permit that must be approved by the Road Agent.
- B) The permittee, or its grantees, successors and assigns served by a driveway shall be responsible for:
 - 1) Maintenance of the drive from the edge of the street pavement or paved shoulder, if existing.
 - 2) Maintenance of all approved drainage alterations including but not limited to:
 - (a) Pipe extensions
 - (b) Open ditches
 - (c) Swales and/or drainage systems
- C) Driveways may serve no more than two (2) dwelling units. Non residential establishments are generally served by a single driveway. Driveways for home business will be at the discretion of the Planning Board after review with the Road Agent.
- D) Driveways shall be constructed at least fifty (50) feet from the intersection of two streets. For Rte 2 a distance of 300 feet from any street intersection is recommended.
- E) When two proposed driveways on the same side of the road are within 50 feet of each other, the Planning Board may require a common access to be used.

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- F) For residential driveways, the approach shall have a (minimum/maximum) width of (10/15) feet at the intersection of the street and for a distance of 25 feet from the street. The board may require this area to be paved.
- G) In all cases, the driveway shall be wide enough to accommodate emergency vehicles. The driveway entrance may be flared as it approaches the road.
- H) The driveway entrance should, if practical, drop six (6) inches from the center of the road to a point at least six (6) feet in back of the ditch line.
- I) A minimum of 150 feet (all season) sight distance in each direction is recommended.
- J) If the driveway is entering a street with an ADT above 500 it shall have a turn around at least 25 ft from the intersection to allow vehicles to face traffic when entering.
- K) If a culvert is required for proper drainage, the culvert shall be at least twelve (12) inches in diameter and shall be of a design approved by the Road Agent. The culvert shall be long enough to maintain the driveway width dimensions.
- L) The culvert may be required to have a catch basin with a cover at the inlet end and a concrete or stone header at the outlet end. The culverts shall be installed by the landowner under the supervision of the Road Agent.
- M) Driveways shall not interrupt the natural or ditch line flow of drainage water. Where shallow ditch lines or natural drainage courses exist, driveways may be swaled at a point beyond the shoulder to accommodate the flow of storm water.
- N) The depth and pitch of the drainage ditch shall be determined by the Road Agent.
- O) Any driveway crossing a wet area or body of water shall have all permits required by the NHDES.
- P) All bridges shall be constructed in accordance with NHDOT standards and as approved by the Planning Board.
- Q) Driveways providing access for more than one dwelling unit, commercial, or industrial uses shall be designed to conform with good engineering practice using the NHDOT Manual, "*Policy and Procedures for Driveways and Other Accesses to the State Highway System*", as a guide.
- R) The contractor shall give **72-hour** notice to the Road Agent before starting construction of any driveway connecting to a "Town" maintained road. (The 72-hours does not include Saturday's, Sunday's or Legal Holidays (federal and/or state)).
- S) Release of Surety Bond (if required by the Planning Board) will be granted upon inspection by the road agent and determination that all work has been satisfactorily completed.

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IV) Driveways to Back-lots

Driveways to back-lots shall be subject to the following standards, in addition to any other applicable standards spelled out in Section III above:

- A) Unless existing conditions prevent it, only one curb cut will be allowed for both the front and the back lot.
- B) The edge of the traveled way shall be set back at least fifteen (15) feet from any property lines. (Unless a smaller distance is agreed to by the abutter)
- C) Appropriate buffering shall be provided, to protect the privacy of neighbors and shield them from dust, noise, lighting, etc.

V) Private Roads

In order to allow development at no additional cost to the Town, the Planning Board may approve the layout of roads to be built and maintained by the landowner(s) according to the following conditions:

- A) Before final approval of a private subdivision road, the Applicant shall post a bond or other surety to cover the cost of construction and maintenance of the road and utility lines, if any. Said guarantee shall remain in effect for a minimum of two (2) years after completion of the roads/utilities. The bond may be extended by the Planning Board for an additional period if deemed necessary, after a site inspection and recommendation by the Town Road Agent to the Planning Board.
- B) A notarized maintenance agreement shall accompany the plat and be recorded. The agreement shall state to what extent each parcel or lot is responsible for the maintenance of the private road. The agreement shall run with the land, and upon any future conveyance of property, the agreement shall be incorporated in and made part of a conveyance binding upon the parties thereto, their successors and assignees.
- C) The Applicant shall include a "Statement of Agreement" on the plat indicating that she/he understands that the Town has no liability for the road and is under no obligation to take over maintenance or ownership of the road. (see typical statement in "typical forms and notifications")
- D) No private road in a subdivision will be approved by the Town or the Planning Board unless adequate provision is made for any utilities serving the site. The plat submitted must show the location and size of necessary utility easements.
- E) If a landowner constructs a road on a private lot without a present intent to subdivide, that road construction may not necessarily constitute "development" such that local land use regulations apply; however in the event that "development" occurs at a later date (such that local land use regulations do apply), the Planning Board may review the specifications of such road construction at the later time, as if the road construction was included as part of the "development" which is then being reviewed under

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the subdivision regulations. Further, this paragraph will have no legal effect upon determining whether or not "development" has occurred for purposes of determining the applicability of the current use land change tax.

VI) Class VI Roads

- A) Subdivision for development is discouraged on Class VI roads.
- B) Approval for subdivision on a Class VI road shall be given only when denial would cause unusual hardship and would serve no public purpose. In such cases the following conditions shall be placed on the approved plat along with any additional conditions the Planning Board may deem as necessary.

The Planning Board hereby approves this subdivision subject to the following conditions:

- 1) Approval of this subdivision in no way constitutes an approval of any portion of the Class VI roadway as a Class V roadway, nor does it obligate the Town to maintain any portion of the Class VI roadway, including snow plowing, nor does the Town assume any liability for any damages resulting from the use of said road(s).
 - 2) Prior to the issuance of a building permit, it may be necessary for the road, or a portion thereof, to be reconstructed to Town specifications. Any expense therefor shall be the responsibility of the subdivider or any successor(s) in title for said lot(s).
 - 3) It shall be the duty of every seller of this land to so inform the potential buyer of any lot of these restrictions prior to the buyer making any binding commitment to purchase said lot.
 - 4) Any conditions imposed by the Planning Board as a part of subdivision approval shall be shown on the plat and made a covenant of the deed(s) conveying all or any part of said subdivision and shall run with the land.
- C) Submittal of the completed form shown as # 13 in the "Typical Forms and Notifications".