

New Hampshire Department of Transportation Suggested Minimum Design Standards for Rural Subdivision Streets

These are suggested minimum design standards to be followed in the absence of local subdivision controls. Every effort should be made to exceed these minimums whenever possible. The circumstance of topography and other physical factors may require an occasional exception to these standards; however, the Selectmen should exercise reasonable judgment before granting such variations.

1. **GENERAL STREET PLAN:** Approval of the general development street plan should be required before allowing the construction of small integral phases of the plan.
2. **STREET LAYOUT:** Streets shall be laid out so as to intersect at right angles as nearly as possible and no street shall intersect another at less than 60 degrees. Streets shall be continuous and in alignment with existing streets as far as possible.
3. **DEAD-END STREETS:** Dead-end streets, designed to be so permanently, shall not be longer than 300m (1,000 ft.) and shall be provided with a turn around having an outside roadway diameter of at least 30 m (100 ft.).
4. **STREET NAMES:** All streets shall be named to comply with the provisions of the "Enhanced 911 System" (RSA 106-H:10,I; RSA 106-H:7, VII).
5. **RIGHT-OF-WAY:** The minimum width of right-of-way shall be 15.5 m (50 ft). A greater width may be required for arterial and collector streets.
6. **HIGHWAY RIGHT-OF-WAY BOUNDS:** Highway bounds, of a type approved by the Board of Selectmen, shall be installed at all intersection of streets, at all points of change in direction and at any other points the Board may deem necessary to designate the street lines.
7. **ALIGNMENT:** No streets shall be constructed with a curvature of less than a 30 m (100 ft.) radius.
8. **GRADES:** Street grades, where feasible, shall not exceed 10 percent, nor shall any be less than 0.50 percent. Special care shall be taken to provide flat grades at all intersections.
9. **CONSTRUCTION SUPERVISION:** Construction of the roadway, drainage facilities, sidewalks, curbs and all other elements of the highway must be done under the supervision of and with the approval of the Board of Selectmen.

10. **CLEARING:** The entire area of each street shall be cleared of all stumps, brush, roots, boulders, and like material, and all trees not intended for preservation.
11. **SUBGRADE PREPARATION:** All loam, humus and unsuitable material such as, but not limited to, stumps, vegetation, demolition debris, and structures shall be removed from the roadway and replaced with suitable fill material. All boulders and ledge shall be removed to a uniform cross sectional depth of not less than 300 mm (12 in.) below the subgrade and replaced with sand or gravel.
12. **DRAINAGE:** Surface water shall be disposed of by means of culverts of sufficient capacity at water courses as determined by standard hydraulic design methods and by the construction of longitudinal storm drainage systems whenever required to relieve water in the ditch sections. Construction shall be in accordance with New Hampshire Standard Specifications, 2002, Sections 603, 604 and 605.
13. **GRAVEL BASE:** All streets shall be constructed with a minimum of 300 mm (12 in.) of gravel per New Hampshire Standard Specifications, 2002, Section 304.
14. **ASPHALT SURFACE:** The asphalt surface may be a Bituminous Surface Treatment, Section 410 or Hot Bituminous Pavement, Section 403 of the New Hampshire Standard Specifications, 2002, as required by the Selectmen. The minimum traveled way width should be 6.0 m (20 ft.) for 51 to 750 vehicles per day, 6.6 m (22 ft.) for 751 to 1,500 vehicles per day and, 7.2 (24 ft.) for roads carrying over 1,501 vehicles. A 13.2 m (44 ft.) wide pavement may be required in areas where on-street parking is expected on both sides of the travel way. Angle parking shall not be allowed.
15. **GRAVEL SURFACE:** In unusual cases of low traffic volumes (up to 50 vehicles per day) where the Selectmen feel an asphalt surface is not required, the total usable roadway width shall be a minimum of 6.6 m (22 ft.). Provision for a wider section should be considered to allow for future upgrading to an asphalt surface as recommended above.
16. **GRAVEL SHOULDERS:** Gravel shoulders, equal to the base course depth, shall be constructed adjacent to all asphalt traveled way surfaces as follows: 51-200 vpd. 0.6 m (2.0 ft.); 201-1,500 vpd. 1.2 m, (4 ft.); over 1,500 vpd. 2.4 – 3.0 m (8-10 ft.).
17. **BRIDGES:** Bridges, as defined by State Law (RSA 234:2), are all structures of 3.048 m (10.0 ft.) or greater clear span, and shall be designed to MS-18 (HS-20) loading (AASHTO Specifications). The minimum roadway width shall be 7.2 m (24 ft.).
18. **SIDEWALKS:** Sidewalks of 50 mm (2 in.) thick asphalt, on a 100 mm (4 in.) gravel base, not less than 1.5 m (5 ft.) in width and no closer than 6.6 m (22 ft.) to the street centerline shall be constructed on one or both sides of the street, as directed by the Board of Selectmen, when in the opinion of the Board such sidewalks are necessary.

19. **WETLANDS:** Any work that requires impacts (fill, dredge, excavation, etc.) on wetlands or other jurisdictional areas (stream banks, undisturbed tidal buffer zones, etc.) requires coordination with the Department of Environmental Services Water Division (271-3503) to ensure that all applicable rules and regulations are adhered to.
20. **EROSION CONTROL:** A **Site Specific permit** is required from NHDES (271-3503) whenever a project proposes to disturb more than 100,000 square feet of terrain (50,000 sq. ft. if within the protected shoreland), and as of March 10, 2003, construction activity that disturbs 1 or more acre of land needs a **Federal storm water permit** (contact EPA at 617-918-1615).. Selection and design of erosion control measures may be found in the publication “Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire”, prepared by the Rockingham County Conservation District for the New Hampshire Department of Environmental Services, August 1992 (currently being updated).
21. **ENVIRONMENTAL IMPACTS:** Environmental documentation may also be required to address the natural, socio-economic, and cultural resource impacts. Contact N.H. Department of Environmental Services (271-2975) and N.H. Division of Historic Resources (271-3483) for assistance.
22. **UTILITIES:** Utility poles should be kept close to the right-of-way line, in no case closer than the ditch line and always well back of a curb. Water and sewer mains should be constructed outside the surface area and preferable outside the ditch line.
23. **SAFETY:** Safety is an important factor on all roadway improvements. On development roads it may not be possible or practical to obtain obstacle-free roadsides but every effort should be made to provide clear areas within the maintenance limits. The use of flatter slopes, the use of guardrail where necessary, and the use of warnings signs are other safety factors to be considered. These areas are addressed in the publication “Roadside Design Guide” by AASHTO, 2002.
24. **MINIMUM STANDARDS:** The use of more liberal values than these minimum standards is recommended. For additional guidance and design of local development roads and streets, reference should be made to the American Association of State Highways and Transportation Officials, “Guidelines for Geometric Design of Very Low-Volume Roads” 2001, and “Policy of Geometric Design of Highways and Streets” 2001.

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MINIMUM GEOMETRIC & STRUCTURAL GUIDES FOR LOCAL ROADS AND STREETS

September 1990

Average Daily Traffic (Veh./Day)	0-50	50-200	200-750	750-1500	1500 & OVER
Pavement Width (Feet)	18 min.	20	20	22	24
Shoulder Width (Feet)	2	2	4	4	8-10
Center of Road to Ditch Line	15	16	18	19-21	Varies
Pavement Type	Gravel	Asph. Surf. Treated	Hot Bitum.	Hot Bitum.	Hot Bitum.
Slope of Roadway	4%	3%	2%	2%	2%
Base Course Depth-(Gravel)	12"	12"	12"	12"	18"
(Cr. Gravel)	-	-	4"	6"	6"

- Notes
1. Gravel surface should be paved where steep grades occur.
 2. For average daily traffic over 1000 veh./day paved shoulders should be considered
 3. Base course depths may need to be increased in areas of poor soils

