ACCESS ROAD

Conservation Practice Job Sheet *NH-560*

Eroding farm roads reduce productivity and cause water quality problems.

Definition

An access road is an established route for equipment and vehicles.

Purpose

Access roads provide a fixed route for vehicular travel for management of timber, wildlife habitat, livestock, agriculture and other conservation enterprises.

Use

Forest roads are used primarily to access landings or to support forestry practices such as timber stand improvement. They are not appropriate within streamside filter strips or immediately adjacent to water bodies except where needed for crossing.

Criteria

Access roads usually require structural measures to manage runoff and surface treatment to reduce soil erosion and sedimentation. Control surface water using techniques such as crowning, outsloping, rolling (broad-based) dips, water bars, and belt diverters (shown in photo above). Stabilize cut and fill slopes and the travel surfaces with appropriate material. Design road side slopes to be no steeper than 2:1 unless special provisions are taken to ensure safety and stability. Plan for minimum road width of 14 feet, and a minimum tread width of 10 feet.

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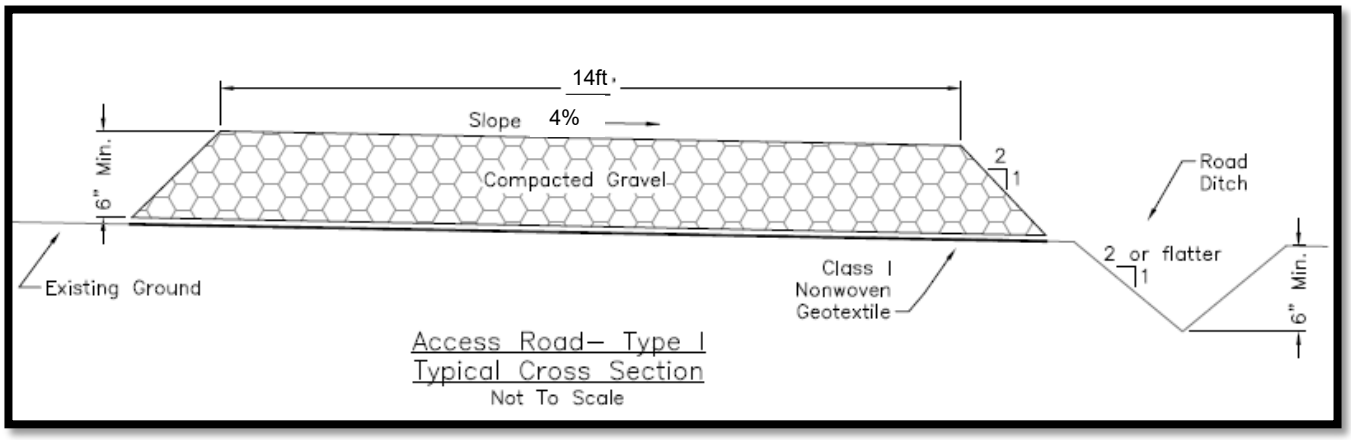
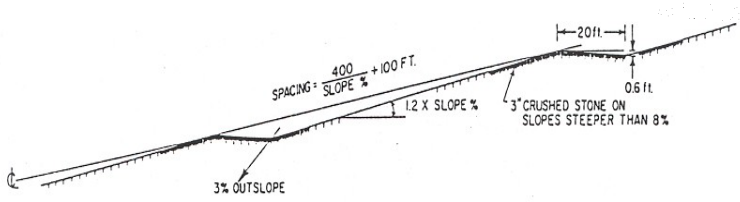


Location
Locate roads to minimize environmental impact, to effectively control water and erosion, and to serve the intended purpose. Always check with Natural Heritage Bureau for wildlife site considerations, and avoid wetland impacts if at all possible.

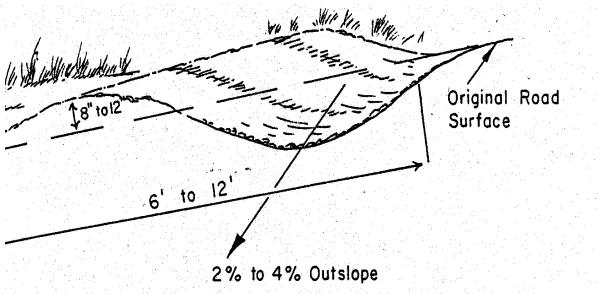
Where mud on a public way is likely, apply gravel, wood chips or slash for a minimum distance of 50 feet on all road sections between woodland harvesting landing areas and public roadways.

Gradient
Roads should not exceed 10 percent grade normally, but when needed could be a maximum of 15 percent for no more than 100 feet. For timber harvest operations, access to landings should be limited to 2 to 5 percent grades.

Water Bars
Water bars, sometimes called shallow water breaks, can be used on roads up to and over 20 percent grade and should be installed at a downslope angle of 30 degrees or less depending on the grade of the road. See the sketch below for design guidance.



DESIGN OF A BROAD BASE DRAINAGE DIP



SHALLOW WATER BREAK

Rolling (Broad-based) Dips
Broad-based dips are shallow, wide diversions usually constructed on roads having a gradient of 10 percent or less. The bottom of the dip will be outsloped at least 4 percent and extend the full width of the roadway (see diagram below). The dip and reverse grade section may require bedding with 3 inch crushed stone in some soils for stability to prevent rutting, and on slopes greater than 8%.road. Steeper road grades require less downslope angle. The outlet of the water break should be open to prevent

water from accumulating, and should be protected by a buffer or filter zone of undisturbed forest floor to clean the sediment out of the water and prevent erosion. When the site does not provide adequate outlet protection, consider additional practices such as rock lined channels or plunge pools.

Water bars and broad-based dips should be spaced according to the following table, based primarily on slope and surfacing material. Refer to the 560 Access Road practice standard for surface drainage feature spacing based on soil type.

Road Grade (%)	Maximum distance between water bars (feet)		Maximum distance between all other drainage structures* (feet)	
	High Erosion Risk (sandy or silt soils)	Low Erosion Risk (rocky or clay soils)	High Erosion Risk (sandy or silt soils)	Low Erosion Risk (rocky or clay soils)
0-3	175	250	250	350
4-6	125	200	175	250
7-9	100	175	125	175
10-12	75	150	75	125
13-15	60	100	60	100
6-20	50	75	50	75
21-30	40	65	40	65
30+	30	50	30	50

**Including culvert cross drains*

Chart from "New Hampshire BMPs for Erosion Control on Timber Harvesting Operations, 2016".

Operation and Maintenance

Surface treatment material and water control features should be monitored for degradation by storms and/or by heavy use. Pipes and ditches will need periodic cleanout, surface treatment will need replenishment and grading, and cut/fill slopes should be managed for clearance and stability. This may entail pruning back encroaching trees, re-establishing vegetation, and scheduled mowing operations. Consider wildlife impacts when detailing a roadway maintenance plan, as many species may utilize the op corridor on a seasonal basis.

Access Road - Job Sheet

For:	***Farm #:***
Field(s):	***Tract #:***
Designed By:	***Approved By:*** ***Signature:***
Date:	***Date:***

Purpose	
☐ Forest Management ☐ Facility Maintenance	☐ Wildlife Habitat Management ☐ Agriculture

Layout and Dimensions			
Water Bars:	No.:	Spacing:	
Broad-based (Rolling) Dips:	No.:	Spacing:	
Bridges:	No.:	Type & Size:	
Culverts (> 15" and <24"):	No.:	Type & Size:	Spacing:
Outlet Protection Structures:	No.:	Type & Size:	
Road - Cut Slope	Road - Surface*		Road- Fill Slope
Width (Height): Length:	Width: Length:		Width: Length:
Total Length (ft):	Average Width (ft.):		Total area (ac) or 1000Ft.^{2}
Additional location and layout requirements:			
If Permit or Review is required, has it been obtained? Y or N			Permit No.

Questions regarding the planting or maintenance of the buffer planting should be directed to _____, at_____.

Plant Materials Info (Refer to NH Standard 342 for appropriate species, or NH BMP Forest Harvest Manual)					
Species	Seed lbs./ac. or lbs./ 1000Ft.^{2}	Lime Lbs./ac. or lbs./ 1000Ft.^{2}	Fertilizer lbs./ac. or lbs./1000 Ft.^{2}	Mulch lbs./ac. or	Planting Dates
Erosion Control					
1.					
2.					

Site Preparation (on Cut/Fill and Disturbed areas)
Planting Method (s)
Broadcast_____ Drilled_____
Maintenance Requirements – Check as Appropriate
Water Bars Functioning_____ Road Outsloped_____ Inspect Periodically_____ Road Properly Graded_____ Vegetation Established_____Access Limited_____

Access Road – Job Sketch

If needed, an aerial view or a side view of the road, including location of water control structures, a direction arrow and other relevant information and complementary practices may also be included.

Scale 1” =_____ft. (NA indicates sketch not to scale: grid size ½” by ½”)

Additional Specifications and Notes: