Long Trail Engineering P.C.

Proposed Cell Tower Installation
1030 Route 100, Rochester, VT

Permeable Surface Demonstration
January 29, 2026

Section 2.0 of the 2017 Vermont Stormwater Management Manual Rule and Design Guidance defines a pervious surface as:

... pervious or porous pavement, concrete, pavers, and similar manmade materials are not "impervious surface," as defined in this Manual, when design specifications demonstrate that the material in question has the capacity to infiltrate the 1-year 24-hour storm event, under a type II distribution. In assessing the infiltrative capacity, the designer shall account for factors related to the specific application, including the effect of base and sub-base materials, slope, and maintenance practices.

Demonstration Method 1: Calculate volume of rainfall per sf of ground surface

One Year, 24 Hour Rainfall	2.34	in (per NOAA Atlas, January 2026)
Assumed infiltration rate through surface	100	%
24 Hour Rainfall	0.20	cf per sf surface area
Crushed Stone Depth	8	in
Void Space	33	%
Void Space Volume	0.22	cf per sf surface area

Void space volume (cf/sf) is greater than the runoff volume (cf/sf); no runoff is generated

Demonstration Method 2: Calculate runoff volume vs storage volume available

Pervious Access Road Length	4,418	ft
Pervious Access Road Width	12	ft
Total Pervious Area	53,016	sf
	1.22	ac
One Year, 24 Hour Rainfall	2.34	in (per NOAA Atlas, January 2026)
One Year, 24 Hour Runoff (Type II)	0.222	ac-ft (per Hydrocad)
	0.215	ac-ft (per Standards Compliance Workbook)
Use larger volume of	0.222	ac-ft
	9,670	cf

Note: for purposes of calculating the one year rainfall rate and volume, the permeable road surface is assumed to be an impervious surface, CN = 98.

Crushed Stone Depth (Reservoir)	8	in
Crushed Stone Volume	35,344	cf
Void Space	33	%
Storage Volume Available	11,664	cf

Void space volume (cf) is greater than the runoff volume (cf); no runoff is generated