

**DEVIL'S SLIDE TUNNELS  
SOUTH ROCK CUT ALTERNATIVES**

<b>Alternatives</b>	<b>1</b>	<b>1b</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Description</b>	Large 1:1 cut slope area. Rock fall fence w/ 4.5-m rock catchment area	Large 1:1 cut slope area. Architecturally treated wall to hide the rock fall barrier. 4.5-m rock catchment area	Two wall sections: the low wall sloping at 1H:10V up to a 2.5 m wide planting bench then continuing up to the top of the slope except in the highest portion of the wall. To reduce the height of the wall, a ridge nose is created. At the toe of this slope, a 4.5-m rock catchment bench is placed.	There is a shotcrete wall sloping at 1H:10V up to a 15% grade maintenance access road, specifically for removing talus material. The access road consists of two roads. The 15% grade and width of the access road allows accessibility for a bobcat. A safety barrier with rock fall fence is located at the edge of access road.	Similar to Alternative 3 but there is only one access road. There is a combination of sloped walls, retaining walls sloping up at 1H:10V and a 1:1 cut slope area.	Similar to Alternative 2 but there is a maintenance access road from the bench to the disposal site.
<b>Max. height of 1:1 cut slope (excluding cut slope after connecting trail)</b>	55 m	55 m	30 m	34 m	34 m	30 m
<b>Length of 1:1 cut slope</b>	320 m	320 m	340m	310 m	310 m	340 m
<b>Wall (Y/N)</b>	No	Yes	Yes	Yes	Yes	Yes
<b>Maintenance Road (Y/N)</b>	Yes	Yes	No	Yes	Yes	Yes
<b>Max. height of lower wall</b>	N/a	~4.5 m	13 m	12 m	21 m	13 m
<b>Max. height of upper wall</b>	N/a	N/a	18 m	N/a	N/a	18 m

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<b>Lower wall surface area</b>	N/A	1,500 m <sup>2</sup>	2,000 m <sup>2</sup>	1,500 m <sup>2</sup>	2,350 m <sup>2</sup>	2,000 m <sup>2</sup>
<b>Upper wall surface area</b>	N/A	N/A	1,860 m <sup>2</sup>	N/A	N/A	1,860m <sup>2</sup>
<b>Total wall surface area</b>	N/A	1,500 m <sup>2</sup>	3,800 m <sup>2</sup>	1,500 m <sup>2</sup>	2,350 m <sup>2</sup>	3,800 m <sup>2</sup>
<b>Total New Exposed Surface Area (1:1 cut slope, excluding the cut above the trail)</b>	6,110 m <sup>2</sup>	6,110 m <sup>2</sup>	720 m <sup>2</sup>	3,600 m <sup>2</sup>	3390 m <sup>2</sup>	720 m <sup>2</sup>
<b>Total Exposed Area (1:1 cut slope and ex. exposed area, excluding the cut above the trail)</b>	11,650 m <sup>2</sup>	11,650 m <sup>2</sup>	6430 m <sup>2</sup>	8640 m <sup>2</sup>	8240 m <sup>2</sup>	6430 m <sup>2</sup>
<b>Total Cut Volume</b>	155,000 m <sup>3</sup>	155,000 m <sup>3</sup>	51,000 m <sup>3</sup>	94,000 m <sup>3</sup>	80,000 m <sup>3</sup>	53,000 m <sup>3</sup>
<b>Total Fill Volume</b>	200 m <sup>3</sup>	200 m <sup>3</sup>	350 m <sup>3</sup>	50 m <sup>3</sup>	0	350 m <sup>3</sup>
<b>Estimated Cost (\$million)</b>	5.5	5.7	6.1	5.5	7.1	7.4
<b>Maintain-ability **</b>	1	2	6	3	4	5
<b>Construction** duration</b>	1	2	5	3	4	6

\*\* Note: Scale 1-6  
1 = Best  
6 = Worst