

02/2003. Large landslide in weak, clay rich, highly saturated soil at Da Deo Pass, one of the most problematic, about 1km long, section.



08/2004. Largely remained untreated. Note the slope angle and the darkened part by water seepage. The white colour is kaoline.



01/2005. Slides continued to occur.



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01/2005. Waiting for solution.



08/2004. One critical part was treated by gabions, drainage and Vetiver. The grass was planted 2 months before. But it was not mature enough and as the rainy season continued, a slow, retarded slide occurred.



01/2005. The drainage path was damaged and the slide continued, although very slow. At the same time the grass became more mature.



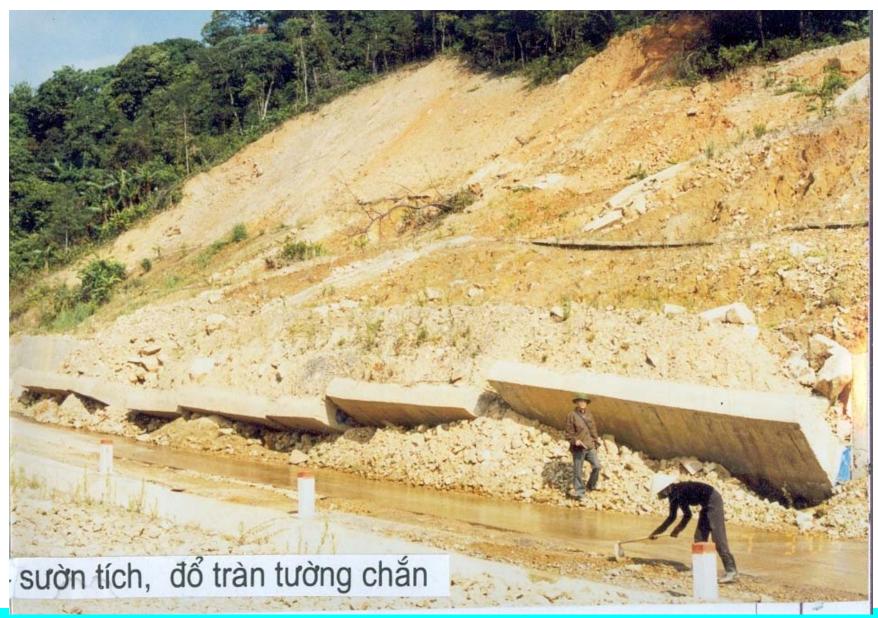
01/2005. The concrete plate was broken down by the sliding force while Vetiver grass continued to grow.



01/2005. At the toe of the slide the road was heaved up for about 1m despite the concrete cover of 20cm.



01/2005. The 3-layer gabion was displaced for about 1m. But the slide didn't continue as the grass became more mature. And the road was rebuilt a little bit to the right to continue its normal function.



Another problem site. Thick weathering crust on granite is clay rich, becoming very weak when wet and the concrete retaining wall is useless.



08/2004. Painting green the problem and it works. HCMHW, Vu Quang section in thin-bedded black schist, dipping 45° toward the road.



08/2004. Lo Xo (spiral) Pass. One of the most problematic section where a major fault runs through (in the road direction) the strongly crushed, clay rich and wet rock mass.