Discussion vahid hosseinitoudeshki 2014) rapid drawdown results from

Discussion Low water table Comparing my results obtained from both Bishop'smethod of slices (LEM) and Midas GTSNX SRM Mohr coulomb (FEM) to the existingliterature, typical attained values of factors of safety for low water tableconditions are greater <1 and rapid drawdown however less than the high-water table FOS. (Sina Khanmohammadi andVahid Hosseinitoudeshki 2014) Despite there being discrepancies withthe two FOS obtained from each method they both concur to existing literature. High water table The two factors of safety obtained from the LEM and FEM werevery different, from Bishops method of slices I attained a value of 0. 79whereas using Midas Mohr coulomb I obtained a value of 1.

78. Midas providing mea much higher FOS in comparison to the bishop's method of slices which produceda FOS < 1 causing it to fail. In accordance to literature the FOS is meant decreaseas the height of the water table increases. (Sina Khanmohammadi and Vahid Hosseinitoudeshki 2014) Rapid DrawdownResultsfrom both my methods show a failure bishops method being slightly lower thanMidas (Cheng, Y. and Lau, C. 2008). The rapid drawdowncondition occurs when immersed slopes experience a rapid reduction of theexternal water level.

The effects ofwater rapid drawdown on slope stability have been reported from differentperspectives based on laboratory tests (Yan et al., 2010; Wang et al., 2012), numericalanalyses (Viratjandr andMichalowski, 2006), and limit analyses (Gao et al., 2014). The reduction of water level reduces thestabilizing external hydrostatic pressure due to the unloading effect ofremoving water, and alteration of the internal pore water pressure.

This changein pore water pressure change induces significant movement of the waterharboured within the slope creating a seepage force which decreases thestability of the slope. The seepage-instability relationshipwas confirmed in tohari, Nishigaki, & Komatsu (2007). It was expectedthat the RDD would have the lowest factor of safety amongst the three given watertable conditions.

Comparing my results for LWT to RDD the partially submergedarea of the soil is now completely submerged inducing a greater weight and porepressure on the slope. examples of Rapid draw-down-induced failures can be foundin Sherardet al. (1963) and Lawrence Von Thun (1985). FEM Vs.

LEMNote that the factorof safety obtained by using Bishop’s method of slices yields a bit moreconservative result compared to the Midas SRM Mohr-coulomb method, as theBishops method has a slightly lower result this relation was confirmed by (Cheng, Y. and Lau, C. 2008). Slope stability analysisand stabilization. London: Routledge.

Even though there is a slight discrepancybetween my results for LEM and FEM it can be stated that they are howevercomparable which suggests that either method LEM or SRM FEM is suitable. The biggestdiscrepancy in my results was found between the FOS attained for high water tablecondition, FEM obtaining: 1. 78 and LEM obtaining: 0. 79. This was a greatdifference as analysing LEM Bishop’s methods of slices results for high watertable it is depicted that the FOS is < 1 indicating the slopes failure. The reason behind the bigdifference of factor of safety is because the Bishop's method.

Does not accountfor the normal Areduction in the effective pressure due to the increase in water levelcontributes to the reduction of the shear strength resulting in the reductionof the factor of safety. there is an importantdifference between SRM FEM and LEM, which is the inter-slice force function definition. In the SRM, the soil parameters are reduced by the FOS LIMITATIONS · Resultant interstice forces are horizontal. There are no inter-sliceshear forces.

· SUITABILITYOF RESULTS CONC.