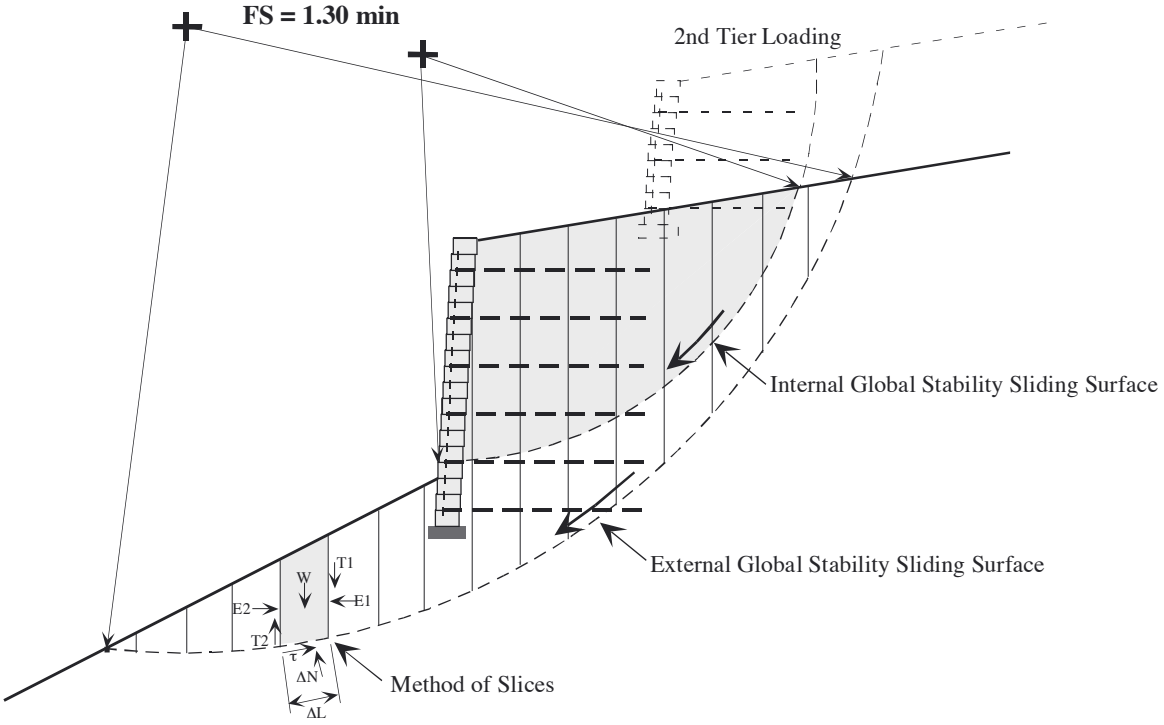
Global Stability

A simple sliding and overturning analysis may be adequate for many simple retaining wall structures, however, an overall or global stability analysis is required for those more complex structures involving slopes, poor soils, and/or tiered wall sections. Global stability analysis looks at a rotational or compound failure mechanism which is significantly different than a simple sliding and overturning analysis.

Global stability analysis provides lower calculated factors of safety than simple sliding and can not be easily "tricked" by artificially low earth pressure calculations for heavily battered walls. Global stability analysis recognizes the inherent instability of walls on slopes and tiered wall configurations, and can also find potential failure planes through flexible wall systems when soil reinforcement spacing and length is inadequate.



Global Stability Section

Global stability analysis is best accomplished through computer modeling with the aid of commercially available slope stability software such as G-Slope and STABL programs which can include soil reinforcing elements and perform Bishop and Janbu methods of analysis. Global stability analysis is very sensitive to soil design parameters and requires proficiency with proper modeling techniques and soils evaluation to arrive at reasonable answers and solutions.

A minimum safety factor of 1.3 is typically required for retaining structures, however, this factor may be increased to 1.5 for critical wall structures such as bridge abutments per AASHTO code.