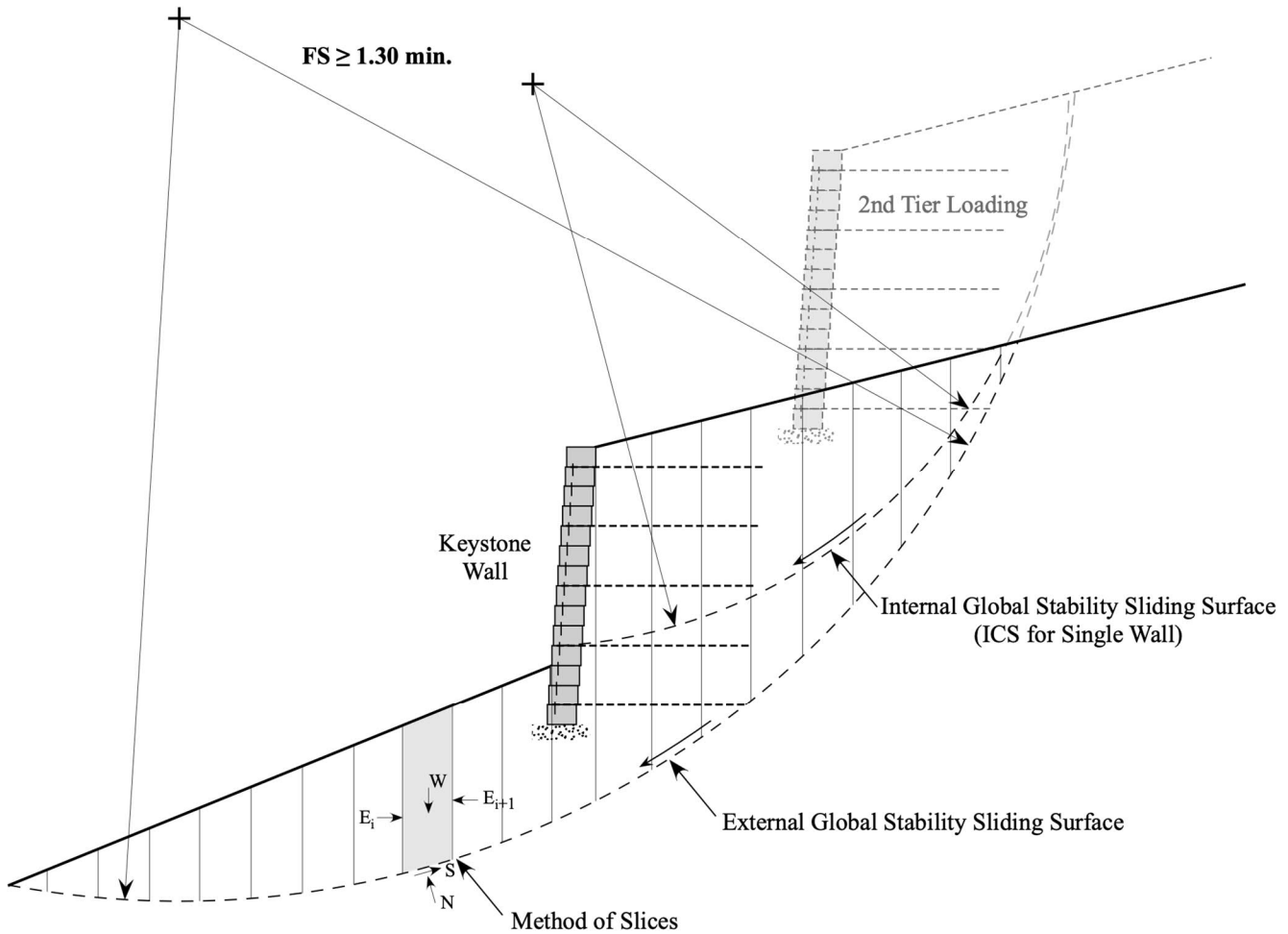


# Global Stability

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, ground water conditions, poor soils, and/or tiered wall sections. Global stability analysis looks at a rotational or compound failure mechanism of walls and slopes which is significantly different than a simple sliding and overturning analysis. 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, Slope-W, and UTexas4 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 stability factor of safety of 1.3 is typically required for retaining structures. However, this factor may be increased to 1.5 for supporting critical wall structures such as bridge abutments per the AASHTO code.