

SIMPLIFIED NEWMARK-TYPE SEISMIC DEFORMATION ANALYSIS OF SLOPES AND EMBANKMENTS

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PROJECT INFORMATION

Project Name	
Project No.	
Project Location	
Analyzed By	
Reviewed By	

INPUT PARAMETERS

Analysis Description	
Yield Acceleration from Slope Stability Analysis, k_y	0.15 g
<u>Level 1 Seismic Design Parameters:</u>	
- Description	Design Earthquake
- Peak Ground Acceleration, PGA	0.43 g
- Earthquake Moment Magnitude, M_w	7.00
<u>Level 2 Seismic Design Parameters:</u>	
- Description	Maximum Considered Earthquake (MCE) / 2475-yr Return Period
- Peak Ground Acceleration, PGA	0.65 g
- Earthquake Moment Magnitude, M_w	7.50

COMPUTED SEISMIC DISPLACEMENTS

	Level 1: PGA = 0.43g, $M_w = 7$		Level 2: PGA = 0.65g, $M_w = 7.5$	
	50th Percentile	84th Percentile	50th Percentile	84th Percentile
Ambraseys and Menu (1988) Method	3.3 inches	6.6 inches	8 inches	15.9 inches
Bray and Travasarou (2007) Method	3.3 inches	6.3 inches	9.6 inches	18.6 inches
Jibson (2007) Method	1.2 inches	3.5 inches	5.5 inches	15.6 inches

REFERENCES:

1. Ambraseys, N. N., and Menu, J. M. (1988). "Earthquake-induced ground displacements." *Earthquake Engineering and Structural Dynamics*, 16(7), pp. 985-1005.
2. Bray, J. D., and Travasarou, T. (2007). "Simplified procedure for estimating earthquake-induced deviatoric slope displacements." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 133(4), pp. 381-392.
3. Jibson, R. W. (2007). "Regression models for estimating coseismic landslide displacement." *Engineering Geology*, 91(2-4), pp. 209-218.