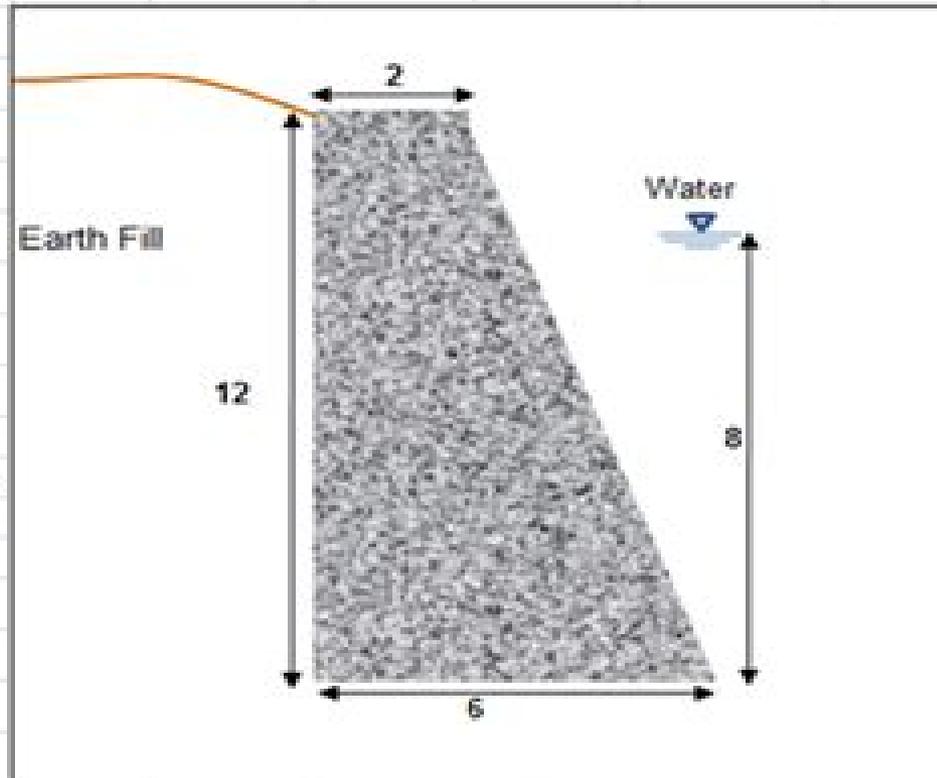


# STABILITY ANALYSIS OF GRAVITY RETAINING WALL V 1.1

PROJECT SITE	<i>Retaining wall at Main Lower Swat Canal</i>		
<b>INPUT DATA</b>			
Wall Material	<b>Plum Concrete</b>		
Height of Retaining Wall	$H_t$	= 12	ft
Top width	$T_w$	= 2	ft
Bottom width	$B_w$	= 6	ft
Depth of water	$D_w$	= 8	
Surcharge load	$S_{load}$	= 10	psf
Unit Weight of Water	$\gamma_{water}$	= 62.4	pcf
Unit Weigh Soil	$\gamma_{soil}$	= 110	pcf
Unit Weight of wall material	$\gamma_{stone}$	= 145	pcf
Soil friction factor	$\mu$	= 0.566	
Angle of internal friction	$\phi$	= 30	degree
<b>DESIGN CALCULATIONS</b>			
Stablizing Force 1	$F_{r1}$	= 3480.0	lb/ft
Stablizing Force 2	$F_{r2}$	= 3480.0	lb/ft
Stablizing Force 3	$F_{r3}$	= 998.4	lb/ft
Moment Arm 1	$X_1$	= 5	ft
Moment Arm 2	$X_2$	= 2.67	ft
Moment Arm 3	$X_3$	= 2.67	ft
Over turning pressure	$P_o$	= 2680.00	lb
Total wall area	Area	= 48.00	ft <sup>2</sup>
Over turning pressure moment	$M_o$	= 10720.00	lb-ft
Resisting moment	$M_r$	= 29342.40	lb-ft
FOS aganist overturning	FOS	= 2.74	> 2 Hence OK
FOS aganist Sliding	FOS	= 1.68	> 1.50 Hence OK
Eccentricity Check	e	= 0.324	-B/6<=e<=B/6 Hence OK
<i>(Resultant is in middle one third)</i>			



# Civil Engineering Retaining Wall Design Example Gravity

**A Loxley**



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**Flower Pollination Algorithm and its Variants** Nilanjan Dey, 2021-03-17 This book presents essential concepts of traditional Flower Pollination Algorithm FPA and its recent variants and also its application to find optimal solution for a variety of real world engineering and medical problems Swarm intelligence based meta heuristic algorithms are extensively implemented to solve a variety of real world optimization problems due to its adaptability and robustness FPA is one of the most successful swarm intelligence procedures developed in 2012 and extensively used in various optimization tasks for more than a decade The mathematical model of FPA is quite straightforward and easy to understand and enhance compared to other swarm approaches Hence FPA has attracted attention of researchers who are working to find the optimal solutions in variety of domains such as N dimensional numerical optimization constrained unconstrained optimization and linear nonlinear optimization problems Along with the traditional bat algorithm the enhanced versions of FPA are also considered to solve a variety of optimization problems in science engineering and medical applications      *Geosynthetics: Leading the Way to a Resilient Planet* Giovanni Biondi, Daniele Cazzuffi, Nicola Moraci, Claudio Soccodato, 2023-09-15 This volume contains the proceedings of the 12th International Conference on Geosynthetics 12 ICG held in Roma Italy 17 21 September 2023 About 750 Authors Academics Researchers Students Practitioners Contractors and Manufacturers contributed to the peer reviewed papers of this volume which includes the Giroud lecture the Bathurst lecture the Rowe lecture four keynote lectures and 296 technical papers The content of these proceedings illustrates the sustainable use of geosynthetics in a variety of innovative as well as consolidated applications After the sustainability implications in the correct use of geosynthetics the ability to overcome the natural events effects often related to the climate change and to adequately afford the human activities as the increase of pollution forced to refer to a new keyword Resiliency The 12 ICG intends to become the base for the next step hence the conference theme is Geosynthetics Leading the Way to a Resilient Planet The conference topics through general and parallel sessions invited presentations and keynote lectures address the most recent developments in geosynthetic engineering and stimulate fruitful technical and scientific interaction among academicians professionals manufacturers students The 12 ICG proceedings contain a wealth of information that could be useful for researchers practitioners and all those working in the broad innovative and dynamic field of geosynthetics      **Japanese Journal of Engineering. Abstracts**

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