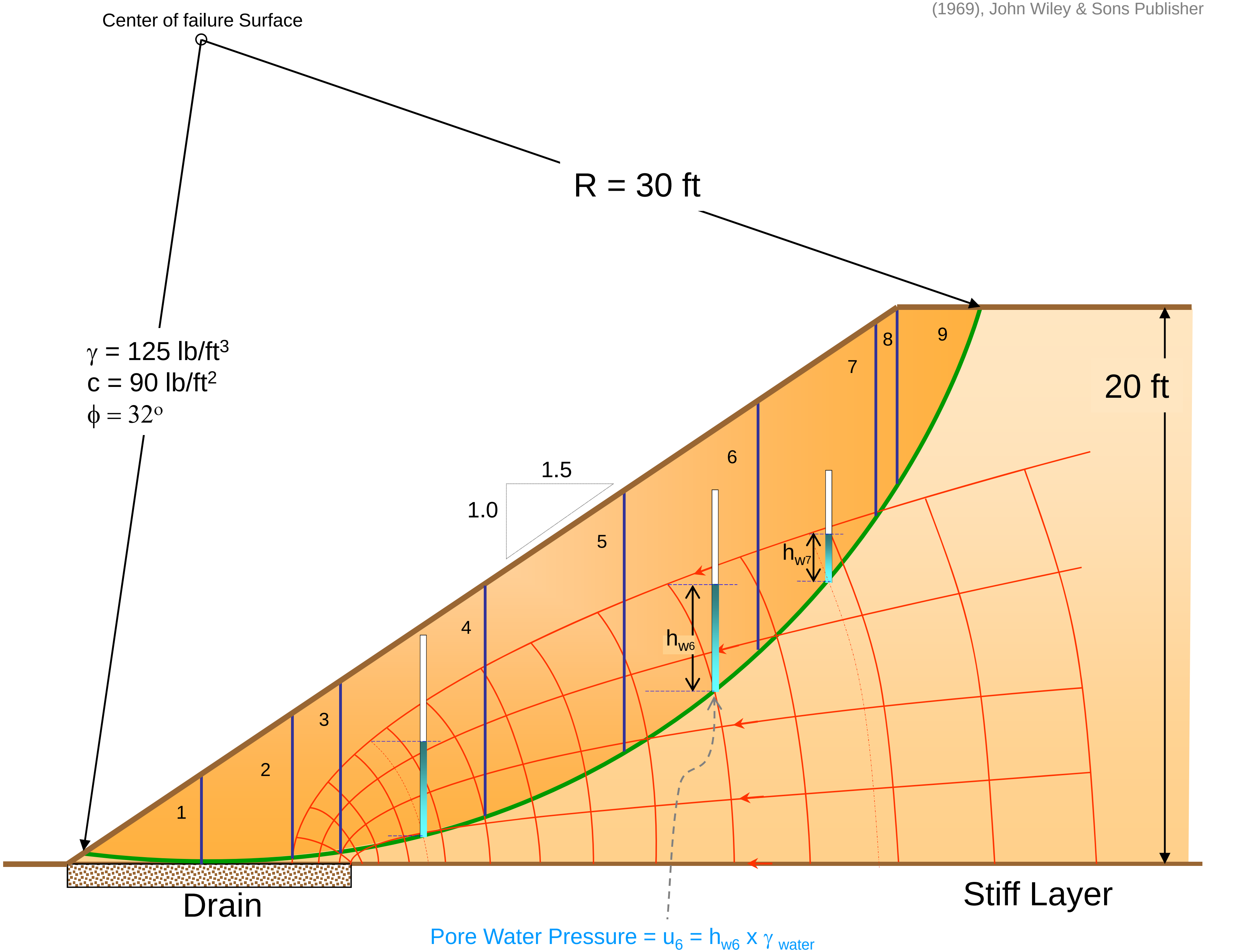

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1- Using Ordinary Method of Slices (Swedish Method)

Slice	Width Δx (ft)	Ave Height (ft)	Weight (Kips)	θ_i	$W_i \sin \theta_i$	$W_i \cos \theta_i$	u_i	Δl_i	$U_i = u_i \Delta l_i$	$N_i = W_i \cos\theta_i - U_i$
1	4.5	1.6	0.9	-1.7	0	0.9	0	4.4	0	0.9
2	3.2	4.2	1.7	2.9	0.1	1.7	0	3.2	0	1.7
3	1.8	5.8	1.3	8.05	0.2	1.3	0.03	1.9	0.05	1.25
4	5.0	7.4	4.6	14.5	1.2	4.5	0.21	5.3	1.1	3.4
5	5.0	9.0	5.6	24.8	2.3	5.1	0.29	5.6	1.6	3.5
6	5.0	9.3	5.8	35.4	3.4	4.7	0.25	6.2	1.55	3.15
7	4.4	8.4	4.6	47.7	3.4	3.1	0.11	6.7	0.7	2.4
8	0.6	6.7	0.5	55.1	0.4	0.3	0	1.2	0	0.3
9	3.2	3.8	1.5	60.4	1.3	0.7	0	7.3	0	0.7
					12.3			41.8		17.3

$$F.S. = \frac{cL + \tan\phi \sum_{i=1}^{i=n} (W_i \cos\theta_i - u_i \Delta l_i)}{\sum_{i=1}^{i=n} W_i \sin\theta_i} = \frac{0.09(41.8) + 17.3 \tan 32^o}{12.3} = \frac{3.76 + 10.82}{12.3} = \frac{14.58}{12.3} = 1.19$$

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2- Using Simplified Bishop Method

$$M_i(\theta) = \cos\theta_i \left(1 + \frac{\tan\theta_i \tan\varphi}{F.S.}\right)$$

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(9)	
							M_i		(7)/(8)	
Slice	Width Δx (ft)	$C\,\Delta x_i$ (kips)	$u_i\,\Delta x_i$ (Kips)	W_i-$u_i\,\Delta x_i$ (Kips)	(5).(tan ϕ) (Kips)	(3)+(6) (Kips)	Assume F=1.25	Assume F=1.35	F=1.25	F=1.35
1	4.5	0.4	0	0.9	0.55	0.95	0.97	0.97	1.0	1.0
2	3.2	0.29	0	1.7	1.05	1.35	1.02	1.02	1.3	1.3
3	1.8	0.16	0.05	1.25	0.8	0.95	1.06	1.05	0.9	0.9
4	5.0	0.45	1.05	3.55	2.25	2.7	1.09	1.08	2.5	2.5
5	5.0	0.45	1.45	4.15	2.55	3.00	1.12	1.10	2.7	2.75
6	5.0	0.45	1.25	4.55	2.7	3.15	1.1	1.08	2.85	2.9
7	4.4	0.4	0.5	4.1	2.65	3.05	1.05	1.02	2.9	2.95
8	0.6	0.05	0	0.5	0.3	0.35	0.98	0.95	0.35	0.4
9	3.2	0.29	0	1.5	0.95	1.25	0.93	0.92	1.3	1.35
									15.8	16.09

$$\text{F.S.} = \frac{\sum_{i=1}^{i=n}\left[c\,\Delta x_i + (W_i - u_i\,\Delta x_i)\tan\phi\right]\left[1/M_i\right]}{\sum_{i=1}^{i=n} W_i \sin\theta_i} =$$

From the previous solution

$$F.S. = 1.25 \quad F.S. = \frac{15.8}{12.3} = 1.29$$

$$F.S. = 1.35 \quad F.S. = \frac{16.05}{12.3} = 1.31$$

With assumed $F.S. = 1.3$ would give $F.S. = 1.3$