Soldier Beam Design - Conventional Method
10'-0" Wall

Loading

		Granular Soils	
Surcharge:	S	72	psf
Active Load:	Wa	45	pcf
Passive:	Wp	350	pcf
Factor of Safety:	FS	1.3	
Creep Load:	Cp	0	pcf
Starting Creep Load:	Csl	0	psf
Creep Zone:	Cz	0	ft
Eff. Creep Factor	Cf	0	Factor x Cp
Point Load:	PLa	0	lbs
PLa Dist.from top of wall:	PLDa	0	ft
Point Load:	PLb	0	lbs
PLb Dist. from top of wall:	PLDb	0	ft
Retained Height:	H	10	ft
Neglected Depth:	ND	1	ft
Starting Passive Value:	SPV	350	psf
Pier Diameter:	PD	24	in
Pier Spacing:	PS	6	ft
Eff. Passive Factor	PF	2	Factor x PD
Eff. Active Factor	AF	1	Factor x PD
Required Depth:	D	15.19	ft
Location of Zero Shear:	X	6.17	ft
Design Moment:	M	1,788	k-in
Cover on Soldier Beam:	CC	1	in
Minimum Lagging Bearing:	BL	2	in
Soldier Beam Yield Stress	Fy	50	ksi
Lagging Braces Beam?:		Yes	

Minimum Size:	W14X43
Specified Size:	W14X43
Demand-to-Capacity:	0.95 <1, OK

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Use W14X43 soldier beam placed in 24" diameter pier
            w/16'-0" minimum embedment
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Granular Soil Loading Distribution
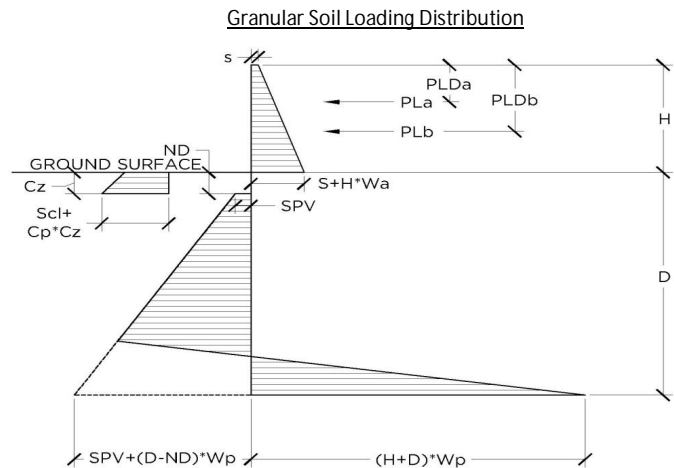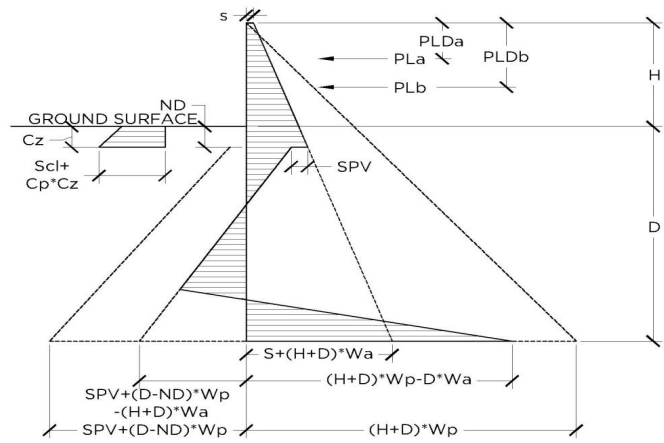
Bedrock @ Top of Passive Loading Distribution