MasterSeries User Company

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Job ref	: Job Ref
Sheet	: Sheet Ref / 6 -
Made By	: PB
Date	: 2024.10.01
Checked	:
Approved	:

Wall Sliding - Virtual Back Pressure

$Fx/(Rx_{Friction}+ Rx_{Passive})$	0.000/(9.281+0.229)	0.000	OK
Prop Reaction Case 2 (Service)	37.0 kN @ Base		

Soil Pressure

Virtual Back	26.143/127 kN/m², Length under pressure 3.121 m	0.206	OK
Wall Back	26.114/127 kN/m², Length under pressure 3.125 m	0.206	OK

Structural Design

At Rest Earth Pressure

At rest earth pressures magnification	$(1+\text{Sin}(\phi)) \times \sqrt{OCR} = (1+\text{Sin}(21.24)\times\sqrt{1}$	1.36

Prop Reaction

Maximum Prop Reaction (Ultimate)	50.4 kN @ Base

Wall Design (Inner Steel)

Critical Section	Critical @ 0 mm from base, Case 2		
Steel Provided (Cover)	Main H10@225 (30 mm) Dist. H10@225 (40 mm)	349 mm²	OK
Compression Steel Provided (Cover)	Main H10@300 (30 mm) Dist. H10@300 (40 mm)	262 mm²	
Leverarm z=fn(d,b,As,fy,Fcu)	215 mm, 1000 mm, 349 mm², 500 N/mm², 35.0 N/mm²	204 mm	
Mr=fn(above,As',d',x,x/d)	262 mm², 35 mm, 11 mm, 0.05	31.0 kN.m	
Moment Capacity Check (M/Mr)	M 22.7 kN.m, Mr 31.0 kN.m	0.733	OK
Shear Capacity Check	F 37.4 kN, vc 0.450 N/mm², Fvr 96.8 kN	0.39	OK

Base Top Steel Design

Steel Provided (Cover)	Main H10@200 (50 mm) Dist. H10@200 (60 mm)	393 mm²	OK
Compression Steel Provided (Cover)	Main H10@200 (50 mm) Dist. H10@200 (60 mm)	393 mm²	
Leverarm z=fn(d,b,As,fy,Fcu)	245 mm, 1000 mm, 393 mm², 500 N/mm², 35 N/mm²	233 mm	
Mr=fn(above,As',d',x,x/d)	393 mm², 55 mm, 12 mm, 0.05	39.8 kN.m	
Moment Capacity Check (M/Mr)	M 1.7 kN.m, Mr 39.8 kN.m	0.044	OK
Shear Capacity Check	F 8.5 kN, vc 0.434 N/mm², Fvr 106.4 kN	0.08	OK

Base Bottom Steel Design

Steel Provided (Cover)	Main H10@200 (50 mm) Dist. H10@200 (60 mm)	393 mm²	OK
Compression Steel Provided (Cover)	Main H10@200 (50 mm) Dist. H10@200 (60 mm)	393 mm²	
Leverarm z=fn(d,b,As,fy,Fcu)	245 mm, 1000 mm, 393 mm², 500 N/mm², 35 N/mm²	233 mm	
Mr=fn(above,As',d',x,x/d)	393 mm², 55 mm, 12 mm, 0.05	39.8 kN.m	
Moment Capacity Check (M/Mr)	M 33.8 kN.m, Mr 39.8 kN.m	0.851	OK
Shear Capacity Check	F 19.1 kN, vc 0.434 N/mm², Fvr 106.4 kN	0.18	OK