



BRIGHT PLAN CIVILS

Project No: D2385
Project Name: Church Lane, Climping
Sheet No: 1 (Swale)

SWALE LINER HYDROSTATIC UPLIFT ANALYSIS FOR SOFT CONSTRUCTION (@BED LEVEL)

Level Data:

Thickness of surfacing layers above Liner:

Ground Level = 5.7 m
Depth to Groundwater = 0.75 m
Invert of Swale = 5.2 m
Level of Liner = 4.7 m

Topsoil = 0 mm
40mm stone = 500 mm
Sand = 0 mm
TOTAL = 500 mm

Depth between
groundwater & Liner = 0.25 m
Groundwater level = 4.95 mAOD

Hydrostatic Uplift = 2.49 kN/m²

Factor of Safety = 1.05

Min' downward force required = 2.62 kN/m²

DMRB, CD 350 (Highway Structures, for Dead loads = 1.32)

Densities:

Top Soil = 15.7 kN/m³
40mm stone = 14 kN/m³
Sand = 14 kN/m³

Weight of Topsoil = 0.00 kN/m²
Weight of Clay = 7.00 kN/m²
Weight of Sand = 0.00 kN/m²

Downward force of layers over liner (inc FOS of 0.9) = 6.30 kN/m²

Make-up over Liner OK

Anchor Trench:

	Width	Height	Total Length	
Dimension =	0	0	0	Weight of Clay = 0.00 kN
Pond area = 0 m ²				
(Base exl sides)	Total min downward force required over pond area = 0 kN			

Total downwards force over pond area from layers over liner = 0 kN
Total downward force from anchor trenches = 0.00 kN

Total resisting force = 0.00 kN

Design Sufficient