



BRIGHT PLAN CIVILS

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

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

Level Data:

Thickness of surfacing layers above Liner:

Ground Level = 5.9 m
Depth to Groundwater = 1.25 m
Invert of Basin = 4 m
Level of Liner = 2.7 m

Topsoil = 500 mm
Clay = 700 mm
Sand = 100 mm
TOTAL = 1300 mm

Depth between
groundwater & Liner = 1.95 m
Groundwater level = 4.65 mAOD

Hydrostatic Uplift = 19.44 kN/m²
Factor of Safety = 1.1
Min' downward force required = 21.39 kN/m²

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

Densities:

Top Soil = 15.7 kN/m³
Clay = 22 kN/m³
Sand = 14 kN/m³

Weight of Topsoil = 7.85 kN/m²
Weight of Clay = 15.40 kN/m²
Weight of Sand = 1.40 kN/m²

Downward force of layers over liner (inc FOS of 0.9) = 22.19 kN/m²

Make-up over Liner OK

Anchor Trench:

Dimension =
Pond area = 0 m²
(Base exl sides)

Width	Height	Total Length
0	0	0

Weight of Clay = 0.00 kN
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



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Project No: D2385
Project Name: Church Lane, Climping
Sheet No: 1 (Basin 2)

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

Level Data:

Thickness of surfacing layers above Liner:

Ground Level = 5.438 m
Depth to Groundwater = 1.5 m
Invert of Basin = 3.5 m
Level of Liner = 2.2 m

Topsoil = 500 mm
Clay = 700 mm
Sand = 100 mm
TOTAL = 1300 mm

Depth between
groundwater & Liner = 1.74 m
Groundwater Level = 3.94 mAOD

Hydrostatic Uplift = 17.33 kN/m²
Factor of Safety = 1.1
Min' downward force required = 19.06 kN/m²

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

Densities:

Top Soil = 15.7 kN/m³
Clay = 22 kN/m³
Sand = 14 kN/m³

Weight of Topsoil = 7.85 kN/m²
Weight of Clay = 15.40 kN/m²
Weight of Sand = 1.40 kN/m²

Downward force of layers over liner (inc FOS of 0.9) = 22.19 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



BRIGHT PLAN CIVILS

Project No: D2385
Project Name: Church Road, Climping
Sheet No: 1 (Basin 3)

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

Level Data:

Thickness of surfacing layers above Liner:

Ground Level = 5.29 m
Depth to Groundwater = 1.495 m
Invert of Basin = 3.67 m
Level of Liner = 2.57 m

Topsoil = 500 mm
Clay = 500 mm
Sand = 100 mm
TOTAL = 1100 mm

Depth between
groundwater & Liner = 1.23 m
Groundwater level = 3.80 mAOD

Hydrostatic Uplift = 12.21 kN/m²

Factor of Safety = 1.1

Min' downward force required = 13.43 kN/m²

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

Densities:

Top Soil = 15.7 kN/m³
Clay = 22 kN/m³
Sand = 14 kN/m³

Weight of Topsoil = 7.85 kN/m²
Weight of Clay = 11.00 kN/m²
Weight of Sand = 1.40 kN/m²

Downward force of layers over liner (inc FOS of 0.9) = 18.23 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



BRIGHT PLAN CIVILS

Project No: D2385
Project Name: Church Road, Climping
Sheet No: 1 (Basin 4)

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

Level Data:

Thickness of surfacing layers above Liner:

Ground Level = 4.74 m
Depth to Groundwater = 1.504 m
Invert of Basin = 3.17 m
Level of Liner = 1.97 m

Topsoil = 500 mm
Clay = 600 mm
Sand = 100 mm
TOTAL = 1200 mm

Depth between
groundwater & Liner = 1.27 m
Groundwater level = 3.24 mAOD

Hydrostatic Uplift = 12.62 kN/m²

Factor of Safety = 1.1

Min' downward force required = 13.88 kN/m²

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

Densities:

Top Soil = 15.7 kN/m³
Clay = 22 kN/m³
Sand = 14 kN/m³

Weight of Topsoil = 7.85 kN/m²
Weight of Clay = 13.20 kN/m²
Weight of Sand = 1.40 kN/m²

Downward force of layers over liner (inc FOS of 0.9) = 20.21 kN/m²

Make-up over Liner OK

Anchor Trench:

Dimension =
Pond area = 0 m²
(Base exl sides)

Width	Height	Total Length
0	0	0

Weight of Clay = 0.00 kN

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



BRIGHT PLAN CIVILS

Project No: D2385
Project Name: Church Road, Climping
Sheet No: 1 (Basin 5)

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

Level Data:

Thickness of surfacing layers above Liner:

Ground Level = 4.55 m
Depth to Groundwater = 1.52 m
Invert of Basin = 3.35 m
Level of Liner = 2.15 m

Topsoil = 500 mm
Clay = 600 mm
Sand = 100 mm
TOTAL = 1200 mm

Depth between
groundwater & Liner = 0.88 m
Groundwater level = 3.03 mAOD

Hydrostatic Uplift = 8.77 kN/m²

Factor of Safety = 1.1

Min' downward force required = 9.65 kN/m²

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

Densities:

Top Soil = 15.7 kN/m³
Clay = 22 kN/m³
Sand = 14 kN/m³

Weight of Topsoil = 7.85 kN/m²
Weight of Clay = 13.20 kN/m²
Weight of Sand = 1.40 kN/m²

Downward force of layers over liner (inc FOS of 0.9) = 20.21 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