

## Gravity wall analysis

### Verification No. 1

#### Forces acting on construction

Name	F <sub>hor</sub> [kN/m]	App.Pt. Z [m]	F <sub>vert</sub> [kN/m]	App.Pt. X [m]	Design coefficient
Weight - wall	0.00	-1.15	45.85	0.96	1.000
FF resistance	-1.65	-0.20	0.00	0.00	1.000
Weight - earth wedge	0.00	-0.90	1.82	1.48	1.000
Active pressure	21.04	-0.96	11.40	1.56	1.000
Water pressure	11.00	-0.59	0.00	1.35	1.000

#### Verification of complete wall

##### Check for overturning stability

Resisting moment  $M_{res} = 57.88$  kNm/m

Overturning moment  $M_{ovr} = 26.32$  kNm/m

**Wall for overturning is SATISFACTORY**

##### Check for slip

Resisting horizontal force  $H_{res} = 30.48$  kN/m

Active horizontal force  $H_{act} = 30.39$  kN/m

**Wall for slip is SATISFACTORY**

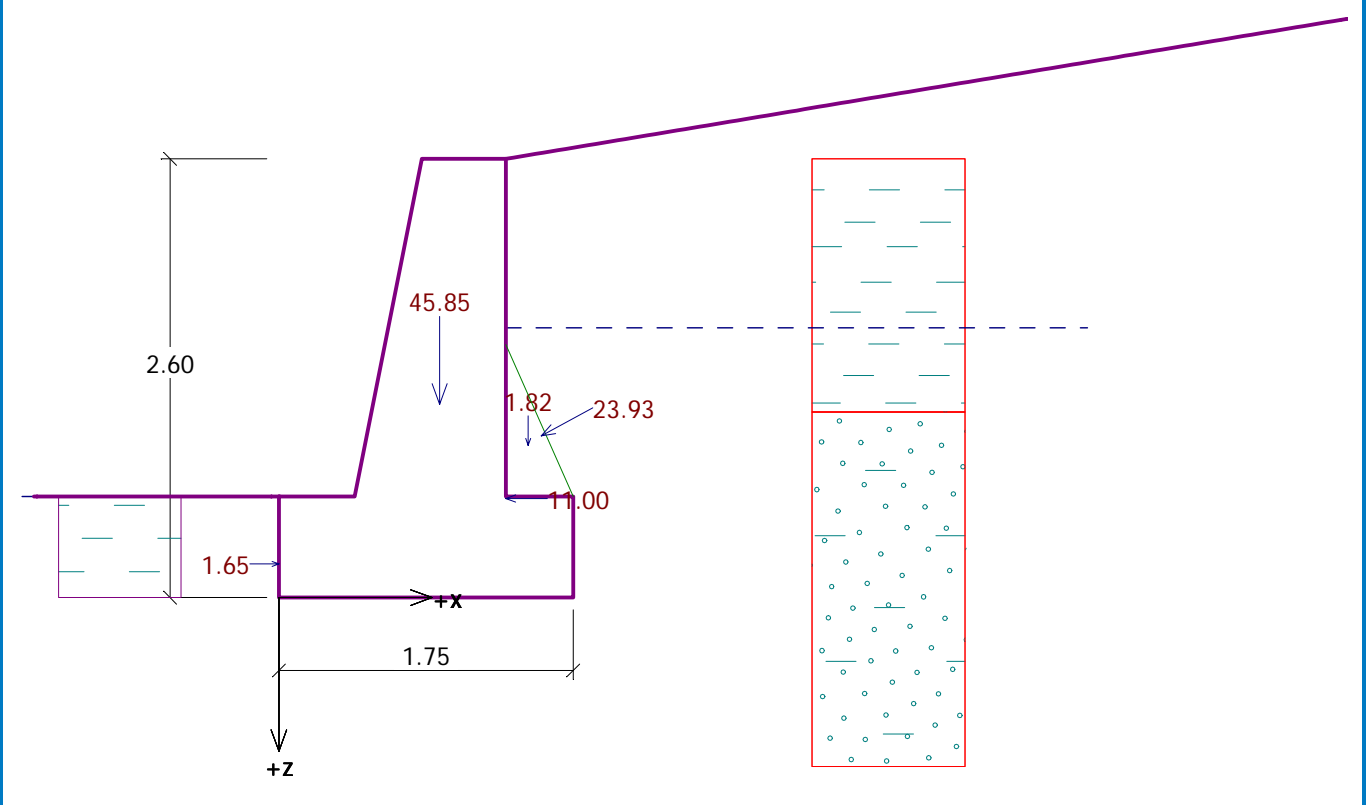
##### Forces acting at the center of footing bottom

Overall moment  $M = 13.69$  kNm/m

Normal force  $N = 59.07$  kN/m

Shear force  $Q = 30.39$  kN/m

**Overall check - WALL is SATISFACTORY**



## Bearing capacity of foundation soil

### Forces acting at the center of the footing bottom

No.	Moment [kNm/m]	Norm. force [kN/m]	Shear Force [kN/m]	Eccentricity [m]	Stress [kPa]
1	13.69	59.07	30.39	0.23	45.91

### Bearing capacity of foundation soil check

#### Eccentricity verification

Max. eccentricity of normal force  $e = 231.8 \text{ mm}$

Maximum allowable eccentricity  $e_{alw} = 577.5 \text{ mm}$

**Eccentricity of the normal force is SATISFACTORY**

#### Footing bottom bearing capacity verification

Max. stress at footing bottom  $\sigma = 45.91 \text{ kPa}$

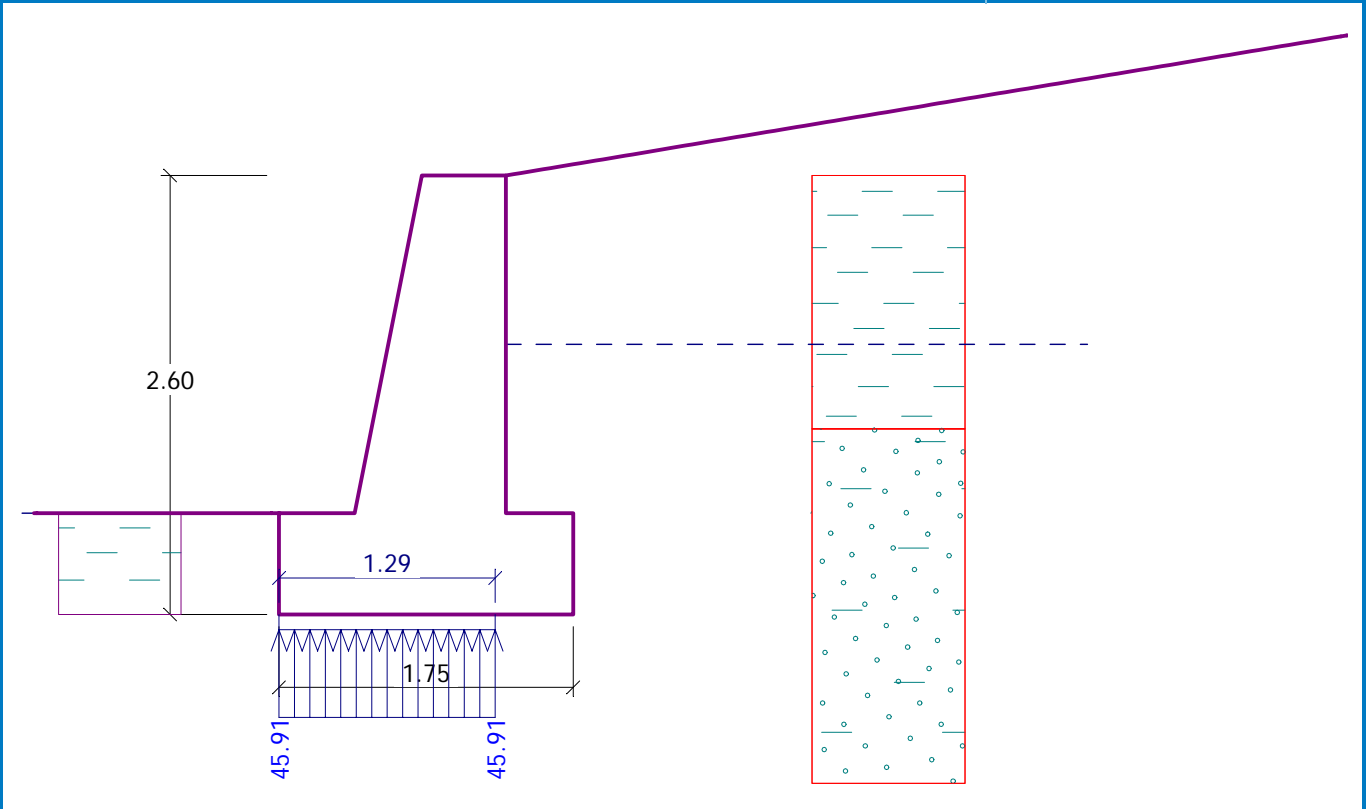
Bearing capacity of foundation soil  $R_d = 120.00 \text{ kPa}$

**Bearing capacity of foundation soil is SATISFACTORY**

**Overall verification - bearing capacity of found. soil is SATISFACTORY**

Name : Bearing cap.

Stage : 1



## Dimensioning No. 1

### Forces acting on construction

Name	$F_{hor}$ [kN/m]	App.Pt. Z [m]	$F_{vert}$ [kN/m]	App.Pt. X [m]	Design coefficient
Weight - wall	0.00	-0.90	32.17	0.54	1.000
Active pressure	11.58	-0.67	0.00	0.90	1.000
Water pressure	4.99	-0.33	0.00	0.90	1.000

### Wall stem check

Cross-section depth  $h = 0.90$  m

Shear :  $Q_d = 16.57$  kN/m <  $Q_u = 197.95$  kN/m

Pressure + Flexure :  $M_d = 6.54$  kNm/m

$N_d = 32.17$  kN/m <  $N_u = 3619.81$  kN/m

**Wall bearing capacity at the joint is SATISFACTORY**



Company Name	Project Name
Project Author	Project Part

Name	$F_{hor}$ [kN/m]	App.Pt. Z [m]	$F_{vert}$ [kN/m]	App.Pt. X [m]	Design coefficient
Water pressure	11.00	-0.59	0.00	1.35	1.000

**Front wall jump check**

Foundation thickness is greater than offset of the front wall jump. Reinforcement is not required.