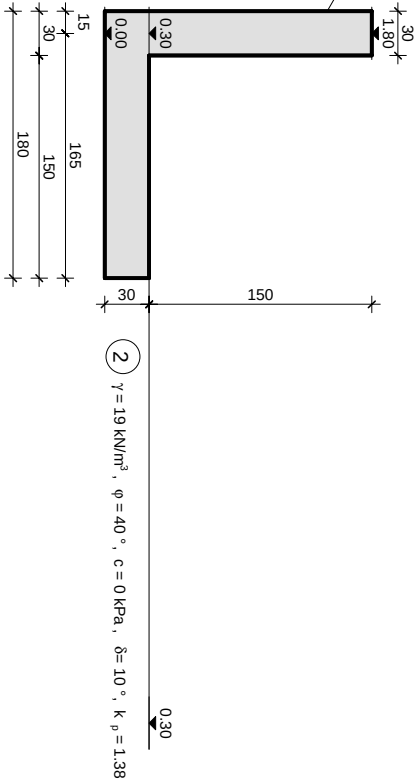


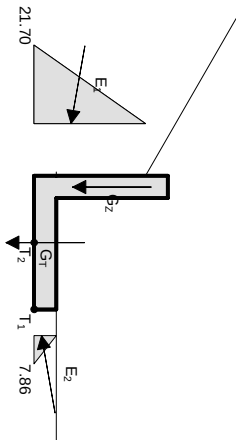
STATIČKI PRORAČUN STEPENIŠTA SA POTPORNIM ZIDOM

		EU funded project Projekat finansira Europska Unija				
Client/Klient		Consultant/Konsultant				
INFRASTRUCTURE PROJECTS FACILITY IN THE WESTERN BALKANS		WYG INTERNATIONAL UK		 INSTITUT ZA HIDROTEHNIKU GRADJEVINSKOG FAKULTETA U SARAJEVU		
Project/Projekat						
REGIONALNI SISTEM VODOSNABDIJEVANJA PLAVA VODA						
Project status/Tip Projekta	Drawing date /Datum crteža: 09.05.2011.	Drawing status /Status Crteža FINAL	Drawing scale/Mjerilo crteža (Priloga)			
GLAVNI PROJEKT	Drawing approved/Crtež odobren: 09.06.2011.	Format A3(420/297 mm)				
Drawing name/Ime Priloga	Prepared by:	Drawing no/ Prilog broj				
STATIČKI PRORAČUN STEPENIŠTA SA POTPORNIM ZIDOM		 INSTITUT ZA HIDROTEHNIKU GRADJEVINSKOG FAKULTETA U SARAJEVU Sarajeva, Tominica 1, Sarajvo, Bosna i Hercegovina Bil. faks: 21 24 6607, 20 24 595 195, E-mail: info@ihf.ba © 1998-2009 Institut za Hidrotehniku, Sarajvo, Bosna i Hercegovina				3.11.1
		Sheet/List		Of/Ofd		
		1		2		

$\frac{1.50}{1} \gamma = 19 \text{ kN/m}^3, \varphi = 30^\circ, c = 0 \text{ kPa}, \delta = 10^\circ, k_a = 0.76$



Sila	Velikina [kN]	Krak sile (T ₁) [m]	Moment (T ₁) [kNm]	Krak sile (T ₂) [m]	Moment (T ₂) [kNm]
G _Z	11.25	1.65	18.56	0.75	8.44
G _T	13.50	0.90	12.15	0.00	0.00
E _{1H}	16.03	0.50	-8.02	0.50	-8.02
E _{1V}	2.83	1.80	5.09	0.90	2.54
E _{2H}	1.16	0.10	0.12	0.10	0.12
E _{2V}	0.20	0.00	0.00	0.90	-0.18



KONTROLA NA PREVRTANJE

$M_s = \frac{35.92}{8.02} = 4.481 \geq k_{p,dop} = 1.5$

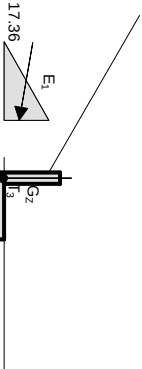
KONTROLA NA KLIZANJE

$k_k = \frac{\sum V \cdot \tan \varphi + c \cdot b_l}{\sum H} = \frac{27.78 \cdot 0.577 + 0 \cdot 1.80}{14.87} = 1.568 \geq k_{k,dop} = 1.5$

KONTROLA NAPONA U TLU

$M_s = -3.08 \text{ kNm}, N_s = 27.78 \text{ kN}$
 $e = \frac{M_s}{N_s} = 11.1 \text{ cm} \leq b_l/6 = 30 \text{ cm}$
 $\sigma_1 = \frac{N_s}{A} + \frac{M_s}{W} = 9.73 \text{ kN/m}^2$
 $\sigma_2 = \frac{N_s}{A} - \frac{M_s}{W} = 21.14 \text{ kN/m}^2$

Sila	Velikina [kN]	Krak sile [m]	Moment [kNm]
G _Z	11.25	0.00	0.00
E _{1H}	10.26	0.40	-4.10



DIMENZIONIRANJE ZIDA (T₃)

$M_g = 4.1 \text{ kNm}, M_p = 0 \text{ kNm}$
 $N = 11.25 \text{ kN}, h = 30 \text{ cm}$
 $M_u = 1.6 \cdot M_g + 1.8 \cdot M_p + N \cdot h/2 = 8.03 \text{ kNm}$
 $M_B-30, f_b = 20.5 \text{ N/mm}^2$
 $R_A 400/500, \sigma_{vI} = 400 \text{ N/mm}^2$
 $\epsilon_a = 10 \text{ ‰}, \epsilon_b = 0.36 \text{ ‰}, k_x = 0.035, k_z = 0.988$
 $m_u = \frac{M_u}{b \cdot h^2 \cdot f_b} = 0.006$
 $A_a = \frac{M_u}{k_z \cdot h \cdot \sigma_{vI}} = 0.78 \text{ cm}^2/\text{m}$