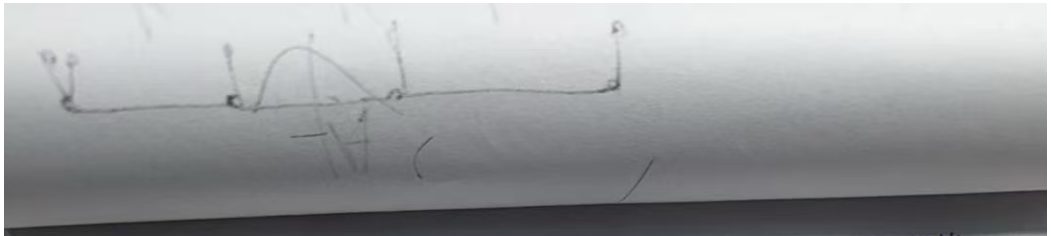

1、单孔荷载

		单孔重载		双孔重载	
力及力矩	N(kN)	M(kN·m)	N	M	N	M
主力 桥梁恒载N_1	1077.08	0	1077.08		1077.08	
活载反力R	977.6	1106.3	805.2	470.9	1382.05	0
墩顶合力(N顶;M顶)	3052.68	1106.3	1882.28	470.9	2459.13	0
墩顶荷载偏心距E e(m)	$\frac{1106.3}{3052.68}=0.362$		$\frac{470.9}{1882.28}=0.239$		$\frac{0}{2459.13}=0$	

墩顶面积$A_1(m^2)$：$A_1=\pi\times0.75^2+1.5\times2.7=7.82(m^2)$

墩顶截面最小惯性矩$I_d(m^4)$：$\frac{\pi}{64}\times1.5^4+\frac{1}{12}\times2.7\times1.5^3=2.18$

墩底面积$A_2(m^2)$：$\pi\times0.75^2+1.8\times2.7=7.97$

墩底截面惯性矩$I_d(m^4)$：$\frac{\pi}{64}\times1.8^4+\frac{1}{12}\times2.7\times1.8^3=2.18$

m(据$\frac{I_0}{I_d}$查表2-7)：$\frac{I_0}{I_d}=\frac{1.01}{2.18}=0.463$ 查表2-7 $m=1.87+\frac{0.15}{0.1}\times0.08=1.187$

墩身计算截面积$A_0(m^2)$：$A_0=\frac{A_1+A_2}{2}=\frac{7.82+7.97}{2}=6.90$

计算长度$l_0(m)$：$2\times(0.6+16)=33.2$

$E_0(kPa)$：24.0×10^6

$a=\frac{0.1}{0.2+\frac{e_0}{h}}+0.16$	$\frac{0.1}{0.2+\frac{0.362}{1.7}}+0.16=0.462$	$\frac{0.1}{0.2+\frac{0.239}{1.7}}+0.16=0.45$	$\frac{0.1}{0.2+e}+0.16=0.$
$\frac{4mE_0I_d}{l_0^2}=N$	$\frac{4\times1.187\times24\times10^6\times2.18}{33.2^2}=2.27\times10^4$	2.27×10^4	2.27×10^4
$a\cdot N$	91254	102170	149820
$N_{cr}=a\cdot N$			
$\left[\frac{1}{Ha\cdot N+\frac{1}{1.1A_0R_c}}\right]$	$91254\times\left[\frac{1}{1+91254\times\frac{1}{1.1\times6.9\times10^6}}\right]=42342$	44782	50529

	静载	静载	动载
主动土压力（k=2）	6103.36	3764.56	4918.26
主动 $\eta_{max}=\frac{1}{1-\frac{kN_{max}}{Nor}}$	$\frac{1}{1-\frac{6103.36}{91254}}=1.0717$	1.038	1.0339
主动时土压力（k=1.6）	4884.288	3011.648	3934.608
主动时 η_{max}	$\frac{1}{1-\frac{4884.288}{91254}}=1.056$	1.0303	1.0269