


generální projektant a investor:  OSTRAVSKÁ UNIVERZITA Ostravská univerzita Dvořákova 7 701 03 Ostrava	Ostravská univerzita - Koleje Jana Opletala		
	místo akce: Kranichova 1433/8, 710 00 Slezská Ostrava k.ú. Slezská Ostrava 714828		
	autor projektu: Ing. Arch. Radim Václavík	podpis:	číslo zakázky:
	hlavní inženýr projektu: Ing. Pavel Hynčica	podpis:	datum: 11/2024
	vypracoval: Ing. Štěpánka Peřinová	podpis:	formát: A4 změna:
projektant profese:	st. objekt: SO 03.1 - HLAVNÍ BUDOVA - 1.etapa SO 03.2 - HLAVNÍ BUDOVA - 2.etapa		měřítko:
	stupeň PD: Dokumentace pro provádění stavby		číslo paré:
	část: D.1.2 - STAVEBNĚ KONSTRUKČNÍ ŘEŠENÍ ZAJIŠTĚNÍ STAVEBNÍ JÁMY, PILOTY		
	výkres: STATICKÝ VÝPOČET		číslo: 41

GEOTECHNICKÉ POSOUZENÍ

Koleje Hladnov, Ostrava – pilotové založení

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 6.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	7.28	5.00	0.25
4	sterk	D7	0.50	0.00	20.00	0.66
5	jil p-t	C5	2.60	0.00	5.00	0.25
6	jil t-m	C5	5.50	0.00	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 390.35 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 7.54 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 497.15 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 546.21 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	142.2	64.7
2.0	201.0	122.8
3.0	246.2	174.8
4.0	284.3	221.2
5.0	317.9	262.6
6.0	348.2	299.5
7.0	376.1	332.1
8.0	393.2	361.1
9.0	399.3	386.7
10.0	405.4	409.2
11.0	411.5	429.1
12.0	417.6	446.5
13.0	423.8	461.8
14.0	429.9	475.2
15.0	436.0	486.8
16.0	442.1	497.0
17.0	448.2	505.9
18.0	454.3	513.6
19.0	460.5	520.3
20.0	466.6	526.1
21.0	472.7	531.2
22.0	478.8	535.6
23.0	484.9	539.4
24.0	491.0	542.7
25.0	497.2	545.5

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 7.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	7.76	5.00	0.25
4	sterk	D7	0.50	0.00	20.00	0.66
5	jil p-t	C5	2.60	0.00	5.00	0.25
6	jil t-m	C5	5.50	0.00	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 464.97 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 8.68 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 555.54 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 648.73 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	157.8	76.4
2.0	223.2	145.1
3.0	273.4	206.7
4.0	315.7	261.8
5.0	353.0	311.0
6.0	386.6	354.8
7.0	417.6	393.7
8.0	446.5	428.2
9.0	466.8	458.7
10.0	472.3	485.6
11.0	477.9	509.3
12.0	483.4	530.1
13.0	489.0	548.3
14.0	494.5	564.3
15.0	500.1	578.2
16.0	505.6	590.4
17.0	511.2	600.9
18.0	516.7	610.1
19.0	522.2	618.1
20.0	527.8	624.9
21.0	533.3	630.9
22.0	538.9	636.1
23.0	544.4	640.5
24.0	550.0	644.4
25.0	555.5	647.7

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 8.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	0.00	5.00	0.25
6	jil t-m	C5	5.50	0.00	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 632.22 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 10.04 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 813.07 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 918.68 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	199.5	114.1
2.0	282.2	216.1
3.0	345.6	306.9
4.0	399.0	387.4
5.0	446.1	458.4
6.0	488.7	520.9
7.0	527.9	575.7
8.0	564.3	623.8
9.0	598.6	665.9
10.0	630.9	702.9
11.0	643.8	735.6
12.0	655.9	764.3
13.0	668.0	789.4
14.0	680.1	811.4
15.0	692.2	830.5
16.0	704.3	846.9
17.0	716.4	861.1
18.0	728.4	873.2
19.0	740.5	883.5
20.0	752.6	892.1
21.0	764.7	899.3
22.0	776.8	905.3
23.0	788.9	910.2
24.0	801.0	914.1
25.0	813.1	917.3

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 12.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	7.28	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 873.84 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 9.48 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 961.32 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1207.43 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	283.9	148.1
2.0	401.5	280.6
3.0	491.7	398.4
4.0	567.8	502.6
5.0	634.8	594.4
6.0	695.4	675.0
7.0	751.1	745.4
8.0	802.9	807.0
9.0	851.6	860.8
10.0	876.8	908.2
11.0	882.4	950.0
12.0	888.1	987.1
13.0	893.7	1019.8
14.0	899.3	1048.6
15.0	905.0	1073.9
16.0	910.6	1096.1
17.0	916.2	1115.5
18.0	921.9	1132.4
19.0	927.5	1147.2
20.0	933.1	1160.0
21.0	938.8	1171.2
22.0	944.4	1180.9
23.0	950.0	1189.2
24.0	955.7	1196.5
25.0	961.3	1202.8

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 13.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	8.98	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 948.88 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 8.79 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1048.44 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1308.85 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	320.1	156.3
2.0	452.7	296.6
3.0	554.4	421.8
4.0	640.2	533.1
5.0	715.7	631.7
6.0	784.0	718.5
7.0	846.9	794.8
8.0	905.3	861.8
9.0	950.2	920.7
10.0	956.3	972.7
11.0	962.5	1018.8
12.0	968.6	1059.8
13.0	974.7	1096.0
14.0	980.9	1128.1
15.0	987.0	1156.3
16.0	993.2	1181.2
17.0	999.3	1203.0
18.0	1005.5	1222.2
19.0	1011.6	1238.9
20.0	1017.7	1253.5
21.0	1023.9	1266.3
22.0	1030.0	1277.4
23.0	1036.2	1287.0
24.0	1042.3	1295.4
25.0	1048.4	1302.7

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 14.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	11.22	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1024.01 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 8.20 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1135.54 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1409.81 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	357.5	164.2
2.0	505.6	312.1
3.0	619.2	444.7
4.0	715.0	563.0
5.0	799.4	668.1
6.0	875.7	761.2
7.0	945.9	843.3
8.0	1011.2	915.8
9.0	1029.3	979.7
10.0	1035.9	1036.4
11.0	1042.6	1086.8
12.0	1049.2	1131.7
13.0	1055.9	1171.5
14.0	1062.5	1206.9
15.0	1069.1	1238.2
16.0	1075.8	1265.8
17.0	1082.4	1290.1
18.0	1089.1	1311.5
19.0	1095.7	1330.3
20.0	1102.3	1346.7
21.0	1109.0	1361.1
22.0	1115.6	1373.6
23.0	1122.3	1384.6
24.0	1128.9	1394.1
25.0	1135.5	1402.4

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 15.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	12.64	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1099.21 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 6.76 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1247.39 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1510.24 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	422.8	171.9
2.0	597.9	327.2
3.0	732.3	467.0
4.0	845.6	592.1
5.0	945.4	703.7
6.0	1035.6	802.9
7.0	1101.2	890.9
8.0	1109.3	968.7
9.0	1117.4	1037.7
10.0	1125.5	1099.0
11.0	1133.7	1153.8
12.0	1141.8	1202.6
13.0	1149.9	1246.2
14.0	1158.0	1284.9
15.0	1166.2	1319.2
16.0	1174.3	1349.7
17.0	1182.4	1376.5
18.0	1190.5	1400.2
19.0	1198.6	1421.1
20.0	1206.8	1439.4
21.0	1214.9	1455.5
22.0	1223.0	1469.6
23.0	1231.1	1481.9
24.0	1239.3	1492.6
25.0	1247.4	1502.0

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 16.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	13.93	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1174.50 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 6.92 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1318.93 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1610.54 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	446.4	179.3
2.0	631.4	341.8
3.0	773.3	488.5
4.0	892.9	620.3
5.0	998.3	738.3
6.0	1093.6	843.5
7.0	1175.1	937.2
8.0	1183.1	1020.5
9.0	1191.1	1094.6
10.0	1199.1	1160.6
11.0	1207.1	1219.6
12.0	1215.1	1272.5
13.0	1223.1	1319.8
14.0	1231.1	1361.9
15.0	1239.0	1399.4
16.0	1247.0	1432.7
17.0	1255.0	1462.2
18.0	1263.0	1488.3
19.0	1271.0	1511.3
20.0	1279.0	1531.5
21.0	1287.0	1549.4
22.0	1295.0	1565.0
23.0	1302.9	1578.7
24.0	1310.9	1590.8
25.0	1318.9	1601.3

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 17.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	14.16	4.00	0.25
7	sterk	D7	1.10	14.49	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1381.50 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 8.00 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1672.52 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1936.29 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	488.4	220.4
2.0	690.7	420.7
3.0	845.9	601.5
4.0	976.7	763.7
5.0	1092.0	908.5
6.0	1196.3	1036.9
7.0	1292.1	1150.3
8.0	1381.3	1250.0
9.0	1398.6	1337.8
10.0	1415.7	1415.1
11.0	1432.8	1483.9
12.0	1450.0	1545.6
13.0	1467.1	1600.8
14.0	1484.2	1650.1
15.0	1501.3	1694.1
16.0	1518.4	1733.2
17.0	1535.6	1767.8
18.0	1552.7	1798.3
19.0	1569.8	1825.1
20.0	1586.9	1848.5
21.0	1604.0	1869.0
22.0	1621.2	1886.8
23.0	1638.3	1902.1
24.0	1655.4	1915.3
25.0	1672.5	1926.7

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 18.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	14.16	4.00	0.25
7	sterk	D7	1.10	14.49	20.00	0.66
8	jil t	C5	1.20	7.28	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1404.25 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 8.22 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1518.37 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1928.97 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	489.7	228.7
2.0	692.6	435.6
3.0	848.2	621.6
4.0	979.5	787.4
5.0	1095.1	934.1
6.0	1199.6	1062.8
7.0	1295.7	1175.1
8.0	1385.2	1272.6
9.0	1409.5	1357.1
10.0	1416.3	1430.7
11.0	1423.1	1495.5
12.0	1430.0	1553.3
13.0	1436.8	1605.2
14.0	1443.6	1651.5
15.0	1450.4	1692.9
16.0	1457.2	1729.7
17.0	1464.0	1762.4
18.0	1470.8	1791.4
19.0	1477.6	1817.1
20.0	1484.4	1839.8
21.0	1491.2	1859.8
22.0	1498.0	1877.4
23.0	1504.8	1892.9
24.0	1511.6	1906.5
25.0	1518.4	1918.5

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 19.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	14.16	4.00	0.25
7	sterk	D7	1.10	14.49	20.00	0.66
8	jil t	C5	1.20	7.28	4.00	0.25
9	sterk	D7	2.90	14.49	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1590.80 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 9.41 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1820.46 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 2222.98 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	518.7	255.1
2.0	733.6	487.8
3.0	898.4	698.6
4.0	1037.4	888.1
5.0	1159.9	1057.0
6.0	1270.6	1206.4
7.0	1372.4	1337.6
8.0	1467.2	1452.1
9.0	1556.2	1551.6
10.0	1599.6	1638.4
11.0	1614.3	1714.6
12.0	1629.0	1782.5
13.0	1643.7	1843.5
14.0	1658.5	1898.2
15.0	1673.2	1947.2
16.0	1687.9	1990.8
17.0	1702.6	2029.6
18.0	1717.4	2064.0
19.0	1732.1	2094.4
20.0	1746.8	2121.1
21.0	1761.6	2144.5
22.0	1776.3	2165.0
23.0	1791.0	2182.8
24.0	1805.7	2198.2
25.0	1820.5	2211.4

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 20.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	14.16	4.00	0.25
7	sterk	D7	1.10	14.49	20.00	0.66
8	jil t	C5	1.20	7.28	4.00	0.25
9	sterk	D7	2.90	14.49	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1738.83 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 10.18 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1941.44 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 2431.11 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	545.0	284.5
2.0	770.8	545.4
3.0	944.0	782.6
4.0	1090.0	996.2
5.0	1218.7	1186.6
6.0	1335.0	1354.5
7.0	1442.0	1501.0
8.0	1541.5	1627.4
9.0	1635.0	1735.7
10.0	1723.5	1828.3
11.0	1750.1	1908.0
12.0	1763.7	1977.8
13.0	1777.4	2040.2
14.0	1791.1	2096.3
15.0	1804.7	2146.5
16.0	1818.4	2191.3
17.0	1832.1	2231.2
18.0	1845.7	2266.6
19.0	1859.4	2297.9
20.0	1873.1	2325.4
21.0	1886.8	2349.6
22.0	1900.4	2370.8
23.0	1914.1	2389.2
24.0	1927.8	2405.2
25.0	1941.4	2419.0

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 21.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	12.78	5.00	0.25
3	jil t	C5	2.40	9.47	5.00	0.25
4	sterk	D7	0.50	14.49	20.00	0.66
5	jil p-t	C5	2.60	9.96	5.00	0.25
6	jil t-m	C5	5.50	14.16	4.00	0.25
7	sterk	D7	1.10	14.49	20.00	0.66
8	jil t	C5	1.20	7.28	4.00	0.25
9	sterk	D7	2.90	18.99	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1886.95 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 10.49 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 2080.19 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 2639.08 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	582.6	309.3
2.0	823.9	594.7
3.0	1009.0	855.8
4.0	1165.1	1092.3
5.0	1302.7	1304.1
6.0	1427.0	1491.4
7.0	1541.3	1654.8
8.0	1647.8	1795.3
9.0	1747.7	1914.7
10.0	1842.2	2015.2
11.0	1893.7	2099.9
12.0	1907.0	2172.5
13.0	1920.4	2236.5
14.0	1933.7	2293.9
15.0	1947.0	2345.4
16.0	1960.3	2391.4
17.0	1973.6	2432.4
18.0	1987.0	2468.9
19.0	2000.3	2501.1
20.0	2013.6	2529.6
21.0	2026.9	2554.6
22.0	2040.2	2576.5
23.0	2053.6	2595.6
24.0	2066.9	2612.2
25.0	2080.2	2626.6

PROGRAM: HP.EXE ver. 1.07, Vypocet horizontalne zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 0.75 m
Delka piloty: 17.00 m
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Nazev	Hloubka [m]	kh [MN/m^3]	Smykovy modul [MN/m]
1	hlavice	0.00	10.00	0.00
		1.00	10.00	0.00
2	jil	1.00	6.60	0.00
		5.30	6.60	0.00
3	jil pisc	5.30	6.60	0.00
		7.70	6.60	0.00
4	sterk	7.70	50.00	0.00
		8.20	55.00	0.00
5	jil	8.20	5.30	0.00
		16.30	5.30	0.00
6	sterk	16.30	100.00	0.00
		17.40	105.00	0.00
7	jil	17.40	5.30	0.00
		18.60	5.30	0.00

ZATIZENI

Horizontalni sila v hlave piloty: 130.00 kN
Moment v hlave piloty: 30.00 kNm

VYSLEDKY

WINKLER				WINKLER-PASTERNAK	
Hloubka [m]	Posun [mm]	Moment [kNm]	Napeti [kPa]	Posun [mm]	Moment [kNm]
0.0	10.58	30.00	105.76		
0.5	9.25	85.02	92.49		
1.0	7.97	122.83	76.36		
1.5	6.77	146.25	47.59		
2.0	5.66	160.75	37.38		
2.5	4.65	168.26	30.69		
3.0	3.74	169.99	24.67		
3.5	2.93	167.11	19.33		
4.0	2.22	160.60	14.67		
4.5	1.61	151.34	10.65		
5.0	1.10	140.07	7.23		
5.5	0.66	127.47	4.38		
6.0	0.31	114.03	2.04		
6.5	0.02	100.21	0.16		
7.0	-0.20	86.37	-1.33		
7.5	-0.37	72.77	-4.63		
8.0	-0.50	60.04	-20.67		
8.5	-0.59	51.18	-6.68		
9.0	-0.65	43.58	-3.46		
9.5	-0.69	36.63	-3.64		
10.0	-0.70	30.36	-3.70		
10.5	-0.69	24.78	-3.67		
11.0	-0.67	19.90	-3.55		
11.5	-0.64	15.68	-3.37		
12.0	-0.59	12.09	-3.14		
12.5	-0.54	9.09	-2.88		
13.0	-0.49	6.63	-2.58		
13.5	-0.43	4.65	-2.26		
14.0	-0.36	3.10	-1.92		
14.5	-0.30	1.91	-1.58		
15.0	-0.23	1.01	-1.23		
15.5	-0.17	0.34	-0.88		
16.0	-0.10	-0.16	-1.69		
16.5	-0.03	-0.34	-2.79		
17.0	0.04	0.00	3.63		

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 7.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	8.51	5.00	0.25
4	sterk	D7	0.50	0.00	20.00	0.66
5	jil p-t	C5	2.60	0.00	5.00	0.25
6	jil t-m	C5	5.50	0.00	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 620.05 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 8.85 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 771.51 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 866.18 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	208.4	104.9
2.0	294.7	198.7
3.0	360.9	282.4
4.0	416.7	356.8
5.0	465.9	423.0
6.0	510.4	481.6
7.0	551.3	533.4
8.0	589.4	579.2
9.0	621.4	619.4
10.0	630.8	654.8
11.0	640.2	685.8
12.0	649.6	713.0
13.0	658.9	736.7
14.0	668.3	757.4
15.0	677.7	775.4
16.0	687.1	791.1
17.0	696.5	804.7
18.0	705.8	816.5
19.0	715.2	826.7
20.0	724.6	835.6
21.0	734.0	843.3
22.0	743.4	850.0
23.0	752.7	855.7
24.0	762.1	860.8
25.0	771.5	865.2

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 8.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	0.00	5.00	0.25
6	jil t-m	C5	5.50	0.00	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 869.35 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.32 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1122.23 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1268.99 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	258.4	154.2
2.0	365.5	292.4
3.0	447.6	415.9
4.0	516.9	525.7
5.0	577.9	623.1
6.0	633.0	709.1
7.0	683.8	785.0
8.0	731.0	851.7
9.0	775.3	910.2
10.0	817.3	961.5
11.0	857.1	1006.5
12.0	882.0	1046.1
13.0	900.5	1081.0
14.0	919.0	1111.5
15.0	937.4	1138.3
16.0	955.9	1161.6
17.0	974.4	1181.9
18.0	992.9	1199.4
19.0	1011.4	1214.5
20.0	1029.8	1227.4
21.0	1048.3	1238.3
22.0	1066.8	1247.6
23.0	1085.3	1255.4
24.0	1103.7	1261.8
25.0	1122.2	1267.1

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 9.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	7.90	5.00	0.25
6	jil t-m	C5	5.50	0.00	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 863.58 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 10.66 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 982.62 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1204.81 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	264.5	158.5
2.0	374.1	299.0
3.0	458.1	422.8
4.0	529.0	531.5
5.0	591.5	626.3
6.0	647.9	708.6
7.0	699.8	779.8
8.0	748.2	841.2
9.0	793.5	894.0
10.0	836.5	939.4
11.0	866.4	978.6
12.0	874.7	1012.6
13.0	883.0	1042.4
14.0	891.3	1068.4
15.0	899.6	1091.0
16.0	907.9	1110.6
17.0	916.2	1127.7
18.0	924.5	1142.5
19.0	932.8	1155.3
20.0	941.1	1166.3
21.0	949.4	1175.9
22.0	957.7	1184.2
23.0	966.0	1191.3
24.0	974.3	1197.5
25.0	982.6	1202.9

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 10.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	8.82	5.00	0.25
6	jil t-m	C5	5.50	0.00	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 962.73 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.39 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1070.81 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1342.08 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	285.3	173.6
2.0	403.5	327.8
3.0	494.1	464.3
4.0	570.6	584.4
5.0	637.9	689.6
6.0	698.8	781.3
7.0	754.8	860.9
8.0	806.9	929.8
9.0	855.9	989.3
10.0	902.2	1040.7
11.0	946.2	1085.1
12.0	967.6	1123.8
13.0	975.5	1157.6
14.0	983.5	1187.1
15.0	991.4	1212.8
16.0	999.4	1235.1
17.0	1007.3	1254.5
18.0	1015.2	1271.2
19.0	1023.2	1285.8
20.0	1031.1	1298.3
21.0	1039.1	1309.1
22.0	1047.0	1318.5
23.0	1054.9	1326.5
24.0	1062.9	1333.5
25.0	1070.8	1339.5

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 11.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	7.90	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1062.03 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.35 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1172.68 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1466.54 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	315.2	186.5
2.0	445.8	352.7
3.0	546.0	500.1
4.0	630.5	630.2
5.0	704.9	744.6
6.0	772.2	844.6
7.0	834.0	931.7
8.0	891.6	1007.4
9.0	945.7	1072.9
10.0	996.9	1129.7
11.0	1045.5	1178.9
12.0	1067.3	1221.8
13.0	1075.4	1259.4
14.0	1083.5	1292.2
15.0	1091.6	1320.8
16.0	1099.7	1345.8
17.0	1107.8	1367.4
18.0	1115.9	1386.2
19.0	1124.0	1402.5
20.0	1132.1	1416.6
21.0	1140.3	1428.8
22.0	1148.4	1439.3
23.0	1156.5	1448.4
24.0	1164.6	1456.3
25.0	1172.7	1463.1

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 12.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	7.90	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1161.41 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.95 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1263.31 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1600.55 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	335.9	198.3
2.0	475.1	375.6
3.0	581.9	533.4
4.0	671.9	673.3
5.0	751.2	796.8
6.0	822.9	905.3
7.0	888.8	1000.3
8.0	950.2	1083.1
9.0	1007.8	1155.3
10.0	1062.3	1218.1
11.0	1114.2	1272.9
12.0	1161.8	1320.8
13.0	1169.6	1362.9
14.0	1177.4	1399.9
15.0	1185.2	1432.3
16.0	1193.0	1460.5
17.0	1200.8	1485.2
18.0	1208.6	1506.7
19.0	1216.4	1525.4
20.0	1224.3	1541.7
21.0	1232.1	1555.8
22.0	1239.9	1568.1
23.0	1247.7	1578.7
24.0	1255.5	1587.9
25.0	1263.3	1596.0

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 13.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	10.05	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1260.93 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.97 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1363.78 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1734.93 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	364.5	209.9
2.0	515.4	398.1
3.0	631.3	566.3
4.0	728.9	715.9
5.0	814.9	848.4
6.0	892.7	965.3
7.0	964.3	1068.1
8.0	1030.8	1158.2
9.0	1093.4	1237.0
10.0	1152.5	1305.9
11.0	1208.8	1366.2
12.0	1261.2	1419.2
13.0	1269.1	1466.0
14.0	1277.0	1507.1
15.0	1284.8	1543.3
16.0	1292.7	1575.0
17.0	1300.6	1602.8
18.0	1308.5	1627.0
19.0	1316.4	1648.2
20.0	1324.3	1666.7
21.0	1332.2	1682.8
22.0	1340.1	1696.8
23.0	1348.0	1709.0
24.0	1355.9	1719.6
25.0	1363.8	1728.9

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 14.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	12.84	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1360.58 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.39 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1474.71 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 1869.65 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	403.2	221.2
2.0	570.2	420.2
3.0	698.4	598.5
4.0	806.4	757.6
5.0	901.6	899.1
6.0	987.6	1024.4
7.0	1066.8	1135.0
8.0	1140.4	1232.3
9.0	1209.6	1317.8
10.0	1275.0	1392.9
11.0	1337.3	1458.8
12.0	1365.7	1516.9
13.0	1374.1	1568.4
14.0	1382.5	1613.7
15.0	1390.9	1653.7
16.0	1399.3	1688.9
17.0	1407.6	1719.9
18.0	1416.0	1747.0
19.0	1424.4	1770.7
20.0	1432.8	1791.5
21.0	1441.2	1809.6
22.0	1449.6	1825.4
23.0	1457.9	1839.2
24.0	1466.3	1851.3
25.0	1474.7	1861.8

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 15.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	14.54	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1460.36 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 10.71 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1588.93 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 2004.68 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	446.3	232.2
2.0	631.1	441.7
3.0	773.0	630.0
4.0	892.6	798.6
5.0	997.9	948.9
6.0	1093.2	1082.6
7.0	1180.7	1200.9
8.0	1262.3	1305.5
9.0	1338.8	1397.6
10.0	1411.3	1478.9
11.0	1463.0	1550.5
12.0	1472.0	1613.8
13.0	1481.0	1669.9
14.0	1490.0	1719.6
15.0	1499.0	1763.5
16.0	1508.0	1802.3
17.0	1517.0	1836.4
18.0	1526.0	1866.4
19.0	1535.0	1892.8
20.0	1544.0	1915.9
21.0	1553.0	1936.1
22.0	1561.9	1953.8
23.0	1570.9	1969.3
24.0	1579.9	1982.8
25.0	1588.9	1994.7

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 16.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.12	4.00	0.25
7	sterk	D7	1.10	0.00	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1560.28 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 9.86 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 1709.36 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 2138.90 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	496.9	242.9
2.0	702.7	462.7
3.0	860.7	660.8
4.0	993.8	838.6
5.0	1111.1	997.7
6.0	1217.2	1139.6
7.0	1314.7	1265.7
8.0	1405.5	1377.4
9.0	1490.8	1476.3
10.0	1561.7	1563.7
11.0	1571.5	1641.0
12.0	1581.4	1709.6
13.0	1591.2	1770.5
14.0	1601.1	1824.6
15.0	1610.9	1872.5
16.0	1620.7	1914.9
17.0	1630.6	1952.3
18.0	1640.4	1985.3
19.0	1650.3	2014.3
20.0	1660.1	2039.8
21.0	1670.0	2062.2
22.0	1679.8	2081.9
23.0	1689.7	2099.1
24.0	1699.5	2114.1
25.0	1709.4	2127.3

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov JV2

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 17.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	0.00	4.00	0.25
9	sterk	D7	2.90	0.00	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 1869.09 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 10.36 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 2208.63 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 2625.16 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	580.8	298.1
2.0	821.3	568.9
3.0	1005.9	813.7
4.0	1161.6	1033.8
5.0	1298.7	1230.8
6.0	1422.6	1406.3
7.0	1536.6	1561.8
8.0	1642.7	1699.1
9.0	1742.3	1820.0
10.0	1836.6	1926.3
11.0	1884.0	2019.8
12.0	1907.2	2102.3
13.0	1930.4	2175.7
14.0	1953.6	2241.2
15.0	1976.7	2299.6
16.0	1999.9	2351.4
17.0	2023.1	2397.4
18.0	2046.3	2438.0
19.0	2069.5	2473.8
20.0	2092.7	2505.3
21.0	2115.9	2532.8
22.0	2139.1	2556.9
23.0	2162.3	2577.8
24.0	2185.4	2595.9
25.0	2208.6	2611.6

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 19.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	7.90	4.00	0.25
9	sterk	D7	2.90	15.80	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 2147.22 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 9.97 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 2514.10 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 3006.86 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	680.2	344.8
2.0	961.9	659.0
3.0	1178.1	943.5
4.0	1360.4	1199.7
5.0	1521.0	1428.8
6.0	1666.1	1632.4
7.0	1799.6	1812.1
8.0	1923.9	1970.0
9.0	2040.6	2107.9
10.0	2148.1	2228.0
11.0	2172.5	2332.6
12.0	2196.9	2424.1
13.0	2221.3	2504.9
14.0	2245.7	2577.0
15.0	2270.1	2641.4
16.0	2294.5	2698.8
17.0	2318.9	2749.8
18.0	2343.3	2795.1
19.0	2367.7	2835.1
20.0	2392.1	2870.5
21.0	2416.5	2901.5
22.0	2440.9	2928.8
23.0	2465.3	2952.5
24.0	2489.7	2973.2
25.0	2514.1	2991.2

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 20.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	7.90	4.00	0.25
9	sterk	D7	2.90	15.80	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 2343.65 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 9.06 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 2773.86 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 3283.02 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	778.7	384.9
2.0	1101.2	736.6
3.0	1348.7	1055.6
4.0	1557.4	1343.0
5.0	1741.2	1599.7
6.0	1907.4	1827.2
7.0	2060.2	2027.0
8.0	2202.5	2201.0
9.0	2336.1	2351.4
10.0	2369.1	2480.6
11.0	2396.0	2591.4
12.0	2423.0	2686.7
13.0	2450.0	2769.7
14.0	2477.0	2843.2
15.0	2504.0	2908.8
16.0	2531.0	2967.4
17.0	2558.0	3019.5
18.0	2585.0	3065.8
19.0	2611.9	3106.8
20.0	2638.9	3143.0
21.0	2665.9	3174.8
22.0	2692.9	3202.8
23.0	2719.9	3227.2
24.0	2746.9	3248.5
25.0	2773.9	3267.0

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 21.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	7.90	4.00	0.25
9	sterk	D7	2.90	21.32	20.00	0.66
10	prachovec	R5	4.00	0.00	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 2540.23 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 9.32 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 2953.79 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 3559.69 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	832.3	420.5
2.0	1177.0	806.3
3.0	1441.5	1157.7
4.0	1664.5	1475.2
5.0	1861.0	1759.5
6.0	2038.6	2011.5
7.0	2202.0	2232.5
8.0	2354.0	2424.4
9.0	2496.8	2589.1
10.0	2558.3	2729.2
11.0	2584.6	2847.8
12.0	2611.0	2948.2
13.0	2637.4	3034.0
14.0	2663.7	3109.1
15.0	2690.1	3176.0
16.0	2716.5	3235.8
17.0	2742.8	3289.1
18.0	2769.2	3336.4
19.0	2795.6	3378.3
20.0	2822.0	3415.4
21.0	2848.3	3448.1
22.0	2874.7	3476.8
23.0	2901.1	3501.9
24.0	2927.4	3523.8
25.0	2953.8	3542.9

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 22.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	7.90	4.00	0.25
9	sterk	D7	2.90	24.39	20.00	0.66
10	prachovec	R5	4.00	24.70	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 3018.41 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 10.49 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 3690.67 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 4232.15 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	932.1	479.0
2.0	1318.2	922.3
3.0	1614.4	1329.4
4.0	1864.2	1700.4
5.0	2084.2	2035.0
6.0	2283.1	2333.9
7.0	2466.1	2597.8
8.0	2636.3	2828.0
9.0	2796.3	3026.6
10.0	2947.5	3196.5
11.0	3042.2	3341.0
12.0	3088.5	3464.4
13.0	3134.8	3570.2
14.0	3181.1	3662.3
15.0	3227.5	3744.2
16.0	3273.8	3818.0
17.0	3320.1	3884.2
18.0	3366.4	3943.6
19.0	3412.7	3996.7
20.0	3459.1	4044.0
21.0	3505.4	4086.0
22.0	3551.7	4123.2
23.0	3598.0	4156.0
24.0	3644.3	4184.8
25.0	3690.7	4210.0

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 23.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	7.90	4.00	0.25
9	sterk	D7	2.90	24.39	20.00	0.66
10	prachovec	R5	4.00	24.70	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 3300.98 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.17 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 3904.62 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 4626.67 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	987.7	528.1
2.0	1396.8	1019.5
3.0	1710.8	1472.9
4.0	1975.4	1887.4
5.0	2208.6	2262.2
6.0	2419.4	2596.7
7.0	2613.2	2891.0
8.0	2793.7	3145.9
9.0	2963.1	3363.3
10.0	3123.4	3546.4
11.0	3275.9	3699.8
12.0	3337.2	3829.4
13.0	3380.9	3940.4
14.0	3424.5	4036.2
15.0	3468.2	4120.7
16.0	3511.8	4196.7
17.0	3555.5	4265.0
18.0	3599.1	4326.4
19.0	3642.7	4381.3
20.0	3686.4	4430.3
21.0	3730.0	4473.9
22.0	3773.7	4512.6
23.0	3817.3	4546.8
24.0	3861.0	4576.9
25.0	3904.6	4603.3

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 24.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	7.90	4.00	0.25
9	sterk	D7	2.90	24.39	20.00	0.66
10	prachovec	R5	4.00	35.57	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 3583.81 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.05 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 4201.67 kN

METODA NELINEARNI

Zatizeni odpovidajici sedani 25 mm s(25) = 5020.61 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (NELINEARNI) [kN]
1.0	1078.3	567.4
2.0	1525.0	1098.9
3.0	1867.7	1592.9
4.0	2156.6	2047.6
5.0	2411.2	2461.5
6.0	2641.3	2833.0
7.0	2853.0	3161.2
8.0	3049.9	3445.6
9.0	3234.9	3687.2
10.0	3409.9	3888.6
11.0	3576.4	4054.4
12.0	3626.1	4191.6
13.0	3670.3	4308.1
14.0	3714.6	4408.4
15.0	3758.9	4495.9
16.0	3803.2	4574.2
17.0	3847.4	4644.7
18.0	3891.7	4708.1
19.0	3936.0	4764.9
20.0	3980.3	4815.7
21.0	4024.6	4861.1
22.0	4068.8	4901.4
23.0	4113.1	4937.0
24.0	4157.4	4968.5
25.0	4201.7	4996.2

PROGRAM: VP.EXE ver. 1.07, Vypocet svisle zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 25.00 m
Koeficient druhu zatizeni: 0.70
Koeficient redukce plastoveho treni (CSN 731004): 1.00
Koeficient technologie provadeni: 0.60
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Popis	Typ	Mocnost [m]	E_sec [MPa]	E_def [MPa]	alfa
1	hlavice	Y	1.00	0.00	0.00	0.00
2	jil p-t	C5	4.30	14.71	5.00	0.25
3	jil t	C5	2.40	10.66	5.00	0.25
4	sterk	D7	0.50	15.80	20.00	0.66
5	jil p-t	C5	2.60	11.27	5.00	0.25
6	jil t-m	C5	5.50	16.44	4.00	0.25
7	sterk	D7	1.10	15.80	20.00	0.66
8	jil t	C5	1.20	7.90	4.00	0.25
9	sterk	D7	2.90	24.39	20.00	0.66
10	prachovec	R5	4.00	44.45	40.00	0.66

VYSLEDKY

METODA "CSN 731004"

Zatizeni na mezi mobilizace plastoveho treni Ry = 3866.90 kN
Sedani piloty na mezi mobilizace plastoveho treni Sy = 11.56 mm
Zatizeni odpovidajici sedani 25 mm s(25) = 4437.18 kN

METODA Nelinearni

Zatizeni odpovidajici sedani 25 mm s(25) = 5414.42 kN

TABULKA ZAVISLOSTI SEDANI A UNOSNOSTI

Sedani [mm]	Sila (CSN 731004) [kN]	Sila (Nelinearni) [kN]
1.0	1137.3	598.3
2.0	1608.4	1162.6
3.0	1969.9	1691.0
4.0	2274.6	2181.5
5.0	2543.1	2632.0
6.0	2785.8	3040.1
7.0	3009.0	3403.9
8.0	3216.8	3721.7
9.0	3411.9	3992.8
10.0	3596.4	4218.4
11.0	3772.0	4402.1
12.0	3885.5	4550.4
13.0	3928.0	4673.2
14.0	3970.4	4778.4
15.0	4012.8	4869.6
16.0	4055.3	4950.4
17.0	4097.7	5023.1
18.0	4140.1	5088.7
19.0	4182.6	5147.5
20.0	4225.0	5200.3
21.0	4267.4	5247.4
22.0	4309.9	5289.3
23.0	4352.3	5326.6
24.0	4394.7	5359.6
25.0	4437.2	5388.6

PROGRAM: HP.EXE ver. 1.07, Vypocet horizontalne zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 8.00 m
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

Vrstva	Nazev	Hloubka [m]	kh [MN/m ³]	Smykovy modul [MN/m]
1	hlavice	0.00	10.00	0.00
		1.00	10.00	0.00
2	jil	1.00	5.00	0.00
		5.30	5.00	0.00
3	jil pisc	5.30	5.00	0.00
		7.70	5.00	0.00
4	sterk	7.70	40.00	0.00
		8.20	45.00	0.00
5	jil	8.20	4.00	0.00
		16.30	4.00	0.00
6	sterk	16.30	90.00	0.00
		17.40	95.00	0.00
7	jil	17.40	4.00	0.00
		18.60	4.00	0.00

ZATIZENI

Horizontalni sila v hlave piloty: 157.00 kN
Moment v hlave piloty: 117.00 kNm

VYSLEDKY

		WINKLER		WINKLER-PASTERNAK	
Hloubka [m]	Posun [mm]	Moment [kNm]	Napeti [kPa]	Posun [mm]	Moment [kNm]
0.0	11.50	117.00	114.96		
0.5	10.26	181.12	102.64		
1.0	9.07	219.60	85.00		
1.5	7.91	236.82	44.50		
2.0	6.80	242.92	34.01		
2.5	5.74	240.51	28.69		
3.0	4.72	230.93	23.61		
3.5	3.75	215.45	18.75		
4.0	2.82	195.28	14.09		
4.5	1.92	171.58	9.62		
5.0	1.06	145.49	5.32		
5.5	0.23	118.06	1.16		
6.0	-0.58	90.35	-2.89		
6.5	-1.37	63.34	-6.85		
7.0	-2.15	38.06	-10.75		
7.5	-2.92	15.46	-28.51		
8.0	-3.69	0.00	-123.74		

PROGRAM: HP.EXE ver. 1.07, Vypocet horizontalne zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 15.00 m
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

-----	-----	-----	-----	-----
Vrstva	Nazev	Hloubka [m]	kh [MN/m^3]	Smykovy modul [MN/m]
-----	-----	-----	-----	-----
1	hlavice	0.00	10.00	0.00
		1.00	10.00	0.00
2	jil	1.00	5.00	0.00
		5.30	5.00	0.00
3	jil pisc	5.30	5.00	0.00
		7.70	5.00	0.00
4	sterk	7.70	40.00	0.00
		8.20	45.00	0.00
5	jil	8.20	4.00	0.00
		16.30	4.00	0.00
6	sterk	16.30	90.00	0.00
		17.40	95.00	0.00
7	jil	17.40	4.00	0.00
		18.60	4.00	0.00
-----	-----	-----	-----	-----

ZATIZENI

Horizontalni sila v hlave piloty: 180.00 kN
Moment v hlave piloty: 77.00 kNm

VYSLEDKY

		WINKLER		WINKLER-PASTERNAK	
Hloubka [m]	Posun [mm]	Moment [kNm]	Napeti [kPa]	Posun [mm]	Moment [kNm]
-----	-----	-----	-----	-----	-----
0.0	10.33	77.00	103.25		
0.5	9.32	153.93	93.19		
1.0	8.34	207.91	78.21		
1.5	7.41	242.13	41.66		
2.0	6.52	265.97	32.58		
2.5	5.68	281.64	28.38		
3.0	4.89	290.23	24.46		
3.5	4.16	292.71	20.81		
4.0	3.49	289.97	17.45		
4.5	2.87	282.88	14.36		
5.0	2.31	272.20	11.55		
5.5	1.80	258.62	9.00		
6.0	1.34	242.80	6.69		
6.5	0.92	225.32	4.62		
7.0	0.55	206.65	2.77		
7.5	0.22	187.31	2.17		
8.0	-0.07	167.44	-2.41		
8.5	-0.34	148.14	-2.97		
9.0	-0.57	129.60	-2.28		
9.5	-0.78	111.64	-3.12		
10.0	-0.97	94.42	-3.87		
10.5	-1.14	78.23	-4.55		
11.0	-1.29	63.14	-5.17		
11.5	-1.43	49.33	-5.74		
12.0	-1.57	36.98	-6.27		
12.5	-1.69	26.17	-6.78		
13.0	-1.82	17.05	-7.26		
13.5	-1.93	9.82	-7.73		
14.0	-2.05	4.44	-8.20		
14.5	-2.16	1.12	-8.66		
15.0	-2.28	0.00	-9.12		
-----	-----	-----	-----	-----	-----

PROGRAM: HP.EXE ver. 1.07, Vypocet horizontalne zatizene osamele piloty
AUTORI: David Hrycej, Vojtech Jezek
UZIVATEL: Cenek a Jezek a.s., ing. Stepanka Perinova

ULOHA: Koleje Hladnov

PILOTA

Prumer piloty: 1.00 m
Delka piloty: 18.00 m
Modul pruznosti betonu: 26500.00 MPa

GEOLOGIE

-----	-----	-----	-----	-----
Vrstva	Nazev	Hloubka	kh	Smykovy modul
		[m]	[MN/m^3]	[MN/m]
-----	-----	-----	-----	-----
1	hlavice	0.00	10.00	0.00
		1.00	10.00	0.00
2	jil	1.00	5.00	0.00
		5.30	5.00	0.00
3	jil pisc	5.30	5.00	0.00
		7.70	5.00	0.00
4	sterk	7.70	40.00	0.00
		8.20	45.00	0.00
5	jil	8.20	4.00	0.00
		16.30	4.00	0.00
6	sterk	16.30	90.00	0.00
		17.40	95.00	0.00
7	jil	17.40	4.00	0.00
		18.60	4.00	0.00
-----	-----	-----	-----	-----

ZATIZENI

Horizontalni sila v hlave piloty: 200.00 kN
Moment v hlave piloty: 10.00 kNm

VYSLEDKY

		WINKLER		WINKLER-PASTERNAK	
Hloubka	Posun	Moment	Napeti	Posun	Moment
[m]	[mm]	[kNm]	[kPa]	[mm]	[kNm]
-----	-----	-----	-----	-----	-----
0.0	10.47	10.00	104.73		
0.5	9.50	96.87	95.01		
1.0	8.55	160.06	80.13		
1.5	7.62	203.21	42.89		
2.0	6.74	235.58	33.71		
2.5	5.90	259.57	29.51		
3.0	5.11	276.15	25.57		
3.5	4.38	286.36	21.89		
4.0	3.70	291.09	18.49		
4.5	3.07	291.21	15.37		
5.0	2.51	287.46	12.53		
5.5	1.99	280.60	9.96		
6.0	1.53	271.23	7.66		
6.5	1.13	259.97	5.63		
7.0	0.77	247.28	3.84		
7.5	0.46	233.65	4.47		
8.0	0.19	218.87	6.47		
8.5	-0.03	202.53	-0.26		
9.0	-0.21	186.20	-0.85		
9.5	-0.36	170.08	-1.44		
10.0	-0.48	154.35	-1.90		
10.5	-0.56	139.11	-2.25		
11.0	-0.62	124.38	-2.48		
11.5	-0.66	110.32	-2.62		
12.0	-0.67	96.87	-2.68		
12.5	-0.66	84.13	-2.66		
13.0	-0.64	72.04	-2.58		
13.5	-0.61	60.58	-2.44		
14.0	-0.56	49.75	-2.25		
14.5	-0.51	39.47	-2.03		
15.0	-0.44	29.71	-1.77		
15.5	-0.37	20.38	-1.49		
16.0	-0.30	11.42	-4.47		
16.5	-0.23	3.60	-18.08		
17.0	-0.15	0.26	-12.17		
17.5	-0.07	0.00	-1.10		
18.0	0.00	0.00	0.01		
-----	-----	-----	-----	-----	-----

GEOTECHNICKÉ POSOUZENÍ

Koleje Hladnov, Ostrava – zajištění stavební jámy

```

*****
Program POST      jmeno ulohy :   HLA1      ctvrtek   7.11.2024   17:45:21
*****
Koleje Hladnov, rez 1
*****
Vrchol zdi = 0. m
Pata zdi = -7. m
Sirka pasu zdi = 2. m
-----
1. cast zdi je od koty 0.m   do koty -3. m
E zdi = 210000000. kPa
I zdi = 0.000118 m^4
A zdi = 0.00626 m^2
-----
2. cast zdi je od koty -3.m  do koty -7. m
E zdi = 22500000. kPa
I zdi = 0.00636 m^4
A zdi = 0.2827 m^2
*****
P I L O T O V A      S T E N A
-----
Prumer piloty = 0.600 m
Osova vzdalenost pilot = 2.000 m
*****
Pata zdi je kloub s <-- posunem
*****
G E O L O G I E
-----
Geologie
-----
      koty[m]      gama[kN/m^3]      fi[st]      c[kPa]      k[kN/m^3]      delta[st]
-----
      0.00 - -1.00      18.00      24.00      3.00      6000.00      16.00
      -1.00 - -1.90      19.50      24.00      5.00      8000.00      16.00
      -1.90 - -2.70      18.00      28.00      3.00      10000.00      18.00
      -2.70 - -6.00      19.00      30.00      3.00      25000.00      20.00
      -6.00 - -7.00      19.50      24.00      5.00      8000.00      16.00
*****
Redukcni koeficient pro aktivni tlak ze strany terenu Kma = 1.000
-----
Redukcni koeficient pro pasivni tlak ze strany jamy Kr = 1.000
*****
Podzemni voda od koty -7. m do koty -7. m
*****
Zed neni osazena kotvami
*****
      kota [m]      pritizeni [kN/m^2]
-----
      0.00      10.000
*****
Min. pocet dilku zdi = 30
*****
P O P I S      Z A T E Z O V A C I C H      S T A V U
-----
      Zatezovací stav c. 1
kota dna jamy = -3.00 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -7.00 m
*****

```

```

*****
Program POST      jmeno ulohy :   HLA1      ctvrtek   7.11.2024   17:45:21
*****
Koleje Hladnov, rez 1
*****
Zatezovaci stav c. 1      kota dna jamy = -3.00 m
*****
      D E F O R M A C E
-----
kota [m]      u [m]      v [m]      fi [rad]
-----
  0.00      -0.01481881      -0.00000000      0.00000000
 -0.20      -0.01406925      -0.00000000      -0.00374775
 -0.40      -0.01331975      -0.00000000      -0.00374712
 -0.60      -0.01257053      -0.00000000      -0.00374461
 -0.80      -0.01182217      -0.00000000      -0.00373808
 -1.00      -0.01107577      -0.00000000      -0.00372456
 -1.30      -0.00996388      -0.00000000      -0.00368312
 -1.50      -0.00923160      -0.00000000      -0.00363676
 -1.70      -0.00851054      -0.00000000      -0.00356996
 -1.90      -0.00780534      -0.00000000      -0.00347726
 -2.10      -0.00712179      -0.00000000      -0.00335230
 -2.40      -0.00615332      -0.00000000      -0.00308714
 -2.70      -0.00528117      -0.00000000      -0.00270536
 -3.00      -0.00454481      -0.00000000      -0.00217662
 -3.20      -0.00411700      -0.00000000      -0.00209904
 -3.40      -0.00370617      -0.00000000      -0.00200677
 -3.60      -0.00331529      -0.00000000      -0.00189951
 -3.80      -0.00294732      -0.00000000      -0.00177798
 -4.00      -0.00260491      -0.00000000      -0.00164431
 -4.20      -0.00229016      -0.00000000      -0.00150223
 -4.40      -0.00200426      -0.00000000      -0.00135653
 -4.60      -0.00174748      -0.00000000      -0.00121184
 -4.80      -0.00151920      -0.00000000      -0.00107208
 -5.00      -0.00131809      -0.00000000      -0.00094064
 -5.20      -0.00114219      -0.00000000      -0.00082038
 -5.40      -0.00098903      -0.00000000      -0.00071370
 -5.60      -0.00085567      -0.00000000      -0.00062266
 -5.80      -0.00073882      -0.00000000      -0.00054875
 -6.00      -0.00063498      -0.00000000      -0.00049275
 -6.20      -0.00054057      -0.00000000      -0.00045405
 -6.40      -0.00045237      -0.00000000      -0.00043014
 -6.60      -0.00036776      -0.00000000      -0.00041753
 -6.80      -0.00028485      -0.00000000      -0.00041261
 -7.00      -0.00020246      0.00000000      0.00000000
*****
      V N I T R N I      S I L Y
-----
kota [m]      M [kNm]      N [kN]      T [kN]
-----
  0.00      0.0000      0.0000      -0.0795
 -0.20      -0.0159      0.0000      -0.6278
 -0.40      -0.1415      0.0000      -1.6952
 -0.60      -0.4805      -0.0000      -3.2818
 -0.80      -1.1369      -0.0000      -5.3874
 -1.00      -2.2143      -0.0000      -8.0553
 -1.30      -4.6309      -0.0000      -11.1255
 -1.50      -6.8560      -0.0000      -14.2144
 -1.70      -9.6989      -0.0000      -17.8657
 -1.90      -13.2721      -0.0000      -22.0984
 -2.10      -17.6917      -0.0000      -28.0710
 -2.40      -26.1130      -0.0000      -36.1472
 -2.70      -36.9572      -0.0000      -44.7791
 -3.00      -50.3909      -0.0000      -51.1835
 -3.20      -60.6276      -0.0000      -53.8807
 -3.40      -71.4038      -0.0000      -53.4223
 -3.60      -82.0882      -0.0000      -48.6304
 -3.80      -91.8143      -0.0000      -38.3065
 -4.00      -99.4756      -0.0000      -21.8203
 -4.20      -103.8397      -0.0000      -4.0528
 -4.40      -104.6502      -0.0000      11.1910
 -4.60      -102.4120      -0.0000      24.2024
 -4.80      -97.5715      -0.0000      35.2662
 -5.00      -90.5183      -0.0000      44.6544
 -5.20      -81.5874      -0.0000      52.6189
 -5.40      -71.0636      -0.0000      59.2695
 -5.60      -59.2097      -0.0000      63.2529
 -5.80      -46.5592      -0.0000      64.8994
 -6.00      -33.5793      -0.0000      58.9266
 -6.20      -21.7940      -0.0000      46.8071
 -6.40      -12.4325      -0.0000      34.1232
 -6.60      -5.6079      -0.0000      20.8978
 -6.80      -1.4283      -0.0000      7.1417
 -7.00      -0.0000
*****

```


H O R N I N O V Y T L A K

kota [m]	SigmaX[kPa]	SigPj-SigAt[kPa]	SigAj-SigPt[kPa]
0.00	-0.3974	-0.3974	-50.9649
-0.20	-1.3708	-1.3708	-60.8072
-0.40	-2.6686	-2.6686	-73.9301
-0.60	-3.9664	-3.9664	-87.0531
-0.80	-5.2642	-5.2642	-100.1761
-1.00	-5.3357	-5.3357	-119.6781
-1.30	-6.1405	-6.1405	-140.3345
-1.50	-7.7222	-7.7222	-156.3281
-1.70	-9.1281	-9.1281	-170.5446
-1.90	-10.5818	-10.5818	-207.8709
-2.10	-11.9452	-11.9452	-249.5727
-2.40	-13.4604	-13.4604	-273.2037
-2.70	-14.3865	-14.3865	-329.2939
-3.00	-12.8087	-12.8087	-387.8507
-3.20	-6.7431	-6.7431	-412.3771
-3.40	1.1460	1.1460	-434.1783
-3.60	11.9797	11.9797	-455.7914
-3.80	25.8098	25.8098	-476.6083
-4.00	41.2156	41.2156	-497.3479
-4.20	44.4186	57.6185	-518.0874
-4.40	38.1096	74.7661	-538.8270
-4.60	32.5283	92.4836	-559.5665
-4.80	27.6597	110.6462	-580.3061
-5.00	23.4703	129.1629	-601.0456
-5.20	19.9113	147.9659	-621.7852
-5.40	16.6266	167.0033	-642.5247
-5.60	9.9586	186.2353	-663.2643
-5.80	4.1162	205.6303	-684.0038
-6.00	-14.9321	173.6509	-576.9554
-6.20	-30.2986	141.8714	-463.9603
-6.40	-31.7098	152.1126	-476.7709
-6.60	-33.0635	162.6364	-489.5815
-6.80	-34.3902	173.3989	-502.3921
-7.00	-35.7084	201.6164	-512.0000

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 3.969

```

*****
Program POST      jmeno ulohy :   HLA2      ctvrtek   7.11.2024   17:50:38
*****
Koleje Hladnov, rez 2
*****
Vrchol zdi = 0. m
Pata zdi = -7.5 m
Sirka pasu zdi = 2. m
-----
1. cast zdi je od koty 0.m   do koty -5. m
E zdi = 210000000. kPa
I zdi = 0.000118 m^4
A zdi = 0.00626 m^2
-----
2. cast zdi je od koty -5.m  do koty -7.5 m
E zdi = 22500000. kPa
I zdi = 0.00636 m^4
A zdi = 0.2827 m^2
*****
P I L O T O V A      S T E N A
-----
Prumer piloty = 0.600 m
Osova vzdalenost pilot = 2.000 m
*****
Pata zdi je kloub s <-- posunem
*****
G E O L O G I E
-----
Geologie
-----
      koty[m]      gama[kN/m^3]      fi[st]      c[kPa]      k[kN/m^3]      delta[st]
-----
      0.00 - -2.20      18.00      24.00      3.00      6000.00      16.00
      -2.20 - -4.20      19.00      30.00      3.00      25000.00      20.00
      -4.20 - -7.50      19.50      24.00      5.00      8000.00      16.00
*****
Redukcni koeficient pro aktivni tlak ze strany terenu Kma = 1.000
-----
Redukcni koeficient pro pasivni tlak ze strany jamy Kr = 1.000
*****
Podzemni voda od koty -7.5 m do koty -7.5 m
*****
K O T V Y
-----
kota [m]  sklon [st]  delka [m]      E [kPa]      A [m^2]      sila [kN]
-----
      -1.50      30.00      10.00      210000000.0      0.0030000      150.00
*****
      kota [m]      pritizeni [kN/m^2]
-----
      0.00      10.000
*****
Min. pocet dilku zdi = 30
*****
P O P I S      Z A T E Z O V A C I C H      S T A V U
-----
      Zatezovaci stav c. 1
kota dna jamy = -1.80 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -7.50 m
-----
      Zatezovaci stav c. 2
kota dna jamy = -1.80 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -7.50 m      pridana kotva c. 1
-----
      Zatezovaci stav c. 3
kota dna jamy = -5.00 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -7.50 m
*****

```

Program POST jmeno ulohy : HLA2 ctvrtek 7.11.2024 17:50:38

Koleje Hladnov, rez 2

Zatezovací stav c. 1 kota dna jamy = -1.80 m

D E F O R M A C E

kota [m]	u [m]	v [m]	fi [rad]
0.00	-0.00700658	-0.00000000	0.00000000
-0.30	-0.00629571	-0.00000000	-0.00236936
-0.50	-0.00582194	-0.00000000	-0.00236807
-0.70	-0.00534867	-0.00000000	-0.00236394
-0.90	-0.00487672	-0.00000000	-0.00235440
-1.10	-0.00440750	-0.00000000	-0.00233606
-1.30	-0.00394317	-0.00000000	-0.00230469
-1.50	-0.00348683	-0.00000000	-0.00225520
-1.80	-0.00282700	-0.00000000	-0.00213281
-2.00	-0.00241200	-0.00000000	-0.00201110
-2.20	-0.00202517	-0.00000000	-0.00185028
-2.40	-0.00167460	-0.00000000	-0.00164870
-2.60	-0.00136803	-0.00000000	-0.00141205
-2.80	-0.00111122	-0.00000000	-0.00115377
-3.00	-0.00090696	-0.00000000	-0.00088892
-3.20	-0.00075530	-0.00000000	-0.00062936
-3.40	-0.00065422	-0.00000000	-0.00038464
-3.60	-0.00059993	-0.00000000	-0.00016275
-3.80	-0.00058716	-0.00000000	0.00002974
-4.00	-0.00060950	-0.00000000	0.00018736
-4.20	-0.00065941	-0.00000000	0.00030448
-4.40	-0.00072842	-0.00000000	0.00037857
-4.70	-0.00085031	-0.00000000	0.00042213
-5.00	-0.00097583	-0.00000000	0.00040700
-5.30	-0.00109672	-0.00000000	0.00039819
-5.50	-0.00117559	-0.00000000	0.00039041
-5.70	-0.00125285	-0.00000000	0.00038211
-5.90	-0.00132845	-0.00000000	0.00037391
-6.10	-0.00140246	-0.00000000	0.00036633
-6.30	-0.00147504	-0.00000000	0.00035972
-6.50	-0.00154643	-0.00000000	0.00035434
-6.70	-0.00161687	-0.00000000	0.00035030
-6.90	-0.00168663	-0.00000000	0.00034756
-7.10	-0.00175597	-0.00000000	0.00034600
-7.30	-0.00182509	-0.00000000	0.00034534
-7.50	-0.00189414	0.00000000	0.00000000

V N I T R N I S I L Y

kota [m]	M [kNm]	N [kN]	T [kN]
0.00	0.0000	0.0000	-0.1679
-0.30	-0.0504	-0.0000	-1.0966
-0.50	-0.2697	-0.0000	-2.4236
-0.70	-0.7544	-0.0000	-4.2697
-0.90	-1.6084	-0.0000	-6.6350
-1.10	-2.9353	-0.0000	-9.5193
-1.30	-4.8392	-0.0000	-12.9228
-1.50	-7.4238	-0.0000	-17.9071
-1.80	-12.7959	-0.0000	-22.8319
-2.00	-17.3623	-0.0000	-25.6378
-2.20	-22.4898	-0.0000	-24.8537
-2.40	-27.4606	-0.0000	-18.6131
-2.60	-31.1832	-0.0000	-8.1747
-2.80	-32.8182	-0.0000	0.0311
-3.00	-32.8119	-0.0000	6.5295
-3.20	-31.5060	-0.0000	11.8467
-3.40	-29.1367	-0.0000	16.4512
-3.60	-25.8465	-0.0000	19.9697
-3.80	-21.8525	-0.0000	23.2330
-4.00	-17.2059	-0.0000	26.9429
-4.20	-11.8173	-0.0000	26.3762
-4.40	-6.5421	-0.0000	19.6264
-4.70	-0.6542	-0.0000	12.6968
-5.00	3.1548	-0.0000	6.9721
-5.30	5.2465	-0.0000	3.1687
-5.50	5.8802	-0.0000	0.6308
-5.70	6.0064	-0.0000	-1.4128
-5.90	5.7238	-0.0000	-2.9724
-6.10	5.1293	-0.0000	-4.0585
-6.30	4.3176	-0.0000	-4.6800
-6.50	3.3816	-0.0000	-4.8446
-6.70	2.4127	-0.0000	-4.5584
-6.90	1.5011	-0.0000	-3.8257
-7.10	0.7359	-0.0000	-2.6492
-7.30	0.2061	-0.0000	-1.0304
-7.50	-0.0000		

K O T V Y

```
-----
kota [m]      F [kN]
-----
-1.50          0.0000
*****
```

H O R N I N O V Y T L A K

```
-----
kota [m]      SigmaX[kPa]  SigPj-SigAt[kPa]  SigAj-SigPt[kPa]
-----
 0.00          -0.5596      -0.5596          -52.6053
-0.30          -1.8574      -1.8574          -65.7283
-0.50          -3.3175      -3.3175          -80.4916
-0.70          -4.6153      -4.6153          -93.6146
-0.90          -5.9131      -5.9131         -106.7376
-1.10          -7.2109      -7.2109         -119.8605
-1.30          -8.5087      -8.5087         -132.9835
-1.50          -9.9687      -9.9687         -147.7468
-1.80          -9.8495      -9.8495         -164.1506
-2.00          -7.0149      -7.0149         -178.9139
-2.20           1.9603        1.9603         -246.3504
-2.40          15.6014       15.6014         -320.1635
-2.60          26.0961       29.2838         -341.0363
-2.80          20.5144       44.8246         -361.7758
-3.00          16.2461       61.4342         -382.5154
-3.20          13.2931       78.7340         -403.2549
-3.40          11.5111       96.5651         -423.9944
-3.60           8.7963      114.8141         -444.7340
-3.80           8.1581      133.3974         -465.4735
-4.00           9.2749      152.2522         -486.2131
-4.20          -1.4168      133.0550         -416.3036
-4.40         -13.4996      117.6896         -342.0488
-4.70         -11.5494      128.4425         -359.6634
-5.00          -9.5411      144.1839         -378.8793
-5.30          -7.6069      155.3228         -396.4939
-5.50          -6.3448      171.4250         -410.9058
-5.70          -5.1088      182.6829         -423.7164
-5.90          -3.8992      194.0808         -436.5270
-6.10          -2.7151      205.6009         -449.3376
-6.30          -1.5537      217.2282         -462.1482
-6.50          -0.4115      228.9500         -474.9588
-6.70           0.7155      240.7558         -487.7694
-6.90           1.8317      252.6362         -500.5800
-7.10           2.9412      264.5833         -513.3906
-7.30           4.0471      276.5904         -526.2012
-7.50           5.1519      310.0967         -535.8092
*****
```

```
Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 5.602
*****
```

Program POST jmeno ulohy : HLA2 ctvrtek 7.11.2024 17:50:38

Koleje Hladnov, rez 2

Zatezovací stav c. 2 kota dna jamy = -1.80 m pridana kotva c. 1

D E F O R M A C E

kota [m]	u [m]	v [m]	fi [rad]
0.00	0.00124546	-0.00022916	0.00000000
-0.30	0.00127366	-0.00022916	-0.00008985
-0.50	0.00129024	-0.00022916	-0.00007318
-0.70	0.00130147	-0.00022916	-0.00003460
-0.90	0.00130187	-0.00022916	0.00003712
-1.10	0.00128358	-0.00022916	0.00015460
-1.30	0.00123605	-0.00022916	0.00033180
-1.50	0.00114586	-0.00022916	0.00058394
-1.80	0.00091650	-0.00021204	0.00090551
-2.00	0.00072466	-0.00020063	0.00099907
-2.20	0.00052180	-0.00018922	0.00101870
-2.40	0.00032079	-0.00017781	0.00098422
-2.60	0.00013034	-0.00016640	0.00091644
-2.80	-0.00004486	-0.00015499	0.00083465
-3.00	-0.00020359	-0.00014358	0.00075391
-3.20	-0.00034713	-0.00013217	0.00068389
-3.40	-0.00047818	-0.00012076	0.00062941
-3.60	-0.00059996	-0.00010935	0.00059082
-3.80	-0.00071533	-0.00009794	0.00056441
-4.00	-0.00082603	-0.00008653	0.00054264
-4.20	-0.00093198	-0.00007512	0.00051485
-4.40	-0.00103101	-0.00006371	0.00047266
-4.70	-0.00116031	-0.00004659	0.00038565
-5.00	-0.00126090	-0.00002948	0.00028363
-5.30	-0.00134327	-0.00002594	0.00026555
-5.50	-0.00139521	-0.00002358	0.00025404
-5.70	-0.00144494	-0.00002122	0.00024343
-5.90	-0.00149266	-0.00001887	0.00023400
-6.10	-0.00153863	-0.00001651	0.00022593
-6.30	-0.00158313	-0.00001415	0.00021932
-6.50	-0.00162646	-0.00001179	0.00021419
-6.70	-0.00166891	-0.00000943	0.00021049
-6.90	-0.00171074	-0.00000707	0.00020807
-7.10	-0.00175221	-0.00000472	0.00020673
-7.30	-0.00179349	-0.00000236	0.00020618
-7.50	-0.00183471	0.00000000	0.00000000

V N I T R N I S I L Y

kota [m]	M [kNm]	N [kN]	T [kN]
0.00	0.0000	0.0000	-3.4397
-0.30	-1.0319	-0.0000	-10.3250
-0.50	-3.0969	-0.0000	-16.8341
-0.70	-6.4637	-0.0000	-24.2245
-0.90	-11.3086	-0.0000	-32.4702
-1.10	-17.8027	-0.0000	-41.5262
-1.30	-26.1079	-0.0000	-51.3225
-1.50	-36.3724	-75.0000	65.4052
-1.80	-16.7508	-75.0000	51.5823
-2.00	-6.4344	-75.0000	40.0234
-2.20	1.5703	-75.0000	27.0225
-2.40	6.9748	-75.0000	14.2268
-2.60	9.8202	-75.0000	3.1400
-2.80	10.4482	-75.0000	-4.4429
-3.00	9.5596	-75.0000	-8.8510
-3.20	7.7894	-75.0000	-10.3883
-3.40	5.7117	-75.0000	-9.3046
-3.60	3.8508	-75.0000	-5.7855
-3.80	2.6937	-75.0000	0.0410
-4.00	2.7019	-75.0000	7.4069
-4.20	4.1833	-75.0000	10.4381
-4.40	6.2709	-75.0000	6.1090
-4.70	8.1036	-75.0000	2.1554
-5.00	8.7502	-75.0000	-0.8325
-5.30	8.5005	-75.0000	-2.6636
-5.50	7.9677	-75.0000	-3.7960
-5.70	7.2086	-75.0000	-4.6101
-5.90	6.2865	-75.0000	-5.1188
-6.10	5.2628	-75.0000	-5.3333
-6.30	4.1961	-75.0000	-5.2630
-6.50	3.1435	-75.0000	-4.9154
-6.70	2.1604	-75.0000	-4.2961
-6.90	1.3012	-75.0000	-3.4091
-7.10	0.6194	-75.0000	-2.2567
-7.30	0.1680	-75.0000	-0.8402
-7.50	-0.0000		

K O T V Y

```
-----
kota [m]      F [kN]
-----
-1.50          150.0000
*****
```

H O R N I N O V Y T L A K

```
-----
kota [m]      SigmaX[kPa]  SigPj-SigAt[kPa]  SigAj-SigPt[kPa]
-----
0.00          -11.4657      -0.5596           -52.6053
-0.30         -13.7706      -1.8574           -65.7283
-0.50         -16.2728      -3.3175           -80.4916
-0.70         -18.4760      -4.6153           -93.6146
-0.90         -20.6141      -5.9131          -106.7376
-1.10         -22.6401      -7.2109          -119.8605
-1.30         -24.4907      -8.5087          -132.9835
-1.50         -26.3522      -9.9687          -147.7468
-1.80         -27.6458      -9.8495          -164.1506
-2.00         -28.8974      -7.0149          -178.9139
-2.20         -32.5021       1.9603           -246.3504
-2.40         -31.9894      15.6014          -320.1635
-2.60         -27.7169      29.2838          -341.0363
-2.80         -18.9572      44.8246          -361.7758
-3.00         -11.0204      61.4342          -382.5154
-3.20         -3.8433       78.7340          -403.2549
-3.40          2.7092       96.5651          -423.9944
-3.60          8.7979      114.8141          -444.7340
-3.80         14.5663      133.3974          -465.4735
-4.00         18.4146      152.2522          -486.2131
-4.20          7.5781      133.0550          -416.3036
-4.40         -8.6582      117.6896          -342.0488
-4.70         -6.5893      128.4425          -359.6634
-5.00         -4.9799      144.1839          -378.8793
-5.30         -3.6621      155.3228          -396.4939
-5.50         -2.8310      171.4250          -410.9058
-5.70         -2.0353      182.6829          -423.7164
-5.90         -1.2717      194.0808          -436.5270
-6.10         -0.5362      205.6009          -449.3376
-6.30          0.1758      217.2282          -462.1482
-6.50          0.8690      228.9500          -474.9588
-6.70          1.5481      240.7558          -487.7694
-6.90          2.2175      252.6362          -500.5800
-7.10          2.8809      264.5833          -513.3906
-7.30          3.5414      276.5904          -526.2012
-7.50          4.2009      310.0967          -535.8092
*****
```

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 7.405

Program POST jmeno ulohy : HLA2 ctvrtek 7.11.2024 17:50:38

Koleje Hladnov, rez 2

Zatezovací stav c. 3 kota dna jamy = -5.00 m

D E F O R M A C E

kota [m]	u [m]	v [m]	fi [rad]
0.00	0.00549790	-0.00033127	0.00000000
-0.30	0.00448650	-0.00033127	0.00338477
-0.50	0.00380537	-0.00033127	0.00343392
-0.70	0.00310928	-0.00033127	0.00353778
-0.90	0.00238531	-0.00033127	0.00371594
-1.10	0.00161674	-0.00033127	0.00398662
-1.30	0.00078338	-0.00033127	0.00436652
-1.50	-0.00013815	-0.00033127	0.00487064
-1.80	-0.00170989	-0.00030653	0.00554880
-2.00	-0.00284819	-0.00029003	0.00580966
-2.20	-0.00402422	-0.00027354	0.00592749
-2.40	-0.00521020	-0.00025704	0.00591056
-2.60	-0.00637998	-0.00024055	0.00576673
-2.80	-0.00750896	-0.00022405	0.00550399
-3.00	-0.00857423	-0.00020756	0.00513102
-3.20	-0.00955465	-0.00019106	0.00465719
-3.40	-0.01043105	-0.00017457	0.00409254
-3.60	-0.01118632	-0.00015808	0.00344779
-3.80	-0.01180559	-0.00014158	0.00273438
-4.00	-0.01227630	-0.00012509	0.00196441
-4.20	-0.01258843	-0.00010859	0.00115065
-4.40	-0.01273459	-0.00009210	0.00030730
-4.70	-0.01263456	-0.00006735	-0.00097416
-5.00	-0.01215328	-0.00004261	-0.00222373
-5.30	-0.01145561	-0.00003750	-0.00242385
-5.50	-0.01095864	-0.00003409	-0.00254365
-5.70	-0.01043908	-0.00003068	-0.00264950
-5.90	-0.00989989	-0.00002727	-0.00273967
-6.10	-0.00934433	-0.00002386	-0.00281311
-6.30	-0.00877577	-0.00002045	-0.00286966
-6.50	-0.00819753	-0.00001705	-0.00291015
-6.70	-0.00761266	-0.00001364	-0.00293646
-6.90	-0.00702369	-0.00001023	-0.00295161
-7.10	-0.00643253	-0.00000682	-0.00295899
-7.30	-0.00584042	-0.00000341	-0.00296162
-7.50	-0.00524803	0.00000000	0.00000000

V N I T R N I S I L Y

kota [m]	M [kNm]	N [kN]	T [kN]
0.00	0.0000	0.0000	-11.0941
-0.30	-3.3282	-0.0000	-27.6179
-0.50	-8.8518	-0.0000	-40.1634
-0.70	-16.8845	-0.0000	-51.8925
-0.90	-27.2630	-0.0000	-62.7384
-1.10	-39.8107	-0.0000	-72.5940
-1.30	-54.3294	-0.0000	-81.3038
-1.50	-70.5902	-108.4193	97.1599
-1.80	-41.4423	-108.4193	91.2161
-2.00	-23.1990	-108.4193	85.9957
-2.20	-5.9999	-108.4193	80.9812
-2.40	10.1964	-108.4193	76.2432
-2.60	25.4450	-108.4193	71.0807
-2.80	39.6611	-108.4193	65.4934
-3.00	52.7598	-108.4193	59.4815
-3.20	64.6561	-108.4193	53.0449
-3.40	75.2651	-108.4193	46.1837
-3.60	84.5018	-108.4193	38.8978
-3.80	92.2814	-108.4193	31.1872
-4.00	98.5189	-108.4193	23.0520
-4.20	103.1293	-108.4193	13.6162
-4.40	105.8525	-108.4193	-0.0212
-4.70	105.8461	-108.4193	-17.5460
-5.00	100.5824	-108.4193	-34.1716
-5.30	90.3309	-108.4193	-46.1684
-5.50	81.0972	-108.4193	-53.5706
-5.70	70.3831	-108.4193	-58.6921
-5.90	58.6447	-108.4193	-60.9795
-6.10	46.4488	-108.4193	-59.8713
-6.30	34.4745	-108.4193	-55.0597
-6.50	23.4626	-108.4193	-46.3459
-6.70	14.1934	-108.4193	-33.5696
-6.90	7.4794	-108.4193	-21.9981
-7.10	3.0798	-108.4193	-11.9552
-7.30	0.6888	-108.4193	-3.4440
-7.50	-0.0000		

K O T V Y

kota [m]	F [kN]
-1.50	216.8386

H O R N I N O V Y T L A K

kota [m]	SigmaX[kPa]	SigPj-SigAt[kPa]	SigAj-SigPt[kPa]
0.00	-36.9803	-0.5596	-52.6053
-0.30	-33.0476	-1.8574	-65.7283
-0.50	-31.3636	-3.3175	-80.4916
-0.70	-29.3228	-4.6153	-93.6146
-0.90	-27.1147	-5.9131	-106.7376
-1.10	-24.6390	-7.2109	-119.8605
-1.30	-21.7746	-8.5087	-132.9835
-1.50	-18.6482	-9.9687	-147.7468
-1.80	-11.8874	-11.5910	-164.1506
-2.00	-13.0510	-13.0510	-178.9139
-2.20	-12.5364	-12.5364	-246.3504
-2.40	-11.8448	-11.8448	-320.2956
-2.60	-12.9065	-12.9065	-342.0968
-2.80	-13.9681	-13.9681	-363.8981
-3.00	-15.0298	-15.0298	-385.6993
-3.20	-16.0914	-16.0914	-407.5005
-3.40	-17.1531	-17.1531	-429.3017
-3.60	-18.2147	-18.2147	-451.1029
-3.80	-19.2764	-19.2764	-472.9041
-4.00	-20.3381	-20.3381	-494.7053
-4.20	-23.5895	-23.5895	-426.3276
-4.40	-27.2748	-27.2748	-354.0384
-4.70	-29.2080	-29.2080	-373.5862
-5.00	-27.7094	-27.7094	-394.9110
-5.30	-23.9936	-23.9936	-414.4588
-5.50	-18.5055	-18.5055	-430.4524
-5.70	-12.8036	-12.8036	-444.6689
-5.90	-5.7186	-5.7186	-458.4454
-6.10	2.7704	2.7704	-471.2560
-6.30	12.0290	12.0290	-484.0666
-6.50	21.7844	21.7844	-496.8772
-6.70	31.9409	31.9409	-509.6878
-6.90	28.9288	42.4252	-522.4984
-7.10	25.1072	53.1807	-535.3090
-7.30	21.2781	64.1630	-548.1196
-7.50	17.2198	92.1321	-557.7276

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 1.215

MA X .	M O M E N T Y	Z E V S E C H Z A T . S T A V U

kota [m]	Mmin [kNm]	Mmax [kNm]

0.00	0.0000	0.0000
-0.30	-3.3282	-0.0504
-0.50	-8.8518	-0.2697
-0.70	-16.8845	-0.7544
-0.90	-27.2630	-1.6084
-1.10	-39.8107	-2.9353
-1.30	-54.3294	-4.8392
-1.50	-70.5902	-7.4238
-1.80	-41.4423	-12.7959
-2.00	-23.1990	-6.4344
-2.20	-22.4898	1.5703
-2.40	-27.4606	10.1964
-2.60	-31.1832	25.4450
-2.80	-32.8182	39.6611
-3.00	-32.8119	52.7598
-3.20	-31.5060	64.6561
-3.40	-29.1367	75.2651
-3.60	-25.8465	84.5018
-3.80	-21.8525	92.2814
-4.00	-17.2059	98.5189
-4.20	-11.8173	103.1293
-4.40	-6.5421	105.8525
-4.70	-0.6542	105.8461
-5.00	3.1548	100.5824
-5.30	5.2465	90.3309
-5.50	5.8802	81.0972
-5.70	6.0064	70.3831
-5.90	5.7238	58.6447
-6.10	5.1293	46.4488
-6.30	4.1961	34.4745
-6.50	3.1435	23.4626
-6.70	2.1604	14.1934
-6.90	1.3012	7.4794
-7.10	0.6194	3.0798
-7.30	0.1680	0.6888
-7.50	-0.0000	-0.0000

```

*****
Program POST      jmeno ulohy :   HLA3      ctvrtek   7.11.2024   17:57:06
*****
Koleje Hladnov, rez 3
*****
Vrchol zdi = 0. m
Pata zdi = -9. m
Sirka pasu zdi = 1.8 m
-----
1. cast zdi je od koty 0.m   do koty -5.9 m
E zdi = 210000000. kPa
I zdi = 0.000163 m^4
A zdi = 0.00727 m^2
-----
2. cast zdi je od koty -5.9m do koty -9. m
E zdi = 22500000. kPa
I zdi = 0.00636 m^4
A zdi = 0.2827 m^2
*****
P I L O T O V A      S T E N A
-----
Prumer piloty = 0.600 m
Osova vzdalenost pilot = 1.800 m
*****
Pata zdi je kloub s <-- posunem
*****
G E O L O G I E
-----
Geologie
-----
      koty[m]      gama[kN/m^3]      fi[st]      c[kPa]      k[kN/m^3]      delta[st]
-----
      0.00 - -2.20      18.00      24.00      3.00      6000.00      16.00
      -2.20 - -4.20      19.00      30.00      3.00      25000.00      20.00
      -4.20 - -9.00      19.50      24.00      5.00      8000.00      16.00
*****
Redukcni koeficient pro aktivni tlak ze strany terenu Kma = 1.000
-----
Redukcni koeficient pro pasivni tlak ze strany jamy Kr = 1.000
*****
Podzemni voda od koty -9. m do koty -9. m
*****
K O T V Y
-----
kota [m]  sklon [st]  delka [m]      E [kPa]      A [m^2]      sila [kN]
-----
      -1.50      30.00      10.00      210000000.0      0.0030000      150.00
*****
      kota [m]      pritizeni [kN/m^2]
-----
      0.00      10.000
*****
Min. pocet dilku zdi = 30
*****
P O P I S      Z A T E Z O V A C I C H      S T A V U
-----
      Zatezovaci stav c. 1
kota dna jamy = -1.80 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -9.00 m
-----
      Zatezovaci stav c. 2
kota dna jamy = -1.80 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -9.00 m      pridana kotva c. 1
-----
      Zatezovaci stav c. 3
kota dna jamy = -5.90 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -9.00 m
*****

```

```

*****
Program POST      jmeno ulohy :   HLA3      ctvrtek   7.11.2024   17:57:06
*****
Koleje Hladnov, rez 3
*****
Zatezovaci stav c. 1      kota dna jamy = -1.80 m
*****
      D E F O R M A C E
-----
kota [m]      u [m]      v [m]      fi [rad]
-----
  0.00      -0.00445612      -0.00000000      0.00000000
 -0.30      -0.00402433      -0.00000000      -0.00143917
 -0.60      -0.00359280      -0.00000000      -0.00143714
 -0.90      -0.00316265      -0.00000000      -0.00142903
 -1.20      -0.00273669      -0.00000000      -0.00140782
 -1.50      -0.00232025      -0.00000000      -0.00136375
 -1.80      -0.00192199      -0.00000000      -0.00128426
 -2.20      -0.00144183      -0.00000000      -0.00109980
 -2.40      -0.00123444      -0.00000000      -0.00096987
 -2.70      -0.00097707      -0.00000000      -0.00074078
 -3.00      -0.00079184      -0.00000000      -0.00049297
 -3.30      -0.00068103      -0.00000000      -0.00024780
 -3.60      -0.00064111      -0.00000000      -0.00002319
 -3.90      -0.00066345      -0.00000000      0.00016475
 -4.20      -0.00073467      -0.00000000      0.00029980
 -4.40      -0.00080061      -0.00000000      0.00035469
 -4.70      -0.00091349      -0.00000000      0.00038928
 -5.00      -0.00102978      -0.00000000      0.00037988
 -5.30      -0.00113838      -0.00000000      0.00034015
 -5.60      -0.00123194      -0.00000000      0.00028116
 -5.90      -0.00130604      -0.00000000      0.00021172
 -6.30      -0.00138609      -0.00000000      0.00018861
 -6.60      -0.00144015      -0.00000000      0.00017200
 -6.90      -0.00148946      -0.00000000      0.00015704
 -7.20      -0.00153460      -0.00000000      0.00014431
 -7.50      -0.00157630      -0.00000000      0.00013413
 -7.80      -0.00161534      -0.00000000      0.00012660
 -8.10      -0.00165252      -0.00000000      0.00012160
 -8.40      -0.00168852      -0.00000000      0.00011877
 -8.70      -0.00172394      -0.00000000      0.00011760
 -9.00      -0.00175917      0.00000000      0.00000000
*****
      V N I T R N I      S I L Y
-----
kota [m]      M [kNm]      N [kN]      T [kN]
-----
  0.00      0.0000      0.0000      -0.1511
 -0.30      -0.0453      0.0000      -1.2417
 -0.60      -0.4178      -0.0000      -3.3836
 -0.90      -1.4329      -0.0000      -6.5766
 -1.20      -3.4059      -0.0000      -10.8209
 -1.50      -6.6522      -0.0000      -16.1164
 -1.80      -11.4871      -0.0000      -21.4880
 -2.20      -20.0823      -0.0000      -21.5527
 -2.40      -24.3928      -0.0000      -11.6424
 -2.70      -27.8856      -0.0000      -2.6020
 -3.00      -28.6662      -0.0000      4.6168
 -3.30      -27.2811      -0.0000      11.0187
 -3.60      -23.9755      -0.0000      16.8806
 -3.90      -18.9113      -0.0000      23.3457
 -4.20      -11.9076      -0.0000      25.1278
 -4.40      -6.8820      -0.0000      19.5727
 -4.70      -1.0102      -0.0000      13.8819
 -5.00      3.1543      -0.0000      9.1958
 -5.30      5.9131      -0.0000      5.4481
 -5.60      7.5475      -0.0000      2.5087
 -5.90      8.3001      -0.0000      -0.1737
 -6.30      8.2306      -0.0000      -2.0492
 -6.60      7.6158      -0.0000      -3.1896
 -6.90      6.6590      -0.0000      -3.9040
 -7.20      5.4878      -0.0000      -4.2284
 -7.50      4.2193      -0.0000      -4.1925
 -7.80      2.9615      -0.0000      -3.8193
 -8.10      1.8157      -0.0000      -3.1249
 -8.40      0.8782      -0.0000      -2.1195
 -8.70      0.2424      -0.0000      -0.8079
 -9.00      -0.0000
*****

```

K O T V Y

kota [m]	F [kN]
-1.50	0.0000

H O R N I N O V Y T L A K

kota [m]	SigmaX[kPa]	SigPj-SigAt[kPa]	SigAj-SigPt[kPa]
0.00	-0.5596	-0.5596	-52.6053
-0.30	-2.0197	-2.0197	-67.3686
-0.60	-3.9664	-3.9664	-87.0531
-0.90	-5.9131	-5.9131	-106.7376
-1.20	-7.8598	-7.8598	-126.4220
-1.50	-9.8065	-9.8065	-146.1065
-1.80	-8.5263	-8.5263	-167.4313
-2.20	-0.1199	-0.1199	-224.9652
-2.40	22.0229	22.7178	-322.7826
-2.70	16.7415	43.6309	-351.4060
-3.00	13.3682	69.7333	-382.5154
-3.30	11.8554	97.0954	-413.6247
-3.60	10.8553	125.2982	-444.7340
-3.90	11.9725	154.0885	-475.8433
-4.20	3.9601	145.4611	-431.8410
-4.40	-12.3447	125.7637	-342.0488
-4.70	-10.5386	137.5093	-359.6634
-5.00	-8.6780	153.8550	-378.8793
-5.30	-6.9402	170.6732	-398.0952
-5.60	-5.4433	187.8584	-417.3111
-5.90	-4.2578	209.2823	-438.1283
-6.30	-2.9768	225.0394	-460.5469
-6.60	-2.1119	246.9448	-481.3641
-6.90	-1.3230	265.0473	-500.5800
-7.20	-0.6007	283.2735	-519.7959
-7.50	0.0664	301.6041	-539.0118
-7.80	0.6912	320.0238	-558.2277
-8.10	1.2859	338.5200	-577.4436
-8.40	1.8620	357.0823	-596.6595
-8.70	2.4287	375.7021	-615.8754
-9.00	2.9924	412.0196	-630.2873

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 6.404

```

*****
Program POST      jmeno ulohy :   HLA3      ctvrtek   7.11.2024   17:57:07
*****
Koleje Hladnov, rez 3
*****
Zatezovaci stav c. 2      kota dna jamy = -1.80 m      pridana kotva c. 1
*****
      D E F O R M A C E
-----
kota [m]      u [m]      v [m]      fi [rad]
-----
0.00      0.00177861      -0.00025270      0.00000000
-0.30      0.00172100      -0.00025270      0.00019548
-0.60      0.00165909      -0.00025270      0.00022297
-0.90      0.00158242      -0.00025270      0.00029849
-1.20      0.00147222      -0.00025270      0.00045175
-1.50      0.00130025      -0.00025270      0.00071622
-1.80      0.00104477      -0.00023797      0.00095793
-2.20      0.00063537      -0.00021832      0.00105161
-2.40      0.00042717      -0.00020849      0.00102442
-2.70      0.00013194      -0.00019375      0.00093729
-3.00      -0.00013326      -0.00017902      0.00083075
-3.30      -0.00036757      -0.00016428      0.00073484
-3.60      -0.00057646      -0.00014954      0.00066189
-3.90      -0.00076666      -0.00013480      0.00060848
-4.20      -0.00094179      -0.00012007      0.00055750
-4.40      -0.00104924      -0.00011024      0.00051531
-4.70      -0.00119255      -0.00009550      0.00043790
-5.00      -0.00131111      -0.00008077      0.00035178
-5.30      -0.00140347      -0.00006603      0.00026423
-5.60      -0.00146999      -0.00005129      0.00018014
-5.90      -0.00151221      -0.00003655      0.00010259
-6.30      -0.00154881      -0.00003184      0.00008106
-6.60      -0.00157105      -0.00002830      0.00006757
-6.90      -0.00158959      -0.00002476      0.00005645
-7.20      -0.00160515      -0.00002122      0.00004767
-7.50      -0.00161841      -0.00001769      0.00004107
-7.80      -0.00162999      -0.00001415      0.00003644
-8.10      -0.00164044      -0.00001061      0.00003351
-8.40      -0.00165023      -0.00000707      0.00003193
-8.70      -0.00165969      -0.00000354      0.00003129
-9.00      -0.00166905      0.00000000      0.00000000
*****
      V N I T R N I      S I L Y
-----
kota [m]      M [kNm]      N [kN]      T [kN]
-----
0.00      0.0000      0.0000      -3.9594
-0.30      -1.1878      0.0000      -12.9891
-0.60      -5.0846      -0.0000      -23.5482
-0.90      -12.1490      -0.0000      -35.5887
-1.20      -22.8256      -0.0000      -49.0022
-1.50      -37.5263      -75.0000      66.3153
-1.80      -17.6317      -75.0000      48.0773
-2.20      1.5992      -75.0000      30.5416
-2.40      7.7075      -75.0000      14.8904
-2.70      12.1746      -75.0000      -0.1199
-3.00      12.1387      -75.0000      -7.9698
-3.30      9.7477      -75.0000      -9.4933
-3.60      6.8997      -75.0000      -5.3769
-3.90      5.2866      -75.0000      3.5392
-4.20      6.3484      -75.0000      8.7139
-4.40      8.0912      -75.0000      4.9490
-4.70      9.5759      -75.0000      1.6693
-5.00      10.0767      -75.0000      -0.5861
-5.30      9.9008      -75.0000      -2.0434
-5.60      9.2878      -75.0000      -2.9261
-5.90      8.4100      -75.0000      -3.5302
-6.30      6.9979      -75.0000      -3.7654
-6.60      5.8683      -75.0000      -3.7750
-6.90      4.7358      -75.0000      -3.6243
-7.20      3.6485      -75.0000      -3.3391
-7.50      2.6467      -75.0000      -2.9395
-7.80      1.7649      -75.0000      -2.4397
-8.10      1.0330      -75.0000      -1.8497
-8.40      0.4781      -75.0000      -1.1750
-8.70      0.1256      -75.0000      -0.4186
-9.00      -0.0000
*****

```

K O T V Y

kota [m] F [kN]

-1.50 150.0000

H O R N I N O V Y T L A K

kota [m] SigmaX[kPa] SigPj-SigAt[kPa] SigAj-SigPt [kPa]

0.00	-14.6645	-0.5596	-52.6053
-0.30	-16.7216	-2.0197	-67.3686
-0.60	-19.5538	-3.9664	-87.0531
-0.90	-22.2974	-5.9131	-106.7376
-1.20	-24.8398	-7.8598	-126.4220
-1.50	-27.0116	-9.8065	-146.1065
-1.80	-28.9493	-8.5263	-167.4313
-2.20	-32.4734	-0.1199	-224.9652
-2.40	-34.7805	22.7178	-322.7826
-2.70	-27.7968	43.6309	-351.4060
-3.00	-14.5369	69.7333	-382.5154
-3.30	-2.8213	97.0954	-413.6247
-3.60	7.6230	125.2982	-444.7340
-3.90	16.5112	154.0885	-475.8433
-4.20	11.4995	145.4611	-431.8410
-4.40	-8.3665	125.7637	-342.0488
-4.70	-6.0736	137.5093	-359.6634
-5.00	-4.1766	153.8550	-378.8793
-5.30	-2.6988	170.6732	-398.0952
-5.60	-1.6345	187.8584	-417.3111
-5.90	-0.9590	209.2823	-438.1283
-6.30	-0.3734	225.0394	-460.5469
-6.60	-0.0176	246.9448	-481.3641
-6.90	0.2791	265.0473	-500.5800
-7.20	0.5280	283.2735	-519.7959
-7.50	0.7402	301.6041	-539.0118
-7.80	0.9254	320.0238	-558.2277
-8.10	1.0927	338.5200	-577.4436
-8.40	1.2493	357.0823	-596.6595
-8.70	1.4007	375.7021	-615.8754
-9.00	1.5505	412.0196	-630.2873

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 7.824

```

*****
Program POST      jmeno ulohy :   HLA3      ctvrtek   7.11.2024   17:57:07
*****
Koleje Hladnov, rez 3
*****
Zatezovaci stav c. 3      kota dna jamy = -5.90 m
*****
      D E F O R M A C E
-----
kota [m]      u [m]      v [m]      fi [rad]
-----
  0.00      0.00917913      -0.00043229      0.00000000
 -0.30      0.00730259      -0.00043229      0.00626757
 -0.60      0.00541129      -0.00043229      0.00635923
 -0.90      0.00347320      -0.00043229      0.00658939
 -1.20      0.00143843      -0.00043229      0.00701179
 -1.50      -0.00075723      -0.00043229      0.00766782
 -1.80      -0.00315920      -0.00040708      0.00829322
 -2.20      -0.00656693      -0.00037347      0.00865875
 -2.40      -0.00829989      -0.00035666      0.00865049
 -2.70      -0.01086645      -0.00033145      0.00841651
 -3.00      -0.01332472      -0.00030624      0.00793182
 -3.30      -0.01560249      -0.00028102      0.00721664
 -3.60      -0.01763390      -0.00025581      0.00629343
 -3.90      -0.01936022      -0.00023060      0.00518693
 -4.20      -0.02073043      -0.00020539      0.00392412
 -4.40      -0.02142462      -0.00018858      0.00300928
 -4.70      -0.02211168      -0.00016337      0.00155732
 -5.00      -0.02235281      -0.00013816      0.00004336
 -5.30      -0.02213579      -0.00011295      -0.00148964
 -5.60      -0.02146172      -0.00008774      -0.00299571
 -5.90      -0.02034595      -0.00006253      -0.00442589
 -6.30      -0.01849200      -0.00005446      -0.00483282
 -6.60      -0.01700248      -0.00004841      -0.00508941
 -6.90      -0.01544338      -0.00004236      -0.00529579
 -7.20      -0.01383033      -0.00003631      -0.00544891
 -7.50      -0.01217918      -0.00003026      -0.00555051
 -7.80      -0.01050449      -0.00002420      -0.00560748
 -8.10      -0.00881792      -0.00001815      -0.00563220
 -8.40      -0.00712698      -0.00001210      -0.00563879
 -8.70      -0.00543537      -0.00000605      -0.00563817
 -9.00      -0.00374412      0.00000000      0.00000000
*****
      V N I T R N I      S I L Y
-----
kota [m]      M [kNm]      N [kN]      T [kN]
-----
  0.00      0.0000      0.0000      -14.2034
 -0.30      -4.2610      -0.0000      -41.3175
 -0.60      -16.6563      -0.0000      -64.0336
 -0.90      -35.8664      -0.0000      -82.2003
 -1.20      -60.5265      -0.0000      -95.5044
 -1.50      -89.1778      -128.2992      118.7964
 -1.80      -53.5389      -128.2992      111.2896
 -2.20      -9.0230      -128.2992      104.3689
 -2.40      11.8508      -128.2992      98.9791
 -2.70      41.5445      -128.2992      91.7229
 -3.00      69.0614      -128.2992      83.6069
 -3.30      94.1435      -128.2992      74.6308
 -3.60      116.5327      -128.2992      64.7949
 -3.90      135.9712      -128.2992      54.0990
 -4.20      152.2009      -128.2992      43.7405
 -4.40      160.9490      -128.2992      31.4668
 -4.70      170.3890      -128.2992      15.6945
 -5.00      175.0974      -128.2992      -1.2166
 -5.30      174.7324      -128.2992      -19.2666
 -5.60      168.9524      -128.2992      -38.4554
 -5.90      157.4158      -128.2992      -59.1823
 -6.30      133.7429      -128.2992      -75.6693
 -6.60      111.0421      -128.2992      -84.0159
 -6.90      85.8373      -128.2992      -85.3005
 -7.20      60.2472      -128.2992      -78.5781
 -7.50      36.6737      -128.2992      -63.3317
 -7.80      17.6742      -128.2992      -39.1954
 -8.10      5.9156      -128.2992      -18.5040
 -8.40      0.3644      -128.2992      -4.3821
 -8.70      -0.9502      -128.2992      3.1673
 -9.00      -0.0000
*****

```

K O T V Y

kota [m]	F [kN]
-1.50	256.5984

H O R N I N O V Y T L A K

kota [m]	SigmaX[kPa]	SigPj-SigAt[kPa]	SigAj-SigPt[kPa]
0.00	-52.6053	-0.5596	-52.6053
-0.30	-50.2112	-2.0197	-67.3686
-0.60	-42.0670	-3.9664	-87.0531
-0.90	-33.6421	-5.9131	-106.7376
-1.20	-24.6371	-7.8598	-126.4220
-1.50	-14.6667	-9.8065	-146.1065
-1.80	-11.9154	-11.9154	-167.4313
-2.20	-12.8161	-12.8161	-224.9652
-2.40	-11.9775	-11.9775	-323.0208
-2.70	-13.4373	-13.4373	-352.9975
-3.00	-15.0298	-15.0298	-385.6993
-3.30	-16.6223	-16.6223	-418.4011
-3.60	-18.2147	-18.2147	-451.1029
-3.90	-19.8072	-19.8072	-483.8047
-4.20	-23.0188	-23.0188	-441.6382
-4.40	-27.2748	-27.2748	-354.0384
-4.70	-29.2080	-29.2080	-373.5862
-5.00	-31.3169	-31.3169	-394.9110
-5.30	-33.4259	-33.4259	-416.2358
-5.60	-35.5348	-35.5348	-437.5607
-5.90	-32.9000	-32.9000	-460.6626
-6.30	-26.1697	-26.1697	-485.5415
-6.60	-15.4567	-15.4567	-508.6434
-6.90	-2.3789	-2.3789	-528.8252
-7.20	12.4489	12.4489	-548.0411
-7.50	28.2341	28.2341	-567.2570
-7.80	44.6968	44.6968	-586.4729
-8.10	38.3174	61.6558	-605.6888
-8.40	26.1516	78.9887	-624.9047
-8.70	13.9803	96.6100	-644.1206
-9.00	-11.7307	129.0932	-658.5326

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 1.388

MAX .	MOMENT Y	ZE VSECH ZAT . STAVU

kota [m]	Mmin [kNm]	Mmax [kNm]

0.00	0.0000	0.0000
-0.30	-4.2610	-0.0453
-0.60	-16.6563	-0.4178
-0.90	-35.8664	-1.4329
-1.20	-60.5265	-3.4059
-1.50	-89.1778	-6.6522
-1.80	-53.5389	-11.4871
-2.20	-20.0823	1.5992
-2.40	-24.3928	11.8508
-2.70	-27.8856	41.5445
-3.00	-28.6662	69.0614
-3.30	-27.2811	94.1435
-3.60	-23.9755	116.5327
-3.90	-18.9113	135.9712
-4.20	-11.9076	152.2009
-4.40	-6.8820	160.9490
-4.70	-1.0102	170.3890
-5.00	3.1543	175.0974
-5.30	5.9131	174.7324
-5.60	7.5475	168.9524
-5.90	8.3001	157.4158
-6.30	6.9979	133.7429
-6.60	5.8683	111.0421
-6.90	4.7358	85.8373
-7.20	3.6485	60.2472
-7.50	2.6467	36.6737
-7.80	1.7649	17.6742
-8.10	1.0330	5.9156
-8.40	0.3644	0.8782
-8.70	-0.9502	0.2424
-9.00	-0.0000	-0.0000

```

*****
Program POST      jmeno ulohy :   HLA4      ctvrtek   7.11.2024   18:05:54
*****
Koleje Hladnov, rez 4
*****
Vrchol zdi = 0. m
Pata zdi = -9. m
Sirka pasu zdi = 1.6 m
-----
1. cast zdi je od koty 0.m   do koty -6.25 m
E zdi = 210000000. kPa
I zdi = 0.000163 m^4
A zdi = 0.00727 m^2
-----
2. cast zdi je od koty -6.25m do koty -9. m
E zdi = 22500000. kPa
I zdi = 0.00636 m^4
A zdi = 0.2827 m^2
*****
P I L O T O V A      S T E N A
-----
Prumer piloty = 0.600 m
Osova vzdalenost pilot = 1.600 m
*****
Pata zdi je kloub s <-- posunem
*****
G E O L O G I E
-----
Geologie
-----
      koty[m]      gama[kN/m^3]      fi[st]      c[kPa]      k[kN/m^3]      delta[st]
-----
      0.00 - -1.00      18.00      24.00      3.00      6000.00      16.00
      -1.00 - -1.90      19.50      24.00      5.00      8000.00      16.00
      -1.90 - -2.70      18.00      28.00      3.00      10000.00      18.00
      -2.70 - -6.00      19.00      30.00      3.00      25000.00      20.00
      -6.00 - -9.00      19.50      24.00      5.00      8000.00      16.00
*****
Redukcni koeficient pro aktivni tlak ze strany terenu Kma = 1.000
-----
Redukcni koeficient pro pasivni tlak ze strany jamy Kr = 1.000
*****
Podzemni voda od koty -9. m do koty -9. m
*****
K O T V Y
-----
kota [m]      sklon [st]      delka [m]      E [kPa]      A [m^2]      sila [kN]
-----
      -1.50      30.00      10.00      210000000.0      0.0030000      200.00
*****
      kota [m]      pritizeni [kN/m^2]
-----
      0.00      10.000
*****
Min. pocet dilku zdi = 30
*****
P O P I S      Z A T E Z O V A C I C H      S T A V U
-----
      Zatezovaci stav c. 1
kota dna jamy = -1.80 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -9.00 m
-----
      Zatezovaci stav c. 2
kota dna jamy = -1.80 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -9.00 m      pridana kotva c. 1
-----
      Zatezovaci stav c. 3
kota dna jamy = -6.25 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -9.00 m
*****

```

```

*****
Program POST      jmeno ulohy :   HLA4      ctvrtek   7.11.2024   18:05:54
*****
Koleje Hladnov, rez 4
*****
Zatezovaci stav c. 1      kota dna jamy = -1.80 m
*****
      D E F O R M A C E
-----
kota [m]      u [m]      v [m]      fi [rad]
-----
  0.00      -0.00485505      -0.00000000      0.00000000
 -0.40      -0.00425573      -0.00000000      -0.00149795
 -0.70      -0.00380668      -0.00000000      -0.00149499
 -1.00      -0.00335945      -0.00000000      -0.00148483
 -1.30      -0.00291714      -0.00000000      -0.00146112
 -1.50      -0.00262740      -0.00000000      -0.00143448
 -1.80      -0.00220581      -0.00000000      -0.00137085
 -1.90      -0.00207012      -0.00000000      -0.00134224
 -2.10      -0.00180841      -0.00000000      -0.00127200
 -2.40      -0.00144633      -0.00000000      -0.00113607
 -2.70      -0.00112998      -0.00000000      -0.00096801
 -3.00      -0.00086776      -0.00000000      -0.00077750
 -3.30      -0.00066408      -0.00000000      -0.00058098
 -3.60      -0.00051814      -0.00000000      -0.00039477
 -3.90      -0.00042523      -0.00000000      -0.00022842
 -4.20      -0.00037888      -0.00000000      -0.00008418
 -4.50      -0.00037272      -0.00000000      0.00004010
 -4.80      -0.00040132      -0.00000000      0.00014821
 -5.10      -0.00046034      -0.00000000      0.00024324
 -5.40      -0.00054599      -0.00000000      0.00032552
 -5.70      -0.00065396      -0.00000000      0.00039081
 -6.00      -0.00077775      -0.00000000      0.00042876
 -6.25      -0.00088601      -0.00000000      0.00043296
 -6.60      -0.00103658      -0.00000000      0.00042618
 -6.90      -0.00116296      -0.00000000      0.00041588
 -7.20      -0.00128597      -0.00000000      0.00040417
 -7.50      -0.00140550      -0.00000000      0.00039293
 -7.80      -0.00152191      -0.00000000      0.00038348
 -8.10      -0.00163584      -0.00000000      0.00037656
 -8.40      -0.00174811      -0.00000000      0.00037234
 -8.70      -0.00185948      -0.00000000      0.00037047
 -9.00      -0.00197054      -0.00000000      0.00000000
*****
      V N I T R N I      S I L Y
-----
kota [m]      M [kNm]      N [kN]      T [kN]
-----
  0.00      0.0000      0.0000      -0.2310
 -0.40      -0.0924      0.0000      -1.6346
 -0.70      -0.5828      0.0000      -3.8499
 -1.00      -1.7377      0.0000      -6.4442
 -1.30      -3.6710      -0.0000      -8.9004
 -1.50      -5.4511      0.0000      -12.0596
 -1.80      -9.0690      -0.0000      -14.4782
 -1.90      -10.5168      -0.0000      -15.0464
 -2.10      -13.5261      -0.0000      -13.2208
 -2.40      -17.4923      -0.0000      -11.2224
 -2.70      -20.8590      -0.0000      -5.8524
 -3.00      -22.6147      -0.0000      1.2774
 -3.30      -22.2315      -0.0000      6.5666
 -3.60      -20.2616      -0.0000      8.5380
 -3.90      -17.7001      -0.0000      8.2794
 -4.20      -15.2163      -0.0000      6.9086
 -4.50      -13.1437      -0.0000      5.3899
 -4.80      -11.5268      -0.0000      4.5577
 -5.10      -10.1594      -0.0000      5.1419
 -5.40      -8.6169      -0.0000      7.7818
 -5.70      -6.2823      -0.0000      13.0127
 -6.00      -2.3785      -0.0000      14.4292
 -6.25      1.2288      -0.0000      8.8180
 -6.60      4.3151      -0.0000      3.9919
 -6.90      5.5127      -0.0000      0.5076
 -7.20      5.6650      -0.0000      -2.0320
 -7.50      5.0554      -0.0000      -3.6535
 -7.80      3.9593      -0.0000      -4.3811
 -8.10      2.6450      -0.0000      -4.2336
 -8.40      1.3749      -0.0000      -3.2240
 -8.70      0.4077      -0.0000      -1.3590
 -9.00      -0.0000
*****

```

K O T V Y

kota [m]	F [kN]
-1.50	0.0000

H O R N I N O V Y T L A K

kota [m]	SigmaX[kPa]	SigPj-SigAt[kPa]	SigAj-SigPt[kPa]
0.00	-0.7219	-0.7219	-54.2457
-0.40	-2.5063	-2.5063	-72.2898
-0.70	-4.6153	-4.6153	-93.6146
-1.00	-5.4049	-5.4049	-117.2479
-1.30	-6.1405	-6.1405	-140.3345
-1.50	-7.8979	-7.8979	-158.1051
-1.80	-7.5581	-7.5581	-174.0988
-1.90	-2.3676	-2.3676	-217.3512
-2.10	4.5641	4.5641	-249.5727
-2.40	4.1633	18.1501	-272.9399
-2.70	11.1874	44.3001	-327.6709
-3.00	14.8538	76.3666	-387.4897
-3.30	11.0191	105.0246	-418.5990
-3.60	4.1072	134.2247	-449.7084
-3.90	-0.5387	163.8084	-480.8177
-4.20	-2.8560	193.6720	-511.9270
-4.50	-3.1638	223.7455	-543.0363
-4.80	-1.7338	253.9805	-574.1457
-5.10	1.2171	284.3420	-605.2550
-5.40	5.4997	314.8045	-636.3643
-5.70	10.8978	345.3490	-667.4736
-6.00	3.2193	302.3328	-580.0776
-6.25	-11.6901	246.6645	-460.8152
-6.60	-9.2810	261.5672	-480.8318
-6.90	-7.2590	280.8806	-500.8484
-7.20	-5.2908	298.6754	-520.0643
-7.50	-3.3782	316.6444	-539.2802
-7.80	-1.5158	334.7588	-558.4961
-8.10	0.3072	352.9959	-577.7120
-8.40	2.1035	371.3372	-596.9279
-8.70	3.8854	389.7676	-616.1438
-9.00	5.6623	420.3766	-630.5557

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 7.839

```

*****
Program POST      jmeno ulohy :   HLA4      ctvrtek   7.11.2024   18:05:54
*****
Koleje Hladnov, rez 4
*****
Zatezovaci stav c. 2      kota dna jamy = -1.80 m      pridana kotva c. 1
*****
      D E F O R M A C E
-----
kota [m]      u [m]      v [m]      fi [rad]
-----
0.00      0.00341670      -0.00035436      0.00000000
-0.40      0.00324168      -0.00035436      0.00044990
-0.70      0.00309954      -0.00035436      0.00050771
-1.00      0.00292921      -0.00035436      0.00064405
-1.30      0.00270130      -0.00035436      0.00089853
-1.50      0.00249735      -0.00035436      0.00115416
-1.80      0.00209655      -0.00033471      0.00147829
-1.90      0.00194568      -0.00032816      0.00153535
-2.10      0.00163216      -0.00031506      0.00158650
-2.40      0.00116063      -0.00029541      0.00153393
-2.70      0.00072326      -0.00027576      0.00136675
-3.00      0.00034719      -0.00025611      0.00113351
-3.30      0.00004502      -0.00023646      0.00088162
-3.60      -0.00018370      -0.00021681      0.00064886
-3.90      -0.00034853      -0.00019716      0.00045836
-4.20      -0.00046401      -0.00017751      0.00032084
-4.50      -0.00054652      -0.00015786      0.00023818
-4.80      -0.00061197      -0.00013821      0.00020601
-5.10      -0.00067427      -0.00011856      0.00021529
-5.40      -0.00074398      -0.00009891      0.00025295
-5.70      -0.00082715      -0.00007926      0.00030175
-6.00      -0.00092394      -0.00005961      0.00033964
-6.25      -0.00101063      -0.00004323      0.00035013
-6.60      -0.00113273      -0.00003773      0.00034647
-6.90      -0.00123565      -0.00003301      0.00033927
-7.20      -0.00133615      -0.00002830      0.00033060
-7.50      -0.00143402      -0.00002358      0.00032205
-7.80      -0.00152950      -0.00001887      0.00031475
-8.10      -0.00162306      -0.00001415      0.00030934
-8.40      -0.00171531      -0.00000943      0.00030602
-8.70      -0.00180686      -0.00000472      0.00030454
-9.00      -0.00189815      0.00000000      0.00000000
*****
      V N I T R N I      S I L Y
-----
kota [m]      M [kNm]      N [kN]      T [kN]
-----
0.00      0.0000      0.0000      -7.9232
-0.40      -3.1693      0.0000      -22.8453
-0.70      -10.0229      0.0000      -36.8922
-1.00      -21.0906      0.0000      -52.9698
-1.30      -36.9815      0.0000      -67.7040
-1.50      -50.5223      -100.0000      90.2627
-1.80      -23.4435      -100.0000      78.2651
-1.90      -15.6170      -100.0000      68.6144
-2.10      -1.8941      -100.0000      52.6196
-2.40      13.8918      -100.0000      34.5553
-2.70      24.2584      -100.0000      15.6919
-3.00      28.9659      -100.0000      -1.5019
-3.30      28.5153      -100.0000      -13.0463
-3.60      24.6015      -100.0000      -19.1015
-3.90      18.8710      -100.0000      -21.2009
-4.20      12.5107      -100.0000      -20.5286
-4.50      6.3521      -100.0000      -17.8762
-4.80      0.9893      -100.0000      -13.6529
-5.10      -3.1066      -100.0000      -7.9345
-5.40      -5.4869      -100.0000      -0.5430
-5.70      -5.6498      -100.0000      8.8446
-6.00      -2.9964      -100.0000      12.4832
-6.25      0.1244      -100.0000      7.8291
-6.60      2.8646      -100.0000      3.8030
-6.90      4.0054      -100.0000      0.8770
-7.20      4.2685      -100.0000      -1.2772
-7.50      3.8854      -100.0000      -2.6797
-7.80      3.0815      -100.0000      -3.3490
-8.10      2.0768      -100.0000      -3.2997
-8.40      1.0869      -100.0000      -2.5419
-8.70      0.3243      -100.0000      -1.0810
-9.00      -0.0000
*****

```

K O T V Y

kota [m]	F [kN]
-1.50	200.0000

H O R N I N O V Y T L A K

kota [m]	SigmaX[kPa]	SigPj-SigAt[kPa]	SigAj-SigPt[kPa]
0.00	-24.7601	-0.7219	-54.2457
-0.40	-26.6466	-2.5063	-72.2898
-0.70	-29.2644	-4.6153	-93.6146
-1.00	-33.4950	-5.4049	-117.2479
-1.30	-36.8354	-6.1405	-140.3345
-1.50	-38.0960	-7.8979	-158.1051
-1.80	-37.4925	-7.5581	-174.0988
-1.90	-40.2112	-2.3676	-217.3512
-2.10	-39.9869	4.5641	-249.5727
-2.40	-37.6340	18.1501	-272.9399
-2.70	-39.2988	44.3001	-327.6709
-3.00	-35.8205	76.3666	-387.4897
-3.30	-24.0508	105.0246	-418.5990
-3.60	-12.6150	134.2247	-449.7084
-3.90	-4.3737	163.8084	-480.8177
-4.20	1.4006	193.6720	-511.9270
-4.50	5.5258	223.7455	-543.0363
-4.80	8.7985	253.9805	-574.1457
-5.10	11.9134	284.3420	-605.2550
-5.40	15.3990	314.8045	-636.3643
-5.70	19.5575	345.3490	-667.4736
-6.00	8.2696	302.3328	-580.0776
-6.25	-9.6961	246.6645	-460.8152
-6.60	-7.7425	261.5672	-480.8318
-6.90	-6.0958	280.8806	-500.8484
-7.20	-4.4879	298.6754	-520.0643
-7.50	-2.9219	316.6444	-539.2802
-7.80	-1.3943	334.7588	-558.4961
-8.10	0.1027	352.9959	-577.7120
-8.40	1.5787	371.3372	-596.9279
-8.70	3.0435	389.7676	-616.1438
-9.00	4.5042	420.3766	-630.5557

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 10.672

```

*****
Program POST      jmeno ulohy :   HLA4      ctvrtek   7.11.2024   18:05:54
*****
Koleje Hladnov, rez 4
*****
Zatezovaci stav c. 3      kota dna jamy = -6.25 m
*****
D E F O R M A C E

```

kota [m]	u [m]	v [m]	fi [rad]
0.00	0.01055715	-0.00046948	0.00000000
-0.40	0.00821735	-0.00046948	0.00587656
-0.70	0.00643881	-0.00046948	0.00600183
-1.00	0.00460025	-0.00046948	0.00628704
-1.30	0.00264463	-0.00046948	0.00679182
-1.50	0.00124010	-0.00046948	0.00727467
-1.80	-0.00105089	-0.00044344	0.00795064
-1.90	-0.00185431	-0.00043476	0.00811265
-2.10	-0.00350215	-0.00041741	0.00834580
-2.40	-0.00603195	-0.00039137	0.00847652
-2.70	-0.00856313	-0.00036534	0.00835795
-3.00	-0.01102354	-0.00033931	0.00800766
-3.30	-0.01334643	-0.00031327	0.00744437
-3.60	-0.01547089	-0.00028724	0.00668836
-3.90	-0.01734240	-0.00026121	0.00576189
-4.20	-0.01891341	-0.00023517	0.00468927
-4.50	-0.02014398	-0.00020914	0.00349680
-4.80	-0.02100234	-0.00018311	0.00221279
-5.10	-0.02146553	-0.00015707	0.00086755
-5.40	-0.02151998	-0.00013104	-0.00050656
-5.70	-0.02116214	-0.00010501	-0.00187523
-6.00	-0.02039903	-0.00007897	-0.00320208
-6.25	-0.01946634	-0.00005728	-0.00424777
-6.60	-0.01792312	-0.00004999	-0.00456281
-6.90	-0.01651896	-0.00004374	-0.00479102
-7.20	-0.01505308	-0.00003749	-0.00497349
-7.50	-0.01353969	-0.00003124	-0.00510770
-7.80	-0.01199309	-0.00002499	-0.00519571
-8.10	-0.01042619	-0.00001875	-0.00524451
-8.40	-0.00884911	-0.00001250	-0.00526597
-8.70	-0.00726809	-0.00000625	-0.00527262
-9.00	-0.00568611	0.00000000	0.00000000

V N I T R N I S I L Y

kota [m]	M [kNm]	N [kN]	T [kN]
0.00	0.0000	0.0000	-17.3586
-0.40	-6.9434	0.0000	-48.9990
-0.70	-21.6431	0.0000	-72.6629
-1.00	-43.4420	0.0000	-94.3553
-1.30	-71.7486	0.0000	-108.9081
-1.50	-93.5302	-132.4845	109.3467
-1.80	-60.7262	-132.4845	105.4065
-1.90	-50.1855	-132.4845	102.8209
-2.10	-29.6214	-132.4845	98.0428
-2.40	-0.2085	-132.4845	91.5818
-2.70	27.2660	-132.4845	84.6763
-3.00	52.6689	-132.4845	77.3480
-3.30	75.8733	-132.4845	69.2554
-3.60	96.6499	-132.4845	60.3983
-3.90	114.7694	-132.4845	50.7768
-4.20	130.0025	-132.4845	40.3910
-4.50	142.1198	-132.4845	29.2407
-4.80	150.8920	-132.4845	17.3261
-5.10	156.0898	-132.4845	4.6471
-5.40	157.4839	-132.4845	-8.7964
-5.70	154.8450	-132.4845	-23.0042
-6.00	147.9438	-132.4845	-38.1484
-6.25	138.4067	-132.4845	-54.8555
-6.60	119.2073	-132.4845	-68.9950
-6.90	98.5088	-132.4845	-76.4800
-7.20	75.5648	-132.4845	-76.9951
-7.50	52.4662	-132.4845	-69.8950
-7.80	31.4977	-132.4845	-54.7918
-8.10	15.0602	-132.4845	-32.1586
-8.40	5.4126	-132.4845	-14.9277
-8.70	0.9343	-132.4845	-3.1144
-9.00	-0.0000		

K O T V Y

kota [m] F [kN]

-1.50 264.9691

H O R N I N O V Y T L A K

kota [m] SigmaX[kPa] SigPj-SigAt[kPa] SigAj-SigPt [kPa]

0.00 -54.2457 -0.7219 -54.2457
-0.40 -56.5006 -2.5063 -72.2898
-0.70 -49.3000 -4.6153 -93.6146
-1.00 -45.1923 -5.4049 -117.2479
-1.30 -36.3820 -6.1405 -140.3345
-1.50 -28.0380 -7.8979 -158.1051
-1.80 -12.3130 -9.4796 -174.0988
-1.90 -10.7734 -10.7734 -217.3512
-2.10 -11.9452 -11.9452 -249.5727
-2.40 -13.4604 -13.4604 -273.2037
-2.70 -14.3865 -14.3865 -329.2939
-3.00 -15.2672 -15.2672 -390.5758
-3.30 -16.8597 -16.8597 -423.2777
-3.60 -18.4522 -18.4522 -455.9795
-3.90 -20.0447 -20.0447 -488.6813
-4.20 -21.6372 -21.6372 -521.3831
-4.50 -23.2297 -23.2297 -554.0849
-4.80 -24.8222 -24.8222 -586.7867
-5.10 -26.4147 -26.4147 -619.4885
-5.40 -28.0071 -28.0071 -652.1903
-5.70 -29.5996 -29.5996 -684.8921
-6.00 -34.4186 -34.4186 -600.7074
-6.25 -34.8065 -34.8065 -485.3593
-6.60 -27.1915 -27.1915 -507.5726
-6.90 -15.5936 -15.5936 -529.7860
-7.20 -1.0732 -1.0732 -550.3193
-7.50 14.7919 14.7919 -569.5352
-7.80 31.4650 31.4650 -588.7511
-8.10 47.1526 48.6871 -607.9670
-8.40 35.8976 66.2984 -627.1829
-8.70 24.6111 84.1955 -646.3988
-9.00 12.9765 113.4912 -660.8107

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 1.257

MA X .	M O M E N T Y	Z E V S E C H Z A T . S T A V U

kota [m]	Mmin [kNm]	Mmax [kNm]

0.00	0.0000	0.0000
-0.40	-6.9434	-0.0924
-0.70	-21.6431	-0.5828
-1.00	-43.4420	-1.7377
-1.30	-71.7486	-3.6710
-1.50	-93.5302	-5.4511
-1.80	-60.7262	-9.0690
-1.90	-50.1855	-10.5168
-2.10	-29.6214	-1.8941
-2.40	-17.4923	13.8918
-2.70	-20.8590	27.2660
-3.00	-22.6147	52.6689
-3.30	-22.2315	75.8733
-3.60	-20.2616	96.6499
-3.90	-17.7001	114.7694
-4.20	-15.2163	130.0025
-4.50	-13.1437	142.1198
-4.80	-11.5268	150.8920
-5.10	-10.1594	156.0898
-5.40	-8.6169	157.4839
-5.70	-6.2823	154.8450
-6.00	-2.9964	147.9438
-6.25	0.1244	138.4067
-6.60	2.8646	119.2073
-6.90	4.0054	98.5088
-7.20	4.2685	75.5648
-7.50	3.8854	52.4662
-7.80	3.0815	31.4977
-8.10	2.0768	15.0602
-8.40	1.0869	5.4126
-8.70	0.3243	0.9343
-9.00	-0.0000	-0.0000

```

*****
Program POST      jmeno ulohy :   HLA5      patek  8.11.2024  11:38:12
*****
Koleje Hladnov, rez 5
*****
Vrchol zdi = 0. m
Pata zdi = -11. m
Sirka pasu zdi = 0.9 m
-----
1. cast zdi je od koty 0.m do koty -11. m
E zdi = 28500000. kPa
I zdi = 0.01553 m^4
A zdi = 0.4418 m^2
*****
P I L O T O V A      S T E N A
-----
Prumer piloty = 0.750 m
Osova vzdalenost pilot = 0.900 m
*****
Pata zdi je kloub s <-- posunem
*****
G E O L O G I E
-----
Geologie
-----
      koty[m]      gama[kN/m^3]      fi[st]      c[kPa]      k[kN/m^3]      delta[st]
-----
      0.00 - -2.00      18.00      24.00      3.00      6000.00      16.00
      -2.00 - -3.80      18.00      28.00      3.00      10000.00      18.00
      -3.80 - -8.80      19.50      24.00      5.00      8000.00      16.00
      -8.80 --11.00      19.00      30.00      3.00      25000.00      20.00
*****
Redukcni koeficient pro aktivni tlak ze strany terenu Kma = 1.000
-----
Redukcni koeficient pro pasivni tlak ze strany jamy Kr = 1.000
*****
Podzemni voda od koty -11. m do koty -11. m
*****
Zed neni osazena kotvami
*****
      kota [m]      pritizeni [kN/m^2]
-----
      0.00      10.000
*****
Min. pocet dilku zdi = 30
*****
P O P I S      Z A T E Z O V A C I C H      S T A V U
-----
      Zatezovaci stav c. 1
kota dna jamy = -4.62 m      pritizeni dna jamy = 0.00 kN/m^2
kota vody ze strany jamy = -11.00 m
*****

```

Program POST jmeno ulohy : HLA5 patek 8.11.2024 11:38:12

Koleje Hladnov, rez 5

Zatezovaci stav c. 1 kota dna jamy = -4.62 m

D E F O R M A C E

kota [m]	u [m]	v [m]	fi [rad]
0.00	-0.02858013	-0.00000000	0.00000000
-0.40	-0.02722319	-0.00000000	-0.00339235
-0.80	-0.02586628	-0.00000000	-0.00339211
-1.20	-0.02450960	-0.00000000	-0.00339113
-1.60	-0.02315359	-0.00000000	-0.00338855
-2.00	-0.02179913	-0.00000000	-0.00338320
-2.60	-0.01977361	-0.00000000	-0.00336649
-3.00	-0.01843057	-0.00000000	-0.00334746
-3.40	-0.01709681	-0.00000000	-0.00331969
-3.80	-0.01577628	-0.00000000	-0.00328093
-4.22	-0.01440935	-0.00000000	-0.00322550
-4.62	-0.01313253	-0.00000000	-0.00315553
-5.20	-0.01133984	-0.00000000	-0.00301889
-5.60	-0.01015528	-0.00000000	-0.00290100
-6.00	-0.00902089	-0.00000000	-0.00276915
-6.40	-0.00794099	-0.00000000	-0.00262960
-6.80	-0.00691751	-0.00000000	-0.00248785
-7.20	-0.00595038	-0.00000000	-0.00234855
-7.60	-0.00503783	-0.00000000	-0.00221555
-8.00	-0.00417669	-0.00000000	-0.00209195
-8.40	-0.00336274	-0.00000000	-0.00197983
-8.80	-0.00259122	-0.00000000	-0.00187976
-9.40	-0.00150168	-0.00000000	-0.00175876
-9.80	-0.00081012	-0.00000000	-0.00170279
-10.20	-0.00013651	-0.00000000	-0.00166886
-10.60	0.00052750	-0.00000000	-0.00165390
-11.00	0.00118815	0.00000000	0.00000000

V N I T R N I S I L Y

kota [m]	M [kNm]	N [kN]	T [kN]
0.00	0.0000	0.0000	-0.1299
-0.40	-0.0520	0.0000	-1.0906
-0.80	-0.4882	0.0000	-2.9857
-1.20	-1.6825	0.0000	-5.8152
-1.60	-4.0086	0.0000	-9.5792
-2.00	-7.8403	-0.0000	-14.9624
-2.60	-16.8177	-0.0000	-21.2055
-3.00	-25.2999	-0.0000	-27.0926
-3.40	-36.1370	-0.0000	-33.7731
-3.80	-49.6462	-0.0000	-41.7796
-4.22	-67.1936	-0.0000	-51.1130
-4.62	-87.6388	-0.0000	-57.3495
-5.20	-120.9015	-0.0000	-47.7154
-5.60	-139.9877	-0.0000	-29.5385
-6.00	-151.8030	-0.0000	-13.0785
-6.40	-157.0344	-0.0000	0.9249
-6.80	-156.6645	-0.0000	12.6344
-7.20	-151.6107	-0.0000	22.2121
-7.60	-142.7259	-0.0000	29.8152
-8.00	-130.7998	-0.0000	33.7136
-8.40	-117.3144	-0.0000	32.9237
-8.80	-104.1449	-0.0000	49.6250
-9.40	-74.3699	-0.0000	62.1750
-9.80	-49.4999	-0.0000	59.7670
-10.20	-25.5931	-0.0000	45.2340
-10.60	-7.4995	-0.0000	18.7488
-11.00	-0.0000		

H O R N I N O V Y T L A K

kota [m]	SigmaX[kPa]	SigPj-SigAt[kPa]	SigAj-SigPt[kPa]
0.00	-0.7219	-0.7219	-54.2457
-0.40	-2.6686	-2.6686	-73.9301
-0.80	-5.2642	-5.2642	-100.1761
-1.20	-7.8598	-7.8598	-126.4220
-1.60	-10.4554	-10.4554	-152.6680
-2.00	-11.9627	-11.9627	-216.1066
-2.60	-13.8736	-13.8736	-279.6486
-3.00	-16.3530	-16.3530	-318.3175
-3.40	-18.5569	-18.5569	-352.6900
-3.80	-21.6977	-21.6977	-344.4097
-4.22	-25.2939	-25.2939	-334.0077
-4.62	-14.1417	-14.1417	-365.9949
-5.20	21.8460	21.8460	-400.8255
-5.60	50.4914	50.4914	-431.4548
-6.00	45.7221	76.1840	-457.0760
-6.40	38.8984	101.8465	-482.6972

-6.80	32.5262	127.4946	-508.3184
-7.20	26.6047	153.1347	-533.9396
-7.60	21.1198	178.7699	-559.5609
-8.00	10.8289	204.4019	-585.1821
-8.40	-2.1943	230.0316	-610.8033
-8.80	37.1140	368.3083	-863.3801
-9.40	27.8890	488.5745	-1060.4332
-9.80	-6.6890	535.5916	-1107.0971
-10.20	-40.3695	577.1879	-1148.5762
-10.60	-73.5699	618.7617	-1190.0553
-11.00	-104.1601	651.0737	-1221.1646

Bezpecnost paty zdi proti dosazeni plneho pasivniho tlaku je 5.633

Projekt

Akce : Koleje Hladnov
Část : Ostrava
Datum : 24.10.2024

Norma

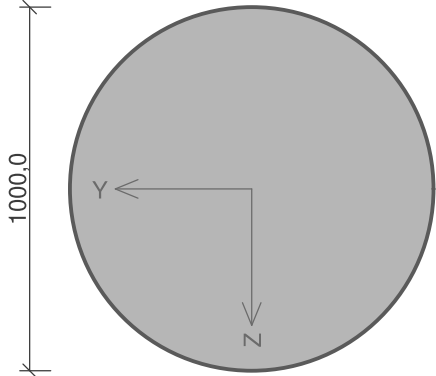
Norma EN 1992-1-1/Česko.

1 Řez 1

1.1 Vstupní data

Typ prvku: sloup
Prostředí: XC2, XA1

Průřez



Materiály

Beton: C 25/30
 $f_{ck} = 25,0 \text{ MPa}$; $f_{ctm} = 2,6 \text{ MPa}$; $E_{cm} = 31000 \text{ MPa}$

Ocel podélná: B500B
 $f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$

Ocel příčná: B500
 $f_{yk} = 500,0 \text{ MPa}$; $E_s = 200000 \text{ MPa}$

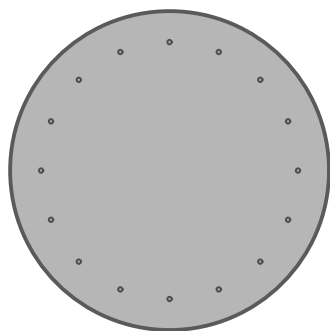
Vnitřní síly - základní návrhová (MSÚ)

č.	Název zatěžovacího případu	N_{Ed} [kN]	M_{Edy} [kNm]	V_{Edz} [kN]	QP koef. [-]
1	Zat. případ 1	-2540,00	690,00	300,00	1,000
2	Zat. případ 2	-1525,00	590,00	300,00	1,000
3	Zat. případ 3	-3230,00	825,00	270,00	1,000
4	Zat. případ 4	-1940,00	695,00	270,00	1,000
5	Zat. případ 5	-785,00	445,00	235,00	1,000
6	Zat. případ 6	-470,00	415,00	235,00	1,000
7	Zat. případ 7	-1225,00	475,00	200,00	1,000
8	Zat. případ 8	-735,00	425,00	200,00	1,000
9	Zat. případ 9	-1600,00	550,00	235,00	1,000
10	Zat. případ 10	-960,00	485,00	235,00	1,000
11	Zat. případ 11	-1680,00	600,00	235,00	1,000
12	Zat. případ 12	-1010,00	535,00	235,00	1,000
13	Zat. případ 13	-1960,00	636,00	270,00	1,000
14	Zat. případ 14	-1175,00	560,00	270,00	1,000
15	Zat. případ 15	-2250,00	695,00	270,00	1,000
16	Zat. případ 16	-1350,00	605,00	270,00	1,000
17	Zat. případ 17	-550,00	310,00	205,00	1,000
18	Zat. případ 18	-330,00	290,00	205,00	1,000
19	Zat. případ 19	-520,00	252,00	235,00	1,000
20	Zat. případ 20	-310,00	230,00	235,00	1,000

Podélná výztuž

Kruh:16ks × profil 14, krytí 90,0 mm

16x14-kr.90,0



S tlačnou výztuží je počítáno.

Smyková výztuž**Obvodové třmínky**

Profil: 6 mm; Vzdálenost: 100,0 mm; Krytí: 84,0 mm

Minimální krytí

Třída konstrukce: S4

$$c_{\min} = \max(c_{\min,b}; c_{\min,dur}; 10) = \max(14; 25; 10) = 25 \text{ mm}$$

$$c_{\text{nom}} = c_{\min} + \Delta c_{\text{dev}} = 25 + 10 = 35 \text{ mm}$$

1.2 Výsledky**Posouzení min. a max. stupně vyztužení**

Sloup (celková výztuž):

$$\rho_s = 0,00315 \geq \rho_{s,\min} = 0,002 \Rightarrow \text{Vyhovuje}$$

$$\rho_s = 0,00315 \leq \rho_{s,\max} = 0,04 \Rightarrow \text{Vyhovuje}$$

Posouzení konstrukčních zásad třmínků

$$\text{Minimální průměr třmínků} \quad d = 6 \text{ mm} \Rightarrow \text{Vyhovuje}$$

$$\text{Maximální vzdálenost třmínků} \quad s_{cl,\max} = 210,0 \text{ mm} \Rightarrow \text{Vyhovuje}$$

Posouzení mezního stavu únosnosti

č.	Název	N_{Ed} [kN]	N_{Rd} [kN]	M_{Edy} [kNm]	M_{Rdy} [kNm]	V_{Edz} [kN]	V_{Rdz} [kN]	Posouzení
1	Zat. případ 1	-2540,00	-14008,82	690,00	1186,38	300,00	470,75	Vyhovuje
2	Zat. případ 2	-1525,00	-14008,82	590,00	941,57	300,00	341,55	Vyhovuje
3	Zat. případ 3	-3230,00	-14008,82	825,00	1315,73	270,00	504,80	Vyhovuje
4	Zat. případ 4	-1940,00	-14008,82	695,00	1050,65	270,00	382,43	Vyhovuje
5	Zat. případ 5	-785,00	-14008,82	445,00	724,54	235,00	336,20	Vyhovuje
6	Zat. případ 6	-470,00	-14008,82	415,00	619,34	235,00	332,31	Vyhovuje
7	Zat. případ 7	-1225,00	-14008,82	475,00	857,24	200,00	340,06	Vyhovuje
8	Zat. případ 8	-735,00	-14008,82	425,00	708,18	200,00	335,70	Vyhovuje
9	Zat. případ 9	-1600,00	-14008,82	550,00	961,91	235,00	341,84	Vyhovuje
10	Zat. případ 10	-960,00	-14008,82	485,00	779,61	235,00	338,33	Vyhovuje
11	Zat. případ 11	-1680,00	-14008,82	600,00	983,31	235,00	345,83	Vyhovuje
12	Zat. případ 12	-1010,00	-14008,82	535,00	794,45	235,00	338,68	Vyhovuje
13	Zat. případ 13	-1960,00	-14008,82	636,00	1055,68	270,00	385,30	Vyhovuje
14	Zat. případ 14	-1175,00	-14008,82	560,00	842,80	270,00	339,76	Vyhovuje
15	Zat. případ 15	-2250,00	-14008,82	695,00	1124,89	270,00	427,55	Vyhovuje
16	Zat. případ 16	-1350,00	-14008,82	605,00	892,89	270,00	340,75	Vyhovuje
17	Zat. případ 17	-550,00	-14008,82	310,00	646,52	205,00	333,47	Vyhovuje
18	Zat. případ 18	-330,00	-14008,82	290,00	571,08	205,00	329,99	Vyhovuje

č.	Název	N_{Ed} [kN]	N_{Rd} [kN]	M_{Edy} [kNm]	M_{Rdy} [kNm]	V_{Edz} [kN]	V_{Rdz} [kN]	Posouzení
19	Zat. případ 19	-520,00	-14008,82	252,00	636,36	235,00	333,05	Vyhovuje
20	Zat. případ 20	-310,00	-14008,82	230,00	564,12	235,00	329,63	Vyhovuje

Mezní stav únosnosti VYHOVUJE

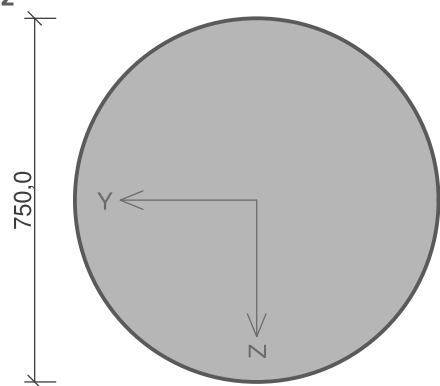
Celkové posouzení - Průřez VYHOVUJE

2 Řez 3

2.1 Vstupní data

Typ prvku: sloup
Prostředí: XC2, XA1

Průřez



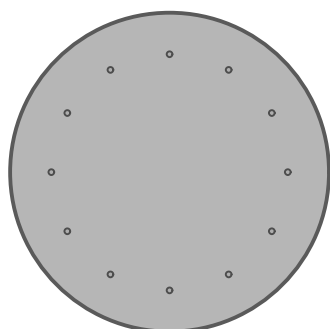
Materiály

Beton: C 25/30 $f_{ck} = 25,0$ MPa; $f_{ctm} = 2,6$ MPa; $E_{cm} = 31000$ MPa**Ocel podélná: B500B** $f_{yk} = 500,0$ MPa; $E_s = 200000$ MPa**Ocel příčná: B500** $f_{yk} = 500,0$ MPa; $E_s = 200000$ MPa

Vnitřní síly - základní návrhová (MSÚ)

č.	Název zatěžovacího případu	N_{Ed} [kN]	M_{Edy} [kNm]	V_{Edz} [kN]	QP koef. [-]
1	Zat. případ 1	-1700,00	425,00	195,00	1,000
2	Zat. případ 2	-1020,00	360,00	195,00	1,000

Podélná výztuž

Kruh: 12ks × profil 14, krytí 90,0 mm
12x14-kr.90,0

S tlačnou výztuží je počítáno.

Smyková výztuž

Průřez bez smykové výztuže.

Minimální krytí

Třída konstrukce: S4

 $c_{min} = \max(c_{min,b}; c_{min,dur}; 10) = \max(14; 25; 10) = 25$ mm

$$c_{nom} = c_{min} + \Delta c_{dev} = 25 + 10 = 35 \text{ mm}$$

2.2 Výsledky

Posouzení min. a max. stupně vyztužení

Sloup (celková výztuž):

$$\rho_s = 0,0042 \geq \rho_{s,min} = 0,002 \Rightarrow \text{Vyhovuje}$$

$$\rho_s = 0,0042 \leq \rho_{s,max} = 0,04 \Rightarrow \text{Vyhovuje}$$

Posouzení mezního stavu únosnosti

č.	Název	N_{Ed} [kN]	N_{Rd} [kN]	M_{Edy} [kNm]	M_{Rdy} [kNm]	V_{Edz} [kN]	V_{Rdz} [kN]	Posouzení
1	Zat. případ 1	-1700,00	-8064,69	425,00	566,23	195,00	287,98	Vyhovuje
2	Zat. případ 2	-1020,00	-8064,69	360,00	464,27	195,00	215,44	Vyhovuje

Mezní stav únosnosti VYHOVUJE

Celkové posouzení - Průřez VYHOVUJE