

ZATĚŽOVACÍ STAVY - KOMBINACE 1-4 (EXTRÉMNÍ ÚČINKY)

-40-

PONTEX s.r.o., PRAHA, Bezova 1658

str.

DEFOR plus V93 (c) FEM consulting Brno 15/10 1993

list 1

18. kveten 1994 (13:22)

AB - POSOUZENÍ ROZHODUJÍCÍCH PRUTU 5,6,7,16

PRUTY (5), (6), (7)

a (16)

KOMB-KOMBINACE 1 - 1.1xSTALE

SUPER-PRUTY 5

Seznam vyhodnocovanych prutu:

5 -5

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT 5 max N-x
x= 8.15 -1847.84 -94.01 -375.72 1 2 3 4 6

PRUT 5 min N-x
x= .00 -6172.50 -275.73 976.99 1 2 3 4 5 7 8 12

PRUT 5 max M-z
x= .00 -4664.46 -345.68 1145.48 1 2 3 4 5 7 8 15

PRUT 5 min M-z
x= 8.15 -4154.12 -369.35 -1749.56 1 2 3 4 5 6 7 8 15

KOMB-KOMBINACE 1 - 1.1xSTALE

SUPER-PRUTY 6

Seznam vyhodnocovanych prutu:

6 -6

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT 6 max N-x
x= 3.58 -966.20 -224.42 -312.85 1 2 3 4 6 7

PRUT 6 min N-x
x= .00 -2768.32 -57.95 -234.11 1 2 3 4 5 8 12

PRUT 6 max M-z
x= .00 -2445.03 -400.19 1154.39 1 2 3 4 7 12

PRUT 6 min M-z
x= .00 -2019.12 375.77 -1435.75 1 2 3 4 5 6 8 15

KOMB-KOMBINACE 1 - 1.1xSTALE

SUPER-PRUT 7

Seznam vyhodnocovanych prutu:

7 -7

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT 7 max N-x

x= 1.45 -2153.38 38.50 -195.02 1 2 3 4

PRUT 7 min N-x

x= .00 -6338.85 115.26 -995.60 1 2 3 4 5 6 7 8 11

PRUT 7

max M-z

x= 1.45 -2497.59 131.20 -80.54 1 2 3 4 12

PRUT 7

min M-z

x= .00 -6295.56 158.27 -1015.05 1 2 3 4 5 7 8 10

KOMB-KOMBINACE 1 - 1.1xSTALE

SUPER-PRUT 16

Seznam vyhodnocovanych prutu:

16 -16

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT 16 max N-x

x= 10.28 -1412.97 -181.11 231.28 1 2 3 4 8

PRUT 16 min N-x

x= .00 -3624.95 220.68 -1244.38 1 2 3 4 5 6 7 10

PRUT 16

max M-z

x= 10.28 -1751.83 277.84 1400.22 1 2 3 4 5 6 7

PRUT 16

min M-z

x= .00 -3315.74 1302.37 -2575.28 1 2 3 4 5 6 7 8 15

KOMB-KOMBINACE 2 - 0.9xSTALE

SUPER-PRUT 5

Seznam vyhodnocovanych prutu:

5 -5

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT 5 max N-x

x= 8.15 -1481.76 -80.77 -313.47 1 2 3 4 6

PRUT 5 min N-x

x= .00 -5729.51 -262.48 925.30 1 2 3 4 5 7 8 12

PRUT 5

max M-z

x= .00 -4221.47 -332.43 1093.79 1 2 3 4 5 7 8 15

PRUT 5

min M-z

x= 8.15 -3788.04 -356.10 -1687.31 1 2 3 4 5 6 7 8 15

KOMB-KOMBINACE 2 - 0.9xSTALE

SUPER-PRUT 6

Seznam vyhodnocovanych prutu:

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT	6	max N-x								
x=	3.58	-762.99	-200.78	-199.77	1	2	3	4	6	7

PRUT	6	min N-x								
x=	.00	-2520.35	-34.31	-205.67	1	2	3	4	5	8 12

PRUT	6			max M-z						
x=	.00	-2197.06	-376.55	1182.83	1	2	3	4	7	12

PRUT	6			min M-z						
x=	.00	-1771.15	399.41	-1407.30	1	2	3	4	5	6 8 15

KOMB-KOMBINACE 2 - 0.9xSTALE

SUPER-PRUTY 7

Seznam vyhodnocovanych prutu:

7 -7

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT	7	max N-x							
x=	1.45	-1745.51	31.32	-156.75	1	2	3	4	

PRUT	7	min N-x							
x=	.00	-5873.86	108.08	-946.92	1	2	3	4	5 6 7 8 11

PRUT	7			max M-z					
x=	1.45	-2089.72	124.02	-42.27	1	2	3	4	12

PRUT	7			min M-z					
x=	.00	-5830.57	151.09	-966.37	1	2	3	4	5 7 8 10

KOMB-KOMBINACE 2 - 0.9xSTALE

SUPER-PRUTY 16

Seznam vyhodnocovanych prutu:

16 -16

VNITRNI SILY V PRUTECH (kN, kNm)

N-x Q-y M-z Kombinace

PRUT	16	max N-x							
x=	10.28	-1140.27	-204.75	83.71	1	2	3	4	8

PRUT	16	min N-x							
x=	.00	-3223.74	197.03	-1148.92	1	2	3	4	5 6 7 10

PRUT	16			max M-z					
x=	10.28	-1479.12	254.20	1252.65	1	2	3	4	5 6 7

PRUT	16			min M-z					
x=	.00	-2914.54	1278.73	-2479.82	1	2	3	4	5 6 7 8 15

ZATEŽOVACÍ STAVY - KOMBINACE 5-8 (POUZE BH)

RADA AB - ROVINNÝ MODEL (BAGHOUSE)

SUPERPOSICE ZATEŽOVACÍCH STAVŮ - POPIS KOMBINACÍ

NAZEV :

KOMB-EXTREMNI ÚČINKY BH

Císlo kombinace: 1

POPIS SUPERPOSICI ZATEŽOVACÍCH STAVŮ

ZAT. STAVY	1	2	3	4	5	6	7	8
SKUPINY :	1	1	1	1	1	1	1	1
KOEFICIENTY:	1.	1.	1.	1.	1.	1.	1.	1.

SEZNAM ZATEŽOVACÍCH STAVŮ

1 - 2 Y+
 2 - 2 Y-
 3 - 2 X+
 4 - 2 X-
 5 - 3 Y+
 6 - 3 Y-
 7 - 3 X+
 8 - 3 X-

ž.s.k. 5 → N = 0,0 M = 0,0

RADA AB - ROVINNY MODEL

KOMB-EXTREMNI UCINKY BH

SUPER-PRUT 5

Seznam vyhodnocovanych prutu:

5 -5

VNITRNI SILY V PRUTECH (kN, kNm)

		N-x	Q-y	M-z	Kombinace
PRUT	5	min N-x			
x=	.00	-1556.75	34.22	-61.31	4
PRUT	5			max M-z	
x=	8.15	-1556.75	34.22	217.56	4
PRUT	5			min M-z	
x=	8.15	-48.70	-35.73	-184.05	7

KOMB-EXTREMNI UCINKY BH

SUPER-PRUT 6

Seznam vyhodnocovanych prutu:

6 -6

VNITRNI SILY V PRUTECH (kN, kNm)

		N-x	Q-y	M-z	Kombinace
PRUT	6	min N-x			
x=	.00	-1223.64	-159.80	634.62	4
PRUT	6			max M-z	
x=	.00	-1223.64	-159.80	634.62	4
PRUT	6			min M-z	
x=	.00	-483.50	239.77	-505.28	7

RADA AB - ROVINNY MODEL

KOMB-EXTREMNI UCINKY BH

SUPER-PRUT 7

Seznam vyhodnocovanych prutu:

7 -7

VNITRNI SILY V PRUTECH (kN, kNm)

		N-x	Q-y	M-z	Kombinace
PRUT	7	min N-x			
x=	.00	-782.86	33.54	-20.89	3
PRUT	7			max M-z	
x=	1.45	-344.21	92.70	114.48	4
PRUT	7			min M-z	
x=	.00	-772.67	62.15	-26.04	2

KOMB-EXTREMNI UCINKY BH

SUPER-PRUT 16

Seznam vyhodnocovanych prutu:

16 -16

VNITRNI SILY V PRUTECH (kN, kNm)

		N-x	Q-y	M-z	Kombinace
PRUT	16	min N-x			
x=	.00	-1166.38	-57.17	211.63	2
PRUT	16			max M-z	
x=	.00	-787.26	-67.53	340.01	4
PRUT	16			min M-z	
x=	10.28	-1166.38	-57.17	-376.05	2

VSTUPNÍ DATA PRO VÝPOČET INTERAKČNÍCH DIAGRAMŮ

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KONTROLA VSTUPNÍCH DAT : ▶ POKRACUJ O P R A V A

Zatizení						Materialy
M [kNm]	-313.47	976.99	1145.48	-1749.56	0.00	Beton B 20
N [kN]	-1481.76	-6172.50	-4664.46	-4154.12	0.00	Ocel 10 512 R
M [kNm]	-61.31	217.56	-184.05	0.00		
N [kN]	-1556.75	-1556.75	-48.70	0.00		

Geometrie [m]

Vyztužení

Vyztuz he[i] (m)

b = 0.70

Per 5

h = 1.00

V-V'

6φ 18 + 4φ 6.5	0.050
5φ 10	0.275
5φ 10	0.500
5φ 10	0.725
6φ 18 + 4φ 6.5	0.950

Soucinitele gama

GamaB = 1.000

GamaS = 1.000

Stupne vyztužení

Misc min = 0.0012 Mist min = 0.0016

GamaU = 0.981

Misc max = 0.0300 Mist max = 0.0300

→:Posuv —:Vyber ESC:Skonci

KONTROLA VSTUPNÍCH DAT : ▶ POKRACUJ

O P R A V A

Zatizení						Materialy
M [kNm]	-199.77	-234.11	1182.83	-1435.75	0.00	Beton B 20
N [kN]	-762.99	-2768.32	-2197.55	-2019.12	0.00	Ocel 10 512 R
M [kNm]	634.62	634.62	-505.28	0.00		
N [kN]	-1223.64	-1223.64	-483.50	0.00		

Geometrie [m]

Vyztužení

Vyztuz he[i] (m)

b = 0.70

Per 6

h = 1.00

V-V'

6φ 18 + 4φ 6.5	0.050
5φ 10	0.275
5φ 10	0.500
5φ 10	0.725
6φ 18 + 4φ 6.5	0.950

Soucinitele gama

GamaB = 1.000

GamaS = 1.000

GamaU = 0.981

Stupne vyztužení

Misc min = 0.0012 Mist min = 0.0016
Misc max = 0.0300 Mist max = 0.0300

→:Posuv —:Vyber ESC:Skonci

KONTROLA VSTUPNICH DAT : ▶ POKRACUJ

OPRAVA

Zatizeni						Materialy	
M [kNm]	-156.75	-995.60	-80.45	-1015.05	0.00	Beton B 20	
N [kN]	-1745.51	-6338.85	-2497.59	-6295.56	0.00	Ocel 10 512 R	
M [kNm]	-20.89	114.48	-26.04	0.00			
N [kN]	-782.86	-344.21	-772.67	0.00			

Geometrie [m]

Vyztuzeni

Vyztuz

he[i] (m)

b = 0.70

Plur

(7)

h = 1.00

V-V'

6φ 18 + 4φ 6.5

0.050

5φ 10

0.275

5φ 10

0.500

5φ 10

0.725

6φ 18 + 4φ 6.5

0.950

Soucinitele gama

GamaB = 1.000

GamaS = 1.000

GamaU = 0.981

Stupne vyztuzeni

Misc min = 0.0012 Mist min = 0.0016

Misc max = 0.0300 Mist max = 0.0300

→:Posuv ┘:Vyber ESC:Skonci

KONTROLA VSTUPNICH DAT : ▶ POKRACUJ

OPRAVA

Zatizeni						Materialy	
M [kNm]	83.71	-1244.38	1400.22	-2575.28	0.00	Beton B 20	
N [kN]	-1140.27	-3624.95	-1751.83	-3315.74	0.00	Ocel 10 512 R	
M [kNm]	211.63	340.01	-376.05	0.00			
N [kN]	-1166.38	-787.26	-1166.38	0.00			

Geometrie [m]

Vyztuzeni

Vyztuz

he[i] (m)

b = 0.70

Plur

(16)

h = 1.00

V-V'

6φ 18 + 4φ 6.5

0.050

5φ 10

0.275

5φ 10

0.500

5φ 10

0.725

6φ 18 + 4φ 6.5

0.950

Soucinitele gama

GamaB = 1.000

GamaS = 1.000

GamaU = 0.981

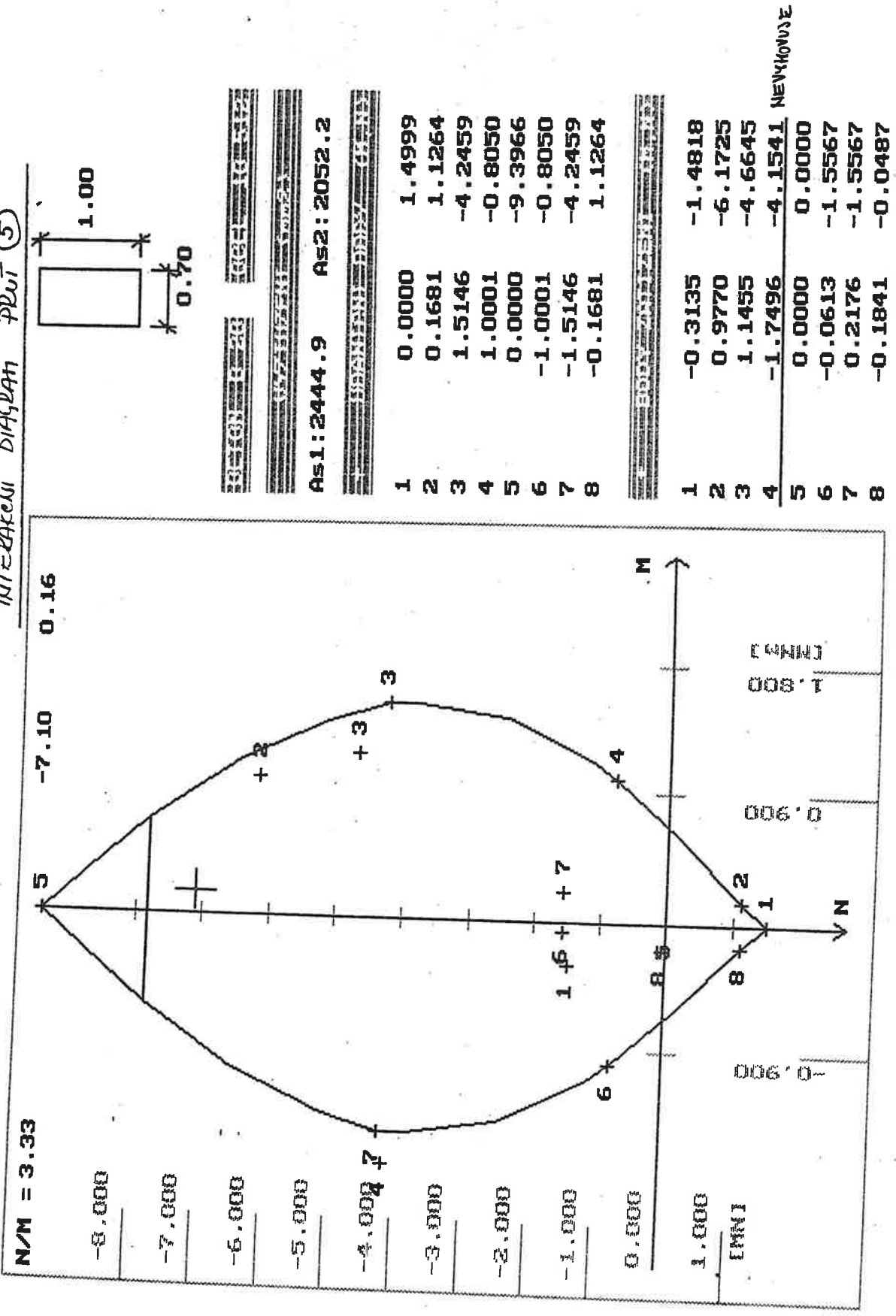
Stupne vyztuzeni

Misc min = 0.0012 Mist min = 0.0016

Misc max = 0.0300 Mist max = 0.0300

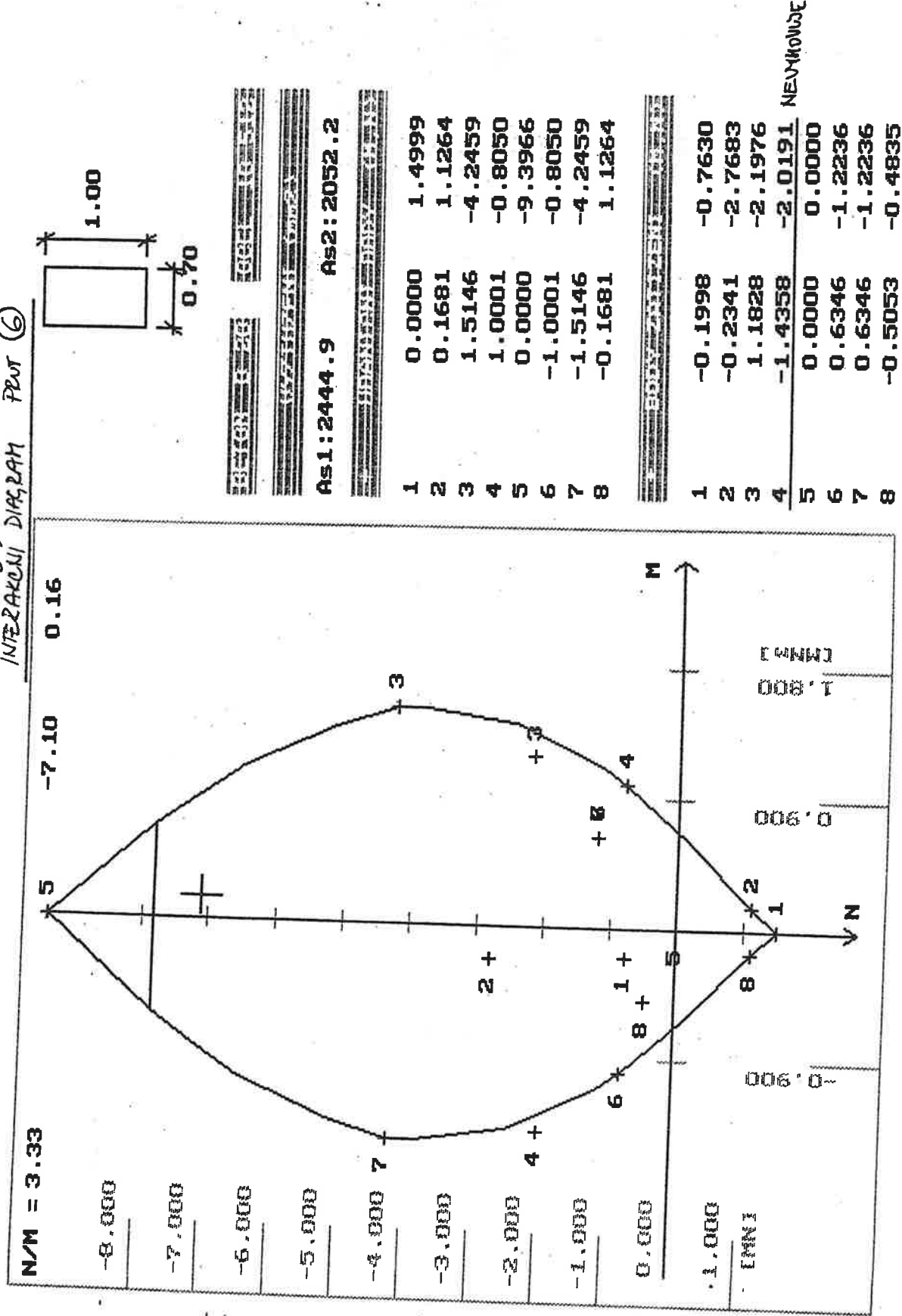
→:Posuv ┘:Vyber ESC:Skonci

INTERAKČNÍ DIAGRAM PRŮT ⑤



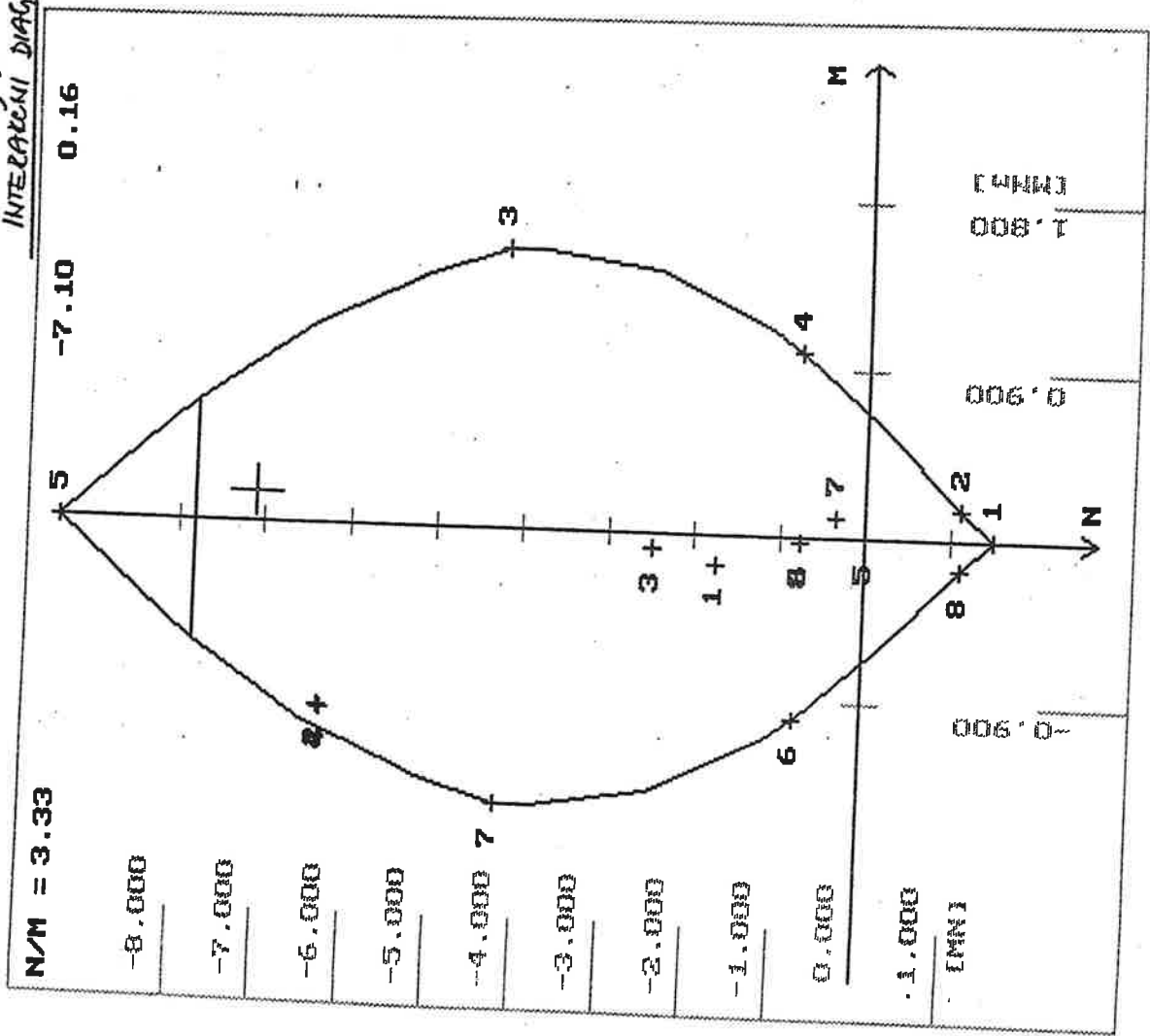
PgDn → ← PgUp ← → Esc KONEC F1 BW/COL. F2 BOD

INTERAKSI DIAGRAM PUT ⑥



PgDn → ← PgUp ← → Esc KONEC F1 BM/COL. F2 B08

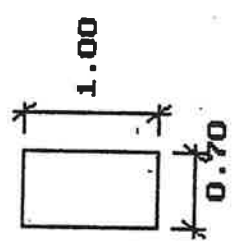
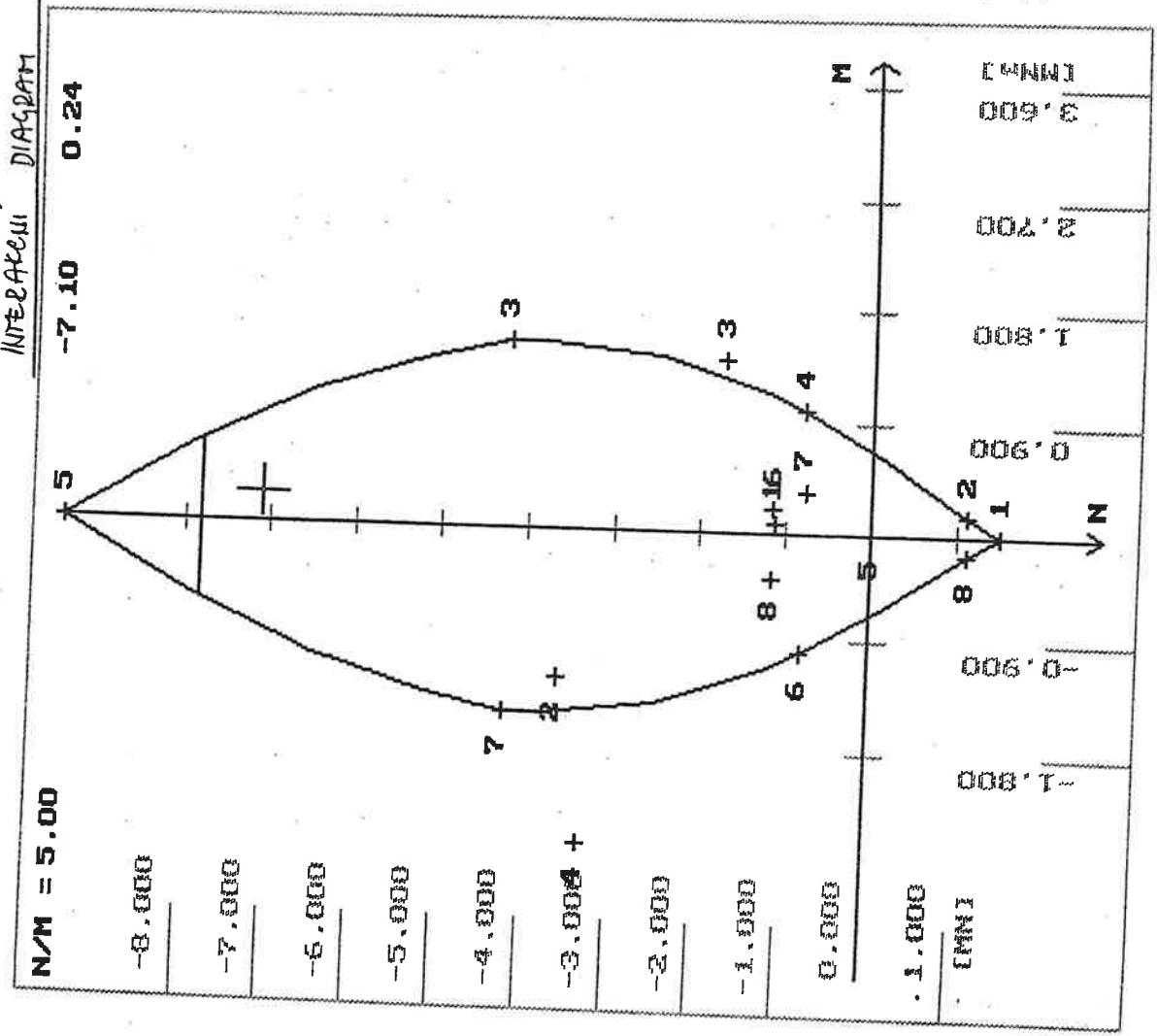
INTERAKČNÍ DIAGRAM PLOŠ 7



$A_{s1}: 2444.9$		$A_{s2}: 2052.2$	
1	0.0000	1.4999	
2	0.1681	1.1264	
3	1.5146	-4.2459	
4	1.0001	-0.8050	
5	0.0000	-9.3966	
6	-1.0001	-0.8050	
7	-1.5146	-4.2459	
8	-0.1681	1.1264	
1	-0.1568	-1.7455	
2	-0.9956	-6.3389	
3	-0.0804	-2.4976	
4	-1.0150	-6.2956	
5	0.0000	0.0000	
6	-0.0209	-0.7829	
7	0.1145	-0.3442	
8	-0.0260	-0.7727	

PgDn -> <- PgUp <- -> Esc KONEC F1 BW/COL. F2 BOD

INTERACTIVE DIAGRAM OUT (K6)



1	0.0000	1.4999
2	0.1681	1.1264
3	1.5146	-4.2459
4	1.0001	-0.8050
5	0.0000	-9.3966
6	-1.0001	-0.8050
7	-1.5146	-4.2459
8	-0.1681	1.1264

As1:2444.9 As2:2052.2

1	0.0000	1.4999
2	0.1681	1.1264
3	1.5146	-4.2459
4	1.0001	-0.8050
5	0.0000	-9.3966
6	-1.0001	-0.8050
7	-1.5146	-4.2459
8	-0.1681	1.1264

1	0.0837	-1.1403
2	-1.2444	-3.6249
3	1.4002	-1.7518
4	-2.5753	-3.3157
5	0.0000	0.0000
6	0.2116	-1.1664
7	0.3400	-0.7873
8	-0.3761	-1.1664

1	0.0837	-1.1403
2	-1.2444	-3.6249
3	1.4002	-1.7518
4	-2.5753	-3.3157
5	0.0000	0.0000
6	0.2116	-1.1664
7	0.3400	-0.7873
8	-0.3761	-1.1664

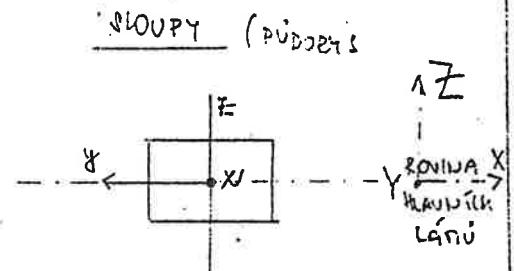
1	0.0837	-1.1403
2	-1.2444	-3.6249
3	1.4002	-1.7518
4	-2.5753	-3.3157
5	0.0000	0.0000
6	0.2116	-1.1664
7	0.3400	-0.7873
8	-0.3761	-1.1664

PgDn -> <- PgUp <- -> Esc KONEC F1 BW/COL. F2 BOD

PROSTOROVÝ MODEL

PRŮŘEZOVÉ CHARAKTERISTIKY PRUTŮ

PRUT 1-8 $h_y = 1,30 \text{ m}$
 $h_z = 1,00 \text{ m}$
 $F_x = 1,3 \text{ m}^2$
 $F_y = 1,083 \text{ m}^2$
 $F_z = 1,083 \text{ m}^2$
 $I_x = 0,2275 \text{ m}^4$
 $I_y = 0,1083 \text{ m}^4$
 $I_z = 0,1831 \text{ m}^4$



$$\begin{aligned}
 I_y &= \frac{1}{12} \cdot h_y \cdot h_z^3 & F_x &= h_y \cdot h_z \\
 I_z &= \frac{1}{12} \cdot h_z \cdot h_y^3 & F_y &= \frac{h_y \cdot h_z}{12} \\
 I_x &= y \cdot b \cdot h & F_z &= \frac{h_y \cdot h_z}{12}
 \end{aligned}$$

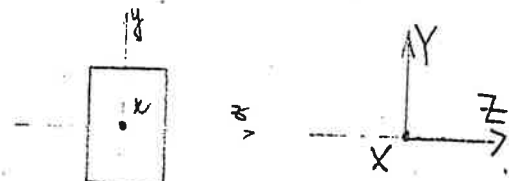
(b JE HĚLÍČEK Z KOTOUČI h_y, h_z)

9-18 $h_y = 1,00 \text{ m}$
 $h_z = 0,70 \text{ m}$
 168,169
 $F_x = 0,70 \text{ m}^2$
 $F_y = 0,583 \text{ m}^2$
 $F_z = 0,583 \text{ m}^2$
 $I_x = 0,0635 \text{ m}^4$
 $I_y = 0,0286 \text{ m}^4$
 $I_z = 0,0583 \text{ m}^4$

19-24 $h_y = 0,5 \text{ m}$
 $h_z = 0,4 \text{ m}$
 $F_x = 0,20 \text{ m}^2$
 $F_y = 0,164 \text{ m}^2$
 $F_z = 0,167 \text{ m}^2$
 $I_x = 0,0054 \text{ m}^4$
 $I_y = 0,0024 \text{ m}^4$
 $I_z = 0,0042 \text{ m}^4$

PRWT 25-30 $h_y = 1,5 \text{ m}$ $F_x = 1,20 \text{ m}^2$
 $h_z = 0,8 \text{ m}$ $F_y = 1,00 \text{ m}^2$
 $F_z = 1,00 \text{ m}^2$
 $I_x = 0,1613 \text{ m}^4$
 $I_y = 0,1064 \text{ m}^4$
 $I_z = 0,1225 \text{ m}^4$

PRICNE PRINGKY (REB)



PRWT 31-38 $h_y = 1,9 \text{ m}$ $F_x = 1,52 \text{ m}^2$ $I_x = 0,2535 \text{ m}^4$
 $h_z = 0,8 \text{ m}$ $F_y = 1,24 \text{ m}^2$ $I_y = 0,10811 \text{ m}^4$
 $F_z = 1,24 \text{ m}^2$ $I_z = 0,4573 \text{ m}^4$

PRWT 39-40 $h_y = 0,8 \text{ m}$ $F_x = 0,32 \text{ m}^2$ $I_x = 0,0117 \text{ m}^4$ (ODHRO)
 $h_z = 0,4 \text{ m}$ $F_y = 0,27 \text{ m}^2$ $I_y = 0,0043 \text{ m}^4$
 $F_z = 0,27 \text{ m}^2$ $I_z = 0,0171 \text{ m}^4$

PRWT 41-42 $h_y = 0,6 \text{ m}$ $F_x = 0,12 \text{ m}^2$ $I_x = 0,0043 \text{ m}^4$ (ODHRO)
 $h_z = 0,2 \text{ m}$ $F_y = 0,10 \text{ m}^2$ $I_y = 0,0004 \text{ m}^4$
 $F_z = 0,10 \text{ m}^2$ $I_z = 0,0036 \text{ m}^4$

* PRWT 179-180 $h_y = 4,0$ $F_x = 1,00 \text{ m}^2$ $I_x = 0,0203 \text{ m}^4$
 $h_z = 0,25$ $F_y = 0,83 \text{ m}^2$ $I_y = 0,0052 \text{ m}^4$
 $F_z = 0,83 \text{ m}^2$ $I_z = 1,3333 \text{ m}^4$

PRWT 43-44 $h_y = 0,3 \text{ m}$ $F_x = 0,08 \text{ m}^2$ $I_x = 0,0008 \text{ m}^4$
 $h_z = 0,25 \text{ m}$ $F_y = 0,06 \text{ m}^2$ $I_y = 0,0004 \text{ m}^4$
 $F_z = 0,06 \text{ m}^2$ $I_z = 0,0006 \text{ m}^4$

PLOT 45-56

$$h_y = 0,8 \text{ m}$$

$$h_z = 0,5 \text{ m}$$

$$F_x = 0,40 \text{ m}^2$$

$$F_y = 0,33 \text{ m}^2$$

$$F_z = 0,33 \text{ m}^2$$

$$I_x = 0,0210 \text{ m}^4$$

$$I_y = 0,0083 \text{ m}^4$$

$$I_z = 0,0213 \text{ m}^4$$

PLOT

51-54

$$h_y = 0,95 \text{ m}$$

$$h_z = 0,5 \text{ m}$$

$$F_x = 0,48 \text{ m}^2$$

$$F_y = 0,40 \text{ m}^2$$

$$F_z = 0,40 \text{ m}^2$$

$$I_x = 0,0261 \text{ m}^4$$

$$I_y = 0,0099 \text{ m}^4$$

$$I_z = 0,0357 \text{ m}^4$$

PLOT 55-62

$$h_y = 0,85 \text{ m}$$

$$h_z = 0,35 \text{ m}$$

$$F_x = 0,33 \text{ m}^2$$

$$F_y = 0,28 \text{ m}^2$$

$$F_z = 0,28 \text{ m}^2$$

$$I_x = 0,0104 \text{ m}^4$$

$$I_y = 0,0034 \text{ m}^4$$

$$I_z = 0,0250 \text{ m}^4$$

PLOT 63-65

$$h_y = 0,6 \text{ m}$$

$$h_z = 0,4 \text{ m}$$

$$F_x = 0,24 \text{ m}^2$$

$$F_y = 0,20 \text{ m}^2$$

$$F_z = 0,20 \text{ m}^2$$

$$I_x = 0,0075 \text{ m}^4$$

$$I_y = 0,0032 \text{ m}^4$$

$$I_z = 0,0072 \text{ m}^4$$

MODELNE PRILAHY

PLOT 66-68
161

$$h_y = 1,60 \text{ m}$$

$$h_z = 0,5 \text{ m}$$

$$F_x = 0,80 \text{ m}^2$$

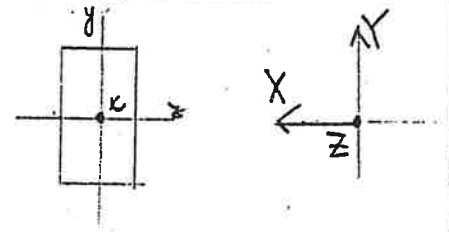
$$F_y = 0,67 \text{ m}^2$$

$$F_z = 0,67 \text{ m}^2$$

$$I_x = 0,0530 \text{ m}^4$$

$$I_y = 0,0167 \text{ m}^4$$

$$I_z = 0,1407 \text{ m}^4$$



PLOT 69-74
162, 163

$$h_y = 1,20 \text{ m}$$

$$h_z = 0,75 \text{ m}$$

$$F_x = 0,54 \text{ m}^2$$

$$F_y = 0,45 \text{ m}^2$$

$$F_z = 0,45 \text{ m}^2$$

$$I_x = 0,0249 \text{ m}^4$$

$$I_y = 0,0091 \text{ m}^4$$

$$I_z = 0,0648 \text{ m}^4$$

PLOT 75-77
164

$$h_y = 1,50 \text{ m}$$

$$h_z = 0,50 \text{ m}$$

$$F_x = 0,75 \text{ m}^2$$

$$F_y = 0,63 \text{ m}^2$$

$$F_z = 0,63 \text{ m}^2$$

$$I_x = 0,0494 \text{ m}^4$$

$$I_y = 0,0156 \text{ m}^4$$

$$I_z = 0,1406 \text{ m}^4$$

PLOT 78-80

$$h_y = 1,0 \text{ m}$$

$$h_z = 0,75 \text{ m}$$

$$F_x = 0,75 \text{ m}^2$$

$$F_y = 0,63 \text{ m}^2$$

$$F_z = 0,60 \text{ m}^2$$

$$I_x = 0,0738 \text{ m}^4$$

$$I_y = 0,0352 \text{ m}^4$$

$$I_z = 0,0625 \text{ m}^4$$

PLOT 81-82

$$h_y = 1,0 \text{ m}$$

$$h_z = 0,5 \text{ m}$$

$$F_x = 0,50 \text{ m}^2$$

$$F_y = 0,42 \text{ m}^2$$

$$F_z = 0,42 \text{ m}^2$$

$$I_x = 0,0286 \text{ m}^4$$

$$I_y = 0,0104 \text{ m}^4$$

$$I_z = 0,0417 \text{ m}^4$$

PLOT 83-85 $h_y = 1,35m$ $F_x = 1,69m^2$ $I_x = 0,6955m^4$
 $h_z = 1,25m$ $F_y = 1,41m^2$ $I_y = 0,2197m^4$
 $F_z = 1,41m^2$ $I_z = 1,2563m^4$

PLOT 86-90 $h_y = 1,40m$ $F_x = 0,70m^2$ $I_x = 0,0429m^4$
 $h_z = 0,50m$ $F_y = 0,58m^2$ $I_y = 0,0146m^4$
 $F_z = 0,58m^2$ $I_z = 0,1143m^4$

PLOT 91-95 $h_y = 1,50m$ $F_x = 1,50m^2$ $I_x = 0,2906m^4$
 $h_z = 1,00m$ $F_y = 1,25m^2$ $I_y = 0,1250m^4$
 $F_z = 1,25m^2$ $I_z = 0,2813m^4$

PLOT 96-98 $h_y = 1,10m$ $F_x = 1,10m^2$ $I_x = 0,1694m^4$
 $h_z = 1,00m$ $F_y = 0,92m^2$ $I_y = 0,0917m^4$
 $F_z = 0,92m^2$ $I_z = 0,1109m^4$

PLOT 99-103 $h_y = 1,20m$ $F_x = 1,20m^2$ $I_x = 0,1993m^4$
 $h_z = 1,00m$ $F_y = 1,00m^2$ $I_y = 0,1000m^4$
 $F_z = 1,00m^2$ $I_z = 0,1440m^4$

PLOT 104-115 $h_y = 0,8m$ $F_x = 0,80m^2$ $I_x = 0,0896m^4$
 $h_z = 1,0m$ $F_y = 0,67m^2$ $I_y = 0,0667m^4$
 $F_z = 0,67m^2$ $I_z = 0,0427m^4$

PRUT 116 - 123

$$h_y = 0,180 \text{ m}$$

$$F_x = 0,140 \text{ m}^2$$

$$I_x = 0,0205 \text{ m}^4$$

$$h_z = 0,150 \text{ m}$$

$$F_y = 0,133 \text{ m}^2$$

$$I_y = 0,0083 \text{ m}^4$$

$$F_z = 0,133 \text{ m}^2$$

$$I_z = 0,0213 \text{ m}^4$$

PRUT 124 - 125

(RODEKSTY)

$$h_y = 0,30 \text{ m}$$

$$F_x = 0,09 \text{ m}^2$$

$$I_x = 0,0011 \text{ m}^4$$

$$h_z = 0,30 \text{ m}$$

$$F_y = 0,08 \text{ m}^2$$

$$I_y = 0,0007 \text{ m}^4$$

$$F_z = 0,08 \text{ m}^2$$

$$I_z = 0,0007 \text{ m}^4$$

PRUT 126 - 131

$$h_y = 0,15 \text{ m}$$

$$F_x = 0,19 \text{ m}^2$$

$$I_x = 0,0031 \text{ m}^4$$

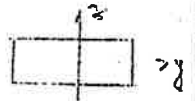
$$h_z = 0,25 \text{ m}$$

$$F_y = 0,16 \text{ m}^2$$

$$I_y = 0,0010 \text{ m}^4$$

$$F_z = 0,16 \text{ m}^2$$

$$I_z = 0,0088 \text{ m}^4$$



PRUT 132, 135, 136, 133

$$h_y = 1,05 \text{ m}$$

$$F_x = 0,37 \text{ m}^2$$

$$I_x = 0,0119 \text{ m}^4$$

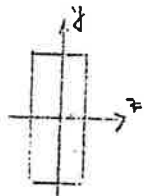
$$h_z = 0,35 \text{ m}$$

$$F_y = 0,31 \text{ m}^2$$

$$I_y = 0,0038 \text{ m}^4$$

$$F_z = 0,31 \text{ m}^2$$

$$I_z = 0,0338 \text{ m}^4$$



PRUT 134, 137

$$h_y = 1,05 \text{ m}$$

$$F_x = 0,44 \text{ m}^2$$

$$I_x = 0,0405 \text{ m}^4$$

$$h_z = 0,40 \text{ m}$$

$$F_y = 0,61 \text{ m}^2$$

$$I_y = 0,0300 \text{ m}^4$$

$$F_z = 0,61 \text{ m}^2$$

$$I_z = 0,0645 \text{ m}^4$$

PRUT 138 - 141

$$h_y = 1,20 \text{ m}$$

$$F_x = 0,42 \text{ m}^2$$

$$I_x = 0,0141 \text{ m}^4$$

$$h_z = 0,35 \text{ m}$$

$$F_y = 0,35 \text{ m}^2$$

$$I_y = 0,0093 \text{ m}^4$$

$$F_z = 0,35 \text{ m}^2$$

$$I_z = 0,0504 \text{ m}^4$$

138-140

[PWT 142-143

$$h_y = 1,20 \text{ m} \quad F_x = 0,84 \text{ m}^2 \quad I_x = 0,0864 \text{ m}^4$$

$$h_z = 0,70 \text{ m} \quad F_y = 0,70 \text{ m}^2 \quad I_y = 0,0343 \text{ m}^4$$

$$F_z = 0,70 \text{ m}^2 \quad I_z = 0,1008 \text{ m}^4$$

PWT 144-149
154, 155

$$h_y = 0,50 \text{ m} \quad F_x = 0,25 \text{ m}^2 \quad I_x = 0,0088 \text{ m}^4$$

$$h_z = 0,50 \text{ m} \quad F_y = 0,21 \text{ m}^2 \quad I_y = 0,0052 \text{ m}^4$$

$$F_z = 0,21 \text{ m}^2 \quad I_z = 0,0052 \text{ m}^4$$

I PWT 150-151

$$h_y = 0,25 \text{ m} \quad F_x = 0,19 \text{ m}^2 \quad I_x = 0,0034 \text{ m}^4$$

$$h_z = 0,75 \text{ m} \quad F_y = 0,16 \text{ m}^2 \quad I_y = 0,0033 \text{ m}^4$$

$$F_z = 0,16 \text{ m}^2 \quad I_z = 0,0010 \text{ m}^4$$

I PWT 150-153
170, 171

$$h_y = 1,00 \text{ m} \quad F_x = 0,35 \text{ m}^2 \quad I_x = 0,0109 \text{ m}^4$$

$$h_z = 0,35 \text{ m} \quad F_y = 0,29 \text{ m}^2 \quad I_y = 0,0036 \text{ m}^4$$

$$F_z = 0,29 \text{ m}^2 \quad I_z = 0,0292 \text{ m}^4$$

PWT 156-160

$$h_y = 0,50 \text{ m} \quad F_x = 0,80 \text{ m}^2 \quad I_x = 0,0530 \text{ m}^4$$

$$h_z = 1,60 \text{ m} \quad F_y = 0,67 \text{ m}^2 \quad I_y = 0,1707 \text{ m}^4$$

$$F_z = 0,67 \text{ m}^2 \quad I_z = 0,0167 \text{ m}^4$$

PWT 165-164

$$h_y = 0,20 \text{ m}$$

$$F_x = 0,12 \text{ m}^2$$

$$I_x = 0,0013 \text{ m}^4$$

$$h_b = 0,60 \text{ m}$$

$$F_y = 0,10 \text{ m}^2$$

$$I_y = 0,0036 \text{ m}^4$$

$$F_b = 0,10 \text{ m}^2$$

$$I_b = 0,0004 \text{ m}^4$$

PWT 174-178

$$h_y = 0,75 \text{ m}$$

$$F_x = 0,19 \text{ m}^2$$

$$I_x = 0,0039 \text{ m}^4$$

$$h_z = 0,25 \text{ m}$$

$$F_y = 0,16 \text{ m}^2$$

$$I_y = 0,0010 \text{ m}^4$$

$$F_b = 0,16 \text{ m}^2$$

$$I_z = 0,0009 \text{ m}^4$$

*

PWT 179-180 - uiz 43-44

PWT 180-184

179-180

$$h_y = 2,0 \text{ m}$$

$$F_x = 0,5 \text{ m}^2$$

$$I_x = 0,0094 \text{ m}^4$$

$$h_z = 0,25 \text{ m}$$

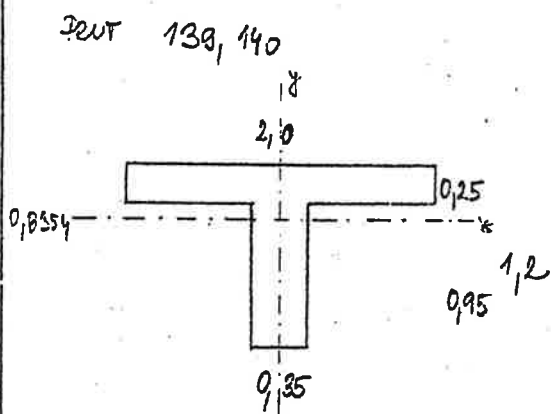
$$F_y = 0,42 \text{ m}^2$$

$$I_y = 0,0026 \text{ m}^4$$

$$F_b = 0,42 \text{ m}^2$$

$$I_z = 0,1667 \text{ m}^4$$

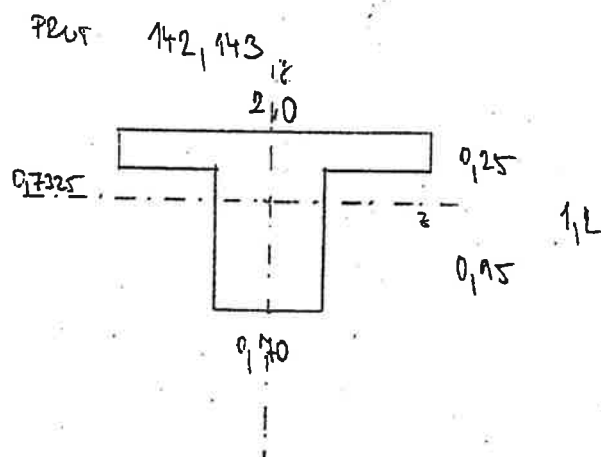
PRUTY S UVAŽOVÁNÍM DEKTY



$$F_x = 0,8325 \text{ m}^2 \quad I_x = 0,0240 \text{ m}^4$$

$$F_y = 0,6998 \text{ m}^2 \quad I_y = 0,1701 \text{ m}^4$$

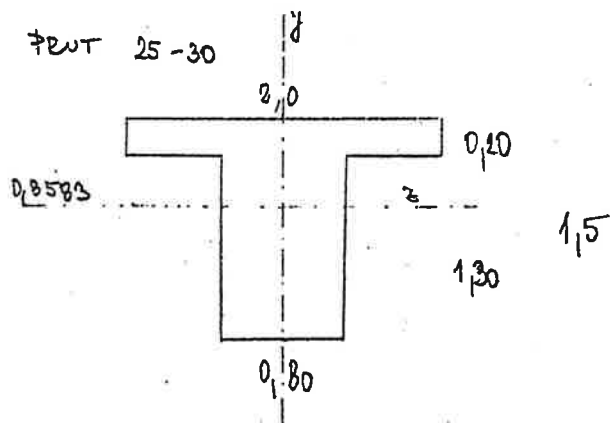
$$F_z = 0,6998 \text{ m}^2 \quad I_z = 0,0995 \text{ m}^4$$



$$F_x = 1,1650 \text{ m}^2 \quad I_x = 0,1190 \text{ m}^4$$

$$F_y = 0,9708 \text{ m}^2 \quad I_y = 0,1938 \text{ m}^4$$

$$F_z = 0,9708 \text{ m}^2 \quad I_z = 0,1554 \text{ m}^4$$

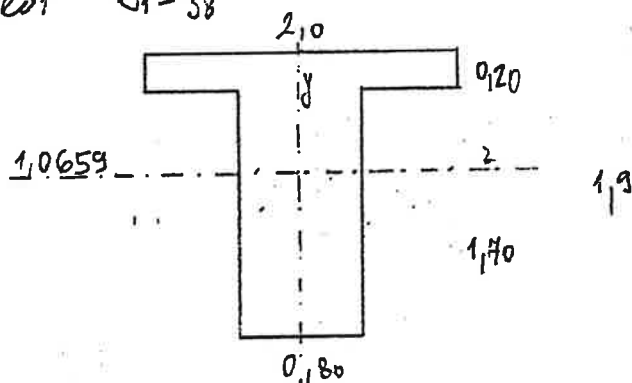


$$F_x = 1,14 \text{ m}^2 \quad I_x = 0,2232 \text{ m}^4$$

$$F_y = 1,20 \text{ m}^2 \quad I_y = 0,1888 \text{ m}^4$$

$$F_z = 1,20 \text{ m}^2 \quad I_z = 0,4818 \text{ m}^4$$

PROT 31-38

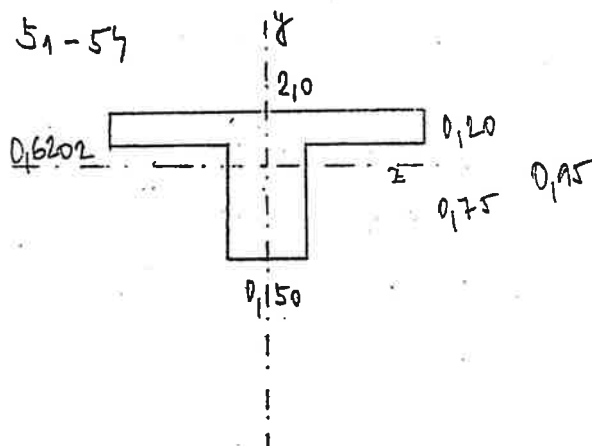


$$F_x = 1.46 \text{ m}^2 \quad I_x = 0.2955 \text{ m}^4$$

$$F_y = 1.47 \text{ m}^2 \quad I_y = 0.2059 \text{ m}^4$$

$$F_z = 1.47 \text{ m}^2 \quad I_z = 0.4561 \text{ m}^4$$

PROT 51-54

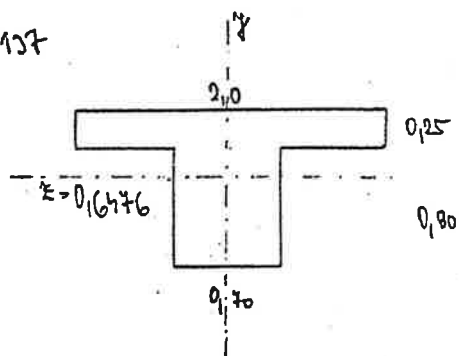


$$F_x = 0.76 \text{ m}^2 \quad I_x = 0.0366 \text{ m}^4$$

$$F_y = 0.65 \text{ m}^2 \quad I_y = 0.1411 \text{ m}^4$$

$$F_z = 0.65 \text{ m}^2 \quad I_z = 0.0626 \text{ m}^4$$

PROT 134, 137



$$F_x = 1.06 \text{ m}^2 \quad I_x = 0.1019 \text{ m}^4$$

$$F_y = 0.883 \text{ m}^2 \quad I_y = 0.1895 \text{ m}^4$$

$$F_z = 0.883 \text{ m}^2 \quad I_z = 0.1053 \text{ m}^4$$

- 64 -

RADA AB - PROSTOROVY MODEL

TYP KONSTRUKCE : 5= prost. ram
 POČET UZLU : 110
 POČET PRUTU : 188
 POČET PODPOR : 21
 POČET ZAT.STAVU: 10

POPIS SOURADNIC UZLU

CISLO	PODP.	SOURADNICE	SOURADNICE	SOURADNICE
UZLU	UZEL	X [m]	Y [m]	Z [m]
1	1	0.000	0.000	3.000
2	1	9.000	0.000	3.000
3	1	0.000	0.000	15.000
4	1	9.000	0.000	15.000
5	0	0.000	7.950	0.000
6	0	2.875	7.950	0.000
7	0	6.125	7.950	0.000
8	0	9.000	7.950	0.000
9	0	0.000	7.950	3.000
10	0	2.875	7.950	3.000
11	0	6.125	7.950	3.000
12	0	9.000	7.950	3.000
13	0	0.000	7.950	15.000
14	0	2.875	7.950	15.000
15	0	6.125	7.950	15.000
16	0	9.000	7.950	15.000
17	1	0.000	7.950	18.000
18	1	2.875	7.950	18.000
19	1	6.125	7.950	18.000
20	1	9.000	7.950	18.000
21	0	0.000	18.550	0.000
22	0	6.000	18.550	0.000
23	0	0.000	18.550	3.000
24	0	6.000	18.550	3.000
25	0	7.000	18.550	3.000
26	0	8.000	18.550	3.000
27	0	9.000	18.550	3.000
28	0	0.000	18.550	7.000
29	0	6.000	18.550	7.000
30	0	8.000	18.550	7.000
31	0	0.000	18.550	11.000
32	0	6.000	18.550	11.000
33	0	8.000	18.550	11.000
34	0	0.000	18.550	15.000
35	0	6.000	18.550	15.000
36	0	7.000	18.550	15.000
37	0	8.000	18.550	15.000
38	0	9.000	18.550	15.000
39	1	0.000	18.550	18.000
40	1	6.000	18.550	18.000
41	0	9.000	20.000	1.939
42	0	9.000	20.000	3.000
43	0	9.000	20.000	7.000
44	0	9.000	20.000	11.000
45	0	9.000	20.000	15.000
46	0	9.000	20.000	16.061
47	0	0.000	22.650	0.000
48	0	2.981	22.650	0.000
49	0	7.000	22.650	0.000

50	0	9.000	22.650	0.000
51	1	0.000	22.650	18.000
52	1	2.981	22.650	18.000
53	1	7.000	22.650	18.000
54	1	9.000	22.650	18.000
55	0	0.000	23.450	0.000
56	0	0.000	23.450	3.000
57	0	0.000	23.450	15.000
58	1	0.000	23.450	18.000
59	0	0.000	26.700	0.000
60	0	0.000	26.700	3.000
61	0	0.000	26.700	7.000
62	0	0.000	26.700	11.000
63	0	0.000	26.700	15.000
64	1	0.000	26.700	18.000
65	0	0.000	30.280	0.000
66	0	4.500	30.280	0.000
67	0	9.000	30.280	0.000
68	0	0.000	30.280	3.000
69	0	4.500	30.280	3.000
70	0	9.000	30.280	3.000
71	0	0.000	30.280	7.000
72	0	4.500	30.280	7.000
73	0	9.000	30.280	7.000
74	0	0.000	30.280	9.000
75	0	9.000	30.280	9.000
76	0	0.000	30.280	11.000
77	0	4.500	30.280	11.000
78	0	9.000	30.280	11.000
79	0	0.000	30.280	15.000
80	0	4.500	30.280	15.000
81	0	9.000	30.280	15.000
82	1	0.000	30.280	18.000
83	1	4.500	30.280	18.000
84	1	9.000	30.280	18.000
85	0	0.000	34.000	0.000
86	0	9.000	34.500	0.000
87	0	0.000	34.000	3.000
88	0	9.000	34.500	3.000
89	0	0.000	34.000	9.000
90	0	9.000	34.500	9.000
91	0	0.000	34.000	15.000
92	0	9.000	34.500	15.000
93	1	0.000	34.000	18.000
94	1	9.000	34.500	18.000
95	0	0.	7.95	9.
96	0	3.	7.95	9.
97	0	6.	7.95	9.
98	0	9.	7.95	9.
99	0	9.	25.14	0.
100	0	9.	25.14	3.
101	0	9.	25.14	7.
102	0	9.	25.14	11.
103	0	9.	25.14	15.
104	0	9.	25.14	18.
105	0	4.9325	20.00	7.
106	0	4.9325	20.00	11.
107	0	3.092	22.5	7.
108	0	9.	22.5	7.
109	0	3.092	22.5	11. 110 0
				9. 22.5 11.

POPIS KODOVÝCH ČÍSEL PRUTU

CÍSLO PRUTU	CÍSLO POČAT. UZLU	CÍSLO KONC. UZLU
1	1	9
2	2	12
3	3	13
4	4	16
5	9	23
6	12	27
7	13	34
8	16	38
9	23	56
10	56	60
11	60	68
12	27	42
13	100	70
14	34	57
15	57	63
16	63	79
17	38	45
18	103	81
19	68	87
20	70	88
21	74	89
22	75	90
23	79	91
24	81	92
25	9	10
26	10	11
27	11	12
28	13	14
29	14	15
30	15	16
31	23	24
32	24	25
33	25	26
34	26	27
35	34	35
36	35	36
37	36	37
38	37	38
39	21	22
40	39	40
41	28	29
42	31	32
43	29	30
44	32	33
45	47	48
46	48	49
47	49	50
48	51	52
49	52	53
50	53	54
51	68	69
52	69	70
53	79	80
54	80	81
55	65	66
56	66	67

57	71	72
58	72	73
59	76	77
60	77	78
61	82	83
62	83	84
63	87	88
64	89	90
65	91	92
66	5	9
67	9	95
68	13	17
69	6	10
70	10	96
71	14	18
72	7	11
73	11	97
74	15	19
75	8	12
76	12	98
77	16	20
78	26	30
79	30	33
80	33	37
81	22	24
82	35	40
83	24	29
84	29	32
85	32	35
86	21	23
87	23	28
88	28	31
89	31	34
90	34	39
91	41	42
92	42	43
93	43	44
94	44	45
95	45	46
96	55	56
97	56	57
98	57	58
99	59	60
100	60	61
101	61	62
102	62	63
103	63	64
104	65	68
105	68	71
106	71	74
107	74	76
108	76	79
109	79	82
110	67	70
111	70	73
112	73	75
113	75	78
114	78	81
115	81	84
116	85	87

117	87	89
118	89	91
119	91	93
120	86	88
121	88	90
122	90	92
123	92	94
124	23	47
125	34	51
126	24	48
127	35	52
128	25	49
129	36	53
130	41	50
131	46	54
132	26	41
133	37	46
134	26	42
135	30	43
136	33	44
137	37	45
138	48	59
139	107	61
140	109	62
141	52	64
142	24	60
143	35	63
144	99	67
145	104	84
146	47	55
147	51	58
148	59	65
149	64	82
150	61	71
151	62	76
152	101	73
153	102	78
154	55	59
155	58	64
156	66	69
157	69	72
158	72	77
159	77	80
160	80	83
161	95	13
162	96	14
163	97	15
164	98	16
165	95	96
166	96	97
167	97	98
168	42	100
169	45	103
170	108	101
171	110	102
172	50	99
173	54	104
174	99	100
175	100	101
176	101	102

177	102	103
178	103	104
179	105	43
180	106	44
181	29	105
182	32	106
183	107	108
184	109	110
185	105	107
186	106	109
187	43	108
188	44	110

POPIS FYZIKALNICH VELICIN PRUTU

CISLO PRUTU V SERII	MODUL PRUZNOSTI	MODUL PRUZ. VE SHYKU
PRVNI POSL.	E [MPa]	G [MPa]
1 188	27000.	0.

POPIS PRUREZOVYCH VELICIN PRUTU [m²]

CISLO PRUTU V SERII	PRUREZOVA PLOCHA FX	SHYKOVA PLOCHA FY	SHYKOVA PLOCHA FZ	TORZNI KONST. IX	MOMENT SERTV. IY	MOMENT SETRV. IZ
PRVNI POSL.	A(1,n)	A(2,n)	A(3,n)	A(4,n)	A(5,n)	A(6,n)
1 8	1.3	1.083	1.083	.2275	.1083	.1831
					Beta=	0.
9 18	.7	.58	.58	.0635	.0286	.0583
					Beta=	0.
19 24	.2	.17	.17	.0054	.0027	.0042
					Beta=	0.
25 30	1.44	1.2	1.2	.2272	.1888	.4818
					Beta=	0.
31 38	1.76	1.47	1.47	.2955	.2059	.7561
					Beta=	0.
39 40	.32	.27	.27	.0117	.0043	.0171
					Beta=	0.
41 42	.12	.1	.1	.0013	.0004	.0036
					Beta=	0.
43 44	.08	.06	.06	.0008	.0004	.0006
					Beta=	0.
45 50	.4	.33	.33	.021	.0083	.0213
					Beta=	0.
51 54	.76	.65	.65	.0366	.1411	.0626
					Beta=	0.
55 62	.33	.28	.28	.0104	.0034	.0250
					Beta=	0.
63 65	.24	.2	.2	.0075	.0032	.0072
					Beta=	0.
66 68	.8	.67	.67	.053	.0167	.1707
					Beta=	0.
69 74	.54	.45	.45	.0279	.0091	.0648
					Beta=	0.
75 77	.75	.63	.63	.0494	.0156	.1406
					Beta=	0.
78 80	.75	.63	.63	.0738	.0352	.0625
					Beta=	0.
81 82	.5	.42	.42	.0286	.0104	.0417
					Beta=	0.
83 85	1.69	1.41	1.41	.3955	.2197	.2563
					Beta=	0.
86 90	.7	.58	.58	.0429	.0146	.1143

						Beta= 0.
91	95	1.5	1.25	1.25	.2936	.1250 .2813
						Beta= 0.
96	98	1.1	.92	.92	.1694	.0917 .1109
						Beta= 0.
99	103	1.2	1.	1.	.1993	.1 .144
						Beta= 0.
104	115	.8	.67	.67	.0896	.0667 .0427
						Beta= 0.
116	123	.4	.33	.33	.0205	.0083 .0213
						Beta= 0.
124	125	.09	.08	.08	.0011	.0007 .0007
						Beta= 0.
126	131	.19	.16	.16	.0031	.001 .0088
						Beta= 0.
132	133	.37	.31	.31	.0119	.0038 .0338
						Beta= 0.
134	134	.74	.61	.61	.0705	.03 .0675
						Beta= 0.
135	136	.37	.31	.31	.0119	.0038 .0338
						Beta= 0.
137	137	.74	.61	.61	.0705	.03 .0675
						Beta= 0.
138	138	.42	.35	.35	.0141	.0043 .0504
						Beta= 0.
139	140	.8325	.6938	.6938	.024	.1701 .0995
						Beta= 0.
185	186	.8325	.6938	.6938	.024	.1701 .0995
						Beta= 0.
141	141	.42	.35	.35	.0141	.0043 .0504
						Beta= 0.
142	143	1.165	.9708	.9708	.119	.1938 .1554
						Beta= 0.
144	149	.25	.21	.21	.0088	.0052 .0052
						Beta= 0.
150	153	.35	.29	.29	.0109	.0036 .0292
						Beta= 0.
154	155	.25	.21	.21	.0088	.0052 .0052
						Beta= 0.
156	160	.8	.67	.67	.053	.1707 .0167
						Beta= 0.
161	161	.8	.67	.67	.053	.0167 .1707
						Beta= 0.
162	163	.54	.45	.45	.0279	.0091 .0648
						Beta= 0.
164	164	.75	.63	.63	.0494	.0156 .1406
						Beta= 0.
165	167	.12	.10	.10	.0013	.0036 .0004
						Beta= 0.
168	169	.7	.58	.58	.0635	.0286 .0583
						Beta= 0.
170	171	.35	.29	.29	.0109	.0036 .0292
						Beta= 0.
187	188	.35	.29	.29	.0109	.0036 .0292
						Beta= 0.
172	173	.25	.21	.21	.0088	.0052 .0052
						Beta= 0.
174	178	.19	.16	.16	.0031	.0010 .0088
						Beta= 0.
179	180	1.	.83	.83	.0203	.0052 1.3333

183	184	.5	.42	.42	.0094	Beta= 0.
					.0026	.1667
181	182	.8325	.6938	.6938	.024	Beta= 0.
					.1701	.0995
						Beta= 0.

POPIS UVOLNENI PODPOROVYCH UZLU
CISLO UVOLNENI VE SMERU

UZLU	X	Y	Z	MX	MY	MZ
17	1	1	0	0	0	1
18	1	1	0	0	0	1
19	1	1	0	0	0	1
20	1	1	0	0	0	1
39	1	1	0	0	0	1
40	1	1	0	0	0	1
51	1	1	0	0	0	1
52	1	1	0	0	0	1
53	1	1	0	0	0	1
54	1	1	0	0	0	1
58	1	1	0	0	0	1
64	1	1	0	0	0	1
82	1	1	0	0	0	1
83	1	1	0	0	0	1
84	1	1	0	0	0	1
93	1	1	0	0	0	1
94	1	1	0	0	0	1

ZATÍŽENÍ

0. STÁLE ZATÍŽENÍ

- VLASTNÍ TÍHA PRUTŮ

$$g = 25 \text{ kN.m}^{-3}$$

$$g = F_k \cdot g$$

PRUTY 25-30, 31-38, 51-54, 109, 110, 112, 113, 181, 182 - VŠETNÉ DESKY
185, 186

- DALŠÍ STÁLE NA PRUTY A VZLY

63-65

STĚNA + 10,00

$$z.s. = 3 + 3 = 6,0 \text{ m}$$

$$g = 6 \cdot 0,17 \cdot 25 = 25,5 \text{ kN.m}^{-1}$$

51-54

LEŠKA + 29,75

$$z.s. = 1,5 + 2 = 3,5 \text{ m}$$

$$g = 3,5 \cdot 0,2 \cdot 25 = 17,5 \text{ kN.m}^{-1}$$

$$x = 0,25 - 2,0 \text{ m}$$

55, 56, 61, 62

STĚNA + 29,75

$$z.s. = 1,5 \text{ m}$$

$$g = 1,5 \cdot 0,2 \cdot 25 = 7,5 \text{ kN.m}^{-1}$$

$$x = 2,5 - 4,25 \text{ m}$$

57-60

STĚNA + 29,75

$$z.s. = 2 + 2 = 4,0 \text{ m}$$

$$g = 4 \cdot 0,2 \cdot 25 = 20,0 \text{ kN.m}^{-1}$$

99-103

STĚNA BUIKAV

$$z.s. = 2,5 \text{ m}$$

$$g = 2,5 \cdot 0,25 \cdot 25 = 15,6 \text{ kN.m}^{-1}$$

PRUT

X

99	0,5 - 2,65 m
100	0,25 - 3,83 m
101	0,18 - 3,83 m
102	0,18 - 3,65 m
103	0,35 - 2,5 m

104-109

OKL

$$g = 0,5 \cdot 18 = 9,0 \text{ kN.m}^{-1}$$

104-109

PLAŠT

$$2 \cdot 0,18 = 0,36 \text{ kN} \cdot \text{m}^{-1}$$

110-115

STĚNA TL. 30 cm

$$0,3 \cdot 3,1 \cdot 18 = 16,74 \text{ kN} \cdot \text{m}^{-1}$$

70, 114 $x=1,0$

SLUPEC POD VÁŽIVOU

$$0,5 \cdot 0,8 \cdot 1,4 \cdot 25 = 14,0 \text{ kN}$$

114-118

STĚNA DUKU

$$z.v. = 4,27 \text{ m}$$

$$g = 4,27 \cdot 0,25 \cdot 25 = 26,69 \text{ kN} \cdot \text{m}^{-1}$$

X V12. 99-103

91-95

STĚNA DUKU

$$z.v. = 4,27 \text{ m}$$

$$g = 26,69 \text{ kN} \cdot \text{m}^{-1}$$

$$91 \quad x \rightarrow 0 - 0,41 \text{ m}$$

$$95 \quad x \rightarrow 0,35 - 1,061 \text{ m}$$

130, 131

STĚNA DUKU

$$z.v. = 4,27 - 1,78$$

$$g_1 = 26,69 \text{ kN} \cdot \text{m}^{-1}$$

$$g_2 = \frac{1,78}{4,27} \cdot 26,69 = 11,13 \text{ kN} \cdot \text{m}^{-1}$$

130 $x \rightarrow 0,5$ $g = 11,13$

131 $x \rightarrow 0,0$ $g \rightarrow 26,69$

96-98

PLAŠT

$$z.v. = 2,2 \text{ m}$$

$$2,2 \cdot 0,18 = 0,40 \text{ kN} \cdot \text{m}^{-1}$$

86-90

PLAŠT

$$z.v. = 3,5 \text{ m}$$

$$3,5 \cdot 0,18 = 0,63 \text{ kN} \cdot \text{m}^{-1}$$

66-68, 161

PLAŠT

$$z.v. = 10,3 \text{ m}$$

$$10,3 \cdot 0,18 = 1,85 \text{ kN} \cdot \text{m}^{-1}$$

1, 2

SLUPEC

$$x = 5,45 \text{ m} \quad z.v. = 3,5 \text{ m}$$

$$3,5 \cdot 0,18 \cdot 9 = 5,64 \text{ kN}$$