

PERUSAHAAN  
 DIREKTORAT JENDERAL PERENCANAAN  
 DAN KONTROL PERTANAKAN  
 SATUAN KERJA PERENCANAAN NASIONAL

**PURWAKALAMAJA**  
 SATUAN KERJA PERENCANAAN PERTANAKAN  
 (Satker Perencanaan Pertanian dan Perikanan) (Region II)  
 Jl. Malar No. 1, Mangrove, Jakarta Selatan  
 Telp. / Fax (021) 7206623

**MAKASUD DAN TUJUAN**  
 PERENCANAAN PROTOTYPE RUMAH BUNGIN  
 PERBELA KELLARGA 3 LANTAI T-4B, TN - AD  
 (PROTOTYPE 14311)  
 (KOS : 0)

**KETERANGAN**  
 PROTOTYPE PERBELA KELLARGA  
 3 LANTAI T-4B, TN - AD

1. Momen dan gaya aksial
2. Rasio tulangan minimum dan maksimum sesuai standar
3. Jarak tumpuan
4. Jarak antar kolom
5. Jarak antar balok
6. Jarak antar dinding

1. 100 mm	1. 100 mm
2. 200 mm	2. 200 mm
3. 300 mm	3. 300 mm
4. 400 mm	4. 400 mm
5. 500 mm	5. 500 mm
6. 600 mm	6. 600 mm
7. 700 mm	7. 700 mm
8. 800 mm	8. 800 mm
9. 900 mm	9. 900 mm
10. 1000 mm	10. 1000 mm

DIBUAT  
 Konsultan (SPT)  
 PT. HABELA KARYA ABADI

Tamu Leader  
 The Typing Service Bureau dan PSE

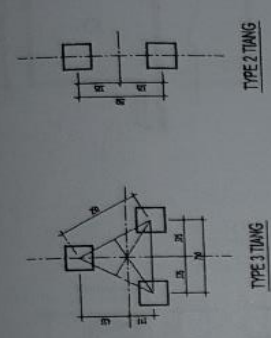
Perencanaan Arsitek Gedung dan Rangka Besi (RAB) dan Vektor

INSYENIR  
 Institut Teknologi Sepuluh Nopember

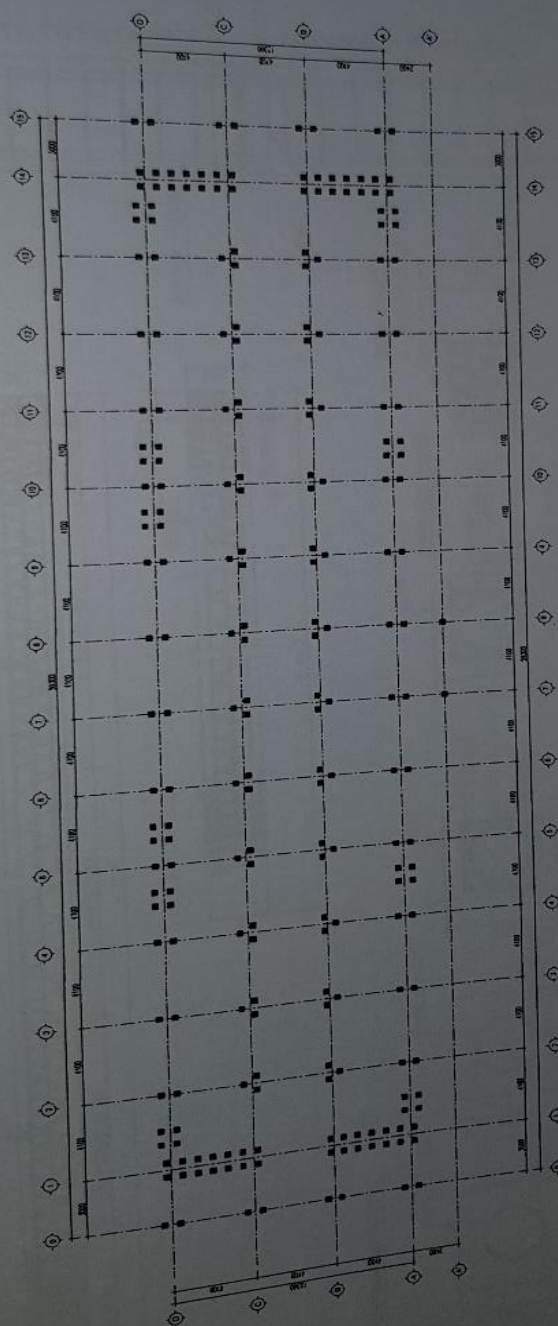
JEDAH GAMBIR  
 DEVAH TITIK PANCANG  
 UK. 250 X 250

NO. GAMBAR  
 STR-1-01

SKALA: 1 : 250  
 TANGGAL:  
 DESKRIPTOR GAMBAR:  
 Uraian:  PERENCANAAN  
 Uraian:  PERENCANAAN  
 Uraian:  PERENCANAAN



DIMENSI TANG PANCANG	JUMLAH
SQUARE PILE 300x300 mm	2x4 Titik
Jumlah per titik	16 Titik



DEVAH TITIK PANCANG UK. 250 X 250  
 PART 1/10

PT. NABEHA KARYA ABADI  
 JALAN ...  
 ...

PROYEKSI PERENCANAAN STRUKTURAL  
 PERENCANAAN PROTOTIPE RUMAH SUBUR  
 PERUMAH KELUARGA LANTAI T4, T4, T4, AD  
 (PROTOTIPE) (1/21)  
 (KON. 10)

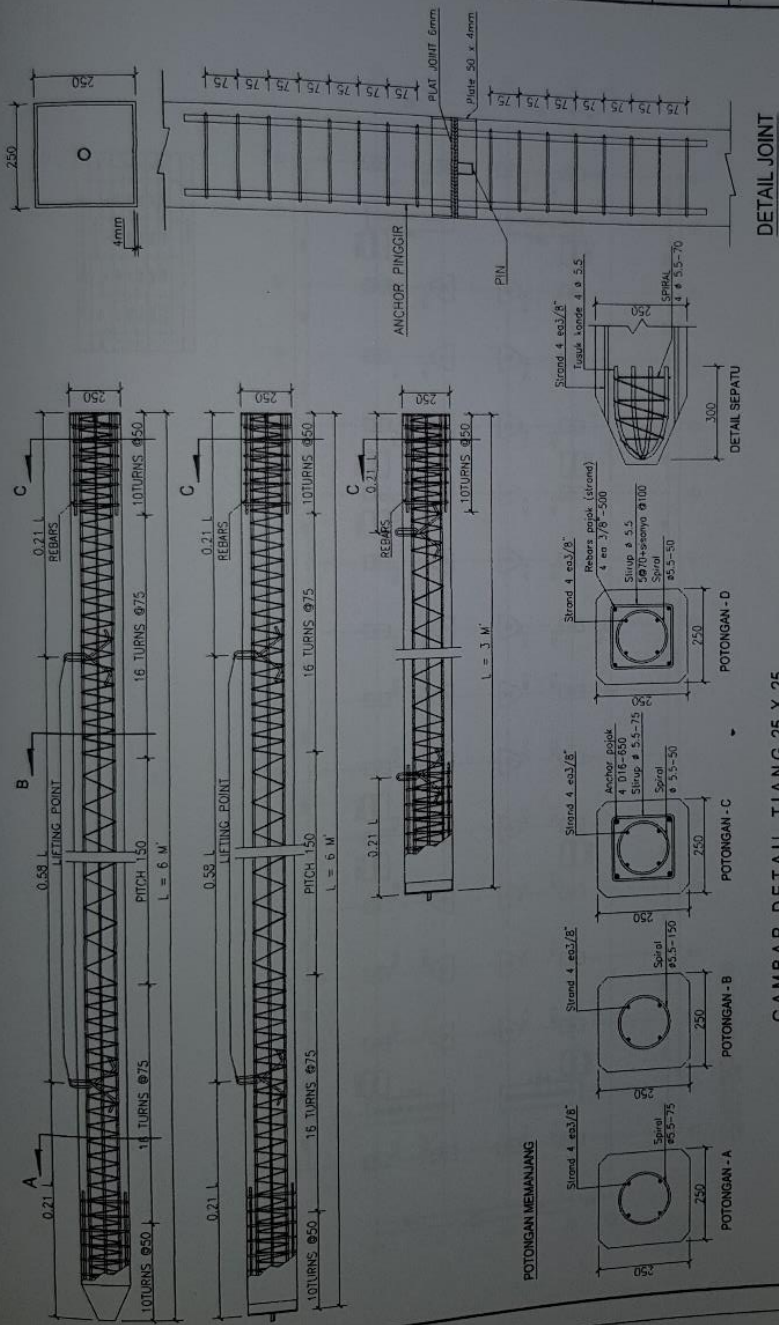
REVISI  
 1. ...  
 2. ...  
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 7. ...  
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 9. ...  
 10. ...

PT. NABEHA KARYA ABADI  
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DETAIL TIANG PANCANG  
 UK. 250 x 250

SKALA: 1:250	TINGKAI: I
NOC GAMBAR	DESKRIPSI LUTER:
STR-102	REVISI
	NO. LUTER
	REVISI
	NO. LUTER
	REVISI



DETAIL JOINT

DETAIL SEPATU

GAMBAR DETAIL TIANG 25 X 25

PT. NABELA KARYA ABADI  
 JALAN ...  
 ...

PROJEKSI ARSITEKTUR  
 DENAH PILE CAP (FONDASI)  
 (PROTOTYPE 1/4/21)

PROTOTYPE PERBUKA KELUARGA  
 3 LANTAI T.4/6, TN. / AD  
 (NDS:1/0)

REVISI  
 1. ...  
 2. ...  
 3. ...

PT. NABELA KARYA ABADI  
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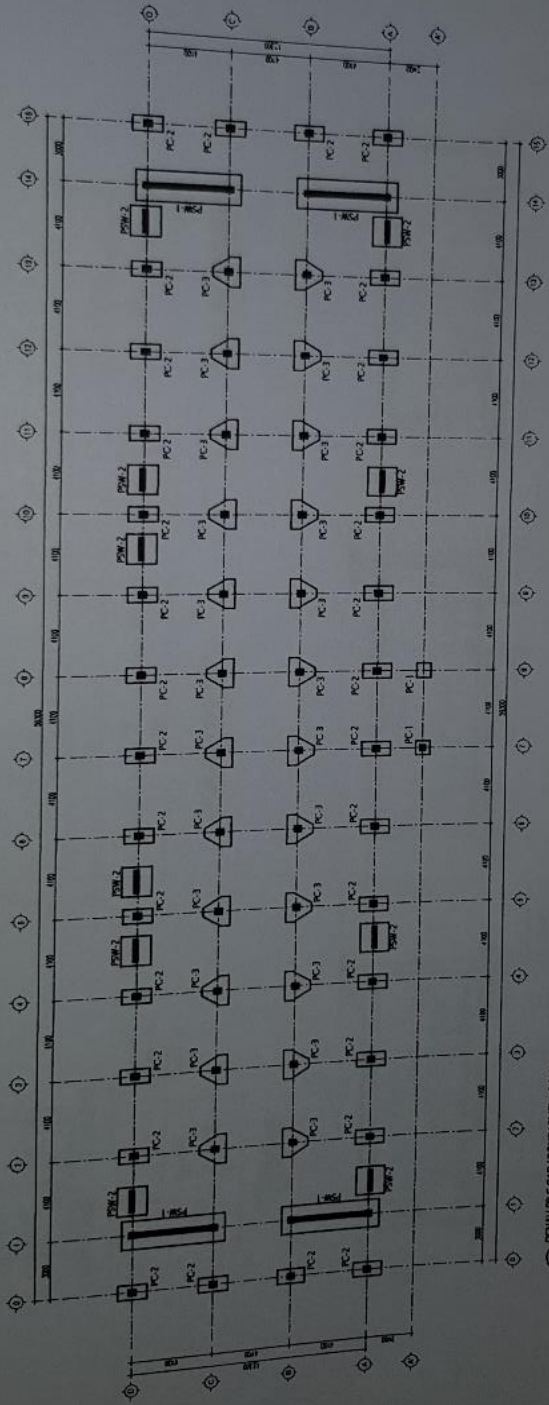
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REVISI ELEMENT PILE CAP (FONDASI)					
NO.	TYP.	Jumlah	Dimensi (mm)		QTY.
			L	D	
1.	PC-1	100	1000	1000	1
2.	PC-2	100	1000	1000	32
3.	PC-3	100	1000	1000	34
4.	PC-4	100	1000	1000	4
5.	PC-5	100	1000	1000	10
Jumlah					72



DENAH PILE CAP (FONDASI) (EL. -0.800)

DENAH PILE CAP  
 (FONDASI)

SKALA: 1 : 250  
 NO. GAMBAR: STR-103  
 TANGGAL: ...  
 DESAIN: ...  
 PERIKSA: ...  
 PERSIAPAN: ...  
 PLESTER: ...  
 PLUMBING: ...  
 PLUMBING: ...

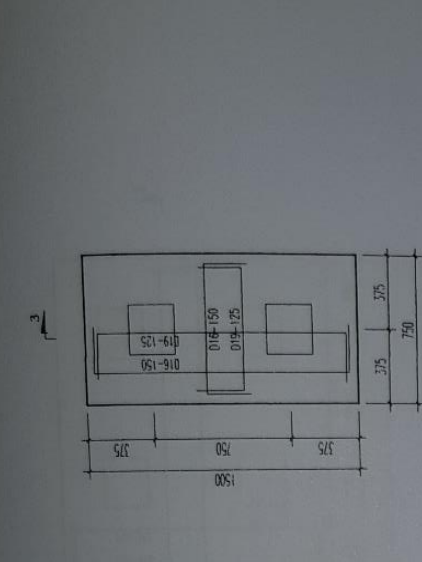
**REVISI / PERUBAHAN:**  
1. ...  
2. ...  
3. ...

- 1. ...
- 2. ...
- 3. ...

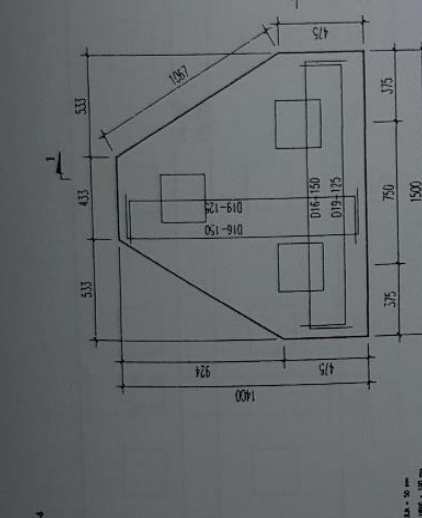
PT. MABELA KARYA ABADI  
Jl. Raya ... No. ...  
Telp / Fax : (061) 7228333

**PENGESAHAN:**  
1. ...  
2. ...

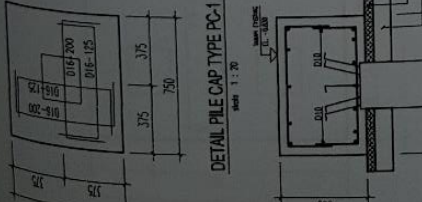
NO. GAMBAR	U. ...
REVISI	1. ...
TANGGAL	...



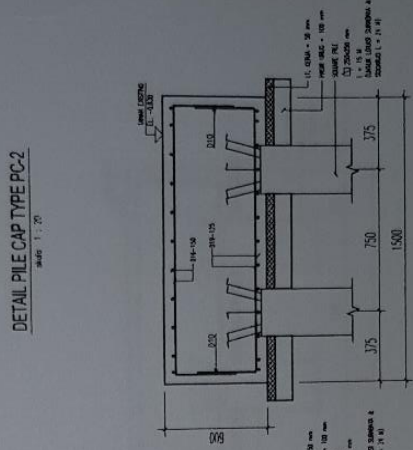
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skala: 1 : 20



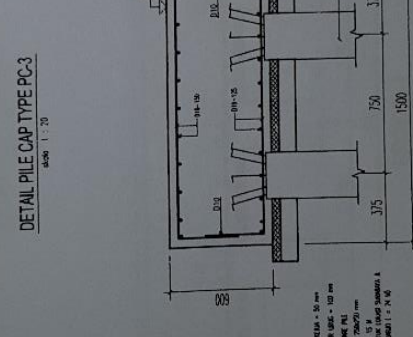
DETAIL PILE CAP TYPE PC-2  
skala: 1 : 20



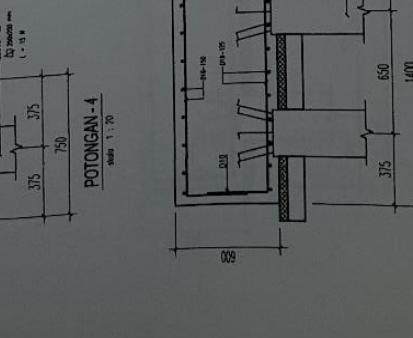
DETAIL PILE CAP TYPE PC-3  
skala: 1 : 20



POTONGAN - 1  
skala: 1 : 20



POTONGAN - 2  
skala: 1 : 20



POTONGAN - 3  
skala: 1 : 20

HASIL SONDIR MESIN

Pembangunan Gedung Rumah Sakit Gigi dan Mulut Universitas Muhammadiyah Semarang  
 Jalan Kadungmandu Raya No.18, Semarang, Jawa Tengah

TANGGAL : 14 Maret 2016

TEAM : Tetang P

SM.1

DEPTH (M)	e perhitungan pembacaan		q + f	F	TF	friction Ratio Fr (%)	DEPTH (M)	e perhitungan pembacaan		q + f	F	TF	Page 1	
	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm			kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm	friction Ratio Fr (%)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.20	22.00	11.00	15.00	0.53	365.33	4.85	
0.20	0.00	0.00	0.00	0.00	0.00	0.00	10.40	20.00	10.00	17.00	0.93	384.00	9.33	
0.40	50.00	25.00	26.00	0.13	2.67	0.53	10.60	20.00	10.00	17.00	0.93	402.67	9.33	
0.60	50.00	25.00	26.00	0.13	5.33	0.53	10.80	20.00	10.00	17.00	0.93	421.33	9.33	
0.80	4.00	2.00	3.00	0.13	8.00	6.67	11.00	24.00	12.00	18.00	0.80	437.33	6.67	
1.00	2.00	1.00	2.00	0.13	10.67	13.33	11.20	20.00	10.00	15.00	0.67	450.67	6.67	
1.20	2.00	1.00	2.00	0.13	13.33	13.33	11.40	20.00	10.00	15.00	0.67	464.00	6.67	
1.40	4.00	2.00	3.00	0.13	16.00	6.67	11.60	20.00	10.00	15.00	0.67	477.33	6.67	
1.60	4.00	2.00	3.00	0.13	18.67	6.67	11.80	20.00	10.00	17.00	0.93	496.00	9.33	
1.80	4.00	2.00	3.00	0.13	21.33	6.67	12.00	24.00	12.00	18.00	0.80	512.00	6.67	
2.00	4.00	2.00	4.00	0.27	26.67	13.33	12.20	30.00	15.00	20.00	0.67	525.33	4.44	
2.20	4.00	2.00	4.00	0.27	32.00	13.33	12.40	30.00	15.00	20.00	0.67	538.67	4.44	
2.40	4.00	2.00	4.00	0.27	37.33	13.33	12.60	24.00	12.00	18.00	0.80	554.67	6.67	
2.60	6.00	3.00	6.00	0.40	45.33	13.33	12.80	24.00	12.00	17.00	0.67	568.00	5.56	
2.80	6.00	3.00	6.00	0.40	53.33	13.33	13.00	30.00	15.00	22.00	0.93	586.67	6.22	
3.00	4.00	2.00	4.00	0.27	58.67	13.33	13.20	30.00	15.00	22.00	0.93	605.33	6.22	
3.20	4.00	2.00	4.00	0.27	64.00	13.33	13.40	40.00	20.00	27.00	0.93	624.00	4.67	
3.40	4.00	2.00	5.00	0.40	72.00	20.00	13.60	32.00	16.00	22.00	0.80	640.00	5.00	
3.60	8.00	4.00	7.00	0.40	80.00	10.00	13.80	36.00	18.00	24.00	0.80	656.00	4.44	
3.80	10.00	5.00	7.00	0.27	85.33	5.33	14.00	36.00	18.00	22.00	0.53	666.67	2.96	
4.00	10.00	5.00	7.00	0.27	90.67	5.33	14.20	44.00	22.00	28.00	0.80	682.67	3.64	
4.20	10.00	5.00	8.00	0.40	98.67	8.00	14.40	48.00	24.00	27.00	0.40	698.67	1.67	
4.40	10.00	5.00	8.00	0.40	106.67	8.00	14.60	40.00	20.00	23.00	0.40	698.67	2.00	
4.60	12.00	6.00	10.00	0.53	117.33	8.89	14.80	40.00	20.00	23.00	0.40	706.67	2.00	
4.80	10.00	5.00	8.00	0.40	125.33	8.00	15.00	44.00	22.00	27.00	0.67	720.00	3.03	
5.00	10.00	5.00	8.00	0.40	133.33	8.00	15.20	50.00	25.00	32.00	0.93	738.67	3.73	
5.20	14.00	7.00	11.00	0.53	144.00	7.62	15.40	100.00	50.00	58.00	1.07	760.00	2.13	
5.40	14.00	7.00	12.00	0.67	157.33	9.52	15.60	150.00	75.00	85.00	1.33	786.67	1.78	
5.60	10.00	5.00	8.00	0.40	165.33	8.00	15.80							
5.80	10.00	5.00	8.00	0.40	173.33	8.00	16.00							
6.00	16.00	8.00	12.00	0.53	184.00	6.67	16.20	Angkur Terangkat						
6.20	10.00	5.00	8.00	0.40	192.00	8.00	16.40	Pipa > 300 kg/cm <sup>2</sup>						
6.40	10.00	5.00	8.00	0.40	200.00	8.00	16.60							
6.60	10.00	5.00	8.00	0.40	208.00	8.00	16.80							
6.80	14.00	7.00	10.00	0.40	216.00	5.71	17.00							
7.00	12.00	6.00	10.00	0.53	226.67	8.89	17.20							
7.20	12.00	6.00	10.00	0.53	237.33	8.89	17.40							
7.40	16.00	8.00	12.00	0.53	248.00	6.67	17.60							
7.60	14.00	7.00	10.00	0.40	256.00	5.71	17.80							
7.80	14.00	7.00	10.00	0.40	264.00	5.71	18.00							
8.00	16.00	8.00	11.00	0.40	272.00	5.00	18.20							
8.20	20.00	10.00	13.00	0.40	280.00	4.00	18.40							
8.40	22.00	11.00	13.00	0.27	285.33	2.42	18.60							
8.60	20.00	10.00	12.00	0.27	290.67	2.67	18.80							
8.80	18.00	9.00	11.00	0.27	296.00	2.96	19.00							
9.00	18.00	9.00	12.00	0.40	304.00	4.44	19.20							
9.20	20.00	10.00	14.00	0.53	314.67	5.33	19.40							
9.40	24.00	12.00	15.00	0.40	322.67	3.33	19.60							
9.60	20.00	10.00	14.00	0.53	333.33	5.33	19.80							
9.80	20.00	10.00	14.00	0.53	344.00	5.33	20.00							
10.00	20.00	10.00	14.00	0.53	354.67	5.33								

HASIL SONDIR MESIN

PROJEK : Pembangunan Gedung Rumah Sakit Gigi dan Mulut Universitas Muhammadiyah Semarang  
 LOKASI : Jalan Kedungrejo Raya No.18, Semarang, Jawa Tengah  
 TITIK : SM 2

TANGGAL : 10 Maret 2016  
 TEAM : Taling P

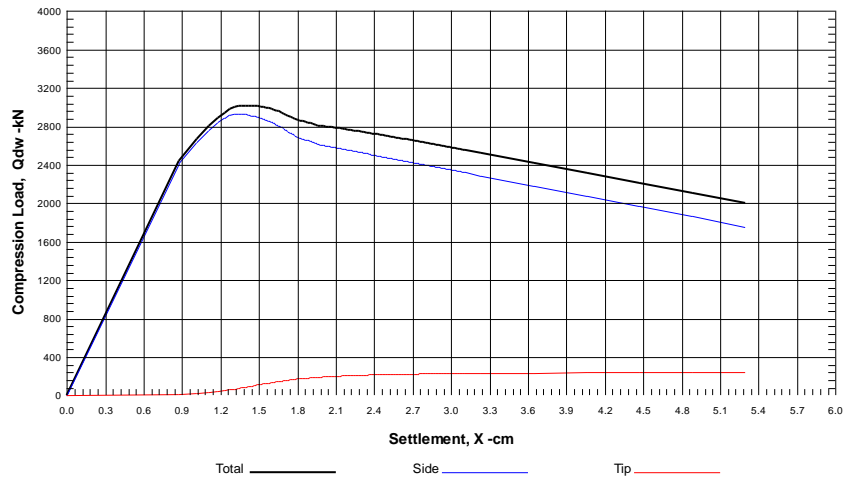
DEPTH (M)	qc	qc + f	F	TF	Fr (%)	DEPTH (M)	qc	qc + f	F	TF	Fr (%)		
0.00	0.00	0.00	0.00	0.00	0.00	10.20	20.00	10.00	20.00	1.33	672.00	13.33	
0.20	0.00	0.00	0.00	0.00	0.00	10.40	20.00	10.00	18.00	1.07	693.33	10.67	
0.40	2.00	1.00	2.00	0.13	2.67	13.33	10.60	11.00	20.00	1.20	717.33	10.91	
0.60	12.00	6.00	7.00	0.13	5.33	2.22	10.80	30.00	15.00	22.00	0.93	736.00	6.22
0.80	4.00	2.00	3.00	0.13	8.00	6.67	11.00	30.00	15.00	22.00	0.93	754.67	6.22
1.00	4.00	2.00	3.00	0.13	10.67	6.67	11.20	24.00	12.00	25.00	1.73	789.33	14.44
1.20	4.00	2.00	4.00	0.27	16.00	13.33	11.40	24.00	12.00	25.00	1.73	824.00	14.44
1.40	6.00	3.00	5.00	0.27	21.33	8.89	11.60	24.00	12.00	25.00	1.73	858.67	14.44
1.60	4.00	2.00	4.00	0.27	26.67	13.33	11.80	24.00	12.00	25.00	1.73	893.33	14.44
1.80	4.00	2.00	4.00	0.27	32.00	13.33	12.00	20.00	10.00	22.00	1.60	925.33	16.00
2.00	8.00	4.00	6.00	0.27	37.33	6.67	12.20	24.00	12.00	25.00	1.73	960.00	14.44
2.20	6.00	3.00	5.00	0.27	42.67	8.89	12.40	20.00	10.00	20.00	1.33	986.67	13.33
2.40	8.00	4.00	6.00	0.27	48.00	6.67	12.60	20.00	10.00	20.00	1.33	1013.33	13.33
2.60	8.00	4.00	7.00	0.40	56.00	10.00	12.80	50.00	25.00	32.00	0.93	1032.00	3.73
2.80	8.00	4.00	7.00	0.40	64.00	10.00	13.00	200.00	100.00	108.00	1.07	1053.33	1.07
3.00	14.00	7.00	10.00	0.40	72.00	5.71	13.20	170.00	85.00	100.00	2.00	1093.33	2.35
3.20	8.00	4.00	8.00	0.53	82.67	13.33	13.40	170.00	85.00	100.00	2.00	1133.33	2.35
3.40	8.00	4.00	8.00	0.53	93.33	13.33	13.60	216.00	108.00	120.00	1.60	1165.33	1.48
3.60	10.00	5.00	10.00	0.67	106.67	13.33	13.80	254.00	127.00	140.00	1.73	1200.00	1.36
3.80	10.00	5.00	10.00	0.67	120.00	13.33	14.00						
4.00	10.00	5.00	10.00	0.67	133.33	13.33	14.20						
4.20	10.00	5.00	10.00	0.67	146.67	13.33	14.40						
4.40	10.00	5.00	10.00	0.67	160.00	13.33	14.60						
4.60	12.00	6.00	10.00	0.53	170.67	8.89	14.80						
4.80	12.00	6.00	10.00	0.53	181.33	8.89	15.00						
5.00	12.00	6.00	10.00	0.53	192.00	8.89	15.20						
5.20	12.00	6.00	12.00	0.80	208.00	13.33	15.40						
5.40	10.00	5.00	8.00	0.40	216.00	8.00	15.60						
5.60	12.00	6.00	11.00	0.67	229.33	11.11	15.80						
5.80	12.00	6.00	11.00	0.67	242.67	11.11	16.00						
6.00	14.00	7.00	10.00	0.40	250.67	5.71	16.20						
6.20	16.00	8.00	12.00	0.53	261.33	6.67	16.40						
6.40	12.00	6.00	10.00	0.53	272.00	8.89	16.60						
6.60	12.00	6.00	10.00	0.53	282.67	8.89	16.80						
6.80	16.00	8.00	12.00	0.53	293.33	6.67	17.00						
7.00	16.00	8.00	15.00	0.93	312.00	11.67	17.20						
7.20	16.00	8.00	15.00	0.93	330.67	11.67	17.40						
7.40	16.00	8.00	15.00	0.93	349.33	11.67	17.60						
7.60	10.00	5.00	15.00	1.33	376.00	26.67	17.80						
7.80	10.00	5.00	15.00	1.33	402.67	26.67	18.00						
8.00	16.00	8.00	18.00	1.33	429.33	16.67	18.20						
8.20	16.00	8.00	14.00	0.80	445.33	10.00	18.40						
8.40	16.00	8.00	14.00	0.80	461.33	10.00	18.60						
8.60	16.00	8.00	14.00	0.80	477.33	10.00	18.80						
8.80	16.00	8.00	18.00	1.33	504.00	16.67	19.00						
9.00	22.00	11.00	20.00	1.20	528.00	10.91	19.20						
9.20	20.00	10.00	18.00	1.07	549.33	10.67	19.40						
9.40	20.00	10.00	18.00	1.07	570.67	10.67	19.60						
9.60	20.00	10.00	20.00	1.33	597.33	13.33	19.80						
9.80	20.00	10.00	20.00	1.33	624.00	13.33	20.00						
10.00	24.00	12.00	20.00	1.07	645.33	8.89							

Angkur Terangkat  
 Pipa > 400 kg/cm<sup>2</sup>

**BORE LOG**

Project : Pembangunan Gedung Rumah Sakit Gigi dan Mulut Universitas Muhammadiyah Semarang Maret 2016		Location : Jalan Kedungmundu Raya No.18 Semarang, Jawa Tengah		Bore Hole No : BH. 1 Page 1					
Drilling Method : Cocon Sample : Sunchin M. Royent Rotary Diameter of hole : 73 mm		Described by : Andi RAS, ST Checked by : Ir. SRI Hardiyati, MT Date of photograph : Sample store at : Semarang Ground Water Depth : -0,75 meter		Coordinate X: Y: Elevation Z: Inclination Azimuth					
Depth (m)	Thickness (m)	sample	Symbol	Layer Type	DESCRIPTION	Field Test SPT			
						Depth (m)	N	10	30
0,00				LANAU kepasiran	sedikit kerikil, warna coklat				
2,00				LANAU kelepungan	teguh, warna coklat abu-abu	2,00			
2,45									
4,00	4,50			LEMPUNG kelanauan	teguh, warna coklat abu-abu	4,00			
4,45	5,00					4,45			
6,00				LEMPUNG kelanauan	teguh, warna coklat abu-abu	6,00			
6,45						6,45			
8,00				LEMPUNG kelanauan	sedikit kulit kerang, teguh, warna coklat abu-abu	8,00			
8,45						8,45			
10,00	9,50			LEMPUNG	sedikit butir kasar, sangat kaku, warna abu-abu kecoklatan	10,00			
10,45	10,00					10,45			
12,00				LEMPUNG	sangat kaku, warna abu-abu	12,00			
12,45						12,45			
14,00				LEMPUNG kepasiran	sangat kaku sampai keras, warna abu-abu bintang putih	14,00			
14,45	14,50					14,45			
16,00	15,00			LANAU kelepungan	campur butir kasar, sangat kaku sampai keras, warna abu-abu kecoklatan dan merah kekuningan	16,00			
16,45						16,45			
18,00						18,00			
18,45						18,45			
20,00	19,50					20,00			
20,45	20,00					20,45			
22,00						22,00			
22,45						22,45			
24,00						24,00			
24,45	24,50					24,45			
26,00	25,00			LEMPUNG	sedikit humus, keras, warna abu-abu kehitaman	26,00			
26,45						26,45			
28,00				LEMPUNG	mudah menyerpih, keras, warna abu-abu	28,00			
28,45						28,45			
30,00	2,00			PASIR kelanauan	sedikit kerikil, keras, warna abu-abu	30,00			
30,45	30,00					30,45			
End Of Boring									

### Vertical Load vs. Settlement

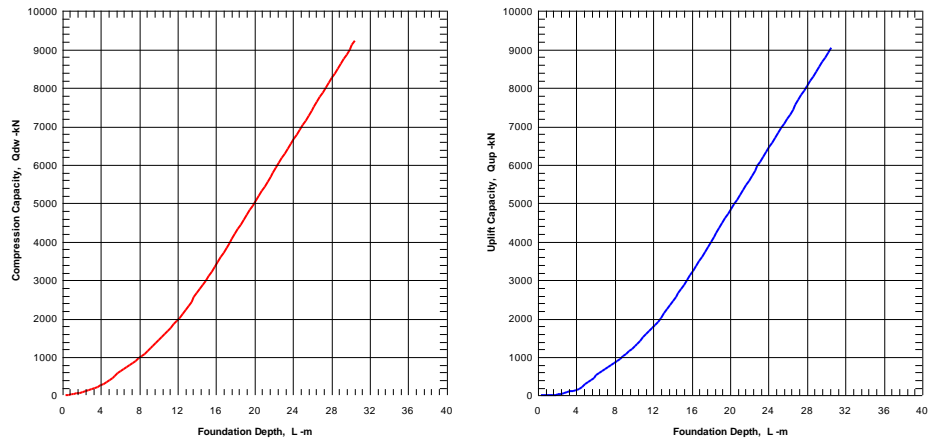


Driving Concrete Pile

Figure 1



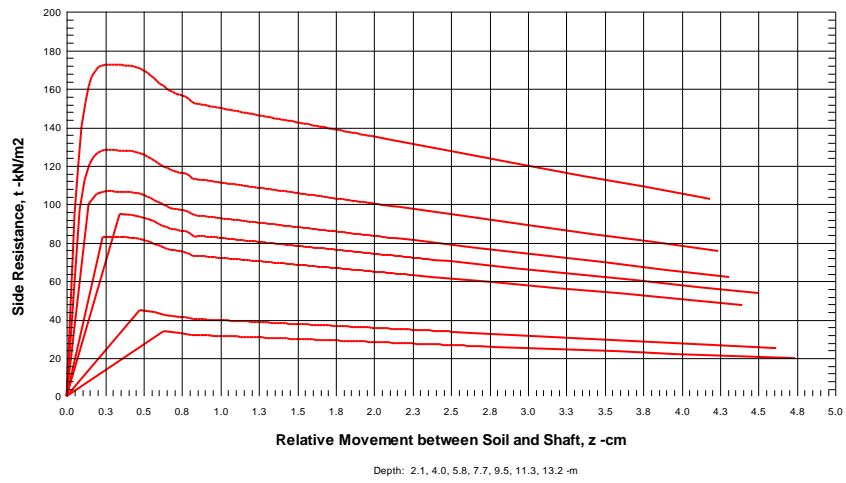
### ULTIMATE CAPACITY vs FOUNDATION DEPTH



Driving Concrete Pile

Figure 1

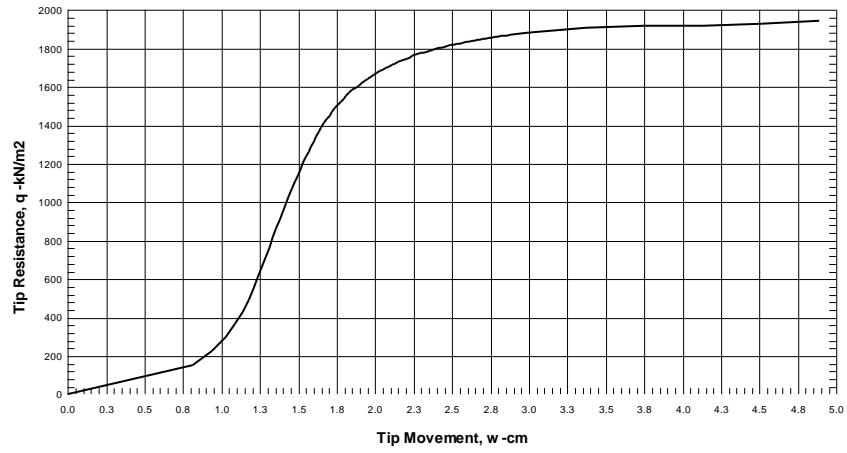
### Side Resistance vs. Relative Movement between Soil and Shaft (t-z)



Driving Concrete Pile

Figure 1

### Tip Resistance vs. Tip Movement (q-w)

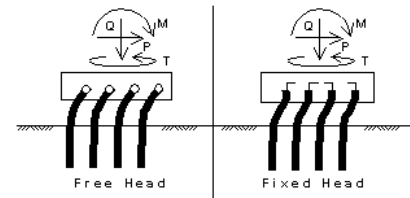


Driving Concrete Pile

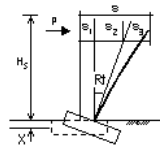
Figure 1

## VERTICAL ANALYSIS

Figure 1



$s = s_1 + s_2 + s_3$   
 $s_1$  = Lateral Movement by AllPile  
 $s_2 = R_t * H_s$ ,  $H_s$  = Height of Structure  
 $R_t$  = Rotation by AllPile  
 $s_3$  = Deflection of Structure by Structural Engineer  
 $x$  = Vertical Settlement by AllPile



Driving Concrete Pile

**Loads:**

Load Factor for Vertical Loads = 1.0  
 Load Factor for Lateral Loads = 1.0  
 Loads Supported by Pile Cap = 0 %  
 Shear Condition: Static

Vertical Load,  $Q = 202.7$  -kN  
 Shear Load,  $P = 0.0$  -kN  
 Moment,  $M = 0.0$  -kN-m

**Profile:**

Pile Length,  $L = 15.0$  -m  
 Top Height,  $H_s = +0.3$  -m  
 Slope Angle,  $A_s = 0$   
 Batter Angle,  $A_b = 0$

**Group and Boundary Condition:**

Free Head  
 $S_x = 75$  -cm  
 $S_y = 75$  -cm  
 $N_x = 1$   
 $N_y = 2$

**Soil Data:**

Depth -m	Gamma -kN/m <sup>3</sup>	Phi	C -kN/m <sup>2</sup>	K -MN/m <sup>3</sup>	e50 or Dr %	Nspt
0.000	6.1	25.8	4.2	5.3	2.88	1
2	10.5	29.8	29.9	85.0	0.87	10
4	10.9	0.0	95.8	164.2	0.66	16
6	10.9	0.0	83.8	136.9	0.71	14
8	11.0	0.0	107.7	192.3	0.61	18
10	11.1	0.0	129.3	244.3	0.55	22
12	11.5	0.0	174.2	357.3	0.46	29
15	11.8	0.0	201.7	427.8	0.42	34

**Pile Data:**

Depth -m	Width -cm	Area -cm <sup>2</sup>	Per. -cm	I -cm <sup>4</sup>	E -MP	Weight -kN/m
0.0	25	625.0	100.0	32552.1	20683	1.474
15.0	25	625.0	100.0	32552.1	199938	4.785

**Group Vertical capacity:**

Total Ultimate Capacity (Down) = 3018.231-kN Total Ultimate Capacity (Up) = 2799.955-kN  
 Total Allowable Capacity (Down) = 1207.292-kN Total Allowable Capacity (Up) = 1119.982-kN  
 OK!  $Q_{allow} > Q$

**Group Settlement Calculation:**

At  $X_{allow} = 2.54$ -cm  $Q_{allow} = 2692.78$ -kN  
 At  $Q = 202.69$ -kN Settlement = 0.07287-cm

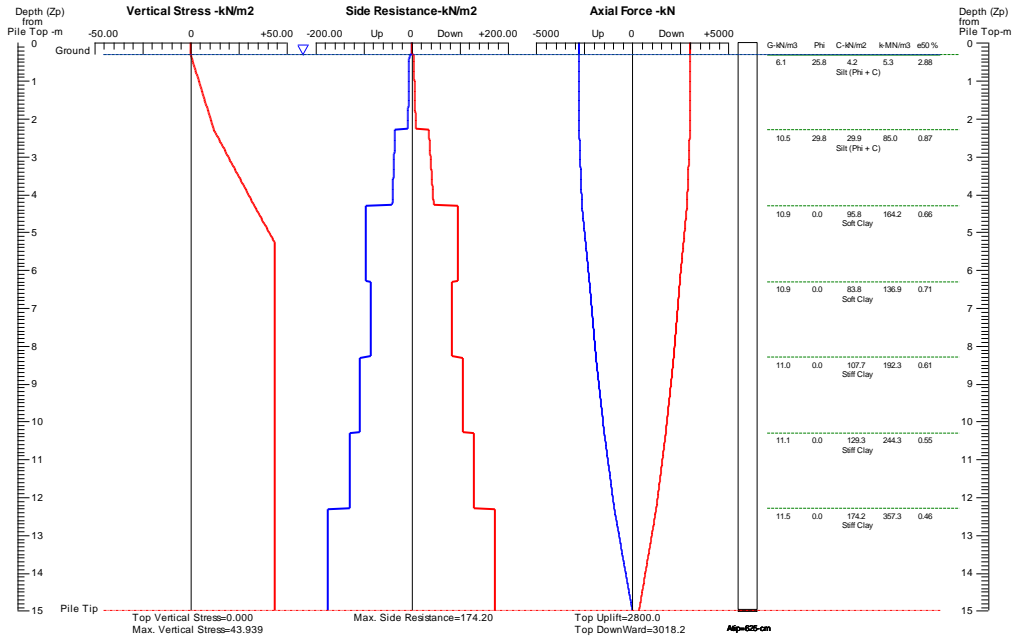
Note: If program can't find result or the result exceeds the up limits. The result shows 9999.



**CivilTech  
Software**

Driving Concrete Pile

**SOIL STRESS, SIDE RESISTANCE, & AXIAL FORCE vs DEPTH**  
Based on Ultimate Load Condition



Driving Concrete Pile

Figure 1

**Table: Joint Reactions, Part 1 of 2**

Table: Joint Reactions, Part 1 of 2							
Joint	OutputCase	CaseType	StepType	F1 Tonf	F2 Tonf	F3 Tonf	M1 Tonf-m
342	ENVL	Combination	Max	3.1788	1.9461	59.6936	3.82324
342	ENVL	Combination	Min	-2.6615	-2.7196	27.5482	-5.26047
343	ENVL	Combination	Max	3.7150	2.0379	92.4898	3.98557
343	ENVL	Combination	Min	-3.2869	-2.9114	53.1064	-5.31093
344	ENVL	Combination	Max	3.2687	2.0665	103.8317	4.03782
344	ENVL	Combination	Min	-3.2605	-2.9591	59.8828	-5.34110
345	ENVL	Combination	Max	3.2946	2.0707	103.4259	4.05060
345	ENVL	Combination	Min	-3.2728	-2.9668	59.6805	-5.34888
346	ENVL	Combination	Max	3.2914	2.0737	103.4312	4.05919
346	ENVL	Combination	Min	-3.2748	-2.9717	59.6658	-5.35412
347	ENVL	Combination	Max	3.2911	2.0744	103.4307	4.06377
347	ENVL	Combination	Min	-3.2784	-2.9744	59.6545	-5.35536
348	ENVL	Combination	Max	3.2902	2.0731	103.4302	4.06446
348	ENVL	Combination	Min	-3.2822	-2.9747	59.6472	-5.35332
349	ENVL	Combination	Max	3.2884	2.0700	103.4297	4.06140
349	ENVL	Combination	Min	-3.2857	-2.9719	59.6486	-5.34933
350	ENVL	Combination	Max	3.2857	2.0700	103.4297	4.06140
350	ENVL	Combination	Min	-3.2884	-2.9719	59.6486	-5.34933
351	ENVL	Combination	Max	3.2822	2.0731	103.4302	4.06446
351	ENVL	Combination	Min	-3.2902	-2.9747	59.6472	-5.35332
352	ENVL	Combination	Max	3.2784	2.0744	103.4307	4.06377
352	ENVL	Combination	Min	-3.2911	-2.9744	59.6545	-5.35536
353	ENVL	Combination	Max	3.2748	2.0737	103.4312	4.05919
353	ENVL	Combination	Min	-3.2914	-2.9717	59.6658	-5.35412
354	ENVL	Combination	Max	3.2728	2.0707	103.4259	4.05060
354	ENVL	Combination	Min	-3.2946	-2.9668	59.6805	-5.34888
355	ENVL	Combination	Max	3.2605	2.0665	103.8317	4.03782
355	ENVL	Combination	Min	-3.2687	-2.9591	59.8828	-5.34110
356	ENVL	Combination	Max	3.2869	2.0379	92.4898	3.98557
356	ENVL	Combination	Min	-3.7150	-2.9114	53.1064	-5.31093
357	ENVL	Combination	Max	2.6615	1.9461	59.6936	3.82324
357	ENVL	Combination	Min	-3.1788	-2.7196	27.5482	-5.26047
358	ENVL	Combination	Max	3.4163	2.7603	93.3278	5.02469
358	ENVL	Combination	Min	-2.7730	-2.7161	48.0074	-5.06986
359	ENVL	Combination	Max	3.9762	2.8671	148.1361	5.17545
359	ENVL	Combination	Min	-3.4267	-2.8464	86.8001	-5.19367
360	ENVL	Combination	Max	3.4413	2.8907	166.4828	5.22502
360	ENVL	Combination	Min	-3.4323	-2.8851	100.5004	-5.22542
361	ENVL	Combination	Max	3.4659	2.8953	165.9912	5.23784
361	ENVL	Combination	Min	-3.4469	-2.8921	100.3110	-5.23447
362	ENVL	Combination	Max	3.4616	2.8986	165.9884	5.24738
362	ENVL	Combination	Min	-3.4475	-2.8974	100.2970	-5.24062
363	ENVL	Combination	Max	3.4603	2.8994	165.9894	5.25253
363	ENVL	Combination	Min	-3.4499	-2.9002	100.2952	-5.24232
364	ENVL	Combination	Max	3.4587	2.8992	165.9886	5.25536
364	ENVL	Combination	Min	-3.4523	-2.9023	100.2996	-5.24161
366	ENVL	Combination	Max	3.4567	2.9057	165.9872	5.26738
366	ENVL	Combination	Min	-3.4545	-2.9131	100.3490	-5.24805
367	ENVL	Combination	Max	3.4545	2.9057	165.9872	5.26738

Table: Joint Reactions, Part 1 of 2

Joint	OutputCase	CaseType	StepType	F1	F2	F3	M1
				Tonf	Tonf	Tonf	Tonf-m
367	ENVL	Combination	Min	-3.4567	-2.9131	100.3490	-5.24805
368	ENVL	Combination	Max	3.4523	2.8992	165.9886	5.25536
368	ENVL	Combination	Min	-3.4587	-2.9023	100.2996	-5.24161
369	ENVL	Combination	Max	3.4499	2.8994	165.9894	5.25253
369	ENVL	Combination	Min	-3.4603	-2.9002	100.2952	-5.24232
370	ENVL	Combination	Max	3.4475	2.8986	165.9884	5.24738
370	ENVL	Combination	Min	-3.4616	-2.8974	100.2970	-5.24062
371	ENVL	Combination	Max	3.4469	2.8953	165.9912	5.23784
371	ENVL	Combination	Min	-3.4659	-2.8921	100.3110	-5.23447
372	ENVL	Combination	Max	3.4323	2.8907	166.4828	5.22502
372	ENVL	Combination	Min	-3.4413	-2.8851	100.5004	-5.22542
373	ENVL	Combination	Max	3.4267	2.8671	148.1361	5.17545
373	ENVL	Combination	Min	-3.9762	-2.8464	86.8001	-5.19367
374	ENVL	Combination	Max	2.7730	2.7603	93.3278	5.02469
374	ENVL	Combination	Min	-3.4163	-2.7161	48.0074	-5.06986
375	ENVL	Combination	Max	3.4184	2.7107	93.3716	5.08043
375	ENVL	Combination	Min	-2.7780	-2.7663	47.9654	-5.01512
376	ENVL	Combination	Max	3.9792	2.8399	148.1346	5.20696
376	ENVL	Combination	Min	-3.4327	-2.8748	86.8190	-5.16395
377	ENVL	Combination	Max	3.4444	2.8770	166.4815	5.24248
377	ENVL	Combination	Min	-3.4383	-2.9006	100.5004	-5.21093
378	ENVL	Combination	Max	3.4680	2.8824	165.9897	5.25548
378	ENVL	Combination	Min	-3.4519	-2.9075	100.3108	-5.22106
379	ENVL	Combination	Max	3.4630	2.8861	165.9867	5.26573
379	ENVL	Combination	Min	-3.4515	-2.9133	100.2966	-5.22788
380	ENVL	Combination	Max	3.4610	2.8874	165.9850	5.27169
380	ENVL	Combination	Min	-3.4526	-2.9166	100.2940	-5.23047
381	ENVL	Combination	Max	3.4570	2.8818	165.9701	5.26659
381	ENVL	Combination	Min	-3.4523	-2.9116	100.3359	-5.22363
382	ENVL	Combination	Max	3.4547	2.8143	165.9171	5.16966
382	ENVL	Combination	Min	-3.4532	-2.8256	100.8261	-5.14635
383	ENVL	Combination	Max	3.4532	2.8143	165.9171	5.16966
383	ENVL	Combination	Min	-3.4547	-2.8256	100.8261	-5.14635
384	ENVL	Combination	Max	3.4523	2.8818	165.9701	5.26659
384	ENVL	Combination	Min	-3.4570	-2.9116	100.3359	-5.22363
385	ENVL	Combination	Max	3.4526	2.8874	165.9850	5.27169
385	ENVL	Combination	Min	-3.4610	-2.9166	100.2940	-5.23047
386	ENVL	Combination	Max	3.4515	2.8861	165.9867	5.26573
386	ENVL	Combination	Min	-3.4630	-2.9133	100.2966	-5.22788
387	ENVL	Combination	Max	3.4519	2.8824	165.9897	5.25548
387	ENVL	Combination	Min	-3.4680	-2.9075	100.3108	-5.22106
388	ENVL	Combination	Max	3.4383	2.8770	166.4815	5.24248
388	ENVL	Combination	Min	-3.4444	-2.9006	100.5004	-5.21093
390	ENVL	Combination	Max	3.4327	2.8399	148.1346	5.20696
390	ENVL	Combination	Min	-3.9792	-2.8748	86.8189	-5.16395
391	ENVL	Combination	Max	2.7780	2.7107	93.3716	5.08043
391	ENVL	Combination	Min	-3.4184	-2.7663	47.9654	-5.01512
392	ENVL	Combination	Max	3.1841	2.7140	59.6288	5.27048
392	ENVL	Combination	Min	-2.6757	-1.9509	27.6186	-3.81434
393	ENVL	Combination	Max	3.7233	2.9042	92.4929	5.32368
393	ENVL	Combination	Min	-3.3043	-2.0439	53.1048	-3.97474
394	ENVL	Combination	Max	3.2771	2.9497	103.8376	5.35760
394	ENVL	Combination	Min	-3.2780	-2.0740	59.8831	-4.02441
395	ENVL	Combination	Max	3.3005	2.9551	103.4332	5.36929

**Table: Joint Reactions, Part 1 of 2**

Joint	OutputCase	CaseType	StepType	F1	F2	F3	M1
				Tonf	Tonf	Tonf	Tonf-m
395	ENVL	Combination	Min	-3.2877	-2.0798	59.6815	-4.03458
396	ENVL	Combination	Max	3.2952	2.9577	103.4401	5.37864
396	ENVL	Combination	Min	-3.2872	-2.0844	59.6685	-4.04056
397	ENVL	Combination	Max	3.2938	2.9582	103.4310	5.38404
397	ENVL	Combination	Min	-3.2875	-2.0869	59.6419	-4.04264
398	ENVL	Combination	Max	3.2802	2.9575	103.4931	5.38866
398	ENVL	Combination	Min	-3.2813	-2.0896	59.7834	-4.04242
399	ENVL	Combination	Max	3.4866	3.2941	112.1318	5.65811
399	ENVL	Combination	Min	-3.2827	-2.6584	68.3554	-4.84167
400	ENVL	Combination	Max	3.2827	3.2941	112.1318	5.65811
400	ENVL	Combination	Min	-3.4866	-2.6584	68.3554	-4.84167
401	ENVL	Combination	Max	3.2813	2.9575	103.4931	5.38866
401	ENVL	Combination	Min	-3.2802	-2.0896	59.7834	-4.04242
402	ENVL	Combination	Max	3.2875	2.9582	103.4310	5.38404
402	ENVL	Combination	Min	-3.2938	-2.0869	59.6419	-4.04264
403	ENVL	Combination	Max	3.2872	2.9577	103.4401	5.37864
403	ENVL	Combination	Min	-3.2952	-2.0844	59.6685	-4.04056
404	ENVL	Combination	Max	3.2877	2.9551	103.4332	5.36929
404	ENVL	Combination	Min	-3.3005	-2.0798	59.6815	-4.03458
406	ENVL	Combination	Max	3.2780	2.9497	103.8376	5.35760
406	ENVL	Combination	Min	-3.2771	-2.0740	59.8831	-4.02441
407	ENVL	Combination	Max	3.3043	2.9042	92.4929	5.32368
407	ENVL	Combination	Min	-3.7233	-2.0439	53.1048	-3.97474
408	ENVL	Combination	Max	2.6757	2.7140	59.6288	5.27048
408	ENVL	Combination	Min	-3.1841	-1.9509	27.6186	-3.81434
410	ENVL	Combination	Max	2.3290	2.6492	20.2699	4.14793
410	ENVL	Combination	Min	-1.1604	-2.0616	8.3647	-4.00650
411	ENVL	Combination	Max	1.1604	2.6492	20.2699	4.14793
411	ENVL	Combination	Min	-2.3290	-2.0616	8.3647	-4.00650

**Table: Joint Reactions, Part 2 of 2**

**Table: Joint Reactions, Part 2 of 2**

Joint	OutputCase	StepType	M3
			Tonf-m
342	ENVL	Max	0.00347
342	ENVL	Min	-0.00351
343	ENVL	Max	0.00325
343	ENVL	Min	-0.00344
344	ENVL	Max	0.00285
344	ENVL	Min	-0.00319
345	ENVL	Max	0.00245
345	ENVL	Min	-0.00279
346	ENVL	Max	0.00187
346	ENVL	Min	-0.00228
347	ENVL	Max	0.00163
347	ENVL	Min	-0.00191
348	ENVL	Max	0.00145
348	ENVL	Min	-0.00175
349	ENVL	Max	0.00156
349	ENVL	Min	-0.00158
350	ENVL	Max	0.00158
350	ENVL	Min	-0.00156



**Table: Joint Reactions, Part 2 of 2**

Joint	OutputCase	StepType	M3 Tonf-m
351	ENVL	Max	0.00175
351	ENVL	Min	-0.00145
352	ENVL	Max	0.00191
352	ENVL	Min	-0.00163
353	ENVL	Max	0.00228
353	ENVL	Min	-0.00187
354	ENVL	Max	0.00279
354	ENVL	Min	-0.00245
355	ENVL	Max	0.00319
355	ENVL	Min	-0.00285
356	ENVL	Max	0.00344
356	ENVL	Min	-0.00325
357	ENVL	Max	0.00351
357	ENVL	Min	-0.00347
358	ENVL	Max	0.00303
358	ENVL	Min	-0.00339
359	ENVL	Max	0.00305
359	ENVL	Min	-0.00338
360	ENVL	Max	0.00286
360	ENVL	Min	-0.00315
361	ENVL	Max	0.00237
361	ENVL	Min	-0.00277
362	ENVL	Max	0.00191
362	ENVL	Min	-0.00223
363	ENVL	Max	0.00142
363	ENVL	Min	-0.00179
364	ENVL	Max	0.00155
364	ENVL	Min	-0.00171
366	ENVL	Max	0.00148
366	ENVL	Min	-0.00164
367	ENVL	Max	0.00164
367	ENVL	Min	-0.00148
368	ENVL	Max	0.00171
368	ENVL	Min	-0.00155
369	ENVL	Max	0.00179
369	ENVL	Min	-0.00142
370	ENVL	Max	0.00223
370	ENVL	Min	-0.00191
371	ENVL	Max	0.00277
371	ENVL	Min	-0.00237
372	ENVL	Max	0.00315
372	ENVL	Min	-0.00286
373	ENVL	Max	0.00338
373	ENVL	Min	-0.00305
374	ENVL	Max	0.00339
374	ENVL	Min	-0.00303
375	ENVL	Max	0.00304
375	ENVL	Min	-0.00338
376	ENVL	Max	0.00303
376	ENVL	Min	-0.00341
377	ENVL	Max	0.00280
377	ENVL	Min	-0.00323
378	ENVL	Max	0.00241
378	ENVL	Min	-0.00275

**Table: Joint Reactions, Part 2 of 2**

Joint	OutputCase	StepType	M3 Tonf-m
379	ENVL	Max	0.00187
379	ENVL	Min	-0.00225
380	ENVL	Max	0.00163
380	ENVL	Min	-0.00192
381	ENVL	Max	0.00140
381	ENVL	Min	-0.00173
382	ENVL	Max	0.00153
382	ENVL	Min	-0.00154
383	ENVL	Max	0.00154
383	ENVL	Min	-0.00153
384	ENVL	Max	0.00173
384	ENVL	Min	-0.00140
385	ENVL	Max	0.00192
385	ENVL	Min	-0.00163
386	ENVL	Max	0.00225
386	ENVL	Min	-0.00187
387	ENVL	Max	0.00275
387	ENVL	Min	-0.00241
388	ENVL	Max	0.00323
388	ENVL	Min	-0.00280
390	ENVL	Max	0.00341
390	ENVL	Min	-0.00303
391	ENVL	Max	0.00338
391	ENVL	Min	-0.00304
392	ENVL	Max	0.00323
392	ENVL	Min	-0.00387
393	ENVL	Max	0.00313
393	ENVL	Min	-0.00365
394	ENVL	Max	0.00284
394	ENVL	Min	-0.00322
395	ENVL	Max	0.00242
395	ENVL	Min	-0.00282
396	ENVL	Max	0.00193
396	ENVL	Min	-0.00226
397	ENVL	Max	0.00138
397	ENVL	Min	-0.00175
398	ENVL	Max	0.00172
398	ENVL	Min	-0.00203
399	ENVL	Max	0.00197
399	ENVL	Min	-0.00226
400	ENVL	Max	0.00226
400	ENVL	Min	-0.00197
401	ENVL	Max	0.00203
401	ENVL	Min	-0.00172
402	ENVL	Max	0.00175
402	ENVL	Min	-0.00138
403	ENVL	Max	0.00226
403	ENVL	Min	-0.00193
404	ENVL	Max	0.00282
404	ENVL	Min	-0.00242
406	ENVL	Max	0.00322
406	ENVL	Min	-0.00284
407	ENVL	Max	0.00365
407	ENVL	Min	-0.00313

**Table: Joint Reactions, Part 2 of 2**

<b>Joint</b>	<b>OutputCase</b>	<b>StepType</b>	<b>M3</b> Tonf-m
408	ENVL	Max	0.00387
408	ENVL	Min	-0.00323
410	ENVL	Max	0.00216
410	ENVL	Min	-0.00339
411	ENVL	Max	0.00339
411	ENVL	Min	-0.00216