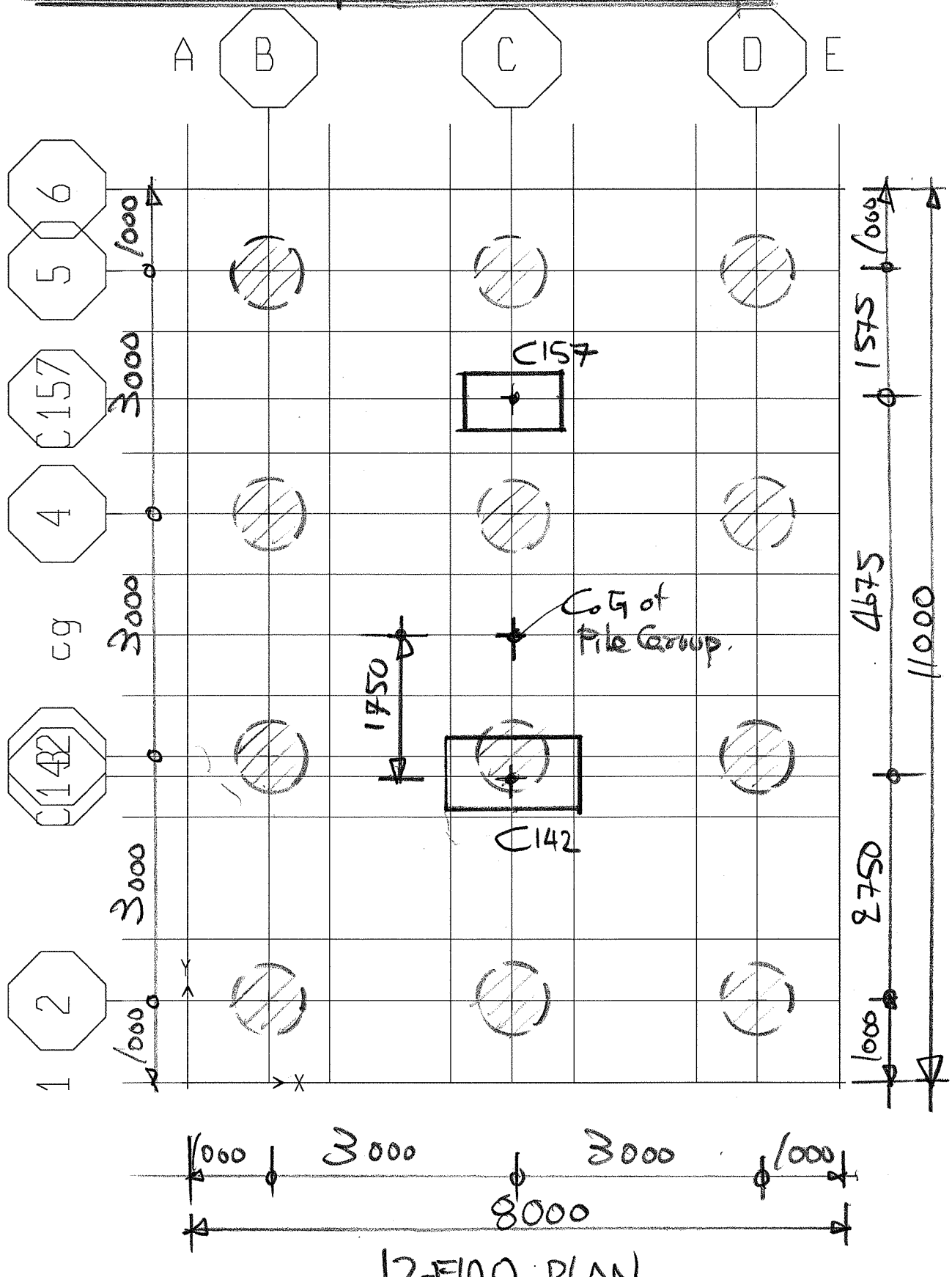
Design of 12 F100

Provided Pile cap : 8.00 x 11.00 x 2.50 dp.



12-F100 : PLAN

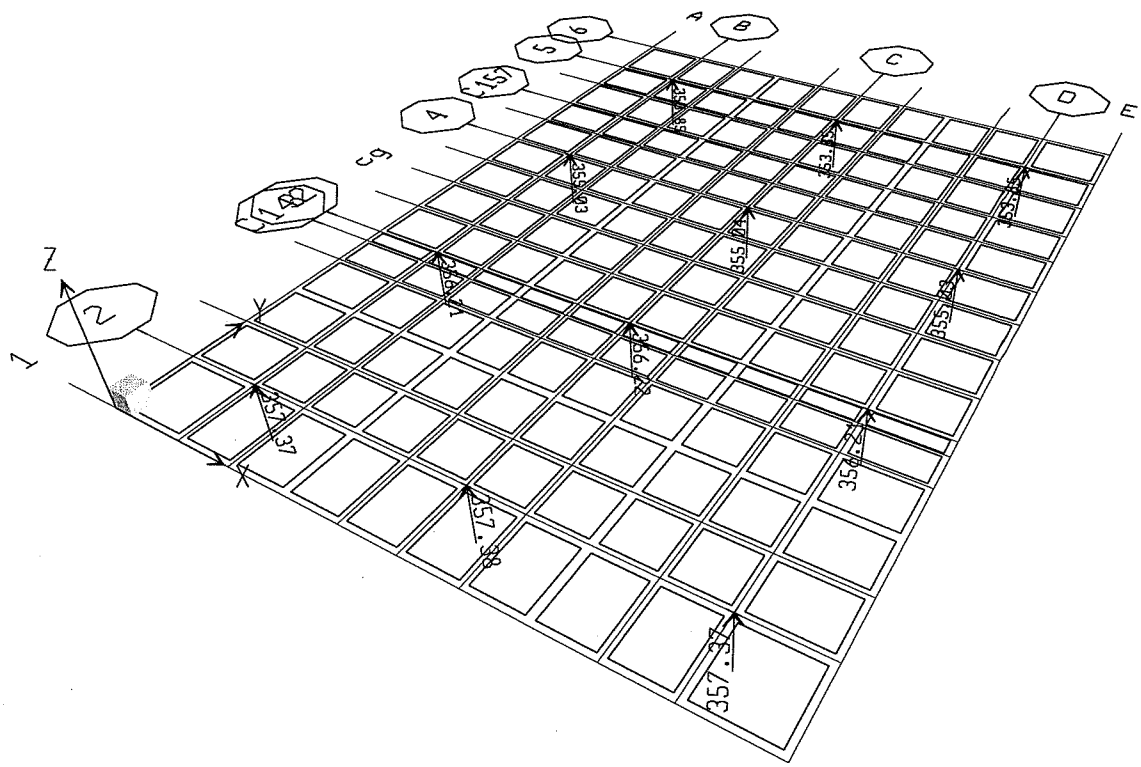
Loading from Analysis

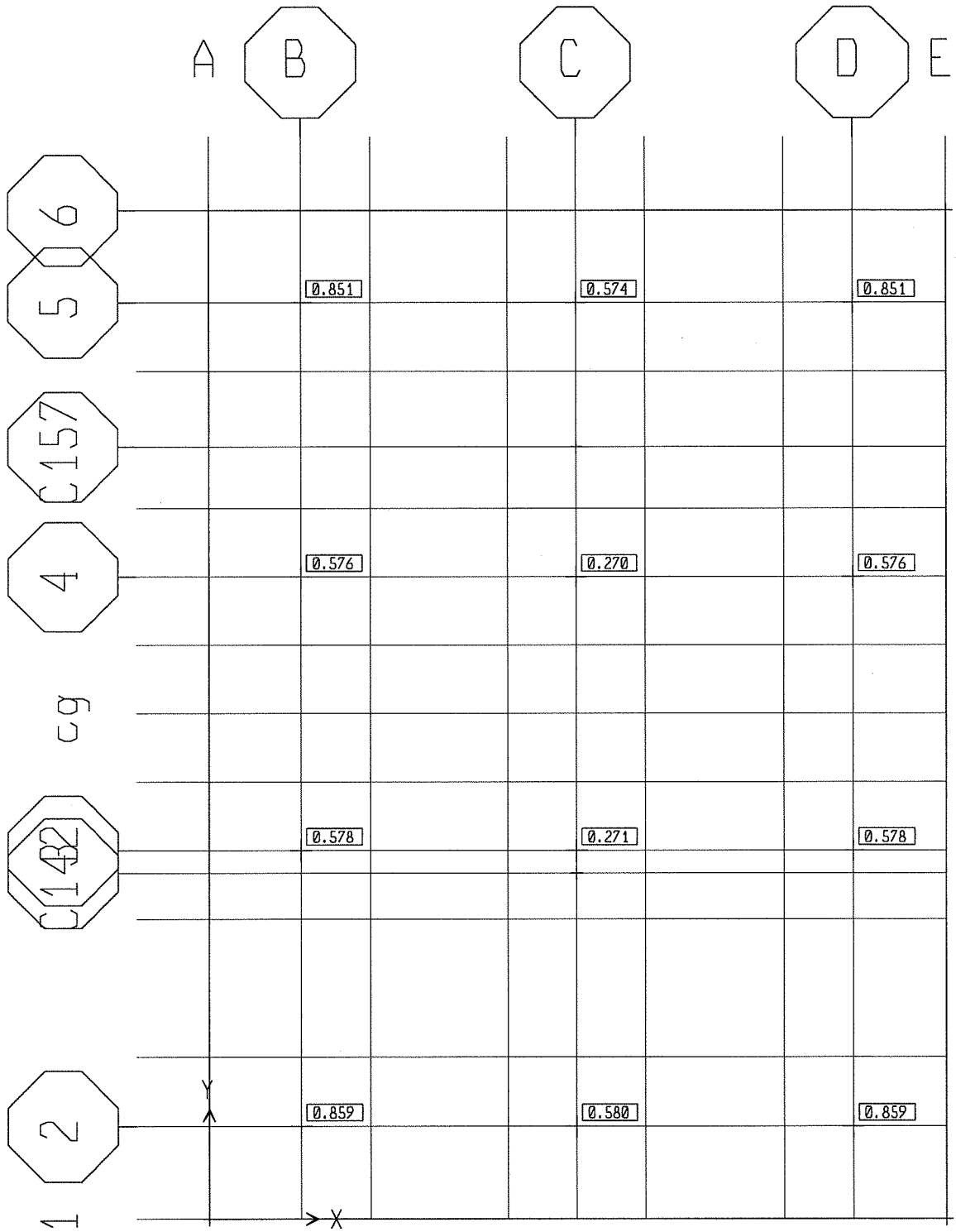
Reaction : **12-F100**

Point Labe	DL [ton]	LL [ton]	DL+LL [ton]	Lx [m]	Lx*[DL+LL]	Ly [m]	y*[DL+LL
C157	1,099	329	1,428	0.00	0	4.68	6,676
C142	1,859	558	2,417	0.00	0	0.00	0
Σ =	2,958	887	3,845		0		6,676
				Lx avg =	**0.00**	**Ly avg =**	**1.74**

Provide Bore Pile Dia. 1000 mm.	=	12	
SW : 8.00x11.00x2.5x2.4	=	528	ton
Load / Pile	=	**364**	ton

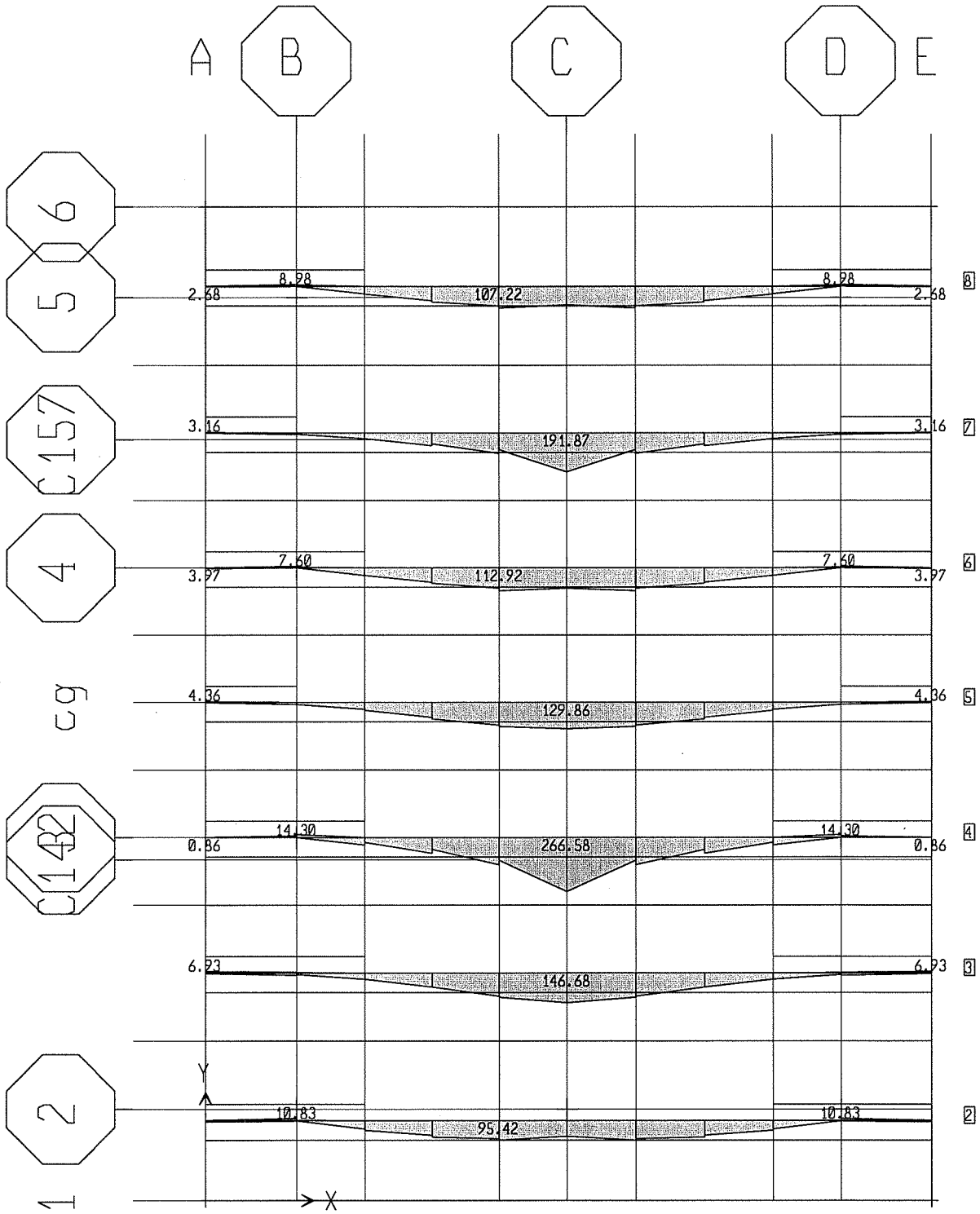
Joint Reaction





Punching Shear Capacity Ratios

X-Strip Reinforcement

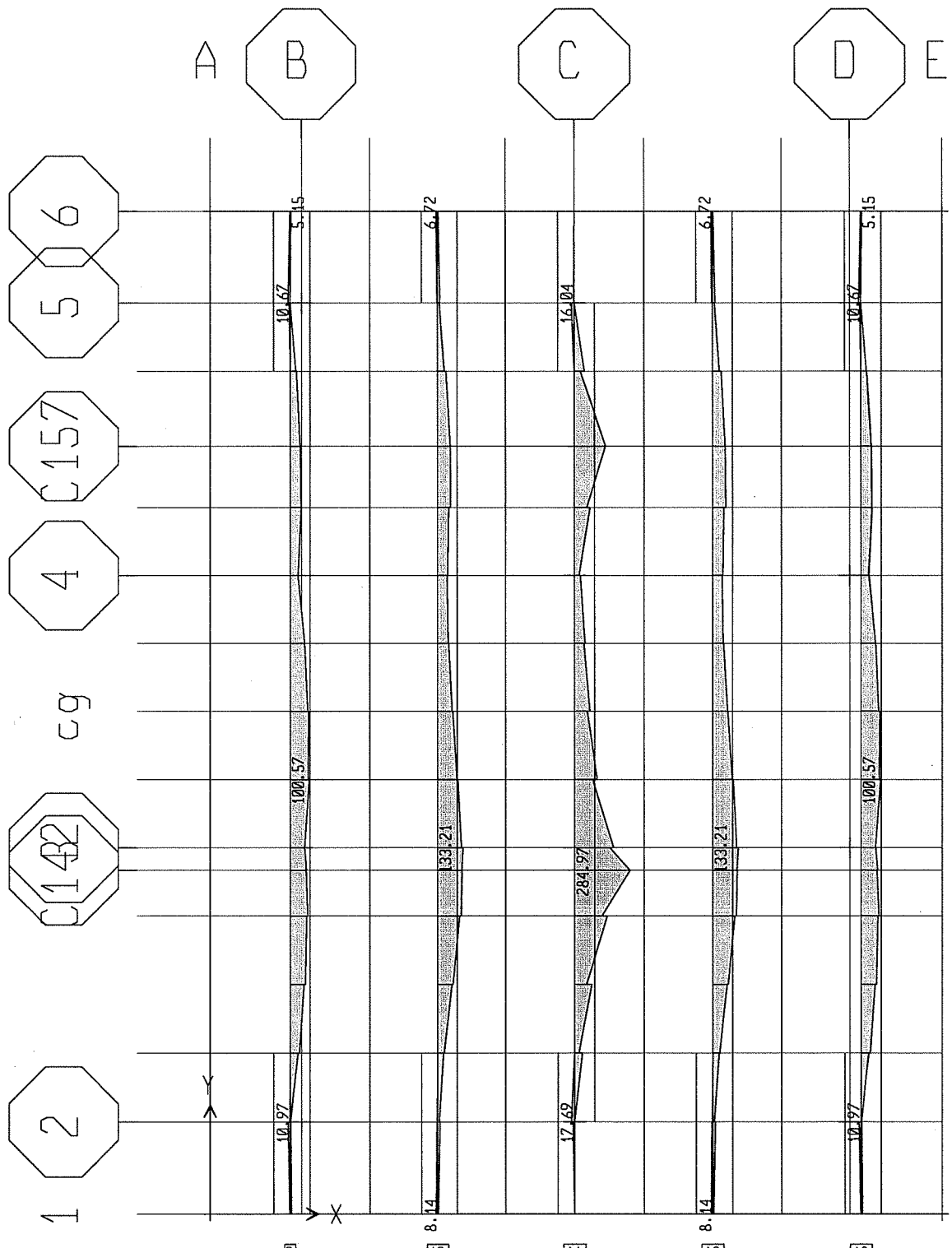


Top Reinf : $A_{st\,req} = 4.30 \times 7 = 100.1\ cm^2$

$A_{st\,min} = 0.0015 \times 1100 \times 250 = 413\ cm^2$ } : 62-DB32 (T)

Bot. Reinf : $A_{st\,req} = 266.67 = 1867\ cm^2$: 2 x 120-DB32 (B)

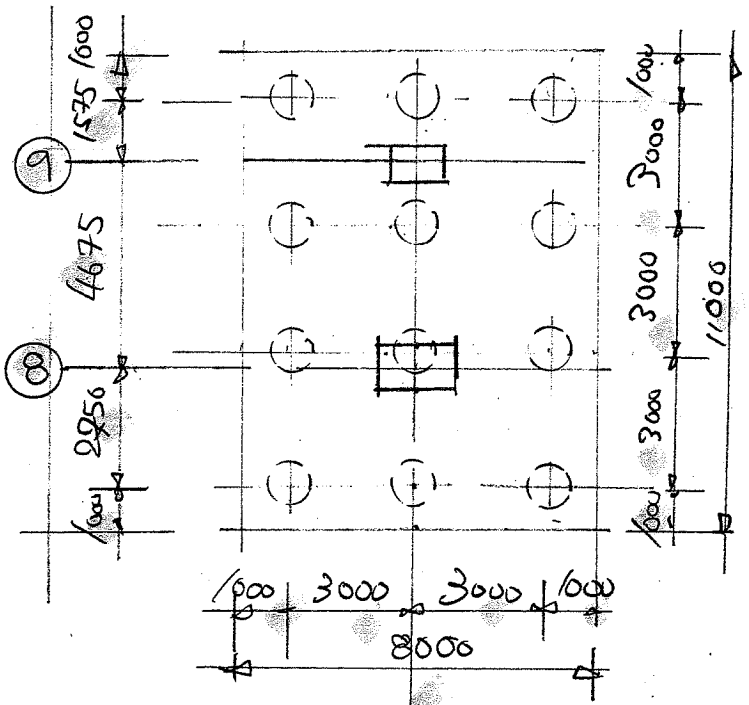
Y-Strip Reinforcement



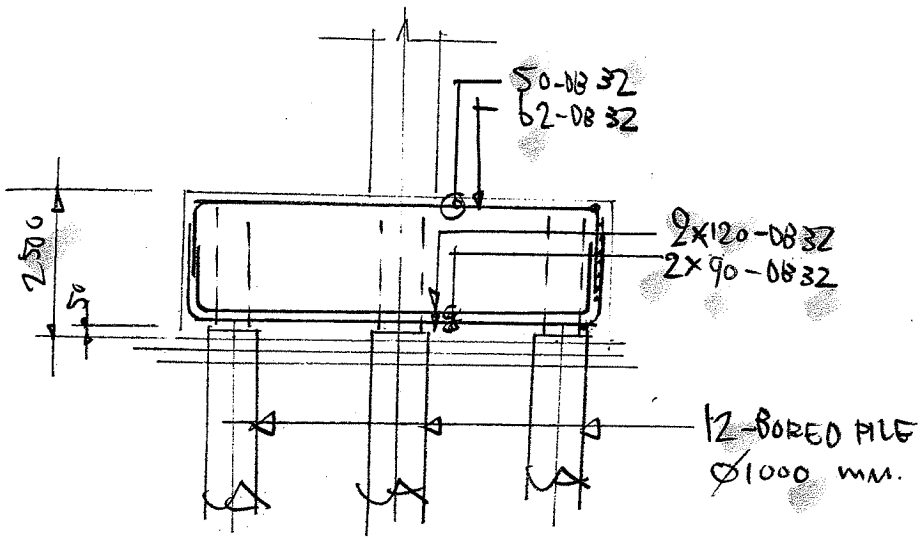
Top Reinf. $A_{st\,req} = 17.7 \times 5 = 89\ cm^2$

$A_{st\,min} = 0.0015 \times 800 \times 250 = 300\ cm^2$ } : 50-DB32(T)

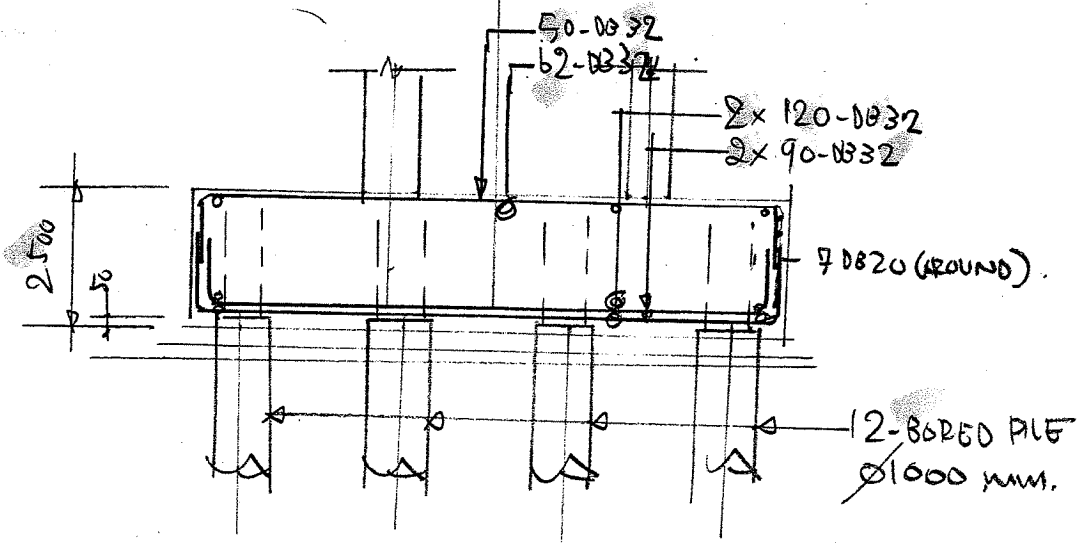
Bot. Reinf. $A_{st\,req} = 285 \times 5 = 1425\ cm^2$: 2x90-DB32(B)



12-F100 = PLAN



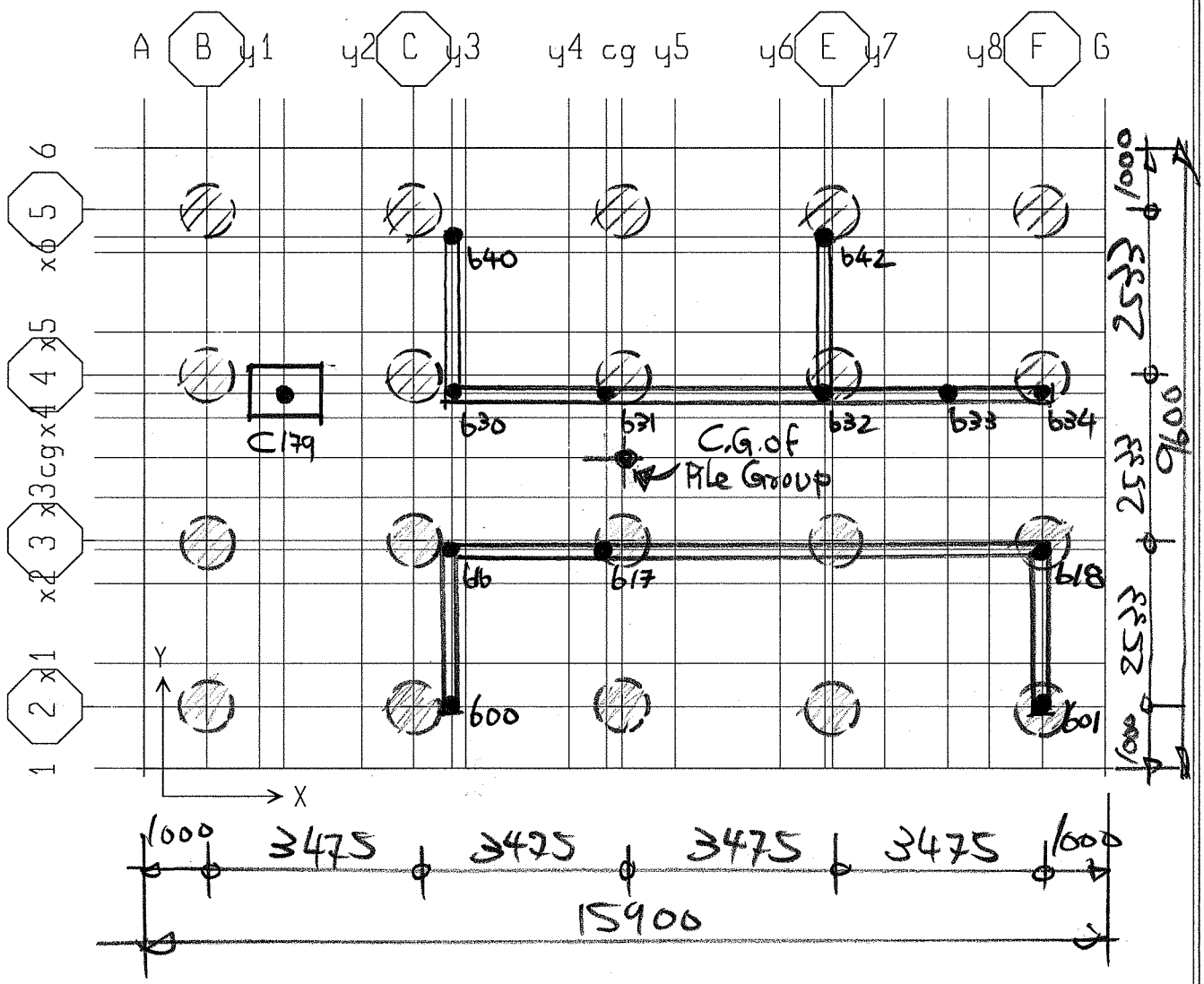
12F100 : SECTION 1-1



12F100 : SECTION 2-2

Design of 20-F100

Provided Pile Cap : 15.90 x 9.60 x 2.50 dp



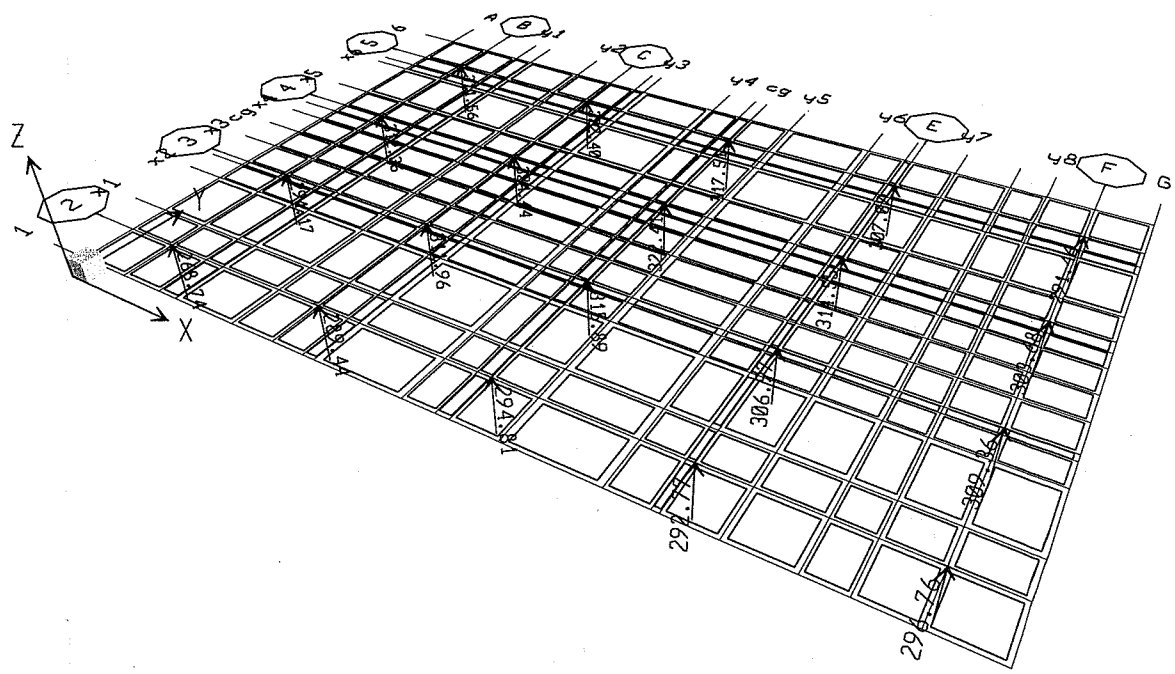
20-F100 : PLAN

Loading form Analysis

Reaction : 20-F100

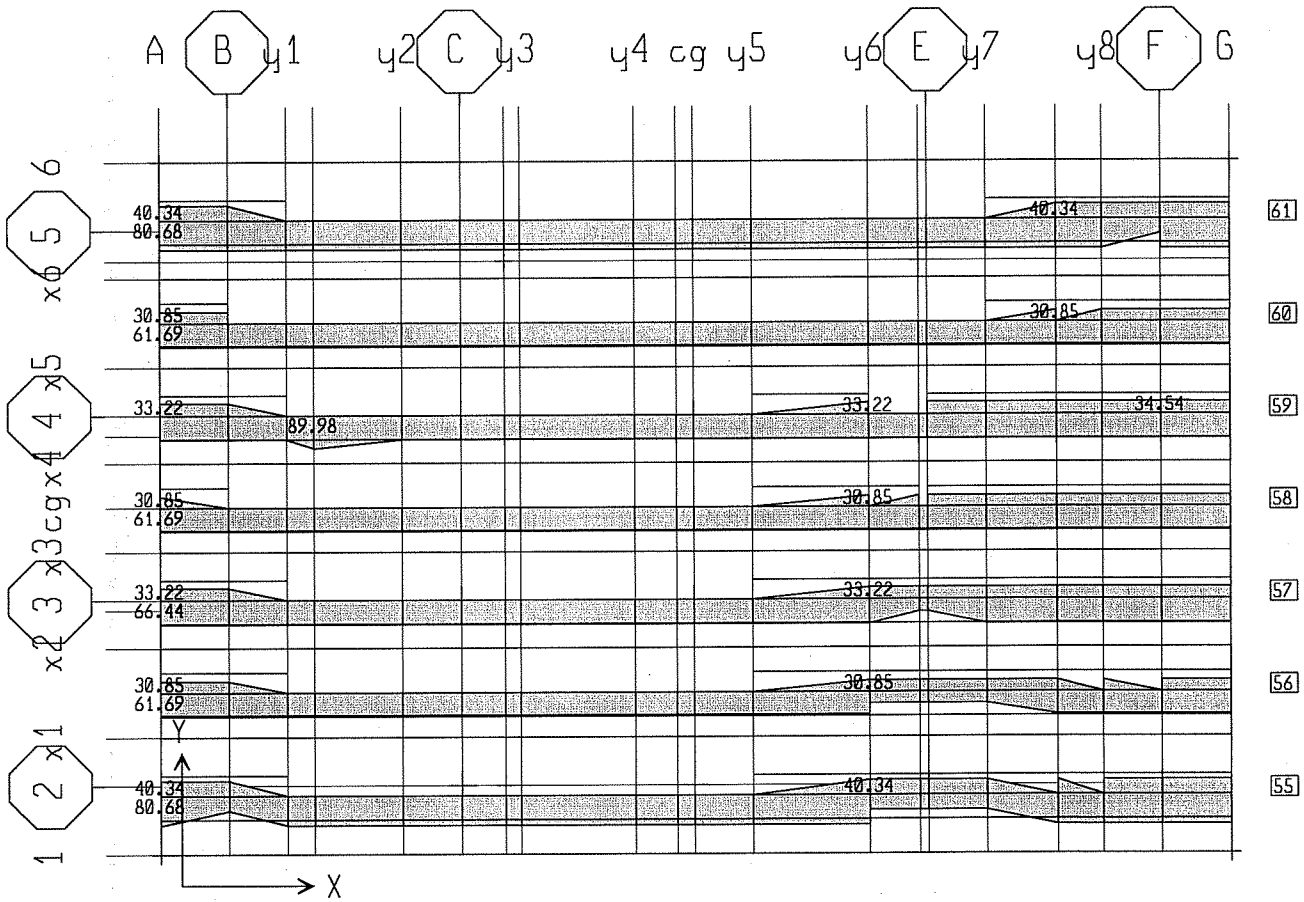
Point Label	DL [ton]	LL [ton]	DL+LL [ton]	Lx [m]	Lx*[DL]	Lx*[DL+LL]	Ly [m]	Ly*[DL+LL]
600	138	28	166	2.75	380	457	0.00	0
601	144	36	173	12.35	1,778	2,137	0.00	0
616	240	75	290	3.75	900	1,088	2.50	725
617	394	109	477	5.25	2,069	2,504	2.50	1,193
618	433	118	524	12.35	5,348	6,471	2.50	1,310
C179	896	266	1,159	0.00	0	0	5.00	5,795
630	224	84	275	2.75	616	756	5.00	1,375
631	242	87	299	5.25	1,271	1,570	5.00	1,495
632	313	110	388	8.75	2,739	3,395	5.00	1,940
633	149	51	184	9.95	1,483	1,831	5.00	920
634	80	32	99	12.35	988	1,223	5.00	495
640	121	47	148	2.75	333	407	7.50	1,110
642	111	10	136	8.75	971	1,190	7.50	1,020
Σ =	3,485	1,053	4,318		18,874	23,028		17,378
				Lx avg =	5.42	**5.33**	**Ly avg =**	**4.02**

Provide Bore Pile Dia. 1000 mm. = 20
SW : 15.90x9.60x2.5x2.4 = 916 ton
Load / Pile = 262 ton



Joint Reaction Diagram

X- Strip Reinforcement

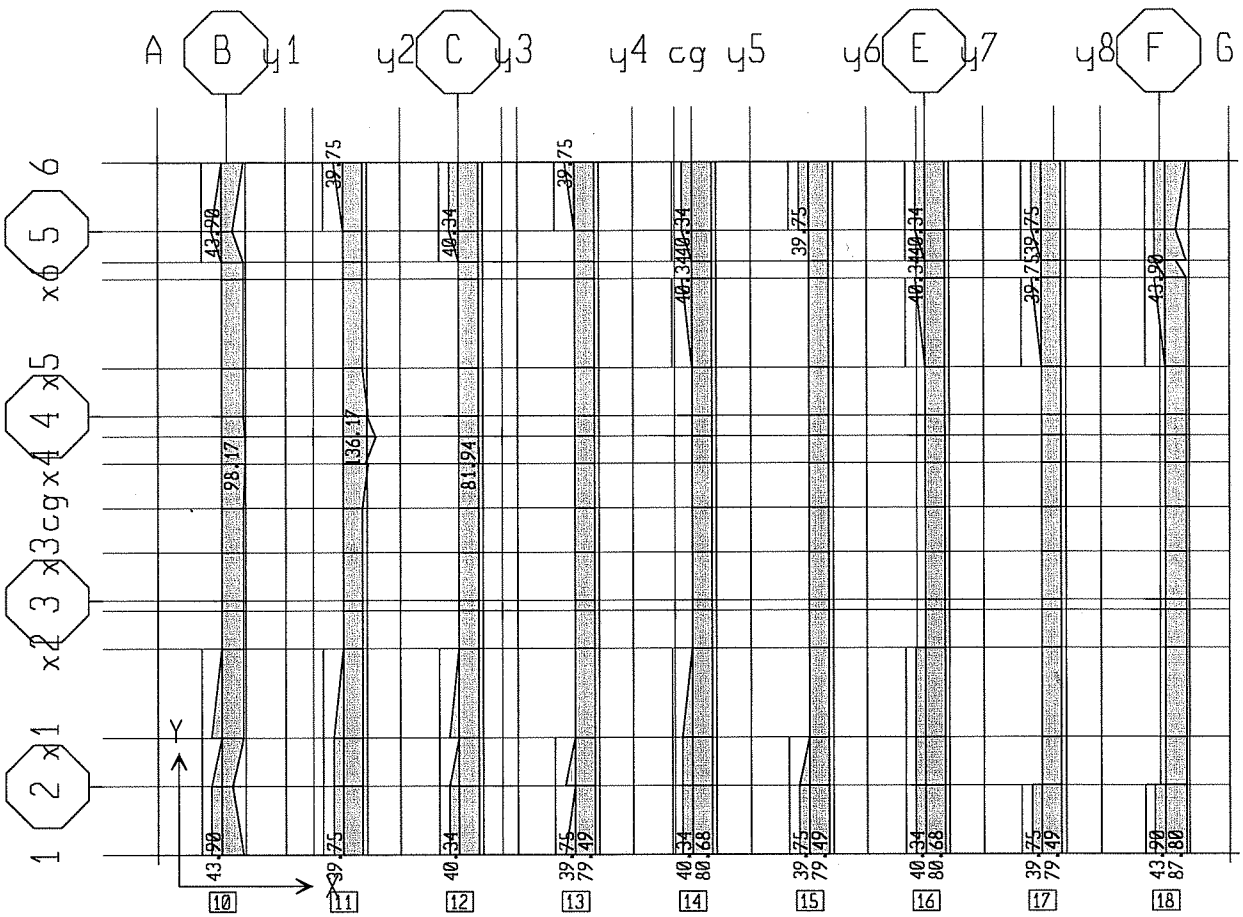


Top. Reinf.: $A_{st\,req} = 40.4 \times 7 = 283\ cm^2$

$A_{st\,min} = 0.0015 \times 960 \times 250 = 360\ cm^2$ } 5-40@32 (T)

Bot. Reinf: $A_{st\,req} = 80.68 \times 7 = 565\ cm^2$ = 2×42-40@32(B)

Y-Strip Reinforcement



Top Reinf:

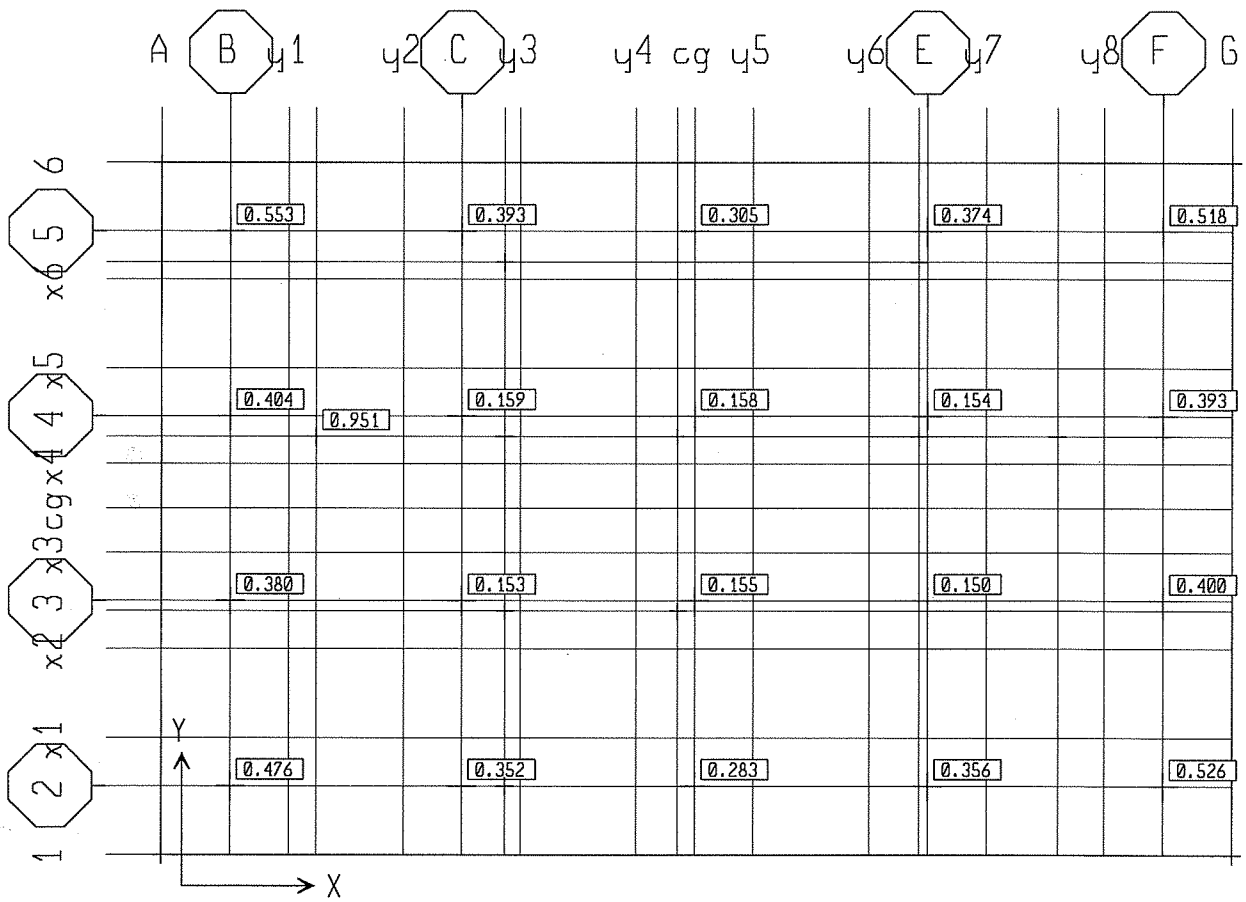
$A_{s\,req} = 43.9 \times 9 = 396\ cm^2$

$A_{s\,min} = 0.0015 \times 150 \times 250 = 592\ cm^2$

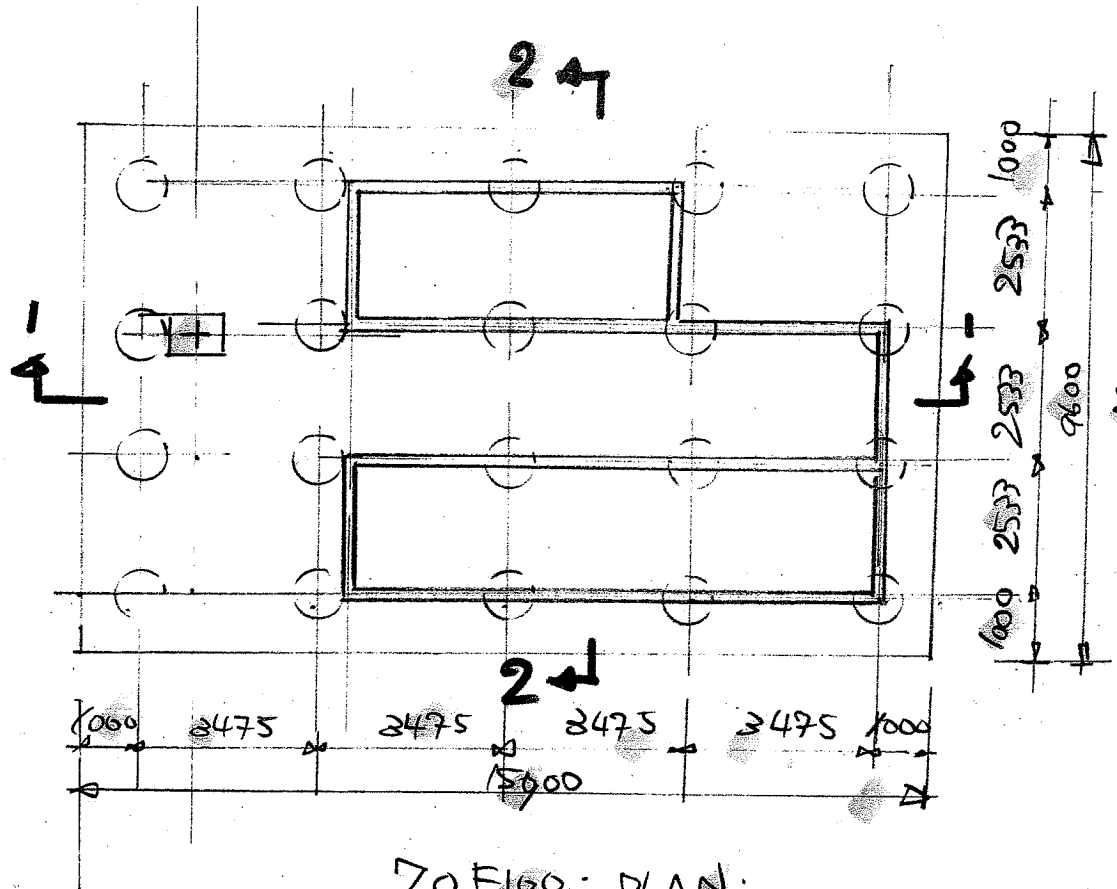
} 90-DB32(T)

Bot. Reinf:

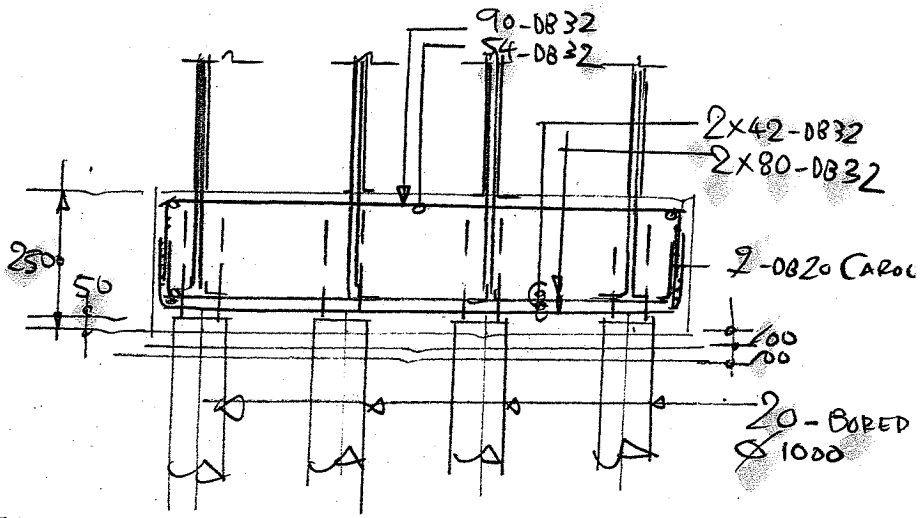
$A_{s\,req} = 136.12 \times 9 = 1225\ cm^2$: 2x80-DB32(B)



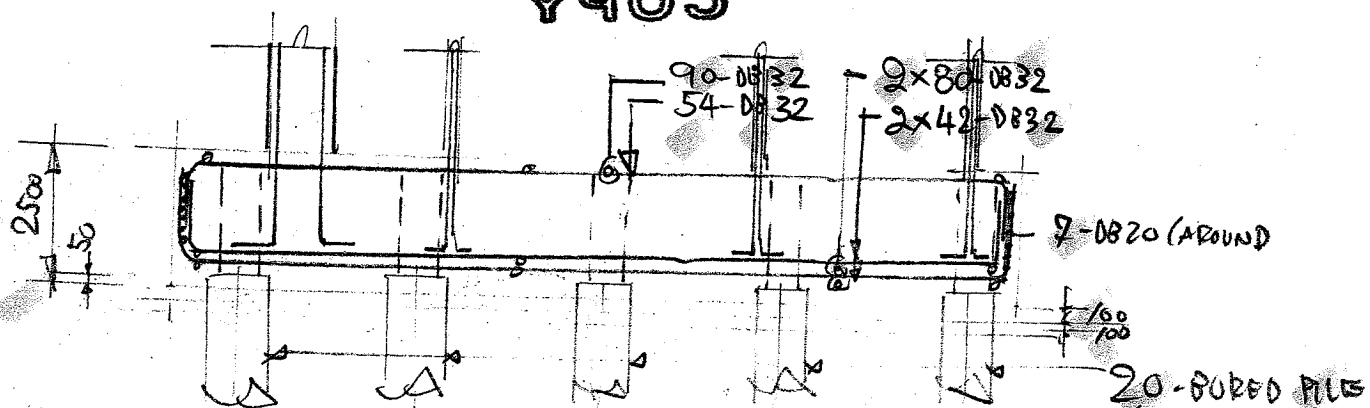
Punching Shear Capacity Ratios



2 OF 100 : PLAN.



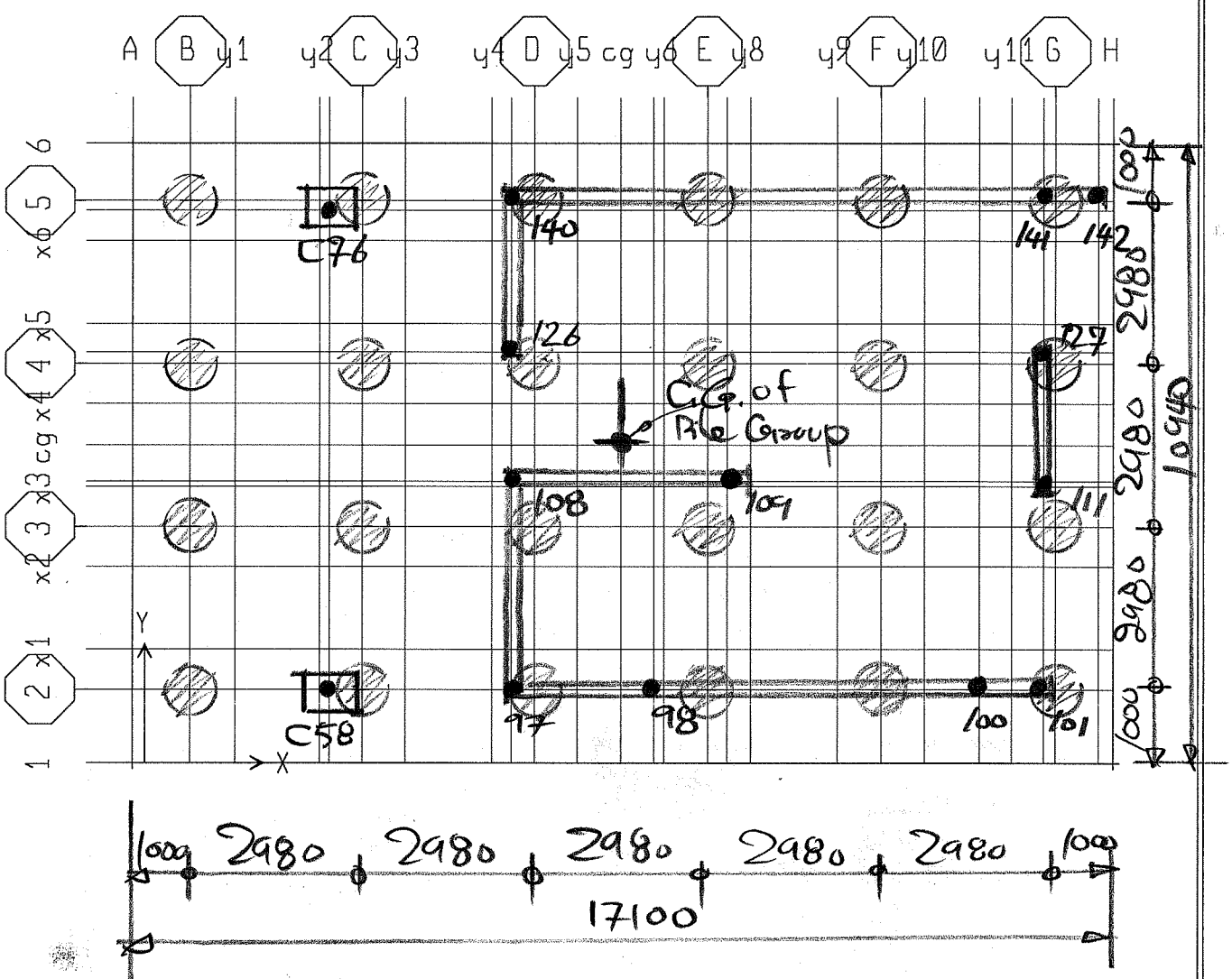
2 OF 100 : SECTION 2-2



2 OF 100 : SECTION 1-1

Design of 24-F100

Provided Pile Cap : 17.10x10.94x2.50 dp



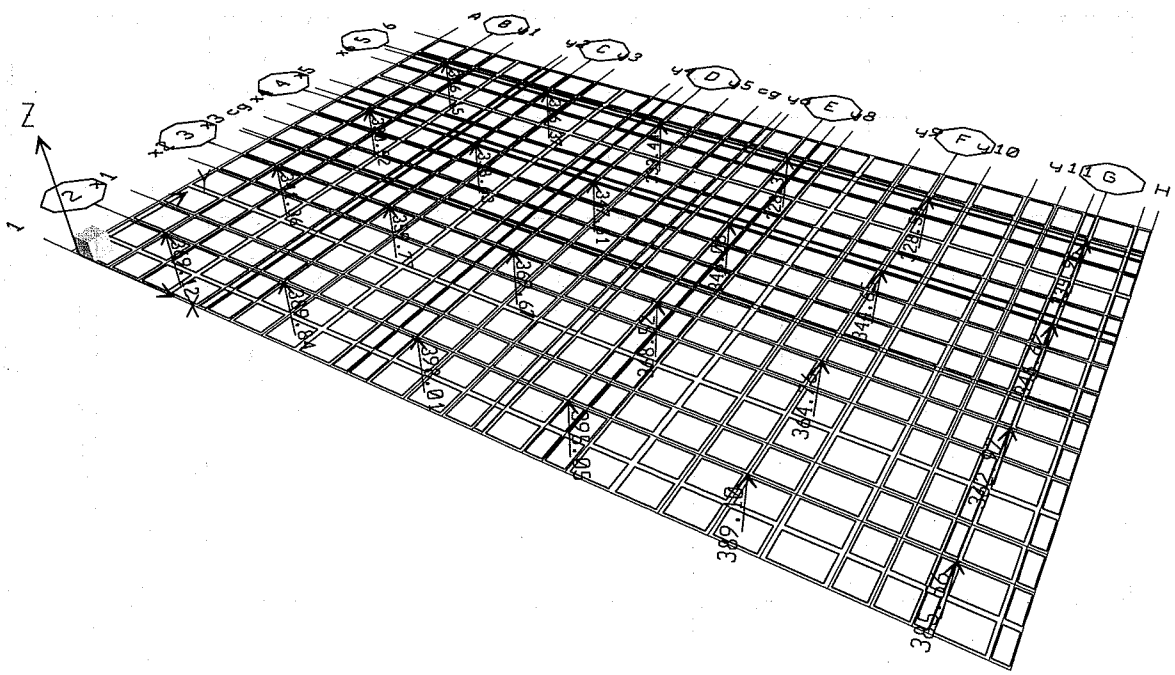
24-F100 : PLAN

Loading from Analysis

Reaction : 24-F100

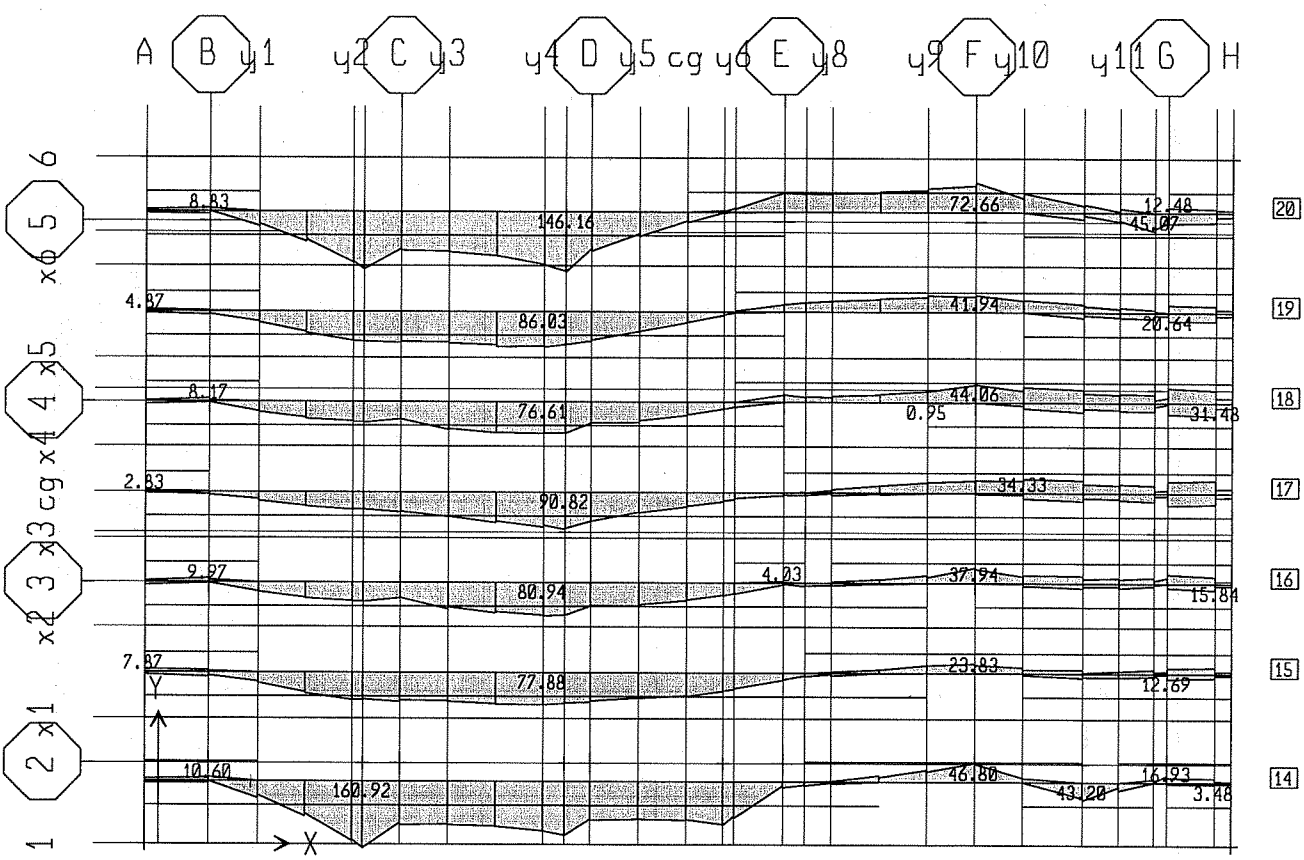
Point Label		DL [ton]	LL [ton]	DL+LL [ton]	Lx [m]	Lx*[DL+LL]	Ly [m]	Ly*[DL+LL]
C58		851	247	1,098	0.00	0	0.28	302
	97	328	73	401	3.20	1,283	0.00	0
	98	397	88	485	5.68	2,755	0.00	0
	100	366	79	445	11.30	5,029	0.00	0
	101	59	13	72	12.40	893	0.00	0
	108	376	81	457	3.20	1,462	4.00	1,828
	109	182	39	221	6.95	1,536	4.00	884
	111	187	45	232	12.40	2,877	4.00	928
	126	143	28	171	3.20	547	6.15	1,052
	127	188	46	234	12.40	2,902	6.15	1,439
C76		775	221	996	0.00	0	9.20	9,163
	140	543	111	654	3.20	2,093	9.48	6,197
	141	421	84	505	11.30	5,707	9.48	4,785
	142	41	11	52	13.20	686	9.48	493
	Σ =	4,857	1,166	6,023		27,769		27,070
					Lx avg =	**4.61**	**Ly avg =**	**4.49**

Provide Bore Pile Dia. 1000 mm.	=	24	
SW : 17.10x10.94x2.5*2.4	=	1,122	ton
Load / Pile	=	298	ton



Joint Reaction Diagram

X-Strip Reinforcement



Top. Reinf:

$As_{req} = 92.66 \times 7 = 508\ cm^2$

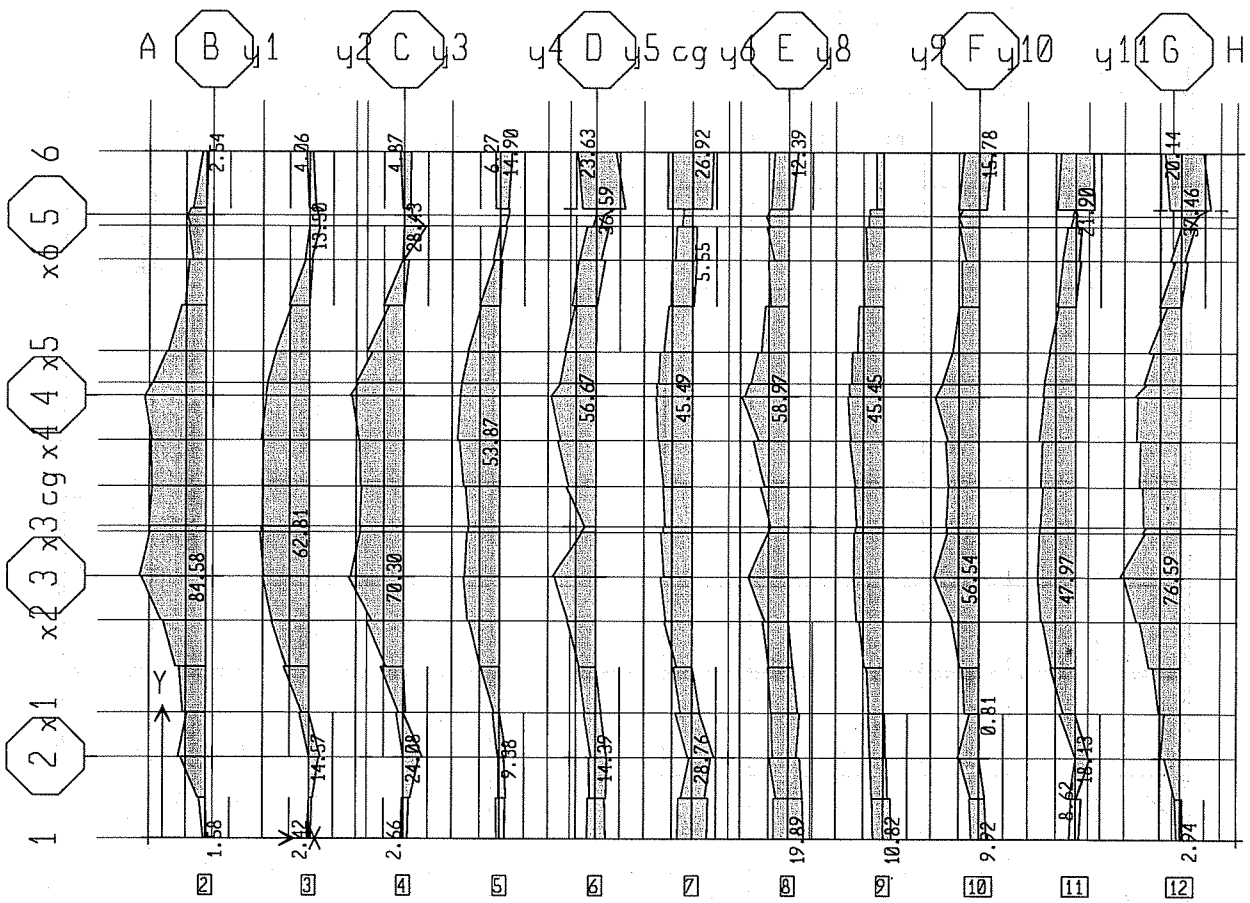
$As_{min} = 0.0015 \times 109.4 \times 250 = 410\ cm^2$

} 65-DB32 (T)

Bot. Reinf:

$As_{req} = 160.92 \times 7 = 1127\ cm^2$: 2x7 DB32 (B)

Y-Strip Reinforcement



Top. Reinf:

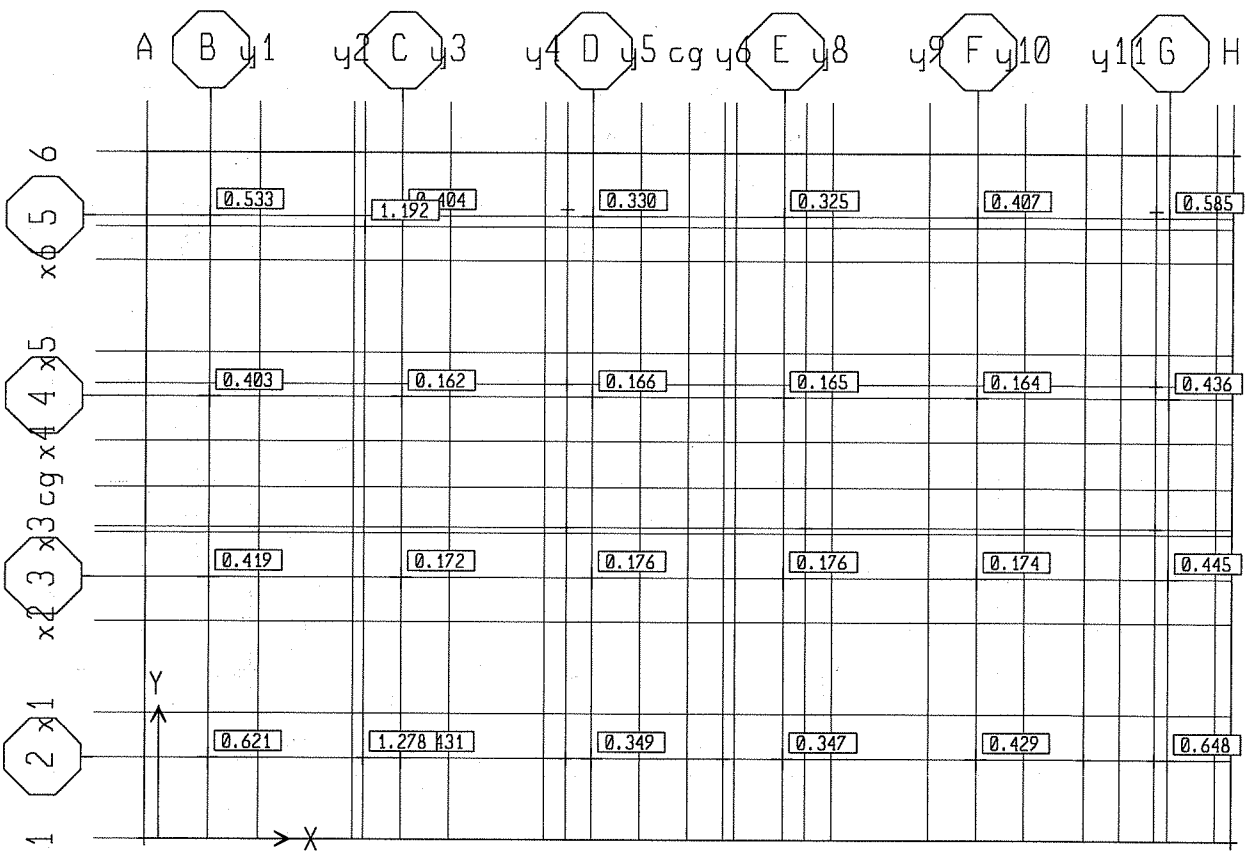
$A_{st\,req} = 84.58 \times 11 = 931\ cm^2$

$A_{st\,min} = 0.0015 \times 1710 \times 250 = 642\ cm$

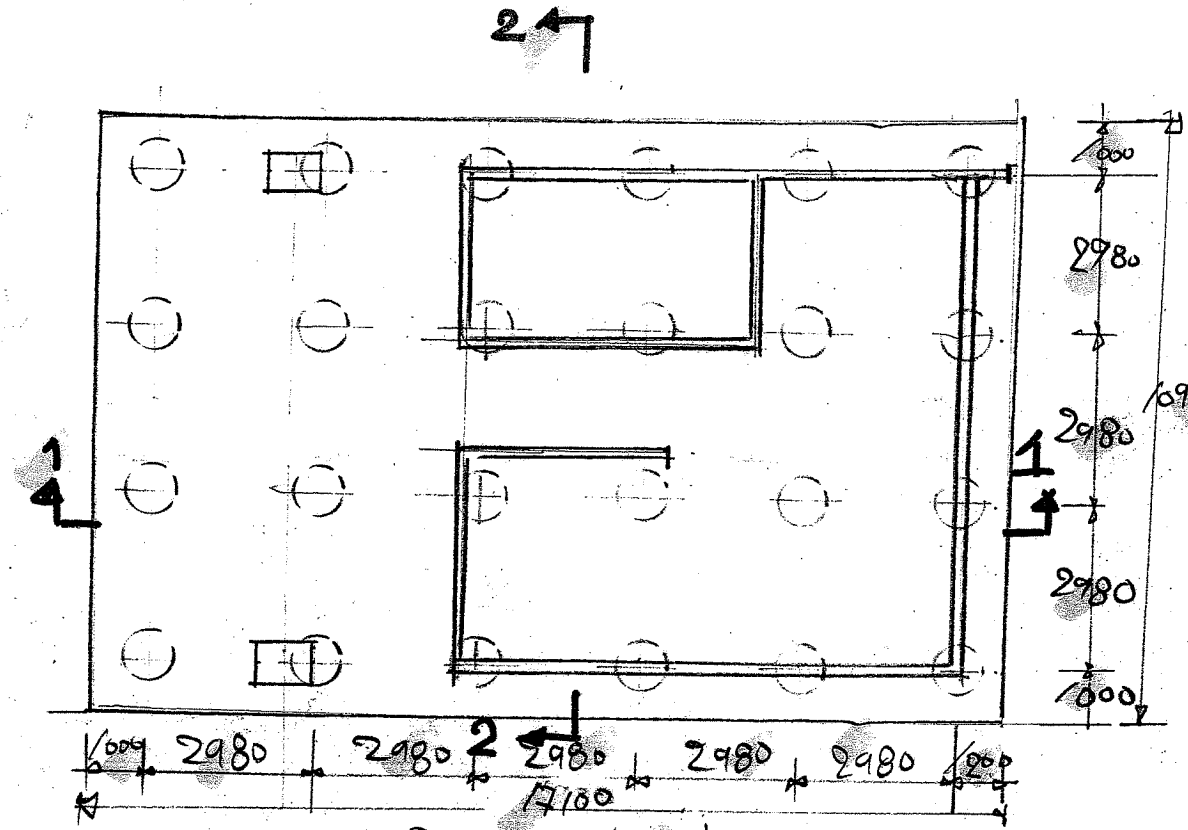
$\Big\} = 120\text{-}@32\,(T)$

Bot. Reinf:

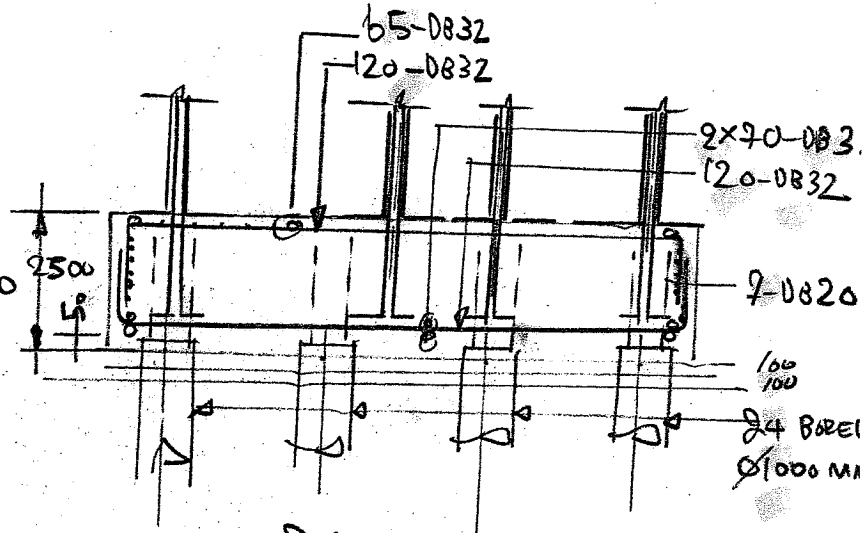
$A_{st\,req} = 37.46 \times 11 = 413\ cm^2 : 120\text{-}@32\,(B)$



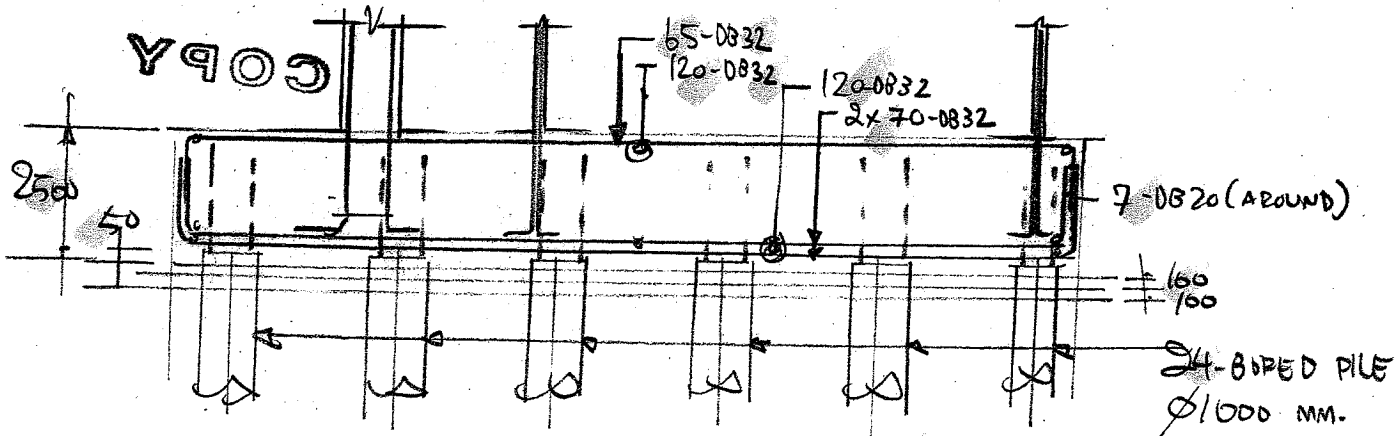
Punching Shear Capacity Ratios



24F100 : PLAN.



24F100 = SECTION 2-2



24F100 : SECTION 1-1