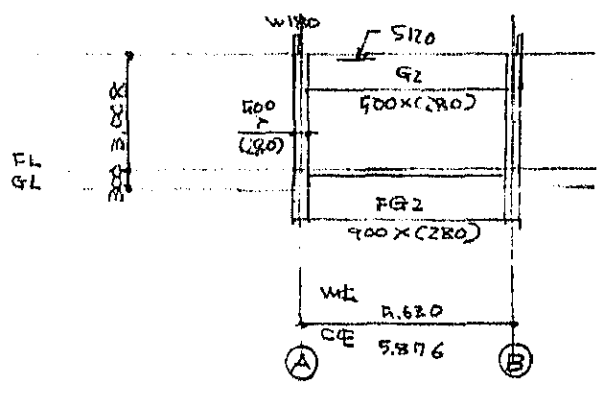
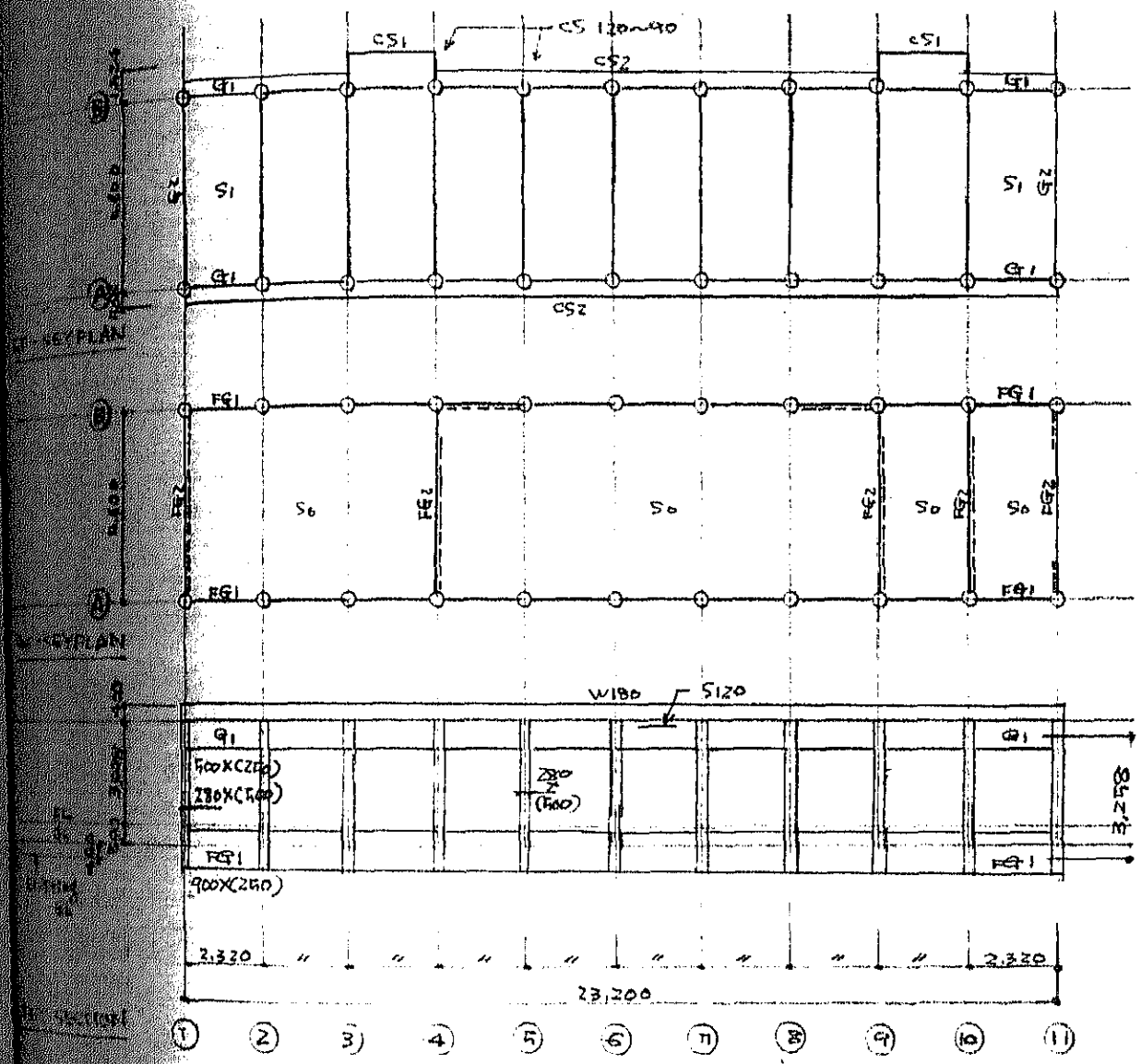
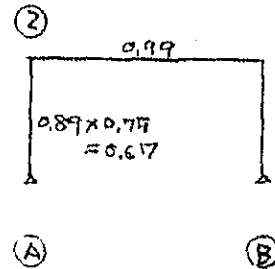
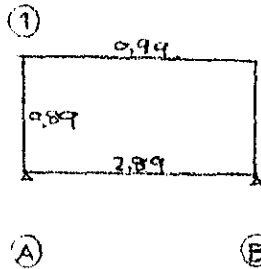
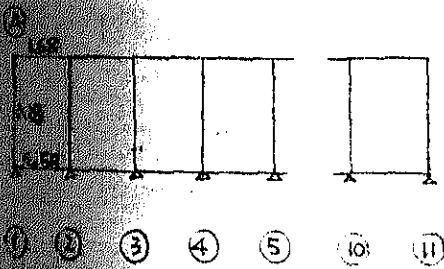


6 CHECK GATE



Stiffness Ratio

b	D	J $\times 10^3$	ϕ	$\phi J \times 10^3$	$\frac{P_c}{E}$				
						232	587.6		$\times 10^3$
50	50	280.4	1.5	390.6	—	1.68	—	—	—
50	50	291.7	2.0	583.3	—	—	0.99	—	—
70	70	1,518.8	1.0	1,518.8	—	6.54	—	—	—
40	40	1,710.0	1.0	1,710.0	—	—	2.89	—	—
30	30	91.4	1.0	91.4	—	—	—	—	0.28
50	50	291.7	1.0	291.7	—	—	—	—	0.89



UNIT Load

FLOOR

[t/m²]

		D.L.		L.L.			T.L.
ROOF		FINISH	0.20	FOR	S	0.09	0.62
		Slab	0.29		R	0.07	0.60
		Ceiling	0.04		E	0.03	0.56
			0.53				
FLOOR		FINISH	0.08	/		0.09	0.39
		Slab	0.24			0.07	0.37
			0.30			0.03	0.33

BEAM

		t/m		t/each			
	Skeleton	FINISH	Σ	h	2.32	1.88	
	0.24	0.04	0.28		0.6		
	0.26	0.04	0.30			1.6	

COLUMN

		t/m		t/each			
	Skeleton	FINISH	Σ	h	3.0		
	0.34	0.08	0.42		1.4		

WALL

		t/m ²		t/m (Horizontal)			
	Skeleton	FINISH	Σ	h	0.3	2.9	
	0.45	0.10	0.55		0.2		
	0.483	0	0.483			1.4	




Axial Force

[t]

	A ①		A ②				
S	0.60×4.0	2.4	$\times 7.1$	4.3			
	0.37×0.7	0.3	$\times 2.0$	0.7			
G.B	$0.3 + 0.8$	1.1	$0.6 + 0.8$	1.4			
C		1.4		1.4			
W	0.2×4.1	0.8	$\times 2.3$	0.5			
	1.4×3.7	(5.2)	$\times 2.0$	(2.8)			
Z		6.0 (11.2)		8.3 (11.0)			

Cl. Q of Beam

[tm, t]

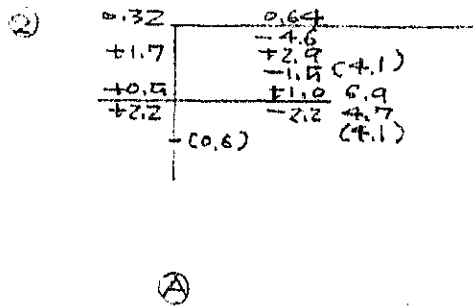
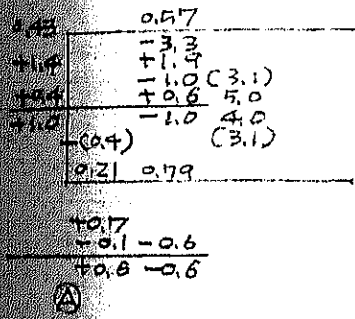
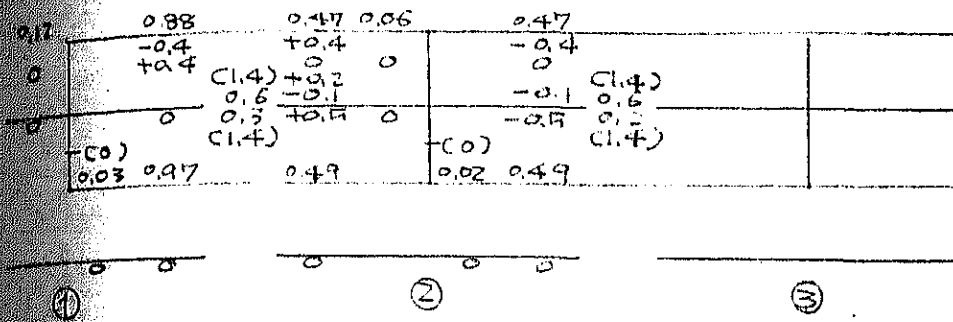
	Load		C		M ₀		Q	
	u 0.60	u	0.60×0.3	0.2	$\times 0.7$	0.3	$\times 1.3$	0.8
	R x 2.32 x 1.0	R	$0.48 \times 2.32 / 2$	0.2	$\times / 8$	0.3	$\times 2.32 / 2$	0.6
	f 0.28 + 0.2							
				0.4		0.6		1.4
	u 0.60	u	0.60×3.1	1.9	$\times 4.7$	2.8	$\times 2.7$	1.6
	R x 2.62	R	$0.40 \times 5.88 / 2$	1.4	$\times / 8$	2.2	$\times 5.88 / 2$	1.5
	f 0.30 + 0.2							
				3.3		5.0		3.1
	u 0.60 x 2	u	1.20×3.1	3.7	$\times 4.7$	5.6	$\times 2.7$	3.2
	R x 2.32	R	$0.30 \times 5.88 / 2$	0.9	$\times / 8$	1.3	$\times 5.88 / 2$	0.9
	f 0.30							
				4.6		6.9		4.1

SEISMIC FORCE

[t]

	W	K	KW	Q
$(1.4 \times 14.7) + (0.33 \times 15.1)$	88.8			
$(1.6 \times 30) + (1.6 \times 11)$	29.6			
(1.4×2.32)	19.4			
$(1.4 \times 2.62) + (1.4 \times 69.7 / 2)$	59.0			
$\Sigma = 192.8 / 149.7 = 1.29 [t/w]$	192.8	0.10	19.3	22.0

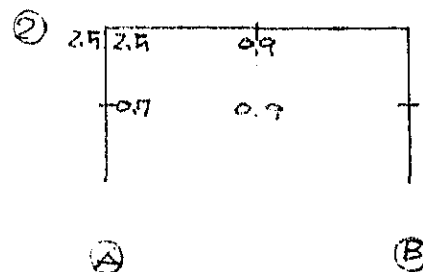
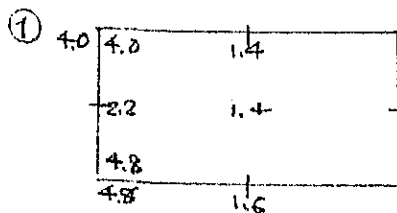
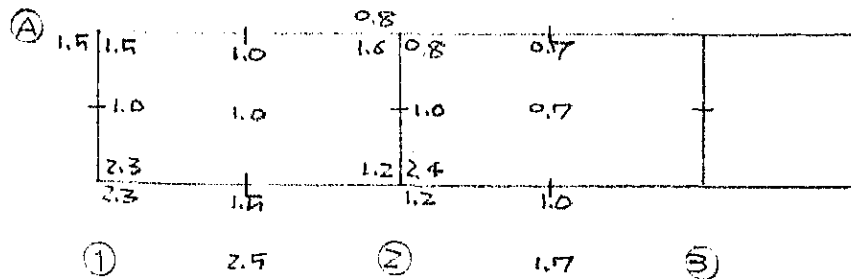
Stress by Vertical Load




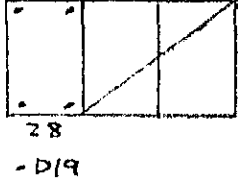
D-Value, Inflection Point

No.	Col.	D						Y				Q, M				
		K ₁	ΣK ₂	K ₂	α	D	D'	Y ₀	Y ₁	Y ₂	Y ₃	Σ	Q	TM	MU	ML
1	1	0.33	8.23	17.89	0.90		0.95	0.55	0.05			0.60	0.96	3.74	1.49	2.25
1	2	16.46	35.78	0.95		1.00	0.55	0.05			0.60	1.01	3.94	1.58	2.36	
1	A	0.89	3.87	2.58	0.56	0.43	3.94	0.55	0		0.55	2.24	8.74	3.96	4.80	
1	1	0.67	0.99	1.77	0.19	0.11	1.00				0	0.65	2.54	2.54	0	





Stress by Seismic Force



Sub Beam

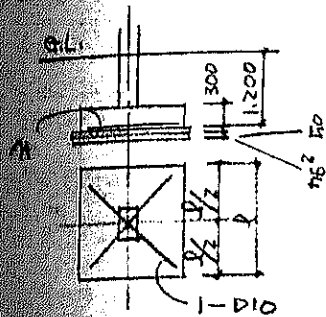
Load			Stress							Section
										
										
				M	C	Pt	τ	at		
			Q	QA	α	ΔQ	pu	St	φ	

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Load	DIR.			D	J	at	φ	Section	
 W 0.62 h 219	X	M	3.34	0.082	0.277	12	8.3	1.6	D10 @ 200 ~
		C	Q	1.44	0.91	0.73			
 W 0.62 h 219	Y	M		0.055	0.08		7.4	0.5	D10 @ 300 ~
		C	Q		0.46	0.66			
 W 0.39 h 219	X	M	0.47	0.60	0.28	12.5	8.3	1.7	D10 @ 200
		C	Q	0.39	1.20	0.47	9.5		
 W 0.39 h 219	Y	M							/
		C	Q						

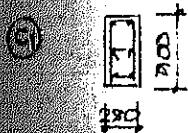
NG. DATA (Check Gate)

1) Footing Schedule



Type	l	M
	1,000 ²	5-D10 (@200)
F1	1,200 ²	6-D10 (@200)

2) Column Schedule



MAIN R. 6-D19
 HOOP General □ D10 @ 100 ~
 Panel Zone □ D10 @ 100
 AUX. HOOP □ D10 @ 600

3) Beam Schedule

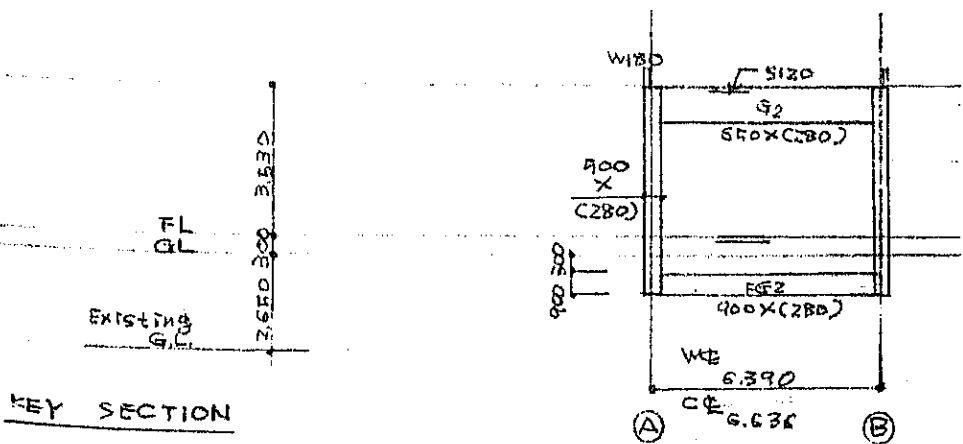
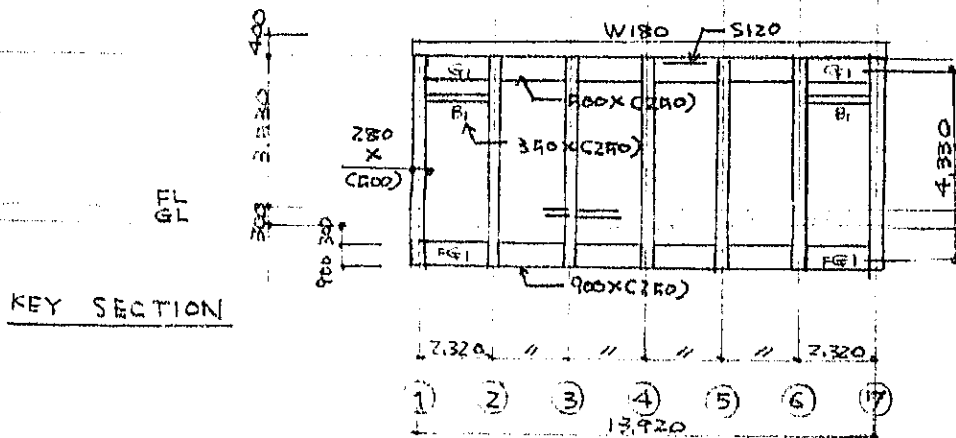
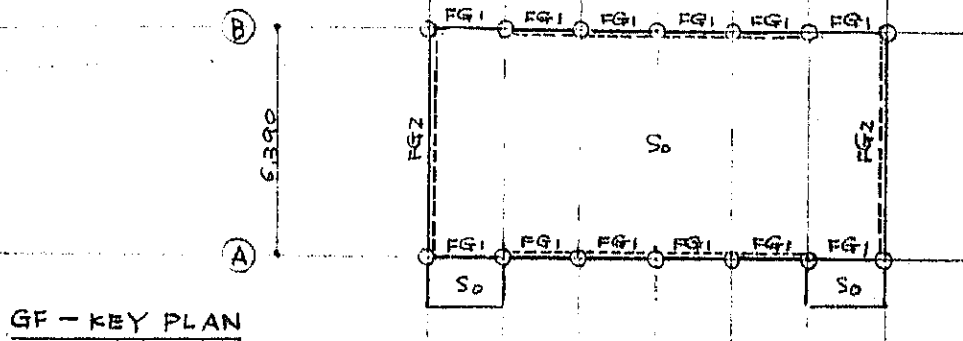
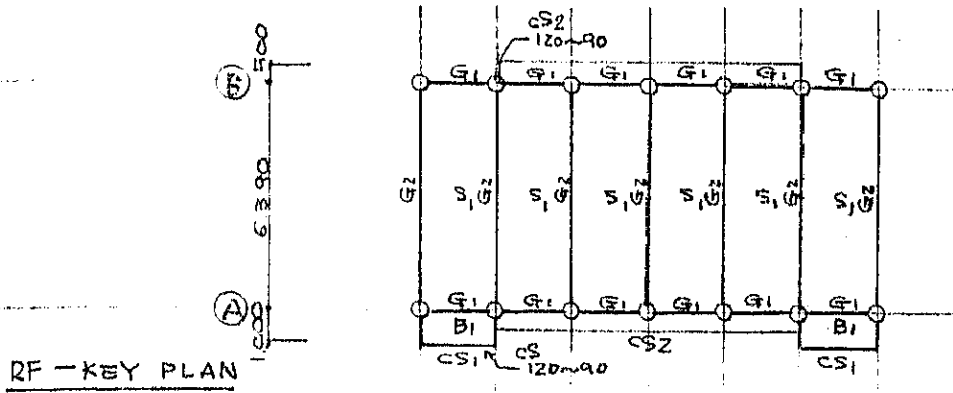
	FG1	FG2	FGX	FG2	B1	B1	
h	300	280	250	280	250	250	
b	500	500	900	900	350	900	
TOP R.	2-D19	←	←	←	2-D16	2-D19	
MID R.	2-D19	←	←	←	2-D16	2-D19	
BM R.	2-D10	←	←	←	←	←	
BT	7-D10 @ 600	←	←	←	←	←	
BL	11-D10 @ 200	←	←	←	□ D10 @ 100	□ D10 @ 200	

4) Slab Schedule

5) Wall Schedule

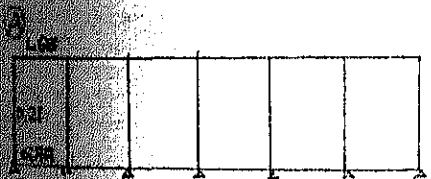
See "AIR Camp. House"

7 AIR COMPRESSOR HOUSE

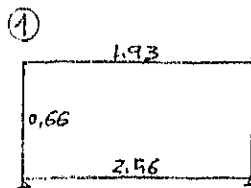


Stiffness Ratio

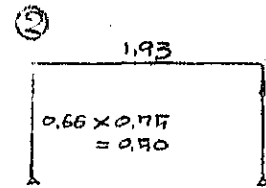
D	D	J $\times 10^3$	\varnothing	$\varnothing J \times 10^3$	k_e				
						232	663,6		$\times 10^3$
15	50	20,4	1,5	390,6	—	1,68	—	—	—
20	65	640,8	2,0	1,281,6	—	—	1,93	—	—
25	90	1,718,8	1,0	1,718,8	—	6,177	—	—	—
28	90	1,701,0	1,0	1,701,0	—	—	2,56	—	—
50	20	91,5	1,0	91,5	—	—	—	—	0,21
50	40	291,7	1,0	291,7	—	—	—	—	0,66



① ② ③ ④ ⑤ ⑥ ⑦



Ⓐ Ⓑ

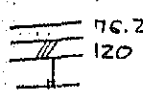



Ⓐ Ⓑ





Unit Load

Floor


[t/m²]

		D.L.		L.L.			T.L.
Roof		Finish	0.20	Foy	S	0.09	0.62
		Slab	0.29			R	0.07
		Ceiling	0.04		E	0.03	0.46
			0.53				
Walls		Finish	0.06	//		0.09	0.39
		Slab	0.24			0.07	0.37
			0.30			0.03	0.33



Beam

	t/m			l	Σ	t/each		
	Skeleton	Finish	Σ			16.64		
	0.24	0.04	0.28		0.6			
	0.37	0.06	0.43			2.6		
	0.44	—	0.44		1.1			
	0.60	—	0.60			3.7		

Column

	t/m			h	Σ	t/each		
	Skeleton	Finish	Σ			15.00		
	0.34	0.08	0.42			2.1		

Wall

	t/m ²			h	Σ	t/m (Horizontal)		
	Skeleton	Finish	Σ			3.7		
	0.43	0.10	0.53		0.3			
	0.483	0	0.483		0.2			

Axial Force

[+]

	A ①		A ②				
S	0.60 x 4.6	2.8	x 8.3	5.0			
	0.37 x 1.6	0.6	x 1.6	0.6			
G/B	0.3 + 0.6	0.9	0.6 + 1.1	1.7			
	1.3 + 1.9	3.2	1.3 + 1.9	3.2			
C		2.1		2.1			
W	0.2 x 4.8	0.9	x 2.3	0.5			
	1.5 x 4.1	6.2	x 2.0	3.0			
S		16.7		16.1			

C.M.G of Beam

Len, t3

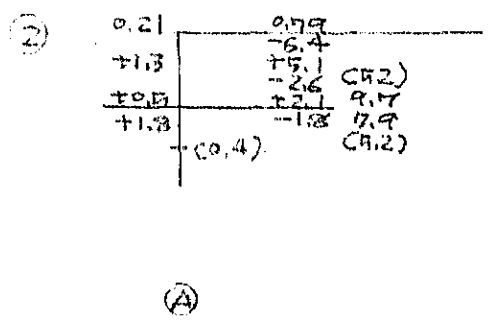
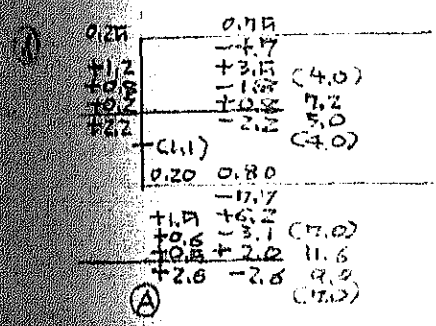
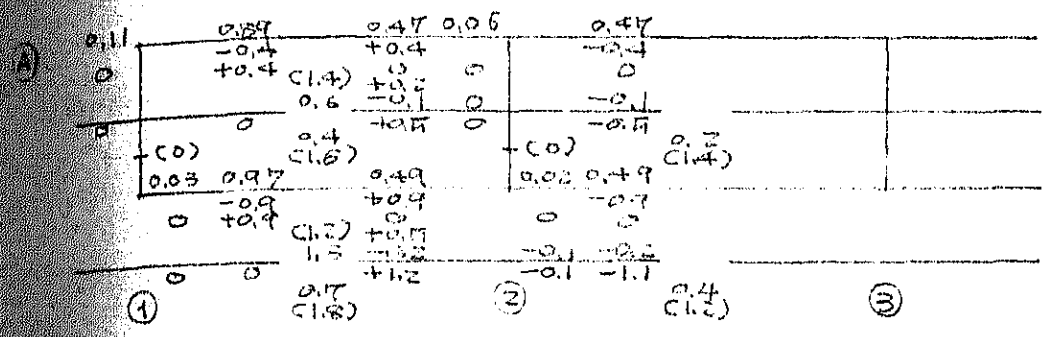
Load		C		M ₀		Q	
<p>W 0.60 L x 2.32 λ 1.0 f 0.28+0.2</p>	W	0.60 x 0.3	0.2	x 0.5	0.3	x 1.3	0.8
	f	0.48 x 2.32 ² /2	0.2	x /8	0.3	x 2.32 ² /2	0.6
	Σ		0.4		0.6		1.4
<p>f 0.44+1.5</p>	W	1.94 x 2.32 ² /2	0.9	x /8	1.3	x 2.32 ² /2	1.2
	f		0.9		1.3		1.2
	Σ		6.4		9.7		5.2
<p>W 0.60 x 2 L x 2.32 λ 2.9 f 0.43</p>	W	1.20 x 4.0	4.8	x 6.1	7.3	x 3.2	3.8
	f	0.43 x 6.64 ² /2	1.6	x /8	2.4	x 6.64 ² /2	1.4
	Σ		6.4		9.7		5.2
<p>f 0.60+1.5</p>	W	2.10 x 6.64 ² /2	7.7	x /8	11.6	x 6.64 ² /2	7.0
	f		7.7		11.6		7.0
	Σ		7.7		11.6		7.0
<p>W 0.60 L x 2.32 λ 2.9 f 0.43+0.2</p>	W	0.60 x 4.0	2.4	x 6.1	3.7	x 3.2	1.9
	f	0.63 x 6.64 ² /2	2.3	x /8	3.5	x 6.64 ² /2	2.1
	Σ		4.7		7.2		4.0

SEISMIC FORCE

[+]

	W	K	KW	Q
(0.08 x 101.8) + (0.33 x 8.8)	61.7			
(0.1 x 12) + (2.6 x 7)	25.4			
(0.1 x 14/2)	14.7			
(0.1 x 11) + (1.5 x 36.8/2)	35.8			
Σ = 137.6 / 101.3 = 1.36 [t/m ²]	137.6	0.10	13.8	14.0

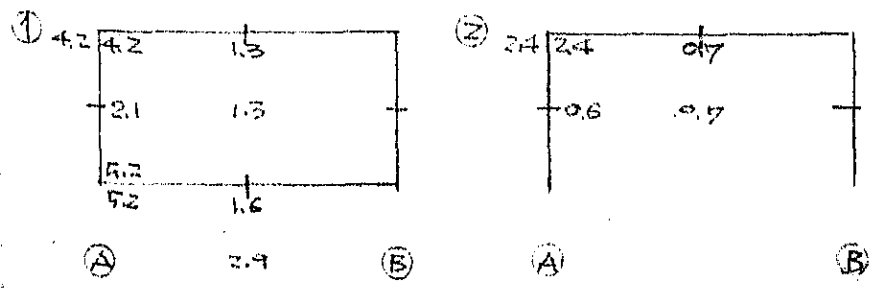
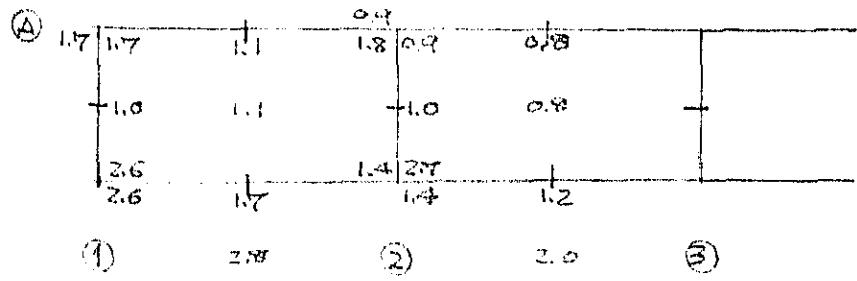
Stress by Vertical Load



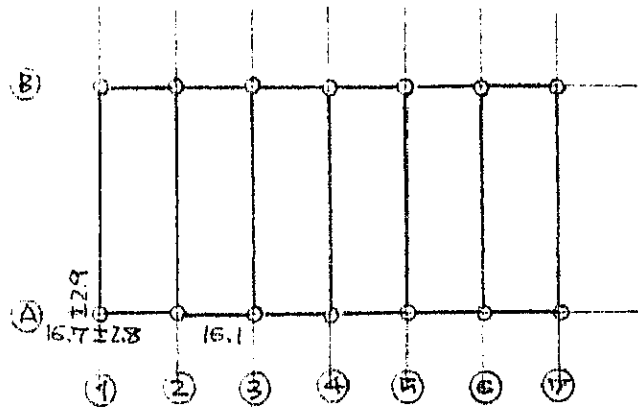
D-Value, Inflection Point

No.	ML	D						Y				Q, M			
		R ₀	R ₁	R	a	D	D'	Y ₀	Y ₁	Y ₂	Y ₃	Σ	Q	TM	MU
1	0.21	8.23	19.00	0.91		0.96	0.55	0.05			0.60	0.97	4.27	1.71	2.56
2	"	16.46	32.19	0.95		1.00	0.55	0.05			0.60	1.01	4.44	1.78	2.66
A	0.66	4.49	3.40	0.63	0.43	3.84	0.55	0			0.55	2.14	9.42	4.34	5.18
B	0.80	1.93	3.86	0.22	0.11	1.00					0	0.55	2.43	2.43	0

Stress by Seismic Force



Footings

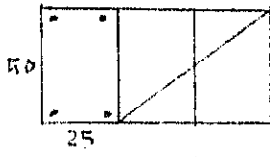
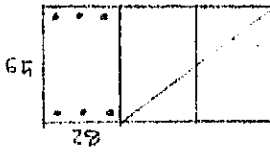
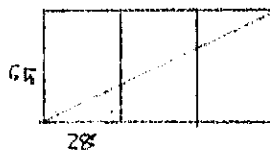
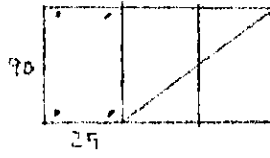
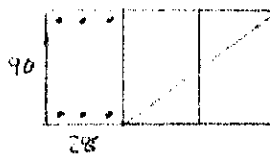
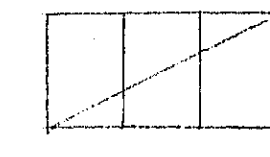


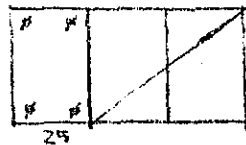
Pile $\phi 300$ R $25 \frac{t}{p} \times 0.8 = 20.0$
 $\Delta N = 0.9^2 \times 1.2 \times 2.0 = 1.9$
 $R_e = 20.0 - 1.9 = 18.1 > 16.7, 16.1$

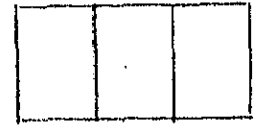
OR Brick G.F.L. - 2.950
 $f_{ea} = 8.4 - (0.30 + 2.65 + 0.60) \times 2.0 = 1.3$
 $A_n = 16.7 / 1.3 = 12.8 \rightarrow 232 \times 4.6$




Chart

No.	STRESS			M/bD	M/bD^2	f_e	at	Pg	ag	b	D	j	Section
	V	H	T										
1	16.7	1.1	17.8	12.7				0.8	11.2	50	28	20.1	- D19
2	0	1.7	2.6		6.6	0.05							
3	0	2.6	2.6										"
4	0	1.0	2.0	9.1		0							
5	16.7	1.3	18.0	12.9						b	28		"
6	0	4.2								D	50		
7	0	7.2	7.8		11.1	0.24				j	39.4		"
8	16.1	2.1	18.2	11.7									
9	0	0.3	16.4							b	50		"
10	0	1.8	2.17		6.9	0.10				D	28		
11	0	2.7	2.7										"
12	0	1.0	2.0	9.1		0							
13	16.1	0.7	16.8	12.0						b	28		"
14	0	1.8	4.2							D	50		
15	0	0			6.0	0.05							"
16	0.4	0.6	1.6	9.9		0							

No	Stress			C	Pt	γ	αt	φ		Section
	V	H	T							
1	D	1.7	1.7				1.4		b 25 D 50 J 39.7	 <p>50 25 • D19</p>
	E	0.4	0.8				0.7			
	I	0.9	1.4				1.2			
2	D	3.8	3.8	8.9		0		5.4	b 28 D 65 J 42.5	 <p>65 28 • D19</p>
	E	4.2	2.0				4.1			
	I	4.8					x 4.8			
3	D	6.6	6.6	QA		KA		7.0	b 28 D 65 J 42.5	 <p>65 28</p>
	E	4.2	0.6				2.7			
	I	4.8					x 7.5			
4	D	6.6	6.6	8.8		0		7.0	b 25 D 90 J 71.8	 <p>90 25 • D19</p>
	E	2.6	2.6				1.7			
	I	2.6					x 0.5			
5	D	5.2	5.2	13.2		0		4.8	b 28 D 90 J 71.8	 <p>90 28 • D19</p>
	E	4.2	2.6				3.6			
	I	4.8					x 6.3			
6	D	10.2	10.2	10.0		0		11.6		 <p>90 28 • D19</p>
	E			15.1		0		9.5		
	I									

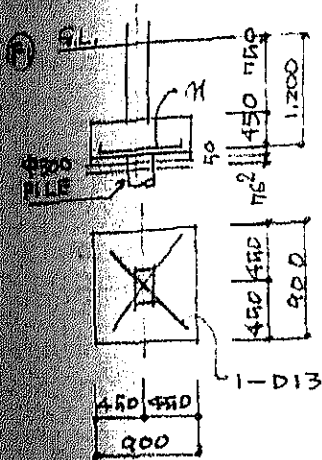
Sub Beam			Stress							Section
Load			Stress							Section
From CS1 ΔM 0.28 ΔQ 0.45			$M_T = 0.28 \times 232/2 = 0.32$ $A_0 = 24 \times 15 = 375$ $V_0 = 2(25+15) = 80$							 <p>35 25</p> <p>f D16 □ D10-@100</p>
C	45	232/8	0.30	M	C	Pt	γ	Δt	j	
			0.30	$\Delta t = \frac{M \cdot y_0}{24 \cdot A_0} = 1.71$ $P_{th} = (M_T / (24 \cdot b \cdot A_0)) + 0.002 = 0.0029$				0.6		
			0.52	Q	QA	α	ΔQ	PW	St	CP
			0.52	0.52	3.9					1.6



Load	DIR.	Stress			D	j	Δt	ϕ	Section
 <p>U 0.62 A 2.9</p>	S	M	0.54	0.082	0.27	12	8.3	1.6	D10 @ 200
		C	1.44	0.51	0.13				
	L	M		0.055	0.08	12	7.4	0.5	D10 @ 300
		C		0.46	0.66				
 <p>U 0.39</p>	S	M	0.47	0.60	0.28	12	8.3	1.7	D10 @ 200
		C	0.39	1.20	0.47				
	L	M				12	7.4	0.5	D10 @ 300
		C							
 <p>U 0.39</p>	S	M				12	8.3	1.7	D10 @ 200
		C							
	L	M				12	7.4	0.5	D10 @ 300
		C							

INGE DATA (Air Compressor House)

1) Footing Schedule



M = 6-D13 (top)

Pile
OR.

Brick Base
BTM = G.L. - 3,250
2.32 x 3.6
Width
+
P. 254

2) Column Schedule

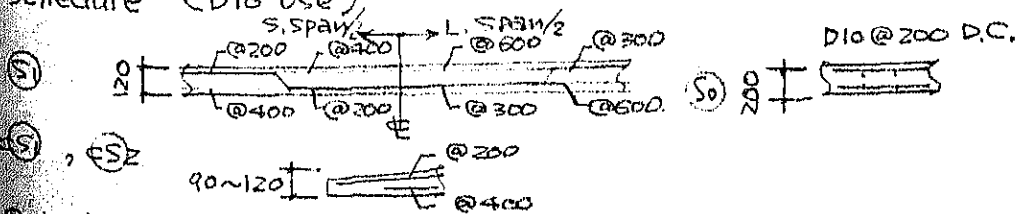


MAIN R. 6-D19
HOOP □ D10-General @ 100 ~ Panel Zone @ 150
AUX. HOOP — D10 @ 600

3) Beam Schedule

	G2	FG1	FG2	B1
b	250	280	250	250
D	500	600	900	350
TOP R.	2-D19	3-D19	2-D19	2-D16
BTM	2-D19	3-D19	2-D19	2-D16
TOP	2-D10	←	←	←
BTM	□ D10 @ 600	←	←	←
ST.	□ D10 @ 200	←	←	□ D10 @ 100

4) Slab Schedule (D10 Use)



5) Wall Schedule

