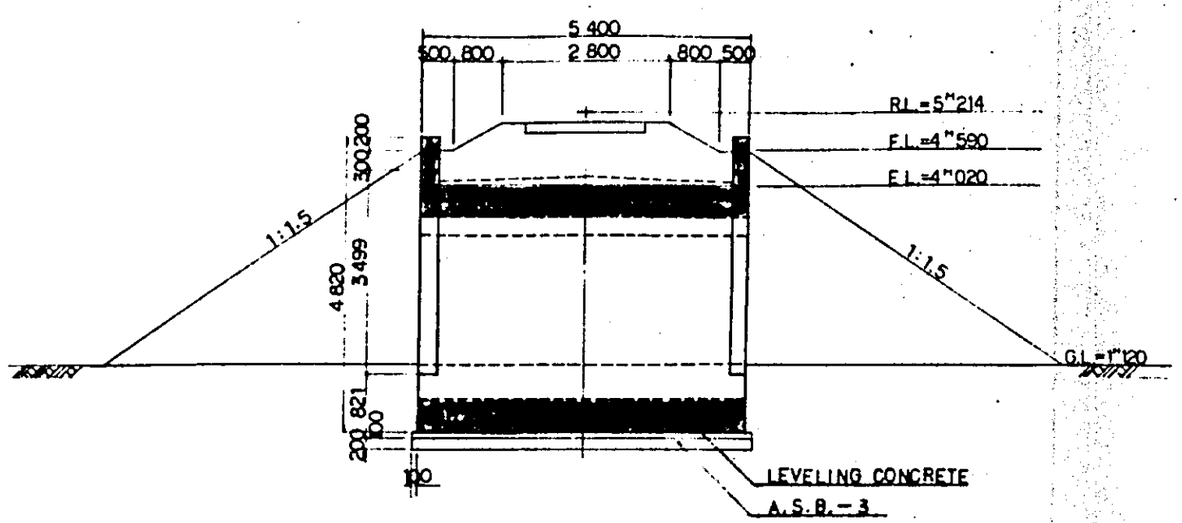
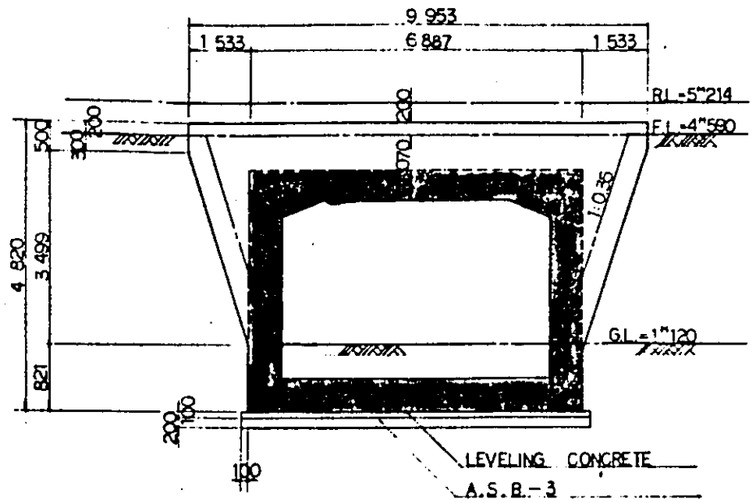
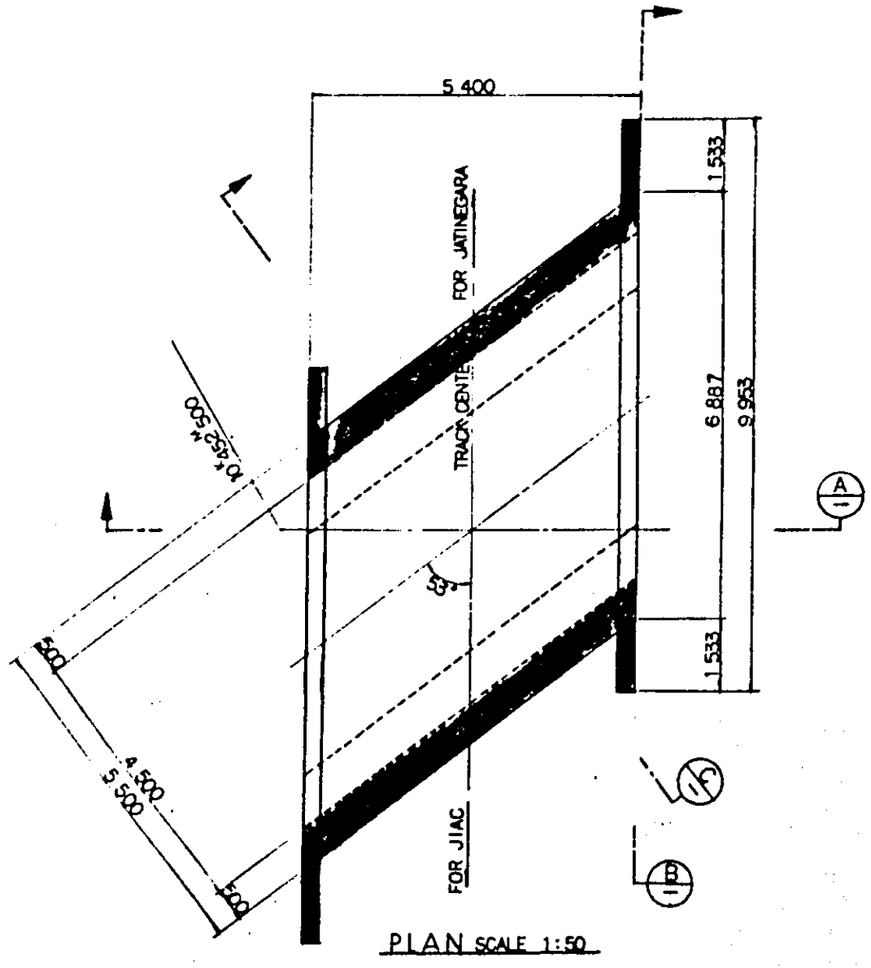
1 Configuration



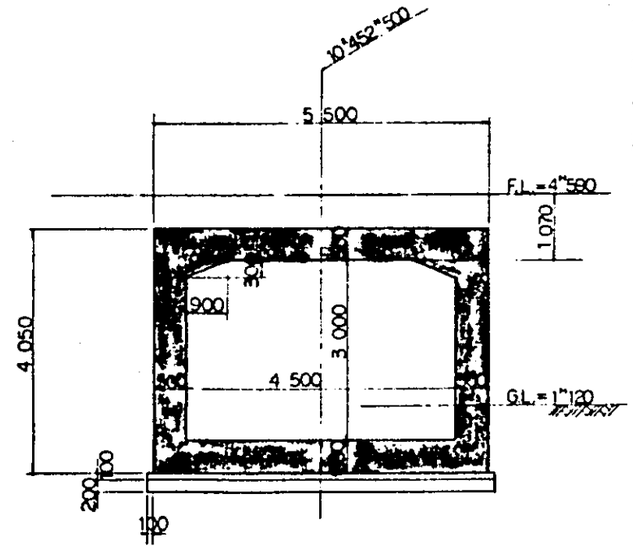
SECTION (A) SCALE 1:50



SECTION (B) SCALE 1:50



PLAN SCALE 1:50

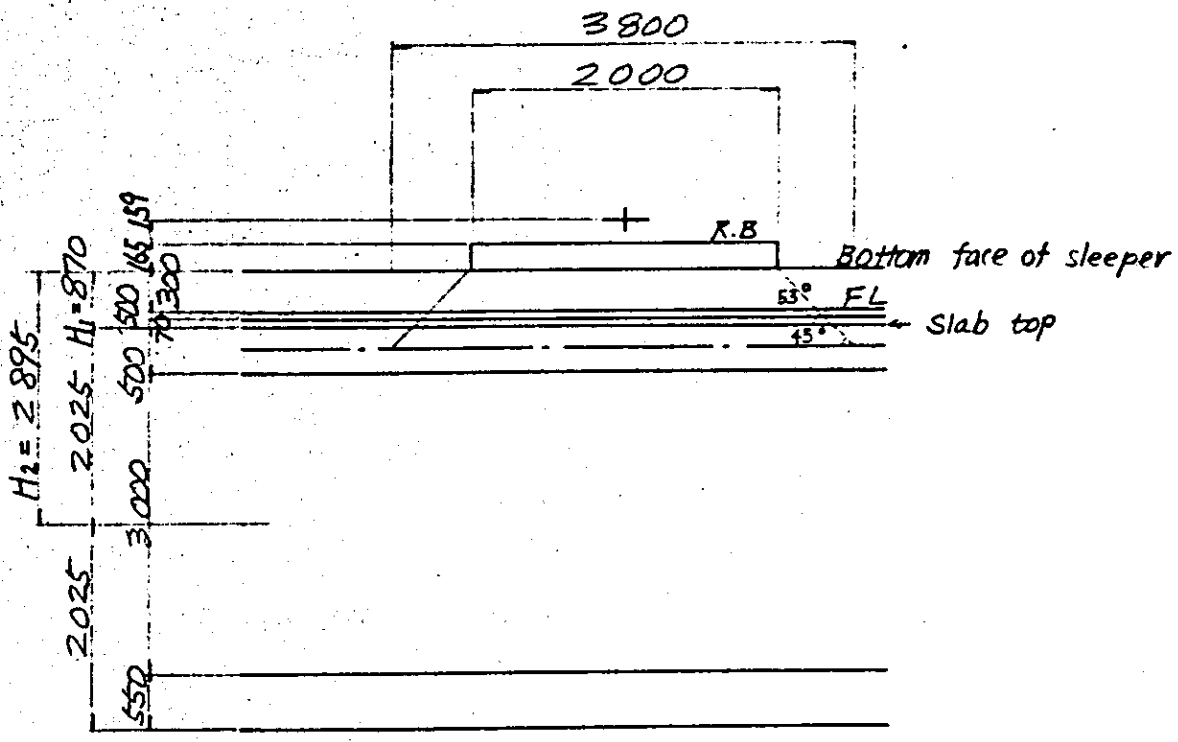


SECTION (C) SCALE 1:50

NOTES:

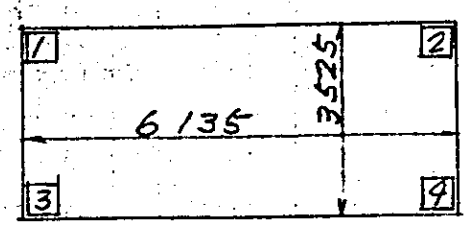
1. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS OTHERWISE INDICATED
2. REFERENCE DRAWING FOR BAR ARRANGEMENT: CE-030
3. GRADING CONCRETE SHALL BE SIMULTANEOUSLY PLACED WITH SLAB CONCRETE

2. Configuration and dimension: Surcharge earth load



3. cross section

1. Axis of Rahmen(Rigid frame)



2. Cross sectional area: Moment of inertia of the area

1)Top slab

$A = 1.00 \times 0.50 = 0.500 \ m^2$

$I = 1/12 \times 1.00 \times 0.50^3 = 0.01042 \ m^4$

2)Bottom slab

$A = 1.00 \times 0.55 = 0.550 \ m^2$

$I = 1/12 \times 1.00 \times 0.55^3 = 0.01386 \ m^4$

3)Side wall

$A = 1.00 \times 0.50 = 0.500 \ m^2$

$I = 1/12 \times 1.00 \times 0.50^3 = 0.01042 \ m^4$

4. Loads

Calcultion is carried out based on the unit width of Rahmen(Rigid frame).

4.1 Dead load

Weight of track assembly

0.45 t / m — 3.80 m = 0.12 t / m²

Track ballast

1.9 t / m³ × 0.47 m = 0.89 〃

(R.B.～F.L.)

Subgrade material

(upper layer) 1.9 t / m³ × 0.50 m = 0.95 〃

Grading concrete 2.35 t / m³ × 0.07 m = 0.16 〃

Weight of top slab 2.5 t / m² × 0.50 m = 1.25 〃

W d = 3.37 t / m²

Weight of side wall

2.5 t / m³ × 0.50 m × 3.525 = 4.41 t / m

Weight of bottom slab

3.37 + 4.41 × 2 × 1 / 6.135 = 4.81 t / m²

4.2 Train load

Uniformly distributed load, equivalent to KS-16 loading

ℓ = 6.135 m Surcharge earth (Sleeper bottom - Slab top) is assumed as 0.87m, then P m = 2.70 t / m²

P s = 2.70 × 1.2 = 3.24 t / m²

4.3 Impact coefficient

$$i = i_o \left\{ \frac{2.5 - H}{1.5} \right\}$$

$= 0.47$

$H \leq 1.0^{m}$ $i = i_o$

$H \geq 2.5^{m}$ $i = 0$

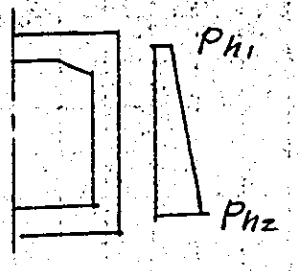
4.4 Earth pressure

1) Ordinary case, earth pressure due to dead load

Horizontal earth pressure acting at the depth of H

Bottom face of sleeper

$$Ph = K \cdot \gamma \cdot H$$



Ph : Horizontal earth pressure per unit area

γ : Unit weight of earth = 1.8 t / m³

H : Depth of earth (depth above slab top is the equivalent value)

K : Coefficient of static earth pressure = 0.5

K = 0.5

H_1 = 1 / 1.8 × (3.37 − 1.25 − 0.16) = 1.09 m

Ph1 = K · γ · H_1

= 0.5 × 1.8 × (1.09 + 0.07 + 0.50 / 2) = 1.27 t / m²

Ph2 = Ph1 + K γ H_2

= 1.27 + 0.5 × 1.8 × 3.525 = 4.44 t / m²

K = 0.3

Ph1 = 0.3 × 1.8 × (1.09 + 0.07 + 0.50 / 2) = 0.76 t / m²

Ph2 = 0.76 + 0.3 × 1.8 × 3.525 = 2.66 t / m²

2) Horizontal earth pressure caused by train load

$$Ph\ell = K \cdot Pv\ell$$

$Ph\ell$: Effect of train load acting at the side.

(uniformly distributed load) (t / m')

$Pv\ell$: Effect of train load in vertical direction

at the depth of the level of culvert

center (t / m')

K : Coefficient of horizontal earth pressure

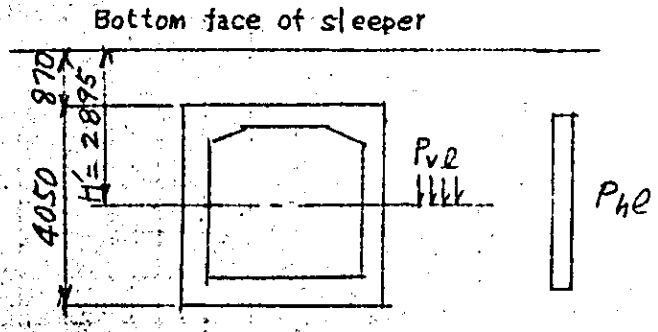
(generally assumed as 0.5)

H' : Depth of the level of culvert center (m)

$$Ph\ell = K \cdot Pv\ell$$

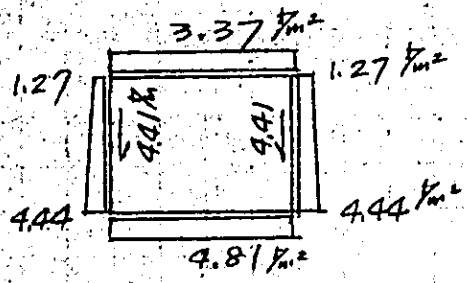
$$= 0.5 \times 1.90$$

$$= 0.95 \text{ t / m'}$$

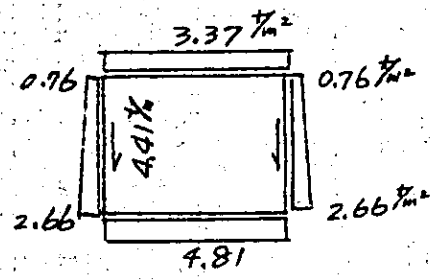


4.5 Loading condition

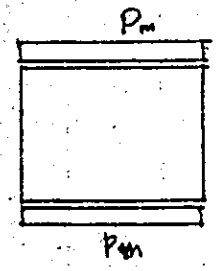
case1 Dead load + Earth pressure (0.5)



case2 Dead load + Earth pressure (0.3)



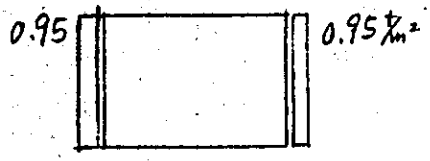
case3 Live load Impact



P m = 2.70 × 1.47 = 3.97 t / m²

P s = 3.24 × 1.47 = 4.76 〃

case4 Earth pressure due to live load



Combination of loads

Case	Combination of loads
①	Dead load +Surcharge earth load +Earth pressure (K = 0.5)
②	Dead load +Surcharge earth load +Earth pressure (K = 0.3)
③	live load +Impact
④	live load, Earth pressure

Difine	Case
1	① ②
2	③
3	④

Combine	Difine	Coefficient of increased load
	1	1.00
	1 + 2	1.00
	1 + 3	1.00
	1 + 2 + 3	1.00

Pick up	Combine	
1	1, 2, 3, 4	

REACTION

	SUPPORT	X (TON)	Y (TON)	Z (TON.M)
LOAD - 1 CASE 1 (SHI+DO (0.5))				
	3	0.000	-0.001	0.000
	4	0.000	-0.001	0.000
LOAD - 2 CASE 2 (SHI+DO (0.3))				
	3	0.000	-0.001	0.000
	4	0.000	-0.001	0.000
LOAD - 3 CASE 3 (KATSU+SYOU)				
	3	0.000	0.000	0.000
	4	0.000	0.000	0.000
LOAD - 4 CASE 4 (KATSUDO)				
	3	0.000	0.000	0.000
	4	0.000	0.000	0.000

D E F L E C T I O N

JOINT	X (MM)	Y (MM)	Z (MMRAD)
LOAD - 1 CASE 1 (SHI+DO (0.5))			
1	-0.005	-0.031	-0.331
2	-0.022	-0.031	0.331
3	0.000	0.000	0.360
4	-0.027	0.000	-0.360
LOAD - 3 CASE 3 (KATSU+SYOU)			
1	0.001	-0.032	-0.480
2	0.000	-0.032	0.480
3	0.000	0.000	0.456
4	0.001	0.000	-0.456

JOINT	X (MM)	Y (MM)	Z (MMRAD)
LOAD - 2 CASE 2 (SHI+DO (0.3))			
1	-0.004	-0.031	-0.375
2	-0.013	-0.031	0.375
3	0.000	0.000	0.405
4	-0.017	0.000	-0.405
LOAD - 4 CASE 4 (KATSUDO)			
1	0.000	0.000	0.038
2	-0.007	0.000	-0.038
3	0.000	0.000	-0.036
4	-0.007	0.000	0.036

LOAD 1 CASE 1 (SHIDO (0.5))

	L	M	(M)	Q	N
= = MEMBER 1 (1 - 2) G = =					
ITAN	0.000	-7.532	-7.532	10.337	-3.568
1	0.250	-5.053	-7.532	9.495	-3.568
2	0.650	-1.525	-3.667	8.147	-3.568
3	0.900	0.407	-1.525	7.304	-3.568
4	1.150	2.128	0.407	6.462	-3.568
5	2.067	6.636	5.690	3.370	-3.568
6	2.567	7.902	7.375	1.685	-3.568
7	3.067	8.323	8.323	0.000	-3.568
JTAN	6.135	-7.532	-7.532	-10.337	-3.568
MAX	3.067	9.323		0.000	-3.568
= = MEMBER 2 (3 - 4) G = =					
ITAN	0.000	9.411		-13.497	-6.496
1	0.250	6.175		-12.397	-6.496
2	0.525	2.932		-11.187	-6.496
3	1.568	-6.340		-6.600	-6.496
4	2.067	-9.090		-4.400	-6.496
5	2.567	-10.740		-2.200	-6.496
6	3.067	-11.290		0.000	-6.496
JTAN	6.135	9.411		13.497	-6.496
MAX	3.067	-11.290		0.000	-6.496
= = MEMBER 3 (1 - 3) C = =					
ITAN	0.000	7.532		-3.568	-10.337
1	0.250	6.682		-3.222	-10.561
2	0.550	5.787		-2.733	-10.830
3	0.650	5.523		-2.552	-10.920
4	1.300	4.297		-1.157	-11.502
5	1.800	4.042		0.175	-11.950
6	2.300	4.509		1.732	-12.398
7	3.000	6.591		4.289	-13.025
8	3.250	7.798		5.309	-13.249
JTAN	3.525	9.411		6.496	-13.496
MAX	1.800	4.042		0.175	-11.950

LOAD 2 CASE 2 (SHIDO (0.3))

	L	M	(M)	Q	N
= = MEMBER 1 (1 - 2) G = =					
ITAN	0.000	-7.131	-7.131	10.337	-1.965
1	0.250	-4.652	-7.131	9.495	-1.965
2	0.650	-1.124	-3.266	8.147	-1.965
3	0.900	0.807	-1.124	7.304	-1.965
4	1.150	2.528	0.807	6.462	-1.965
5	2.067	7.039	6.091	3.370	-1.965
6	2.567	8.302	7.776	1.685	-1.965
7	3.067	8.724	8.724	0.000	-1.965
JTAN	6.135	-7.131	-7.131	-10.337	-1.965
MAX	3.067	8.724		0.000	-1.965
= = MEMBER 2 (3 - 4) G = =					
ITAN	0.000	8.860		-13.497	-4.062
1	0.250	5.623		-12.397	-4.062
2	0.525	2.380		-11.187	-4.062
3	1.568	-6.891		-6.600	-4.062
4	2.067	-9.641		-4.400	-4.062
5	2.567	-11.291		-2.200	-4.062
6	3.067	-11.841		0.000	-4.062
JTAN	6.135	8.860		13.497	-4.062
MAX	3.067	-11.841		0.000	-4.062
= = MEMBER 3 (1 - 3) C = =					
ITAN	0.000	7.131		-1.965	-10.337
1	0.250	6.665		-1.759	-10.561
2	0.550	6.180		-1.466	-10.830
3	0.650	6.039		-1.358	-10.920
4	1.300	5.416		-0.522	-11.502
5	1.800	5.349		0.276	-11.950
6	2.300	5.714		1.208	-12.398
7	3.000	7.081		2.740	-13.025
8	3.250	7.841		3.351	-13.249
JTAN	3.525	8.860		4.062	-13.496
MAX	1.567	5.330		-0.113	-11.741

LOAD 1 CASE 1 (SHIPOO (0.5))

MEMBER 4 (2 - 4) C	L	M	(M)	Q	N
ITAN	0.000	-7.532		3.566	-10.337
1	0.250	-6.682		3.222	-10.561
2	0.550	-5.787		2.733	-10.830
3	0.650	-5.523		2.552	-10.920
4	1.300	-4.297		1.157	-11.502
5	1.800	-4.042		-0.175	-11.950
6	2.300	-4.509		-1.732	-12.398
7	3.000	-6.591		-4.289	-13.025
8	3.250	-7.790		-5.309	-13.249
JTAN	3.525	-9.411		-6.496	-13.496
MAX	1.800	-4.042		-0.175	-11.950

LOAD 2 CASE 2 (SHIPOO (0.3))

MEMBER 4 (2 - 4) C	L	M	(M)	Q	N
ITAN	0.000	-7.131		1.965	-10.337
1	0.250	-6.665		1.759	-10.561
2	0.550	-6.180		1.466	-10.830
3	0.650	-6.039		1.358	-10.920
4	1.300	-5.416		0.522	-11.502
5	1.800	-5.349		-0.276	-11.950
6	2.300	-5.714		-1.208	-12.398
7	3.000	-7.081		-2.740	-13.025
8	3.250	-7.841		-3.351	-13.249
JTAN	3.525	-8.860		-4.062	-13.496
MAX	1.567	-5.330		0.113	-11.741

LOAD 3 CASE 3 (KATSU+SYOU)

	L	M	(M)	Q	N
= = MEMBER 1 (1 - 2) G = =					
ITAN	0.000	-8.046	-8.046	14.601	-0.327
1	0.250	-5.125	-8.046	13.411	-0.327
2	0.650	-0.969	-3.492	11.507	-0.327
3	0.900	1.306	-0.969	10.317	-0.327
4	1.150	3.334	1.306	9.127	-0.327
5	2.067	9.647	7.531	4.760	-0.327
6	2.567	10.136	9.516	2.380	-0.327
7	3.067	10.632	10.632	0.000	-0.327
JTAN	6.135	-8.046	-8.046	-14.601	-0.327
MAX	3.067	10.632		0.000	-0.327
= = MEMBER 2 (3 - 4) G = =					
ITAN	0.000	6.894		-14.601	0.327
1	0.250	3.974		-13.411	0.327
2	0.525	1.048		-12.102	0.327
3	1.568	-7.317		-7.140	0.327
4	2.067	-9.799		-4.760	0.327
5	2.567	-11.287		-2.380	0.327
6	3.067	-11.784		0.000	0.327
JTAN	6.135	6.894		14.601	0.327
MAX	3.067	-11.784		0.000	0.327
= = MEMBER 3 (1 - 3) C = =					
ITAN	0.000	8.046		-0.327	-12.178
1	0.250	7.964		-0.327	-12.176
2	0.550	7.266		-0.327	-12.176
3	0.650	7.834		-0.327	-12.178
4	1.300	7.621		-0.327	-12.178
5	1.800	7.458		-0.327	-12.178
6	2.300	7.295		-0.327	-12.178
7	3.000	7.066		-0.327	-12.178
8	3.250	6.984		-0.327	-12.178
JTAN	3.525	6.894		-0.327	-12.178

LOAD 4 CASE 4 (KATSUDO)

	L	M	(M)	Q	N
= = MEMBER 1 (1 - 2) G = =					
ITAN	0.000	-0.347	-0.347	0.000	-1.648
1	0.250	-0.347	-0.347	0.000	-1.648
2	0.650	-0.347	-0.347	0.000	-1.648
3	0.900	-0.347	-0.347	0.000	-1.648
4	1.150	-0.347	-0.347	0.000	-1.648
5	2.067	-0.347	-0.347	0.000	-1.648
6	2.567	-0.347	-0.347	0.000	-1.648
7	3.067	-0.347	-0.347	0.000	-1.648
JTAN	6.135	-0.347	-0.347	0.000	-1.648
= = MEMBER 2 (3 - 4) G = =					
ITAN	0.000	0.440		0.000	-1.701
1	0.250	0.440		0.000	-1.701
2	0.525	0.440		0.000	-1.701
3	1.568	0.440		0.000	-1.701
4	2.067	0.440		0.000	-1.701
5	2.567	0.440		0.000	-1.701
6	3.067	0.440		0.000	-1.701
JTAN	6.135	0.440		0.000	-1.701
= = MEMBER 3 (1 - 3) C = =					
ITAN	0.000	0.347		-1.648	0.000
1	0.250	-0.035		-1.411	0.000
2	0.550	-0.415		-1.126	0.000
3	0.650	-0.523		-1.031	0.000
4	1.300	-0.992		-0.413	0.000
5	1.800	-1.080		0.062	0.000
6	2.300	-0.931		0.537	0.000
7	3.000	-0.322		1.202	0.000
8	3.250	0.008		1.439	0.000
JTAN	3.525	0.440		1.701	0.000
MAX	1.800	-1.080		0.062	0.000

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LOAD 3 CASE 3 (KATSU+SYOU)

= = MEMBER 4 (2 - 4) C = =	L	M	(M)	Q	N
ITAN	0.000	-8.346		0.327	-12.178
1	0.250	-7.964		0.327	-12.178
2	0.550	-7.866		0.327	-12.178
3	0.650	-7.834		0.327	-12.178
4	1.300	-7.621		0.327	-12.178
5	1.800	-7.458		0.327	-12.178
6	2.300	-7.295		0.327	-12.178
7	3.000	-7.066		0.327	-12.178
8	3.250	-6.984		0.327	-12.178
JTAN	3.525	-6.894		0.327	-12.178

LOAD 4 CASE 4 (KATSUDO)

= = MEMBER 4 (2 - 4) C = =	L	M	(M)	Q	N
ITAN	0.000	-0.347		1.648	0.000
1	0.250	0.035		1.411	0.000
2	0.550	0.415		1.126	0.000
3	0.650	0.523		1.031	0.000
4	1.300	0.992		0.413	0.000
5	1.800	1.080		-0.062	0.000
6	2.300	0.931		-0.537	0.000
7	3.000	0.322		-1.202	0.000
8	3.250	-0.008		-1.439	0.000
JTAN	3.525	-0.440		-1.701	0.000
MAX	1.800	1.080		-0.062	0.000

COMBINE 1

	L	MOMENT MAXIMUM M	Q	N	CASE	MOMENT MINIMUM M	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-7.131	10.337	-1.965	(2)	-7.532	10.337	-3.568	(1)
1	0.250	-4.652	9.495	-1.965	(2)	-5.053	9.495	-3.568	(1)
2	0.650	-1.124	8.147	-1.965	(2)	-1.525	8.147	-3.568	(1)
3	0.900	0.807	7.304	-1.965	(2)	0.407	7.304	-3.568	(1)
4	1.150	2.528	6.462	-1.965	(2)	2.128	6.462	-3.568	(1)
5	2.067	7.039	3.370	-1.965	(2)	6.638	3.370	-3.568	(1)
6	2.567	8.302	1.685	-1.965	(2)	7.902	1.685	-3.568	(1)
7	3.067	8.724	0.000	-1.965	(2)	8.323	0.000	-3.568	(1)
JTAN	6.135	-7.131	-10.337	-1.965	(2)	-7.532	-10.337	-3.568	(1)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	9.411	-13.497	-6.496	(1)	8.860	-13.497	-4.062	(2)
1	0.250	6.175	-12.397	-6.496	(1)	5.623	-12.397	-4.062	(2)
2	0.525	2.932	-11.187	-6.496	(1)	2.380	-11.187	-4.062	(2)
3	1.568	-6.340	-6.600	-6.496	(1)	-6.891	-6.600	-4.062	(2)
4	2.067	-9.090	-4.400	-6.496	(1)	-9.641	-4.400	-4.062	(2)
5	2.567	-10.740	-2.200	-6.496	(1)	-11.291	-2.200	-4.062	(2)
6	3.067	-11.290	0.000	-6.496	(1)	-11.841	0.000	-4.062	(2)
JTAN	6.135	9.411	13.497	-6.496	(1)	8.860	13.497	-4.062	(2)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	7.532	-3.568	-10.337	(1)	7.131	-1.965	-10.337	(2)
1	0.250	6.682	-3.222	-10.561	(1)	6.665	-1.759	-10.561	(2)
2	0.550	6.180	-1.466	-10.830	(2)	5.787	-2.733	-10.830	(1)
3	0.650	6.039	-1.358	-10.920	(2)	5.523	-2.552	-10.920	(1)
4	1.300	5.416	-0.522	-11.502	(2)	4.297	-1.157	-11.502	(1)
5	1.800	5.349	0.276	-11.950	(2)	4.042	0.175	-11.950	(1)
6	2.300	5.714	1.208	-12.398	(2)	4.509	1.732	-12.398	(1)
7	3.000	7.081	2.740	-13.025	(2)	6.591	4.289	-13.025	(1)
8	3.250	7.841	3.351	-13.249	(2)	7.790	5.309	-13.249	(1)
JTAN	3.525	9.411	6.496	-13.496	(1)	8.860	4.062	-13.496	(2)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-7.131	1.965	-10.337	(2)	-7.532	3.568	-10.337	(1)
1	0.250	-6.665	1.759	-10.561	(2)	-6.682	3.222	-10.561	(1)
2	0.550	-5.787	2.733	-10.830	(1)	-6.180	1.466	-10.830	(2)
3	0.650	-5.523	2.552	-10.920	(1)	-6.039	1.358	-10.920	(2)
4	1.300	-4.297	1.157	-11.502	(1)	-5.416	0.522	-11.502	(2)
5	1.800	-4.042	-0.175	-11.950	(1)	-5.349	-0.276	-11.950	(2)
6	2.300	-4.509	-1.732	-12.398	(1)	-5.714	-1.208	-12.398	(2)
7	3.000	-6.591	-4.289	-13.025	(1)	-7.081	-2.740	-13.025	(2)
8	3.250	-7.790	-5.309	-13.249	(1)	-7.841	-3.351	-13.249	(2)
JTAN	3.525	-8.860	-4.062	-13.496	(2)	-9.411	-6.496	-13.496	(1)

COMBINE 1

	L	SHEAR MAXIMUM M	Q	N	CASE	SHEAR MINIMUM M	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-7.532	10.337	-3.568	(1)	-7.532	10.337	-3.568	(1)
1	0.250	-5.053	9.495	-3.568	(1)	-5.053	9.495	-3.568	(1)
2	0.650	-1.525	8.147	-3.568	(1)	-1.525	8.147	-3.568	(1)
3	0.900	0.407	7.304	-3.568	(1)	0.407	7.304	-3.568	(1)
4	1.150	2.128	6.462	-3.568	(1)	2.128	6.462	-3.568	(1)
5	2.067	6.638	3.370	-3.568	(1)	6.639	3.370	-3.568	(1)
6	2.567	7.902	1.685	-3.568	(1)	7.902	1.685	-3.568	(1)
7	3.067	8.323	0.000	-3.568	(1)	8.323	0.000	-3.568	(1)
JTAN	6.135	-7.532	-10.337	-3.568	(1)	-7.532	-10.337	-3.568	(1)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	9.411	-13.497	-6.496	(1)	9.411	-13.497	-6.496	(1)
1	0.250	6.175	-12.397	-6.496	(1)	6.175	-12.397	-6.496	(1)
2	0.525	2.932	-11.187	-6.496	(1)	2.932	-11.187	-6.496	(1)
3	1.568	-6.340	-6.600	-6.496	(1)	-6.340	-6.600	-6.496	(1)
4	2.067	-9.090	-4.400	-6.496	(1)	-9.090	-4.400	-6.496	(1)
5	2.567	-10.740	-2.200	-6.496	(1)	-10.740	-2.200	-6.496	(1)
6	3.067	-11.290	0.000	-6.496	(1)	-11.290	0.000	-6.496	(1)
JTAN	6.135	9.411	13.497	-6.496	(1)	9.411	13.497	-6.496	(1)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	7.131	-1.965	-10.337	(2)	7.532	-3.568	-10.337	(1)
1	0.250	6.665	-1.759	-10.561	(2)	6.682	-3.222	-10.561	(1)
2	0.550	6.180	-1.466	-10.830	(2)	5.787	-2.733	-10.830	(1)
3	0.650	6.039	-1.358	-10.920	(2)	5.523	-2.552	-10.920	(1)
4	1.300	5.416	-0.522	-11.502	(2)	4.297	-1.157	-11.502	(1)
5	1.800	5.349	0.276	-11.950	(2)	4.042	0.175	-11.950	(1)
6	2.300	4.509	1.732	-12.398	(1)	5.714	1.208	-12.398	(2)
7	3.000	6.591	4.289	-13.025	(1)	7.081	2.740	-13.025	(2)
8	3.250	7.790	5.309	-13.249	(1)	7.841	3.351	-13.249	(2)
JTAN	3.525	9.411	6.496	-13.496	(1)	8.860	4.062	-13.496	(2)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-7.532	3.568	-10.337	(1)	-7.131	1.965	-10.337	(2)
1	0.250	-6.682	3.222	-10.561	(1)	-6.665	1.759	-10.561	(2)
2	0.550	-5.787	2.733	-10.830	(1)	-6.180	1.466	-10.830	(2)
3	0.650	-5.523	2.552	-10.920	(1)	-6.039	1.358	-10.920	(2)
4	1.300	-4.297	1.157	-11.502	(1)	-5.416	0.522	-11.502	(2)
5	1.800	-4.042	-0.175	-11.950	(1)	-5.349	-0.276	-11.950	(2)
6	2.300	-5.714	-1.208	-12.398	(2)	-4.509	-1.732	-12.398	(1)
7	3.000	-7.081	-2.740	-13.025	(2)	-6.591	-4.289	-13.025	(1)
8	3.250	-7.841	-3.351	-13.249	(2)	-7.790	-5.309	-13.249	(1)
JTAN	3.525	-8.860	-4.062	-13.496	(2)	-9.411	-6.496	-13.496	(1)

TITLE..C22

COMBINE 1

		AXIAL MAXIMUM				AXIAL MINIMUM			
	L	M	Q	N	CASE	M	Q	N	CASE
== MEMBER 1 (1 - 2) G ==									
ITAN	0.000	-7.131	10.337	-1.965	(2)	-7.532	10.337	-3.568	(1)
1	0.250	-4.652	9.495	-1.965	(2)	-5.053	9.495	-3.568	(1)
2	0.650	-1.124	8.147	-1.965	(2)	-1.525	8.147	-3.568	(1)
3	0.900	0.807	7.304	-1.965	(2)	0.407	7.304	-3.568	(1)
4	1.150	2.528	6.462	-1.965	(2)	2.128	6.462	-3.568	(1)
5	2.067	7.039	3.370	-1.965	(2)	6.638	3.370	-3.568	(1)
6	2.567	8.302	1.685	-1.965	(2)	7.902	1.685	-3.568	(1)
7	3.067	8.724	0.000	-1.965	(2)	8.323	0.000	-3.568	(1)
JTAN	6.135	-7.131	-10.337	-1.965	(2)	-7.532	-10.337	-3.568	(1)
== MEMBER 2 (3 - 4) G ==									
ITAN	0.000	8.860	-13.497	-4.062	(2)	9.411	-13.497	-6.496	(1)
1	0.250	5.623	-12.397	-4.062	(2)	6.175	-12.397	-6.496	(1)
2	0.525	2.380	-11.187	-4.062	(2)	2.932	-11.187	-6.496	(1)
3	1.568	-6.891	-6.600	-4.062	(2)	-6.340	-6.600	-6.496	(1)
4	2.067	-9.641	-4.400	-4.062	(2)	-9.090	-4.400	-6.496	(1)
5	2.567	-11.291	-2.200	-4.062	(2)	-10.740	-2.200	-6.496	(1)
6	3.067	-11.841	0.000	-4.062	(2)	-11.290	0.000	-6.496	(1)
JTAN	6.135	8.860	13.497	-4.062	(2)	9.411	13.497	-6.496	(1)
== MEMBER 3 (1 - 3) C ==									
ITAN	0.000	7.532	-3.568	-10.337	(1)	7.532	-3.568	-10.337	(1)
1	0.250	6.682	-3.222	-10.561	(1)	6.682	-3.222	-10.561	(1)
2	0.550	5.787	-2.733	-10.830	(1)	5.787	-2.733	-10.830	(1)
3	0.650	5.523	-2.552	-10.920	(1)	5.523	-2.552	-10.920	(1)
4	1.300	4.297	-1.157	-11.502	(1)	4.297	-1.157	-11.502	(1)
5	1.800	4.042	0.175	-11.950	(1)	4.042	0.175	-11.950	(1)
6	2.300	4.509	1.732	-12.398	(1)	4.509	1.732	-12.398	(1)
7	3.000	6.591	4.289	-13.025	(1)	6.591	4.289	-13.025	(1)
8	3.250	7.790	5.309	-13.249	(1)	7.790	5.309	-13.249	(1)
JTAN	3.525	9.411	6.496	-13.496	(1)	9.411	6.496	-13.496	(1)
== MEMBER 4 (2 - 4) C ==									
ITAN	0.000	-7.532	3.568	-10.337	(1)	-7.532	3.568	-10.337	(1)
1	0.250	-6.682	3.222	-10.561	(1)	-6.682	3.222	-10.561	(1)
2	0.550	-5.787	2.733	-10.830	(1)	-5.787	2.733	-10.830	(1)
3	0.650	-5.523	2.552	-10.920	(1)	-5.523	2.552	-10.920	(1)
4	1.300	-4.297	1.157	-11.502	(1)	-4.297	1.157	-11.502	(1)
5	1.800	-4.042	-0.175	-11.950	(1)	-4.042	-0.175	-11.950	(1)
6	2.300	-4.509	-1.732	-12.398	(1)	-4.509	-1.732	-12.398	(1)
7	3.000	-6.591	-4.289	-13.025	(1)	-6.591	-4.289	-13.025	(1)
8	3.250	-7.790	-5.309	-13.249	(1)	-7.790	-5.309	-13.249	(1)
JTAN	3.525	-9.411	-6.496	-13.496	(1)	-9.411	-6.496	-13.496	(1)

COMBINE 2

	L	M	Q	N	CASE	M	I	N	CASE
		MOMENT MAXIMUM				MOMENT MINIMUM			
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-15.177	24.939	-2.292	(2 3)	-15.578	24.939	-3.894	(1 3)
1	0.250	-9.778	22.906	-2.292	(2 3)	-10.178	22.906	-3.894	(1 3)
2	0.650	-2.093	19.654	-2.292	(2 3)	-2.493	19.654	-3.894	(1 3)
3	0.900	2.114	17.622	-2.292	(2 3)	1.713	17.622	-3.894	(1 3)
4	1.150	5.862	15.589	-2.292	(2 3)	5.461	15.589	-3.894	(1 3)
5	2.067	15.686	8.130	-2.292	(2 3)	15.285	8.130	-3.894	(1 3)
6	2.567	18.438	4.065	-2.292	(2 3)	18.038	4.065	-3.894	(1 3)
7	3.067	19.356	0.000	-2.292	(2 3)	18.955	0.000	-3.894	(1 3)
JTAN	6.135	-15.177	-24.939	-2.292	(2 3)	-15.578	-24.939	-3.894	(1 3)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	16.306	-28.098	-6.170	(1 3)	15.754	-28.098	-3.736	(2 3)
1	0.250	10.149	-25.808	-6.170	(1 3)	9.597	-25.808	-3.736	(2 3)
2	0.525	3.980	-23.289	-6.170	(1 3)	3.428	-23.289	-3.736	(2 3)
3	1.568	-13.657	-13.740	-6.170	(1 3)	-14.209	-13.740	-3.736	(2 3)
4	2.067	-18.888	-9.160	-6.170	(1 3)	-19.440	-9.160	-3.736	(2 3)
5	2.567	-22.027	-4.580	-6.170	(1 3)	-22.579	-4.580	-3.736	(2 3)
6	3.067	-23.073	0.000	-6.170	(1 3)	-23.625	0.000	-3.736	(2 3)
JTAN	6.135	16.306	28.098	-6.170	(1 3)	15.754	28.098	-3.736	(2 3)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	15.578	-3.894	-22.515	(1 3)	15.177	-2.292	-22.515	(2 3)
1	0.250	14.646	-3.549	-22.739	(1 3)	14.629	-2.085	-22.739	(2 3)
2	0.550	14.047	-1.793	-23.008	(2 3)	13.653	-3.060	-23.008	(1 3)
3	0.650	13.873	-1.684	-23.098	(2 3)	13.356	-2.879	-23.098	(1 3)
4	1.300	13.037	-0.849	-23.680	(2 3)	11.918	-1.483	-23.680	(1 3)
5	1.800	12.807	-0.051	-24.128	(2 3)	11.500	-0.151	-24.128	(1 3)
6	2.300	13.009	0.882	-24.576	(2 3)	11.804	1.405	-24.576	(1 3)
7	3.000	14.146	2.413	-25.203	(2 3)	13.657	3.963	-25.203	(1 3)
8	3.250	14.825	3.024	-25.427	(2 3)	14.774	4.983	-25.427	(1 3)
JTAN	3.525	16.306	6.170	-25.674	(1 3)	15.754	3.736	-25.674	(2 3)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-15.177	2.292	-22.515	(2 3)	-15.578	3.894	-22.515	(1 3)
1	0.250	-14.629	2.085	-22.739	(2 3)	-14.646	3.549	-22.739	(1 3)
2	0.550	-13.653	3.060	-23.008	(1 3)	-14.047	1.793	-23.008	(2 3)
3	0.650	-13.356	2.879	-23.098	(1 3)	-13.873	1.684	-23.098	(2 3)
4	1.300	-11.918	1.483	-23.680	(1 3)	-13.037	0.849	-23.680	(2 3)
5	1.800	-11.500	0.151	-24.128	(1 3)	-12.807	0.051	-24.128	(2 3)
6	2.300	-11.804	-1.405	-24.576	(1 3)	-13.009	-0.882	-24.576	(2 3)
7	3.000	-13.657	-3.963	-25.203	(1 3)	-14.146	-2.413	-25.203	(2 3)
8	3.250	-14.774	-4.983	-25.427	(1 3)	-14.825	-3.024	-25.427	(2 3)
JTAN	3.525	-15.754	-3.736	-25.674	(2 3)	-16.306	-6.170	-25.674	(1 3)

COMBINE 2

	L	M	SHEAR Q	MAXIMUM N	CASE	M	SHEAR Q	MINIMUM N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-15.578	24.939	-3.894	(1 3)	-15.578	24.939	-3.894	(1 3)
1	0.250	-10.178	22.906	-3.894	(1 3)	-10.178	22.906	-3.894	(1 3)
2	0.650	-2.493	19.654	-3.894	(1 3)	-2.493	19.654	-3.894	(1 3)
3	0.900	1.713	17.622	-3.894	(1 3)	1.713	17.622	-3.894	(1 3)
4	1.150	5.461	15.589	-3.894	(1 3)	5.461	15.589	-3.894	(1 3)
5	2.067	15.285	8.130	-3.894	(1 3)	15.285	8.130	-3.894	(1 3)
6	2.567	18.038	4.065	-3.894	(1 3)	18.038	4.065	-3.894	(1 3)
7	3.067	18.955	0.000	-3.894	(1 3)	18.955	0.000	-3.894	(1 3)
JTAN	6.135	-15.578	-24.939	-3.894	(1 3)	-15.578	-24.939	-3.894	(1 3)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	16.306	-28.098	-6.170	(1 3)	16.306	-28.098	-6.170	(1 3)
1	0.250	10.149	-25.808	-6.170	(1 3)	10.149	-25.808	-6.170	(1 3)
2	0.525	3.980	-23.289	-6.170	(1 3)	3.980	-23.289	-6.170	(1 3)
3	1.568	-13.657	-13.740	-6.170	(1 3)	-13.657	-13.740	-6.170	(1 3)
4	2.067	-18.888	-9.160	-6.170	(1 3)	-18.888	-9.160	-6.170	(1 3)
5	2.567	-22.027	-4.580	-6.170	(1 3)	-22.027	-4.580	-6.170	(1 3)
6	3.067	-23.073	0.000	-6.170	(1 3)	-23.073	0.000	-6.170	(1 3)
JTAN	6.135	16.306	28.098	-6.170	(1 3)	16.306	28.098	-6.170	(1 3)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	15.177	-2.292	-22.515	(2 3)	15.578	-3.894	-22.515	(1 3)
1	0.250	14.629	-2.085	-22.739	(2 3)	14.646	-3.549	-22.739	(1 3)
2	0.550	14.047	-1.793	-23.008	(2 3)	13.653	-3.060	-23.008	(1 3)
3	0.650	13.873	-1.684	-23.098	(2 3)	13.356	-2.879	-23.098	(1 3)
4	1.300	13.037	-0.849	-23.680	(2 3)	11.918	-1.483	-23.680	(1 3)
5	1.800	12.807	-0.051	-24.128	(2 3)	11.500	-0.151	-24.128	(1 3)
6	2.300	11.804	1.405	-24.576	(1 3)	13.009	0.382	-24.576	(2 3)
7	3.000	13.657	3.963	-25.203	(1 3)	14.146	2.413	-25.203	(2 3)
8	3.250	14.774	4.983	-25.427	(1 3)	14.825	3.024	-25.427	(2 3)
JTAN	3.525	16.306	6.170	-25.674	(1 3)	15.754	3.736	-25.674	(2 3)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-15.578	3.894	-22.515	(1 3)	-15.177	2.292	-22.515	(2 3)
1	0.250	-14.646	3.549	-22.739	(1 3)	-14.629	2.085	-22.739	(2 3)
2	0.550	-13.653	3.060	-23.008	(1 3)	-14.047	1.793	-23.008	(2 3)
3	0.650	-13.356	2.879	-23.098	(1 3)	-13.873	1.684	-23.098	(2 3)
4	1.300	-11.918	1.483	-23.680	(1 3)	-13.037	0.849	-23.680	(2 3)
5	1.800	-11.500	0.151	-24.128	(1 3)	-12.807	0.051	-24.128	(2 3)
6	2.300	-13.009	-0.882	-24.576	(2 3)	-11.804	-1.405	-24.576	(1 3)
7	3.000	-14.146	-2.413	-25.203	(2 3)	-13.657	-3.963	-25.203	(1 3)
8	3.250	-14.825	-3.024	-25.427	(2 3)	-14.774	-4.983	-25.427	(1 3)
JTAN	3.525	-15.754	-3.736	-25.674	(2 3)	-16.306	-6.170	-25.674	(1 3)

COMBINE 2

	L	AXIAL MAXIMUM M	Q	N	CASE	AXIAL MINIMUM M	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-15.177	24.939	-2.292	(2 3)	-15.578	24.939	-3.894	(1 3)
1	0.250	-9.778	22.906	-2.292	(2 3)	-10.178	22.906	-3.894	(1 3)
2	0.650	-2.093	19.654	-2.292	(2 3)	-2.493	19.654	-3.894	(1 3)
3	0.900	2.114	17.622	-2.292	(2 3)	1.713	17.622	-3.894	(1 3)
4	1.150	5.862	15.589	-2.292	(2 3)	5.461	15.589	-3.894	(1 3)
5	2.067	15.686	8.130	-2.292	(2 3)	15.285	8.130	-3.894	(1 3)
6	2.567	18.433	4.065	-2.292	(2 3)	18.038	4.065	-3.894	(1 3)
7	3.067	19.356	0.000	-2.292	(2 3)	18.955	0.000	-3.894	(1 3)
JTAN	6.135	-15.177	-24.939	-2.292	(2 3)	-15.578	-24.939	-3.894	(1 3)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	15.754	-28.098	-3.736	(2 3)	16.306	-28.098	-6.170	(1 3)
1	0.250	9.597	-25.808	-3.736	(2 3)	10.149	-25.808	-6.170	(1 3)
2	0.525	3.429	-23.289	-3.736	(2 3)	3.980	-23.289	-6.170	(1 3)
3	1.568	-14.209	-13.740	-3.736	(2 3)	-13.657	-13.740	-6.170	(1 3)
4	2.067	-19.440	-9.160	-3.736	(2 3)	-18.888	-9.160	-6.170	(1 3)
5	2.567	-22.579	-4.580	-3.736	(2 3)	-22.027	-4.580	-6.170	(1 3)
6	3.067	-23.625	0.000	-3.736	(2 3)	-23.073	0.000	-6.170	(1 3)
JTAN	6.135	15.754	28.098	-3.736	(2 3)	16.306	28.098	-6.170	(1 3)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	15.578	-3.894	-22.515	(1 3)	15.578	-3.894	-22.515	(1 3)
1	0.250	14.646	-3.549	-22.739	(1 3)	14.646	-3.549	-22.739	(1 3)
2	0.550	13.653	-3.060	-23.008	(1 3)	13.653	-3.060	-23.008	(1 3)
3	0.650	13.356	-2.879	-23.098	(1 3)	13.356	-2.879	-23.098	(1 3)
4	1.300	11.918	-1.483	-23.680	(1 3)	11.918	-1.483	-23.680	(1 3)
5	1.800	11.500	-0.151	-24.128	(1 3)	11.500	-0.151	-24.128	(1 3)
6	2.300	11.804	1.405	-24.576	(1 3)	11.804	1.405	-24.576	(1 3)
7	3.000	13.657	3.963	-25.203	(1 3)	13.657	3.963	-25.203	(1 3)
8	3.250	14.774	4.983	-25.427	(1 3)	14.774	4.983	-25.427	(1 3)
JTAN	3.525	16.306	6.170	-25.674	(1 3)	16.306	6.170	-25.674	(1 3)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-15.578	3.894	-22.515	(1 3)	-15.578	3.894	-22.515	(1 3)
1	0.250	-14.646	3.549	-22.739	(1 3)	-14.646	3.549	-22.739	(1 3)
2	0.550	-13.653	3.060	-23.008	(1 3)	-13.653	3.060	-23.008	(1 3)
3	0.650	-13.356	2.879	-23.098	(1 3)	-13.356	2.879	-23.098	(1 3)
4	1.300	-11.918	1.483	-23.680	(1 3)	-11.918	1.483	-23.680	(1 3)
5	1.800	-11.500	0.151	-24.128	(1 3)	-11.500	0.151	-24.128	(1 3)
6	2.300	-11.804	-1.405	-24.576	(1 3)	-11.804	-1.405	-24.576	(1 3)
7	3.000	-13.657	-3.963	-25.203	(1 3)	-13.657	-3.963	-25.203	(1 3)
8	3.250	-14.774	-4.983	-25.427	(1 3)	-14.774	-4.983	-25.427	(1 3)
JTAN	3.525	-16.306	-6.170	-25.674	(1 3)	-16.306	-6.170	-25.674	(1 3)

COMBINE 3

		MOMENT MAXIMUM				MOMENT MINIMUM			
	L	M	Q	N	CASE	M	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-7.479	10.337	-3.614	(2 4)	-7.879	10.337	-5.216	(1 4)
1	0.250	-5.000	9.495	-3.614	(2 4)	-5.400	9.495	-5.216	(1 4)
2	0.650	-1.471	8.147	-3.614	(2 4)	-1.872	8.147	-5.216	(1 4)
3	0.900	0.460	7.304	-3.614	(2 4)	0.060	7.304	-5.216	(1 4)
4	1.150	2.181	6.462	-3.614	(2 4)	1.780	6.462	-5.216	(1 4)
5	2.067	6.691	3.370	-3.614	(2 4)	6.291	3.370	-5.216	(1 4)
6	2.567	7.955	1.685	-3.614	(2 4)	7.555	1.685	-5.216	(1 4)
7	3.067	8.376	0.000	-3.614	(2 4)	7.976	0.000	-5.216	(1 4)
JTAN	6.135	-7.479	-10.337	-3.614	(2 4)	-7.879	-10.337	-5.216	(1 4)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	9.851	-13.497	-8.197	(1 4)	9.300	-13.497	-5.763	(2 4)
1	0.250	6.615	-12.397	-8.197	(1 4)	6.063	-12.397	-5.763	(2 4)
2	0.525	3.372	-11.187	-8.197	(1 4)	2.820	-11.187	-5.763	(2 4)
3	1.568	-5.900	-6.600	-8.197	(1 4)	-6.451	-6.600	-5.763	(2 4)
4	2.067	-8.650	-4.400	-8.197	(1 4)	-9.201	-4.400	-5.763	(2 4)
5	2.567	-10.300	-2.200	-8.197	(1 4)	-10.851	-2.200	-5.763	(2 4)
6	3.067	-10.850	0.000	-8.197	(1 4)	-11.401	0.000	-5.763	(2 4)
JTAN	6.135	9.851	13.497	-8.197	(1 4)	9.300	13.497	-5.763	(2 4)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	7.879	-5.216	-10.337	(1 4)	7.479	-3.614	-10.337	(2 4)
1	0.250	6.647	-4.633	-10.561	(1 4)	6.630	-3.169	-10.561	(2 4)
2	0.550	5.765	-2.592	-10.830	(2 4)	5.371	-3.859	-10.830	(1 4)
3	0.650	5.516	-2.388	-10.920	(2 4)	4.999	-3.583	-10.920	(1 4)
4	1.300	4.423	-0.935	-11.502	(2 4)	3.304	-1.570	-11.502	(1 4)
5	1.800	4.268	0.338	-11.950	(2 4)	2.962	0.237	-11.950	(1 4)
6	2.300	4.784	1.745	-12.398	(2 4)	3.579	2.269	-12.398	(1 4)
7	3.000	6.759	3.942	-13.025	(2 4)	6.269	5.491	-13.025	(1 4)
8	3.250	7.849	4.791	-13.249	(2 4)	7.798	6.749	-13.249	(1 4)
JTAN	3.525	9.851	8.197	-13.496	(1 4)	9.300	5.763	-13.496	(2 4)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-7.479	3.614	-10.337	(2 4)	-7.879	5.216	-10.337	(1 4)
1	0.250	-6.630	3.169	-10.561	(2 4)	-6.647	4.633	-10.561	(1 4)
2	0.550	-5.371	3.859	-10.830	(1 4)	-5.765	2.592	-10.830	(2 4)
3	0.650	-4.999	3.583	-10.920	(1 4)	-5.516	2.388	-10.920	(2 4)
4	1.300	-3.304	1.570	-11.502	(1 4)	-4.423	0.935	-11.502	(2 4)
5	1.800	-2.962	-0.237	-11.950	(1 4)	-4.268	-0.338	-11.950	(2 4)
6	2.300	-3.579	-2.269	-12.398	(1 4)	-4.784	-1.745	-12.398	(2 4)
7	3.000	-6.269	-5.491	-13.025	(1 4)	-6.759	-3.942	-13.025	(2 4)
8	3.250	-7.798	-6.749	-13.249	(1 4)	-7.849	-4.791	-13.249	(2 4)
JTAN	3.525	-9.300	-5.763	-13.496	(2 4)	-9.851	-8.197	-13.496	(1 4)

TITLE..C22

COMBINE 3

	L	M	Q	N	CASE	SHEAR MAXIMUM M	SHEAR MAXIMUM Q	SHEAR MAXIMUM N	SHEAR MAXIMUM CASE	SHEAR MINIMUM M	SHEAR MINIMUM Q	SHEAR MINIMUM N	SHEAR MINIMUM CASE
= = MEMBER 1 (1 - 2) G = =													
ITAN	0.000	-7.879	10.337	-5.216	(1 4)	-7.879	10.337	-5.216	(1 4)	-7.879	10.337	-5.216	(1 4)
1	0.250	-5.400	9.495	-5.216	(1 4)	-5.400	9.495	-5.216	(1 4)	-5.400	9.495	-5.216	(1 4)
2	0.650	-1.872	8.147	-5.216	(1 4)	-1.872	8.147	-5.216	(1 4)	-1.872	8.147	-5.216	(1 4)
3	0.900	0.060	7.304	-5.216	(1 4)	0.060	7.304	-5.216	(1 4)	0.060	7.304	-5.216	(1 4)
4	1.150	1.780	6.462	-5.216	(1 4)	1.780	6.462	-5.216	(1 4)	1.780	6.462	-5.216	(1 4)
5	2.067	6.291	3.370	-5.216	(1 4)	6.291	3.370	-5.216	(1 4)	6.291	3.370	-5.216	(1 4)
6	2.567	7.555	1.685	-5.216	(1 4)	7.555	1.685	-5.216	(1 4)	7.555	1.685	-5.216	(1 4)
7	3.067	7.976	0.000	-5.216	(1 4)	7.976	0.000	-5.216	(1 4)	7.976	0.000	-5.216	(1 4)
JTAN	6.135	-7.879	-10.337	-5.216	(1 4)	-7.879	-10.337	-5.216	(1 4)	-7.879	-10.337	-5.216	(1 4)
= = MEMBER 2 (3 - 4) G = =													
ITAN	0.000	9.851	-13.497	-8.197	(1 4)	9.851	-13.497	-8.197	(1 4)	9.851	-13.497	-8.197	(1 4)
1	0.250	6.615	-12.397	-8.197	(1 4)	6.615	-12.397	-8.197	(1 4)	6.615	-12.397	-8.197	(1 4)
2	0.525	3.372	-11.187	-8.197	(1 4)	3.372	-11.187	-8.197	(1 4)	3.372	-11.187	-8.197	(1 4)
3	1.568	-5.900	-6.600	-8.197	(1 4)	-5.900	-6.600	-8.197	(1 4)	-5.900	-6.600	-8.197	(1 4)
4	2.067	-8.650	-4.400	-8.197	(1 4)	-8.650	-4.400	-8.197	(1 4)	-8.650	-4.400	-8.197	(1 4)
5	2.567	-10.300	-2.200	-8.197	(1 4)	-10.300	-2.200	-8.197	(1 4)	-10.300	-2.200	-8.197	(1 4)
6	3.067	-10.850	0.000	-8.197	(1 4)	-10.850	0.000	-8.197	(1 4)	-10.850	0.000	-8.197	(1 4)
JTAN	6.135	9.851	13.497	-8.197	(1 4)	9.851	13.497	-8.197	(1 4)	9.851	13.497	-8.197	(1 4)
= = MEMBER 3 (1 - 3) C = =													
ITAN	0.000	7.479	-3.614	-10.337	(2 4)	7.879	-5.216	-10.337	(1 4)	7.879	-5.216	-10.337	(1 4)
1	0.250	6.630	-3.169	-10.561	(2 4)	6.647	-4.633	-10.561	(1 4)	6.647	-4.633	-10.561	(1 4)
2	0.550	5.765	-2.592	-10.830	(2 4)	5.371	-3.859	-10.830	(1 4)	5.371	-3.859	-10.830	(1 4)
3	0.650	5.516	-2.388	-10.920	(2 4)	4.999	-3.583	-10.920	(1 4)	4.999	-3.583	-10.920	(1 4)
4	1.300	4.423	-0.935	-11.502	(2 4)	3.304	-1.570	-11.502	(1 4)	3.304	-1.570	-11.502	(1 4)
5	1.800	4.268	0.338	-11.950	(2 4)	2.962	0.237	-11.950	(1 4)	2.962	0.237	-11.950	(1 4)
6	2.300	3.579	2.269	-12.398	(1 4)	4.784	1.745	-12.398	(2 4)	4.784	1.745	-12.398	(2 4)
7	3.000	6.269	5.491	-13.025	(1 4)	6.759	3.942	-13.025	(2 4)	6.759	3.942	-13.025	(2 4)
8	3.250	7.798	6.749	-13.249	(1 4)	7.349	4.791	-13.249	(2 4)	7.349	4.791	-13.249	(2 4)
JTAN	3.525	9.851	8.197	-13.496	(1 4)	9.300	5.763	-13.496	(2 4)	9.300	5.763	-13.496	(2 4)
= = MEMBER 4 (2 - 4) C = =													
ITAN	0.000	-7.879	5.216	-10.337	(1 4)	-7.479	3.614	-10.337	(2 4)	-7.479	3.614	-10.337	(2 4)
1	0.250	-6.647	4.633	-10.561	(1 4)	-6.630	3.169	-10.561	(2 4)	-6.630	3.169	-10.561	(2 4)
2	0.550	-5.371	3.859	-10.830	(1 4)	-5.765	2.592	-10.830	(2 4)	-5.765	2.592	-10.830	(2 4)
3	0.650	-4.999	3.583	-10.920	(1 4)	-5.516	2.388	-10.920	(2 4)	-5.516	2.388	-10.920	(2 4)
4	1.300	-3.304	1.570	-11.502	(1 4)	-4.423	0.935	-11.502	(2 4)	-4.423	0.935	-11.502	(2 4)
5	1.800	-2.962	-0.237	-11.950	(1 4)	-4.268	-0.338	-11.950	(2 4)	-4.268	-0.338	-11.950	(2 4)
6	2.300	-4.784	-1.745	-12.398	(2 4)	-3.579	-2.269	-12.398	(1 4)	-3.579	-2.269	-12.398	(1 4)
7	3.000	-6.759	-3.942	-13.025	(2 4)	-6.269	-5.491	-13.025	(1 4)	-6.269	-5.491	-13.025	(1 4)
8	3.250	-7.849	-4.791	-13.249	(2 4)	-7.798	-6.749	-13.249	(1 4)	-7.798	-6.749	-13.249	(1 4)
JTAN	3.525	-9.300	-5.763	-13.496	(2 4)	-9.851	-8.197	-13.496	(1 4)	-9.851	-8.197	-13.496	(1 4)

COMBINE 3

	L	AXIAL MAXIMUM M	Q	N	CASE	AXIAL MINIMUM M	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-7.479	10.337	-3.614	(2 4)	-7.879	10.337	-5.216	(1 4)
1	0.250	-5.000	9.495	-3.614	(2 4)	-5.400	9.495	-5.216	(1 4)
2	0.650	-1.471	8.147	-3.614	(2 4)	-1.872	8.147	-5.216	(1 4)
3	0.900	0.460	7.304	-3.614	(2 4)	0.060	7.304	-5.216	(1 4)
4	1.150	2.181	6.462	-3.614	(2 4)	1.780	6.462	-5.216	(1 4)
5	2.067	6.691	3.370	-3.614	(2 4)	6.291	3.370	-5.216	(1 4)
6	2.567	7.955	1.685	-3.614	(2 4)	7.555	1.685	-5.216	(1 4)
7	3.067	8.376	0.000	-3.614	(2 4)	7.976	0.000	-5.216	(1 4)
JTAN	6.135	-7.479	-10.337	-3.614	(2 4)	-7.879	-10.337	-5.216	(1 4)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	9.300	-13.497	-5.763	(2 4)	9.351	-13.497	-8.197	(1 4)
1	0.250	6.063	-12.397	-5.763	(2 4)	6.615	-12.397	-8.197	(1 4)
2	0.525	2.820	-11.187	-5.763	(2 4)	3.372	-11.187	-8.197	(1 4)
3	1.568	-6.451	-6.600	-5.763	(2 4)	-5.900	-6.600	-8.197	(1 4)
4	2.067	-9.201	-4.400	-5.763	(2 4)	-8.650	-4.400	-8.197	(1 4)
5	2.567	-10.851	-2.200	-5.763	(2 4)	-10.300	-2.200	-8.197	(1 4)
6	3.067	-11.401	0.000	-5.763	(2 4)	-10.850	0.000	-8.197	(1 4)
JTAN	6.135	9.300	13.497	-5.763	(2 4)	9.851	13.497	-8.197	(1 4)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	7.879	-5.216	-10.337	(1 4)	7.879	-5.216	-10.337	(1 4)
1	0.250	6.647	-4.633	-10.561	(1 4)	6.647	-4.633	-10.561	(1 4)
2	0.550	5.371	-3.859	-10.830	(1 4)	5.371	-3.859	-10.830	(1 4)
3	0.650	4.999	-3.583	-10.920	(1 4)	4.999	-3.583	-10.920	(1 4)
4	1.300	3.304	-1.570	-11.502	(1 4)	3.304	-1.570	-11.502	(1 4)
5	1.800	2.962	0.237	-11.950	(1 4)	2.962	0.237	-11.950	(1 4)
6	2.300	3.579	2.269	-12.398	(1 4)	3.579	2.269	-12.398	(1 4)
7	3.000	6.269	5.491	-13.025	(1 4)	6.269	5.491	-13.025	(1 4)
8	3.250	7.798	6.749	-13.249	(1 4)	7.798	6.749	-13.249	(1 4)
JTAN	3.525	9.851	8.197	-13.496	(1 4)	9.851	8.197	-13.496	(1 4)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-7.879	5.216	-10.337	(1 4)	-7.879	5.216	-10.337	(1 4)
1	0.250	-6.647	4.633	-10.561	(1 4)	-6.647	4.633	-10.561	(1 4)
2	0.550	-5.371	3.859	-10.830	(1 4)	-5.371	3.859	-10.830	(1 4)
3	0.650	-4.999	3.583	-10.920	(1 4)	-4.999	3.583	-10.920	(1 4)
4	1.300	-3.304	1.570	-11.502	(1 4)	-3.304	1.570	-11.502	(1 4)
5	1.800	-2.962	-0.237	-11.950	(1 4)	-2.962	-0.237	-11.950	(1 4)
6	2.300	-3.579	-2.269	-12.398	(1 4)	-3.579	-2.269	-12.398	(1 4)
7	3.000	-6.269	-5.491	-13.025	(1 4)	-6.269	-5.491	-13.025	(1 4)
8	3.250	-7.798	-6.749	-13.249	(1 4)	-7.798	-6.749	-13.249	(1 4)
JTAN	3.525	-9.851	-8.197	-13.496	(1 4)	-9.851	-8.197	-13.496	(1 4)

COMBINE 4

	L	MOMENT MAXIMUM M	Q	N	CASE	MOMENT MINIMUM M	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-15.525	24.939	-3.940	(2 3 4)	-15.925	24.939	-5.542	(1 3 4)
1	0.250	-10.125	22.906	-3.940	(2 3 4)	-10.526	22.906	-5.542	(1 3 4)
2	0.650	-2.440	19.654	-3.940	(2 3 4)	-2.841	19.654	-5.542	(1 3 4)
3	0.900	1.767	17.622	-3.940	(2 3 4)	1.366	17.622	-5.542	(1 3 4)
4	1.150	5.515	15.589	-3.940	(2 3 4)	5.114	15.589	-5.542	(1 3 4)
5	2.067	15.338	8.130	-3.940	(2 3 4)	14.938	8.130	-5.542	(1 3 4)
6	2.567	18.091	4.065	-3.940	(2 3 4)	17.690	4.065	-5.542	(1 3 4)
7	3.067	19.008	0.000	-3.940	(2 3 4)	18.608	0.000	-5.542	(1 3 4)
JTAN	6.135	-15.525	-24.939	-3.940	(2 3 4)	-15.925	-24.939	-5.542	(1 3 4)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	16.746	-28.098	-7.870	(1 3 4)	16.194	-28.098	-5.436	(2 3 4)
1	0.250	10.589	-25.808	-7.870	(1 3 4)	10.037	-25.808	-5.436	(2 3 4)
2	0.525	4.420	-23.289	-7.870	(1 3 4)	3.868	-23.289	-5.436	(2 3 4)
3	1.568	-13.217	-13.740	-7.870	(1 3 4)	-13.769	-13.740	-5.436	(2 3 4)
4	2.067	-18.448	-9.160	-7.870	(1 3 4)	-19.000	-9.160	-5.436	(2 3 4)
5	2.567	-21.587	-4.580	-7.870	(1 3 4)	-22.139	-4.580	-5.436	(2 3 4)
6	3.067	-22.633	0.000	-7.870	(1 3 4)	-23.185	0.000	-5.436	(2 3 4)
JTAN	6.135	16.746	28.098	-7.870	(1 3 4)	16.194	28.098	-5.436	(2 3 4)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	15.925	-5.542	-22.515	(1 3 4)	15.525	-3.940	-22.515	(2 3 4)
1	0.250	14.611	-4.959	-22.739	(1 3 4)	14.594	-3.496	-22.739	(2 3 4)
2	0.550	13.631	-2.918	-23.008	(2 3 4)	13.238	-4.185	-23.008	(1 3 4)
3	0.650	13.349	-2.715	-23.098	(2 3 4)	12.833	-3.909	-23.098	(1 3 4)
4	1.300	12.045	-1.262	-23.680	(2 3 4)	10.925	-1.896	-23.680	(1 3 4)
5	1.800	11.726	0.011	-24.128	(2 3 4)	10.419	-0.089	-24.128	(1 3 4)
6	2.300	12.078	1.418	-24.576	(2 3 4)	10.873	1.942	-24.576	(1 3 4)
7	3.000	13.824	3.615	-25.203	(2 3 4)	13.335	5.164	-25.203	(1 3 4)
8	3.250	14.834	4.464	-25.427	(2 3 4)	14.782	6.422	-25.427	(1 3 4)
JTAN	3.525	16.746	7.870	-25.674	(1 3 4)	16.194	5.436	-25.674	(2 3 4)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-15.525	3.940	-22.515	(2 3 4)	-15.925	5.542	-22.515	(1 3 4)
1	0.250	-14.594	3.496	-22.739	(2 3 4)	-14.611	4.959	-22.739	(1 3 4)
2	0.550	-13.238	4.185	-23.008	(1 3 4)	-13.631	2.918	-23.008	(2 3 4)
3	0.650	-12.833	3.909	-23.098	(1 3 4)	-13.349	2.715	-23.098	(2 3 4)
4	1.300	-10.925	1.896	-23.680	(1 3 4)	-12.045	1.262	-23.680	(2 3 4)
5	1.800	-10.419	0.089	-24.128	(1 3 4)	-11.726	-0.011	-24.128	(2 3 4)
6	2.300	-10.873	-1.942	-24.576	(1 3 4)	-12.078	-1.418	-24.576	(2 3 4)
7	3.000	-13.335	-5.164	-25.203	(1 3 4)	-13.824	-3.615	-25.203	(2 3 4)
8	3.250	-14.782	-6.422	-25.427	(1 3 4)	-14.834	-4.464	-25.427	(2 3 4)
JTAN	3.525	-16.194	-5.436	-25.674	(2 3 4)	-16.746	-7.870	-25.674	(1 3 4)

COMBINE 4

		SHEAR MAXIMUM				SHEAR MINIMUM			
	L	M	Q	N	CASE	M	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-15.925	24.939	-5.542	(1 3 4)	-15.925	24.939	-5.542	(1 3 4)
1	0.250	-10.526	22.906	-5.542	(1 3 4)	-10.526	22.906	-5.542	(1 3 4)
2	0.650	-2.841	19.654	-5.542	(1 3 4)	-2.841	19.654	-5.542	(1 3 4)
3	0.900	1.366	17.622	-5.542	(1 3 4)	1.366	17.622	-5.542	(1 3 4)
4	1.150	5.114	15.589	-5.542	(1 3 4)	5.114	15.589	-5.542	(1 3 4)
5	2.067	14.938	8.130	-5.542	(1 3 4)	14.938	8.130	-5.542	(1 3 4)
6	2.567	17.690	4.065	-5.542	(1 3 4)	17.690	4.065	-5.542	(1 3 4)
7	3.067	18.608	0.000	-5.542	(1 3 4)	18.608	0.000	-5.542	(1 3 4)
JTAN	6.135	-15.925	-24.939	-5.542	(1 3 4)	-15.925	-24.939	-5.542	(1 3 4)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	16.746	-28.098	-7.870	(1 3 4)	16.746	-28.098	-7.870	(1 3 4)
1	0.250	10.589	-25.808	-7.870	(1 3 4)	10.589	-25.808	-7.870	(1 3 4)
2	0.525	4.420	-23.289	-7.870	(1 3 4)	4.420	-23.289	-7.870	(1 3 4)
3	1.568	-13.217	-13.740	-7.870	(1 3 4)	-13.217	-13.740	-7.870	(1 3 4)
4	2.067	-18.448	-9.160	-7.870	(1 3 4)	-18.448	-9.160	-7.870	(1 3 4)
5	2.567	-21.587	-4.580	-7.870	(1 3 4)	-21.587	-4.580	-7.870	(1 3 4)
6	3.067	-22.633	0.000	-7.870	(1 3 4)	-22.633	0.000	-7.870	(1 3 4)
JTAN	6.135	16.746	28.098	-7.870	(1 3 4)	16.746	28.098	-7.870	(1 3 4)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	15.525	-3.940	-22.515	(2 3 4)	15.925	-5.542	-22.515	(1 3 4)
1	0.250	14.594	-3.496	-22.739	(2 3 4)	14.611	-4.959	-22.739	(1 3 4)
2	0.550	13.631	-2.918	-23.008	(2 3 4)	13.238	-4.185	-23.008	(1 3 4)
3	0.650	13.349	-2.715	-23.098	(2 3 4)	12.833	-3.909	-23.098	(1 3 4)
4	1.300	12.045	-1.262	-23.680	(2 3 4)	10.925	-1.896	-23.680	(1 3 4)
5	1.800	11.726	0.011	-24.128	(2 3 4)	10.419	-0.089	-24.128	(1 3 4)
6	2.300	10.873	1.942	-24.576	(1 3 4)	12.078	1.418	-24.576	(2 3 4)
7	3.000	13.335	5.164	-25.203	(1 3 4)	13.824	3.615	-25.203	(2 3 4)
8	3.250	14.782	6.422	-25.427	(1 3 4)	14.834	4.464	-25.427	(2 3 4)
JTAN	3.525	16.746	7.870	-25.674	(1 3 4)	16.194	5.436	-25.674	(2 3 4)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-15.925	5.542	-22.515	(1 3 4)	-15.525	3.940	-22.515	(2 3 4)
1	0.250	-14.611	4.959	-22.739	(1 3 4)	-14.594	3.496	-22.739	(2 3 4)
2	0.550	-13.238	4.185	-23.008	(1 3 4)	-13.631	2.918	-23.008	(2 3 4)
3	0.650	-12.833	3.909	-23.098	(1 3 4)	-13.349	2.715	-23.098	(2 3 4)
4	1.300	-10.925	1.896	-23.680	(1 3 4)	-12.045	1.262	-23.680	(2 3 4)
5	1.800	-10.419	0.089	-24.128	(1 3 4)	-11.726	-0.011	-24.128	(2 3 4)
6	2.300	-12.078	-1.418	-24.576	(2 3 4)	-10.873	-1.942	-24.576	(1 3 4)
7	3.000	-13.824	-3.615	-25.203	(2 3 4)	-13.335	-5.164	-25.203	(1 3 4)
8	3.250	-14.834	-4.464	-25.427	(2 3 4)	-14.782	-6.422	-25.427	(1 3 4)
JTAN	3.525	-16.194	-5.436	-25.674	(2 3 4)	-16.746	-7.870	-25.674	(1 3 4)

COMBINE 4

	L	M (AXIAL MAXIMUM)	Q	N	CASE	M (AXIAL MINIMUM)	Q	N	CASE
= = MEMBER 1 (1 - 2) G = =									
ITAN	0.000	-15.525	24.939	-3.940	(2 3 4)	-15.925	24.939	-5.542	(1 3 4)
1	0.250	-10.125	22.906	-3.940	(2 3 4)	-10.526	22.906	-5.542	(1 3 4)
2	0.650	-2.440	19.654	-3.940	(2 3 4)	-2.841	19.654	-5.542	(1 3 4)
3	0.900	1.767	17.622	-3.940	(2 3 4)	1.366	17.622	-5.542	(1 3 4)
4	1.150	5.515	15.589	-3.940	(2 3 4)	5.114	15.589	-5.542	(1 3 4)
5	2.067	15.338	8.130	-3.940	(2 3 4)	14.938	8.130	-5.542	(1 3 4)
6	2.567	18.091	4.065	-3.940	(2 3 4)	17.690	4.065	-5.542	(1 3 4)
7	3.067	19.008	0.000	-3.940	(2 3 4)	18.608	0.000	-5.542	(1 3 4)
JTAN	6.135	-15.525	-24.939	-3.940	(2 3 4)	-15.925	-24.939	-5.542	(1 3 4)
= = MEMBER 2 (3 - 4) G = =									
ITAN	0.000	16.194	-28.098	-5.436	(2 3 4)	16.746	-28.098	-7.870	(1 3 4)
1	0.250	10.037	-25.808	-5.436	(2 3 4)	10.589	-25.908	-7.870	(1 3 4)
2	0.525	3.868	-23.289	-5.436	(2 3 4)	4.420	-23.289	-7.870	(1 3 4)
3	1.568	-13.769	-13.740	-5.436	(2 3 4)	-13.217	-13.740	-7.870	(1 3 4)
4	2.067	-19.000	-9.160	-5.436	(2 3 4)	-18.448	-9.160	-7.870	(1 3 4)
5	2.567	-22.139	-4.580	-5.436	(2 3 4)	-21.587	-4.580	-7.870	(1 3 4)
6	3.067	-23.185	0.000	-5.436	(2 3 4)	-22.633	0.000	-7.870	(1 3 4)
JTAN	6.135	16.194	28.098	-5.436	(2 3 4)	16.746	28.098	-7.870	(1 3 4)
= = MEMBER 3 (1 - 3) C = =									
ITAN	0.000	15.925	-5.542	-22.515	(1 3 4)	15.925	-5.542	-22.515	(1 3 4)
1	0.250	14.611	-4.959	-22.739	(1 3 4)	14.611	-4.959	-22.739	(1 3 4)
2	0.550	13.238	-4.185	-23.008	(1 3 4)	13.238	-4.185	-23.008	(1 3 4)
3	0.650	12.833	-3.909	-23.098	(1 3 4)	12.833	-3.909	-23.098	(1 3 4)
4	1.300	10.925	-1.896	-23.680	(1 3 4)	10.925	-1.896	-23.680	(1 3 4)
5	1.800	10.419	-0.089	-24.128	(1 3 4)	10.419	-0.089	-24.128	(1 3 4)
6	2.300	10.873	1.942	-24.576	(1 3 4)	10.873	1.942	-24.576	(1 3 4)
7	3.000	13.335	5.164	-25.203	(1 3 4)	13.335	5.164	-25.203	(1 3 4)
8	3.250	14.782	6.422	-25.427	(1 3 4)	14.782	6.422	-25.427	(1 3 4)
JTAN	3.525	16.746	7.870	-25.674	(1 3 4)	16.746	7.870	-25.674	(1 3 4)
= = MEMBER 4 (2 - 4) C = =									
ITAN	0.000	-15.925	5.542	-22.515	(1 3 4)	-15.925	5.542	-22.515	(1 3 4)
1	0.250	-14.611	4.959	-22.739	(1 3 4)	-14.611	4.959	-22.739	(1 3 4)
2	0.550	-13.238	4.185	-23.008	(1 3 4)	-13.238	4.185	-23.008	(1 3 4)
3	0.650	-12.833	3.909	-23.098	(1 3 4)	-12.833	3.909	-23.098	(1 3 4)
4	1.300	-10.925	1.896	-23.680	(1 3 4)	-10.925	1.896	-23.680	(1 3 4)
5	1.800	-10.419	0.089	-24.128	(1 3 4)	-10.419	0.089	-24.128	(1 3 4)
6	2.300	-10.873	-1.942	-24.576	(1 3 4)	-10.873	-1.942	-24.576	(1 3 4)
7	3.000	-13.335	-5.164	-25.203	(1 3 4)	-13.335	-5.164	-25.203	(1 3 4)
8	3.250	-14.782	-6.422	-25.427	(1 3 4)	-14.782	-6.422	-25.427	(1 3 4)
JTAN	3.525	-16.746	-7.870	-25.674	(1 3 4)	-16.746	-7.870	-25.674	(1 3 4)

PICK UP 1

MOMENT MAXIMUM

---L---	----M---	----Q---	----N---	-COM-	----CASE-----
= = MEMBER 1 (1 - 2) G = =					
ITAN 0.000	-7.131	10.337	-1.965	(1; 2)	
1 0.250	-4.652	9.495	-1.965	(1; 2)	
2 0.650	-1.124	8.147	-1.965	(1; 2)	
3 0.900	2.114	17.622	-2.292	(2; 2 3)	
4 1.150	5.862	15.589	-2.292	(2; 2 3)	
5 2.067	15.686	8.130	-2.292	(2; 2 3)	
6 2.567	18.438	4.065	-2.292	(2; 2 3)	
7 3.067	19.356	0.000	-2.292	(2; 2 3)	
JTAN 6.135	-7.131	-10.337	-1.965	(1; 2)	
= = MEMBER 2 (3 - 4) G = =					
ITAN 0.000	16.746	-28.098	-7.870	(4; 1 3 4)	
1 0.250	10.589	-25.808	-7.870	(4; 1 3 4)	
2 0.525	4.420	-23.289	-7.870	(4; 1 3 4)	
3 1.568	-5.900	-6.600	-8.197	(3; 1 4)	
4 2.067	-8.650	-4.400	-8.197	(3; 1 4)	
5 2.567	-10.300	-2.200	-8.197	(3; 1 4)	
6 3.067	-10.850	0.000	-8.197	(3; 1 4)	
JTAN 6.135	16.746	28.098	-7.870	(4; 1 3 4)	
= = MEMBER 3 (1 - 3) C = =					
ITAN 0.000	15.925	-5.542	-22.515	(4; 1 3 4)	
1 0.250	14.646	-3.549	-22.739	(2; 1 3)	
2 0.550	14.047	-1.793	-23.008	(2; 2 3)	
3 0.650	13.873	-1.684	-23.098	(2; 2 3)	
4 1.300	13.037	-0.849	-23.680	(2; 2 3)	
5 1.800	12.807	-0.051	-24.128	(2; 2 3)	
6 2.300	13.009	0.882	-24.576	(2; 2 3)	
7 3.000	14.146	2.413	-25.203	(2; 2 3)	
8 3.250	14.834	4.464	-25.427	(4; 2 3 4)	
JTAN 3.525	16.746	7.870	-25.674	(4; 1 3 4)	
= = MEMBER 4 (2 - 4) C = =					
ITAN 0.000	-7.131	1.965	-10.337	(1; 2)	
1 0.250	-6.630	3.169	-10.561	(3; 2 4)	
2 0.550	-5.371	3.859	-10.830	(3; 1 4)	
3 0.650	-4.999	3.583	-10.920	(3; 1 4)	
4 1.300	-3.304	1.570	-11.502	(3; 1 4)	
5 1.800	-2.962	-0.237	-11.950	(3; 1 4)	
6 2.300	-3.579	-2.269	-12.398	(3; 1 4)	
7 3.000	-6.269	-5.491	-13.025	(3; 1 4)	
8 3.250	-7.790	-5.309	-13.249	(1; 1)	
JTAN 3.525	-8.860	-4.062	-13.496	(1; 2)	

MOMENT MINIMUM

----M---	----Q---	----N---	-COM-	----CASE-----
-15.925	24.939	-5.542	(4; 1 3 4)	
-10.526	22.906	-5.542	(4; 1 3 4)	
-2.841	19.654	-5.542	(4; 1 3 4)	
0.060	7.304	-5.216	(3; 1 4)	
1.780	6.462	-5.216	(3; 1 4)	
6.291	3.370	-5.216	(3; 1 4)	
7.555	1.685	-5.216	(3; 1 4)	
7.976	0.000	-5.216	(3; 1 4)	
-15.925	-24.939	-5.542	(4; 1 3 4)	
8.860	-13.497	-4.062	(1; 2)	
5.623	-12.397	-4.062	(1; 2)	
2.380	-11.187	-4.062	(1; 2)	
-14.209	-13.740	-3.736	(2; 2 3)	
-19.440	-9.160	-3.736	(2; 2 3)	
-22.579	-4.580	-3.736	(2; 2 3)	
-23.625	0.000	-3.736	(2; 2 3)	
8.860	13.497	-4.062	(1; 2)	
7.131	-1.965	-10.337	(1; 2)	
6.630	-3.169	-10.561	(3; 2 4)	
5.371	-3.859	-10.830	(3; 1 4)	
4.999	-3.583	-10.920	(3; 1 4)	
3.304	-1.570	-11.502	(3; 1 4)	
2.962	0.237	-11.950	(3; 1 4)	
3.579	2.269	-12.398	(3; 1 4)	
6.269	5.491	-13.025	(3; 1 4)	
7.790	5.309	-13.249	(1; 1)	
8.860	4.062	-13.496	(1; 2)	
-15.925	5.542	-22.515	(4; 1 3 4)	
-14.646	3.549	-22.739	(2; 1 3)	
-14.047	1.793	-23.008	(2; 2 3)	
-13.873	1.684	-23.098	(2; 2 3)	
-13.037	0.849	-23.680	(2; 2 3)	
-12.807	0.051	-24.128	(2; 2 3)	
-13.009	-0.882	-24.576	(2; 2 3)	
-14.146	-2.413	-25.203	(2; 2 3)	
-14.834	-4.464	-25.427	(4; 2 3 4)	
-16.746	-7.870	-25.674	(4; 1 3 4)	

PICK UP 1

	L	SHEAR M	SHEAR Q	MAXIMUM N	COM	CASE	SHEAR M	SHEAR Q	MINIMUM N	COM	CASE
= = MEMBER 1 (1 - 2) G = =											
ITAN	0.000	-15.578	24.939	-3.894	(2;	1 3)	-7.532	10.337	-3.568	(1;	1)
1	0.250	-10.178	22.906	-3.894	(2;	1 3)	-5.053	9.495	-3.568	(1;	1)
2	0.650	-2.493	*19.654	-3.894	(2;	1 3)	-1.525	8.147	-3.568	(1;	1)
3	0.900	1.713	17.622	-3.894	(2;	1 3)	0.407	7.304	-3.568	(1;	1)
4	1.150	5.461	15.589	-3.894	(2;	1 3)	2.128	6.462	-3.568	(1;	1)
5	2.067	15.285	8.130	-3.894	(2;	1 3)	6.638	3.370	-3.568	(1;	1)
6	2.567	18.038	4.065	-3.894	(2;	1 3)	7.902	1.685	-3.568	(1;	1)
7	3.067	8.323	0.000	-3.568	(1;	1)	7.976	0.000	-5.216	(3;	1 4)
JTAN	6.135	-7.532	-10.337	-3.568	(1;	1)	-15.578	-24.939	-3.894	(2;	1 3)
= = MEMBER 2 (3 - 4) G = =											
ITAN	0.000	9.411	-13.497	-6.496	(1;	1)	16.306	-28.098	-6.170	(2;	1 3)
1	0.250	6.175	-12.397	-6.496	(1;	1)	10.149	-25.808	-6.170	(2;	1 3)
2	0.525	2.932	-11.187	-6.496	(1;	1)	3.980	*-23.269	-6.170	(2;	1 3)
3	1.568	-6.340	-6.600	-6.496	(1;	1)	-13.657	-13.740	-6.170	(2;	1 3)
4	2.067	-9.090	-4.400	-6.496	(1;	1)	-18.888	-9.160	-6.170	(2;	1 3)
5	2.567	-10.740	-2.200	-6.496	(1;	1)	-22.027	-4.580	-6.170	(2;	1 3)
6	3.067	-11.290	0.000	-6.496	(1;	1)	-10.850	0.000	-8.197	(3;	1 4)
JTAN	6.135	16.306	28.098	-6.170	(2;	1 3)	9.411	13.497	-6.496	(1;	1)
= = MEMBER 3 (1 - 3) C = =											
ITAN	0.000	7.131	-1.965	-10.337	(1;	2)	15.925	-5.542	-22.515	(4;	1 3 4)
1	0.250	6.665	-1.759	-10.561	(1;	2)	14.611	-4.959	-22.739	(4;	1 3 4)
2	0.550	6.180	-1.466	-10.830	(1;	2)	13.238	-4.185	-23.008	(4;	1 3 4)
3	0.650	6.039	-1.358	-10.920	(1;	2)	12.833	*-3.909	-23.098	(4;	1 3 4)
4	1.300	5.416	-0.522	-11.502	(1;	2)	10.925	-1.896	-23.680	(4;	1 3 4)
5	1.800	4.268	0.338	-11.950	(3;	2 4)	11.500	-0.151	-24.128	(2;	1 3)
6	2.300	3.579	2.269	-12.398	(3;	1 4)	13.009	0.882	-24.576	(2;	2 3)
7	3.000	6.269	*5.491	-13.025	(3;	1 4)	14.146	2.413	-25.203	(2;	2 3)
8	3.250	7.798	6.749	-13.249	(3;	1 4)	14.825	3.024	-25.427	(2;	2 3)
JTAN	3.525	9.851	8.197	-13.496	(3;	1 4)	15.754	3.736	-25.674	(2;	2 3)
= = MEMBER 4 (2 - 4) C = =											
ITAN	0.000	-15.925	5.542	-22.515	(4;	1 3 4)	-7.131	1.965	-10.337	(1;	2)
1	0.250	-14.611	4.959	-22.739	(4;	1 3 4)	-6.665	1.759	-10.561	(1;	2)
2	0.550	-13.238	4.185	-23.008	(4;	1 3 4)	-6.180	1.466	-10.830	(1;	2)
3	0.650	-12.833	3.909	-23.098	(4;	1 3 4)	-6.039	1.358	-10.920	(1;	2)
4	1.300	-10.925	1.896	-23.680	(4;	1 3 4)	-5.416	0.522	-11.502	(1;	2)
5	1.800	-11.500	0.151	-24.128	(2;	1 3)	-4.268	-0.338	-11.950	(3;	2 4)
6	2.300	-13.009	-0.882	-24.576	(2;	2 3)	-3.579	-2.269	-12.398	(3;	1 4)
7	3.000	-14.146	-2.413	-25.203	(2;	2 3)	-6.269	-5.491	-13.025	(3;	1 4)
8	3.250	-14.825	-3.024	-25.427	(2;	2 3)	-7.798	-6.749	-13.249	(3;	1 4)
JTAN	3.525	-15.754	-3.736	-25.674	(2;	2 3)	-9.851	-8.197	-13.496	(3;	1 4)

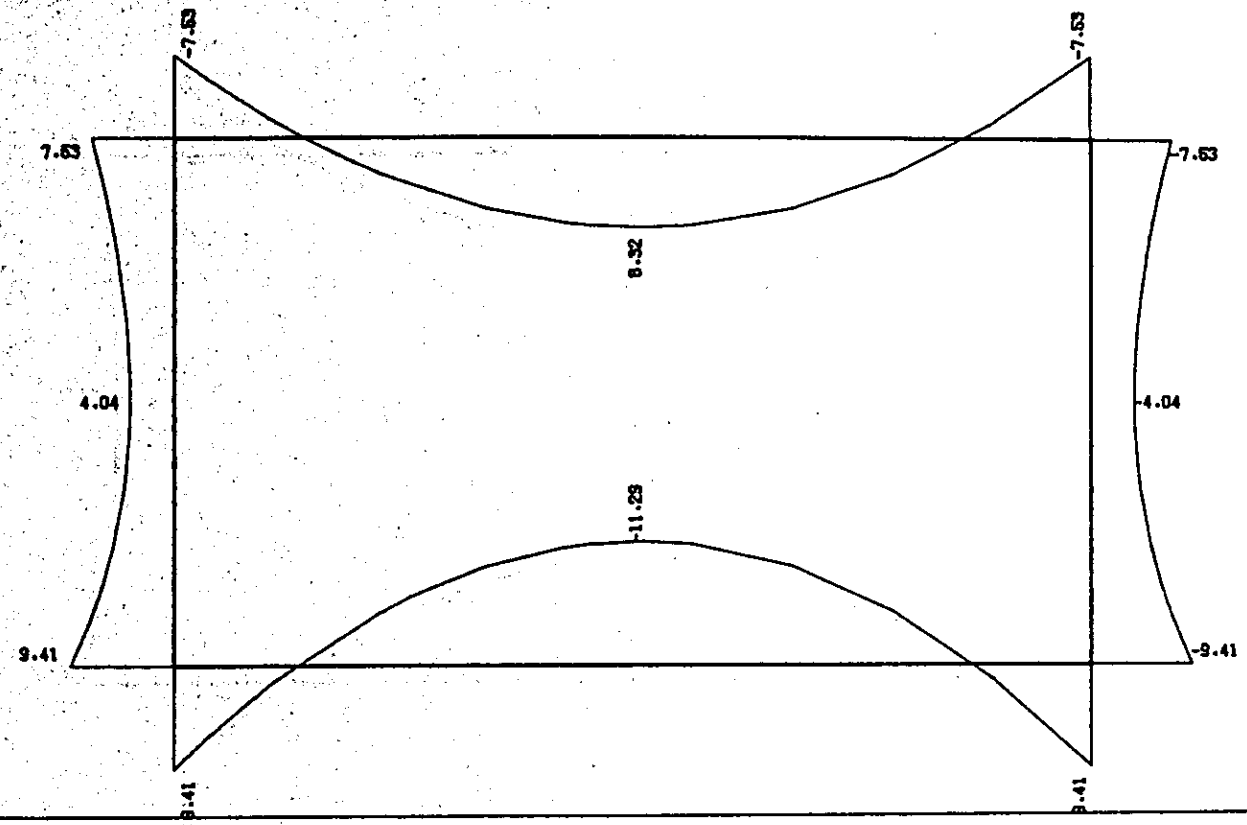
PICK UP 1

		AXIAL MAXIMUM				AXIAL MINIMUM			
---	---L---	---M---	---Q---	---N---	-COM-	----CASE-----	---M---	---Q---	---N---	-COM-	----CASE-----
= = MEMBER 1 (1 - 2) G = =											
ITAN	0.000	-7.131	10.337	-1.965	(1; | 2)	-15.925	24.939	-5.542	(4; | 1 3 4)
1	0.250	-4.652	9.495	-1.965	(1; | 2)	-10.526	22.906	-5.542	(4; | 1 3 4)
2	0.650	-1.124	8.147	-1.965	(1; | 2)	-2.841	19.654	-5.542	(4; | 1 3 4)
3	0.900	0.807	7.304	-1.965	(1; | 2)	1.366	17.622	-5.542	(4; | 1 3 4)
4	1.150	2.528	6.462	-1.965	(1; | 2)	5.114	15.589	-5.542	(4; | 1 3 4)
5	2.067	7.039	3.370	-1.965	(1; | 2)	14.938	8.130	-5.542	(4; | 1 3 4)
6	2.567	8.302	1.685	-1.965	(1; | 2)	17.690	4.065	-5.542	(4; | 1 3 4)
7	3.067	8.724	0.000	-1.965	(1; | 2)	18.608	0.000	-5.542	(4; | 1 3 4)
JTAN	6.135	-7.131	-10.337	-1.965	(1; | 2)	-15.925	-24.939	-5.542	(4; | 1 3 4)
= = MEMBER 2 (3 - 4) G = =											
ITAN	0.000	15.754	-28.098	-3.736	(2; | 2 3)	9.851	-13.497	-8.197	(3; | 1 4)
1	0.250	9.597	-25.808	-3.736	(2; | 2 3)	6.615	-12.397	-8.197	(3; | 1 4)
2	0.525	3.428	-23.289	-3.736	(2; | 2 3)	3.372	-11.187	-8.197	(3; | 1 4)
3	1.568	-14.209	-13.740	-3.736	(2; | 2 3)	-5.900	-6.600	-8.197	(3; | 1 4)
4	2.067	-19.440	-9.160	-3.736	(2; | 2 3)	-8.650	-4.400	-8.197	(3; | 1 4)
5	2.567	-22.579	-4.580	-3.736	(2; | 2 3)	-10.300	-2.200	-8.197	(3; | 1 4)
6	3.067	-23.625	0.000	-3.736	(2; | 2 3)	-10.850	0.000	-8.197	(3; | 1 4)
JTAN	6.135	15.754	28.098	-3.736	(2; | 2 3)	9.851	13.497	-8.197	(3; | 1 4)
= = MEMBER 3 (1 - 3) C = =											
ITAN	0.000	7.532	-3.566	-10.337	(1; | 1)	15.578	-3.894	-22.515	(2; | 1 3)
1	0.250	6.682	-3.222	-10.561	(1; | 1)	14.646	-3.549	-22.739	(2; | 1 3)
2	0.550	5.787	-2.733	-10.830	(1; | 1)	13.653	-3.060	-23.008	(2; | 1 3)
3	0.650	5.523	-2.552	-10.920	(1; | 1)	13.356	-2.879	-23.098	(2; | 1 3)
4	1.300	4.297	-1.157	-11.502	(1; | 1)	11.918	-1.483	-23.680	(2; | 1 3)
5	1.800	4.042	0.175	-11.950	(1; | 1)	11.500	-0.151	-24.128	(2; | 1 3)
6	2.300	4.509	1.732	-12.398	(1; | 1)	11.804	1.405	-24.576	(2; | 1 3)
7	3.000	6.591	4.289	-13.025	(1; | 1)	13.657	3.963	-25.203	(2; | 1 3)
8	3.250	7.790	5.309	-13.249	(1; | 1)	14.774	4.983	-25.427	(2; | 1 3)
JTAN	3.525	9.411	6.496	-13.496	(1; | 1)	16.306	6.170	-25.674	(2; | 1 3)
= = MEMBER 4 (2 - 4) C = =											
ITAN	0.000	-7.532	3.568	-10.337	(1; | 1)	-15.578	3.894	-22.515	(2; | 1 3)
1	0.250	-6.682	3.222	-10.561	(1; | 1)	-14.646	3.549	-22.739	(2; | 1 3)
2	0.550	-5.787	2.733	-10.830	(1; | 1)	-13.653	3.060	-23.008	(2; | 1 3)
3	0.650	-5.523	2.552	-10.920	(1; | 1)	-13.356	2.879	-23.098	(2; | 1 3)
4	1.300	-4.297	1.157	-11.502	(1; | 1)	-11.918	1.483	-23.680	(2; | 1 3)
5	1.800	-4.042	-0.175	-11.950	(1; | 1)	-11.500	0.151	-24.128	(2; | 1 3)
6	2.300	-4.509	-1.732	-12.398	(1; | 1)	-11.804	-1.405	-24.576	(2; | 1 3)
7	3.000	-6.591	-4.289	-13.025	(1; | 1)	-13.657	-3.963	-25.203	(2; | 1 3)
8	3.250	-7.790	-5.309	-13.249	(1; | 1)	-14.774	-4.983	-25.427	(2; | 1 3)
JTAN	3.525	-9.411	-6.496	-13.496	(1; | 1)	-16.306	-6.170	-25.674	(2; | 1 3)

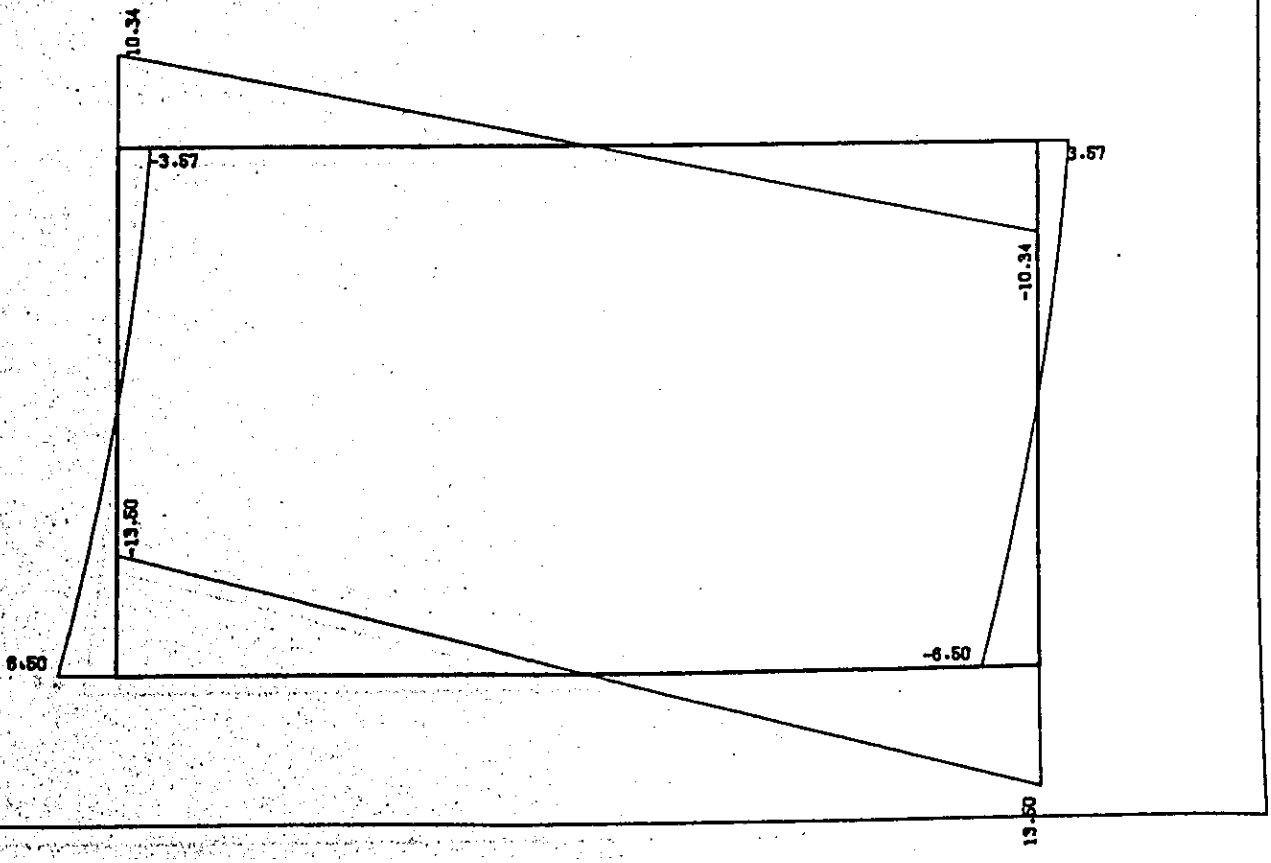
C22

CASE 1 (SHI+DO (0.5))

BENDING MOMENT



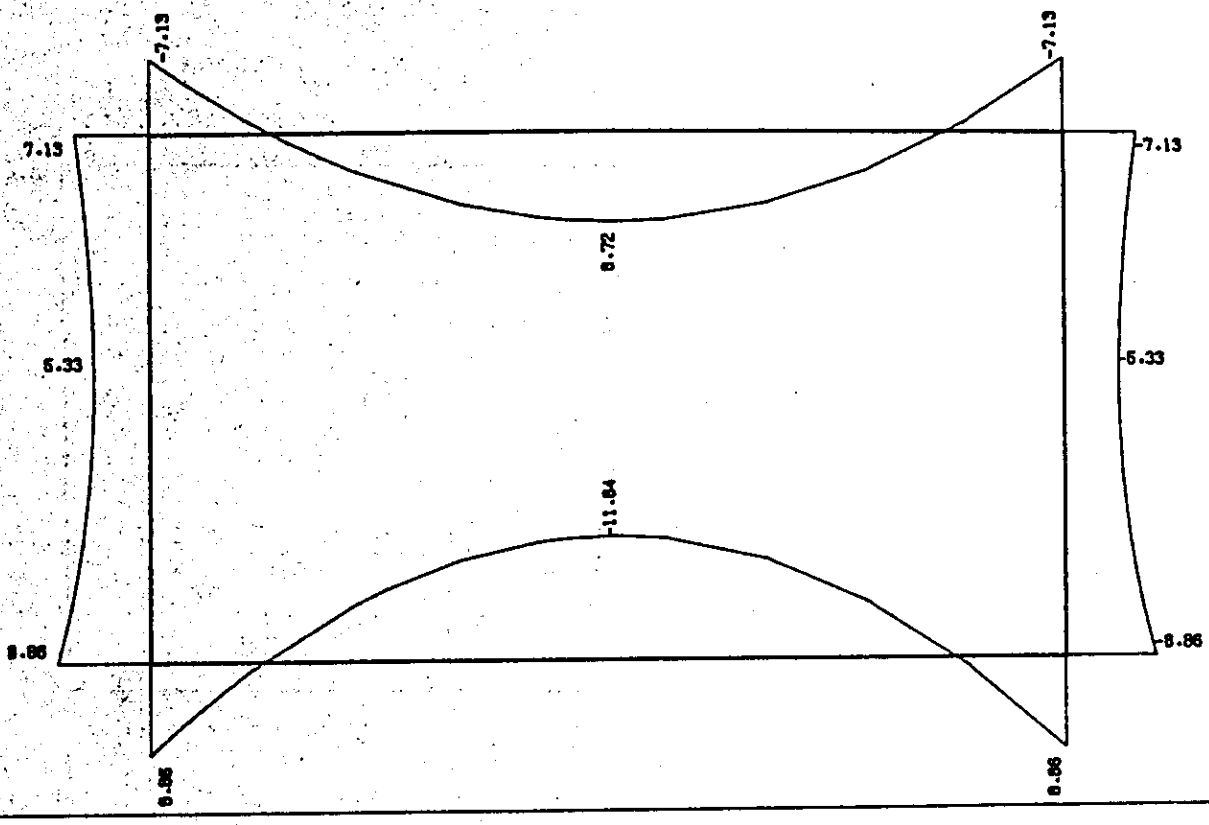
SHEARING FORCE



C22

CASE 2 (SHI+DO (0.3))

BENDING MOMENT



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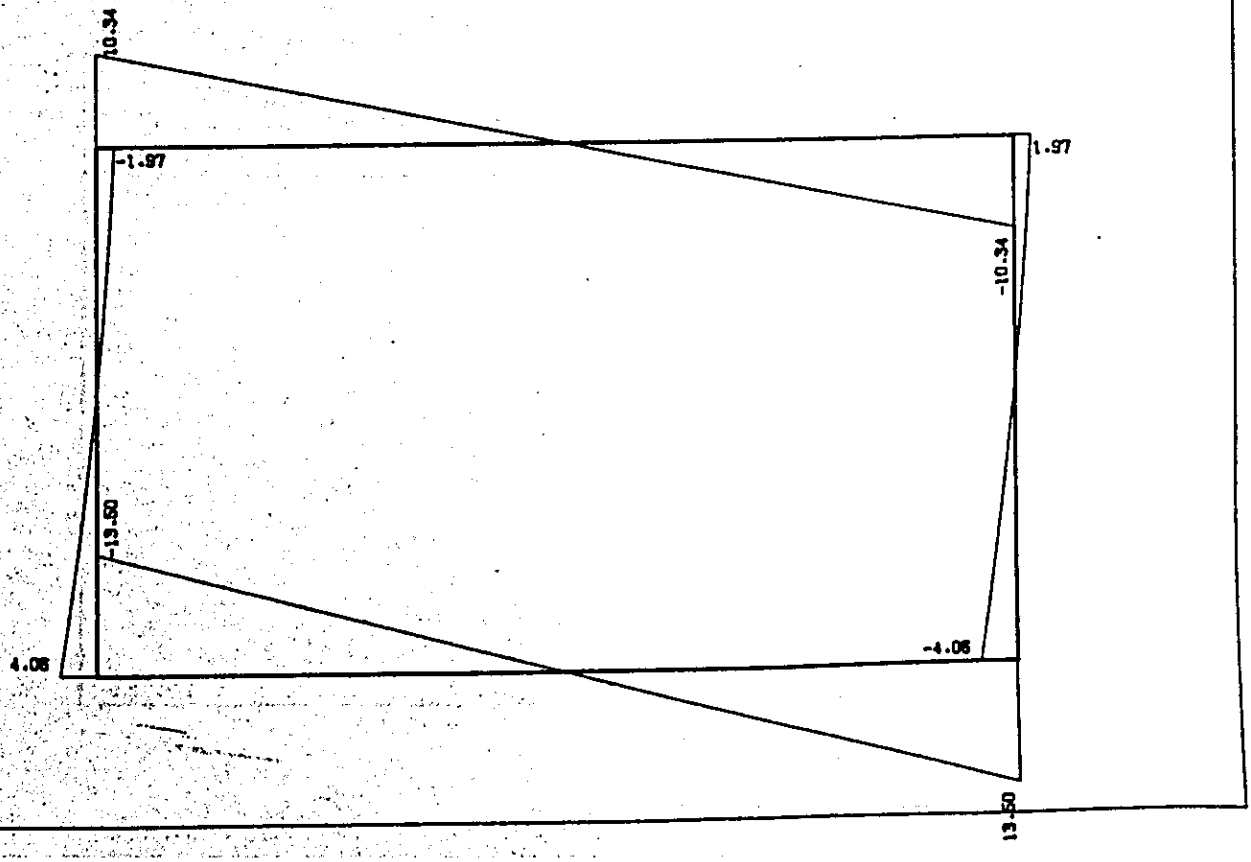
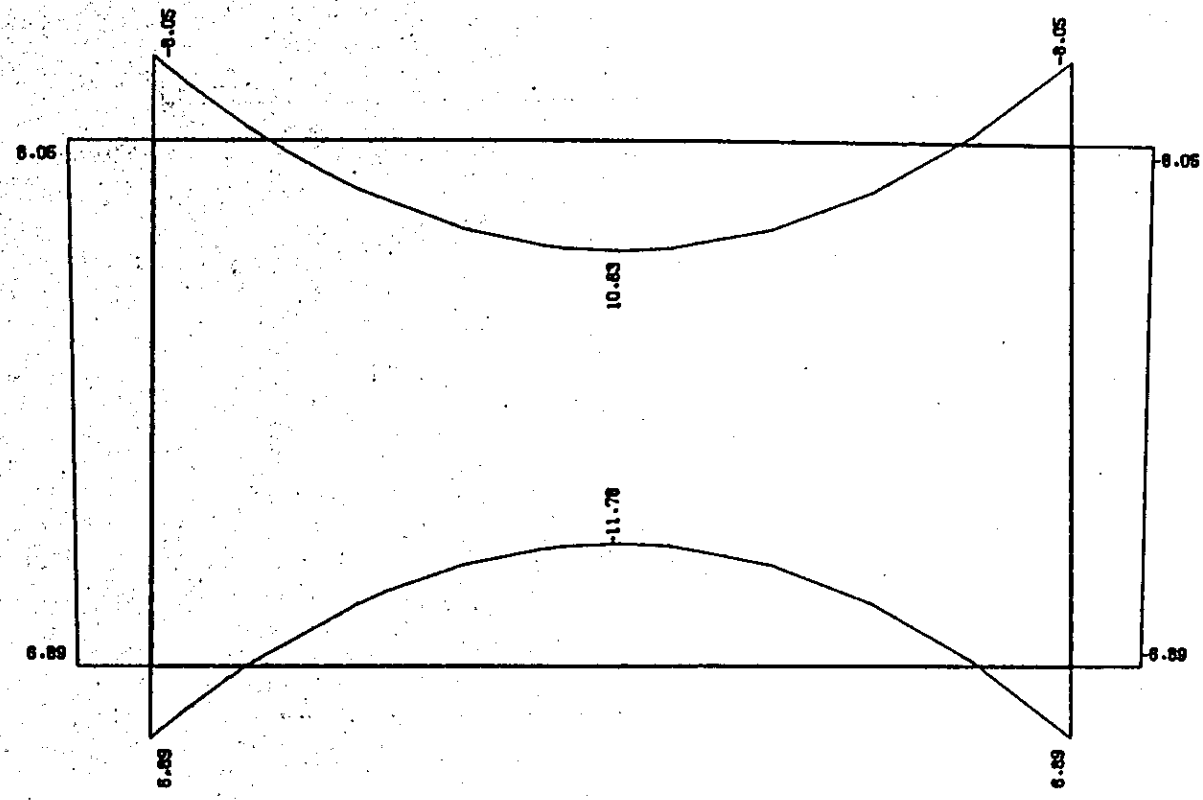


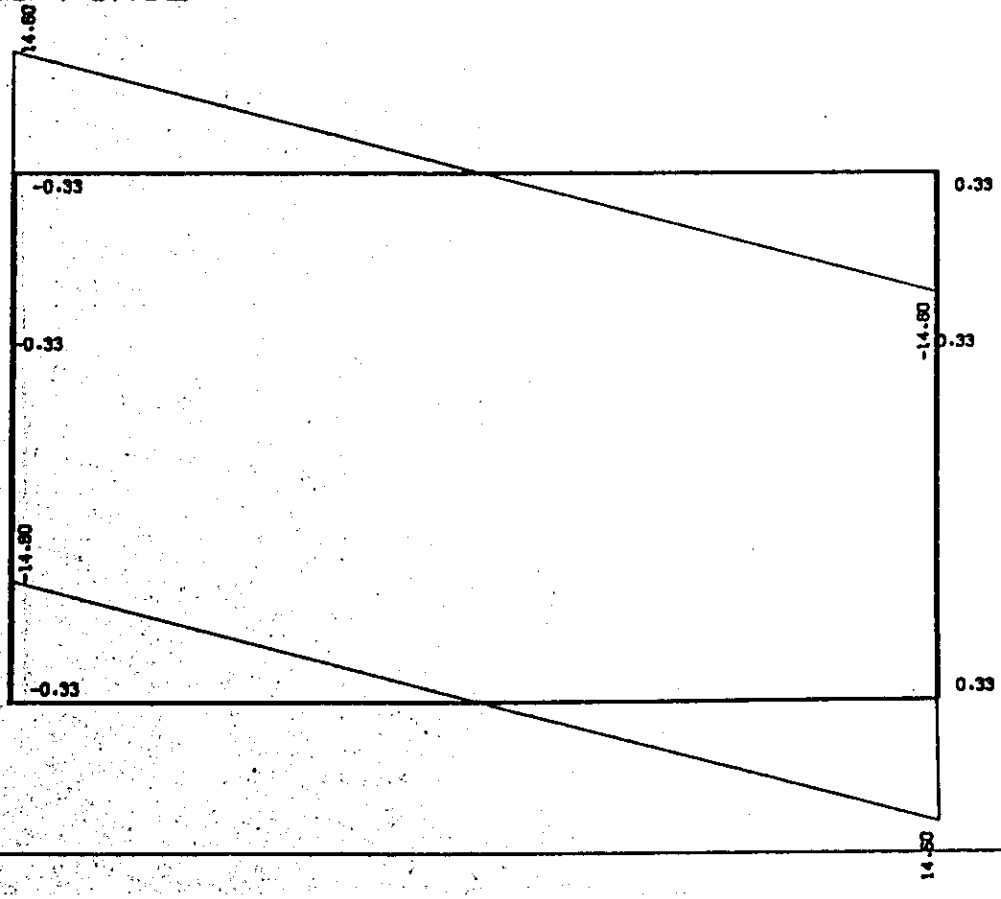
C22

CASE 3 (KATSU+SYOU)

BENDING MOMENT



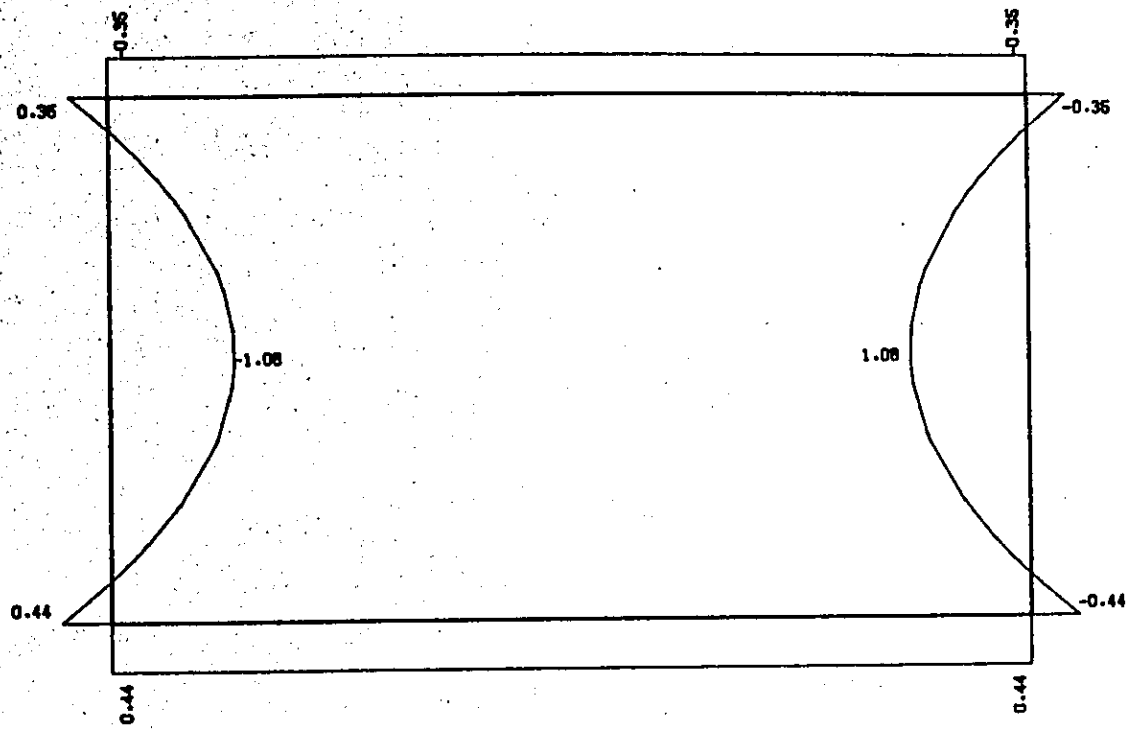
SHEARING FORCE



C22

CASE 4 (KATSUDO)

BENDING MOMENT



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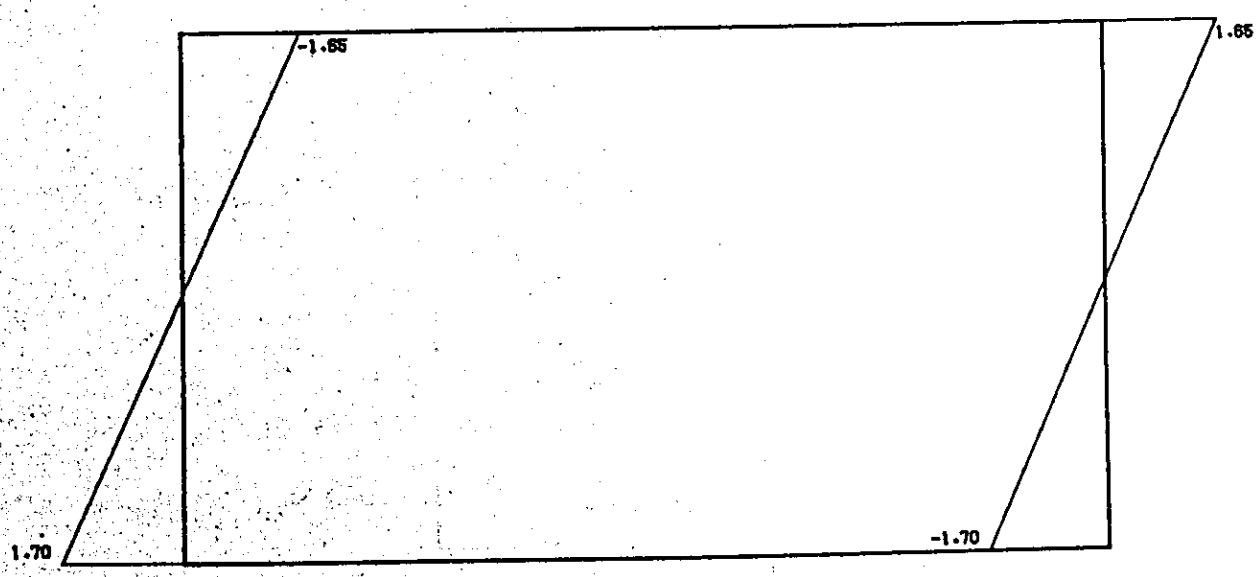
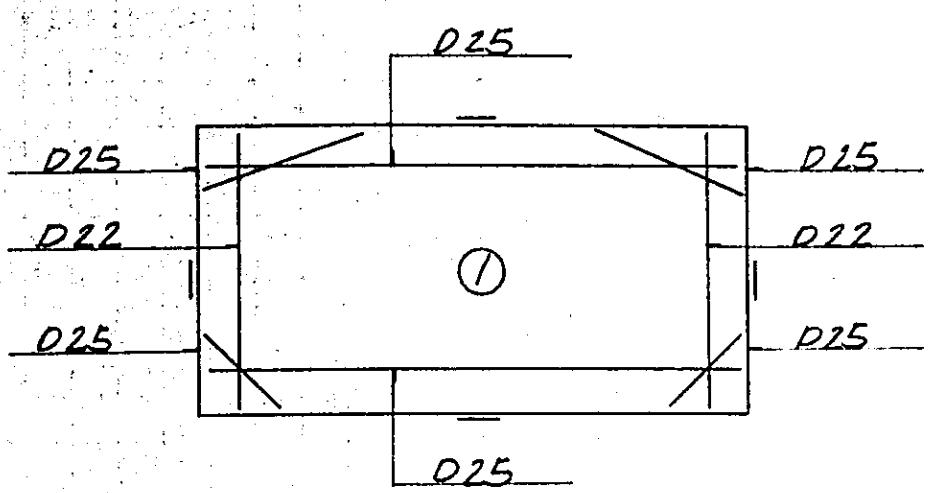
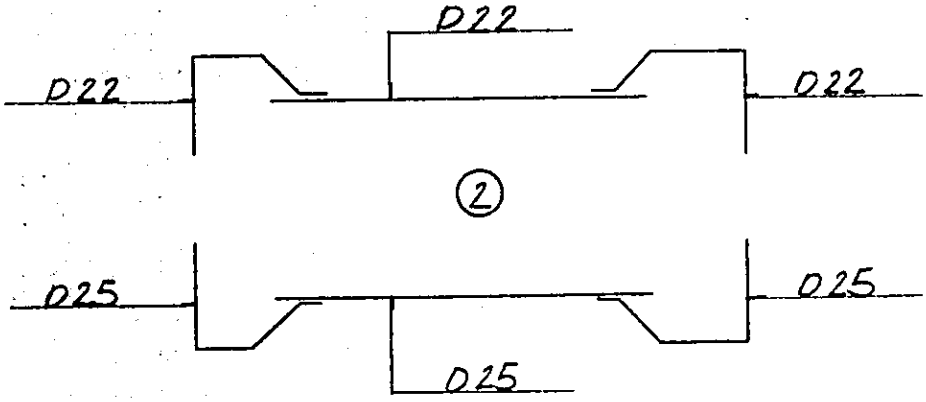
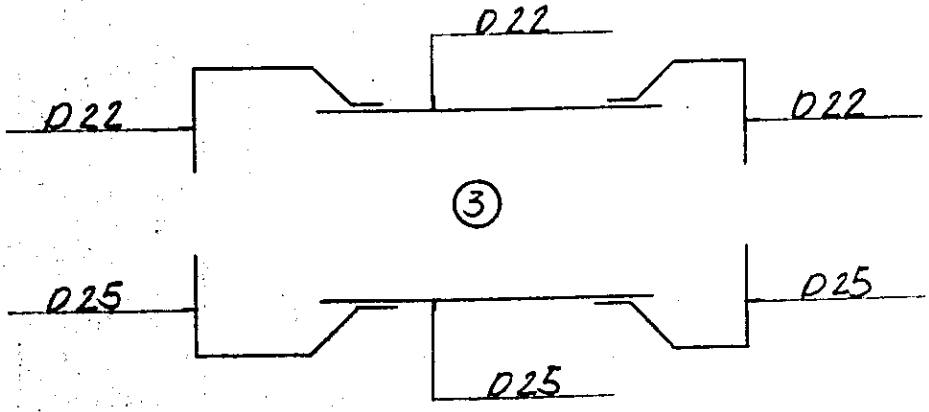


REINFORCEMENT FRAME







C22 CRACKING

STRESS

SGM CA =	0.000	(KG/M2)
SGM SA =	0.000	(KG/M2)
TAU A =	0.000	(KG/M2)

		NO.(1) 1-2	NO.(2) 1-2	NO.(3) 1-2
B	(CM)	100.00	100.00	100.00
H	(CM)	80.00	50.00	50.00
D	(CM)	73.00	43.00	43.00
D'	(CM)	0.00	7.00	7.00
D''	(CM)	7.00	7.00	7.00
		4.00 D-25	4.00 D-25	4.00 D-25
		4.00 D-22		4.00 D-22
AS	(CM2)	35.752	20.268	35.752
P		0.00489	0.00471	0.00831
			4.00 D-22	4.00 D-25
AS'	(CM2)	0.000	15.484	20.268
P'		0.00000	0.00360	0.00471
M	(T*M)	7.53	1.53	8.72
N	(T)	3.57	3.57	1.97
S	(T)	0.00	0.00	0.00
EO	(CM)	210.924	42.857	442.639
E	(CM)	243.924	60.857	460.639
E'	(CM)	170.924	24.857	424.639
E'/E		0.700	0.408	0.921
D'/D		0.000	0.162	0.162
D/E		0.299	0.706	0.093
N*E/B*D2		1.634	1.175	4.907
K			0.422	0.374
LC			0.209	0.197
C		0.157		
BETA		26.909		
SGM C	(KG/CM2)	10.36	5.61	24.89
SGM S	(KG/CM2)	279.00	115.03	624.48
TAU	(KG/CM2)	0.00	0.00	0.00

C22 CRACKING

STRESS

SGM CA =	0.000	(KG/M2)	
SGM SA =	0.000	(KG/M2)	
TAU A =	0.000	(KG/M2)	

		NO.(4) 3-4	NO.(5) 3-4
B	(CM)	100.00	100.00
H	(CM)	55.00	55.00
D	(CM)	46.00	48.00
D'	(CM)	0.00	9.00
D''	(CM)	9.00	7.00
		8.00 D-25	8.00 D-25
AS	(CM2)	40.536	40.536
P		0.00881	0.00844
			4.00 D-25
AS'	(CM2)	0.000	20.268
P'		0.00000	0.00422
M	(T*M)	6.18	11.84
N	(T)	6.50	4.06
S	(T)	0.00	0.00
EO	(CM)	95.076	291.625
E	(CM)	113.576	312.125
E'	(CM)	67.576	273.125
E'/E		0.594	0.875
D'/D		0.000	0.187
D/E		0.405	0.153
N*E/B*D2		3.488	5.500
K			0.390
LC			0.196
C		0.196	
BETA		17.318	
SGM C(KG/CM2)		17.78	27.98
SGM S(KG/CM2)		308.02	655.74
TAU (KG/CM2)		0.00	0.00

C22 CRACKING

STRESS

SGM CA =	0.000	(KG/M2)
SGM SA =	0.000	(KG/M2)
TAU A =	0.000	(KG/M2)

		NO.(6) 1-3.2-4	NO.(7) 1-3.2-4	NO.(8) 1-3.2-4	NO.(9) 1-3.2-4
B	(CM)	100.00	100.00	100.00	100.00
H	(CM)	60.00	50.00	50.00	50.00
D	(CM)	53.00	43.00	43.00	43.00
D'	(CM)	0.00	7.00	7.00	0.00
D''	(CM)	7.00	7.00	7.00	7.00
		4.00 D-25	4.00 D-25	4.00 D-25	8.00 D-25
		4.00 D-22	4.00 D-22		
AS	(CM2)	35.752	35.752	20.268	40.536
P		0.00674	0.00831	0.00471	0.00942
			4.00 D-22	4.00 D-22	
AS'	(CM2)	0.000	15.484	15.484	0.000
P'		0.00000	0.00360	0.00360	0.00000
M	(T*M)	7.53	6.18	5.35	7.84
N	(T)	10.56	10.92	11.95	13.25
S	(T)	0.00	0.00	0.00	0.00
EO	(CM)	71.306	56.593	44.769	59.169
E	(CM)	94.306	74.593	62.769	77.169
E'	(CM)	41.306	38.593	26.769	34.169
E'/E		0.438	0.517	0.426	0.442
D'/D		0.000	0.162	0.162	0.000
D/E		0.561	0.576	0.683	0.557
N*E/B*D2		3.545	4.405	4.056	5.530
K			0.471	0.415	
LC			0.228	0.206	
C		0.193			0.211
BETA		17.769			14.492
SGM C	(KG/CM2)	18.28	19.28	19.63	26.18
SGM S	(KG/CM2)	324.83	323.83	413.45	379.49
TAU	(KG/CM2)	0.00	0.00	0.00	0.00

C22 FATIGUE

STRESS

SGM CA =	0.000	(KG/M2)
SGM SA =	0.000	(KG/M2)
TAU A =	0.000	(KG/M2)

		NO.(1) 1-2	NO.(2) 1-2	NO.(3) 1-2
B	(CM)	100.00	100.00	100.00
H	(CM)	80.00	50.00	50.00
D	(CM)	73.00	43.00	43.00
D'	(CM)	0.00	7.00	7.00
D''	(CM)	7.00	7.00	7.00
		4.00 D-25	4.00 D-25	4.00 D-25
		4.00 D-22		4.00 D-22
AS	(CM2)	35.752	20.268	35.752
P		0.00489	0.00471	0.00831
			4.00 D-22	4.00 D-25
AS'	(CM2)	0.000	15.484	20.268
P'		0.00000	0.00360	0.00471
M	(T*M)	15.93	2.84	19.36
N	(T)	5.54	5.22	2.29
S	(T)	0.00	0.00	0.00
EO	(CM)	287.545	54.406	845.414
E	(CM)	320.545	72.406	863.414
E'	(CM)	247.545	36.406	827.414
E'/E		0.772	0.502	0.958
D'/D		0.000	0.162	0.162
D/E		0.227	0.593	0.049
N*E/B*D2		3.332	2.044	10.693
K			0.390	0.368
LC			0.196	0.194
C		0.153		
BETA		28.265		
SGM C(KG/CM2)		21.73	10.41	54.95
SGM S(KG/CM2)		614.36	243.66	1413.97
TAU (KG/CM2)		0.00	0.00	0.00

C22 FATIGUE

STRESS

SGM CA =	0.000	(KG/M2)	
SGM SA =	0.000	(KG/M2)	
TAU A =	0.000	(KG/M2)	

		NO.(4) 3-4	NO.(3) 3-4
B	(CM)	100.00	100.00
H	(CM)	55.00	55.00
D	(CM)	46.00	48.00
D'	(CM)	0.00	9.00
D''	(CM)	9.00	7.00
		8.00 D-25	8.00 D-25
AS	(CM2)	40.536	40.536
P		0.00881	0.00844
			4.00 D-25
AS'	(CM2)	0.000	20.268
P'		0.00000	0.00422
M	(T*M)	10.59	23.63
N	(T)	7.87	3.74
S	(T)	0.00	0.00
E0	(CM)	134.561	631.818
E	(CM)	153.061	652.318
E'	(CM)	107.061	613.318
E'/E		0.699	0.940
D'/D		0.000	0.187
D/E		0.300	0.073
N*E/B*D2		5.692	10.588
K			0.379
LC			0.191
C		0.189	
BETA		18.757	
SGM C(KG/CM2)		30.07	55.26
SGM S(KG/CM2)		564.18	1357.62
TAU (KG/CM2)		0.00	0.00

C22 FATIGUE

STRESS

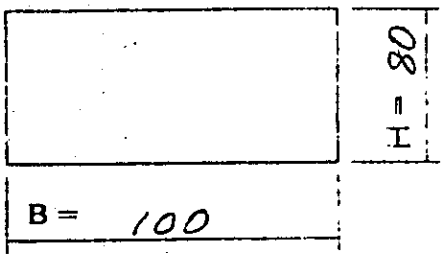
SGM CA =	0.000	(KG/M2)
SGM SA =	0.000	(KG/M2)
TAU A =	0.000	(KG/M2)

		NO.(6) 1-3.2-4	NO.(7) 1-3.2-4	NO.(8) 1-3.2-4	NO.(9) 1-3.2-4
B	(CM)	100.00	100.00	100.00	100.00
H	(CM)	60.00	50.00	50.00	50.00
D	(CM)	53.00	43.00	43.00	43.00
D'	(CM)	0.00	7.00	7.00	0.00
D''	(CM)	7.00	7.00	7.00	7.00
		4.00 D-25	4.00 D-25	4.00 D-25	8.00 D-25
		4.00 D-22	4.00 D-22		
AS	(CM2)	35.752	35.752	20.268	40.536
P		0.00674	0.00831	0.00471	0.00942
			4.00 D-22	4.00 D-22	
AS'	(CM2)	0.000	15.484	15.484	0.000
P'		0.00000	0.00360	0.00360	0.00000
M	(T*M)	15.93	14.05	12.81	14.83
N	(T)	22.74	23.10	24.13	25.43
S	(T)	0.00	0.00	0.00	0.00
EO	(CM)	70.052	60.822	53.087	58.316
E	(CM)	93.052	78.822	71.087	76.316
E'	(CM)	40.052	42.822	35.087	33.316
E'/E		0.430	0.543	0.493	0.436
D'/D		0.000	0.162	0.162	0.000
D/E		0.569	0.545	0.604	0.563
N*E/B*D2		7.533	9.847	9.277	10.496
K			0.464	0.393	
LC			0.225	0.197	
C		0.194			0.211
BETA		17.636			14.404
SGM C(KG/CM2)		38.71	43.67	46.98	49.58
SGM S(KG/CM2)		682.70	756.74	1086.28	714.19
TAU (KG/CM2)		0.00	0.00	0.00	0.00

Stress calculation

Stress calculation of slab

1-2 (1) (for slab calculation)

Section	 Standard strength for design $\sigma ck = 240$ kg/cm² Re-bar SD30 AS = 35.80cm² ($\frac{4}{4}$ − D $\frac{25}{22}$) AS' = 0 〃 (− D)		
	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	Md = 7.53 t m	Md ℓ i = 15.93 t m	M = 15.93 t m
Shearing force	Sd = t	Sd ℓ i = t	S = —— t
Stress	σc = 10.4 kg/cm² σs = 279 〃 τ = — 〃	σc = 21.7 kg/cm² σs = 614 〃 τ = — 〃	σc = 21.7 kg/cm² σs = 614 〃 τ = — 〃
Allowable stress	σca = 90kg/cm² σsa = 1000 〃 τa = — 〃	σca = 90kg/cm² σsa = 1800 〃 τa = — 〃	σca = 90kg/cm² σsa = 1800 〃 τa = — 〃

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma \ell i}{\sigma d + \sigma \ell i} = \frac{614 - 279}{614} = 0.54 > 0.25$$

($\alpha \geq 0.25$ → Dynamic $\sigma sa = 1000$kg/cm²,

$\alpha \leq 0.25$ → Static $\sigma sa = 1200$kg/cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis KS-16 $\ell = 6.13$m $\sigma rao = 1800$ kg/cm²

$$\sigma sa = \sigma min + (1 - \sigma min / 5000) \times \sigma rao$$

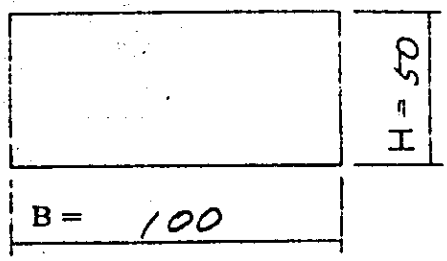
$$= 279 + (1 - 279/5000) \times 1800 = 1980 \text{ kg/cm}^2$$

Stress calculation

Stress calculation of slab

1 - 2 (2)

(for slab calculation)

Section	 Standard strength for design σ_{ck} = 240 kg / cm² Re-bar SD 30 A S = 20.30 cm² (4 - D25) A S' = 15.50 cm² (4 - D22)

	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	Md = 1.53 t m	Md ℓ i = 2.84 t m	M = 2.84 t m
Shearing force	Sd = — t	Sd ℓ i = — t	S = — t
Stress	σc = 5.6 kg / cm² σs = 115 〃 τ = — 〃	σc = 10.4 kg / cm² σs = 244 〃 τ = — 〃	σc = 10.4 kg / cm² σs = 244 〃 τ = — 〃
Allowable stress	σca = 90kg / cm² σsa = 1000 〃 τa = — 〃	σca = 90kg / cm² σsa = 1800 〃 τa = — 〃	σca = 90kg / cm² σsa = 1800 〃 τa = — 〃

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma \ell i}{\sigma d + \sigma \ell i} = \frac{244 - 115}{244} = 0.53 > 0.25$$

($\alpha \geq 0.25 \rightarrow$ Dynamic $\sigma sa = 1000$ kg / cm²,

$\alpha \leq 0.25 \rightarrow$ Static $\sigma sa = 1200$ kg / cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis Ks-16 $\ell = 6.13^{m}5$ $\sigma rao = 1800$ kg / cm²

$$\sigma sa = \sigma min + (1 - \sigma min / 5000) \times \sigma rao$$

$$= 115 + (1 - 115/5000) \times 1800 = 1870 \text{ kg / cm}^2$$

Stress calculation

Stress calculation of slab

1-2 (3)

(for slab calculation)

Section	Standard strength for design $\sigma_{ck} = 240$ kg/cm² Re-bar SD30 $A_S = 35.80$ cm² ($\frac{4}{4}$ − D $\frac{25}{22}$) $A_S' = 20.30$ 〃 (4 − D 25) H = 50 〃, B = 100		
	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	M_d = 8.72 t m	$M_{d\ell i}$ = 19.36 t m	M = 19.36 t m
Shearing force	S_d = — t	$S_{d\ell i}$ = — t	S = — t
Stress	σ_c = 24.9 kg/cm² σ_s = 624 〃 τ = — 〃	σ_c = 55.0 kg/cm² σ_s = 1414 〃 τ = — 〃	σ_c = 55.kg/cm² σ_s = 1414 〃 τ = — 〃
Allowable stress	σ_{ca} = 90kg/cm² σ_{sa} = 1000 〃 τ_a = — 〃	σ_{ca} = 90kg/cm² σ_{sa} = 1800 〃 τ_a = — 〃	σ_{ca} = 90kg/cm² σ_{sa} = 1800 〃 τ_a = — 〃

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma_{\ell i}}{\sigma_d + \sigma_{\ell i}} = \frac{1414 - 624}{1414} = 0.56 > 0.25$$

($\alpha \geq 0.25 \rightarrow$ Dynamic $\sigma_{sa} = 1000$kg/cm²,

$\alpha \leq 0.25 \rightarrow$ Static $\sigma_{sa} = 1200$kg/cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis ks-16 $\ell = 6.135$ $\sigma_{rao} = 1800$ kg/cm²

$$\sigma_{sa} = \sigma_{min} + (1 - \sigma_{min}/5000) \times \sigma_{rao}$$

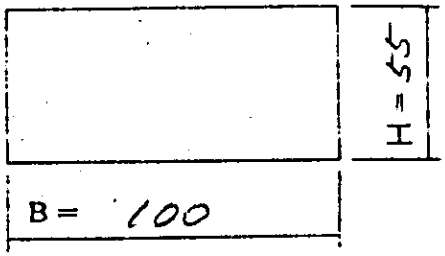
$$= 624 + (1 - 624/5000) \times 1800 = 2210 \text{ kg/cm}^2$$

Stress calculation

Stress calculation of slab

3-4(4) (for slab calculation)

Section	Standard strength for design σ_{ck} = 240 kg/cm² Re-bar SD30 AS = 40.50 cm² (8 − D25) AS' = 0 〃 (− D)



	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	Md = 6.18 t m	Mdℓi = 10.59 t m	M = 10.59 t m
Shearing force	Sd = — t	Sdℓi = — t	S = — t
Stress	σc = 17.8 kg/cm² σs = 308 〃 τ = — 〃	σc = 30.1 kg/cm² σs = 564 〃 τ = — 〃	σc = 30.1 kg/cm² σs = 564 〃 τ = — 〃
Allowable stress	σca = 90kg/cm² σsa = 1000 〃 τa = — 〃	σca = 90kg/cm² σsa = 1800 〃 τa = — 〃	σca = 90kg/cm² σsa = 1800 〃 τa = — 〃

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma \ell i}{\sigma d + \sigma \ell i} = \frac{564 - 308}{564} = 0.45 > 0.25$$

($\alpha \geq 0.25$ → Dynamic σ_{sa} = 1000 kg/cm²,

$\alpha \leq 0.25$ → Static σ_{sa} = 1200 kg/cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis Ks-16 ℓ = 6.135 σ_{rao} = 1800 kg/cm²

$$\sigma_{sa} = \sigma_{min} + (1 - \sigma_{min} / 5000) \times \sigma_{rao}$$

$$= 308 + (1 - 308 / 5000) \times 1800 = 2000 \text{ kg/cm}^2$$

Stress calculation

Stress calculation of slab

3-4(5) (for slab calculation)

Section	Standard strength for design σ_{ck} = 240 kg/cm² Re-bar SD30 AS = 40.50cm² (8−D25) AS' = 20.30 〃 (4−D25) H = 55 B = 100		
	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	Md = 11.84 t m	Mdℓi = 23.63 t m	M = 23.63 t m
Shearing force	Sd = — t	Sdℓi = — t	S = — t
Stress	σ_c = 28.0 kg/cm² σ_s = 656 〃 τ = — 〃	σ_c = 55.3 kg/cm² σ_s = 1358 〃 τ = — 〃	σ_c = 55.3 kg/cm² σ_s = 1358 〃 τ = — 〃
Allowable stress	σ_{ca} = 90kg/cm² σ_{sa} = 1000 〃 τ_a = — 〃	σ_{ca} = 90kg/cm² σ_{sa} = 1800 〃 τ_a = — 〃	σ_{ca} = 90kg/cm² σ_{sa} = 1800 〃 τ_a = — 〃

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma_{\ell i}}{\sigma_d + \sigma_{\ell i}} = \frac{1358 - 656}{1358} = 0.52 > 0.25$$

($\alpha \geq 0.25 \rightarrow$ Dynamic σ_{sa} = 1000kg/cm²,

$\alpha \leq 0.25 \rightarrow$ Static σ_{sa} = 1200kg/cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis Ks-16 ℓ = 6.13m σ_{rao} = 1800 kg/cm²

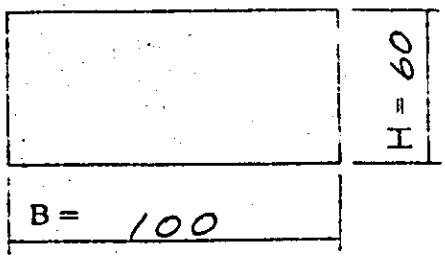
$$\sigma_{sa} = \sigma_{min} + (1 - \sigma_{min}/5000) \times \sigma_{rao}$$

$$= 656 + (1 - 656/5000) \times 1800 = 2220 \text{ kg/cm}^2$$

Stress calculation

Stress calculation of slab

1-3, 2-4 (6) (for slab calculation)

Section	 Standard strength for design σ_{ck} = 240 kg/cm² Re-bar SD30 AS = 35.80cm² ($\frac{4}{4}$ − D$\frac{25}{22}$) AS' = 0 〃 (− D)		
	Analysis of cracking	Analysis of fatigue	Analysis of registing power
Bending moment	Md = 7.53 t m	Mdℓi = 15.93 t m	M = 15.93 t m
Shearing force	Sd = — t	Sdℓi = — t	S = — t
Stress	σc = 18.3 kg/cm² σs = 325 〃 τ = — 〃	σc = 38.7 kg/cm² σs = 683 〃 τ = — 〃	σc = 38.7 kg/cm² σs = 683 〃 τ = — 〃
Allowable stress	σca = 90kg/cm² σsa = 1000 〃 τa = — 〃	σca = 90kg/cm² σsa = 1800 〃 τa = — 〃	σca = 90kg/cm² σsa = 1800 〃 τa = — 〃

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma_{\ell i}}{\sigma_d + \sigma_{\ell i}} = \frac{683 - 325}{683} = 0.52 > 0.25$$

($\alpha \geq 0.25$ → Dynamic σ_{sa} = 1000kg/cm²,

$\alpha \leq 0.25$ → Static σ_{sa} = 1200kg/cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis Ks-16 ℓ = 6.135m σ_{rao} = 1800 kg/cm²

$$\sigma_{sa} = \sigma_{min} + (1 - \sigma_{min}/5000) \times \sigma_{rao}$$

$$= 325 + (1 - 325/5000) \times 1800 = 2010 \text{ kg/cm}^2$$

Stress calculation

Stress calculation of slab

1-3, 2-4 (7)

(for slab calculation)

Section	Standard strength for design σ_{ck} = 240 kg/cm² Re-bar SD30 As = 35.80cm² ($\frac{4}{4}$ - D $\frac{25}{22}$) As' = 15.50 " (4 - D22) H = 50, I, B = 100		
	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	Md = 6.18 t m	Mdℓi = 14.05 t m	M = 14.05 t m
Shearing force	Sd = — t	Sdℓi = — t	S = — t
Stress	σ_c = 19.3 kg/cm² σ_s = 324 " τ = — "	σ_c = 43.7 kg/cm² σ_s = 757 " τ = — "	σ_c = 43.7 kg/cm² σ_s = 757 " τ = — "
Allowable stress	σ_{ca} = 90kg/cm² σ_{sa} = 1000 " τ_a = — "	σ_{ca} = 90kg/cm² σ_{sa} = 1800 " τ_a = — "	σ_{ca} = 90kg/cm² σ_{sa} = 1800 " τ_a = — "

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma_{\ell i}}{\sigma_d + \sigma_{\ell i}} = \frac{757 - 324}{757} = 0.57 > 0.25$$

($\alpha \geq 0.25$ → Dynamic σ_{sa} = 1000kg/cm²,

$\alpha \leq 0.25$ → Static σ_{sa} = 1200kg/cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis Ks-16 ℓ = 6.135m σ_{rao} = 1800 kg/cm²

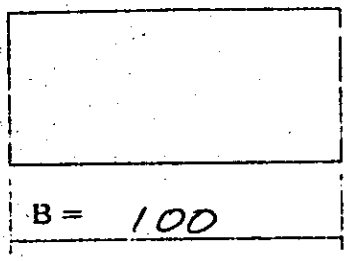
$$\sigma_{sa} = \sigma_{min} + (1 - \sigma_{min}/5000) \times \sigma_{rao}$$

$$= 324 + (1 - 324/5000) \times 1800 = 2010 \text{ kg/cm}^2$$

Stress calculation

Stress calculation of slab

1-3, 2-4 (8) (for slab calculation)

Section		Standard strength for design σ_{ck} = 240 kg / cm² Re-bar SD 30 AS = 20.30cm² (4 − D 25) AS' = 15.50 ″ (4 − D 22)

	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	Md = 5.35 t m	Mdℓi = 12.81 t m	M = t m
Shearing force	Sd = — t	Sdℓi = — t	S = — t
Stress	σc = 19.6 kg / cm² σs = 413 ″ τ = — ″	σc = 47.0 kg / cm² σs = 1086 ″ τ = — ″	σc = 47.0 kg / cm² σs = 1086 ″ τ = — ″
Allowable stress	σca = 90kg / cm² σsa = 1000 ″ τa = — ″	σca = 90kg / cm² σsa = 1800 ″ τa = — ″	σca = 90kg / cm² σsa = 1800 ″ τa = — ″

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma_{\ell i}}{\sigma_d + \sigma_{\ell i}} = \frac{1086 - 413}{1086} = 0.62 > 0.25$$

($\alpha \geq 0.25$ → Dynamic σ_{sa} = 1000kg / cm²,

$\alpha \leq 0.25$ → Static σ_{sa} = 1200kg / cm²)

2. Allowable stress of re-bar in terms of fatigue

Span for fatigue analysis Es-16 ℓ = 6.135 σ_{rao} = 1800 kg / cm²

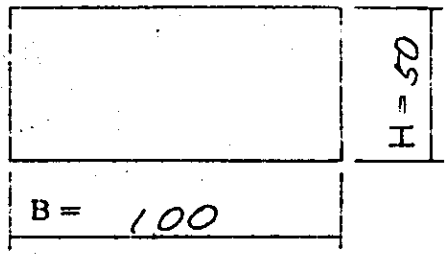
$$\sigma_{sa} = \sigma_{min} + (1 - \sigma_{min} / 5000) \times \sigma_{rao}$$

$$= 413 + (1 - 413 / 5000) \times 1800 = 2060 \text{ kg / cm}^2$$

Stress calculation

Stress calculation of slab

1-3, 2-4(9) (for slab calculation)

Section	 Standard strength for design σ_{ck} = 240 kg/cm² Re-bar SD30 AS = 40.50cm² (8 - D25) AS' = 0 〃 (- D)		
	Analysis of cracking	Analysis of fatigue	Analysis of ragisting power
Bending moment	Md = 7.84 t m	Mdℓi = 14.83 t m	M = t m
Shearing force	Sd = — t	Sdℓi = — t	S = — t
Stress	σ_c = 26.2 kg/cm² σ_s = 379 〃 τ = — 〃	σ_c = 50.0 kg/cm² σ_s = 714 〃 τ = — 〃	σ_c = 50.0 kg/cm² σ_s = 714 〃 τ = — 〃
Allowable stress	σ_{ca} = 90kg/cm² σ_{sa} = 1,000 〃 τ_a = — 〃	σ_{ca} = 90kg/cm² σ_{sa} = 1800 〃 τ_a = — 〃	σ_{ca} = 90kg/cm² σ_{sa} = 1800 〃 τ_a = — 〃

1. Allowable stress applied for analysis of cracking

Static / Dynamic distinction

$$\alpha = \frac{\sigma \ell i}{\sigma d + \sigma \ell i} = \frac{714 - 379}{714} = 0.47 > 0.25$$

($\alpha \geq 0.25 \rightarrow$ Dynamic σ_{sa} = 1000kg/cm²,

$\alpha \leq 0.25 \rightarrow$ Static σ_{sa} = 1200kg/cm²)

2. Allowable stress of re-bar in terms of fatigue

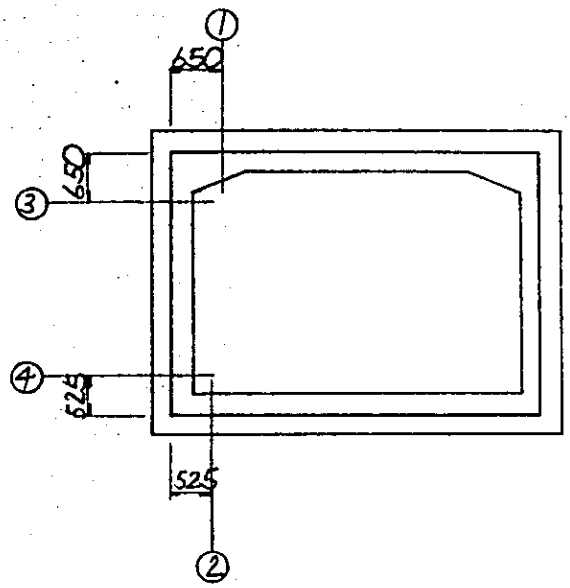
Span for fatigue analysis Ks-16 ℓ = 6.135 σ_{rao} = 1800 kg/cm²

$$\sigma_{sa} = \sigma_{min} + (1 - \sigma_{min} / 5000) \times \sigma_{rao}$$

$$= 379 + (1 - 379/5000) \times 1800 = 2040 \text{ kg/cm}^2$$

Calculation of shearing force

Sections of calculation of shearing stress



$$\tau = \frac{S}{b \cdot d}$$

b = 100 cm

h = Thickness of member

d″ = Thickness of concrete cover of tension bar

d = Effective height

Sections of calculation	cm h	cm d′	cm d = h-d′	kg S	kg / cm² τ	% ρ	kg / cm² τ a
1	50	7	43	19 650	4.6	0.76	6.2
2	55	9	46	23 290	5.1	0.76	6.2
3	50	7	43	3 910	0.9	0.76	6.2
4	50	7	43	5 490	1.3	0.76	6.2