

## BAB V

### KESIMPULAN

1. Struktur EBF (*Eccentric Brace Frame*) dengan balok link pendek cenderung mengembangkan perilaku irelastisnya melalui keluluhan gesernya, sedang struktur EBF dengan balok link panjang cenderung mengembangkan perilaku inelastisnya melalui keluluhan karena momen.
2. Untuk desain awal sebuah link, diperlukan estimasi gaya yang akan ditahan oleh link, sebagai berikut:

a. *Split K-Braced Frame* 
$$Vl = \frac{P.h}{L} + \frac{Q.e}{2} + \frac{Pl.a}{e}$$

b. *D-Braced Frame* 
$$Vl = \frac{P.h}{(L+e)} + Q + \frac{Pl.a}{e}$$

3. Daktilitas merupakan kemampuan struktur, komponen struktur, ataupun material untuk menahan dan mengembangkan deformasi yang besar tanpa kehilangan kekuatannya. Dapat dirumuskan sebagai berikut:

$$\mu = \frac{\Delta}{\Delta_y} \quad \text{dimana } \Delta = \Delta_y + \Delta_p$$

4. Profil dan panjang link yang sama, bila diaplikasikan pada struktur EBF yang berbeda tipe, akan memberi daktilitas batang dan daktilitas struktur yang berbeda. Hal ini disebabkan oleh perbedaan mekanisme dan efisiensi keseluruhan struktur dalam menyalurkan gaya-gaya ke dalam link sebagai gaya geser dan momen. Salah satu elemen yang berperan penting dalam penyaluran energi gempa ke dalam link adalah *eccentric bracing*.

5. Perubahan panjang link, secara mutlak akan mengubah bentuk histeresis loop dan daktilitas struktur EBF, dimana semakin panjang link struktur EBF semakin mampu menahan gaya lateral dan memiliki kemampuan deformasi struktur yang lebih besar, sehingga daktilitas struktur juga semakin besar.
6. Daktilitas batang pada tipe *Split K-Brace Frame* maupun tipe *D-Braced Frame* tidak mengalami perubahan yang besar terhadap perubahan panjang link, tetapi perubahan daktilitas struktur yang terjadi cukup besar terhadap perubahan panjang link, dimana tipe *Split K-Brace Frame* lebih responsif terhadap perubahan panjang link daripada tipe *D-Braced Frame*.
7. Prosedur perencanaan *Eccentric Brace Frame* pada daerah rawan gempa adalah :
  - a. Perencanaan berdasar kuat perlu struktur (*strength design*).
  - b. Perhitungan detail untuk memastikan struktur baja memberikan respon daktil yang baik.
  - c. Penggantian profil balok, kolom, maupun *bracing* agar balok link memberikan respon inelastis dan elemen frame yang lain tetap dalam keadaan elastis (*ductile design*).
12. Tujuan utama perencanaan daktil struktur EBF adalah agar balok link maksimal memberikan respon inelastis. Tujuan ini dapat diwujudkan bila dengan tepat menerapkan prosedur desain kapasitas, dengan kapasitas maksimum link sebagai dasar perencanaan, dimana kekuatan elemen frame yang lain disyaratkan minimal 125% terhadap kekuatan aktual link.

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Lampiran 1. Gaya Geser-Momen Link  
(Pembebanan Sesuai Daktilal Desain)

SHEAR - MOMEN LINK Lantai 3

e	0,05	0,10	0,15	0,20	0,25	0,50	0,75	0,76	1,00	1,25	1,50	1,75	2,00	2,25
V	226,45	227,00	225,11	224,83	228,25	230,59	232,87	232,98	235,12	237,35	239,55	241,72	251,85	245,93
M	-35,00	-38,07	-45,01	-47,78	-52,69	-77,73	-103,51	-104,76	-129,93	-156,94	-184,41	-212,42	-247,11	-269,55

	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75
	247,95	249,91	251,78	253,56	255,21	256,73	258,07	259,22	260,14	260,77	261,08	260,99	260,41	259,20
	-298,60	-327,90	-357,39	-387,01	-416,67	-446,28	-475,71	-504,84	-533,50	-561,50	-588,59	-614,45	-638,67	-658,05

	6,00	6,25	6,50	6,75	7,00	7,25	7,50	7,75
	257,28	254,33	250,03	243,86	235,09	222,84	206,84	189,49
	-679,84	-694,94	-704,46	-705,81	-695,54	-668,78	-621,83	-562,89

SHEAR - MOMEN LINK Lantai 2

e	0,05	0,10	0,15	0,20	0,25	0,50	0,75	0,76	1,00	1,25	1,50	1,75	2,00	2,25
V	377,17	376,12	375,64	375,56	379,02	381,32	383,56	383,65	385,68	387,71	389,58	391,26	400,73	393,95
M	-41,06	-47,59	-58,10	-64,94	-73,67	-117,77	-162,56	-164,73	-207,92	-253,75	-299,52	-346,32	-400,26	-432,26

	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75
	394,88	395,50	395,78	395,71	395,26	394,42	393,19	391,55	389,51	387,06	384,21	380,95	377,28	373,45
	-485,50	-531,35	-575,75	-621,40	-665,18	-707,91	-749,43	-739,56	-828,14	-865,02	-900,02	-933,00	-963,78	-988,66

	6,00	6,25	6,50	6,75	7,00	7,25	7,50	7,75
	368,75	363,91	358,72	353,32	347,97	343,28	340,32	339,99
	-1018,1	-1014,3	-1061,8	-1079,6	-1095,6	-1111,5	-1131,4	-1159,4

Lampiran 1. Gaya Geser-Momen Link  
(Pembebanan Sesuai Daktilail Desain)

SHEAR - MOMEN LINK Lantai 1

	0,05	0,10	0,15	0,20	0,25	0,50	0,75	0,76	1,00	1,25	1,50	1,75	2,00	2,25
e														
V	440,62	439,82	438,44	437,68	440,62	439,73	437,81	437,69	434,88	430,99	426,19	420,56	422,20	407,21
M	-42,95	-55,69	-66,46	-76,00	-86,17	-136,98	-187,37	-189,77	-236,87	-285,06	-331,58	-376,10	-427,24	-458,24

2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75
400,00	391,77	383,54	375,13	366,64	358,17	349,82	341,68	333,83	326,37	319,39	312,99	307,30	302,79
-495,55	-530,26	-562,36	-591,91	-619,02	-643,83	-666,55	-687,39	-706,63	-724,59	-741,63	-758,19	-774,82	-789,24

6,00	6,25	6,50	6,75	7,00	7,25	7,50	7,75
298,72	296,32	295,67	297,34	302,05	310,58	322,99	336,68
-811,25	-833,20	-859,77	-893,42	-937,42	-995,54	-1069,3	-1150,0

Lampiran 2. Gaya Geser-Momen Link Lantai 3  
(Shear-Momen Link Lantai 3, Tanpa Beban Merata Pada Link)

e	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	6,50	7,00	7,50
V	226,84	227,62	228,30	228,85	229,20	229,28	228,96	228,07	226,39	223,58	219,16	212,28	201,28	182,59	150,49
M	-58,47	-115,17	-172,28	-229,65	-287,11	-344,36	-400,98	-456,32	-509,44	-558,93	-602,60	-637,00	-654,35	-639,31	-564,58

(Shear-Momen Link Lantai 3, Dengan Beban Merata [50 Kn.m] Pada Link)

e	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	6,50	7,00	7,50
V	233,41	251,50	263,88	276,44	288,99	301,31	313,13	324,15	334,06	342,54	349,20	353,47	354,39	350,05	338,02
M	-125,15	-175,07	-224,12	-280,39	-340,21	-402,83	-467,32	-532,49	-596,87	-658,62	-715,35	-763,62	-797,71	-806,90	-775,36

Lampiran 3. Pengaruh Panjang Link pada Rotasi Link dan Deformasi Structure.

Analisis Lantai 3

Q	e	e/L	Momen Primer I	Momen Primer J	3EI	Momen Batang	Link Rotation	Structure Deformation
15	0,05	0,006	0,003125	-0,003125	62400	-35	2,804E-05	1,753E-07
15	0,1	0,013	0,0125	-0,0125	62400	-38,07	6,098E-05	7,622E-07
15	0,15	0,019	0,028125	-0,028125	62400	-45,01	1,081E-04	2,027E-06
15	0,2	0,025	0,05	-0,05	62400	-47,78	1,529E-04	3,823E-06
15	0,25	0,031	0,078125	-0,078125	62400	-52,69	2,106E-04	6,582E-06
15	0,5	0,063	0,3125	-0,3125	62400	-77,73	6,191E-04	3,869E-05
15	1	0,125	1,25	-1,25	62400	-129,93	2,052E-03	2,565E-04
15	1,5	0,188	2,8125	-2,8125	62400	-184,41	4,332E-03	8,122E-04
15	2	0,250	5	-5	62400	-247,11	7,680E-03	1,920E-03
15	2,5	0,313	7,8125	-7,8125	62400	-298,6	1,149E-02	3,592E-03
15	3	0,375	11,25	-11,25	62400	-357,39	1,637E-02	6,139E-03
15	3,5	0,438	15,3125	-15,3125	62400	-416,67	2,208E-02	9,661E-03
15	4	0,500	20	-20	62400	-475,71	2,857E-02	1,429E-02
15	4,5	0,563	25,3125	-25,3125	62400	-533,5	3,574E-02	2,010E-02
15	5	0,625	31,25	-31,25	62400	-588,59	4,341E-02	2,713E-02
15	5,5	0,688	37,8125	-37,8125	62400	-638,67	5,129E-02	3,526E-02
15	6	0,750	45	-45	62400	-679,84	5,888E-02	4,416E-02
15	6,5	0,813	52,8125	-52,8125	62400	-704,46	6,513E-02	5,292E-02
15	7	0,875	61,25	-61,25	62400	-695,54	6,772E-02	5,925E-02
15	7,5	0,938	70,3125	-70,3125	62400	-621,83	6,206E-02	5,818E-02





Lampiran 5. Pengaruh Beban-Merata terhadap Gaya Geser Link

Tabel 4. 8. a. Shear Link Lantai 3, P= 286 kN, Tanpa Beban Merata.

e	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1	1,1
P=286 kN/L3V	113,81	115,52	116,19	115,75	114,28	111,97	108,92	104,83	97,98	82,36	48,28

Tabel 4. 8. b. Shear Link Lantai 3, P= 286 kN, Dengan Beban Merata 50kN/m.

e	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1	1,1
P=286 kN/L3V	166,36	165,24	163,16	160,29	156,78	152,61	147,52	140,55	128,87	105,52	62,28

Tabel 4. 8. c. Shear Link Lantai 3, P= 286 kN, Dengan Beban Merata 100kN/m.

e	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,10
P=286 kN/L3V	221,37	218,66	214,54	209,65	204,84	199,42	193,15	184,72	170,76	143,68	96,09

Tabel 4. 8. d. Shear Link Lantai 3, P= 286 kN, Dengan Beban Merata 200kN/m.

e	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1	1,1
P=286 kN/L3V	332,59	325,49	317,31	306,97	300,95	293,05	284,42	273,07	254,54	220,35	132,72

Lampiran 6. Gaya Geser-Momen dan Rotasi Link dengan Panjang Link= 0,3 m dan 0,8m

Shear-Momen Link, Panjang Link = 0,3 m.		50	100	150	200	250	300	350	400	450	500	550
P(Gaya Lateral)												
Link Lt3	V	16,37	36,58	57,79	77,01	97,22	117,44	137,65	157,86	178,08	198,29	218,5
	M	-2,81	-8,1	-13,39	-18,69	-23,98	-29,27	-34,56	-39,85	-45,15	-50,44	-55,73
	γ	1,87E-04	1,65E-04	1,86E-04	3,60E-04	5,35E-04	7,10E-04	8,84E-04	1,10E-03	1,23E-03	1,41E-03	1,58E-03
Link Lt2	V	22,7	44,3	65,9	87,49	109,09	130,69	152,29	173,89	195,49	217,09	238,68
	M	-6,18	-11,45	-16,73	-22	-27,27	-32,55	-37,82	-43,09	-48,37	-53,64	-58,91
	γ	5,17E-04	8,67E-04	1,22E-03	1,57E-03	1,92E-03	2,27E-03	2,62E-03	3,00E-03	3,14E-03	3,70E-03	4,00E-04
Link Lt1	V	14,82	35,18	55,54	75,9	96,27	116,63	136,99	157,35	177,72	198,08	218,44
	M	-4,43	-9,48	-14,53	-19,59	-24,64	-29,7	-34,75	-39,8	-44,86	-49,91	-54,97
	γ	4,48E-04	7,30E-04	1,02E-03	1,31E-03	1,60E-03	1,89E-03	2,18E-03	2,46E-03	2,75E-03	3,04E-03	3,33E-03

Shear-Momen Link, Panjang Link = 0,8 m.		50	100	150	200	250	300	350	400	450	500	550
P(Gaya Lateral)												
Link Lt3	V	10,28	28,51	46,75	65	83,24	101,48	119,73	137,97	156,21	174,45	192,7
	M	-4,3	-13,5	-22,96	-32,29	-41,62	-50,95	-60,27	-69,6	-78,93	-88,26	-97,59
	γ	4,90E-06	2,84E-04	5,73E-04	8,60E-04	1,15E-03	1,44E-03	1,73E-03	2,02E-03	2,31E-03	2,50E-03	2,89E-03
Link Lt2	V	15,68	32,58	49,48	66,39	83,29	100,19	117,09	133,99	150,89	167,8	184,7
	M	-8,37	-16,74	-25,11	-33,48	-41,85	-50,22	-58,59	-66,96	-75,33	-83,7	-92,07
	γ	9,22E-04	1,63E-03	2,32E-03	3,03E-03	3,73E-03	4,44E-03	5,14E-03	5,84E-03	6,54E-03	7,25E-03	7,95E-03
Link Lt1	V	9,35	23,35	37,35	51,34	65,34	79,34	93,34	107,34	121,33	135,33	149,33
	M	-5,76	-12,63	-19,5	-26,37	-33,24	-40,12	-46,99	-53,86	-60,73	-67,6	-74,47
	γ	8,36E-04	1,48E-03	2,10E-03	2,75E-03	3,39E-03	4,03E-03	4,67E-03	5,30E-03	5,95E-03	6,59E-03	7,23E-03



Lampiran 8. Pengaruh Panjang Link terhadap Rotasi Link dan Deformasi Struktur

Analisis Lantai 3

e	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1	1,1
e/L	0,04	0,08	0,12	0,16	0,20	0,25	0,29	0,33	0,37	0,41	0,45
P=286 kN;L3V	110,91	111,75	111,78	110,73	108,72	105,79	101,86	96,23	86,99	67,36	28,46
M	-15,06	-21,65	-27,79	-33,4	-38,38	-42,67	-46,11	-48,33	-48,1	-41,8	-23,49
Link Rot. Str. Def.	7,39E-04	6,73E-04	6,61E-04	7,03E-04	7,98E-04	9,43E-04	1,13E-03	1,36E-03	1,64E-03	1,98E-03	2,36E-03
P=370,1 kN;L3V	144,24	145,63	145,77	144,61	142,17	138,56	133,76	127,06	115,65	91,48	42,59
M	-20,1	-28,68	-36,69	-44,03	-50,59	-56,26	-60,88	-64,02	-64,17	-56,75	-34
Link Rot. Str. Def.	1,09E-03	9,76E-04	9,56E-04	1,01E-03	1,13E-03	1,31E-03	1,55E-03	1,85E-03	2,20E-03	2,65E-03	3,13E-03
P=444,8 kN;L3V	173,81	175,65	175,97	174,69	171,87	167,67	162,06	154,31	141,1	112,91	55,13
M	-24,58	-34,92	-44,59	-53,48	-61,43	-68,33	-74	-77,96	-78,44	-70,04	-43,34
Link Rot. Str. Def.	1,35E-03	1,24E-03	1,22E-03	1,28E-03	1,42E-03	1,64E-03	1,93E-03	2,28E-03	2,70E-03	3,23E-03	3,82E-03
P=502,6 kN;L3V	196,69	198,88	199,34	197,97	194,86	190,19	183,99	175,4	160,6	129,48	64,94
M	-28,05	-39,75	-50,71	-60,79	-69,82	-77,67	-84,15	-88,75	-89,48	-80,31	-50,56
Link Rot. Str. Def.	1,57E-03	1,45E-03	1,42E-03	1,48E-03	1,65E-03	1,89E-03	2,22E-03	2,61E-03	3,09E-03	3,69E-03	4,35E-03
P=505,3 kN;L3V	197,76	199,96	200,43	199,06	195,93	191,24	185,01	176,39	161,72	130,26	65,29
M	-28,21	-39,97	-51	-61,13	-70,21	-78,1	-84,63	-89,25	-90	-80,79	-50,9
Link Rot. Str. Def.	1,58E-03	1,46E-03	1,43E-03	1,49E-03	1,66E-03	1,91E-03	2,23E-03	2,63E-03	3,11E-03	3,71E-03	4,38E-03
P=505,3 kN;L3V	6,48E-05	1,20E-04	1,76E-04	2,44E-04	3,40E-04	4,70E-04	6,40E-04	8,62E-04	1,15E-03	1,52E-03	1,97E-03

*JOINT DISPLACEMENT*  
*Tipe Split K-Braced Frame, e=0,3 m*

JOINT	LOAD	U1	U2	U3	R1	R2	R3
1	KOMB1	0	0	0	0	0	0
2	KOMB1	0,002282	0	-0,00014	0	0,001888	0
3	KOMB1	0,004507	0	-0,00038	0	0,001728	0
4	KOMB1	0,006307	0	-0,00072	0	0,001435	0
5	KOMB1	0,006674	0	-0,00079	0	0,001446	0
6	KOMB1	0	0	0	0	0	0
7	KOMB1	0,002303	0	-0,00059	0	0,001988	0
8	KOMB1	0,0047	0	-0,00107	0	0,001932	0
9	KOMB1	0,006614	0	-0,00143	0	0,000557	0
10	KOMB1	0,006681	0	-0,00151	0	3,15E-05	0
11	KOMB1	0,006295	0	-0,00119	0	-0,00078	0
12	KOMB1	0,00633	0	-0,00055	0	-0,00057	0
13	KOMB1	0,004262	0	-0,00101	0	-0,0018	0
14	KOMB1	0,004284	0	0,000243	0	-0,00159	0
15	KOMB1	0,002084	0	-0,0006	0	-0,00194	0
16	KOMB1	0,002085	0	0,000544	0	-0,00169	0

Frame Forces

Tipe Split K-Braced Frame,  $e=0,3\text{ m}$

FRAME	LOAD	STATION	P	V2	V3	M3
1	KOMB1	0	-168,778	65,79789	1,63E-16	99,93307
1	KOMB1	0,745	-168,257	65,79789	1,63E-16	50,91364
1	KOMB1	1,49	-167,735	65,79789	1,63E-16	1,894217
2	KOMB1	0	-302,999	11,47236	4,6E-16	2,320612
2	KOMB1	0,585	-302,675	11,47236	4,6E-16	-4,39072
2	KOMB1	1,17	-302,35	11,47236	4,6E-16	-11,1021
3	KOMB1	0	-420,404	-5,26567	1,48E-16	-11,1559
3	KOMB1	0,585	-420,08	-5,26567	1,48E-16	-8,07548
3	KOMB1	1,17	-419,755	-5,26567	1,48E-16	-4,99506
4	KOMB1	0	-416,143	5,563438	-2,7E-17	2,338243
4	KOMB1	0,125	-416,065	5,563438	-2,7E-17	1,642815
4	KOMB1	0,25	-415,987	5,563438	-2,7E-17	0,947384
5	KOMB1	0	-723,326	61,77806	-2,6E-16	99,63585
5	KOMB1	0,745	-723,405	61,77806	-2,6E-16	53,61119
5	KOMB1	1,49	-722,884	61,77806	-2,6E-16	7,586537
6	KOMB1	0	-587,05	10,85147	-5,7E-16	4,814088
6	KOMB1	0,585	-586,725	10,85147	-5,7E-16	-1,53402
6	KOMB1	1,17	-586,401	10,85147	-5,7E-16	-7,88213
7	KOMB1	0	-450,459	48,13457	-1,2E-16	-9,68163
7	KOMB1	0,585	-450,134	48,13457	-1,2E-16	-37,8404
7	KOMB1	1,17	-449,81	48,13457	-1,2E-16	-65,9991
8	KOMB1	0	-476,063	-5,56344	2,7E-17	-75,4405
8	KOMB1	0,125	-475,985	-5,56344	2,7E-17	-74,7451
8	KOMB1	0,25	-475,907	-5,56344	2,7E-17	-74,0497
9	KOMB1	0	5,563438	-415,987	5,04E-14	-0,94738
9	KOMB1	0,61	5,563438	29,48665	-3,5E-15	48,85011
9	KOMB1	1,22	5,563438	29,95994	-3,6E-15	30,7189
9	KOMB1	1,83	5,563438	30,43322	-3,7E-15	12,29898
9	KOMB1	2,44	5,563438	475,9065	-5,8E-14	-74,0497
10	KOMB1	0	-10,8291	-3,61243	2,63E-16	7,333303
10	KOMB1	0,2675	-10,8291	-3,51523	2,51E-16	8,286629
10	KOMB1	0,535	-10,8291	-3,41803	2,39E-16	9,213932
10	KOMB1	0,8025	-10,8291	-3,32084	2,28E-16	10,11528
10	KOMB1	1,07	-10,8291	-3,22364	2,16E-16	10,9906
11	KOMB1	0	110,735	124,5851	-1,5E-14	15,55034
11	KOMB1	0,075	110,735	124,6124	-1,5E-14	6,205432
11	KOMB1	0,15	110,735	124,6396	-1,5E-14	-3,14152
11	KOMB1	0,225	110,735	124,6669	-1,5E-14	-12,4905
11	KOMB1	0,3	110,735	124,6941	-1,5E-14	-21,8416
12	KOMB1	0	251,302	-26,6418	3,08E-15	-18,8573
12	KOMB1	0,2675	251,302	-26,5446	3,06E-15	-11,7436
12	KOMB1	0,535	251,302	-26,4474	3,05E-15	-4,65591
12	KOMB1	0,8025	251,302	-26,3502	3,04E-15	2,405766
12	KOMB1	1,07	251,302	-26,253	3,03E-15	9,441442
13	KOMB1	0	-104,826	-9,47678	7,8E-16	1,009649

Frame Forces

Type Split K-Braced Frame,  $e=0,3\text{ m}$

13	KOMB1	0,2675	-104,826	-9,42972	7,74E-16	3,538394
13	KOMB1	0,535	-104,826	-9,38267	7,69E-16	6,054551
13	KOMB1	0,8025	-104,826	-9,33561	7,63E-16	8,55812
13	KOMB1	1,07	-104,826	-9,28855	7,57E-16	11,0491
14	KOMB1	0	33,95847	133,23	-1,6E-14	18,64739
14	KOMB1	0,15	33,95847	133,2564	-1,6E-14	-1,33909
14	KOMB1	0,225	33,95847	133,2696	-1,6E-14	-11,3338
14	KOMB1	0,3	33,95847	133,2828	-1,6E-14	-21,3295
15	KOMB1	0	177,8501	-15,8597	1,44E-15	-14,4708
15	KOMB1	0,2675	177,8501	-15,8127	1,43E-15	-10,2346
15	KOMB1	0,535	177,8501	-15,7656	1,43E-15	-6,01104
15	KOMB1	0,8025	177,8501	-15,7186	1,42E-15	-1,80004
15	KOMB1	1,07	177,8501	-15,6715	1,42E-15	2,398386
16	KOMB1	0	-84,459	-6,97727	9,6E-16	2,859733
16	KOMB1	0,2675	-84,459	-6,93021	9,55E-16	4,719858
16	KOMB1	0,535	-84,459	-6,88315	9,49E-16	6,567395
16	KOMB1	0,8025	-84,459	-6,83609	9,43E-16	8,402344
16	KOMB1	1,07	-84,459	-6,78904	9,38E-16	10,2247
17	KOMB1	0	1,805148	106,6322	-1,3E-14	14,43895
17	KOMB1	0,075	1,805148	106,6454	-1,3E-14	6,441046
17	KOMB1	0,15	1,805148	106,6585	-1,3E-14	-1,55785
17	KOMB1	0,225	1,805148	106,6717	-1,3E-14	-9,55774
17	KOMB1	0,3	1,805148	106,6849	-1,3E-14	-17,5536
18	KOMB1	0	92,96502	-13,7746	1,68E-15	-13,6291
18	KOMB1	0,2675	92,96502	-13,7275	1,68E-15	-9,95065
18	KOMB1	0,535	92,96502	-13,6805	1,67E-15	-6,28483
18	KOMB1	0,8025	92,96502	-13,6334	1,67E-15	-2,6316
18	KOMB1	1,07	92,96502	-13,5864	1,66E-15	1,009044
19	KOMB1	0	176,1498	-3,64038	4,96E-16	-1,0635
19	KOMB1	0,792748	176,2523	-3,54667	4,85E-16	1,785261
19	KOMB1	1,585497	176,3547	-3,45297	4,74E-16	4,559738
20	KOMB1	0	198,6263	-6,42083	9,59E-16	-2,43334
20	KOMB1	0,792748	198,7287	-6,32712	9,48E-16	2,61962
20	KOMB1	1,585497	198,8312	-6,23342	9,36E-16	7,598292
21	KOMB1	0	142,2401	-4,05739	6,15E-16	-3,09365
21	KOMB1	0,917197	142,3426	-3,98382	6,06E-16	0,594037
21	KOMB1	1,834394	142,445	-3,91026	5,97E-16	4,214248
22	KOMB1	0	-206,746	1,4108	-1,4E-16	-0,59889
22	KOMB1	0,792748	-206,643	1,504504	-1,5E-16	-1,75444
22	KOMB1	1,585497	-206,541	1,598209	-1,6E-16	-2,98428
23	KOMB1	0	-207,371	5,344409	-3,5E-16	1,763405
23	KOMB1	0,792748	-207,268	5,438113	-3,6E-16	-2,51051
23	KOMB1	1,585497	-207,166	5,531817	-3,7E-16	-6,85871
24	KOMB1	0	-151,223	3,634239	-2,1E-16	2,872024
24	KOMB1	0,917197	-151,12	3,707805	-2,2E-16	-0,49503
24	KOMB1	1,834394	-151,018	3,781371	-2,3E-16	-3,92955

*Joint Displacement*  
*Type Split K-Braced Frame, e=0,8 m*

JOINT	LOAD	U1	U2	U3	R1	R2	R3
1	KOMB1	0	0	0	0	0	0
2	KOMB1	0,005343	0	-9E-05	0	0,00479	0
3	KOMB1	0,011355	0	-0,0003	0	0,004618	0
4	KOMB1	0,01579	0	-0,00065	0	0,002781	0
5	KOMB1	0,016461	0	-0,0007	0	0,002337	0
6	KOMB1	0	0	0	0	0	0
7	KOMB1	0,005361	0	-0,00064	0	0,004903	0
8	KOMB1	0,011565	0	-0,00114	0	0,004868	0
9	KOMB1	0,016172	0	-0,00149	0	0,001897	0
10	KOMB1	0,01649	0	-0,00158	0	0,000891	0
11	KOMB1	0,015779	0	-0,00243	0	-0,00103	0
12	KOMB1	0,015898	0	0,000763	0	-0,00058	0
13	KOMB1	0,011155	0	-0,00327	0	-0,00169	0
14	KOMB1	0,01122	0	0,002529	0	-0,00119	0
15	KOMB1	0,005219	0	-0,00217	0	-0,00186	0
16	KOMB1	0,005222	0	0,002103	0	-0,0013	0



Frame Forces

Tipe Split K-Braced Frame,  $e=0,8\text{ m}$

FRAME	LOAD	STATION	P	V2	V3	M3
1	KOMB1	0	-110,304	133,4629	2,4E-16	228,5898
1	KOMB1	0,745	-109,783	133,4629	2,4E-16	129,1599
1	KOMB1	1,49	-109,261	133,4629	2,4E-16	29,73009
2	KOMB1	0	-265,749	53,37764	1,03E-15	26,50257
2	KOMB1	0,585	-265,425	53,37764	1,03E-15	-4,72335
2	KOMB1	1,17	-265,1	53,37764	1,03E-15	-35,9493
3	KOMB1	0	-420,044	11,18329	3,51E-16	-43,9882
3	KOMB1	0,585	-419,72	11,18329	3,51E-16	-50,5304
3	KOMB1	1,17	-419,395	11,18329	3,51E-16	-57,0726
4	KOMB1	0	-361,513	24,47794	-6,8E-17	-60,1526
4	KOMB1	0,125	-361,435	24,47794	-6,8E-17	-63,2124
4	KOMB1	0,25	-361,357	24,47794	-6,8E-17	-66,2721
5	KOMB1	0	-778,622	128,4824	-3,4E-16	227,9335
5	KOMB1	0,745	-778,101	128,4824	-3,4E-16	132,2141
5	KOMB1	1,49	-777,58	128,4824	-3,4E-16	36,49467
6	KOMB1	0	-619,912	51,22223	-1,1E-15	29,00013
6	KOMB1	0,585	-619,588	51,22223	-1,1E-15	-0,96488
6	KOMB1	1,17	-619,263	51,22223	-1,1E-15	-30,9299
7	KOMB1	0	-438,56	68,14055	-3E-16	-41,8505
7	KOMB1	0,585	-438,236	68,14055	-3E-16	-81,7128
7	KOMB1	1,17	-437,911	68,14055	-3E-16	-121,575
8	KOMB1	0	-530,693	-24,4779	6,77E-17	-146,246
8	KOMB1	0,125	-530,614	-24,4779	6,77E-17	-143,186
8	KOMB1	0,25	-530,536	-24,4779	6,77E-17	-140,127
9	KOMB1	0	24,47794	-361,357	4,38E-14	66,27211
9	KOMB1	0,61	24,47794	84,11633	-1E-14	82,7455
9	KOMB1	1,22	24,47794	84,58961	-1E-14	31,29019
9	KOMB1	1,83	24,47794	85,06289	-1E-14	-20,4538
9	KOMB1	2,44	24,47794	530,5362	-6,4E-14	-140,127
10	KOMB1	0	-13,2947	-57,8821	6,59E-15	-3,07999
10	KOMB1	0,205	-13,2947	-57,8076	6,58E-15	8,778194
10	KOMB1	0,41	-13,2947	-57,7331	6,57E-15	20,62111
10	KOMB1	0,615	-13,2947	-57,6586	6,56E-15	32,44875
10	KOMB1	0,82	-13,2947	-57,5841	6,56E-15	44,26113
11	KOMB1	0	140,7565	145,2705	-1,8E-14	55,66813
11	KOMB1	0,2	140,7565	145,3432	-1,8E-14	26,60676
11	KOMB1	0,4	140,7565	145,4159	-1,8E-14	-2,46915
11	KOMB1	0,6	140,7565	145,4885	-1,8E-14	-31,5596
11	KOMB1	0,8	140,7565	145,5612	-1,8E-14	-60,6646
12	KOMB1	0	316,3815	-93,0794	1,0E-14	-51,5319
12	KOMB1	0,205	316,3815	-93,0049	1,09E-14	-32,4562
12	KOMB1	0,41	316,3815	-92,9304	1,09E-14	-13,3999
12	KOMB1	0,615	316,3815	-92,8559	1,09E-14	5,643209
12	KOMB1	0,82	316,3815	-92,7814	1,09E-14	24,67107
13	KOMB1	0	-111,857	-47,6604	5,18E-15	-5,44422

*Frame Forces*  
*Tipe Split K-Braced Frame, e=0,8 m*

13	KOMB1	0,205	-111,857	-47,6243	5,18E-15	4,322459
13	KOMB1	0,41	-111,857	-47,5882	5,17E-15	14,08174
13	KOMB1	0,615	-111,857	-47,5522	5,17E-15	23,83363
13	KOMB1	0,82	-111,857	-47,5161	5,17E-15	33,57813
14	KOMB1	0	37,48827	132,9614	-1,6E-14	52,05719
14	KOMB1	0,4	37,48827	133,0318	-1,6E-14	-1,14144
14	KOMB1	0,6	37,48827	133,0669	-1,6E-14	-27,7513
14	KOMB1	0,8	37,48827	133,1021	-1,6E-14	-54,3682
15	KOMB1	0	192,5433	-58,3319	6,37E-15	-37,413
15	KOMB1	0,205	192,5433	-58,2959	6,36E-15	-25,4587
15	KOMB1	0,41	192,5433	-58,2598	6,36E-15	-13,5117
15	KOMB1	0,615	192,5433	-58,2237	6,35E-15	-1,57217
15	KOMB1	0,82	192,5433	-58,1877	6,35E-15	10,36
16	KOMB1	0	-69,2598	-23,7394	3,16E-15	5,138259
16	KOMB1	0,205	-69,2598	-23,7034	3,15E-15	10,00115
16	KOMB1	0,41	-69,2598	-23,6673	3,15E-15	14,85664
16	KOMB1	0,615	-69,2598	-23,6313	3,14E-15	19,70475
16	KOMB1	0,82	-69,2598	-23,5952	3,14E-15	24,54546
17	KOMB1	0	1,632246	85,90627	-9,7E-15	33,09805
17	KOMB1	0,2	1,632246	85,94144	-9,7E-15	15,91327
17	KOMB1	0,4	1,632246	85,97663	-9,8E-15	-1,27854
17	KOMB1	0,6	1,632246	86,01182	-9,8E-15	-18,4774
17	KOMB1	0,8	1,632246	86,047	-9,8E-15	-35,6833
18	KOMB1	0	77,79482	-34,1609	4,32E-15	-27,839
18	KOMB1	0,205	77,79482	-34,1249	4,31E-15	-20,8397
18	KOMB1	0,41	77,79482	-34,0888	4,31E-15	-13,8478
18	KOMB1	0,615	77,79482	-34,0527	4,3E-15	-6,86326
18	KOMB1	0,82	77,79482	-34,0167	4,3E-15	0,113854
19	KOMB1	0	254,3282	-9,87184	1,11E-15	-2,5947
19	KOMB1	0,71437	254,4307	-9,80002	1,1E-15	4,431798
19	KOMB1	1,428741	254,5332	-9,72821	1,09E-15	11,40699
20	KOMB1	0	233,3026	-18,861	2,79E-15	-8,36578
20	KOMB1	0,71437	233,405	-18,7892	2,78E-15	5,082295
20	KOMB1	1,428741	233,5075	-18,7174	2,77E-15	18,47907
21	KOMB1	0	129,9087	-9,42522	1,52E-15	-7,38133
21	KOMB1	0,850368	130,0111	-9,36884	1,51E-15	0,609602
21	KOMB1	1,700735	130,1135	-9,31246	1,5E-15	8,552588
22	KOMB1	0	-296,425	6,712722	-9,5E-16	0,56065
22	KOMB1	0,71437	-296,323	6,784534	-9,6E-16	-4,26037
22	KOMB1	1,428741	-296,22	6,856344	-9,7E-16	-9,13269
23	KOMB1	0	-245,962	16,96129	-1,4E-15	7,380695
23	KOMB1	0,71437	-245,859	17,0331	-1,4E-15	-4,7616
23	KOMB1	1,428741	-245,757	17,10491	-1,5E-15	-16,9552
24	KOMB1	0	-142,239	8,655066	-5,7E-16	6,971552
24	KOMB1	0,850368	-142,137	8,711443	-5,8E-16	-0,41241
24	KOMB1	1,700735	-142,035	8,767821	-5,8E-16	-7,84431

*Joint Displacement*

*Type D-Braced Frame, e=0,3 m*

JOINT	LOAD	U1	U2	U3	R1	R2	R3
1	KOMBO1	0	0	0	0	0	0
2	KOMBO1	0,002871	0	-0,00014	0	0,002086	0
3	KOMBO1	0,005744	0	-0,00038	0	0,001951	0
4	KOMBO1	0,008049	0	-0,00071	0	0,001708	0
5	KOMBO1	0,008433	0	-0,00078	0	0,001657	0
6	KOMBO1	0	0	0	0	0	0
7	KOMBO1	0,002352	0	-0,0007	0	0,001922	0
8	KOMBO1	0,005347	0	-0,00129	0	0,002308	0
9	KOMBO1	0,008242	0	-0,00178	0	0,000731	0
10	KOMBO1	0,008397	0	-0,00185	0	0,000212	0
11	KOMBO1	0,00815	0	-0,00202	0	-7,6E-05	0
12	KOMBO1	0,005776	0	-0,00028	0	0,000285	0
13	KOMBO1	0,005292	0	-0,00144	0	0,000147	0
14	KOMBO1	0,002911	0	6,78E-05	0	6,77E-05	0
15	KOMBO1	0,002365	0	-0,0009	0	-0,00012	0
16	KOMBO1	0	0	0	0	0	0

Frame Forces

Tipe D-Braced Frame,  $e=0,3\text{ m}$

FRAME	LOAD	STATION	P	V2	V3	M3
1	KOMBO1	0	-168,714	99,07649	0	130,0562
1	KOMBO1	0,745	-168,193	99,07649	0	56,24421
1	KOMBO1	1,49	-167,672	99,07649	0	-17,5678
2	KOMBO1	0	-299,297	53,61179	0	27,66158
2	KOMBO1	0,585	-298,972	53,61179	0	-3,70132
2	KOMBO1	1,17	-298,648	53,61179	0	-35,0642
3	KOMBO1	0	-411,891	17,26753	0	3,421117
3	KOMBO1	0,585	-411,566	17,26753	0	-6,68039
3	KOMBO1	1,17	-411,242	17,26753	0	-16,7819
4	KOMBO1	0	-412,843	-29,5273	0	-11,0158
4	KOMBO1	0,125	-412,765	-29,5273	0	-7,32485
4	KOMBO1	0,25	-412,687	-29,5273	0	-3,63394
5	KOMBO1	0	-853,992	69,18947	0	103,3858
5	KOMBO1	0,745	-853,47	69,18947	0	51,8397
5	KOMBO1	1,49	-852,949	69,18947	0	0,293546
6	KOMBO1	0	-733,859	54,50503	0	42,50347
6	KOMBO1	0,585	-733,534	54,50503	0	10,61802
6	KOMBO1	1,17	-733,21	54,50503	0	-21,2674
7	KOMBO1	0	-599,909	117,3266	0	25,24124
7	KOMBO1	0,585	-599,584	117,3266	0	-43,3948
7	KOMBO1	1,17	-599,26	117,3266	0	-112,031
8	KOMBO1	0	-479,363	29,52727	0	-70,1385
8	KOMBO1	0,125	-479,285	29,52727	0	-73,8294
8	KOMBO1	0,25	-479,207	29,52727	0	-77,5203
9	KOMBO1	0	-29,5273	-412,687	5,34E-14	3,633942
9	KOMBO1	0,61	-29,5273	32,78666	-5,1E-16	51,41843
9	KOMBO1	1,22	-29,5273	33,25994	-5,7E-16	31,27422
9	KOMBO1	1,83	-29,5273	33,73323	-6,3E-16	10,8413
9	KOMBO1	2,44	-29,5273	479,2065	-5,5E-14	-77,5203
10	KOMBO1	0	46,7948	1,601177	-3,9E-17	5,766132
10	KOMBO1	0,51	46,7948	1,786488	-6,2E-17	4,902278
10	KOMBO1	1,02	46,7948	1,9718	-8,4E-17	3,943914
10	KOMBO1	1,53	46,7948	2,157112	-1,1E-16	2,891042
10	KOMBO1	2,04	46,7948	2,342423	-1,3E-16	1,74366
11	KOMBO1	0	218,2007	119,7518	-1,7E-14	6,037434
11	KOMBO1	0,075	218,2007	119,779	-1,7E-14	-2,94497
11	KOMBO1	0,15	218,2007	119,8063	-1,7E-14	-11,9294
11	KOMBO1	0,225	218,2007	119,8335	-1,7E-14	-20,9159
11	KOMBO1	0,3	218,2007	119,8608	-1,7E-14	-29,9045
12	KOMBO1	0,1	36,34427	113,2605	-6,3E-15	27,16016
12	KOMBO1	0,175	36,34427	113,2737	-6,3E-15	18,66513
12	KOMBO1	0,25	36,34427	113,2869	-6,3E-15	10,16911
12	KOMBO1	0,325	36,34427	113,3001	-6,3E-15	1,672096
12	KOMBO1	0,4	36,34427	113,3133	-6,3E-15	-6,82591
13	KOMBO1	0	-135,062	-3,74321	8,38E-17	-2,83677

*Frame Forces*

*Tipe D-Braced Frame, e=0,3 m*

13	KOMBO1	0,41	-135,062	-3,67108	7,5E-17	-1,31684
13	KOMBO1	0,82	-135,062	-3,59895	6,63E-17	0,17352
13	KOMBO1	1,23	-135,062	-3,52683	5,75E-17	1,634306
13	KOMBO1	1,64	-135,062	-3,4547	4,88E-17	3,065519
14	KOMBO1	0	62,82155	133,2304	-7,4E-15	6,797573
14	KOMBO1	0,075	62,82155	133,2436	-7,4E-15	-3,1952
14	KOMBO1	0,15	62,82155	133,2568	-7,4E-15	-13,189
14	KOMBO1	0,225	62,82155	133,27	-7,4E-15	-23,1937
14	KOMBO1	0,3	62,82155	133,2832	-7,4E-15	-33,1795
15	KOMBO1	0,1	45,4647	131,6428	-7,3E-15	32,06596
15	KOMBO1	0,175	45,4647	131,656	-7,3E-15	22,19226
15	KOMBO1	0,25	45,4647	131,6691	-7,3E-15	12,31757
15	KOMBO1	0,325	45,4647	131,6823	-7,3E-15	2,441893
15	KOMBO1	0,4	45,4647	131,6955	-7,3E-15	-7,43478
16	KOMBO1	0	-152,419	-4,63671	1E-16	-3,51772
16	KOMBO1	0,41	-152,419	-4,56458	9,15E-17	-1,63145
16	KOMBO1	0,82	-152,419	-4,49246	8,27E-17	0,225239
16	KOMBO1	1,23	-152,419	-4,42033	7,4E-17	2,05236
16	KOMBO1	1,64	-152,419	-4,34821	6,53E-17	3,849909
17	KOMBO1	0	-14,6844	119,0199	-6,6E-15	5,412097
17	KOMBO1	0,075	-14,6844	119,0331	-6,6E-15	-3,51489
17	KOMBO1	0,15	-14,6844	119,0462	-6,6E-15	-12,4429
17	KOMBO1	0,225	-14,6844	119,0594	-6,6E-15	-21,3718
17	KOMBO1	0,3	-14,6844	119,0726	-6,6E-15	-30,3018
18	KOMBO1	0	207,5189	-4,25512	5,15E-16	-3,98914
18	KOMBO1	1,007286	207,6214	-4,1115	4,98E-16	0,224651
18	KOMBO1	2,014572	207,7238	-3,96788	4,81E-16	4,293774
19	KOMBO1	0	240,268	-3,94051	4,77E-16	-3,91706
19	KOMBO1	1,007286	240,3704	-3,79689	4,6E-16	-0,02017
19	KOMBO1	2,014572	240,4729	-3,65327	4,42E-16	3,732054
20	KOMBO1	0	184,6968	-1,53434	1,86E-16	-1,58775
20	KOMBO1	1,107892	184,7992	-1,42159	1,72E-16	0,049681
20	KOMBO1	2,215784	184,9017	-1,30883	1,59E-16	1,562187

*Joint Displacement*

*Tipe D-Braced Frame, e=0,8 m*

JOINT	LOAD	U1	U2	U3	R1	R2	R3
1	KOMBO1	0	0	0	0	0	0
2	KOMBO1	0,004709	0	-0,00014	0	0,00379	0
3	KOMBO1	0,010338	0	-0,00038	0	0,00409	0
4	KOMBO1	0,01507	0	-0,00069	0	0,002928	0
5	KCMBO1	0,015711	0	-0,00074	0	0,002503	0
6	KOMBO1	0	0	0	0	0	0
7	KOMBO1	0,004625	0	-0,00072	0	0,00387	0
8	KOMBO1	0,010464	0	-0,00135	0	0,004203	0
9	KOMBO1	0,015412	0	-0,00188	0	0,00128	0
10	KOMBO1	0,015675	0	-0,00196	0	0,000527	0
11	KOMBO1	0,015225	0	-0,00293	0	-0,00052	0
12	KOMBO1	0,010419	0	-0,00085	0	0,001239	0
13	KOMBO1	0,010336	0	-0,0021	0	0,000188	0
14	KOMBO1	0,004778	0	0,00024	0	0,000881	0
15	KOMBO1	0,004652	0	-0,00113	0	-8,9E-05	0
16	KOMBO1	0	0	0	0	0	0

Frame Forces  
 Tipe D-Braced Frame,  $e=0,8\text{ m}$

FRAME	LOAD	STATION	P	V2	V3	M3
1	KOMBO1	0	-172,613	141,7889	0	207,8423
1	KOMBO1	0,745	-172,092	141,7889	0	102,2096
1	KOMBO1	1,49	-171,571	141,7889	0	-3,42312
2	KOMBO1	0	-289,398	106,8939	0	70,77855
2	KOMBO1	0,585	-289,073	106,8939	0	8,245629
2	KOMBO1	1,17	-288,749	106,8939	0	-54,2873
3	KOMBO1	0	-332,996	65,75379	0	6,49302
3	KOMBO1	0,585	-382,671	65,75379	0	-31,973
3	KOMBO1	1,17	-382,347	65,75379	0	-70,4389
4	KOMBO1	0	-377,464	-29,8203	0	-64,1283
4	KOMBO1	0,125	-377,386	-29,8203	0	-60,4007
4	KOMBO1	0,25	-377,308	-29,8203	0	-56,6732
5	KOMBO1	0	-885,857	130,9989	0	201,9457
5	KOMBO1	0,745	-885,336	130,9989	0	104,3516
5	KOMBO1	1,49	-884,815	130,9989	0	6,75741
6	KOMBO1	0	-777,67	117,2134	0	77,73398
6	KOMBO1	0,585	-777,345	117,2134	0	9,164114
6	KOMBO1	1,17	-777,021	117,2134	0	-59,4058
7	KOMBO1	0	-643,686	182,6671	0	26,45451
7	KOMBO1	0,585	-643,362	182,6671	0	-80,4057
7	KOMBO1	1,17	-643,037	182,6671	0	-187,266
8	KOMBO1	0	-514,742	29,82025	0	-103,35
8	KOMBO1	0,125	-514,664	29,82025	0	-107,078
8	KOMBO1	0,25	-514,585	29,82025	0	-110,806
9	KOMBO1	0	-29,8203	-377,308	5,28E-14	56,6732
9	KOMBO1	0,61	-29,8203	68,16552	-1,1E-15	82,87657
9	KOMBO1	1,22	-29,8203	68,63881	-1,2E-15	41,15126
9	KOMBO1	1,83	-29,8203	69,11209	-1,2E-15	-0,86277
9	KOMBO1	2,44	-29,8203	514,5854	-5,5E-14	-110,306
10	KOMBO1	0	95,57404	-4,88273	2,44E-16	6,310659
10	KOMBO1	0,385	95,57404	-4,74284	2,27E-16	8,163582
10	KOMBO1	0,77	95,57404	-4,60295	2,1E-16	9,962646
10	KOMBO1	1,155	95,57404	-4,46306	1,94E-16	11,70785
10	KOMBO1	1,54	95,57404	-4,32316	1,77E-16	13,3992
11	KOMBO1	0	196,1532	127,9685	-9,2E-15	31,40327
11	KOMBO1	0,16875	196,1532	128,0298	-9,2E-15	9,803417
11	KOMBO1	0,3375	196,1532	128,0911	-9,2E-15	-11,8068
11	KOMBO1	0,50625	196,1532	128,1524	-9,2E-15	-33,4273
11	KOMBO1	0,675	196,1532	128,2137	-9,2E-15	-55,0582
12	KOMBO1	0,225	41,14009	94,28651	-2,5E-15	39,5703
12	KOMBO1	0,39375	41,14009	94,31619	-2,5E-15	23,65695
12	KOMBO1	0,5625	41,14009	94,34588	-2,5E-15	7,73859
12	KOMBO1	0,73125	41,14009	94,37556	-2,5E-15	-8,18478
12	KOMBO1	0,9	41,14009	94,40525	-2,5E-15	-24,1132
13	KOMBO1	0	-59,439	-37,6528	1,04E-15	-9,05157

*Frame Forces*  
*Type D-Braced Frame, e=0,8 m*

13	KOMBO1	0,16	-59,439	-37,6247	1,04E-15	-3,00937
13	KOMBO1	0,32	-59,439	-37,5965	1,03E-15	3,008328
13	KOMBO1	0,48	-59,439	-37,5684	1,03E-15	9,021521
13	KOMBO1	0,64	-59,439	-37,5402	1,03E-15	15,03021
14	KOMBO1	0	65,45364	133,1761	-3,5E-15	34,0695
14	KOMBO1	0,16875	65,45364	133,2058	-3,5E-15	11,59353
14	KOMBO1	0,3375	65,45364	133,2355	-3,5E-15	-10,8875
14	KOMBO1	0,50625	65,45364	133,2652	-3,5E-15	-33,3735
14	KOMBO1	0,675	65,45364	133,2949	-3,5E-15	-55,8645
15	KOMBO1	0,225	34,89497	117,8669	-3,1E-15	47,68808
15	KOMBO1	0,39375	34,89497	117,8965	-3,1E-15	27,79354
15	KOMBO1	0,5625	34,89497	117,9262	-3,1E-15	7,896
15	KOMBO1	0,73125	34,89497	117,9559	-3,1E-15	-12,0066
15	KOMBO1	0,9	34,89497	117,9856	-3,1E-15	-31,9141
16	KOMBO1	0	-89,9977	-52,4972	1,45E-15	-14,0127
16	KOMBO1	0,16	-89,9977	-52,469	1,44E-15	-5,61542
16	KOMBO1	0,32	-89,9977	-52,4409	1,44E-15	2,777377
16	KOMBO1	0,48	-89,9977	-52,4128	1,44E-15	11,16567
16	KOMBO1	0,64	-89,9977	-52,3846	1,43E-15	19,54346
17	KOMBO1	0	-13,7854	106,9867	-2,8E-15	25,36272
17	KOMBO1	0,16875	-13,7854	107,0164	-2,8E-15	7,326209
17	KOMBO1	0,3375	-13,7854	107,0461	-2,8E-15	-10,7353
17	KOMBO1	0,50625	-13,7854	107,0758	-2,8E-15	-28,8019
17	KOMBO1	0,675	-13,7854	107,1055	-2,8E-15	-46,8734
18	KOMBO1	0	164,1256	-24,8653	3,01E-15	-15,0916
18	KOMBO1	0,666802	164,2281	-24,8092	3E-15	1,479926
18	KOMBO1	1,333604	164,3305	-24,7532	3E-15	18,00407
19	KOMBO1	0	209,5046	-27,756	3,36E-15	-17,9014
19	KOMBO1	0,666802	209,607	-27,6999	3,35E-15	0,587634
19	KOMBO1	1,333604	209,7095	-27,6439	3,35E-15	19,0393
20	KOMBO1	0	176,3078	-7,21578	8,74E-16	-5,79675
20	KOMBO1	0,810818	176,4102	-7,17178	8,69E-16	0,036097
20	KOMBO1	1,621635	176,5127	-7,12778	8,63E-16	5,833264