İSTANBUL TEKNİK ÜNİVERSİTESİ ★ FEN BİLİMLERİ ENSTİTÜSÜ

ÇOK KATLI BETONARME BİR YAPININ PROJELENDİRİLMESİ

YÜKSEK LİSANS TEZİ

İnş. Müh. Mehmet KARA

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Tez Danışmanı : Prof. Dr. Nahit KUMBASAR

Diğer Jüri Üyeleri : Prof. Dr. Melike ALTAN

Prof. Dr. Metin AYDOĞAN

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ÖNSÖZ

Yüksek lisans tezi olarak hazırlanan bu çalışmada 8 kat ve bir bodrumdan oluşan bir yapının yatay ve düşey yükler altında statik ve betonarme hesapları TS 500'e göre yapılarak , gerekli kalıp planları çizilmiş ve donatı detayları gösterilmiştir. Sistemin statik hesapları SAP90 bilgisayar programıyla, betonarme hesapları ise uygun tablolar ve abaklardan yararlanılarak yapılmıştır.

Bu çalışmada yakın ilgi ve değerli yardımlarını esirgemeyen Sayın Hocam Prof. Dr. Nahit KUMBASAR'a ve yüksek lisans ögrenimim sırasında değerli bilgilerinden ve çalışmalarından yararlandığım Yapı Anabilim dalının tüm öğretim elamanlarına ayrıca tüm öğrenim hayatım boyunca bana desteklerini hiç esirgemeyen aileme sonsuz teşekkürlerimi sunarım.

Nisan 1995

Mehmet KARA

İnşaat Mühendisi

İÇİNDEKİLER

ŞEKİL LİSTESİ

TABLO LİSTESİ

NOTASYON LİSTESİ

A : Alan
Ac : Beton alanı
As : Donatı alanı
bw : Genişlik , tabla genişliği , kolon enkesiti küçük boyu
b : Tablalı kirişlerde gövde genişliği
C : Deprem katsayısı
C_o : Deprem bölge katsayısı
d : Deblasman, yararlı yükseklik
E : Elastisite modülü, deprem etkisi
G : Kayma modülü
F : Yapıya etkiyen yatay yük
Fa : Zımbalama çerçevesi içerisinde kalan yayılı yüklerin toplamı
Fi : i . kata etkiyen yatay yük
fcd : Hesapta kullanılacak beton basınç dayanımı
fctd : Hesapta kullanılacak beton çekme dayanımı
fyd : Hesapta kullanılacak çelik akma dayanımı
g : Öz ağırlık , sabit yük
H : Yapının toplam yüksekliği
h : Kiriş yüksekliği , kat yüksekliği , kolon enkesitinin eğilme yönündeki boyu
hf : Tabla kalınlığı
I : Atalet momenti , yapı önem katsayısı
k_d : Yapı tipi katsayısı
K_o : Zemin katsayısı
L : Açıklık , elaman boyu
M : Eğilme momenti
Md : Hesapta kullanılacak eğilme momenti
N : Eksenel Kuvvet
P : Toplam yük

q : Hareketli yük
S : Kolon yapı dinamik katsayısı
T : Kesme kuvveti , yapı özel periyodu
Up : Zımbalama çevresinin uzunluğu
Vc : Beton tarafından taşınan kesme kuvveti
Vcr : Eğik çatlamayı oluşturan kesme kuvveti
Vpd : Hesapta kullanılan zımbalama yükü
Vpr : Zımbalamada kesitin taşıma gücü
W : Toplam yapı ağırlığı , mukavemet momenti
Wi : i. katın ağırlığı
σ_{em} : Zemin emniyet gerilmesi
ρ : Donatı oranı
As : Donatı alanı

ÖZET

Bu çalışmada çok katlı bir betonarme yapının statik ve betonarme hesapları yatay ve düşey yükler altında yapılmıştır.

Yapının statik hesapları SAP90 (Yapı Analiz Proğramı) bilgisayar programı kullanılarak yapılmıştır. SAP90 bilgisayar programının eğitim versiyonu kullanılmıştır. Bu versiyonun sınırlandırılmış olmasından dolayı yapının tümü tanımlanıp bir seferde çözümlenememiş bunun yerine kısımlara ayrılıp bazı kabüller yapılarak ancak çözülebilmiştir.

Yapı 8 normal kat ve bir bodrum katından oluşmuş bir sistemdir. Yapının bodrum katının çevresi perde duvarları ile çevrilmiştir. Döşeme tipi kat yüksekliğinin sınırlı olmasından dolayı kirişsiz döşeme olarak seçilmiştir. Döşeme kalınlığı 18 cm seçilmiştir. Zımbalamaya karşı S3 kolonlarında başlık yapılmıştır kat yüksekliği 2.72 m dir.

Düşey yükler ve yatay yükler altında TS 500 de belirtilen yük kombinezonları yapılmış ve en elverişsiz durumlar dikkate alınmıştır. Yatay yüklerin yön değiştireceği göz önüne alınarak mesnetlere gerekli ek donatı konulmuştur. Yatay yük hesabında simetri dikkate alınarak yapının dörtte biri için hesap yapılmıştır. Yapının temel kısmına tek tip temel uygulanmıştır. Radye temel uygun görülmüştür.

Radyenin statik hesabı döşemeye benzetilerek SAP90 bilgisayar programı ile yapılmıştır.

STATİC AND REINFORCED CONCRETE CALCULATION OF A MULTI-STOREY BUILDING

The static and reinforced concrete calculation of a multi-storey building under vertical and horizontal loads are made as a master thesis.

Software SAP90 (Structural Analysis Program) are used for the static calculations. The reinforced concrete design is made by using tables prepared to design all kinds of reinforced concrete structures.

The building has a reinforced concrete skeleton, eight normal storeys and one basement storey . Basement is surrounded by shear wall.

Building support system is composed of columns , shear walls, a core in which elevator hall is located and slabs without beams. Because height of storeys are limited ,slab without beams is chosen ,slab thickness is chosen 18 cm. Height of normal storeys are 272 cm.

To check the computer solutions, one axe is calculated by using equivalent frame method.

The solution of slab is calculated by using SAP90's (Structural Analysis Program) shell data . Slab is divided in small pieces and crossing points of slab elements are called crucial nodes and numbered. Because program is limited, normal storey's slab are divided into big pieces by using symmetry.

The following assumption are made while determining the border conditions of the slab.

1. The crucial points on the column and shear wall are restricted to displacements
2. The other crucial points are not allowed to displace in x and y directions.
3. A long the axis dividing the slab's grid members do not rotate around it's axis.
4. Side of beams do not displace .

Another calculation for the system under vertical and horizontal loads are made and cross section effect which are accrued on columns and shear walls are determined. The structure is defined totally as a three dimensional frame which is composed of equivalent beams which connects columns and shear walls. Calculations results is superposed by the result under horizontal loads.

Calculating of lateral loads;

The building which is in the 4th degree earthquake area and the purpose of usage is as a residence and ytong is used in the building wall.

The first step is to calculate the weight of the building

$N_i = G_i + n \times Q_i$

n is taken 0.3 because the purpose of usage is as a residence.

$W = \sum W_i$ (The weight of building)

The second step is to calculate the coefficient of earthquake

Co:The coefficient of earthquake zone
K:The coefficient of frame elements type
I :The coefficient of building importance
h:Height of building
C:Building wide in the earthquake forces direction
N:Number of floors

$T < (0.09\,H) / \sqrt{D}$

$T < (0.07 \sim 0.1)\,N$ the coefficient of N is depend on rigidity of building

$S = 1 / |0.80 + T + To|$ $S<1$

To: Takes from the table [3]

The third step is to calculate total lateral force.

$F = C.W$

The last step is to calculate forces which influence to floors

$Ft=0.004\ F(H/D)^2 \quad Ft < 0.15\ F\ ;H/D<3 \rightarrow Ft=0$
Ft is just for the last floor

$Fi= (F-Ft)(Wi.hi/ \sum Wi.hi)$

These coefficients are used for semi-dynamic earthquake design forces.

Fi forces determined are divided into two axes of the structure and calculations carried out for earthquake forces action in two direction perpendicular to each other of the building.

Reinforced concrete design of the building is made by using the most unfavourable cross section effect resulted from loads due to earthquake and vertical loads. Reinforced concrete design of the beams in the building is done by the use of cross section effects of the beams at opening and support points and reasonable amount of bar determine from calculation is exceeded the minimum bar required which is

$minAs= (12/fyd)\ bw\ d$.

İf the magnitude of the shear stresses of beams at the point which have a distance from the support surface is greater from the magnitude of

$Vcr=0,65\ fctd.bw.d$

Reinforced concrete design of beams are made by taking shear forces into consideration.

The minimum dimension of the rectangular cross section of columns of the building design is 30 cm. The thickness of concrete cover exposed to outside effects is chosen to be 2 cm.

Wrapping horizontal bar around vertical bar, sprain of vertical bar of columns is restricted and vertical strength of columns is increased. Diameter of shear bar used the condition below.

$Øt>Ø\ /3\ ,\delta\leq 120,20$ cm
Øt:The diameter of shear bar
Ø:The diameter of vertical bar
S :Length between two shear bar.

Reinforced concrete design of the columns carried out by using tables reinforced concrete design of shear walls in the

building is made like design of columns and appropriate amount of bar is placed in shear walls.

For the foundation a mat slab is designed like slab without beams. İt is calculated by using SAP90 computer software.

BÖLÜM 1.GİRİŞ

Yapılar kat adetleride göz önünde bulundurularak taşıyıcı sistemleri o şekilde seçilirki düşey ve yatay yükler altında en uygun çözüm elde edilsin. Bu en uygun çözümü elde etmede genellikle analitik ve yaklaşık yöntemler olmak üzere çeşitli yöntemler kullanılır. Bu yöntemlerle çözümü yapılamayan veya yaklaşık olarak ancak çözülebilen sistemler bilgisayarın gelişmesi ile birlikte geliştirilen yeni yöntemlerle tamamen veya bazı durumlarda yaklaşık olarak çözülebilmektedir.

Bu çalışmamızda 8 kat ve bir bodrumdan oluşan yapı sisteminin taşıyıcı sisteminin projelendirilmesine çalışılmıştır. Döşeme tipi kirişsiz döşeme olarak belirlenmiştir. Kirişsiz döşemeler arada kirişler olmadan doğrudan doğruya kolonlara oturan eğilmeye çalışan çift doğrultuda donatılı betonarme plaklardır.

Kirişsiz döşemelerin gerek hesap gerekse inşaatlarının basit ve kolay olması ve özel problemlerin çıkmaması için düzgün sıralanmış birbirine dik eksenler üzerindeki kolonlara oturmalıdırlar. Ayrıca her iki doğrultuda da en az üç açıklığın bulunması ve kenar açıklıkların iç açıklıklara göre biraz küçük düzenlenmesi momentlerin dengelenmesi bakımından önemlidir.

Bu çalışmada simetriden yararlanarak sistemin dört - tebiri alınmış ve bazı kabüller yapılarak sistem hesaplanmıştır. Sistemin hesaplarında bilgisayardan yararlanılmıştır.

Sistemin hesaplarda ölü yükler, hareketli yükler ve deprem yükleri, yük katsayıları ile çarpılmış ve en elverişsiz olanları dikkate alınarak, kesit hesapları yapılmıştır. Kesit hesaplarında TS 500 göz önünde bulundurulmuştur. Hesaplarda kullanılan yükler TS 498'den alınmıştır. Deprem etkileri ise Afet Bölgelerinde Yapılacak Yapılar Hakkındaki Yönetmeliğe göre hesaplanmıştır.

Hesapların yapılışında yük aktarma sırasına uygun olarak döşemelerden başlanmış ve temellere doğru bir sıra izlenmiştir. Hesap yöntemi olarak taşıma gücü kullanılmıştır.

BÖLÜM 2. YAPININ ÖN BOYUTLANDIRILMASI

2.1.Yapının Özellikleri

BS25, BÇ III, Sargı ve döşemede BÇ I
Kat adeti : 8 kat + bodrum
Kat yüksekliği : 2.72 m
Duvar malzemesi : gaz beton (ytong)

2.2.Normal Kat Döşemesi Yük Analizi

Seçilen döşeme kalınlığı 18 cm

Sabit yük (g)

Döşeme öz ağırlığı	:0.18x2.4	=0.432 t /m^2
Tesfiye betonu	:0.03x2.0	=0.060 t /m^2
Rip halı	:	=0.003 t /m^2
Şap	:0.025x2.00	=0.050 t /m^2
Duvar	:	=0.200 t /m^2
	sabit yük(g)	=0.745 t /m^2

hareketli yük (q) =0.200 t /m^2 [2]

2.3.Çatı Katı Döşemesi Yük Analizi

Sabit yük (g)

Döşeme öz ağırlığı	:0.18x2.4	=0.432 t /m^2
Isı yalıtımı	:	=0.002 t /m^2
Oluklu kiremit	:1.122x0.050	=0.056 t /m^2
Kaplama tahtası	:	=0.100 t /m^2
	sabit yük (g)	=0.590 t /m^2

Hareketli yük = (q)

27derece < 30 dereceden $\rightarrow p_k = p_{k0}$

kar yükü $q = p_{k0}$ $p_{k0} = 0.075$ t /m^2 [2]

2.4.Kolon Ön Boyutlandırılması

2.4.1.S1 kolonları

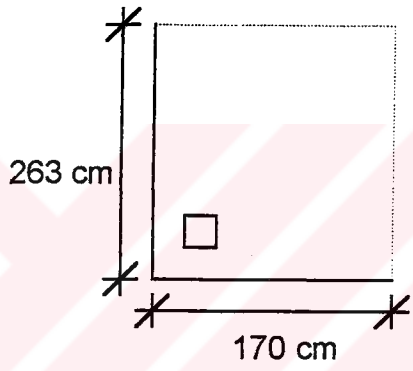
8. kat

Sabit yük	:0.590x 1.70x 2.63	=2.638 t
Hareketli yük	:0.075x 1.70x 2.63	=0.335 t
Kolon ağırlığı	:2.4x 0.30x 0.30x 2.54	=0.548 t
Kiriş ağırlığı	:2.4x 0.20x 0.27x (1.40+1.90)	=0.428 t

N8 = 1.4x(2.638 +0.548+0.428)+(1.6x0.335) = 5.595 t

N = 0.6x 250x 30x 30= 135000 kg = 135 t

N8 = 5.595 < N = 135 t



Şekil 2.1. S1 kolonu alan payı

7. kat

Sabit yükü	:0.745x1.70x2.63	=3.331 t
Hareketli yük	:0.200x1.70x2.63	=0.894 t
Kolon ağırlığı	:	=0.548 t
Kiriş ağırlığı	:	=0.428 t

N7 = 7.460 + 5.595 = 13.055 t

N7 = 13.055 < N = 135 t

6. kat

N6 = 13.055 + 7.460 = 20.515 t <N = 135 t

5. kat

N5 = 20.515 + 7.460 = 27.975 t <N = 135 t

4. kat

N4 = 27.975 + 7.460 = 35.435 t < N= 135t

3. kat

N3 = 35.435 + 7.460 = 42.896 t < N = 135 t

2. kat

N2 = 42.895 + 7.460 = 50.355 t < N = 135 t

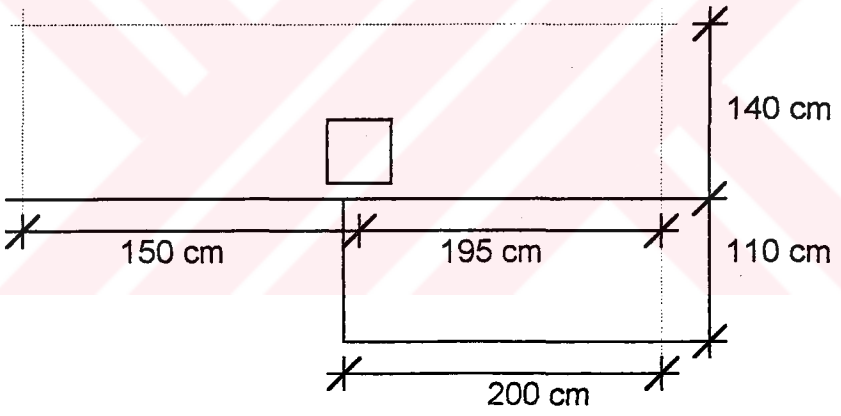
1. kat

N1 = 50.355 + 7. 460 = 57.815 t < N =135 t

Bodrum katı

NB = 57.815 + 7. 460 = 65.275 t <N= 135 t

2.4.2.S2 Kolonları



Şekil 2.2. S2 kolonu alan payı

8. kat

Sabit yük	:0.590 x(3.45x1.40+1.10x2.00)	=4.148 t
Hareketli yük	:0.075 x(3.45x1.40+1.10x2.00)	=0.796 t
Kolon ağırlığı	:2.4x0.30x0.30x2.54	=0.548 t
Kiriş ağırlığı	:2.4x0.20x0.27x(1.50+1.95-0.30)	=0.408 t

N8= 1.4x(4.148+0.548 + 0.408) +1.6x0.796 = 8.419 t

N = 0.6x250x 30x30 = 135 t

N8= 8.419 t < N = 135 t

7. kat

Sabit yük :0.745x(3.45x1.40+1.10x 2.00) =5.237 t

Hareketli yük :0.200x(3.45x1.40 +1.10x 2.00) =1.406 t

Kolon ağırlığı : =0.548 t

Kiriş ağırlığı : =0.408 t

N7 =1.4x(5.237 +0.548 +0.408) + 1.6x1.406 = 10.920 t

N7 = 10.920 + 8.419 = 19.339 t < N = 135 t

6. kat

N6 = 19.339 + 10.920 = 30.259 t < N = 135t

5. kat

N5 = 30.259 + 10.920 = 41.179 t < N = 135 t

4. kat

N4 = 41.179 + 10 .920 = 52.099 t < N= 135 t

3. kat

N3 = 52.099 + 10.920 = 63.019 t < N = 135 t

2. kat

N2 = 63.019 + 10.920 = 73.939 t < N = 135 t

1. kat

N1 = 73.939 + 10.920 = 84.859 t < N = 135 t

Bodrum katı

NB = 84.859 + 10.920 = 95.779 t < N = 135 t

2.4.3.S3 Kolonları

8. kat

Sabit yük :0.590x(3.65x 3.45) =4.380 t

Hareketli yük :0 075x(3.65x 3.45) =0.950 t

Kolon ağırlığı :2.4x0.30x0.30x2.54 =0.548 t

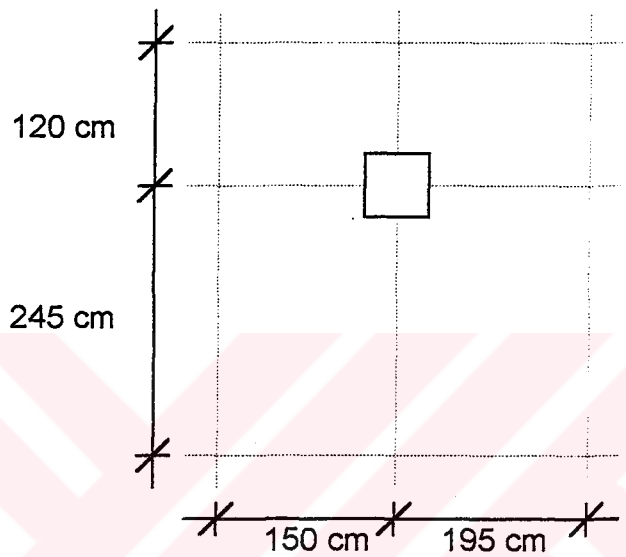
N8 = 1.4x(4.380+0.548) + 1.6 x 0.350 = 9.027 t

N = 0.6x 250x 30x 30 = 135 t

N8 = 9.027 t < N = 135t

7. kat

Sabit yük	:0.745x(3.65x3.45)	=9.381 t
Hareketli yük	:0.200x(6.15x 3.45)	=2.519 t
Kolon ağırlığı	:	=0.548 t



Şekil 2.3. S3 kolonu alan payı

N7 =1.4x(9.381+ 0.548) + 1.6x2.519= 19.543 t
N7 =19.543 + 9.027 = 28.570 t < N = 135t

6. kat
N6 = 28.570 + 19.543 = 48.113 t < N =135 t

5. kat
N5 = 48.113 + 19.543 = 67.656 t < N = 135t

4. kat
N4 = 67.656 + 19.543 = 87.199 t < N = 135 t

3. kat
N3 = 87.199 + 19.543 = 106.742 t < N= 135 t

2. kat

N2= 106.742 + 19.543 = 126.285 t < N = 135 t

1. kat

N1 = 126.286 + 19.543 = 145.828 t

N = 0.6x250x30x50 = 225000 kg = 225 t

N1 = 145.828 t < N= 225t

Bodrum katı

NB =148.828 + 19.543 = 165.371 t < N= 225 t

Tablo 2.1. Kolon boyutları ve yükleri

	S1		S2		S3	
Katlar	Yük (t)	Boyut (cm)	Yük (t)	Boyut (cm)	Yük (t)	Boyut (cm)
8	5.595	30 / 30	8.419	30 / 30	9.027	30 / 30
7	13.055	30 / 30	19.339	30 / 30	28.570	30 / 30
6	20.515	30 / 30	30.259	30 / 30	48.113	30 / 30
5	27.975	30 / 30	41.179	30 / 30	67.656	30 / 30
4	35.435	30 / 30	52.099	30 / 30	87.199	30 / 30
3	42.895	30 / 30	63.019	30 / 30	106.742	30 / 30
2	50.355	30 / 30	73.939	30 / 30	126.285	30 / 30
1	57.815	30 / 30	84.859	30 / 30	145.828	30 / 50
bodrum	65.275	30 / 30	95.779	30 / 30	165.371	30 / 50

2.5.Seçilen Döşeme Kalınlığının Denetimi

Seçilen hf = 18 cm

hf ≥ 15 cm

hf ≥ lyn (800 + β fyd) / 3600 = 10.9 cm

2.6. Kolonların Zımbalama Kontrolü

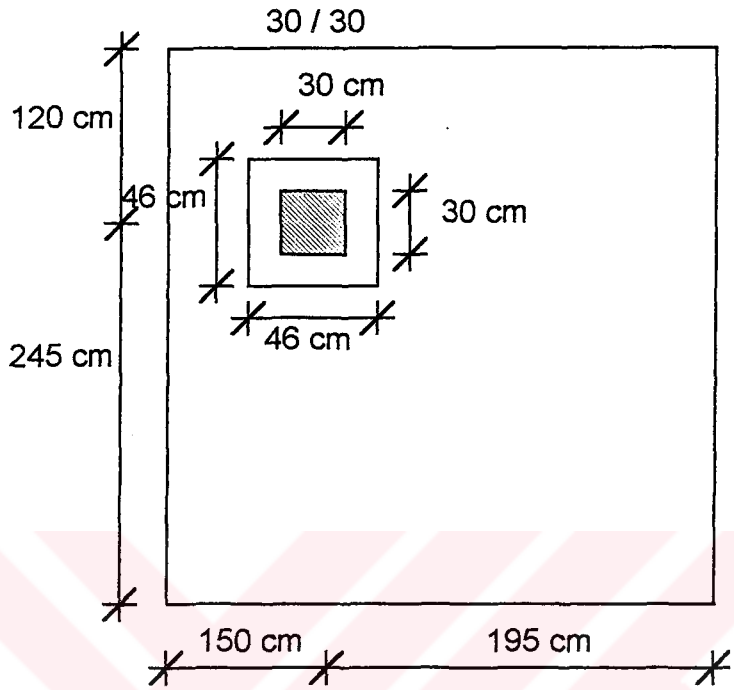
S3 Kolonu

hf = 18 cm

d = 16 cm

p = 1.40x0.745 +1.6 x 0.200 = 1.363 t / m^2

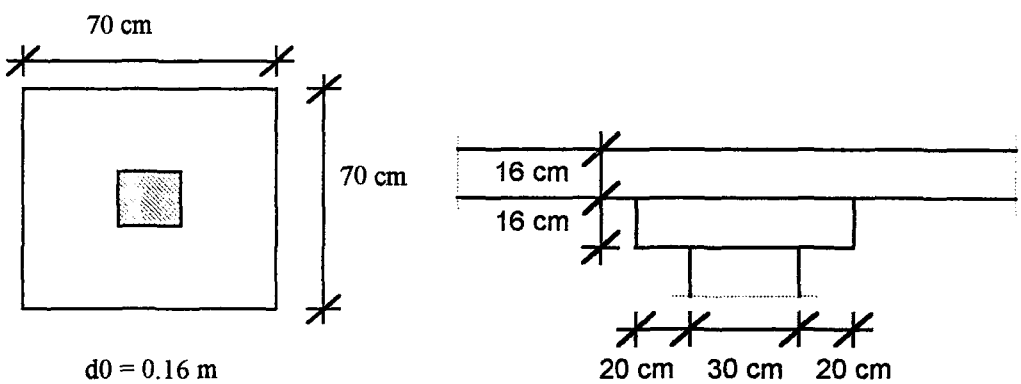
Vpd = (3.65x 3.45 - 0.46 x 0.46) x 1.363 = 16.870 t
ex = 0.625 m
ey = 0.225 m



Şekil 2.4. S3 kolonu zımbalama çevresi

γ = 1 / [1 +1.5x(0.625 +0.225) / √(0.46 x 0.46)] = 0.265 cm
Vcr = γ fctd Upd = 115x 4x 0.46 x 0.265 x 0.16 = 8.970 t
Vcr = 8.970 t < Vpd = 16.87 t
sağlamadığı için başlık yapılacaktır.

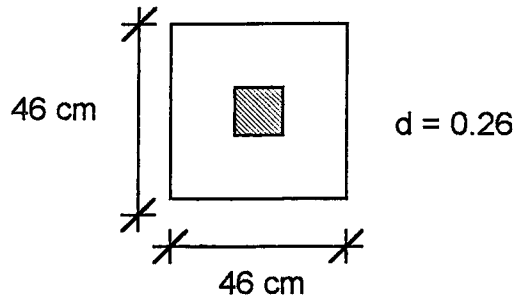
Döşeme Kısmı İçin Hesap



Şekil 2.5. Başlık detayı

Vpd = (3.65 x 3.45 - 0.70 x 0.70) x 1.363 = 16.495 t
γ = 1/ [1 +1.5x (0.625 + 0.225) / √ (0.70 x 0.70)] = 0.354
Vcr = 115 x 2.8 x 0.354 x 0.16 = 18.260 t > Vpd = 16.495 t

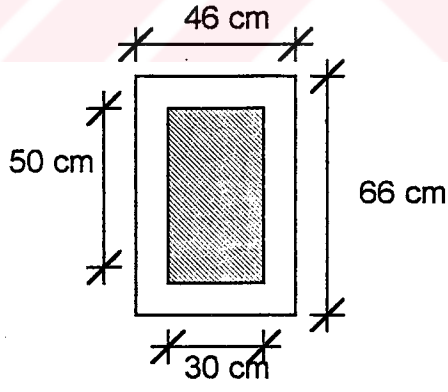
Başlık Kısmı İçin Hesap



Şekil 2.6. Başlık kısmı zımbalama çevresi

Vpd =(3.65 x 3.45 - 0.46 x 0.46) x 1.363 = 16.875 t
γ =1 / [1 + 1.5 (0.625 + 0.225) / √ (0.46 x 0.46)] = 0.265
Vcr =115 x 2 (0.46 + 0.46) 0.265 x 0.32=17.944 t >Vpd= 16.874 t

30 / 50



Şekil 2.7. S3 kolonu zımbalama çevresi

Vpd =(3.65 x 3.45 - 0.46 x 0.66) x 1.363 = 16.750 t
γ =1 /[1 +1.5x(0.625+0.225) /√(0.46 x 0.66)] = 0.302
Vcr =115 x2x(0.46+0.66)x0.302x0.16 = 12.440 t < Vpd
Yukarıdaki başlık bu kesit içinde yeterli olacaktır.

2.7. Eşdeğer Çerçeve Yöntemiyle Döşeme Hesabı

Sistemin en elverişiz aksı olan 2-2 aksı için eşdeğer çerçeve yöntemi ile hesap yapılmış ; moment kolon ve açıklık şeritlerine dağıtılmıştır.

Hesap Yükü

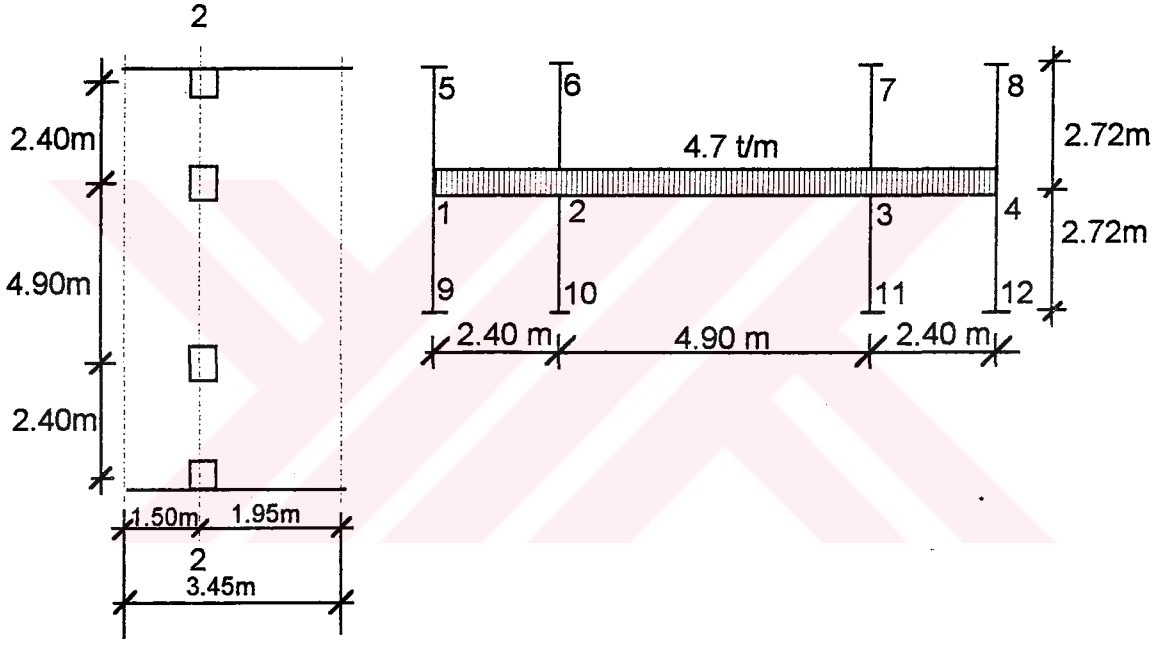
pd = 1.4 g + 1.6 q = 1.363

$Id = 3.45 \times 0.18^3 / 12 = 1.676 \times 10^{-3}\ m^4 = 2.5\ I$

$Ik1 = 0.3^4 / 12 = 0.675 \times 10^{-3} m^4 = I$

$Ik2 = 0.3 \times 0.5^3 / 12 = 3.125 \times 10^{-3}\ m^4 = 4.6\ I$

p = 1.363 x 3.45 = 4.700 t / m



Şekil 2.8. 2-2 aksı çerçevesi

Birim Yerdeğiştirme Sabitleri

1 - 2 $\quad m_{1\theta 1} = 4 x E x 2.5 x\ I \div 2.40 = 4EI$

$m_{2\theta 1} = 2 x E x 2.5 x\ I \div 2.40 = 2EI$

2 - 3 $\quad m_{2\theta 2} = m_{3\theta 3} = 4\ E\ \ x2.5\ I \div 4.9 = 2.041\ E\ I$

$m_{3\theta 2} = m_{2\theta 3} = 2\ E\ \ x2.5\ I \div 4.9 = 1.020\ E\ I$

1 - 5 ,1 - 9 $\quad m_1\ \theta_1 = 4\ E\ I \div 2.72 = 1.47\ E\ I$

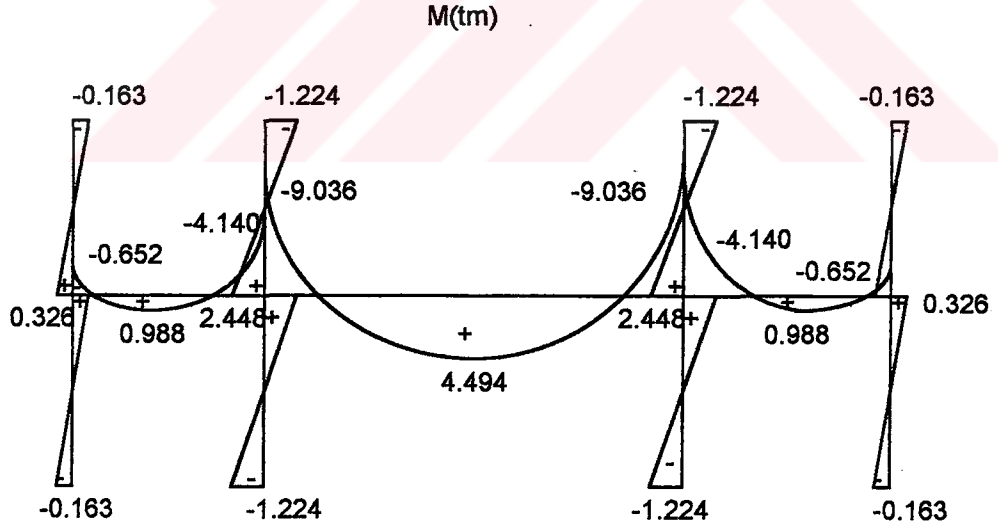
2 - 6 , 2 - 10 $\quad m_2\ \theta_2 = 4\ E\ I \times 4.6 \div 2.72 = 6.8\ E\ I$

$\mu_{12} = \mu_{21} = (4.700 x 2.4^2) \div 12 = 2.256$ tm
$\mu_{23} = \mu_{21} = (4.700 x 2.4^2) \div 12 = 9.404$ tm

$\theta_1 (4 + 1.47 + 1.47) E I + \theta_2 x 2 E I + 2.256 = 0$
$\theta_1 x 2 E I + \theta_2 (6.8+6.8+4+2.041) E I - \theta_2 x 1.020 E I + 9.404 - 2.256 = 0$
$6.94 \theta_1 EI + 2 \theta_2 EI + 2.256 = 0$
$2.00 \theta_1 EI + 18.621 \theta_2 EI + 7.148 = 0$

$\theta_1 = 0.222 / EI$
$\theta_2 = 0.360 / EI$

$M_{12} = 2.256 - 2x0360 - 0.222 x4 = 0.658$ tm (-0.658 tm)
$M_{23} = 9.404 - 0.360x0.41 + 0.360x1.020 = 9.036$ tm (-9.036 tm)
$M_{26} = -0.360 \times 6.8 = -2.448$ tm (2.448 tm)
$M_{210} = -0.360 \times 6.8 = -2.448$ tm (2.248 tm)
$M_{21} = -2.256 - 0.360 \times 4 - 0.222 \times 2 = -4.140$ tm (-4.140 tm)
$M_{15} = -0.222 \times 1.47 = -0.326$ tm (0.326 tm)
$M_{19} = -0.222 \times 1.47 = -0.326$ tm (0.326 tm)

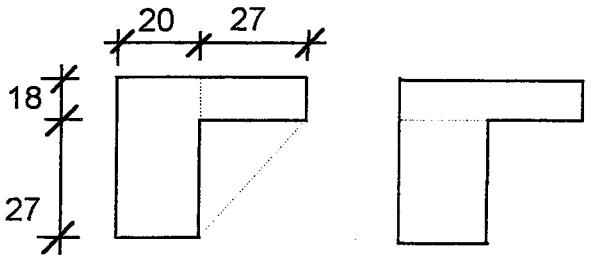


Şekil 2.9. 2-2 çerçevesi moment diyagramı

Moment Dağıtımı

$\alpha_1 = 0$ (Kirişsiz döşemeden dolayı)

$\alpha 1$ = Boyuna kiriş rijitliği / Döşeme plağı rijitliği



Şekil 2.10. Kiriş burulma alanları

$C = \Sigma(1-0.63\ x / y)\ x^3\ y / 3$

$=(1-0.63\ x20/45)x20^3x27/3+(1-0.63x18/47)x18^3x27/3$

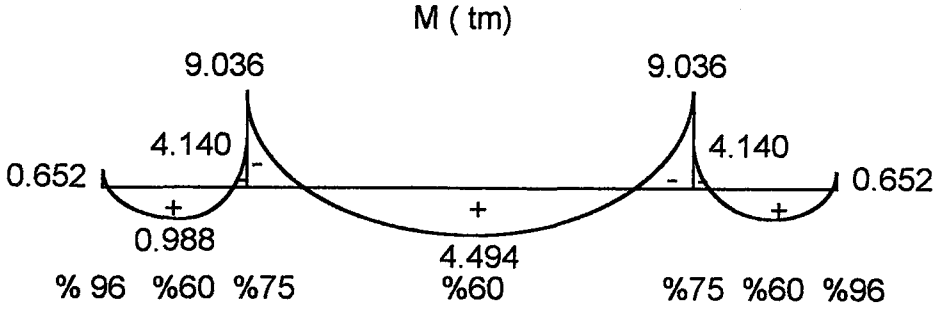
$=782224\ cm^4$

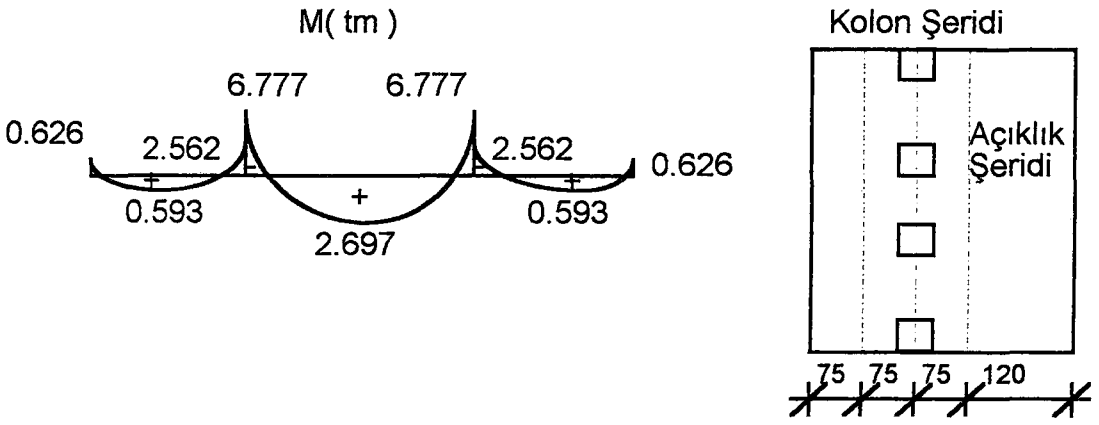
$C = (1-0.63x20/45)x20^3x45/3 + (1-0.63x18/27)x18^3x27/3$

$=117000\ cm^4$

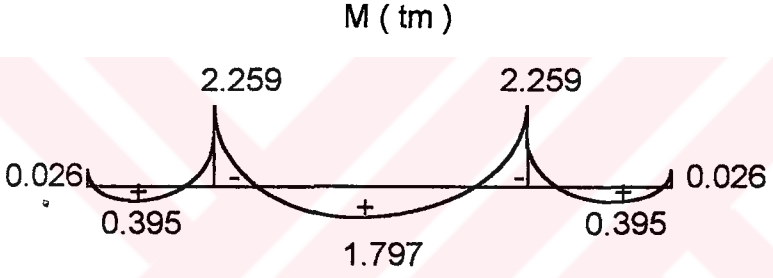
$Bt = C / (2 \times Is) = 117x10^{-5} / (2x3.45x0.18^3/12) = 0.35$

I2 / I1 = 2.856	
Bt = 0	100
α 1= 0 Bt > 2.5	75
Bt = 0.35	96





Şekil 2.11. Kolon şeridine düşen moment değerleri



Şekil 2.12. Açıklık şeridine düşen moment değerleri

BÖLÜM 3. YAPININ KESİT TESİRLERİNİN BULUNMASI

3.1. Döşeme Kiriş ve Duvar Birim Ağırlıkları

3.1.1. Duvar Birim Ağırlıkları

Duvar +Sıva = 0.65 t / m^3
İç duvar ağırlıkları = 0.1 x 2.54 x 0.65 = 0.17 t / m
Dış duvar ağırlıkları
K117 ve K101`e gelen : 0.33 x 2.27 x 0.65 = 0.50 t / m
K102 ve K103`e gelen : 0.20 x 2.27 x 0.65 = 0.30 t / m

3.1.2. Döşeme Birim Ağırlıkları

Döşeme öz ağırlığı	: 0.18 x 2.4	= 0.432 t / m^2
Tasfiye betonu	: 0.03 x 2.0	= 0.060 t / m^2
Rip halı	:	= 0.003 t / m^2
Şap	:0.025x2.0	= 0.050 t / m^2
	toplam	= 0.545 t / m^2

P = 1.40x0.545 + 1.6 x 0.200 = 1.083 t / m^2
W = 1.083 / 0.18 = 6.016 t / m^3

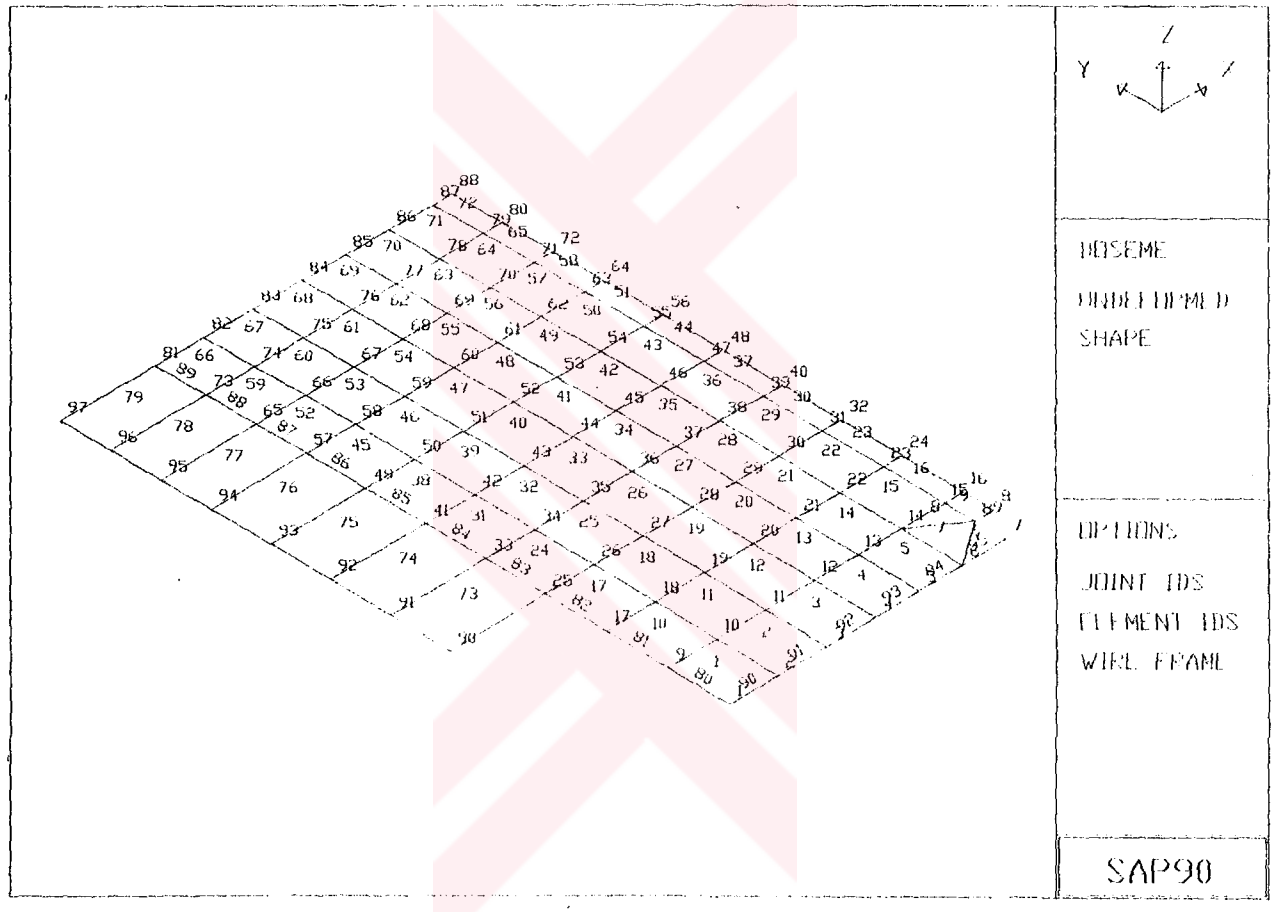
3.2. Döşeme Kesit Tesirlerinin Bulunması

3.2.1. Döşeme SAP90 Giriş Verileri ve Çıktıları

Aşağıda tüm kat döşemelerini temsilen bir döşeme parçası için SAP90 [5] giriş bloku oluşturulmuştur. Burada alınan döşeme parçası yapının her iki doğrultuda da simetrik olduğu kabulüne dayanılarak alınmıştır.

```
KİRİŞSİZ DÖŞEME
SYSTEM
L=1
RESTRAINTS
1,97,1          R=1,1,0,0,0,1
1               R=1,1,1,0,0,1
7,8,1           R=1,1,1,1,1,1
89              R=1,1,1,1,1,1
25,28,3         R=1,1,1,0,0,1
57,60,3         R=1,1,1,0,0,1
81,88,1         R=1,1,1,1,1,1
16,80,8         R=1,1,0,0,1,1

JOINTS
1   X=0       Y=0
3   X=1.6     Y=0
4   X=2.4     Y=0
7   X=4.54    Y=0
8   X=4.85    Y=0.5
16  X=4.85    Y=1
17  X=0       Y=2
19  X=1.6     Y=2             Q=1,3,17,19,1,8
20  X=2.4     Y=2
23  X=4.54    Y=2             Q=4,7,20,23,1,8
25  X=0       Y=3
27  X=1.6     Y=3
28  X=2.4     Y=3
31  X=4.54    Y=3
32  X=4.85    Y=3             G=16,32,8
49  X=0       Y=5.925
51  X=1.6     Y=5.925         Q=25,27,49,51,1,8
52  X=2.4     Y=5.925
57  X=0       Y=6.9
55  X=4.54    Y=5.925         Q=28,31,52,55,1,8
59  X=1.6     Y=6.9
60  X=2.4     Y=6.9
63  X=4.54    Y=6.9
64  X=4.85    Y=6.9           G=32,64,8
81  X=0       Y=9.37
83  X=1.6     Y=9.37          Q=57,59,81,83,1,8
84  X=2.4     Y=9.37
87  X=4.54    Y=9.37          Q=60,63,84,87,1,8
89  X=4.54    Y=0.5
88  X=4.85    Y=9.37          G=64,88,8
90  X=-1.55   Y=3
94  X=-1.55   Y=6.9           G=90,94,1
97  X=-1.55   Y=9.37          G=94,97,1

SHELL
NM=1  Z=-1
1  E=3025000        W=6.016
1  JQ=1,2,9,10      ETYPE=2    TH=0.18   G=5,1
6  JQ=6,7,89        ETYPE=2    TH=0.18   LP=2      G=1,1
7  JQ=6,89,14       ETYPE=2    TH=0.18   LP=2      G=1,1
8  JQ=14,89,15      ETYPE=2    TH=0.18   LP=2      G=1,1
9  JQ=89,8,15,16    ETYPE=2    TH=0.18   G=1,1
```

```
10 JQ=9,10,17,18    ETYPE=2    TH=0.18    G=7,9
73 JQ=90,25,91,33   ETYPE=2    TH=0.18    G=1,1
74 JQ=91,33,92,41   ETYPE=2    TH=0.18    G=1,1
75 JQ=92,41,93,49   ETYPE=2    TH=0.18    G=1,1
76 JQ=93,49,94,57   ETYPE=2    TH=0.18    G=1,1
77 JQ=94,57,95,65   ETYPE=2    TH=0.18    G=1,1
78 JQ=95,65,96,73   ETYPE=2    TH=0.18    G=1,1
79 JQ=96,73,97,81   ETYPE=2    TH=0.18    G=1,1

FRAME
NM=1  NL=2     Z=-1
1     SH=R  T=0.45,0.20  E=3025000  G=1210000  W=0.22
1     WG=0,0,-0.50
2     WG=0,0,-0.30
C KİRİŞLER
80  1  9   M=1  LP=3,0  NSL=1  G=2,1,8,8
83  25 33  M=1  LP=3,0  NSL=2  G=6,1,8,8
90  1  2   M=1  LP=-2,0 NSL=1  G=5,1,1,1

LOAD
76  L=1  F=0,0,-.14
68  L=1  F=0,0,-.14
26  L=1  F=0,0,-.14
27  L=1  F=0,0,-.14
20  L=1  F=0,0,-.21
12  L=1  F=0,0,-.17
4   L=1  F=0,0,-.17
21  L=1  F=0,0,-.12
22  L=1  F=0,0,-.06
30  L=1  F=0,0,-.145
31  L=1  F=0,0,-.09
32  L=1  F=0,0,-.2
16  L=1  F=0,0,-.13
24  L=1  F=0,0,-.17
40  L=1  F=0,0,-.17
48  L=1  F=0,0,-.17
56  L=1  F=0,0,-.17
64  L=1  F=0,0,-.17
72  L=1  F=0,0,-.14
80  L=1  F=0,0,-.14
```


Y
DEFORMED
SHAPE
OPTIONS
JOINT IDS
ELEMENT IDS
WIRE FRAME
SAP90

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
80								
	1	.000			.000			-.133
		.000	.994	-.067				
		1.000	.274	.567				
		1.000			.000			-.133
81								
	1	.000			.000			-.181
		.000	-.417	.560				
		1.000	-1.137	-.217				
		1.000			.000			-.181
82								
	1	.000			.000			-.315
		.000	-1.708	-.277				
		1.000	-2.428	-2.346				
		1.000			.000			-.315
83								
	1	.000			.000			-.250
		.000	3.238	-1.984				
		.975	2.731	.926				
		.975			.000			-.250
84								
	1	.000			.000			-.038
		.000	1.044	1.104				
		.975	.537	1.875				
		.975			.000			-.038
85								
	1	.000			.000			-.020
		.000	-.672	1.871				
		.975	-1.179	.968				
		.975			.000			-.020
86								
	1	.000			.000			.003
		.000	-2.842	.775				
		.975	-3.349	-2.243				
		.975			.000			.003
87								
	1	.000			.000			.022
		.000	2.686	-2.253				
		.823	2.258	-.218				
		.823			.000			.022
88								
	1	.000			.000			.107

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.860	-.042				
		.823	.432	.490				
		.823			.000			.107
89								
	1	.000			.000			.409
		.000	-1.027	.473				
		.823	-1.455	-.549				
		.823			.000			.409
90								
	1	.000			.000			.078
		.000	1.666	-.071				
		.800	1.090	1.031				
		.800			.000			.078
91								
	1	.000			.000			.023
		.000	.890	1.095				
		.800	.314	1.576				
		.800			.000			.023
92								
	1	.000			.000			-.058
		.000	.147	1.591				
		.204	.000	1.606				
		.800	-.429	1.478				
		.800			.000			-.058
93								
	1	.000			.000			-.075
		.000	-.788	1.441				
		.713	-1.302	.696				
		.713			.000			-.075
94								
	1	.000			.000			.013
		.000	-1.673	.595				
		.713	-2.187	-.782				
		.713			.000			.013
95								
	1	.000			.000			.098
		.000	-2.011	-1.169				
		.713	-2.525	-2.787				
		.713			.000			.098

S H E L L E L E M E N T F O R C E S

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID 1 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	-1.7780E-01	-6.3938E-02	1.4839E-01	3.8064E-02	-2.7980E-01	55.50
2	5.0967E-01	8.9258E-02	1.1799E-01	5.4052E-01	5.8406E-02	14.65
9	-3.1310E-02	2.6239E-01	2.1628E-01	3.7697E-01	-1.4588E-01	62.09
10	2.1121E-01	3.2646E-01	1.8589E-01	4.6345E-01	7.4221E-02	53.61
MIDPT	V1	V2		VMAX		ANGLE
	6.4914E-01	2.4377E-01		6.9340E-01		20.58

ELEMENT ID 2 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
2	2.8940E-01	8.9258E-02	7.9581E-02	3.1719E-01	6.1472E-02	19.25
3	5.8983E-01	1.0544E-01	3.6502E-04	5.8983E-01	1.0544E-01	.04
10	2.5206E-01	3.2646E-01	1.2876E-01	4.2328E-01	1.5524E-01	53.06
11	2.3109E-01	4.6763E-01	4.9541E-02	4.7759E-01	2.2113E-01	78.64
MIDPT	V1	V2		VMAX		ANGLE
	2.2384E-01	2.0068E-01		3.0062E-01		41.88

ELEMENT ID 3 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
3	5.3845E-01	1.0544E-01	-5.6918E-02	5.4581E-01	9.8087E-02	-7.36
4	4.6800E-01	3.7315E-02	-1.4659E-01	5.1316E-01	-7.8457E-03	-17.12
11	2.4312E-01	4.6763E-01	-1.0925E-01	5.1202E-01	1.9874E-01	-67.89
12	3.1495E-01	3.6830E-01	-1.9893E-01	5.4233E-01	1.4092E-01	-48.82
MIDPT	V1	V2		VMAX		ANGLE
	-5.1477E-02	2.3449E-01		2.4008E-01		102.38

ELEMENT ID 4 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
4	6.1332E-01	3.7315E-02	-1.5804E-01	6.5383E-01	-3.1990E-03	-14.38
5	9.0120E-02	-2.0934E-01	-1.7624E-01	1.7164E-01	-2.9086E-01	-24.82
12	2.7263E-01	3.6829E-01	-3.1011E-01	6.3423E-01	6.6890E-03	-49.38
13	3.2879E-01	1.8106E-01	-3.2830E-01	5.9143E-01	-8.1577E-02	-38.66
MIDPT	V1	V2		VMAX		ANGLE
	-4.7942E-01	3.3519E-01		5.8498E-01		145.04

ELEMENT ID 5 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
5	4.6319E-01	-2.0934E-01	-1.1450E-01	4.8215E-01	-2.2830E-01	-9.40
6	-5.0345E-01	-1.0653E-01	-2.7343E-02	-1.0465E-01	-5.0533E-01	-86.08
13	2.2589E-01	1.8106E-01	-5.0502E-01	7.0900E-01	-3.0205E-01	-43.73
14	2.2260E-01	-1.0360E+00	-4.1786E-01	3.4869E-01	-1.1621E+00	-16.79
MIDPT	V1	V2		VMAX		ANGLE
	-1.0704E+00	-1.4737E-01		1.0805E+00		-172.16

ELEMENT ID 6 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	-5.5261E-02	5.7469E-01	7.3567E-02	5.8317E-01	-6.3738E-02	83.43
7	-1.1911E+00	0.0000E+00	6.8745E-02	3.9544E-03	-1.1951E+00	86.71
89	-1.1979E+00	2.8774E-06	-1.3267E-01	1.4520E-02	-1.2124E+00	-83.76
89	-1.1979E+00	1.4406E-11	-1.3267E-01	1.4517E-02	-1.2124E+00	-83.76

MIDPT	V1	V2	VMAX	ANGLE
	1.9952E+00	6.7549E-03	1.9952E+00	.19

ELEMENT ID 7 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	2.8746E-03	-1.0653E-01	2.7084E-01	2.2449E-01	-3.2814E-01	39.29
89	-1.7021E+00	-1.7016E+00	8.2337E-01	-8.7848E-01	-2.5252E+00	45.01
14	1.1141E+00	-1.0360E+00	-5.2142E-01	1.2339E+00	-1.1558E+00	-12.94
14	1.1141E+00	-1.0360E+00	-5.2142E-01	1.2339E+00	-1.1558E+00	-12.94

MIDPT	V1	V2	VMAX	ANGLE
	3.9613E+00	-4.0038E-01	3.9815E+00	-5.77

ELEMENT ID 8 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	-6.8672E-03	-2.2389E-01	-1.0364E+00	9.2670E-01	-1.1575E+00	-42.01
89	-1.9576E+00	-3.2559E+00	9.6400E-02	-1.9505E+00	-3.2630E+00	4.22
15	-5.3648E-01	-5.6369E-01	-2.2694E-02	-5.2362E-01	-5.7654E-01	-29.53
15	-5.3649E-01	-5.6370E-01	-2.2689E-02	-5.2364E-01	-5.7655E-01	-29.52

MIDPT	V1	V2	VMAX	ANGLE
	9.8064E-01	-6.8056E+00	6.8759E+00	-81.80

ELEMENT ID 9 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
89	0.0000E+00	-3.2559E+00	1.7746E-01	9.6435E-03	-3.2656E+00	3.11
8	0.0000E+00	-2.6169E+00	0.0000E+00	0.0000E+00	-2.6169E+00	.00
15	-7.4682E-01	-5.6371E-01	1.5893E-01	-4.7185E-01	-8.3868E-01	59.97
16	-3.9806E-01	-1.2487E+00	-1.8528E-02	-3.9766E-01	-1.2491E+00	-1.25

MIDPT	V1	V2	VMAX	ANGLE
	5.2546E-01	3.4879E+00	3.5273E+00	81.43

ELEMENT ID 10 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
9	-3.1311E-02	2.7397E-01	2.4997E-01	4.1422E-01	-1.7156E-01	60.71
10	2.1121E-01	3.2584E-01	2.5826E-01	5.3307E-01	3.9833E-03	51.26
17	3.0664E-02	-1.2565E-01	2.6870E-01	2.3234E-01	-3.2733E-01	36.89
18	1.9068E-01	-1.1760E-01	2.7698E-01	3.5352E-01	-2.8045E-01	30.45

MIDPT	V1	V2	VMAX	ANGLE
	2.7031E-01	-4.1117E-01	4.9207E-01	-56.68

ELEMENT ID 11 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE

10	2.5206E-01	3.2584E-01	2.0113E-01	4.9344E-01	8.4468E-02	50.20
11	2.3109E-01	5.0329E-01	1.2169E-01	5.4976E-01	1.8462E-01	69.10
18	2.3197E-01	-1.1760E-01	2.7272E-01	3.8111E-01	-2.6674E-01	28.67
19	-1.4602E-01	-6.5942E-02	1.9328E-01	9.1408E-02	-3.0337E-01	50.85
MIDPT	V1	V2		VMAX		ANGLE
	-1.7776E-01	-6.0563E-01		6.3118E-01		-106.36

ELEMENT ID 12 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
11	2.4312E-01	5.0329E-01	-3.7104E-02	5.0847E-01	2.3793E-01	-82.04
12	3.1495E-01	3.3746E-01	-2.9866E-01	6.2508E-01	2.7339E-02	-46.08
19	-2.1144E-01	-6.5939E-02	1.1081E-01	-6.1307E-03	-2.7125E-01	61.64
20	-5.3824E-01	5.7321E-01	-1.5074E-01	5.9329E-01	-5.5832E-01	-82.41
MIDPT	V1	V2		VMAX		ANGLE
	-1.1441E-02	-4.9368E-01		4.9381E-01		-91.33

ELEMENT ID 13 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
12	2.7263E-01	3.3746E-01	-4.0983E-01	7.1616E-01	-1.0607E-01	-47.26
13	3.2879E-01	4.6071E-02	-6.4175E-01	8.4457E-01	-4.6971E-01	-38.79
20	-5.2174E-01	5.7321E-01	-6.8385E-01	9.0174E-01	-8.5027E-01	-64.34
21	-1.7732E-01	8.2743E-02	-9.1577E-01	8.7767E-01	-9.7225E-01	-49.04
MIDPT	V1	V2		VMAX		ANGLE
	6.7598E-03	-1.8891E-01		1.8903E-01		-87.95

ELEMENT ID 14 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
13	2.2589E-01	4.6071E-02	-8.1848E-01	9.5939E-01	-6.8743E-01	-41.87
14	2.2260E-01	-2.0959E-01	-8.3001E-01	8.6418E-01	-8.5117E-01	-37.70
21	-9.7762E-02	8.2740E-02	-9.6625E-01	9.6295E-01	-9.7797E-01	-47.67
22	4.8164E-01	-8.3235E-02	-9.7778E-01	1.2170E+00	-8.1855E-01	-36.94
MIDPT	V1	V2		VMAX		ANGLE
	2.5604E-01	6.5359E-02		2.6425E-01		14.32

ELEMENT ID 15 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	-6.8672E-03	-2.0959E-01	-6.4893E-01	5.4857E-01	-7.6503E-01	-40.56
15	-5.3648E-01	-8.9317E-01	-3.7042E-01	-3.0371E-01	-1.1259E+00	-32.15
22	5.1380E-01	-8.3234E-02	-7.8391E-01	1.0541E+00	-6.2354E-01	-34.58
23	5.0463E-01	2.1521E-01	-5.0539E-01	8.8562E-01	-1.6578E-01	-37.01
MIDPT	V1	V2		VMAX		ANGLE
	-5.1263E-01	1.0078E+00		1.1307E+00		116.96

ELEMENT ID 16 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
15	-7.4683E-01	-8.9317E-01	-1.8880E-01	-6.1752E-01	-1.0225E+00	-34.41
16	-3.9806E-01	-1.0367E+00	-1.8531E-02	-3.9753E-01	-1.0373E+00	-1.66
23	5.6044E-01	2.1521E-01	-2.5667E-01	6.9714E-01	7.8516E-02	-28.04
24	4.9168E-01	2.7460E-01	-8.6400E-02	5.2187E-01	2.4441E-01	-19.26

MIDPT	V1	V2	VMAX	ANGLE
	3.8376E-01	1.7591E+00	1.8005E+00	77.69

ELEMENT ID 17 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
17	3.0663E-02	1.3154E-01	3.6246E-01	4.4705E-01	-2.8485E-01	48.96
18	1.9068E-01	-2.0299E-01	1.9593E-01	2.7157E-01	-2.8388E-01	22.43
25	-9.6236E-01	-9.3244E-01	3.4121E-01	-6.0586E-01	-1.2889E+00	46.26
26	3.5106E-01	-6.6589E-01	1.7469E-01	3.8023E-01	-6.9506E-01	9.48

MIDPT	V1	V2	VMAX	ANGLE
	8.9965E-01	-9.7160E-01	1.3242E+00	-47.20

ELEMENT ID 18 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
18	2.3197E-01	-2.0299E-01	1.9167E-01	3.0438E-01	-2.7539E-01	20.70
19	-1.4602E-01	-1.0225E-01	2.9776E-01	1.7443E-01	-4.2270E-01	47.10
26	2.8918E-01	-6.6589E-01	3.0272E-02	2.9013E-01	-6.6685E-01	1.81
27	3.2724E-01	-1.2831E+00	1.3636E-01	3.3871E-01	-1.2946E+00	4.81

MIDPT	V1	V2	VMAX	ANGLE
	-3.7385E-01	-6.8926E-01	7.8412E-01	-118.48

ELEMENT ID 19 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
19	-2.1144E-01	-1.0225E-01	2.1529E-01	6.5260E-02	-3.7895E-01	52.11
20	-5.3825E-01	7.4416E-01	-1.5325E-01	7.6222E-01	-5.5630E-01	-83.28
27	4.5985E-01	-1.2831E+00	3.4761E-02	4.6055E-01	-1.2838E+00	1.14
28	-3.0522E+00	-2.7072E+00	-3.3377E-01	-2.5040E+00	-3.2554E+00	-58.67

MIDPT	V1	V2	VMAX	ANGLE
	-2.5798E+00	-2.7768E+00	3.7902E+00	-132.89

ELEMENT ID 20 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
20	-5.2174E-01	7.4416E-01	-6.8636E-01	1.0449E+00	-8.2245E-01	-66.34
21	-1.7733E-01	2.4767E-02	-1.0056E+00	9.3434E-01	-1.0869E+00	-47.87
28	-3.0642E+00	-2.7072E+00	-3.9488E-01	-2.4524E+00	-3.3191E+00	-57.16
29	5.7530E-01	-1.1561E+00	-7.1408E-01	8.3180E-01	-1.4126E+00	-19.76

MIDPT	V1	V2	VMAX	ANGLE
	3.0840E+00	-2.7636E+00	4.1411E+00	-41.86

ELEMENT ID 21 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
21	-9.7766E-02	2.4767E-02	-1.0560E+00	1.0213E+00	-1.0943E+00	-46.66
22	4.8164E-01	-8.1042E-02	-8.6512E-01	1.1100E+00	-7.0941E-01	-35.99
29	4.6332E-01	-1.1561E+00	-7.2214E-01	7.3856E-01	-1.4314E+00	-20.86
30	9.9113E-01	-9.7603E-02	-5.3123E-01	1.2074E+00	-3.1385E-01	-22.15

MIDPT	V1	V2	VMAX	ANGLE
	1.1100E+00	-3.3108E-01	1.1583E+00	-16.61

ELEMENT ID 22 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
22	5.1380E-01	-8.1042E-02	-6.7125E-01	9.5057E-01	-5.1781E-01	-33.05
23	5.0463E-01	1.7094E-01	-4.5300E-01	8.2053E-01	-1.4496E-01	-34.89
30	9.9826E-01	-9.7596E-02	-4.5793E-01	1.1644E+00	-2.6376E-01	-19.94
31	1.2440E+00	2.5910E-01	-2.3968E-01	1.2992E+00	2.0387E-01	-12.98
MIDPT	V1	V2		VMAX		ANGLE
	3.7914E-01	3.4176E-01		5.1044E-01		42.03

ELEMENT ID 23 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
23	5.6044E-01	1.7094E-01	-2.0427E-01	6.4793E-01	8.3456E-02	-23.18
24	4.9168E-01	1.9789E-01	-8.6399E-02	5.1521E-01	1.7436E-01	-15.23
31	1.2445E+00	2.5910E-01	-1.4955E-01	1.2667E+00	2.3690E-01	-8.44
32	1.3286E+00	3.0001E-01	-3.1673E-02	1.3296E+00	2.9904E-01	-1.76
MIDPT	V1	V2		VMAX		ANGLE
	7.9509E-02	4.7538E-01		4.8199E-01		80.50

ELEMENT ID 24 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
25	-9.6237E-01	-9.1923E-01	2.9575E-01	-6.4426E-01	-1.2373E+00	47.09
26	3.5107E-01	-6.5384E-01	1.3557E-01	3.6904E-01	-6.7181E-01	7.55
33	-1.0403E+00	6.0684E-01	2.0541E-01	6.3207E-01	-1.0655E+00	83.00
34	-3.5185E-01	4.4931E-02	4.5229E-02	5.0021E-02	-3.5694E-01	83.58
MIDPT	V1	V2		VMAX		ANGLE
	1.1585E+00	9.4072E-01		1.4924E+00		39.08

ELEMENT ID 25 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
26	2.8918E-01	-6.5384E-01	-8.8439E-03	2.8926E-01	-6.5392E-01	-.54
27	3.2724E-01	-1.2836E+00	-3.2913E-01	3.9189E-01	-1.3483E+00	-11.11
34	-3.2099E-01	4.4929E-02	-1.4300E-01	9.4185E-02	-3.7025E-01	-70.99
35	-6.2396E-01	2.3440E-01	-4.6328E-01	4.3675E-01	-8.2631E-01	-66.41
MIDPT	V1	V2		VMAX		ANGLE
	-3.0316E-01	7.3646E-01		7.9642E-01		112.37

ELEMENT ID 26 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
27	4.5987E-01	-1.2836E+00	-4.3074E-01	5.6048E-01	-1.3842E+00	-13.15
28	-3.0522E+00	-2.7118E+00	-2.3860E-01	-2.5890E+00	-3.1751E+00	-62.75
35	-6.8925E-01	2.3441E-01	-5.7579E-01	5.1070E-01	-9.6554E-01	-64.37
36	-9.6646E-01	1.1865E+00	-3.8366E-01	1.2529E+00	-1.0328E+00	-80.19
MIDPT	V1	V2		VMAX		ANGLE
	-2.5171E+00	3.0178E+00		3.9298E+00		129.83

ELEMENT ID 27 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
28	-3.0643E+00	-2.7118E+00	-2.9969E-01	-2.5404E+00	-3.2357E+00	-60.23
29	5.7532E-01	-1.1563E+00	-6.6398E-02	5.7787E-01	-1.1589E+00	-2.19

36	-9.6257E-01	1.1865E+00	9.5506E-03	1.1866E+00	-9.6261E-01	89.75
37	-2.5089E-01	5.3601E-01	2.4284E-01	6.0492E-01	-3.1980E-01	74.16
MIDPT	V1	V2		VMAX		ANGLE
	3.3671E+00	3.1941E+00		4.6411E+00		43.49

ELEMENT ID 28 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
29	4.6332E-01	-1.1563E+00	-7.4468E-02	4.6674E-01	-1.1597E+00	-2.63
30	9.9114E-01	-1.0812E-01	-2.1246E-01	1.0308E+00	-1.4776E-01	-10.57
37	-2.0115E-01	5.3601E-01	2.5499E-01	6.1561E-01	-2.8075E-01	72.66
38	9.0115E-01	4.5197E-01	1.1699E-01	9.2980E-01	4.2333E-01	13.76
MIDPT	V1	V2		VMAX		ANGLE
	1.4805E+00	9.6164E-01		1.7654E+00		33.01

ELEMENT ID 29 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
30	9.9826E-01	-1.0812E-01	-1.3917E-01	1.0155E+00	-1.2536E-01	-7.06
31	1.2440E+00	2.7077E-01	-1.4027E-01	1.2638E+00	2.5096E-01	-8.04
38	8.7940E-01	4.5197E-01	2.1814E-02	8.8051E-01	4.5086E-01	2.91
39	1.3569E+00	5.4420E-01	2.0713E-02	1.3574E+00	5.4367E-01	1.46
MIDPT	V1	V2		VMAX		ANGLE
	6.7204E-01	4.2590E-01		7.9563E-01		32.36

ELEMENT ID 30 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
31	1.2445E+00	2.7077E-01	-5.0142E-02	1.2471E+00	2.6819E-01	-2.94
32	1.3286E+00	3.0882E-01	-3.1672E-02	1.3296E+00	3.0784E-01	-1.78
39	1.3621E+00	5.4420E-01	-1.2631E-02	1.3623E+00	5.4400E-01	-.88
40	1.4433E+00	5.5386E-01	5.8388E-03	1.4433E+00	5.5382E-01	.38
MIDPT	V1	V2		VMAX		ANGLE
	3.0507E-01	3.2546E-01		4.4608E-01		46.85

ELEMENT ID 31 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
33	-1.0403E+00	2.8767E-01	5.6140E-02	2.9004E-01	-1.0427E+00	87.58
34	-3.5185E-01	1.4942E-01	-9.0672E-03	1.4959E-01	-3.5202E-01	-88.96
41	-9.9692E-01	6.9196E-01	3.1889E-02	6.9256E-01	-9.9753E-01	88.92
42	-7.1313E-01	7.5061E-01	-3.3318E-02	7.5137E-01	-7.1389E-01	-88.70
MIDPT	V1	V2		VMAX		ANGLE
	5.8279E-01	4.3413E-01		7.2671E-01		36.68

ELEMENT ID 32 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
34	-3.2100E-01	1.4942E-01	-1.9730E-01	2.2121E-01	-3.9279E-01	-70.01
35	-6.2397E-01	2.6433E-01	-2.9577E-01	3.5380E-01	-7.1344E-01	-73.17
42	-7.2263E-01	7.5062E-01	-5.4176E-02	7.5261E-01	-7.2462E-01	-87.90
43	-7.0241E-01	1.1054E+00	-1.5265E-01	1.1182E+00	-7.1520E-01	-85.21
MIDPT	V1	V2		VMAX		ANGLE
	-2.9929E-02	6.1655E-01		6.1727E-01		92.78

ELEMENT ID 33 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
35	-6.8925E-01	2.6433E-01	-4.0827E-01	4.1524E-01	-8.4017E-01	-69.71
36	-9.6646E-01	1.0382E+00	-3.1380E-01	1.0861E+00	-1.0144E+00	-81.31
43	-7.0496E-01	1.1054E+00	-1.5172E-01	1.1181E+00	-7.1759E-01	-85.24
44	-4.9017E-01	1.1736E+00	-5.7247E-02	1.1756E+00	-4.9214E-01	-88.03
MIDPT	V1	V2		VMAX		ANGLE
	2.2412E-01	6.1890E-01		6.5823E-01		70.09

ELEMENT ID 34 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
36	-9.6256E-01	1.0382E+00	7.9402E-02	1.0413E+00	-9.6571E-01	87.73
37	-2.5089E-01	5.6176E-01	2.0228E-01	6.0932E-01	-2.9845E-01	76.77
44	-4.9405E-01	1.1736E+00	-4.4327E-02	1.1748E+00	-4.9523E-01	-88.48
45	-4.7607E-02	1.2879E+00	7.8547E-02	1.2925E+00	-5.2211E-02	86.65
MIDPT	V1	V2		VMAX		ANGLE
	6.8486E-01	6.1411E-01		9.1987E-01		41.88

ELEMENT ID 35 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
37	-2.0116E-01	5.6176E-01	2.1442E-01	6.1789E-01	-2.5729E-01	75.33
38	9.0116E-01	4.8517E-01	2.0176E-01	9.8294E-01	4.0339E-01	22.06
45	-4.8278E-02	1.2879E+00	9.2996E-02	1.2944E+00	-5.4719E-02	86.04
46	6.7905E-01	1.0092E+00	8.0334E-02	1.0277E+00	6.6054E-01	77.02
MIDPT	V1	V2		VMAX		ANGLE
	1.1579E+00	6.2335E-01		1.3150E+00		28.30

ELEMENT ID 36 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
38	8.7939E-01	4.8517E-01	1.0658E-01	9.0636E-01	4.5820E-01	14.20
39	1.3569E+00	5.6478E-01	5.5076E-02	1.3607E+00	5.6097E-01	3.96
46	6.9470E-01	1.0092E+00	7.8738E-02	1.0278E+00	6.7609E-01	76.70
47	1.2600E+00	8.4806E-01	2.7232E-02	1.2617E+00	8.4626E-01	3.77
MIDPT	V1	V2		VMAX		ANGLE
	7.0232E-01	3.4178E-01		7.8106E-01		25.95

ELEMENT ID 37 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
39	1.3621E+00	5.6478E-01	2.1732E-02	1.3627E+00	5.6419E-01	1.56
40	1.4433E+00	5.7523E-01	5.8389E-03	1.4434E+00	5.7519E-01	.39
47	1.2513E+00	8.4805E-01	1.8979E-02	1.2522E+00	8.4716E-01	2.69
48	1.3542E+00	8.3411E-01	3.0861E-03	1.3542E+00	8.3409E-01	.34
MIDPT	V1	V2		VMAX		ANGLE
	2.9406E-01	2.2676E-01		3.7134E-01		37.64

ELEMENT ID 38 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE

41	-9.9692E-01	7.0408E-01	1.9295E-02	7.0430E-01	-9.9714E-01	89.35
42	-7.1313E-01	7.4286E-01	3.9577E-02	7.4394E-01	-7.1421E-01	88.44
49	-1.0790E+00	2.3081E-01	3.5839E-02	2.3179E-01	-1.0799E+00	88.43
50	-5.3223E-01	2.4634E-01	5.6121E-02	2.5036E-01	-5.3625E-01	85.90
MIDPT	V1	V2		VMAX		ANGLE
	5.3604E-01	-4.7198E-01		7.1422E-01		-41.36

ELEMENT ID 39 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
42	-7.2263E-01	7.4286E-01	1.8721E-02	7.4310E-01	-7.2287E-01	89.27
43	-7.0241E-01	1.1014E+00	7.9168E-02	1.1049E+00	-7.0587E-01	87.49
50	-4.9496E-01	2.4634E-01	1.6495E-01	2.8138E-01	-5.3001E-01	78.01
51	-6.3540E-01	3.6775E-01	2.2540E-01	4.1607E-01	-6.8372E-01	77.90
MIDPT	V1	V2		VMAX		ANGLE
	7.4847E-02	-5.5529E-01		5.6031E-01		-82.32

ELEMENT ID 40 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
43	-7.0496E-01	1.1014E+00	8.0094E-02	1.1049E+00	-7.0851E-01	87.47
44	-4.9017E-01	1.1827E+00	1.0628E-02	1.1828E+00	-4.9023E-01	89.64
51	-6.9235E-01	3.6775E-01	3.1531E-01	4.5445E-01	-7.7905E-01	74.63
52	-8.4142E-01	1.0584E+00	2.4584E-01	1.0897E+00	-8.7272E-01	82.75
MIDPT	V1	V2		VMAX		ANGLE
	2.8232E-01	-5.2680E-01		5.9768E-01		-61.81

ELEMENT ID 41 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
44	-4.9405E-01	1.1827E+00	2.3547E-02	1.1830E+00	-4.9438E-01	89.20
45	-4.7604E-02	1.2834E+00	-6.0644E-02	1.2862E+00	-5.0361E-02	-87.40
52	-8.3827E-01	1.0584E+00	-7.8288E-02	1.0616E+00	-8.4150E-01	-87.64
53	-1.6368E-01	6.5970E-01	-1.6248E-01	6.9060E-01	-1.9458E-01	-79.23
MIDPT	V1	V2		VMAX		ANGLE
	6.8133E-01	-5.0162E-01		8.4607E-01		-36.36

ELEMENT ID 42 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
45	-4.8281E-02	1.2834E+00	-4.6197E-02	1.2850E+00	-4.9881E-02	-88.02
46	6.7905E-01	1.0074E+00	-2.5911E-02	1.0094E+00	6.7702E-01	-85.52
53	-1.2289E-01	6.5970E-01	-1.6144E-01	6.9169E-01	-1.5489E-01	-78.79
54	8.6457E-01	5.9846E-01	-1.4115E-01	9.2549E-01	5.3754E-01	-23.35
MIDPT	V1	V2		VMAX		ANGLE
	1.0838E+00	-5.0112E-01		1.1940E+00		-24.82

ELEMENT ID 43 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
46	6.9470E-01	1.0074E+00	-2.7507E-02	1.0098E+00	6.9230E-01	-85.01
47	1.2600E+00	8.4964E-01	5.7909E-03	1.2600E+00	8.4956E-01	.81
54	8.4271E-01	5.9846E-01	-6.3782E-02	8.5837E-01	5.8281E-01	-13.79
55	1.2940E+00	6.5005E-01	-3.0484E-02	1.2954E+00	6.4861E-01	-2.70

MIDPT	V1	V2	VMAX	ANGLE
	6.7531E-01	-2.6539E-01	7.2559E-01	-21.45

ELEMENT ID 44 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
47	1.2513E+00	8.4964E-01	-2.4616E-03	1.2513E+00	8.4963E-01	-.35
48	1.3542E+00	8.3587E-01	3.0859E-03	1.3542E+00	8.3585E-01	.34
55	1.2957E+00	6.5005E-01	-8.4574E-03	1.2958E+00	6.4994E-01	-.75
56	1.3796E+00	6.5620E-01	-2.9100E-03	1.3796E+00	6.5619E-01	-.23

MIDPT	V1	V2	VMAX	ANGLE
	2.9518E-01	-1.7660E-01	3.4397E-01	-30.89

ELEMENT ID 45 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
49	-1.0790E+00	5.6977E-01	2.0030E-02	5.7001E-01	-1.0792E+00	89.30
50	-5.3223E-01	1.3790E-01	4.2599E-02	1.4060E-01	-5.3492E-01	86.38
57	-1.4841E+00	-1.0130E+00	1.8915E-02	-1.0122E+00	-1.4849E+00	87.71
58	-1.7049E-02	-5.8476E-01	4.1484E-02	-1.4034E-02	-5.8778E-01	4.16

MIDPT	V1	V2	VMAX	ANGLE
	1.2575E+00	-1.1540E+00	1.7068E+00	-42.54

ELEMENT ID 46 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
50	-4.9496E-01	1.3790E-01	1.5143E-01	1.7227E-01	-5.2933E-01	77.21
51	-6.3540E-01	3.4214E-01	3.9133E-01	4.7950E-01	-7.7276E-01	70.66
58	-8.3924E-02	-5.8476E-01	8.2482E-02	-7.0690E-02	-5.9799E-01	9.12
59	1.2307E-01	-1.0153E+00	3.2238E-01	2.0803E-01	-1.1002E+00	14.76

MIDPT	V1	V2	VMAX	ANGLE
	-2.9117E-02	-7.6684E-01	7.6739E-01	-92.17

ELEMENT ID 47 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
51	-6.9235E-01	3.4214E-01	4.8124E-01	5.3139E-01	-8.8160E-01	68.53
52	-8.4143E-01	1.1902E+00	3.1925E-01	1.2392E+00	-8.9041E-01	81.28
59	2.4184E-01	-1.0153E+00	3.7152E-01	3.4343E-01	-1.1169E+00	15.29
60	-2.5653E+00	-2.2234E+00	2.0953E-01	-2.1240E+00	-2.6648E+00	64.61

MIDPT	V1	V2	VMAX	ANGLE
	-1.9602E+00	-2.6492E+00	3.2955E+00	-126.50

ELEMENT ID 48 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
52	-8.3828E-01	1.1902E+00	-4.8858E-03	1.1902E+00	-8.3829E-01	-89.86
53	-1.6367E-01	6.3106E-01	-1.9624E-01	6.7687E-01	-2.0949E-01	-76.86
60	-2.5753E+00	-2.2234E+00	2.8253E-01	-2.0665E+00	-2.7322E+00	60.95
61	5.2717E-01	-8.2319E-01	9.1182E-02	5.3330E-01	-8.2932E-01	3.85

MIDPT	V1	V2	VMAX	ANGLE
	2.9423E+00	-2.7646E+00	4.0373E+00	-43.22

ELEMENT ID 49 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
53	-1.2290E-01	6.3106E-01	-1.9520E-01	6.7860E-01	-1.7044E-01	-76.31
54	8.6458E-01	5.7119E-01	-8.6844E-02	8.8835E-01	5.4741E-01	-15.31
61	4.3618E-01	-8.2318E-01	6.4125E-02	4.3944E-01	-8.2644E-01	2.91
62	8.9788E-01	-4.4208E-03	1.7248E-01	9.2973E-01	-3.6266E-02	10.46
MIDPT	V1	V2		VMAX		ANGLE
	1.2817E+00	-8.8905E-01		1.5599E+00		-34.75

ELEMENT ID 50 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
54	8.4271E-01	5.7119E-01	-9.4736E-03	8.4304E-01	5.7086E-01	-2.00
55	1.2940E+00	6.3385E-01	-1.1167E-02	1.2942E+00	6.3366E-01	-.97
62	9.2467E-01	-4.4154E-03	1.0361E-01	9.3609E-01	-1.5830E-02	6.29
63	1.2028E+00	2.6386E-01	1.0192E-01	1.2137E+00	2.5293E-01	6.12
MIDPT	V1	V2		VMAX		ANGLE
	6.2723E-01	-4.8729E-01		7.9428E-01		-37.84

ELEMENT ID 51 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
55	1.2957E+00	6.3385E-01	1.0860E-02	1.2959E+00	6.3367E-01	.94
56	1.3796E+00	6.3987E-01	-2.9099E-03	1.3796E+00	6.3986E-01	-.23
63	1.2143E+00	2.6386E-01	3.5931E-02	1.2157E+00	2.6251E-01	2.16
64	1.2877E+00	2.8973E-01	2.2161E-02	1.2882E+00	2.8924E-01	1.27
MIDPT	V1	V2		VMAX		ANGLE
	2.7942E-01	-4.1372E-01		4.9924E-01		-55.97

ELEMENT ID 52 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
57	-1.4841E+00	-1.0036E+00	5.4089E-03	-1.0035E+00	-1.4842E+00	89.36
58	-1.7040E-02	-5.8562E-01	6.3795E-02	-9.9696E-03	-5.9269E-01	6.32
65	-1.0198E+00	2.3147E-01	-4.0280E-02	2.3276E-01	-1.0211E+00	-88.16
66	-2.4102E-01	-3.6404E-01	1.8106E-02	-2.3841E-01	-3.6665E-01	8.20
MIDPT	V1	V2		VMAX		ANGLE
	1.3482E+00	9.5756E-01		1.6536E+00		35.39

ELEMENT ID 53 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
58	-8.3923E-02	-5.8562E-01	1.0479E-01	-6.2916E-02	-6.0663E-01	11.34
59	1.2308E-01	-1.0067E+00	-1.9140E-02	1.2340E-01	-1.0071E+00	-.97
66	-1.8713E-01	-3.6404E-01	6.9773E-03	-1.8686E-01	-3.6431E-01	2.26
67	-2.8388E-01	-3.2308E-01	-1.1695E-01	-1.8490E-01	-4.2206E-01	-40.24
MIDPT	V1	V2		VMAX		ANGLE
	-4.9890E-02	3.9484E-01		3.9798E-01		97.20

ELEMENT ID 54 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
59	2.4186E-01	-1.0067E+00	2.9995E-02	2.4258E-01	-1.0075E+00	1.38
60	-2.5654E+00	-2.2425E+00	3.1219E-01	-2.0524E+00	-2.7554E+00	58.67

67	-3.4277E-01	-3.2307E-01	-8.8245E-02	-2.4413E-01	-4.2172E-01	-48.18
68	-8.1904E-01	4.5307E-01	1.9394E-01	4.8198E-01	-8.4795E-01	81.52
MIDPT	V1	V2		VMAX		ANGLE
	-2.1958E+00	2.4049E+00		3.2565E+00		132.40

ELEMENT ID 55 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
60	-2.5753E+00	-2.2425E+00	3.8521E-01	-1.9893E+00	-2.8285E+00	56.68
61	5.2719E-01	-8.1477E-01	6.0851E-01	7.6202E-01	-1.0496E+00	21.10
68	-8.1546E-01	4.5307E-01	6.2891E-01	7.1202E-01	-1.0744E+00	67.62
69	-2.0173E-01	-1.3004E-01	8.5221E-01	6.8708E-01	-1.0188E+00	46.20
MIDPT	V1	V2		VMAX		ANGLE
	2.9008E+00	2.3658E+00		3.7433E+00		39.20

ELEMENT ID 56 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
61	4.3618E-01	-8.1477E-01	5.8145E-01	6.6470E-01	-1.0433E+00	21.46
62	8.9788E-01	-7.0580E-04	3.8630E-01	1.0411E+00	-1.4394E-01	20.34
69	-1.6355E-01	-1.3005E-01	8.2375E-01	6.7712E-01	-9.7072E-01	45.58
70	5.9665E-01	-1.0440E-01	6.2860E-01	9.6585E-01	-4.7360E-01	30.43
MIDPT	V1	V2		VMAX		ANGLE
	1.1508E+00	7.9281E-02		1.1535E+00		3.94

ELEMENT ID 57 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	9.2467E-01	-7.0580E-04	3.1743E-01	1.0231E+00	-9.9126E-02	17.23
63	1.2028E+00	2.6575E-01	1.6051E-01	1.2295E+00	2.3902E-01	9.46
70	5.6976E-01	-1.0440E-01	4.3016E-01	7.7918E-01	-3.1381E-01	25.96
71	8.3323E-01	1.9815E-02	2.7324E-01	9.1649E-01	-6.3450E-02	16.95
MIDPT	V1	V2		VMAX		ANGLE
	5.1652E-01	-4.3230E-01		6.7356E-01		-39.93

ELEMENT ID 58 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
63	1.2143E+00	2.6575E-01	9.4527E-02	1.2237E+00	2.5642E-01	5.64
64	1.2877E+00	2.9147E-01	2.2161E-02	1.2882E+00	2.9098E-01	1.27
71	8.3689E-01	1.9815E-02	1.2017E-01	8.5420E-01	2.5083E-03	8.20
72	8.9639E-01	3.2719E-02	4.7805E-02	8.9903E-01	3.0081E-02	3.16
MIDPT	V1	V2		VMAX		ANGLE
	2.4547E-01	-5.3993E-01		5.9311E-01		-65.55

ELEMENT ID 59 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
65	-1.0198E+00	-8.0299E-02	-9.9755E-02	-6.9824E-02	-1.0303E+00	-84.01
66	-2.4102E-01	-2.6591E-01	-7.5062E-02	-1.7738E-01	-3.2955E-01	-40.29
73	-1.0904E+00	2.4249E-01	-1.9515E-01	2.7047E-01	-1.1184E+00	-81.84
74	-6.8713E-02	5.7332E-02	-1.7046E-01	1.7605E-01	-1.8743E-01	-55.15
MIDPT	V1	V2		VMAX		ANGLE
	1.0094E+00	4.2319E-01		1.0946E+00		22.75

ELEMENT ID 60 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
66	-1.8713E-01	-2.6591E-01	-8.6188E-02	-1.3176E-01	-3.2129E-01	-32.72
67	-2.8388E-01	-3.0637E-01	-2.9511E-02	-2.6355E-01	-3.2671E-01	-34.57
74	-1.1325E-01	5.7332E-02	-4.4382E-02	6.8189E-02	-1.2411E-01	-76.26
75	-1.2445E-01	2.6027E-01	1.2295E-02	2.6066E-01	-1.2484E-01	88.17
MIDPT	V1	V2		VMAX		ANGLE
	-1.6690E-02	6.1126E-01		6.1149E-01		91.56

ELEMENT ID 61 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
67	-3.4277E-01	-3.0637E-01	-8.0231E-04	-3.0635E-01	-3.4279E-01	-88.74
68	-8.1904E-01	3.4899E-01	2.1455E-01	3.8716E-01	-8.5720E-01	79.91
75	-1.2789E-01	2.6027E-01	1.3881E-01	3.0480E-01	-1.7241E-01	72.21
76	-1.4741E-01	1.4751E-01	3.5415E-01	3.8368E-01	-3.8358E-01	56.30
MIDPT	V1	V2		VMAX		ANGLE
	-1.4031E-01	4.9094E-01		5.1059E-01		105.95

ELEMENT ID 62 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
68	-8.1545E-01	3.4899E-01	6.4950E-01	6.3903E-01	-1.1055E+00	65.94
69	-2.0173E-01	-9.7488E-02	8.1822E-01	6.7027E-01	-9.6948E-01	46.82
76	-1.4296E-01	1.4751E-01	4.7458E-01	4.9858E-01	-4.9403E-01	53.51
77	-9.5278E-02	-1.2206E-02	6.4330E-01	5.9090E-01	-6.9838E-01	46.85
MIDPT	V1	V2		VMAX		ANGLE
	2.5115E-01	1.6595E-01		3.0103E-01		33.46

ELEMENT ID 63 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
69	-1.6356E-01	-9.7488E-02	7.8976E-01	6.5993E-01	-9.2098E-01	46.20
70	5.9665E-01	-8.4024E-02	7.0739E-01	1.0413E+00	-5.2869E-01	32.15
77	-8.4453E-02	-1.2208E-02	6.9403E-01	6.4664E-01	-7.4330E-01	46.49
78	1.3726E-01	-3.5743E-01	6.1166E-01	5.4969E-01	-7.6987E-01	33.99
MIDPT	V1	V2		VMAX		ANGLE
	5.7199E-01	-2.2972E-01		6.1640E-01		-21.88

ELEMENT ID 64 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
70	5.6976E-01	-8.4024E-02	5.0895E-01	8.4776E-01	-3.6202E-01	28.64
71	8.3323E-01	3.0748E-02	3.0310E-01	9.3484E-01	-7.0869E-02	18.53
78	1.4798E-01	-3.5744E-01	5.0022E-01	4.5570E-01	-6.6516E-01	31.60
79	3.0464E-01	-5.0245E-01	2.9438E-01	4.0060E-01	-5.9841E-01	18.05
MIDPT	V1	V2		VMAX		ANGLE
	2.8389E-01	-7.7842E-01		8.2857E-01		-69.96

ELEMENT ID 65 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE

71	8.3689E-01	3.0748E-02	1.5003E-01	8.6391E-01	3.7311E-03	10.21
72	8.9639E-01	4.3146E-02	4.7804E-02	8.9906E-01	4.0476E-02	3.20
79	2.9400E-01	-5.0245E-01	1.5173E-01	3.2192E-01	-5.3038E-01	10.43
80	3.5327E-01	-5.1228E-01	4.9509E-02	3.5609E-01	-5.1510E-01	3.26
MIDPT	V1	V2		VMAX		ANGLE
	1.9364E-01	-9.9087E-01		1.0096E+00		-78.94

ELEMENT ID 66 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
73	-1.0904E+00	3.0735E-01	-4.0755E-01	4.1749E-01	-1.2006E+00	-74.88
74	-6.8707E-02	1.4345E-02	-1.2597E-01	1.0546E-01	-1.5982E-01	-54.12
81	-5.4596E-06	-3.1275E-01	-2.8739E-01	1.7080E-01	-4.8356E-01	-30.72
82	-3.4403E-07	4.4726E-01	-5.8164E-03	4.4733E-01	-7.5970E-05	-89.26
MIDPT	V1	V2		VMAX		ANGLE
	7.8453E-01	2.3829E-01		8.1992E-01		16.90

ELEMENT ID 67 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
74	-1.1325E-01	1.4345E-02	1.0261E-04	1.4345E-02	-1.1325E-01	89.95
75	-1.2444E-01	2.3189E-01	5.7842E-02	2.4105E-01	-1.3360E-01	81.01
82	-5.6702E-07	4.4726E-01	-5.8133E-03	4.4733E-01	-7.6114E-05	-89.26
83	-6.2307E-07	2.0672E-01	5.1926E-02	2.1903E-01	-1.2311E-02	76.66
MIDPT	V1	V2		VMAX		ANGLE
	-1.4183E-02	3.1979E-01		3.2010E-01		92.54

ELEMENT ID 68 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
75	-1.2788E-01	2.3189E-01	1.8435E-01	3.0958E-01	-2.0557E-01	67.15
76	-1.4741E-01	1.8860E-01	2.5122E-01	3.2282E-01	-2.8163E-01	61.89
83	-6.4029E-07	2.0672E-01	5.1927E-02	2.1903E-01	-1.2311E-02	76.66
84	-7.3805E-07	-2.6468E-01	1.1880E-01	4.5500E-02	-3.1018E-01	20.96
MIDPT	V1	V2		VMAX		ANGLE
	-1.7304E-01	-2.0697E-01		2.6978E-01		-129.90

ELEMENT ID 69 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
76	-1.4296E-01	1.8860E-01	3.7165E-01	4.2977E-01	-3.8413E-01	57.02
77	-9.5277E-02	-4.2699E-02	4.2325E-01	3.5508E-01	-4.9305E-01	46.78
84	-7.1575E-07	-2.6469E-01	1.1880E-01	4.5500E-02	-3.1019E-01	20.96
85	-4.7703E-07	-9.0966E-01	1.7040E-01	3.0872E-02	-9.4053E-01	10.27
MIDPT	V1	V2		VMAX		ANGLE
	-2.7368E-01	-7.2943E-01		7.7908E-01		-110.57

ELEMENT ID 70 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	-8.4454E-02	-4.2699E-02	4.7398E-01	4.1087E-01	-5.3802E-01	46.26
78	1.3726E-01	-3.5153E-01	4.6255E-01	4.1601E-01	-6.3028E-01	31.07
85	-4.2284E-07	-9.0966E-01	1.7040E-01	3.0872E-02	-9.4054E-01	10.27
86	6.8721E-07	-1.6529E+00	1.5897E-01	1.5150E-02	-1.6681E+00	5.44

MIDPT	V1	V2	VMAX	ANGLE
	-2.1332E-01	-1.3328E+00	1.3498E+00	-99.09

ELEMENT ID 71 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
78	1.4797E-01	-3.5153E-01	3.5111E-01	3.2910E-01	-5.3266E-01	27.29
79	3.0464E-01	-4.8148E-01	2.5308E-01	3.7907E-01	-5.5591E-01	16.39
86	7.4088E-07	-1.6529E+00	1.5896E-01	1.5150E-02	-1.6681E+00	5.44
87	1.5253E-06	-2.1889E+00	6.0929E-02	1.6962E-03	-2.1906E+00	1.59

MIDPT	V1	V2	VMAX	ANGLE
	-1.2356E-01	-1.9646E+00	1.9685E+00	-93.60

ELEMENT ID 72 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
79	2.9399E-01	-4.8148E-01	1.1044E-01	3.0941E-01	-4.9690E-01	7.95
80	3.5327E-01	-4.8877E-01	4.9509E-02	3.5617E-01	-4.9167E-01	3.35
87	1.4720E-06	-2.1889E+00	6.0927E-02	1.6960E-03	-2.1906E+00	1.59
88	1.7687E-06	-2.2562E+00	7.8030E-07	1.7687E-06	-2.2562E+00	.00

MIDPT	V1	V2	VMAX	ANGLE
	3.5476E-02	-2.3067E+00	2.3070E+00	-89.12

ELEMENT ID 73 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
90	1.3242E-01	4.3895E-01	2.3550E-02	4.4075E-01	1.3062E-01	85.63
25	-1.9791E+00	-9.1923E-01	2.7342E-01	-8.5286E-01	-2.0455E+00	76.36
91	-6.6222E-02	8.4235E-02	-1.0785E-01	1.4050E-01	-1.2249E-01	-62.45
33	-1.1518E+00	6.0684E-01	1.4201E-01	6.1824E-01	-1.1632E+00	85.41

MIDPT	V1	V2	VMAX	ANGLE
	-1.1661E+00	7.6190E-01	1.3929E+00	146.84

ELEMENT ID 74 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
91	-6.6218E-02	2.7181E-01	-8.5061E-02	2.9201E-01	-8.6416E-02	-76.64
33	-1.1518E+00	2.8767E-01	-7.2477E-03	2.8770E-01	-1.1518E+00	-89.71
92	-4.3085E-03	4.1160E-01	-3.8478E-02	4.1513E-01	-7.8383E-03	-84.76
41	-1.0179E+00	6.9196E-01	3.9335E-02	6.9287E-01	-1.0188E+00	88.68

MIDPT	V1	V2	VMAX	ANGLE
	-6.2939E-01	3.2922E-01	7.1029E-01	152.39

ELEMENT ID 75 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
92	-4.3031E-03	4.0627E-01	7.7346E-02	4.2036E-01	-1.8391E-02	79.68
41	-1.0179E+00	7.0408E-01	2.6742E-02	7.0450E-01	-1.0184E+00	89.11
93	-1.8651E-02	2.0279E-01	1.2859E-01	2.6176E-01	-7.7616E-02	65.37
49	-1.1309E+00	2.3081E-01	7.7982E-02	2.3526E-01	-1.1354E+00	86.73

MIDPT	V1	V2	VMAX	ANGLE
	-6.3322E-01	-3.7970E-01	7.3834E-01	-149.05

ELEMENT ID 76 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
93	-1.8645E-02	1.3415E-02	1.5483E-01	1.5304E-01	-1.5827E-01	47.96
49	-1.1309E+00	5.6977E-01	6.2173E-02	5.7204E-01	-1.1332E+00	87.91
94	4.5452E-02	2.2118E-02	7.9543E-02	1.1418E-01	-4.6609E-02	40.83
57	-1.4282E+00	-1.0130E+00	-1.3111E-02	-1.0125E+00	-1.4286E+00	-88.19

MIDPT	V1	V2	VMAX	ANGLE
	-9.1137E-01	-8.6697E-01	1.2579E+00	-136.43

ELEMENT ID 77 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
94	4.5459E-02	1.9764E-02	-1.1055E-01	1.4390E-01	-7.8681E-02	-41.69
57	-1.4282E+00	-1.0036E+00	-2.6622E-02	-1.0019E+00	-1.4298E+00	-86.43
95	-1.0297E-02	-2.5380E-01	-1.8200E-01	8.6918E-02	-3.5102E-01	-28.11
65	-1.1941E+00	2.3147E-01	-9.8072E-02	2.3818E-01	-1.2008E+00	-86.08

MIDPT	V1	V2	VMAX	ANGLE
	-9.4401E-01	6.3802E-01	1.1394E+00	145.95

ELEMENT ID 78 ----------

LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
95	-1.0291E-02	-8.3277E-02	-1.2486E-01	8.3300E-02	-1.7687E-01	-36.85
65	-1.1941E+00	-8.0299E-02	-1.5754E-01	-5.8444E-02	-1.2159E+00	-82.10
96	-1.1406E-01	-4.6786E-02	-8.6051E-02	1.1968E-02	-1.7282E-01	-55.68
73	-1.1598E+00	2.4249E-01	-1.1873E-01	2.5247E-01	-1.1697E+00	-85.19

MIDPT	V1	V2	VMAX	ANGLE
	-6.7205E-01	1.9710E-01	7.0036E-01	163.65

ELEMENT ID 79 ----------

LOAD COND 1 ----------

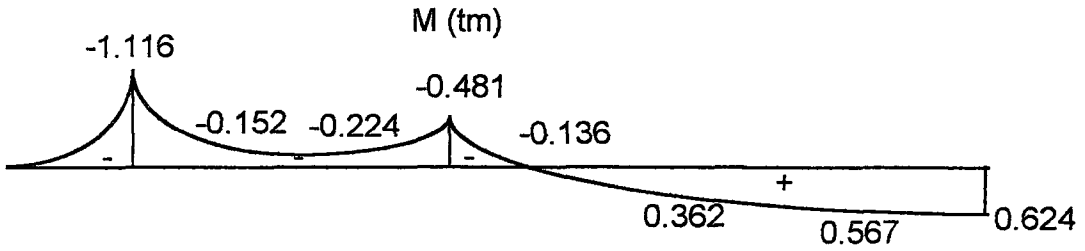
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
96	-1.1406E-01	-8.5688E-02	-1.9321E-02	-7.5903E-02	-1.2384E-01	-63.14
73	-1.1598E+00	3.0735E-01	-3.3113E-01	3.7862E-01	-1.2310E+00	-77.85
97	2.0377E-01	1.5506E-01	-2.9251E-02	2.1748E-01	1.4135E-01	-25.11
81	-2.1401E+00	-3.1275E-01	-3.4106E-01	-2.5118E-01	-2.2017E+00	-79.77

MIDPT	V1	V2	VMAX	ANGLE
	-1.1055E+00	-4.3154E-01	1.1867E+00	-158.68

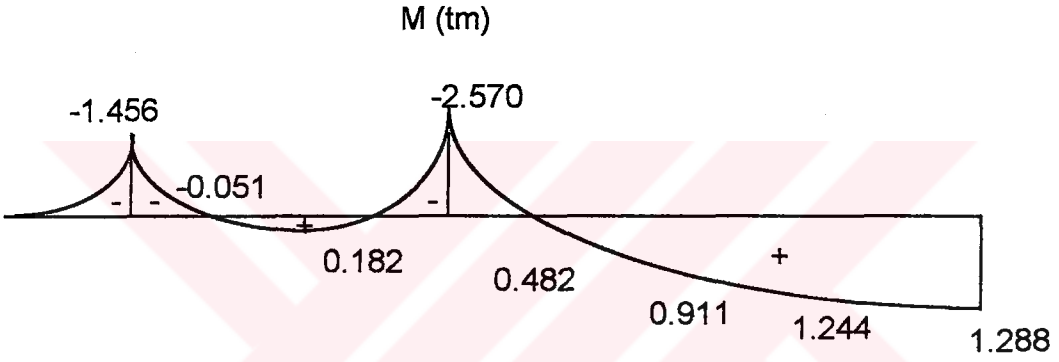
3.2.2.Döşeme Moment Diyagramları

p=1.4 g+1.6 q için

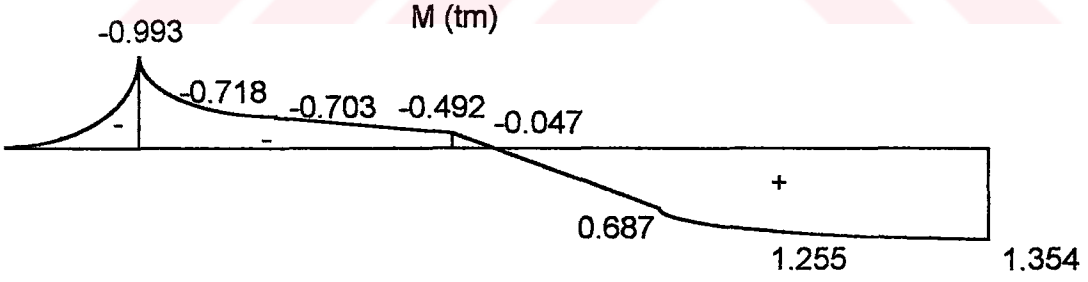
a) X doğrultusunda moment diyagramları



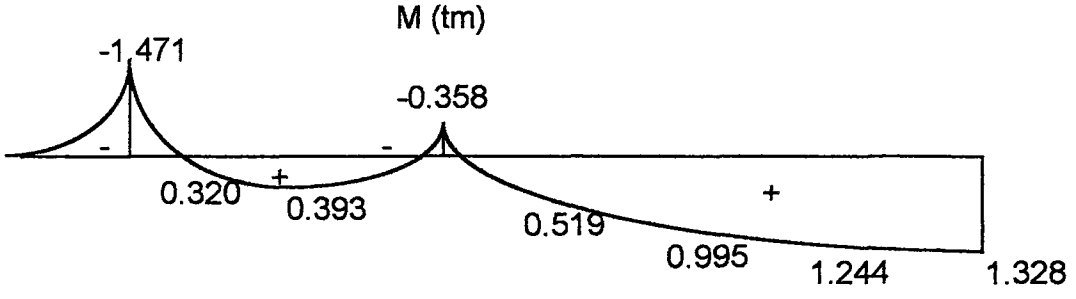
Şekil 3.1. 4-4,3-3 Aksları arası açıklık şeridi moment diyagramı



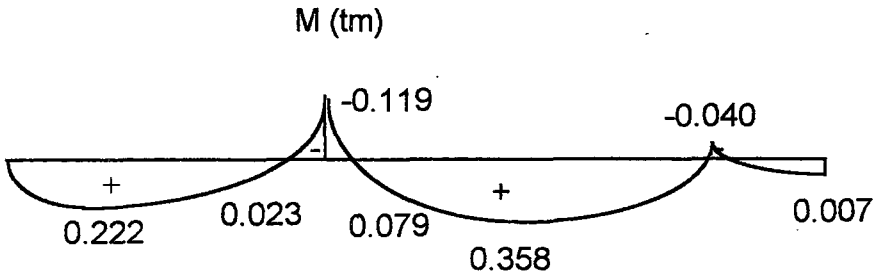
Şekil 3.2. 3-3 Aksı kolon şeridi moment diyagramı



Şekil 3.3. 3-3, 2-2 Aksları arası açıklık şeridi moment diyagramı

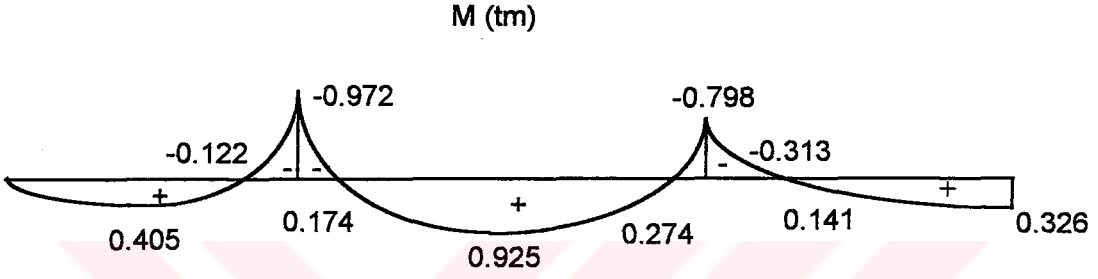


Şekil 3.4. 2-2 Aksı kolon şeridi moment diyagramı

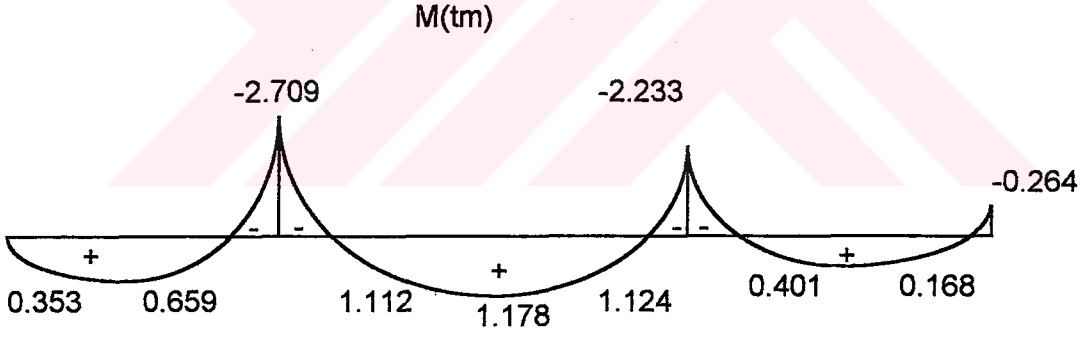


Şekil 3.5. 2-2, 1-1 Aksları arası açıklık şeridi moment diyagramı

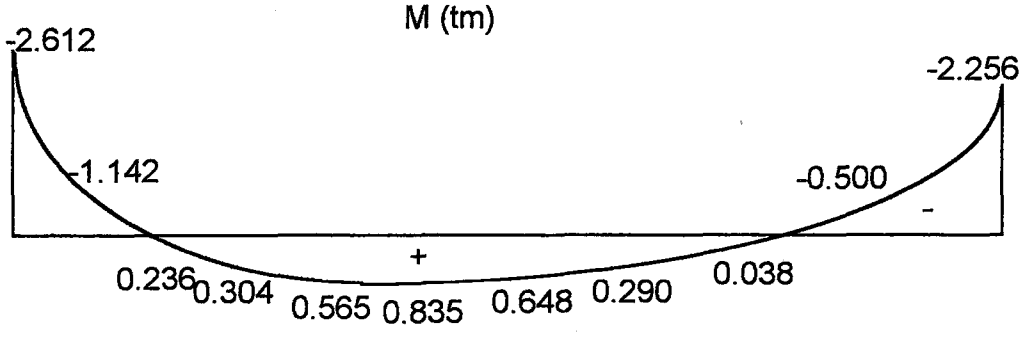
b) Y doğrultusunda moment diyagramları



Şekil 3.6. D-D,E-E Arası açıklık şeridi moment diyagramı

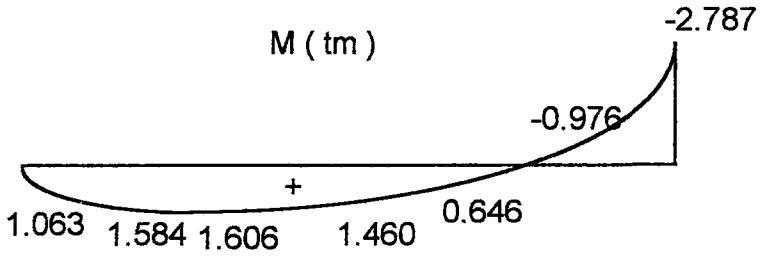


Şekil 3.7. D-D Aksı kolon şeridi moment diyagramı

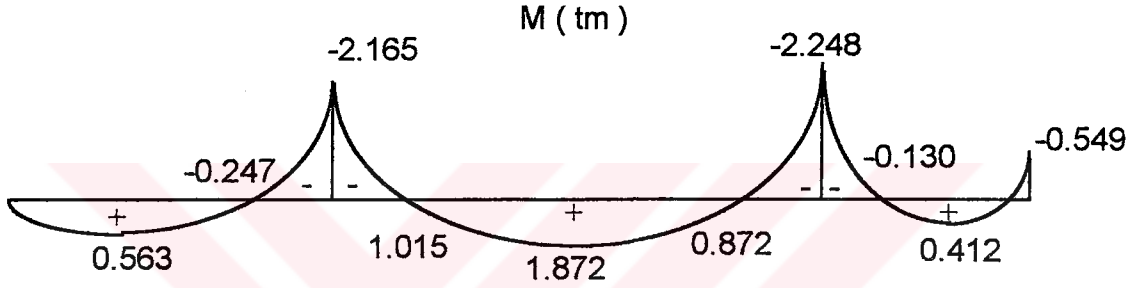


Şekil 3.8. C-C Aksı açıklık şeridi moment diyagramı

3.2.3.Kiriş Moment Diyagramları



Şekil 3.9. X Doğrultusunda kiriş moment diyagramı



Şekil 3.10. Y Doğrultusunda kiriş moment diyagramı

3.3.Merdiven Kesit Tesirleri Hesabı

yük analizi

Döşeme öz ağırlığı	:0.180 x 2.4	= 0.432
Basamak ağırlığı	:	= 0.100
Tesfiye betonu	:0.030 x 2.0	= 0.060
şap	:0.025 x 2.0	= 0.050

sabit yük = 0.642 t / m^2

pd = 1.4x0.642 +1.6x0.350 =1.459 t / m^2

W = 1.459 / 0.18 = 8.104 t / m^3

3.3. Merdiven Kesit Tesirlerinin Bulunması

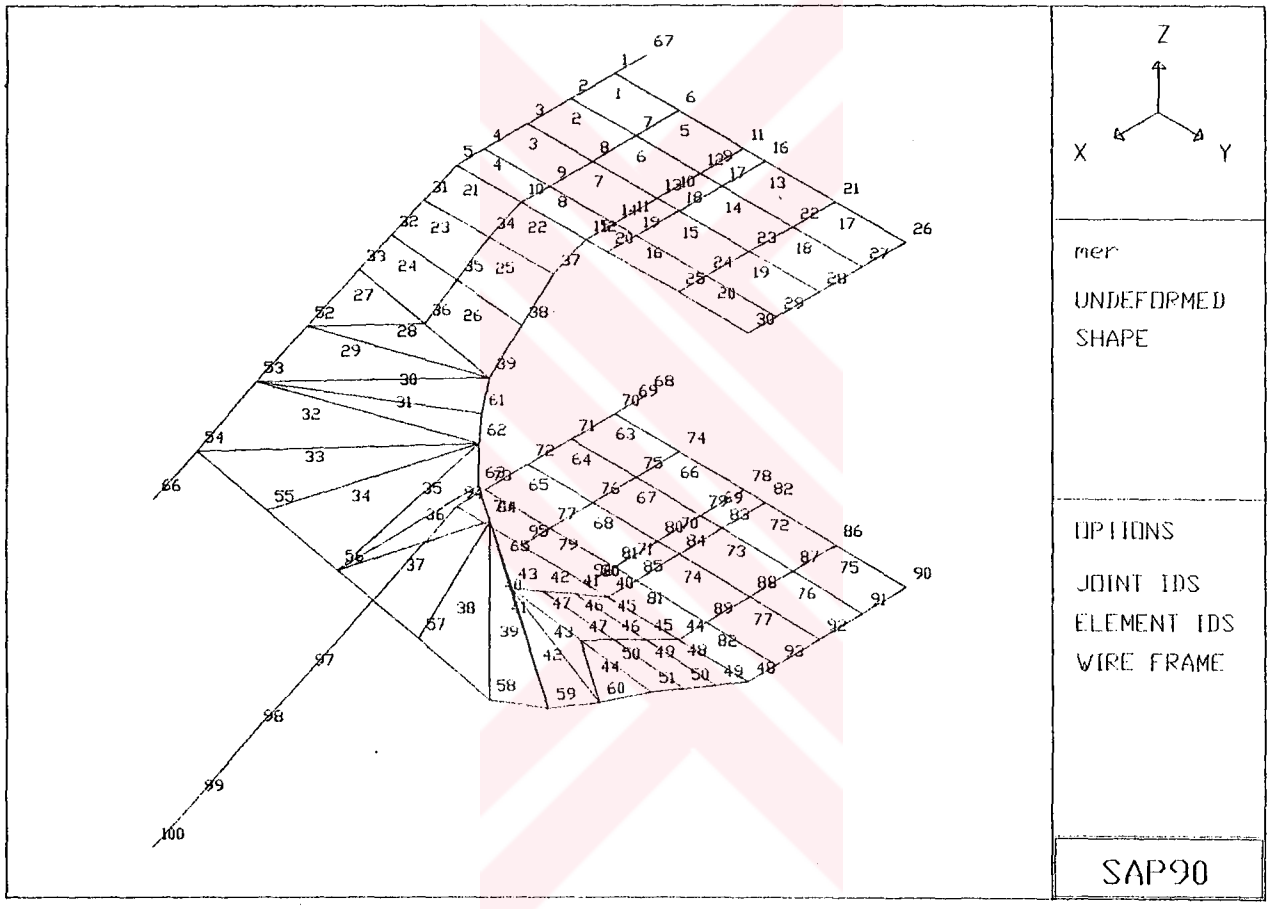
3.3.1. Merdiven SAP90 Giriş Verileri ve Çıktıları

Merdiven kısmı için SAP90 veri bloku oluşturulup hesaplar yapılmıştır ve kesit tesir değerleri elde edilmiştir.

```
SYSTEM
L=1
RESTRAINTS
1,100,1        R=0,0,0,0,0,0
26             R=1,1,1,1,1,1
27,28,1        R=1,1,0,0,1,1
29,30,1        R=1,1,1,1,1,1
31,65,1        R=0,0,0,0,0,0
40,44,4        R=0,0,0,0,0,0
48,51,1        R=1,1,1,1,1,1
58,60,1        R=1,1,1,1,1,1
66,68,1        R=1,1,1,1,1,1
90,93,3        R=1,1,1,1,1,1
91,92,1        R=1,1,0,0,1,1
100            R=1,1,1,1,1,1

JOINTS
1   X=0.3    Y=0
4   X=1.5    Y=0
5   X=1.76   Y=0
11  X=0.3    Y=1.2
14  X=1.5    Y=1.2                    Q=1,4,11,14,1,5
15  X=1.76   Y=1.2                    G=5,15,5
16  X=0.3    Y=1.4
19  X=1.5    Y=1.4
20  X=1.76   Y=1.4
26  X=0.3    Y=2.7
29  X=1.5    Y=2.7                    Q=16,19,26,29,1,5
30  X=1.76   Y=2.7                    G=20,30,5
31  X=2.06   Y=0      Z=-0.13
33  X=2.66   Y=0      Z=-0.39
37  X=2.06   Y=1.2    Z=-0.13
39  X=2.66   Y=1.2    Z=-0.65         Q=31,33,37,39,1,3
40  X=1.76   Y=1.4    Z=-2.72
43  X=2.66   Y=1.4    Z=-2.20
48  X=1.76   Y=2.7    Z=-2.72
51  X=2.66   Y=2.7    Z=-2.35         Q=40,43,48,51,1,4
52  X=3.14   Y=0      Z=-0.60
53  X=3.61   Y=0      Z=-0.80
54  X=4.16   Y=0      Z=-1.08
55  X=4.16   Y=0.65   Z=-1.22
56  X=4.16   Y=1.3    Z=-1.36
57  X=4.16   Y=2.05   Z=-1.51
58  X=4.16   Y=2.7    Z=-1.66
59  X=3.61   Y=2.7    Z=-2.00
60  X=3.14   Y=2.7    Z=-2.19
61  X=2.73   Y=1.2    Z=-0.9
62  X=2.8    Y=1.25   Z=-1.08
63  X=2.86   Y=1.3    Z=-1.36
64  X=2.8    Y=1.35   Z=-1.64
65  X=2.73   Y=1.4    Z=-1.95
66  X=4.56   Y=0      Z=-1.26
67  X=0      Y=0      Z=0
68  X=0      Y=0      Z=-2.72
```

```
69   X=0.15    Y=0       Z=-2.72
70   X=0.3     Y=0       Z=-2.72
73   X=1.5     Y=0       Z=-2.72
78   X=0.3     Y=1.2     Z=-2.72
81   X=1.5     Y=1.2     Z=-2.72      Q=70,73,78,81,1,4
82   X=0.3     Y=1.4     Z=-2.72
85   X=1.5     Y=1.4     Z=-2.72
90   X=0.3     Y=2.7     Z=-2.72
93   X=1.5     Y=2.7     Z=-2.72      Q=82,85,90,93,1,4
94   X=1.76    Y=0       Z=-2.72
95   X=1.76    Y=0.6     Z=-2.72
96   X=1.76    Y=1.2     Z=-2.72
97   X=3.14    Y=0       Z=-3.32
98   X=3.61    Y=0       Z=-3.52
99   X=4.16    Y=0       Z=-3.8
100  X=4.56    Y=0       Z=-3.98

SHELL
NM=2   Z=-1
1   E=3025000        W=8.104
2   E=3025000        W=0.
1   JQ=1,2,6,7       ETYPE=2   M=1    TH=0.18   G=4,5
21  JQ=5,31,10,34    ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
22  JQ=10,34,15,37   ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
23  JQ=31,32,34,35   ETYPE=0   M=1    TH=0.18   LP=2    G=2,2
27  JQ=33,52,36      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
28  JQ=36,52,39      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
29  JQ=52,53,39      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
30  JQ=61,39,53      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
31  JQ=62,61,53      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
32  JQ=53,54,62      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
33  JQ=62,54,55      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
34  JQ=62,55,56      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
35  JQ=62,56,63      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
36  JQ=63,56,64      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
37  JQ=64,56,57      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
38  JQ=64,57,58      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
39  JQ=64,58,59      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
40  JQ=64,59,65      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
41  JQ=65,59,43      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
42  JQ=43,59,60      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
43  JQ=43,60,47      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
44  JQ=47,60,51      ETYPE=0   M=1    TH=0.18   LP=2    G=1,1
45  JQ=40,41,44,45   ETYPE=0   M=1    TH=0.18   LP=2    G=3,2
63  JQ=70,71,74,75   ETYPE=2   M=2    TH=0.18   G=3,5
78  JQ=73,94,77,95   ETYPE=2   M=2    TH=0.18   G=1,1
79  JQ=77,95,81,96   ETYPE=2   M=2    TH=0.18   G=1,1
80  JQ=81,96,85,40   ETYPE=2   M=2    TH=0.18   G=1,1
81  JQ=85,40,89,44   ETYPE=2   M=2    TH=0.18   G=1,1
82  JQ=89,44,93,48   ETYPE=2   M=2    TH=0.18   G=1,1

FRAME
NM=2   NL=1      Z=-1
1      SH=R   T=0.45,0.20   E=3025000   G=1210000 W=0.22
```

```
2      SH=R  T=0.45,0.20  E=3025000  G=1210000 W=0.
1      WG=0,0,-0.50
C KİRİŞLER
52   1  2  M=1  LP=-2,0  NSL=1  G=3,1,1,1
56   5 31  M=1  LP=-2,0  NSL=1
57  31 32  M=1  LP=-2,0  NSL=1  G=1,1,1,1
59  33 52  M=1  LP=-2,0  NSL=1
60  52 53  M=1  LP=-2,0  NSL=1
61  53 54  M=1  LP=-2,0  NSL=1
62  54 66  M=1  LP=-2,0  NSL=1
51  67  1  M=1  LP=-2,0  NSL=1
83  68 69  M=2  LP=-2,0         G=4,1,1,1
88  73 94  M=2  LP=-2,0
89  94 97  M=2  LP=-2,0
90  97 98  M=2  LP=-2,0         G=2,1,1,1
```


Z
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UNDEFORMED
SHAPE
OPTIONS
JOINT IDS
ELEMENT IDS
WIRE FRAME
SAP90

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
51								
	1	.000			-5.349			-.449
		.000	3.103	-1.770		-.117	.071	
		.300	2.887	-.871		-.117	.036	
		.300			-5.349			-.449
52								
	1	.000			-5.349			-.235
		.000	1.776	-.759		-.117	.036	
		.400	1.488	-.106		-.117	-.010	
		.400			-5.349			-.235
53								
	1	.000			-5.349			-.028
		.000	.864	-.014		-.117	-.010	
		.400	.576	.274		-.117	-.057	
		.400			-5.349			-.028
54								
	1	.000			-5.349			.057
		.000	.204	.305		-.117	-.057	
		.283	.000	.334		-.117	-.090	
		.400	-.084	.329		-.117	-.104	
		.400			-5.349			.057
55								
	1	.000			-5.349			.101
		.000	-.278	.308		-.117	-.104	
		.260	-.466	.211		-.117	-.134	
		.260			-5.349			.101
56								
	1	.000			-3.463			.086
		.000	.763	.221		.230	-.100	
		.327	.560	.437		.230	-.025	
		.327			-3.551			.086
57								
	1	.000			-3.437			.108
		.000	.463	.471		.022	.022	
		.327	.260	.589		.022	.029	
		.327			-3.525			.108
58								
	1	.000			-3.659			.099
		.000	.197	.581		-.038	.031	
		.316	.000	.612		-.038	.019	
		.327	-.007	.612		-.038	.019	
		.327			-3.748			.099

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
59								
	1	.000			-3.178			.066
		.000	-.139	.581		-.046	.004	
		.524	-.465	.423		-.046	-.019	
		.524			-3.320			.066
60								
	1	.000			-2.585			.038
		.000	-.526	.390		-.062	-.002	
		.511	-.846	.039		-.062	-.034	
		.511			-2.721			.038
61								
	1	.000			-2.869			.032
		.000	-.827	.074		-.344	.056	
		.617	-1.193	-.549		-.344	-.156	
		.617			-3.055			.032
62								
	1	.000			-9.324			.068
		.000	-1.426	-.636		.889	-.124	
		.439	-1.697	-1.321		.889	.266	
		.439			-9.445			.068
83								
	1	.000			-.417			-.080
		.000	.107	-.135		.006	-.012	
		.150	.107	-.119		.006	-.011	
		.150			-.417			-.080
84								
	1	.000			-.417			-.080
		.000	.107	-.119		.006	-.011	
		.150	.107	-.103		.006	-.011	
		.150			-.417			-.080
85								
	1	.000			-.417			-.065
		.000	.151	-.091		.006	-.011	
		.400	.151	-.031		.006	-.008	
		.400			-.417			-.065
86								
	1	.000			-.417			-.051
		.000	.108	-.021		.006	-.008	
		.400	.108	.022		.006	-.006	
		.400			-.417			-.051
87								
	1	.000			-.417			-.036

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.083	.030		.006	-.006	
		.400	.083	.063		.006	-.004	
		.400			-.417			-.036
88								
	1	.000			-.417			-.001
		.000	.034	.069		.006	-.004	
		.260	.034	.077		.006	-.002	
		.260			-.417			-.001
89								
	1	.000			-.477			.027
		.000	-.052	.083		.006	-.014	
		1.505	-.052	.005		.006	-.006	
		1.505			-.477			.027
90								
	1	.000			-.477			.027
		.000	-.056	.005		.006	-.006	
		.511	-.056	-.023		.006	-.003	
		.511			-.477			.027
91								
	1	.000			-.480			.027
		.000	-.023	-.023		.006	-.005	
		.617	-.023	-.038		.006	-.001	
		.617			-.480			.027
92								
	1	.000			-.478			.027
		.000	-.046	-.038		.006	.000	
		.439	-.046	-.058		.006	.003	
		.439			-.478			.027

SHELL ELEMENT FORCES

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID 1 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	-6.3626E-01	-1.2985E+00	-2.0838E-01	-5.7615E-01	-1.3586E+00	-16.09
2	3.6571E-01	-4.3281E-01	-1.4580E-01	3.9150E-01	-4.5860E-01	-10.03
6	1.6708E-01	5.3550E-01	3.0343E-02	5.3798E-01	1.6460E-01	85.32
7	-6.2155E-02	3.0639E-01	9.2922E-02	3.2850E-01	-8.4258E-02	76.62
MIDPT	V1	V2		VMAX		ANGLE
	1.3638E+00	2.3008E+00		2.6746E+00		59.34

ELEMENT ID 2 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
2	-1.7648E-01	-4.3281E-01	-3.1027E-05	-1.7648E-01	-4.3281E-01	-.01
3	2.6567E-01	-1.9350E-01	2.0440E-02	2.6658E-01	-1.9440E-01	2.54
7	9.1061E-02	3.0639E-01	9.2605E-02	3.4074E-01	5.6714E-02	69.65
8	1.2096E-01	3.1411E-01	1.1308E-01	3.6624E-01	6.8830E-02	65.25
MIDPT	V1	V2		VMAX		ANGLE
	7.4446E-01	1.0902E+00		1.3201E+00		55.67

ELEMENT ID 3 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
3	8.6145E-02	-1.9350E-01	7.9787E-02	1.0731E-01	-2.1466E-01	14.86
4	1.2290E-01	-1.2036E-01	1.0601E-01	1.6262E-01	-1.6007E-01	20.54
8	1.6923E-01	3.1411E-01	9.3118E-02	3.5964E-01	1.2369E-01	63.94
9	1.9715E-01	2.7652E-01	1.1934E-01	3.6260E-01	1.1107E-01	54.20
MIDPT	V1	V2		VMAX		ANGLE
	1.0307E-01	8.1928E-01		8.2574E-01		82.83

ELEMENT ID 4 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
4	2.3892E-01	-1.2036E-01	1.3709E-01	2.8526E-01	-1.6669E-01	18.67
5	-7.0103E-02	-1.2485E-01	1.5877E-01	6.3638E-02	-2.5859E-01	40.11
9	1.7045E-01	2.7652E-01	1.4004E-01	3.7323E-01	7.3743E-02	55.37
10	1.9846E-01	2.8611E-01	1.6171E-01	4.0983E-01	7.4737E-02	52.58
MIDPT	V1	V2		VMAX		ANGLE
	-5.3552E-01	7.5656E-01		9.2691E-01		125.29

ELEMENT ID 5 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	1.6708E-01	4.0827E-01	1.4878E-01	4.7920E-01	9.6160E-02	64.51
7	-6.2158E-02	3.6352E-01	1.3876E-01	4.0475E-01	-1.0339E-01	73.45
11	-5.6280E-02	7.1594E-01	1.2437E-01	7.3547E-01	-7.5815E-02	81.07
12	1.0104E-01	6.9558E-01	1.1434E-01	7.1681E-01	7.9806E-02	79.48
MIDPT	V1	V2		VMAX		ANGLE
	-1.3060E-01	5.0803E-01		5.2455E-01		104.42

ELEMENT ID 6 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
7	9.1062E-02	3.6352E-01	1.3844E-01	4.2152E-01	3.3064E-02	67.27
8	1.2096E-01	3.2147E-01	1.2788E-01	3.8371E-01	5.8717E-02	64.05
12	4.4202E-02	6.9558E-01	1.1276E-01	7.1455E-01	2.5235E-02	80.45
13	1.0448E-01	6.6914E-01	1.0220E-01	6.8707E-01	8.6555E-02	80.05
MIDPT	V1	V2		VMAX		ANGLE
	6.9921E-02	5.4005E-01		5.4456E-01		82.62

ELEMENT ID 7 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
8	1.6923E-01	3.2147E-01	1.0793E-01	3.7742E-01	1.1328E-01	62.60
9	1.9715E-01	2.5738E-01	7.8128E-02	3.1099E-01	1.4353E-01	55.54
13	8.2614E-02	6.6914E-01	9.2851E-02	6.8349E-01	6.8266E-02	81.22
14	1.0497E-01	6.9303E-01	6.3052E-02	6.9972E-01	9.8285E-02	83.95
MIDPT	V1	V2		VMAX		ANGLE
	3.7719E-02	5.7827E-01		5.7950E-01		86.27

ELEMENT ID 8 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
9	1.7045E-01	2.5738E-01	9.8825E-02	3.2188E-01	1.0595E-01	56.87
10	1.9846E-01	2.2710E-01	8.3641E-02	2.9764E-01	1.2792E-01	49.86
14	1.0642E-01	6.9303E-01	-5.2190E-02	6.9764E-01	1.0181E-01	-84.96
15	1.2233E-01	4.6155E-01	-6.7374E-02	4.7445E-01	1.0944E-01	-79.17
MIDPT	V1	V2		VMAX		ANGLE
	-1.6723E-01	5.0003E-01		5.2725E-01		108.49

ELEMENT ID 9 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
11	-5.6282E-02	7.2812E-01	8.4821E-02	7.3719E-01	-6.5349E-02	83.90
12	1.0104E-01	6.8679E-01	9.5163E-02	7.0186E-01	8.5965E-02	81.00
16	-3.0626E-02	7.2460E-01	7.3828E-02	7.3175E-01	-3.7775E-02	84.47
17	9.6065E-02	6.7799E-01	8.4170E-02	6.8992E-01	8.4135E-02	81.93
MIDPT	V1	V2		VMAX		ANGLE
	3.0005E-01	-4.9364E-03		3.0009E-01		-.94

ELEMENT ID 10 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
12	4.4201E-02	6.8679E-01	9.3583E-02	7.0014E-01	3.0849E-02	81.88
13	1.0448E-01	6.9598E-01	8.4735E-02	7.0788E-01	9.2585E-02	82.01
17	7.2439E-02	6.7799E-01	9.4143E-02	6.9229E-01	5.8141E-02	81.36
18	5.8551E-02	6.7327E-01	8.5295E-02	6.8489E-01	4.6935E-02	82.25
MIDPT	V1	V2		VMAX		ANGLE
	6.0793E-02	-1.0088E-01		1.1778E-01		-58.93

ELEMENT ID 11 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE

13	8.2614E-02	6.9598E-01	7.5384E-02	7.0511E-01	7.3485E-02	83.10
14	1.0497E-01	5.8535E-01	5.3354E-02	5.9120E-01	9.9115E-02	83.74
18	9.4776E-02	6.7327E-01	7.1211E-02	6.8191E-01	8.6139E-02	83.08
19	4.8748E-02	7.5052E-01	4.9182E-02	7.5395E-01	4.5318E-02	86.01
MIDPT	V1	V2		VMAX		ANGLE
	-5.0452E-02	3.0111E-01		3.0531E-01		99.51

ELEMENT ID 12 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	1.0642E-01	5.8535E-01	-6.1889E-02	5.9321E-01	9.8550E-02	-82.75
15	1.2233E-01	1.1672E+00	-1.1261E-01	1.1792E+00	1.1033E-01	-83.92
19	8.6372E-02	7.5052E-01	4.6573E-02	7.5377E-01	8.3122E-02	86.01
20	-1.3684E-02	7.3271E-01	-4.1465E-03	7.3273E-01	-1.3707E-02	-89.68
MIDPT	V1	V2		VMAX		ANGLE
	3.8050E-01	-8.6830E-01		9.4801E-01		-66.34

ELEMENT ID 13 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
16	-3.0626E-02	6.7122E-01	2.8304E-02	6.7236E-01	-3.1766E-02	87.69
17	9.6066E-02	6.9837E-01	5.2211E-02	7.0286E-01	9.1574E-02	85.08
21	1.0159E-01	5.0988E-01	-8.1399E-02	5.2551E-01	8.5961E-02	-79.13
22	1.1924E-01	2.1268E-01	-5.7492E-02	2.4005E-01	9.1881E-02	-64.55
MIDPT	V1	V2		VMAX		ANGLE
	1.1657E-02	-4.3795E-01		4.3810E-01		-88.48

ELEMENT ID 14 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
17	7.2439E-02	6.9837E-01	6.2184E-02	7.0449E-01	6.6322E-02	84.38
18	5.8550E-02	7.0432E-01	1.1095E-01	7.2285E-01	4.0020E-02	80.52
22	2.1208E-01	2.1268E-01	2.8894E-02	2.4127E-01	1.8348E-01	45.30
23	2.3588E-01	1.2478E-01	7.7658E-02	2.7581E-01	8.4852E-02	27.21
MIDPT	V1	V2		VMAX		ANGLE
	-3.8824E-02	-6.9750E-01		6.9858E-01		-93.19

ELEMENT ID 15 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
18	9.4776E-02	7.0432E-01	9.6865E-02	7.1935E-01	7.9754E-02	81.18
19	4.8747E-02	7.0738E-01	9.4426E-02	7.2065E-01	3.5477E-02	82.00
23	1.3616E-01	1.2478E-01	1.8697E-01	3.1754E-01	-5.6587E-02	44.13
24	-8.4935E-03	3.4354E-01	1.8454E-01	4.2254E-01	-8.7498E-02	66.82
MIDPT	V1	V2		VMAX		ANGLE
	-9.9728E-02	-7.3178E-01		7.3854E-01		-97.76

ELEMENT ID 16 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
19	8.6373E-02	7.0738E-01	9.1817E-02	7.2067E-01	7.3082E-02	81.76
20	-1.3685E-02	7.6609E-01	7.4357E-02	7.7312E-01	-2.0712E-02	84.60
24	-1.0672E-01	3.4354E-01	1.0628E-01	3.6736E-01	-1.3055E-01	77.36
25	4.8033E-03	3.0797E-01	8.8822E-02	3.3207E-01	-1.9303E-02	74.82

MIDPT	V1	V2	VMAX	ANGLE
	4.4303E-02	-6.9944E-01	7.0084E-01	-86.38

ELEMENT ID 17 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
21	1.0159E-01	9.5391E-01	-5.8504E-03	9.5395E-01	1.0155E-01	-89.61
22	1.1924E-01	-1.9137E-02	-3.9825E-02	1.2989E-01	-2.9780E-02	-14.96
26	-3.9354E-01	-2.3328E+00	6.9213E-01	-1.7186E-01	-2.5545E+00	17.76
27	3.9354E-01	3.5834E-01	6.5816E-01	1.0343E+00	-2.8245E-01	44.23

MIDPT	V1	V2	VMAX	ANGLE
	2.0797E+00	-2.3228E+00	3.1178E+00	-48.16

ELEMENT ID 18 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
22	2.1208E-01	-1.9137E-02	4.6562E-02	2.2110E-01	-2.8161E-02	10.97
23	2.3588E-01	-4.8519E-02	-2.2354E-02	2.3763E-01	-5.0265E-02	-4.47
27	2.7442E-02	3.5835E-01	1.2935E-02	3.5886E-01	2.6937E-02	87.77
28	-2.7439E-02	3.0496E-01	-5.5981E-02	3.1414E-01	-3.6614E-02	-80.69

MIDPT	V1	V2	VMAX	ANGLE
	-9.0582E-02	3.9000E-01	4.0038E-01	103.08

ELEMENT ID 19 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
23	1.3616E-01	-4.8519E-02	8.6963E-02	1.7067E-01	-8.3022E-02	21.64
24	-8.4945E-03	6.0146E-01	6.7322E-02	6.0880E-01	-1.5837E-02	83.78
28	3.6610E-01	3.0495E-01	-6.4429E-01	9.8054E-01	-3.0949E-01	-43.64
29	-3.6610E-01	-2.1450E+00	-6.6393E-01	-1.4563E-01	-2.3655E+00	-18.37

MIDPT	V1	V2	VMAX	ANGLE
	-2.2211E+00	-1.8899E+00	2.9163E+00	-139.61

ELEMENT ID 20 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
24	-1.0672E-01	6.0146E-01	-1.0932E-02	6.0163E-01	-1.0689E-01	-89.12
25	4.8040E-03	2.1662E-01	-7.4037E-04	2.1662E-01	4.8014E-03	-89.80
29	-5.3433E-07	-2.1450E+00	-5.6652E-02	1.4947E-03	-2.1465E+00	-1.51
30	2.4050E-08	-1.8333E+00	-4.6461E-02	1.1767E-03	-1.8345E+00	-1.45

MIDPT	V1	V2	VMAX	ANGLE
	1.4414E-01	-3.6504E+00	3.6532E+00	-87.74

ELEMENT ID 21 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
5	-7.0146E+00	-2.2919E+00	-1.9176E+00	-1.6113E+00	-7.6952E+00	-70.46
31	-7.0146E+00	4.5402E-01	1.5843E+00	7.7621E-01	-7.3368E+00	78.51
10	5.4033E-02	-2.2919E+00	-3.8636E+00	2.9188E+00	-5.1566E+00	-36.56
34	5.4061E-02	4.5400E-01	-3.6176E-01	6.6738E-01	-1.5932E-01	-59.47

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
5	-1.2420E-01	-2.4680E-01	1.4796E-01	-2.5346E-02	-3.4565E-01	33.75
31	3.3839E-01	-4.7168E-02	1.5386E-01	3.9226E-01	-1.0104E-01	19.30
10	2.0760E-01	3.5192E-01	1.9104E-01	4.8397E-01	7.5544E-02	55.35

34	4.9935E-02	2.4618E-01	1.9694E-01	3.6809E-01	-7.1974E-02	58.24
MIDPT	V1	V2		VMAX		ANGLE
	-5.3811E-01	-7.6145E-01		9.3240E-01		-125.25

ELEMENT ID 22 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
10	5.4118E-02	1.2150E+00	1.1428E+00	1.9164E+00	-6.4722E-01	58.46
34	5.4118E-02	-1.2983E+00	-1.0871E+00	6.5818E-01	-1.9024E+00	-29.06
15	5.7575E-01	1.2151E+00	1.7985E+00	2.7221E+00	-9.3126E-01	50.04
37	5.7574E-01	-1.2983E+00	-4.3143E-01	6.7029E-01	-1.3928E+00	-12.36
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
10	2.0760E-01	3.0329E-01	1.1297E-01	3.7812E-01	1.3276E-01	56.48
34	4.9933E-02	3.0197E-01	1.4688E-01	3.6949E-01	-1.7582E-02	65.31
15	1.5549E-01	4.7535E-01	-1.3950E-01	5.2764E-01	1.0320E-01	-69.45
37	3.5101E-01	-7.3633E-02	-1.0558E-01	3.7582E-01	-9.8436E-02	-13.22
MIDPT	V1	V2		VMAX		ANGLE
	3.6288E-01	6.5884E-02		3.6881E-01		10.29

ELEMENT ID 23 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
31	-6.7324E+00	6.5067E-01	7.1369E-01	7.1903E-01	-6.8008E+00	84.53
32	-6.7360E+00	2.3874E-01	2.8506E-01	2.5037E-01	-6.7476E+00	87.66
34	-4.5396E-01	6.5068E-01	5.0905E-01	8.4948E-01	-6.5277E-01	68.67
35	-4.4946E-01	2.5962E-01	-7.9599E-02	2.6845E-01	-4.5828E-01	-83.67
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
31	1.4709E-02	-4.5041E-02	1.7185E-01	1.5926E-01	-1.8959E-01	40.07
32	3.2756E-01	4.7849E-02	1.5281E-01	3.9485E-01	-1.9441E-02	23.77
34	1.6866E-01	2.4372E-01	1.8724E-01	3.9715E-01	1.5229E-02	50.67
35	8.7653E-02	1.8628E-01	1.7838E-01	3.2203E-01	-4.8102E-02	52.73
MIDPT	V1	V2		VMAX		ANGLE
	-3.7491E-01	-3.1335E-01		4.8862E-01		-140.11

ELEMENT ID 24 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
32	-7.3382E+00	5.3073E-01	-2.1088E-02	5.3078E-01	-7.3383E+00	-89.85
33	-7.3259E+00	4.9327E-01	4.7525E-01	5.2205E-01	-7.3547E+00	86.53
35	4.7310E-01	4.9613E-01	1.1434E-01	5.9953E-01	3.6969E-01	47.88
36	4.6625E-01	4.2488E-01	4.1677E-01	8.6284E-01	2.8286E-02	43.58

ELEMENT ID 24 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
32	1.2160E-01	4.9541E-02	1.5200E-01	2.4178E-01	-7.0638E-02	38.33
33	2.5691E-01	6.1162E-02	1.2552E-01	3.1820E-01	-1.3082E-04	26.03
35	1.7095E-01	1.8614E-01	1.6612E-01	3.4484E-01	1.2253E-02	46.31
36	8.0453E-02	2.0159E-01	1.5373E-01	3.0626E-01	-2.4213E-02	55.75
MIDPT	V1	V2		VMAX		ANGLE
	-1.0495E-01	-1.6854E-01		1.9855E-01		-121.91

ELEMENT ID 25 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE

34	-5.9550E-01	-1.5360E+00	-1.2039E+00	2.2676E-01	-2.3583E+00	-34.33
35	-5.8505E-01	6.8967E-01	4.7032E-01	8.4441E-01	-7.3979E-01	71.79
37	-2.8760E-02	-1.5360E+00	-1.6137E+00	9.9859E-01	-2.5634E+00	-32.48
38	-3.8071E-02	7.4400E-01	3.5989E-02	7.4565E-01	-3.9724E-02	87.37
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
34	1.6736E-01	2.9131E-01	1.3908E-01	3.8160E-01	7.7079E-02	57.01
35	9.3782E-02	1.1541E-01	1.8076E-01	2.8568E-01	-7.6488E-02	46.71
37	2.8369E-01	-5.9378E-02	1.1400E-01	3.1812E-01	-9.3805E-02	16.80
38	2.1749E-01	5.3547E-02	1.4943E-01	3.0595E-01	-3.4919E-02	30.63
MIDPT	V1	V2		VMAX		ANGLE
	2.3595E-01	2.3833E-01		3.3538E-01		45.29

ELEMENT ID 26 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
35	3.2311E-01	4.7953E-01	6.1449E-01	1.0208E+00	-2.1813E-01	48.63
36	2.9322E-01	1.0270E-01	-9.9082E-01	1.1934E+00	-7.9743E-01	-42.25
38	-1.8909E+00	5.5318E-01	1.2287E-01	5.5934E-01	-1.8971E+00	87.13
39	-1.8651E+00	2.4757E-01	-1.4123E+00	9.5486E-01	-2.5724E+00	-63.40
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
35	1.7999E-01	1.1838E-01	1.6697E-01	3.1897E-01	-2.0599E-02	39.77
36	8.3985E-02	2.2666E-01	1.4014E-01	3.1258E-01	-1.9327E-03	58.49
38	1.9744E-01	5.9043E-02	9.8820E-02	2.4888E-01	7.6018E-03	27.50
39	-2.1553E-01	-2.1393E-01	6.3018E-02	-1.5170E-01	-2.7775E-01	45.36
MIDPT	V1	V2		VMAX		ANGLE
	7.8788E-01	4.7503E-01		9.2000E-01		31.09

ELEMENT ID 27 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
33	-6.4982E+00	1.3301E+00	-1.2567E-01	1.3321E+00	-6.5003E+00	-89.08
52	-6.4982E+00	3.3901E-01	-1.1099E+00	5.1467E-01	-6.6739E+00	-81.01
36	-4.2000E+00	1.2315E+00	3.5500E-01	1.2546E+00	-4.2231E+00	86.28
36	-4.2000E+00	1.2315E+00	3.5499E-01	1.2546E+00	-4.2231E+00	86.28
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
33	2.3882E-01	6.9362E-02	1.0310E-01	2.8754E-01	2.0644E-02	25.29
52	9.0151E-02	1.1433E-01	9.0738E-02	1.9378E-01	1.0702E-02	48.80
36	1.9517E-01	2.0726E-01	1.3727E-01	3.3863E-01	6.3813E-02	46.26
36	1.9517E-01	2.0726E-01	1.3727E-01	3.3862E-01	6.3813E-02	46.26
MIDPT	V1	V2		VMAX		ANGLE
	2.2588E-01	-1.9454E-01		2.9810E-01		-40.74

ELEMENT ID 28 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
36	8.2419E-01	6.2729E-01	2.0718E+00	2.7999E+00	-1.3484E+00	43.64
52	-3.9025E+00	-1.7100E+00	-1.2662E+00	-1.1314E+00	-4.4810E+00	-65.44
39	5.5508E+00	3.6917E-01	3.3856E+00	7.2232E+00	-1.3032E+00	26.29
39	5.5508E+00	3.6916E-01	3.3856E+00	7.2232E+00	-1.3032E+00	26.29
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
36	1.5519E-01	2.3780E-01	1.4165E-01	3.4404E-01	4.8949E-02	53.13
52	-4.0198E-02	2.7021E-01	1.4151E-01	3.2504E-01	-9.5029E-02	68.82
39	-4.0053E-02	-1.9260E-01	-1.2211E-01	2.7649E-02	-2.6030E-01	-29.01
39	-4.0054E-02	-1.9260E-01	-1.2211E-01	2.7648E-02	-2.6030E-01	-29.01

MIDPT	V1	V2	VMAX	ANGLE
	1.1339E+00	1.1426E+00	1.6097E+00	45.22

ELEMENT ID 29 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
52	-5.3056E+00	-2.0686E-02	-3.6813E-01	4.8325E-03	-5.3312E+00	-86.03
53	-5.3056E+00	-7.6096E-01	3.0151E-01	-7.4104E-01	-5.3256E+00	86.22
39	-8.5113E+00	5.9105E-01	-3.5558E-02	5.9119E-01	-8.5114E+00	-89.78
39	-8.5113E+00	5.9104E-01	-3.5555E-02	5.9118E-01	-8.5114E+00	-89.78
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
52	2.5308E-01	1.8746E-01	7.1077E-02	2.9855E-01	1.4198E-01	32.61
53	-9.8855E-02	1.4578E-01	-3.6890E-02	1.5122E-01	-1.0430E-01	-81.61
39	2.7051E-02	-9.9346E-02	2.5742E-02	3.2093E-02	-1.0439E-01	11.08
39	2.7050E-02	-9.9346E-02	2.5742E-02	3.2091E-02	-1.0439E-01	11.08

MIDPT	V1	V2	VMAX	ANGLE
	7.9906E-01	4.7414E-01	9.2914E-01	30.68

ELEMENT ID 30 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
61	-2.2758E+00	-1.3968E-01	3.9084E+00	2.8440E+00	-5.2595E+00	52.64
39	-2.2758E+00	-3.5975E+00	-2.8308E+00	-2.9742E-02	-5.8436E+00	-38.43
53	7.4808E+01	1.7380E+00	1.7456E+01	7.8764E+01	-2.2178E+00	12.77
53	7.4808E+01	1.7380E+00	1.7456E+01	7.8764E+01	-2.2178E+00	12.77
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
61	-1.2077E-01	-1.3891E-01	-5.9672E-02	-6.9483E-02	-1.9020E-01	-40.68
39	-5.3716E-02	-7.7138E-02	-5.0724E-02	-1.3368E-02	-1.1749E-01	-38.50
53	-5.4839E-02	1.5008E-01	1.0798E-01	1.9647E-01	-1.0123E-01	66.75
53	-5.4839E-02	1.5008E-01	1.0798E-01	1.9647E-01	-1.0123E-01	66.75

MIDPT	V1	V2	VMAX	ANGLE
	3.7446E-01	2.5169E-01	4.5119E-01	33.91

ELEMENT ID 31 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
62	2.6696E+00	-5.4213E+00	-7.7983E+00	7.4093E+00	-1.0161E+01	-31.29
61	-6.0376E+00	4.6956E-02	5.0937E+00	2.9378E+00	-8.9284E+00	60.42
53	-2.1501E+02	-1.0617E+01	-4.2500E+01	-2.1318E+00	-2.2349E+02	-78.71
53	-2.1501E+02	-1.0617E+01	-4.2500E+01	-2.1318E+00	-2.2349E+02	-78.71

ELEMENT ID 31 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	-2.9990E-01	-2.0988E-01	-1.2108E-01	-1.2572E-01	-3.8406E-01	-55.20
61	-3.8566E-02	-1.2990E-01	-6.2303E-02	-6.9854E-03	-1.6148E-01	-26.88
53	-1.1008E-01	1.7863E-01	9.5283E-02	2.0724E-01	-1.3869E-01	73.29
53	-1.1008E-01	1.7863E-01	9.5283E-02	2.0724E-01	-1.3869E-01	73.29

MIDPT	V1	V2	VMAX	ANGLE
	1.4595E+00	5.5125E-01	1.5601E+00	20.69

ELEMENT ID 32 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
53	-5.9240E+00	-3.5855E-01	-1.8028E+00	1.7439E-01	-6.4569E+00	-73.53

54	-5.9240E+00	-1.0492E+00	4.1432E+00	1.3204E+00	-8.2935E+00	60.23
62	-3.2784E+01	3.0707E-01	-6.7533E+00	1.6322E+00	-3.4109E+01	-78.90
62	-3.2784E+01	3.0706E-01	-6.7533E+00	1.6322E+00	-3.4109E+01	-78.90
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
53	1.0539E-01	2.0683E-01	-1.1468E-02	2.0811E-01	1.0411E-01	-83.63
54	-1.5887E-01	6.3156E-02	-8.8192E-02	9.3924E-02	-1.8963E-01	-70.77
62	1.3486E-02	-4.1548E-01	-9.0106E-02	3.1645E-02	-4.3364E-01	-11.39
62	1.3485E-02	-4.1548E-01	-9.0106E-02	3.1643E-02	-4.3364E-01	-11.39
MIDPT	V1	V2		VMAX		ANGLE
	5.3763E-01	6.7007E-01		8.5910E-01		51.26

ELEMENT ID 33 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
62	7.8157E+00	1.6088E+01	1.5898E+01	2.8379E+01	-4.4751E+00	52.29
54	-7.8435E+00	-1.9873E+01	-9.4970E+00	-2.6168E+00	-2.5100E+01	-28.83
55	2.9932E-01	-2.0606E+01	-7.0986E-01	3.2340E-01	-2.0630E+01	-1.94
55	2.9924E-01	-2.0606E+01	-7.0999E-01	3.2333E-01	-2.0630E+01	-1.94
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	-8.7805E-02	-1.0001E-01	5.5359E-02	-3.8214E-02	-1.4960E-01	41.85
54	5.3899E-02	-2.0257E-01	-8.5352E-02	7.9707E-02	-2.2837E-01	-16.82
55	6.0046E-02	1.8866E-01	8.1970E-02	2.2854E-01	2.0168E-02	64.06
55	6.0047E-02	1.8866E-01	8.1969E-02	2.2853E-01	2.0169E-02	64.06
MIDPT	V1	V2		VMAX		ANGLE
	-3.5725E-01	-7.0030E-01		7.8616E-01		-117.03

ELEMENT ID 34 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
62	-3.1932E+00	-1.3074E+01	-2.8470E+00	-2.4316E+00	-1.3836E+01	-14.98
55	2.4167E+00	1.4914E+01	9.6836E+00	2.0190E+01	-2.8593E+00	61.42
56	-3.6607E+00	1.5473E+01	2.9785E+00	1.5926E+01	-4.1136E+00	81.35
56	-3.6607E+00	1.5473E+01	2.9785E+00	1.5926E+01	-4.1136E+00	81.35
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	-2.9132E-02	-3.2743E-02	1.3563E-01	1.0471E-01	-1.6658E-01	44.62
55	8.4456E-02	5.1233E-02	7.8108E-02	1.4770E-01	-1.2010E-02	39.00
56	4.5806E-02	3.0052E-02	9.3907E-02	1.3217E-01	-5.6308E-02	42.60
56	4.5807E-02	3.0052E-02	9.3907E-02	1.3217E-01	-5.6307E-02	42.60
MIDPT	V1	V2		VMAX		ANGLE
	-8.1246E-02	6.4758E-02		1.0390E-01		141.44

ELEMENT ID 35 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
62	-5.9275E-01	-1.0596E+01	2.1877E+00	-1.3524E-01	-1.1053E+01	11.81
56	-3.8222E-01	-4.4534E-01	6.2290E-01	2.0992E-01	-1.0375E+00	43.55
63	-3.8222E-01	-1.0148E+01	1.1040E+00	-2.5896E-01	-1.0271E+01	6.37
63	-3.8222E-01	-1.0148E+01	1.1040E+00	-2.5896E-01	-1.0271E+01	6.37
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	4.4646E-02	-8.9726E-01	1.2071E-01	5.9868E-02	-9.1249E-01	7.19
56	-4.9953E-02	-7.4815E-02	2.7234E-01	2.1024E-01	-3.3501E-01	43.69
63	7.1682E-02	7.0694E-01	1.9773E-01	7.6346E-01	1.5165E-02	74.05
63	7.1681E-02	7.0695E-01	1.9773E-01	7.6347E-01	1.5164E-02	74.05
MIDPT	V1	V2		VMAX		ANGLE

-1.6513E-01	-5.8244E+00	5.8267E+00		-91.62

ELEMENT ID 36 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
63	-4.8749E-01	-1.6765E+01	8.4792E-01	-4.4344E-01	-1.6809E+01	2.97
56	-4.8749E-01	4.3997E+00	3.6678E-01	4.4270E+00	-5.1486E-01	85.73
64	-2.7695E-01	-1.7742E+01	-1.4452E+00	-1.5817E-01	-1.7861E+01	-4.70
64	-2.7695E-01	-1.7742E+01	-1.4452E+00	-1.5817E-01	-1.7860E+01	-4.70
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
63	7.1682E-02	-2.5372E-02	1.2704E-01	1.5915E-01	-1.1284E-01	34.55
56	-4.9953E-02	5.2187E-01	3.7096E-01	7.0431E-01	-2.3240E-01	63.81
64	1.8403E-01	1.4912E+00	4.1464E-02	1.4925E+00	1.8271E-01	88.19
64	1.8403E-01	1.4912E+00	4.1466E-02	1.4925E+00	1.8271E-01	88.19
MIDPT	V1	V2		VMAX		ANGLE
	3.5487E-01	-5.6084E+00		5.6196E+00		-86.38

ELEMENT ID 37 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
64	-9.1815E-01	-1.2015E+01	4.9737E-01	-8.9590E-01	-1.2037E+01	2.56
56	-7.4077E-01	1.9242E+01	3.4878E+00	1.9833E+01	-1.3320E+00	80.38
57	-3.4015E+00	1.8584E+01	-5.1658E+00	1.9738E+01	-4.5548E+00	-77.42
57	-3.4015E+00	1.8585E+01	-5.1658E+00	1.9738E+01	-4.5548E+00	-77.42
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
64	1.1216E-01	2.2725E-01	-2.6527E-02	2.3307E-01	1.0634E-01	-77.63
56	-5.6940E-02	7.6316E-02	-6.2341E-03	7.6607E-02	-5.7231E-02	-87.33
57	-3.1645E-02	2.4648E-01	-4.7485E-02	2.5436E-01	-3.9528E-02	-80.57
57	-3.1645E-02	2.4648E-01	-4.7485E-02	2.5436E-01	-3.9529E-02	-80.57
MIDPT	V1	V2		VMAX		ANGLE
	1.7423E-01	-2.3144E-01		2.8969E-01		-53.03

ELEMENT ID 38 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
64	9.0152E+00	2.2014E+01	-1.2203E+01	2.9340E+01	1.6883E+00	-59.02
57	-1.0921E+01	-1.0883E+01	1.5345E+01	4.4433E+00	-2.6247E+01	45.04
58	-2.9434E+01	-1.0120E+01	2.2985E+01	5.1540E+00	-4.4708E+01	56.39
58	-2.9434E+01	-1.0120E+01	2.2985E+01	5.1540E+00	-4.4708E+01	56.39

ELEMENT ID 38 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
64	-1.5623E-01	6.4242E-01	1.1975E-01	6.5999E-01	-1.7380E-01	81.65
57	1.2453E-01	1.4854E-01	-1.6687E-01	3.0384E-01	-3.0772E-02	-47.06
58	-2.6735E-01	-5.6663E-01	-9.3519E-02	-2.4053E-01	-5.9345E-01	-16.00
58	-2.6735E-01	-5.6664E-01	-9.3521E-02	-2.4053E-01	-5.9346E-01	-16.00
MIDPT	V1	V2		VMAX		ANGLE
	-6.0295E-01	1.3268E+00		1.4574E+00		114.44

ELEMENT ID 39 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
64	-7.0515E-17	-1.5813E+01	1.4782E+01	8.8569E+00	-2.4670E+01	30.93
58	-7.0515E-17	-6.1638E+00	8.3181E+00	5.7887E+00	-1.1953E+01	34.84

59	-2.2166E-11	-1.1607E+01	8.3181E+00	4.3391E+00	-1.5946E+01	27.55
59	-3.3366E-17	-1.1607E+01	8.3181E+00	4.3391E+00	-1.5946E+01	27.55
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
64	2.3185E-01	9.7837E-01	-3.1899E-01	1.0961E+00	1.1411E-01	-69.74
58	0.0000E+00	-4.8290E-01	-2.2191E-01	8.6488E-02	-5.6939E-01	-21.29
59	1.1608E-06	-7.8352E-01	-1.7311E-01	3.6542E-02	-8.2006E-01	-11.92
59	5.8120E-12	-7.8353E-01	-1.7311E-01	3.6540E-02	-8.2007E-01	-11.92
MIDPT	V1	V2		VMAX		ANGLE
	-1.1955E-01	1.3740E+00		1.3792E+00		94.97

ELEMENT ID 40 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
64	1.4253E+02	-2.0700E+00	1.4192E+01	1.4391E+02	-3.4497E+00	5.55
59	-1.4311E+02	-3.7535E+00	-9.5798E+00	-3.0980E+00	-1.4376E+02	-86.09
65	1.3195E+02	-8.5278E+00	-1.4410E+01	1.3341E+02	-9.9907E+00	-5.80
65	1.3195E+02	-8.5278E+00	-1.4410E+01	1.3341E+02	-9.9907E+00	-5.80
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
64	7.0688E-01	5.3002E-01	-2.5294E-01	8.8641E-01	3.5050E-01	-35.37
59	1.8991E-01	-5.4875E-01	3.5643E-01	3.3385E-01	-6.9269E-01	21.99
65	4.3906E-01	2.5755E-01	-2.0739E-01	5.7468E-01	1.2193E-01	-33.18
65	4.3906E-01	2.5755E-01	-2.0738E-01	5.7467E-01	1.2193E-01	-33.18
MIDPT	V1	V2		VMAX		ANGLE
	-1.1684E+00	7.0433E-01		1.3643E+00		148.92

ELEMENT ID 41 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
65	-1.0688E+02	-8.3731E+00	3.1899E+01	1.0548E+00	-1.1630E+02	73.54
59	1.0569E+02	3.7905E+00	-3.1132E+01	1.1445E+02	-4.9682E+00	-15.71
43	-1.0688E+02	-2.5070E+01	4.9596E+01	-1.6861E+00	-1.3026E+02	64.76
43	-1.0687E+02	-2.5070E+01	4.9595E+01	-1.6861E+00	-1.3026E+02	64.76
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
65	5.0576E-01	2.2565E-01	-7.2377E-02	5.2335E-01	2.0805E-01	-13.66
59	2.4780E-01	-4.6957E-01	1.7606E-01	2.8868E-01	-5.1044E-01	13.07
43	3.0738E-01	1.3541E-01	-3.8871E-02	3.1576E-01	1.2704E-01	-12.16
43	3.0738E-01	1.3541E-01	-3.8869E-02	3.1576E-01	1.2703E-01	-12.16
MIDPT	V1	V2		VMAX		ANGLE
	-9.3910E-01	6.1710E-01		1.1237E+00		146.69

ELEMENT ID 42 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
43	2.8015E-17	-1.8925E+00	-7.5809E-01	2.6622E-01	-2.1587E+00	-19.35
59	2.8015E-17	-2.7326E+00	-1.8182E-01	1.2045E-02	-2.7446E+00	-3.79
60	-2.0645E-12	-2.2869E+00	-1.8182E-01	1.4365E-02	-2.3013E+00	-4.52
60	2.3691E-17	-2.2869E+00	-1.8182E-01	1.4365E-02	-2.3013E+00	-4.52
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
43	2.9069E-01	4.1258E-01	-1.2599E-01	4.9160E-01	2.1167E-01	-57.91
59	0.0000E+00	-6.7132E-01	-1.4287E-01	2.9140E-02	-7.0046E-01	-11.53
60	1.4554E-06	-8.0878E-01	-8.6672E-02	9.1853E-03	-8.1796E-01	-6.05
60	7.2869E-12	-8.0878E-01	-8.6672E-02	9.1839E-03	-8.1796E-01	-6.05
MIDPT	V1	V2		VMAX		ANGLE
	-6.7928E-02	1.1352E+00		1.1372E+00		93.42

ELEMENT ID 43 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
43	-4.1193E+00	-1.5265E+00	-8.7697E-01	-1.2577E+00	-4.3881E+00	-72.96
60	8.0869E+00	-1.7692E+00	-2.6707E+00	8.7641E+00	-2.4464E+00	-14.23
47	1.9838E+00	-1.5139E+00	-5.9320E-01	2.0816E+00	-1.6118E+00	-9.37
47	1.9838E+00	-1.5139E+00	-5.9321E-01	2.0817E+00	-1.6118E+00	-9.37
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
43	4.6669E-01	2.7595E-01	4.1877E-02	4.7548E-01	2.6716E-01	11.85
60	2.9846E-02	-8.3254E-01	-6.0483E-02	3.4067E-02	-8.3676E-01	-3.99
47	1.4434E-01	-1.9026E-01	-8.1924E-02	1.6332E-01	-2.0924E-01	-13.05
47	1.4433E-01	-1.9027E-01	-8.1924E-02	1.6332E-01	-2.0925E-01	-13.05
MIDPT	V1	V2		VMAX		ANGLE
	-2.3191E-01	4.3856E-01		4.9610E-01		117.87

ELEMENT ID 44 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
47	1.8384E-17	3.8361E+00	-4.7601E+00	7.0500E+00	-3.2140E+00	-55.97
60	1.8384E-17	2.6108E-01	-2.3365E+00	2.4706E+00	-2.2096E+00	-46.60
51	3.4076E-12	4.0119E+00	-2.3365E+00	5.0854E+00	-1.0735E+00	-65.32
51	9.4966E-17	4.0118E+00	-2.3365E+00	5.0853E+00	-1.0735E+00	-65.32
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
47	2.2424E-01	-2.1750E-01	-9.2927E-02	2.4299E-01	-2.3625E-01	-11.41
60	0.0000E+00	-7.8171E-01	-8.3938E-02	8.9114E-03	-7.9062E-01	-6.06
51	1.1227E-06	-9.1638E-01	2.8180E-03	9.7885E-06	-9.1639E-01	.18
51	5.6212E-12	-9.1638E-01	2.8181E-03	8.6660E-06	-9.1639E-01	.18
MIDPT	V1	V2		VMAX		ANGLE
	-1.4020E-01	1.2306E+00		1.2386E+00		96.50

ELEMENT ID 45 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
40	-2.6117E+00	3.5846E-02	6.0280E-01	1.6663E-01	-2.7425E+00	77.76
41	-2.6132E+00	-7.4890E-01	-7.7793E-01	-4.6694E-01	-2.8952E+00	-70.08
44	1.0415E+00	3.5825E-02	1.6318E+00	2.2462E+00	-1.1689E+00	36.44
45	1.0429E+00	-7.1151E-01	2.8473E-01	1.0880E+00	-7.5657E-01	8.99

ELEMENT ID 45 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
40	-3.0244E-01	3.9707E-01	3.4738E-01	5.4027E-01	-4.4564E-01	67.60
41	1.1334E-01	-5.2856E-02	3.7073E-01	4.1017E-01	-3.4969E-01	38.68
44	-7.2892E-03	-4.5335E-02	1.7767E-01	1.5237E-01	-2.0500E-01	41.94
45	-1.6978E-02	4.9350E-02	1.9905E-01	2.1798E-01	-1.8561E-01	49.73
MIDPT	V1	V2		VMAX		ANGLE
	-3.3452E-01	2.0068E-01		3.9010E-01		149.04

ELEMENT ID 46 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
41	-2.9718E+00	-6.5072E-01	3.1168E-01	-6.0960E-01	-3.0129E+00	82.48
42	-2.9703E+00	3.8134E-01	7.6786E-01	5.4888E-01	-3.1378E+00	77.69
45	1.1250E+00	-6.5738E-01	1.6527E-01	1.1402E+00	-6.7258E-01	5.25

46	1.1234E+00	3.6790E-01	6.5676E-01	1.5033E+00	-1.2003E-02	30.05
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
41	7.4417E-02	-5.8324E-02	2.3698E-01	2.5415E-01	-2.3805E-01	37.18
42	2.8797E-01	-2.6917E-02	2.0559E-01	3.8947E-01	-1.2842E-01	26.28
45	6.6261E-03	5.0250E-02	2.0799E-01	2.3757E-01	-1.8070E-01	47.99
46	9.4471E-02	-3.8122E-02	1.7516E-01	2.1546E-01	-1.5912E-01	34.63
MIDPT	V1	V2		VMAX		ANGLE
	-3.9450E-01	2.1816E-02		3.9511E-01		176.83

ELEMENT ID 47 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
42	-4.1589E+00	3.4635E-01	3.6609E-01	3.7590E-01	-4.1885E+00	85.38
43	-4.1531E+00	-1.1951E+00	1.4530E+00	-6.0078E-01	-4.7474E+00	67.75
46	2.0165E+00	3.3357E-01	3.0223E-01	2.0691E+00	2.8094E-01	9.88
47	2.0102E+00	-1.2137E+00	1.4485E+00	2.5654E+00	-1.7689E+00	20.97
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
42	2.5436E-01	-3.5648E-02	8.0599E-02	2.7526E-01	-5.6543E-02	14.53
43	5.8438E-01	2.6566E-01	1.5317E-02	5.8512E-01	2.6492E-01	2.75
46	1.2499E-01	-3.9439E-02	1.6124E-01	2.2377E-01	-1.3822E-01	31.49
47	1.9270E-01	-1.6755E-01	9.9811E-02	2.1851E-01	-1.9335E-01	14.50
MIDPT	V1	V2		VMAX		ANGLE
	-7.0237E-01	5.0956E-01		8.6774E-01		144.04

ELEMENT ID 48 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
44	1.0310E+00	-3.3093E+00	-1.9784E-01	1.0400E+00	-3.3183E+00	-2.60
45	1.0332E+00	-1.7312E-01	1.6848E+00	2.2196E+00	-1.3595E+00	35.15
48	-1.3558E-03	-3.3093E+00	-6.8486E-01	1.3483E-01	-3.4455E+00	-11.25
49	-3.6547E-03	-1.8865E-01	1.1876E+00	1.0951E+00	-1.2874E+00	42.77
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
44	-3.5094E-03	9.4344E-03	1.2588E-01	1.2901E-01	-1.2308E-01	46.47
45	-1.9965E-02	1.2085E-02	1.2544E-01	1.2252E-01	-1.3040E-01	48.64
48	-6.1875E-05	-6.6415E-01	5.0417E-02	3.7440E-03	-6.6795E-01	4.32
49	-6.9701E-05	-8.1966E-01	5.6755E-02	3.8418E-03	-8.2357E-01	3.94
MIDPT	V1	V2		VMAX		ANGLE
	1.3579E-01	1.1506E+00		1.1586E+00		83.27

ELEMENT ID 49 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
45	1.1879E+00	-7.3421E-01	1.6031E+00	2.0960E+00	-1.6423E+00	29.53
46	1.1834E+00	7.7039E-01	3.4191E-01	1.3763E+00	5.7746E-01	29.43
49	-7.9525E-03	-7.4662E-01	1.2017E+00	8.7988E-01	-1.6345E+00	36.46
50	-3.2571E-03	7.4541E-01	-7.1491E-02	7.5217E-01	-1.0023E-02	-84.59
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
45	1.1560E-02	1.2050E-02	1.3746E-01	1.4926E-01	-1.2565E-01	45.05
46	9.1620E-02	-4.8650E-02	1.2171E-01	1.6196E-01	-1.1899E-01	30.02
49	-2.0897E-04	-8.1924E-01	5.7425E-02	3.7977E-03	-8.2325E-01	3.99
50	-1.7305E-04	-9.3338E-01	4.7901E-02	2.2792E-03	-9.3583E-01	2.93
MIDPT	V1	V2		VMAX		ANGLE
	-2.5191E-03	1.3629E+00		1.3629E+00		90.11

ELEMENT ID 50 ----------
LOAD COND 1 ----------

JOINT	F11	F22	F12	FMAX	FMIN	ANGLE
46	2.0494E+00	1.1813E-01	-4.4776E-02	2.0504E+00	1.1709E-01	-1.33
47	2.0474E+00	2.5175E+00	-3.6912E-01	2.7201E+00	1.8449E+00	-61.24
50	-6.7794E-03	1.1828E-01	-7.5182E-02	1.5354E-01	-4.2036E-02	-64.88
51	-4.6702E-03	2.5170E+00	-4.2278E-01	2.5860E+00	-7.3667E-02	-80.73
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
46	1.3311E-01	-4.9282E-02	1.0690E-01	1.8243E-01	-9.8601E-02	24.77
47	1.8708E-01	-2.0326E-01	6.6396E-02	1.9807E-01	-2.1425E-01	9.39
50	-2.9015E-04	-9.3372E-01	4.8867E-02	2.2612E-03	-9.3627E-01	2.99
51	-4.6977E-05	-9.2049E-01	9.2264E-03	4.5499E-05	-9.2058E-01	.57
MIDPT	V1	V2		VMAX		ANGLE
	1.0769E-02	1.3575E+00		1.3575E+00		89.55

ELEMENT ID 63 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
70	-6.5826E-02	-8.9526E-02	-8.0844E-02	4.0323E-03	-1.5938E-01	-40.83
71	2.6835E-02	-2.7903E-02	-7.8083E-02	8.2207E-02	-8.3275E-02	-35.34
74	1.7202E-02	5.5015E-02	-5.5506E-02	9.4746E-02	-2.2529E-02	-54.41
75	-3.9627E-02	6.0960E-02	-5.2745E-02	8.3547E-02	-6.2214E-02	-66.82
MIDPT	V1	V2		VMAX		ANGLE
	8.7019E-02	2.0141E-01		2.1940E-01		66.63

ELEMENT ID 64 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
71	-3.2907E-02	-2.7903E-02	-6.8135E-02	3.7776E-02	-9.8586E-02	-46.05
72	3.3382E-02	-2.8462E-02	-7.7719E-02	8.6105E-02	-8.1185E-02	-34.15
75	-2.3169E-02	6.0960E-02	-6.5601E-02	9.6824E-02	-5.9033E-02	-61.33
76	-3.3861E-02	6.8278E-02	-7.5185E-02	1.0810E-01	-7.3680E-02	-62.09
MIDPT	V1	V2		VMAX		ANGLE
	7.3721E-02	1.3071E-01		1.5007E-01		60.58

ELEMENT ID 65 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
72	-1.0663E-02	-2.8462E-02	-6.7343E-02	4.8366E-02	-8.7491E-02	-41.24
73	4.0538E-02	-1.0653E-01	-7.8000E-02	7.4201E-02	-1.4019E-01	-23.34
76	-2.2800E-02	6.8278E-02	-1.0034E-01	1.3293E-01	-8.7453E-02	-57.21
77	-1.1263E-02	5.8346E-02	-1.1100E-01	1.3987E-01	-9.2785E-02	-53.70
MIDPT	V1	V2		VMAX		ANGLE
	2.3424E-02	1.9137E-01		1.9280E-01		83.02

ELEMENT ID 66 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
74	1.7203E-02	5.0588E-02	-2.8632E-02	6.7038E-02	7.5315E-04	-60.12
75	-3.9628E-02	6.6498E-02	-3.4374E-02	7.6659E-02	-4.9788E-02	-73.53
78	-5.8201E-03	8.5728E-02	-7.7191E-03	8.6374E-02	-6.4664E-03	-85.21
79	-5.1057E-02	1.2558E-01	-1.3461E-02	1.2660E-01	-5.2077E-02	-85.67
MIDPT	V1	V2		VMAX		ANGLE
	-9.2730E-02	6.4167E-02		1.1277E-01		145.32

ELEMENT ID 67 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
75	-2.3169E-02	6.6498E-02	-4.7229E-02	8.6784E-02	-4.3455E-02	-66.76
76	-3.3861E-02	7.6063E-02	-6.3747E-02	1.0527E-01	-6.3068E-02	-65.38
79	-5.6628E-02	1.2558E-01	-1.5112E-02	1.2683E-01	-5.7873E-02	-85.29
80	-9.9508E-02	2.0166E-01	-3.1630E-02	2.0495E-01	-1.0279E-01	-84.07
MIDPT	V1	V2		VMAX		ANGLE
	-1.3438E-02	1.1261E-01		1.1341E-01		96.80

ELEMENT ID 68 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
76	-2.2800E-02	7.6063E-02	-8.8904E-02	1.2835E-01	-7.5091E-02	-59.54
77	-1.1263E-02	5.9084E-02	-1.1901E-01	1.4801E-01	-1.0019E-01	-53.23
80	-1.0388E-01	2.0166E-01	-4.2437E-02	2.0745E-01	-1.0966E-01	-82.24
81	-1.1081E-01	3.4255E-01	-7.2541E-02	3.5388E-01	-1.2213E-01	-81.13
MIDPT	V1	V2		VMAX		ANGLE
	8.3202E-02	2.6563E-01		2.7836E-01		72.61

ELEMENT ID 69 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
78	-5.8200E-03	7.7491E-02	4.5259E-03	7.7736E-02	-6.0651E-03	86.90
79	-5.1057E-02	1.2909E-01	6.9181E-03	1.2935E-01	-5.1322E-02	87.80
82	3.0854E-03	7.5672E-02	1.5376E-02	7.8795E-02	-3.7311E-05	78.52
83	-5.5178E-02	1.1088E-01	1.7768E-02	1.1276E-01	-5.7058E-02	83.96
MIDPT	V1	V2		VMAX		ANGLE
	-7.5126E-02	-4.4094E-02		8.7110E-02		-149.59

ELEMENT ID 70 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
79	-5.6628E-02	1.2909E-01	5.2669E-03	1.2924E-01	-5.6777E-02	88.38
80	-9.9508E-02	1.8990E-01	7.2632E-03	1.9008E-01	-9.9690E-02	88.56
83	-4.9612E-02	1.1088E-01	2.5754E-02	1.1491E-01	-5.3643E-02	81.10
84	-1.0253E-01	2.1396E-01	2.7751E-02	2.1638E-01	-1.0495E-01	85.03
MIDPT	V1	V2		VMAX		ANGLE
	-1.7314E-02	1.9624E-02		2.6170E-02		131.42

ELEMENT ID 71 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
80	-1.0388E-01	1.8990E-01	-3.5437E-03	1.8994E-01	-1.0392E-01	-89.31
81	-1.1081E-01	3.7700E-01	-1.5449E-02	3.7749E-01	-1.1130E-01	-88.19
84	-1.0108E-01	2.1396E-01	2.3558E-02	2.1572E-01	-1.0283E-01	85.75
85	-1.3742E-01	2.4367E-01	1.1653E-02	2.4403E-01	-1.3778E-01	88.25
MIDPT	V1	V2		VMAX		ANGLE
	8.1412E-02	-3.0293E-01		3.1367E-01		-74.96

ELEMENT ID 72 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE

82	3.0857E-03	7.2469E-02	2.9147E-02	8.3089E-02	-7.5334E-03	69.98
83	-5.5179E-02	1.2017E-01	3.7361E-02	1.2780E-01	-6.2807E-02	78.46
86	-4.4883E-03	3.2376E-02	3.6037E-02	5.4421E-02	-2.6533E-02	58.54
87	5.7840E-03	1.6389E-03	4.4251E-02	4.8011E-02	-4.0588E-02	43.66
MIDPT	V1	V2		VMAX		ANGLE
	-4.9390E-02	-1.0148E-01		1.1286E-01		-115.95

ELEMENT ID 73 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
83	-4.9611E-02	1.2017E-01	4.5347E-02	1.3152E-01	-6.0964E-02	75.94
84	-1.0253E-01	1.8956E-01	6.8013E-02	2.0462E-01	-1.1759E-01	77.51
87	-2.4938E-03	1.6387E-03	6.6969E-02	6.6573E-02	-6.7429E-02	45.88
88	-2.3240E-03	-1.4536E-02	8.9635E-02	8.1412E-02	-9.8272E-02	43.05
MIDPT	V1	V2		VMAX		ANGLE
	-3.2674E-02	-1.9151E-01		1.9428E-01		-99.68

ELEMENT ID 74 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
84	-1.0108E-01	1.8956E-01	6.3820E-02	2.0296E-01	-1.1447E-01	78.15
85	-1.3742E-01	3.6952E-01	9.0637E-02	3.8523E-01	-1.5314E-01	80.16
88	7.6453E-04	-1.4536E-02	1.3367E-01	1.2701E-01	-1.4078E-01	43.36
89	-6.4951E-02	-2.2537E-02	1.6049E-01	1.1814E-01	-2.0563E-01	48.76
MIDPT	V1	V2		VMAX		ANGLE
	-2.0110E-02	-3.9154E-01		3.9205E-01		-92.94

ELEMENT ID 75 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
86	-4.4884E-03	5.7737E-02	4.8032E-02	8.3852E-02	-3.0604E-02	61.47
87	5.7844E-03	-4.2336E-03	4.7832E-02	4.8869E-02	-4.7318E-02	42.01
90	1.2279E-02	-1.9973E-01	1.1012E-01	5.9125E-02	-2.4657E-01	23.05
91	-1.2279E-02	1.5073E-02	1.0992E-01	1.1216E-01	-1.0937E-01	48.55
MIDPT	V1	V2		VMAX		ANGLE
	7.7663E-02	-1.8370E-01		1.9944E-01		-67.08

ELEMENT ID 76 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
87	-2.4935E-03	-4.2336E-03	7.0551E-02	6.7192E-02	-7.3920E-02	44.65
88	-2.3235E-03	-7.9489E-02	7.1292E-02	4.0156E-02	-1.2197E-01	30.79
91	1.1108E-02	1.5074E-02	6.9736E-02	8.2855E-02	-5.6673E-02	45.81
92	-1.1108E-02	8.8324E-02	7.0477E-02	1.2486E-01	-4.7640E-02	62.60
MIDPT	V1	V2		VMAX		ANGLE
	-2.8810E-02	1.4579E-01		1.4861E-01		101.18

ELEMENT ID 77 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
88	7.6537E-04	-7.9489E-02	1.1533E-01	8.2751E-02	-1.6147E-01	35.41
89	-6.4951E-02	3.7618E-02	1.2521E-01	1.2164E-01	-1.4897E-01	56.14
92	-2.3387E-02	8.8321E-02	-9.0198E-02	1.3856E-01	-7.3624E-02	-60.88
93	2.3386E-02	-5.3470E-01	-8.0323E-02	3.4717E-02	-5.4603E-01	-8.03

MIDPT	V1	V2	VMAX	ANGLE
	-3.3988E-01	-2.8647E-01	4.4451E-01	-139.87

ELEMENT ID 78 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
73	9.2329E-03	-1.0653E-01	-5.3136E-02	2.9924E-02	-1.2722E-01	-21.28
94	3.7479E-02	-2.7264E-01	-5.9797E-02	4.8609E-02	-2.8377E-01	-10.54
77	1.3528E-03	5.8347E-02	-1.2097E-01	1.5413E-01	-9.4432E-02	-51.63
95	-1.6128E-02	1.0688E-01	-1.2763E-01	1.8705E-01	-9.6303E-02	-57.86

MIDPT	V1	V2	VMAX	ANGLE
	-9.2356E-02	4.2804E-01	4.3789E-01	102.18

ELEMENT ID 79 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	1.3528E-03	5.9084E-02	-1.2898E-01	1.6239E-01	-1.0195E-01	-51.31
95	-1.6128E-02	7.0831E-02	-1.3794E-01	1.7198E-01	-1.1728E-01	-53.75
81	-1.2398E-01	3.4255E-01	-1.3497E-01	3.7879E-01	-1.6021E-01	-74.97
96	2.6535E-02	3.2043E-01	-1.4393E-01	3.7917E-01	-3.2207E-02	-67.80

MIDPT	V1	V2	VMAX	ANGLE
	2.4586E-01	4.0978E-01	4.7787E-01	59.04

ELEMENT ID 80 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
81	-1.2398E-01	3.7700E-01	-7.7877E-02	3.8883E-01	-1.3581E-01	-81.37
96	2.6536E-02	2.7108E-01	-1.5830E-01	3.4883E-01	-5.1215E-02	-63.84
85	-1.3454E-01	2.4368E-01	7.1203E-02	2.5664E-01	-1.4750E-01	79.68
40	-2.1036E-01	1.1248E+00	-9.2190E-03	1.1249E+00	-2.1042E-01	-89.60

MIDPT	V1	V2	VMAX	ANGLE
	8.8906E-01	1.4917E+00	1.7366E+00	59.21

ELEMENT ID 81 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
85	-1.3454E-01	3.6952E-01	1.5019E-01	4.1087E-01	-1.7590E-01	74.60
40	-2.1036E-01	4.0494E-01	1.7508E-01	4.5127E-01	-2.5669E-01	75.18
89	-5.9287E-02	-2.2537E-02	1.6274E-01	1.2287E-01	-2.0469E-01	48.22
44	-3.6671E-02	-3.7868E-02	1.8764E-01	1.5037E-01	-2.2491E-01	44.91

MIDPT	V1	V2	VMAX	ANGLE
	-8.2999E-02	-5.4645E-01	5.5272E-01	-98.64

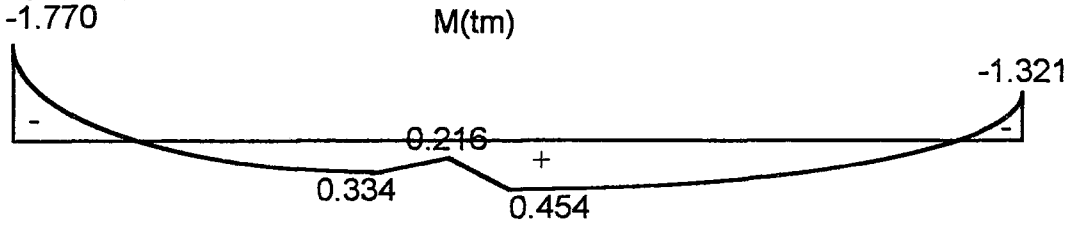
ELEMENT ID 82 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
89	-5.9287E-02	3.7618E-02	1.2746E-01	1.2552E-01	-1.4719E-01	55.41
44	-3.6670E-02	-2.3908E-02	1.3705E-01	1.0691E-01	-1.6749E-01	46.33
93	-2.9683E-07	-5.3470E-01	4.0188E-02	3.0034E-03	-5.3771E-01	4.27
48	-1.8360E-07	-6.1281E-01	4.9784E-02	4.0178E-03	-6.1683E-01	4.61

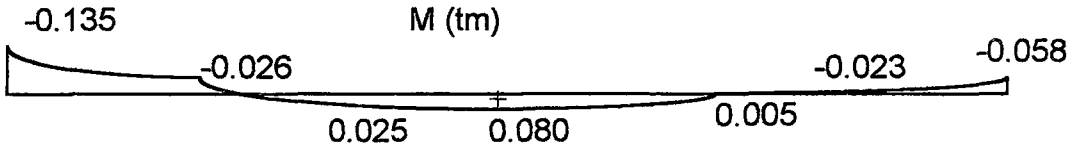
MIDPT	V1	V2	VMAX	ANGLE
	-9.0768E-02	-8.5634E-01	8.6114E-01	-96.05

3.3.2.Merdiven Moment Diyagramları

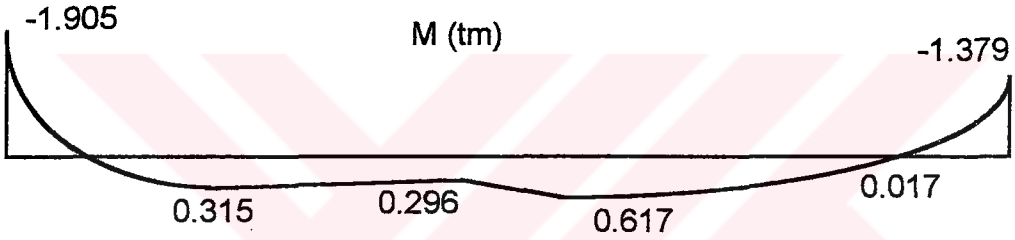
a) Kiriş moment diyagramları



Şekil 3.11.Merdiven kirişi moment diyagramı (a)



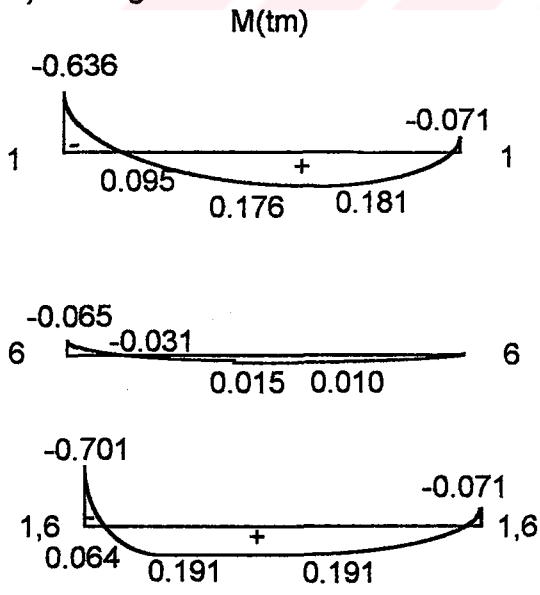
Şekil 3.12.Merdiven kirişi moment diyagramı (b)



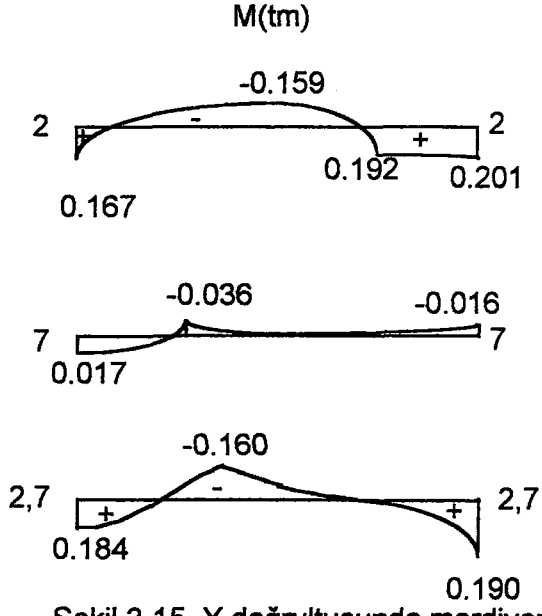
Şekil 3.13. Merdiven kirişi moment diyagramı (a + b)

b) Döşeme moment diyagramları

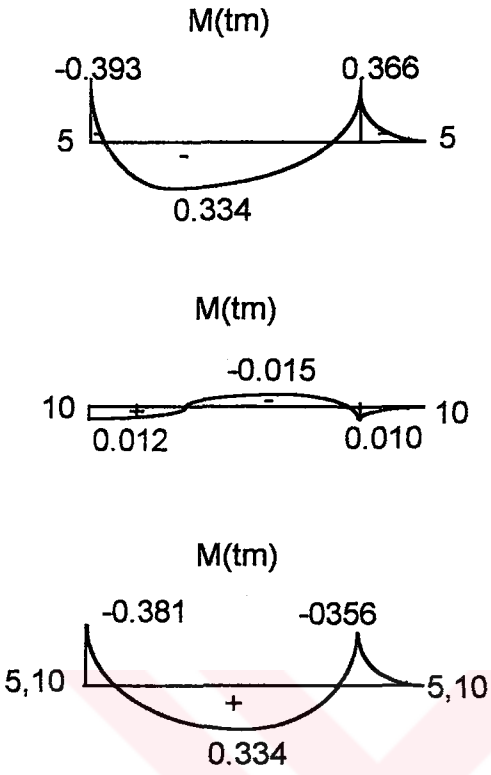
1) Y doğrultusunda



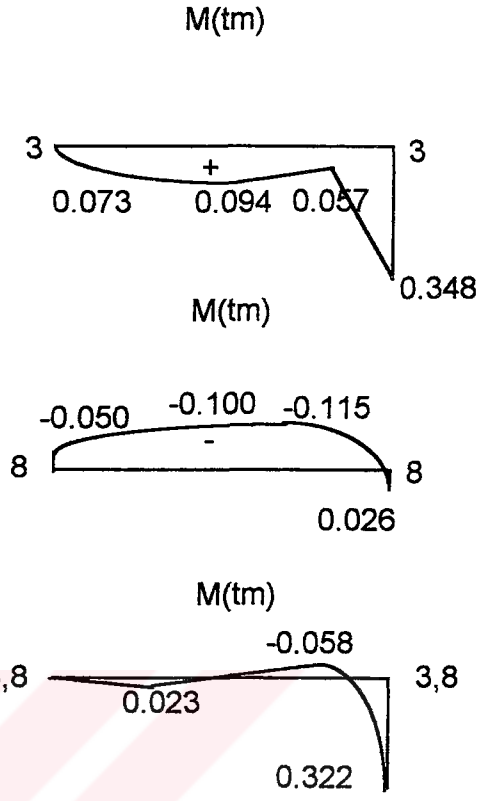
Şekil 3.14. Y doğrultusunda merdiven döşemesi moment diyagramları (1,6)



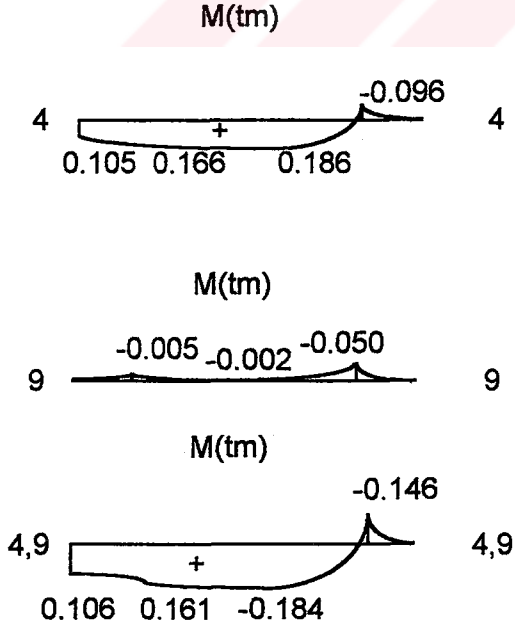
Şekil 3.15. Y doğrultusunda merdiven döşemesi moment diyagramları (2,7)



Şekil 3.16. Y doğrultusunda merdiven döşemesi moment diyagramları (5,10)

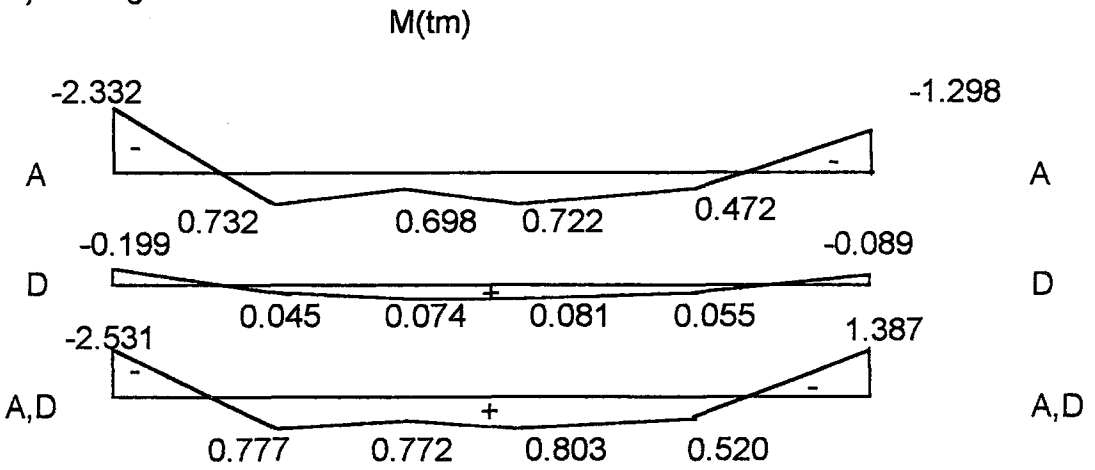


Şekil 3.17. Y doğrultusunda merdiven döşemesi moment diyagramları (3,8)

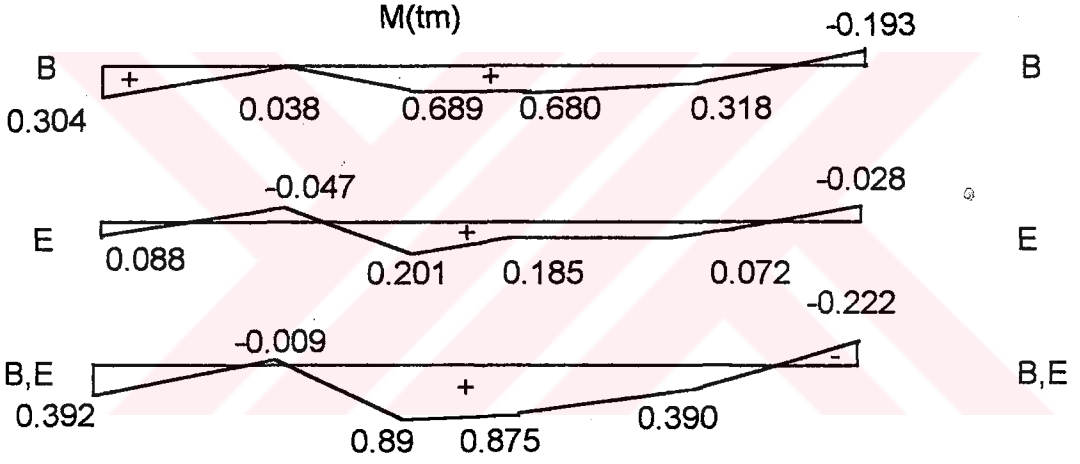


Şekil 3.18. Y doğrultusunda merdiven döşemesi moment diyagramları (4,9)

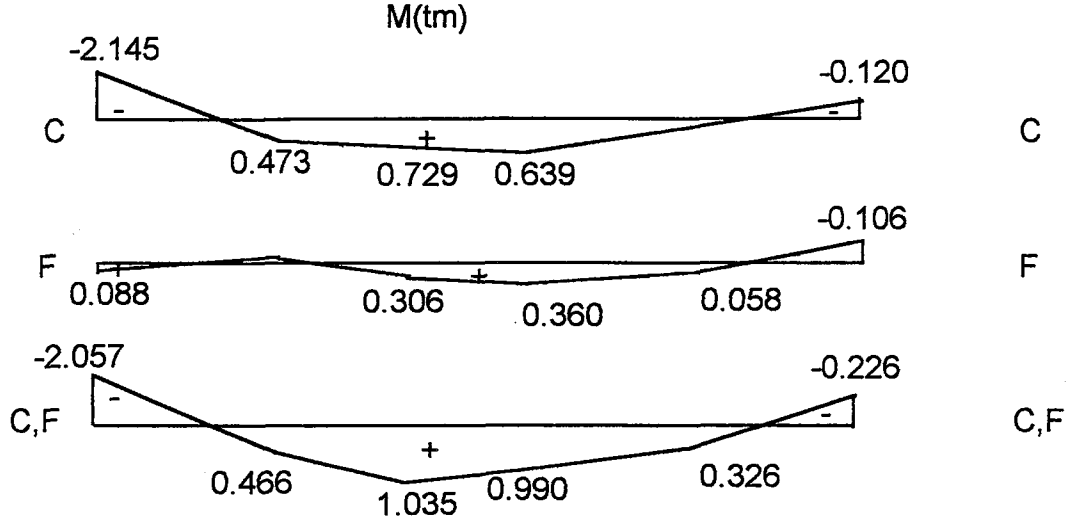
2) X doğrultusunda



Şekil 3.19. X doğrultusunda merdiven döşemesi moment diyagramları (A,D)

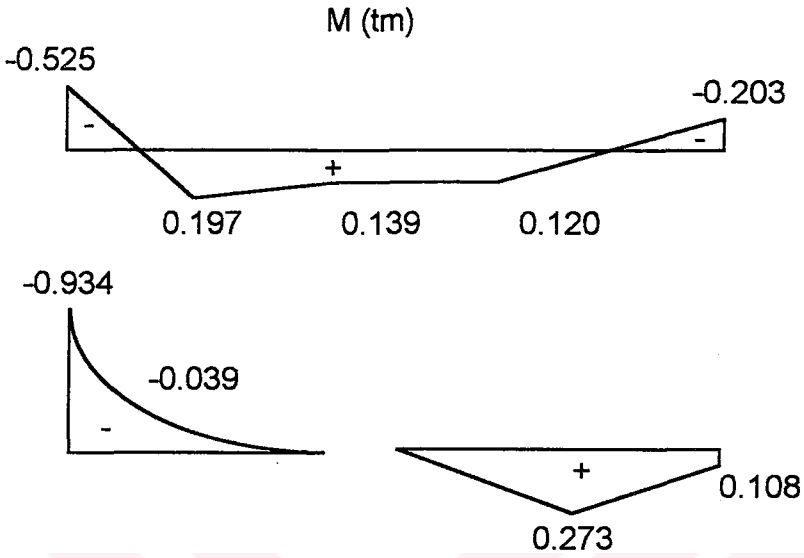


Şekil 3.20. X doğrultusunda merdiven döşemesi moment diyagramları (B,E)

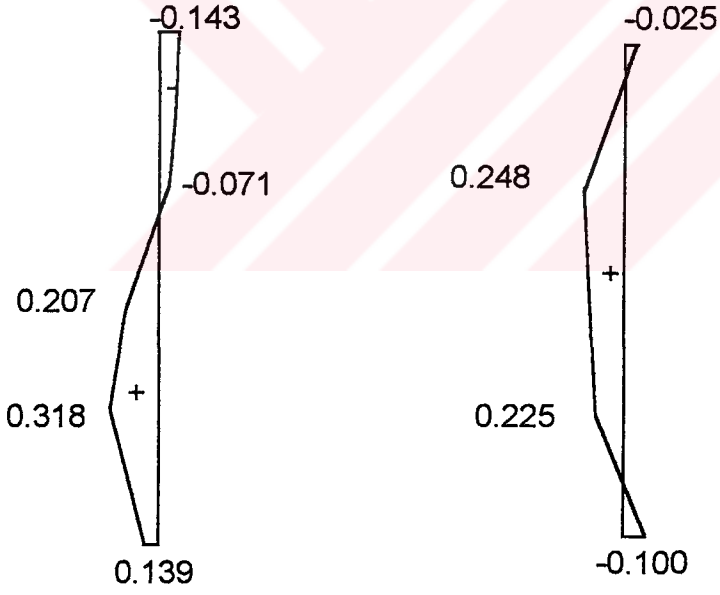


Şekil 3.21. X doğrultusunda merdiven döşemesi moment diyagramları (C,F)

c) Basamak kısmı moment diyagramları



Şekil 3.22. X doğrultusunda basamak kısmı moment diyagramları



Şekil 3.23. Y doğrultusunda basamak kısmı moment diyagramları

3.4. Koridor Kesit Tesirleri Hesabı

3.4.1.Koridor SAP90 Giriş Verileri ve Çıktıları

Koridor kısmı için SAP90 [5] veri bloku oluşturulmuş ve çözülmüştür. Aşagıda veri ve çıktılar verilmiştir.

```
KORİDOR DÖŞEMESİ
SYSTEM
L=1
RESTRAINTS
1,97,1          R=1,1,0,0,0,1
1,21,5          R=1,1,1,1,1,1
41,45,1         R=1,1,1,1,1,1
26,36,5         R=1,1,0,0,1,1
5,25,5          R=1,1,1,1,1,1
66,69,1         R=1,1,1,1,1,1
50              R=1,1,1,1,1,1
73,82,3         R=1,1,1,1,1,1
94              R=1,1,1,1,1,1
95,97,1         R=1,1,1,1,1,1
85,91,3         R=1,1,0,0,1,1
2,4,1           R=1,1,0,1,0,1
70              R=1,1,0,1,0,1
92,93,1         R=1,1,0,1,0,1

JOINTS
1   X=0       Y=0
5   X=1.6     Y=0
41  X=0       Y=4.6
45  X=1.6     Y=4.6     Q=1,5,41,45,1,5
46  X=1.952   Y=2.3
66  X=1.952   Y=4.6
50  X=3.36    Y=2.3
70  X=3.36    Y=4.6     Q=46,50,66,70,1,5
71  X=3.76    Y=0.9
73  X=4.56    Y=0.9
80  X=3.76    Y=2.3
82  X=4.56    Y=2.3     Q=71,73,80,82,1,3
83  X=3.76    Y=2.875
85  X=4.56    Y=2.875
92  X=3.76    Y=4.6
94  X=4.56    Y=4.6     Q=83,85,92,94,1,3
95  X=3.36    Y=0.9
97  X=3.36    Y=1.833   G=95,97,1

SHELL
NM=1  Z=-1
1  E=3025000        W=8.104
1  JQ=1,2,6,7       ETYPE=2    TH=0.18   G=4,8
33 JQ=25,46,30,51   ETYPE=2    TH=0.18   G=1,4
37 JQ=46,47,51,52   ETYPE=2    TH=0.18   G=4,4
53 JQ=95,71,96,74   ETYPE=2    TH=0.18   G=1,1
54 JQ=96,74,97,77   ETYPE=2    TH=0.18   G=1,1
55 JQ=97,77,50,80   ETYPE=2    TH=0.18   G=1,1
56 JQ=50,80,55,83   ETYPE=2    TH=0.18   G=1,1
57 JQ=55,83,60,86   ETYPE=2    TH=0.18   G=1,1
58 JQ=60,86,65,89   ETYPE=2    TH=0.18   G=1,1
59 JQ=65,89,70,92   ETYPE=2    TH=0.18   G=1,1
60 JQ=71,72,74,75   ETYPE=2    TH=0.18   G=2,3
66 JQ=80,81,83,84   ETYPE=2    TH=0.18   G=2,4
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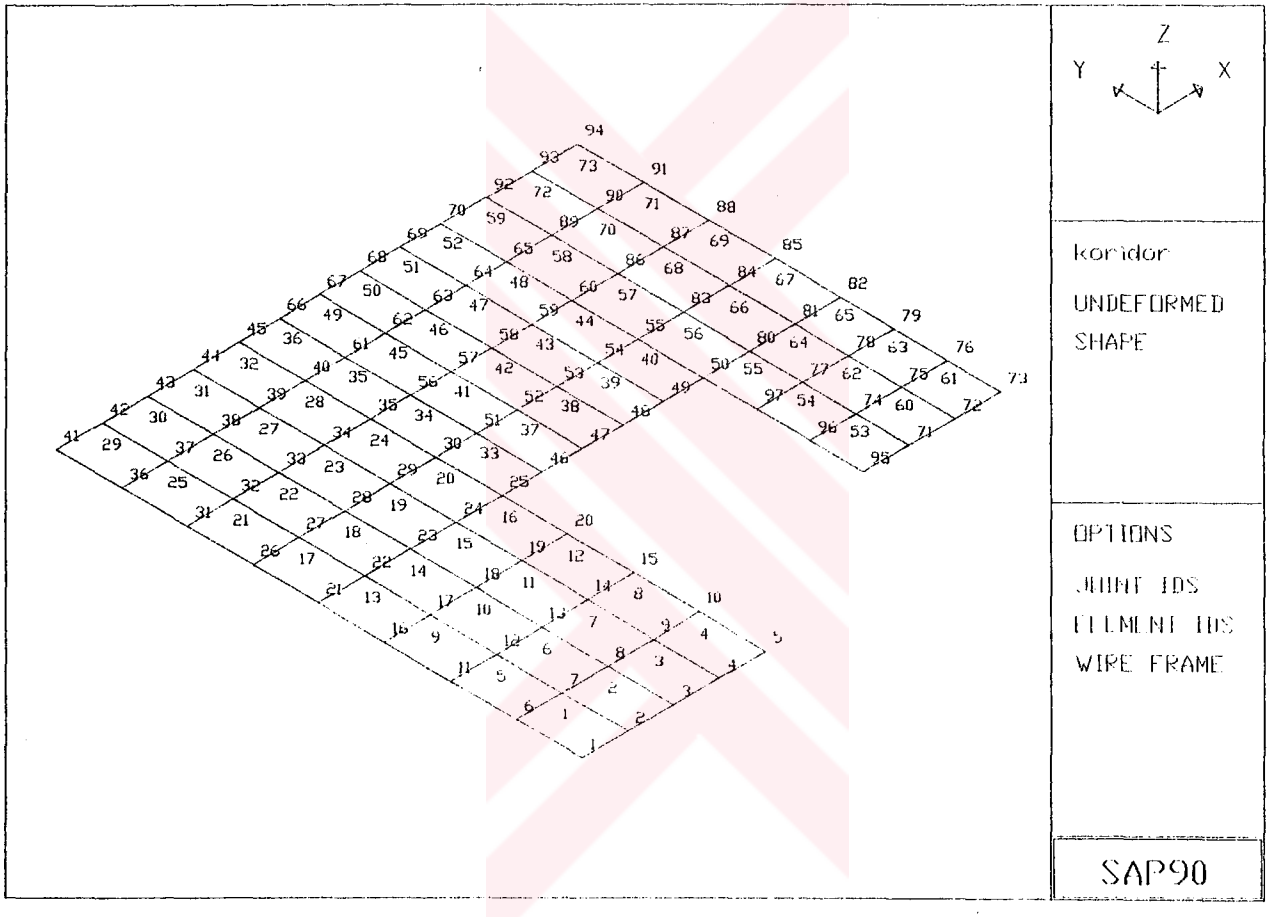
Z
Y
X
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UNDEFORMED
SHAPE
OPTIONS
JOINT IDS
ELEMENT IDS
WIRE FRAME
SAP90

S H E L L E L E M E N T F O R C E S

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID 1 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	-2.9419E-01	0.0000E+00	0.0000E+00	0.0000E+00	-2.9419E-01	90.00
2	5.9049E-02	8.7589E-04	7.2648E-04	5.9058E-02	8.6682E-04	.72
6	-2.8968E-01	1.2277E-08	1.1960E-03	4.9501E-06	-2.8968E-01	89.76
7	5.8715E-02	2.4521E-03	1.9225E-03	5.8781E-02	2.3865E-03	1.95

MIDPT	V1	V2	VMAX	ANGLE
	8.7912E-01	3.1868E-03	8.7912E-01	.21

ELEMENT ID 2 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
2	5.8666E-02	8.7589E-04	7.2648E-04	5.8675E-02	8.6676E-04	.72
3	1.7650E-01	6.3785E-04	-1.6200E-05	1.7650E-01	6.3785E-04	-.01
7	5.8972E-02	2.4521E-03	2.3020E-03	5.9066E-02	2.3585E-03	2.33
8	1.7193E-01	7.0742E-03	1.5593E-03	1.7194E-01	7.0594E-03	.54

MIDPT	V1	V2	VMAX	ANGLE
	2.9123E-01	5.1107E-03	2.9128E-01	1.01

ELEMENT ID 3 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
3	1.7647E-01	6.3785E-04	-1.6200E-05	1.7647E-01	6.3785E-04	-.01
4	5.8618E-02	9.2305E-04	-7.1494E-04	5.8627E-02	9.1419E-04	-.71
8	1.7201E-01	7.0742E-03	-1.6405E-03	1.7203E-01	7.0579E-03	-.57
9	5.9054E-02	2.2691E-03	-2.3393E-03	5.9151E-02	2.1729E-03	-2.35

MIDPT	V1	V2	VMAX	ANGLE
	-2.9134E-01	5.0204E-03	2.9138E-01	179.01

ELEMENT ID 4 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
4	5.9021E-02	9.2305E-04	-7.1494E-04	5.9030E-02	9.1425E-04	-.70
5	-2.9414E-01	0.0000E+00	0.0000E+00	0.0000E+00	-2.9414E-01	90.00
9	5.8738E-02	2.2691E-03	-1.8621E-03	5.8799E-02	2.2077E-03	-1.89
10	-2.8975E-01	1.1361E-08	-1.1472E-03	4.5532E-06	-2.8975E-01	-89.77

MIDPT	V1	V2	VMAX	ANGLE
	-8.7905E-01	2.9578E-03	8.7905E-01	179.81

ELEMENT ID 5 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	-2.8968E-01	0.0000E+00	1.1960E-03	4.9378E-06	-2.8968E-01	89.76
7	5.8717E-02	1.8572E-03	5.6374E-03	5.9270E-02	1.3037E-03	5.61
11	-2.6551E-01	5.1853E-08	5.5853E-03	1.1749E-04	-2.6563E-01	88.80
12	6.0084E-02	1.0356E-02	1.0027E-02	6.2029E-02	8.4108E-03	10.98

MIDPT	V1	V2	VMAX	ANGLE
	8.5012E-01	1.8494E-02	8.5032E-01	1.25

ELEMENT ID 6 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
7	5.8972E-02	1.8572E-03	6.0169E-03	5.9599E-02	1.2303E-03	5.95
8	1.7193E-01	7.3247E-03	1.5579E-03	1.7194E-01	7.3100E-03	.54
12	5.6863E-02	1.0356E-02	7.8237E-03	5.8144E-02	9.0756E-03	9.30
13	1.4840E-01	9.9168E-03	3.3648E-03	1.4848E-01	9.8351E-03	1.39

MIDPT	V1	V2	VMAX	ANGLE
	2.5876E-01	-1.5027E-03	2.5876E-01	-.33

ELEMENT ID 7 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
8	1.7202E-01	7.3247E-03	-1.6419E-03	1.7203E-01	7.3083E-03	-.57
9	5.9054E-02	1.6260E-03	-6.0694E-03	5.9688E-02	9.9155E-04	-5.97
13	1.4808E-01	9.9168E-03	-3.3635E-03	1.4816E-01	9.8350E-03	-1.39
14	5.7530E-02	1.0825E-02	-7.7908E-03	5.8795E-02	9.5600E-03	-9.22

MIDPT	V1	V2	VMAX	ANGLE
	-2.5739E-01	-8.1510E-04	2.5739E-01	-179.82

ELEMENT ID 8 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
9	5.8739E-02	1.6260E-03	-5.5922E-03	5.9282E-02	1.0836E-03	-5.54
10	-2.8975E-01	0.0000E+00	-1.1472E-03	4.5418E-06	-2.8975E-01	-89.77
14	6.0977E-02	1.0825E-02	-1.0067E-02	6.2922E-02	8.8800E-03	-10.94
15	-2.6643E-01	5.4200E-08	-5.6219E-03	1.1863E-04	-2.6654E-01	-88.79

MIDPT	V1	V2	VMAX	ANGLE
	-8.5264E-01	1.9112E-02	8.5286E-01	178.72

ELEMENT ID 9 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
11	-2.6551E-01	0.0000E+00	5.5853E-03	1.1744E-04	-2.6563E-01	88.80
12	6.0085E-02	5.5031E-03	7.4068E-03	6.1072E-02	4.5159E-03	7.59
16	-1.9213E-01	-8.5380E-08	1.4348E-03	1.0628E-05	-1.9214E-01	89.57
17	-2.8198E-03	-1.7053E-02	3.2562E-03	-2.1102E-03	-1.7762E-02	12.29

MIDPT	V1	V2	VMAX	ANGLE
	6.3641E-01	-1.5060E-02	6.3659E-01	-1.36

ELEMENT ID 10 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
12	5.6863E-02	5.5031E-03	5.2039E-03	5.7385E-02	4.9811E-03	5.73
13	1.4840E-01	2.0380E-02	3.8814E-03	1.4852E-01	2.0263E-02	1.74
17	1.1819E-02	-1.7053E-02	-1.3981E-02	1.7480E-02	-2.2714E-02	-22.04
18	1.8584E-01	-8.5315E-02	-1.5304E-02	1.8670E-01	-8.6176E-02	-3.22

MIDPT	V1	V2	VMAX	ANGLE
	2.9858E-01	-1.1483E-01	3.1990E-01	-21.04

ELEMENT ID 11 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
13	1.4808E-01	2.0380E-02	-2.8468E-03	1.4815E-01	2.0317E-02	-1.28
14	5.7530E-02	5.3151E-03	-5.3925E-03	5.8081E-02	4.7640E-03	-5.84

18	1.8658E-01	-8.5315E-02	1.8252E-02	1.8780E-01	-8.6535E-02	3.82
19	4.3931E-03	-1.1542E-02	1.5706E-02	1.4037E-02	-2.1186E-02	31.55
MIDPT	V1	V2		VMAX		ANGLE
	-3.0423E-01	-1.1293E-01		3.2452E-01		-159.64

ELEMENT ID 12 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	6.0979E-02	5.3151E-03	-7.6685E-03	6.2016E-02	4.2780E-03	-7.70
15	-2.6643E-01	0.0000E+00	-5.6219E-03	1.1857E-04	-2.6655E-01	-88.79
19	-1.0579E-02	-1.1542E-02	-5.4310E-03	-5.6081E-03	-1.6513E-02	-42.47
20	-1.8310E-01	-5.7787E-08	-3.3843E-03	6.2475E-05	-1.8316E-01	-88.94
MIDPT	V1	V2		VMAX		ANGLE
	-6.2102E-01	-9.5416E-03		6.2109E-01		-179.12

ELEMENT ID 13 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
16	-1.9213E-01	0.0000E+00	1.4346E-03	1.0711E-05	-1.9214E-01	89.57
17	-2.8191E-03	3.2563E-02	-4.3982E-02	6.2279E-02	-3.2535E-02	-55.96
21	-6.5781E-01	-2.1471E-06	-1.4098E-01	2.8937E-02	-6.8674E-01	-78.40
22	2.0171E-01	-4.2883E-01	-1.8639E-01	2.5269E-01	-4.7981E-01	-15.30
MIDPT	V1	V2		VMAX		ANGLE
	1.0634E+00	-5.1476E-01		1.1814E+00		-25.83

ELEMENT ID 14 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
17	1.1818E-02	3.2563E-02	-6.1220E-02	8.4283E-02	-3.9902E-02	-49.81
18	1.8584E-01	-1.3779E-01	-1.6951E-02	1.8672E-01	-1.3868E-01	-2.99
22	1.7868E-01	-4.2883E-01	-1.5552E-02	1.7908E-01	-4.2923E-01	-1.47
23	2.7352E-01	-1.3141E-01	2.8716E-02	2.7555E-01	-1.3343E-01	4.04
MIDPT	V1	V2		VMAX		ANGLE
	4.1551E-01	-2.8499E-01		5.0385E-01		-34.45

ELEMENT ID 15 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
18	1.8658E-01	-1.3779E-01	1.6605E-02	1.8743E-01	-1.3864E-01	2.92
19	4.3920E-03	4.3890E-02	6.3755E-02	9.0885E-02	-4.2603E-02	53.61
23	2.7230E-01	-1.3141E-01	-4.3331E-02	2.7689E-01	-1.3600E-01	-6.06
24	1.8979E-01	-4.7986E-01	3.8191E-03	1.8982E-01	-4.7988E-01	.33
MIDPT	V1	V2		VMAX		ANGLE
	-4.3510E-01	-3.3201E-01		5.4730E-01		-142.65

ELEMENT ID 16 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
19	-1.0579E-02	4.3890E-02	4.2618E-02	6.7232E-02	-3.3921E-02	61.29
20	-1.8310E-01	0.0000E+00	-3.3842E-03	6.2526E-05	-1.8316E-01	-88.94
24	2.1222E-01	-4.7986E-01	1.9930E-01	2.6551E-01	-5.3315E-01	14.97
25	-6.7042E-01	-2.4026E-06	1.5329E-01	3.3386E-02	-7.0381E-01	77.71
MIDPT	V1	V2		VMAX		ANGLE
	-1.0465E+00	-5.7044E-01		1.1919E+00		-151.40

ELEMENT ID 17 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
21	-6.5781E-01	-1.1699E+00	-1.4098E-01	-6.2157E-01	-1.2061E+00	-14.42
22	2.0171E-01	-1.7676E-01	-9.1130E-02	2.2251E-01	-1.9756E-01	-12.86
26	-1.5885E-01	5.2681E-01	6.1678E-02	5.3231E-01	-1.6435E-01	84.90
27	-1.0635E-02	9.7607E-02	1.1152E-01	1.6745E-01	-8.0476E-02	57.94
MIDPT	V1	V2		VMAX		ANGLE
	1.6121E+00	1.8386E+00		2.4452E+00		48.75

ELEMENT ID 18 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
22	1.7868E-01	-1.7676E-01	7.9712E-02	1.9574E-01	-1.9381E-01	12.08
23	2.7352E-01	-2.5059E-01	2.4589E-02	2.7468E-01	-2.5174E-01	2.68
27	-8.2790E-04	9.7605E-02	7.9848E-02	1.4219E-01	-4.5408E-02	60.82
28	1.3608E-01	1.7182E-01	2.4725E-02	1.8446E-01	1.2344E-01	62.93
MIDPT	V1	V2		VMAX		ANGLE
	2.8992E-01	4.6808E-01		5.5060E-01		58.23

ELEMENT ID 19 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
23	2.7230E-01	-2.5059E-01	-4.7461E-02	2.7657E-01	-2.5487E-01	-5.14
24	1.8979E-01	-1.7896E-01	-1.0836E-01	2.1928E-01	-2.0844E-01	-15.22
28	1.3723E-01	1.7182E-01	-4.6869E-02	2.0448E-01	1.0457E-01	-55.13
29	-2.5310E-02	1.0183E-01	-1.0777E-01	1.6338E-01	-8.6859E-02	-60.27
MIDPT	V1	V2		VMAX		ANGLE
	-3.0528E-01	4.5924E-01		5.5144E-01		123.61

ELEMENT ID 20 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
24	2.1223E-01	-1.7896E-01	8.7120E-02	2.3075E-01	-1.9748E-01	12.00
25	-6.7042E-01	-1.4014E+00	1.2507E-01	-6.4962E-01	-1.4222E+00	9.45
29	-3.3295E-02	1.0184E-01	-1.3671E-01	1.8677E-01	-1.1823E-01	-58.15
30	-2.0667E-01	7.0147E-01	-9.8758E-02	7.1209E-01	-2.1728E-01	-83.87
MIDPT	V1	V2		VMAX		ANGLE
	-1.7093E+00	2.1677E+00		2.7605E+00		128.26

ELEMENT ID 21 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
26	-1.5885E-01	3.8915E-01	6.1676E-02	3.9601E-01	-1.6570E-01	83.66
27	-1.0635E-02	1.8424E-01	8.7129E-02	2.1751E-01	-4.3910E-02	69.10
31	-9.1129E-03	3.7769E-01	1.7828E-03	3.7770E-01	-9.1211E-03	89.74
32	-1.4012E-02	4.1595E-01	2.7236E-02	4.1766E-01	-1.5731E-02	86.39
MIDPT	V1	V2		VMAX		ANGLE
	7.4976E-02	2.5516E-01		2.6595E-01		73.62

ELEMENT ID 22 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
27	-8.2948E-04	1.8424E-01	5.5455E-02	1.9958E-01	-1.6174E-02	74.53
28	1.3608E-01	1.3399E-01	2.8505E-02	1.6356E-01	1.0651E-01	43.95

32	-1.1914E-02	4.1595E-01	3.0990E-02	4.1818E-01	-1.4147E-02	85.88
33	-7.8006E-03	3.9812E-01	4.0406E-03	3.9816E-01	-7.8408E-03	89.43
MIDPT	V1	V2		VMAX		ANGLE
	1.3372E-01	3.6379E-01		3.8759E-01		69.82

ELEMENT ID 23 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
28	1.3723E-01	1.3399E-01	-4.3089E-02	1.7873E-01	9.2492E-02	-43.92
29	-2.5312E-02	2.1405E-01	-6.7215E-02	2.3163E-01	-4.2895E-02	-75.34
33	-8.2147E-03	3.9812E-01	-9.9433E-04	3.9812E-01	-8.2171E-03	-89.86
34	-1.8589E-02	4.3519E-01	-2.5120E-02	4.3658E-01	-1.9976E-02	-86.84
MIDPT	V1	V2		VMAX		ANGLE
	-1.4294E-01	3.6166E-01		3.8888E-01		111.57

ELEMENT ID 24 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
29	-3.3295E-02	2.1405E-01	-9.6156E-02	2.4703E-01	-6.6278E-02	-71.07
30	-2.0667E-01	4.7840E-01	-5.8693E-02	4.8339E-01	-2.1166E-01	-85.14
34	-2.2052E-02	4.3519E-01	-1.7006E-02	4.3582E-01	-2.2684E-02	-87.87
35	-2.4933E-03	3.9109E-01	2.0458E-02	3.9215E-01	-3.5538E-03	87.03
MIDPT	V1	V2		VMAX		ANGLE
	-5.4612E-02	2.1003E-01		2.1701E-01		104.58

ELEMENT ID 25 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
31	-9.1121E-03	4.0523E-01	1.7826E-03	4.0524E-01	-9.1198E-03	89.75
32	-1.4012E-02	4.0328E-01	4.5577E-03	4.0333E-01	-1.4062E-02	89.37
36	-3.5002E-03	8.6615E-02	8.8740E-04	8.6624E-02	-3.5090E-03	89.44
37	-3.6678E-03	8.6077E-02	3.6624E-03	8.6226E-02	-3.8171E-03	87.67
MIDPT	V1	V2		VMAX		ANGLE
	-7.8917E-03	-5.4595E-01		5.4600E-01		-90.83

ELEMENT ID 26 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
32	-1.1914E-02	4.0328E-01	8.3117E-03	4.0345E-01	-1.2080E-02	88.85
33	-7.8013E-03	3.9482E-01	9.9304E-03	3.9506E-01	-8.0461E-03	88.59
37	-4.0430E-03	8.6077E-02	6.0555E-03	8.6482E-02	-4.4480E-03	86.17
38	-6.3644E-03	8.8261E-02	7.6742E-03	8.8880E-02	-6.9828E-03	85.39
MIDPT	V1	V2		VMAX		ANGLE
	-1.6852E-03	-5.3835E-01		5.3835E-01		-90.18

ELEMENT ID 27 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
33	-8.2154E-03	3.9482E-01	4.8962E-03	3.9488E-01	-8.2749E-03	89.30
34	-1.8589E-02	4.1928E-01	7.8466E-03	4.1942E-01	-1.8730E-02	88.97
38	-6.3853E-03	8.8261E-02	1.1048E-02	8.9534E-02	-7.6578E-03	83.43
39	-3.4550E-03	8.0919E-02	1.3998E-02	8.3181E-02	-5.7168E-03	80.82
MIDPT	V1	V2		VMAX		ANGLE
	1.3943E-03	-5.5342E-01		5.5342E-01		-89.86

ELEMENT ID 28 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
34	-2.2052E-02	4.1928E-01	1.5961E-02	4.1985E-01	-2.2629E-02	87.93
35	-2.4922E-03	4.2729E-01	1.9713E-02	4.2819E-01	-3.3945E-03	87.38
39	-2.7629E-03	8.0919E-02	1.6370E-02	8.4007E-02	-5.8512E-03	79.32
40	-2.0432E-04	7.4042E-02	2.0122E-02	7.9145E-02	-5.3072E-03	75.77

MIDPT	V1	V2	VMAX	ANGLE
	2.8360E-02	-5.9202E-01	5.9270E-01	-87.26

ELEMENT ID 29 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
36	-3.5002E-03	8.6361E-02	8.8739E-04	8.6370E-02	-3.5090E-03	89.43
37	-3.6678E-03	8.6586E-02	2.1340E-03	8.6636E-02	-3.7182E-03	88.65
41	-1.7525E-08	-7.0199E-01	1.5788E-08	-1.7525E-08	-7.0199E-01	.00
42	-1.8364E-08	-7.0469E-01	1.2466E-03	2.1869E-06	-7.0469E-01	.10

MIDPT	V1	V2	VMAX	ANGLE
	-1.7527E-03	-1.3705E+00	1.3705E+00	-90.07

ELEMENT ID 30 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
37	-4.0429E-03	8.6586E-02	4.5271E-03	8.6811E-02	-4.2685E-03	87.15
38	-6.3644E-03	8.5728E-02	6.3371E-03	8.6162E-02	-6.7985E-03	86.08
42	-2.0242E-08	-7.0469E-01	1.2466E-03	2.1852E-06	-7.0469E-01	.10
43	-3.1865E-08	-7.1296E-01	3.0566E-03	1.3072E-05	-7.1297E-01	.25

MIDPT	V1	V2	VMAX	ANGLE
	-8.6071E-03	-1.3780E+00	1.3781E+00	-90.36

ELEMENT ID 31 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
38	-6.3853E-03	8.5728E-02	9.7109E-03	8.6741E-02	-7.3979E-03	84.05
39	-3.4549E-03	8.2064E-02	1.1422E-02	8.3563E-02	-4.9542E-03	82.52
43	-3.1970E-08	-7.1296E-01	3.0566E-03	1.3072E-05	-7.1297E-01	.25
44	-1.7298E-08	-7.2781E-01	4.7680E-03	3.1217E-05	-7.2784E-01	.38

MIDPT	V1	V2	VMAX	ANGLE
	-7.9095E-03	-1.3945E+00	1.3945E+00	-90.32

ELEMENT ID 32 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
39	-2.7628E-03	8.2064E-02	1.3794E-02	8.4250E-02	-4.9495E-03	80.99
40	-2.0430E-04	7.4408E-02	1.4310E-02	7.7058E-02	-2.8546E-03	79.51
44	-1.3833E-08	-7.2781E-01	4.7680E-03	3.1221E-05	-7.2784E-01	.38
45	-1.0229E-09	-7.4527E-01	5.2840E-03	3.7461E-05	-7.4531E-01	.41

MIDPT	V1	V2	VMAX	ANGLE
	-1.2499E-02	-1.4157E+00	1.4158E+00	-90.51

ELEMENT ID 33 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
25	-7.5775E-01	-1.4014E+00	-3.7259E-01	-5.8724E-01	-1.5719E+00	-24.59
46	9.2602E-02	2.6469E-01	-2.9966E-01	4.9042E-01	-1.3313E-01	-53.01

30	-1.8716E-01	7.0147E-01	5.5687E-02	7.0495E-01	-1.9064E-01	86.43
51	-1.4803E-03	8.4071E-02	1.2861E-01	1.7683E-01	-9.4244E-02	54.20
MIDPT	V1	V2		VMAX		ANGLE
	2.2165E+00	1.8787E+00		2.9056E+00		40.29

ELEMENT ID 34 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
30	-1.8716E-01	4.7840E-01	9.5747E-02	4.9190E-01	-2.0066E-01	81.97
51	-1.4799E-03	2.5570E-01	1.2386E-01	3.0565E-01	-5.1431E-02	68.04
35	-6.7335E-03	3.9109E-01	2.6229E-02	3.9281E-01	-8.4555E-03	86.24
56	1.7951E-03	4.4356E-01	5.4344E-02	4.5015E-01	-4.7918E-03	83.09
MIDPT	V1	V2		VMAX		ANGLE
	1.5497E-01	1.6730E-01		2.2805E-01		47.19

ELEMENT ID 35 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
35	-6.7327E-03	4.2729E-01	2.5485E-02	4.2878E-01	-8.2240E-03	86.65
56	1.7952E-03	4.2362E-01	2.7275E-02	4.2537E-01	3.8903E-05	86.32
40	9.2114E-04	7.4042E-02	2.0073E-02	7.9190E-02	-4.2267E-03	75.62
61	5.8371E-03	6.4466E-02	2.1863E-02	7.1721E-02	-1.4178E-03	71.64
MIDPT	V1	V2		VMAX		ANGLE
	9.6841E-03	-6.1439E-01		6.1447E-01		-89.10

ELEMENT ID 36 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
40	9.2116E-04	7.4408E-02	1.4260E-02	7.7078E-02	-1.7490E-03	79.39
61	5.8372E-03	6.6387E-02	1.3226E-02	6.9149E-02	3.0744E-03	78.20
45	4.6122E-09	-7.4527E-01	5.2840E-03	3.7467E-05	-7.4531E-01	.41
66	2.9225E-08	-7.5923E-01	4.2497E-03	2.3816E-05	-7.5925E-01	.32
MIDPT	V1	V2		VMAX		ANGLE
	-8.6275E-03	-1.4336E+00		1.4337E+00		-90.34

ELEMENT ID 37 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
46	7.2850E-02	2.6469E-01	1.3476E-01	3.3418E-01	3.3601E-03	62.72
47	2.9253E-01	-4.5920E-02	1.0654E-01	3.2327E-01	-7.6664E-02	16.10
51	7.0651E-03	8.4069E-02	8.7263E-02	1.4095E-01	-4.9812E-02	56.90
52	1.7391E-01	2.7837E-01	5.9041E-02	3.0497E-01	1.4731E-01	65.75
MIDPT	V1	V2		VMAX		ANGLE
	4.6643E-01	4.4755E-02		4.6857E-01		5.48

ELEMENT ID 38 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
47	2.9203E-01	-4.5920E-02	1.5274E-02	2.9272E-01	-4.6609E-02	2.58
48	2.9600E-01	-4.3627E-02	-2.0312E-02	2.9721E-01	-4.4837E-02	-3.41
52	1.7264E-01	2.7838E-01	1.3550E-02	2.8008E-01	1.7093E-01	82.81
53	1.8288E-01	2.7186E-01	-2.2035E-02	2.7702E-01	1.7773E-01	-76.83
MIDPT	V1	V2		VMAX		ANGLE
	1.7195E-02	4.5524E-01		4.5556E-01		87.84

ELEMENT ID 39 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
48	2.9587E-01	-4.3627E-02	-1.0747E-01	3.2703E-01	-7.4785E-02	-16.17
49	8.9944E-02	2.5569E-01	-1.3470E-01	3.3097E-01	1.4662E-02	-60.80
53	1.8569E-01	2.7186E-01	-6.6019E-02	3.0761E-01	1.4994E-01	-61.56
54	2.2160E-02	7.4041E-02	-9.3255E-02	1.4490E-01	-4.8696E-02	-52.77

MIDPT	V1	V2	VMAX	ANGLE
	-4.5273E-01	3.9008E-02	4.5440E-01	175.08

ELEMENT ID 40 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
49	1.0467E-01	2.5569E-01	2.9754E-01	4.8715E-01	-1.2680E-01	52.12
50	-7.7875E-01	-1.3649E+00	3.8716E-01	-5.8625E-01	-1.5574E+00	26.44
54	2.8476E-02	7.4043E-02	-1.3335E-01	1.8654E-01	-8.4026E-02	-49.85
55	-1.1700E-01	6.3949E-01	-4.3737E-02	6.4201E-01	-1.1952E-01	-86.70

MIDPT	V1	V2	VMAX	ANGLE
	-2.2109E+00	1.8396E+00	2.8761E+00	140.24

ELEMENT ID 41 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
51	7.0639E-03	2.5570E-01	8.2515E-02	2.8059E-01	-1.7829E-02	73.21
52	1.7391E-01	2.4046E-01	6.0432E-02	2.7617E-01	1.3820E-01	59.42
56	2.9672E-03	4.4356E-01	5.8216E-02	4.5112E-01	-4.5953E-03	82.60
57	3.3707E-02	3.9930E-01	3.6133E-02	4.0283E-01	3.0170E-02	84.41

MIDPT	V1	V2	VMAX	ANGLE
	2.3840E-01	2.3874E-01	3.3739E-01	45.04

ELEMENT ID 42 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
52	1.7264E-01	2.4046E-01	1.4940E-02	2.4361E-01	1.6949E-01	78.11
53	1.8288E-01	2.3398E-01	-2.9481E-02	2.4744E-01	1.6942E-01	-65.46
57	3.4698E-02	3.9930E-01	1.4469E-02	3.9987E-01	3.4124E-02	87.73
58	3.0574E-02	4.0463E-01	-2.9951E-02	4.0701E-01	2.8191E-02	-85.45

MIDPT	V1	V2	VMAX	ANGLE
	7.8795E-03	1.6032E-01	1.6051E-01	87.19

ELEMENT ID 43 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
53	1.8569E-01	2.3398E-01	-7.3465E-02	2.8716E-01	1.3250E-01	-54.10
54	2.2159E-02	2.4016E-01	-9.3252E-02	2.7460E-01	-1.2288E-02	-69.73
58	2.4445E-02	4.0463E-01	-5.9352E-02	4.1368E-01	1.5394E-02	-61.33
59	5.4117E-02	4.3301E-01	-7.9139E-02	4.4887E-01	3.8251E-02	-78.66

MIDPT	V1	V2	VMAX	ANGLE
	-1.6560E-01	2.5987E-01	3.0815E-01	122.51

ELEMENT ID 44 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
54	2.8476E-02	2.4016E-01	-1.3335E-01	3.0456E-01	-3.5929E-02	-64.22
55	-1.1699E-01	4.3128E-01	-1.1734E-01	4.5534E-01	-1.4105E-01	-78.41

59	-1.0688E-02	4.3300E-01	-7.9358E-02	4.4677E-01	-2.4455E-02	-80.16
60	2.6770E-02	3.7409E-01	-6.3349E-02	3.8528E-01	1.5576E-02	-79.98
MIDPT	V1	V2		VMAX		ANGLE
	-5.9534E-02	1.6344E-01		1.7394E-01		110.01

ELEMENT ID 45 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
56	2.9670E-03	4.2362E-01	3.1147E-02	4.2591E-01	6.7321E-04	85.79
57	3.3707E-02	4.0130E-01	2.6589E-02	4.0321E-01	3.1793E-02	85.88
61	6.0283E-03	6.4466E-02	2.0051E-02	7.0684E-02	-1.8985E-04	72.77
62	8.6540E-04	5.9613E-02	1.5493E-02	6.3448E-02	-2.9702E-03	76.10
MIDPT	V1	V2		VMAX		ANGLE
	1.7033E-02	-6.2237E-01		6.2260E-01		-88.43

ELEMENT ID 46 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
57	3.4697E-02	4.0130E-01	4.9260E-03	4.0136E-01	3.4631E-02	89.23
58	3.0573E-02	4.1433E-01	-9.9306E-03	4.1459E-01	3.0317E-02	-88.52
62	1.8589E-03	5.9613E-02	1.4916E-02	6.3238E-02	-1.7660E-03	76.34
63	-3.3662E-02	7.1040E-02	5.9728E-05	7.1040E-02	-3.3662E-02	89.97
MIDPT	V1	V2		VMAX		ANGLE
	-3.8939E-02	-6.3784E-01		6.3903E-01		-93.49

ELEMENT ID 47 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
58	2.4444E-02	4.1433E-01	-3.9331E-02	4.1826E-01	2.0516E-02	-84.30
59	5.4117E-02	3.9987E-01	-8.2048E-02	4.1835E-01	3.5635E-02	-77.31
63	-2.8022E-02	7.1040E-02	-5.3457E-03	7.1328E-02	-2.8310E-02	-86.92
64	-1.7254E-01	1.6872E-01	-4.8063E-02	1.7536E-01	-1.7918E-01	-82.13
MIDPT	V1	V2		VMAX		ANGLE
	-1.0402E-01	-6.2087E-01		6.2953E-01		-99.51

ELEMENT ID 48 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
59	-1.0688E-02	3.9987E-01	-8.2267E-02	4.1574E-01	-2.6559E-02	-79.08
60	2.6771E-02	4.1135E-01	-7.4446E-02	4.2525E-01	1.2862E-02	-79.42
64	8.4880E-02	1.6872E-01	-1.1317E-01	2.4749E-01	6.1119E-03	-55.16
65	-1.7693E-02	8.1566E-02	-1.0535E-01	1.4839E-01	-8.4521E-02	-57.61
MIDPT	V1	V2		VMAX		ANGLE
	-1.4624E-01	-4.6555E-01		4.8798E-01		-107.44

ELEMENT ID 49 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
61	6.0284E-03	6.6387E-02	1.1414E-02	6.8473E-02	3.9421E-03	79.64
62	8.6521E-04	5.7676E-02	1.0359E-02	5.9506E-02	-9.6470E-04	79.98
66	3.0183E-08	-7.5923E-01	4.2497E-03	2.3816E-05	-7.5925E-01	.32
67	4.3321E-09	-7.6806E-01	3.1946E-03	1.3292E-05	-7.6807E-01	.24
MIDPT	V1	V2		VMAX		ANGLE
	-1.9794E-02	-1.4390E+00		1.4391E+00		-90.79

ELEMENT ID 50 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	1.8589E-03	5.7676E-02	9.7818E-03	5.9340E-02	1.9429E-04	80.34
63	-3.3663E-02	6.0105E-02	1.4649E-02	6.2341E-02	-3.5898E-02	81.32
67	9.3062E-09	-7.6806E-01	3.1947E-03	1.3297E-05	-7.6807E-01	.24
68	-1.6854E-07	-7.8662E-01	8.0620E-03	8.2449E-05	-7.8670E-01	.59

MIDPT	V1	V2	VMAX	ANGLE
	-6.1913E-02	-1.4405E+00	1.4418E+00	-92.46

ELEMENT ID 51 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
63	-2.8022E-02	6.0105E-02	9.2443E-03	6.1065E-02	-2.8981E-02	84.08
64	-1.7254E-01	1.9920E-01	3.9939E-02	2.0344E-01	-1.7678E-01	83.94
68	-1.4030E-07	-7.8662E-01	8.0626E-03	8.2490E-05	-7.8670E-01	.59
69	-8.6385E-07	-9.2861E-01	3.8757E-02	1.6139E-03	-9.3022E-01	2.39

MIDPT	V1	V2	VMAX	ANGLE
	-2.0733E-01	-1.6298E+00	1.6429E+00	-97.25

ELEMENT ID 52 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
64	8.4881E-02	1.9920E-01	-2.5173E-02	2.0450E-01	7.9583E-02	-78.12
65	-1.7694E-02	7.6752E-02	-1.4904E-01	1.8587E-01	-1.2681E-01	-53.79
69	-1.0276E+00	-9.2861E-01	3.8753E-02	-9.1525E-01	-1.0410E+00	70.98
70	2.8546E-01	-6.4962E-01	-8.5114E-02	2.9314E-01	-6.5730E-01	-5.16

MIDPT	V1	V2	VMAX	ANGLE
	1.8307E+00	-1.9642E+00	2.6851E+00	-47.02

ELEMENT ID 53 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
95	-1.6353E-01	-1.0997E-06	2.6563E-03	4.2036E-05	-1.6358E-01	89.07
71	8.1739E-02	-6.2066E-04	7.4241E-03	8.2403E-02	-1.2845E-03	5.11
96	-1.2559E-01	-3.1906E-06	7.8945E-03	4.9110E-04	-1.2609E-01	86.42
74	6.6289E-02	1.8667E-02	1.2713E-02	6.9471E-02	1.5486E-02	14.05

MIDPT	V1	V2	VMAX	ANGLE
	5.5772E-01	3.2646E-02	5.5868E-01	3.35

ELEMENT ID 54 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
96	-1.2559E-01	-9.8844E-06	7.9468E-03	4.9100E-04	-1.2609E-01	86.39
74	6.6301E-02	1.9196E-02	1.4147E-02	7.0224E-02	1.5274E-02	15.50
97	-3.1569E-02	-6.4500E-06	5.0538E-03	7.8301E-04	-3.2359E-02	81.12
77	1.5436E-03	-2.8991E-02	1.1313E-02	5.2785E-03	-3.2726E-02	18.27

MIDPT	V1	V2	VMAX	ANGLE
	2.7510E-01	-3.6052E-02	2.7746E-01	-7.47

ELEMENT ID 55 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
97	-3.1571E-02	-4.2003E-06	5.0469E-03	7.8307E-04	-3.2358E-02	81.13
77	1.5770E-03	-8.6756E-03	-3.4645E-02	3.1473E-02	-3.8571E-02	-40.79

50	-4.6212E-01	1.1371E-04	-1.3928E-01	3.8839E-02	-5.0084E-01	-74.46
80	2.4659E-01	-4.8662E-01	-1.7947E-01	2.8816E-01	-5.2820E-01	-13.04
MIDPT	V1	V2		VMAX		ANGLE
	6.1766E-01	-6.1137E-01		8.6907E-01		-44.71

ELEMENT ID 56 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
50	-4.6201E-01	-1.3649E+00	-9.6197E-02	-4.5187E-01	-1.3750E+00	-6.01
80	2.4674E-01	-2.4497E-01	-9.3619E-02	2.6396E-01	-2.6220E-01	-10.42
55	-1.9075E-01	6.3949E-01	9.9339E-02	6.5121E-01	-2.0247E-01	83.27
83	-9.6868E-03	6.3666E-02	1.0192E-01	1.3531E-01	-8.1327E-02	54.90
MIDPT	V1	V2		VMAX		ANGLE
	1.4523E+00	2.0178E+00		2.4861E+00		54.26

ELEMENT ID 57 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
55	-1.9075E-01	4.3128E-01	2.5732E-02	4.3234E-01	-1.9181E-01	87.64
83	-9.6872E-03	1.5265E-01	6.3001E-02	1.7423E-01	-3.1269E-02	71.09
60	3.9630E-02	3.7409E-01	-5.5959E-02	3.8320E-01	3.0515E-02	-80.75
86	-2.5766E-02	4.2540E-01	-1.8690E-02	4.2618E-01	-2.6539E-02	-87.63
MIDPT	V1	V2		VMAX		ANGLE
	2.5091E-03	2.8062E-01		2.8063E-01		89.49

ELEMENT ID 58 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
60	3.9631E-02	4.1135E-01	-6.7056E-02	4.2307E-01	2.7904E-02	-80.08
86	-2.5766E-02	4.1533E-01	-3.8334E-02	4.1864E-01	-2.9073E-02	-85.07
65	4.1515E-03	8.1565E-02	-9.3312E-02	1.4388E-01	-5.8163E-02	-56.26
89	1.7486E-01	4.5184E-03	-6.4591E-02	1.9658E-01	-1.7203E-02	-18.59
MIDPT	V1	V2		VMAX		ANGLE
	8.5978E-02	-5.7219E-01		5.7861E-01		-81.45

ELEMENT ID 59 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
65	4.1505E-03	7.6752E-02	-1.3700E-01	1.8218E-01	-1.0128E-01	-52.42
89	1.7486E-01	-1.6212E-02	-6.0258E-02	1.9228E-01	-3.3627E-02	-16.12
70	2.4224E-01	-6.4962E-01	-8.5112E-02	2.5029E-01	-6.5767E-01	-5.40
92	3.7804E-01	-4.1227E-01	-8.3703E-03	3.7813E-01	-4.1236E-01	-.61
MIDPT	V1	V2		VMAX		ANGLE
	4.7339E-01	-7.8417E-01		9.1598E-01		-58.88

ELEMENT ID 60 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
71	8.1732E-02	-6.1756E-04	4.8924E-03	8.2022E-02	-9.0720E-04	3.39
72	8.1897E-02	-6.0364E-04	-4.7331E-03	8.2167E-02	-8.7430E-04	-3.27
74	6.0071E-02	1.8672E-02	4.8583E-03	6.0633E-02	1.8110E-02	6.60
75	5.8639E-02	1.8542E-02	-4.7671E-03	5.9198E-02	1.7983E-02	-6.69
MIDPT	V1	V2		VMAX		ANGLE
	-1.6565E-03	1.7117E-02		1.7197E-02		95.53

ELEMENT ID 61 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
72	8.1697E-02	-6.0364E-04	-7.5020E-03	8.2375E-02	-1.2819E-03	-5.17
73	-1.6353E-01	0.0000E+00	-2.6955E-03	4.4420E-05	-1.6357E-01	-89.06
75	6.5224E-02	1.8542E-02	-1.2734E-02	6.8472E-02	1.5294E-02	-14.31
76	-1.2463E-01	9.2835E-08	-7.9275E-03	5.0234E-04	-1.2513E-01	-86.38
MIDPT	V1	V2		VMAX		ANGLE
	-5.5506E-01	3.2529E-02		5.5601E-01		176.65

ELEMENT ID 62 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
74	6.0071E-02	1.9214E-02	6.3119E-03	6.1024E-02	1.8261E-02	8.59
75	5.8639E-02	2.0177E-02	-6.4936E-03	5.9706E-02	1.9110E-02	-9.33
77	2.4321E-02	-2.8977E-02	4.2651E-03	2.4660E-02	-2.9316E-02	4.55
78	3.4630E-02	-3.6957E-02	-8.5402E-03	3.5635E-02	-3.7962E-02	-6.71
MIDPT	V1	V2		VMAX		ANGLE
	6.7108E-03	-1.4486E-01		1.4502E-01		-87.35

ELEMENT ID 63 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
75	6.5225E-02	2.0177E-02	-1.4460E-02	6.9467E-02	1.5935E-02	-16.35
76	-1.2463E-01	0.0000E+00	-7.9275E-03	5.0224E-04	-1.2513E-01	-86.38
78	1.0590E-02	-3.6957E-02	-9.5663E-03	1.2443E-02	-3.8809E-02	-10.96
79	-3.9506E-02	-1.8504E-07	-3.0335E-03	2.3139E-04	-3.9737E-02	-85.63
MIDPT	V1	V2		VMAX		ANGLE
	-2.8945E-01	-4.4883E-02		2.9291E-01		-171.19

ELEMENT ID 64 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	2.4321E-02	-8.7045E-03	-4.1699E-02	5.2658E-02	-3.7041E-02	-34.20
78	3.4630E-02	-2.6009E-02	3.8005E-02	5.2928E-02	-4.4307E-02	25.71
80	2.2114E-01	-4.8677E-01	-2.7825E-02	2.2223E-01	-4.8787E-01	-2.25
81	2.0976E-01	-4.2190E-01	5.1878E-02	2.1399E-01	-4.2614E-01	4.66
MIDPT	V1	V2		VMAX		ANGLE
	2.8394E-02	-7.3713E-01		7.3768E-01		-87.79

ELEMENT ID 65 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
78	1.0590E-02	-2.6009E-02	3.6979E-02	3.3550E-02	-4.8968E-02	31.84
79	-3.9506E-02	0.0000E+00	-3.0332E-03	2.3153E-04	-3.9737E-02	-85.64
81	2.3974E-01	-4.2190E-01	1.6762E-01	2.7978E-01	-4.6194E-01	13.44
82	-4.5537E-01	-2.1124E-06	1.2761E-01	3.3319E-02	-4.8869E-01	75.37
MIDPT	V1	V2		VMAX		ANGLE
	-6.5156E-01	-5.2420E-01		8.3625E-01		-141.18

ELEMENT ID 66 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
80	2.2114E-01	-2.4497E-01	5.7723E-02	2.2818E-01	-2.5202E-01	6.96
81	2.0976E-01	-2.5869E-01	-1.2789E-02	2.1011E-01	-2.5904E-01	-1.56

83	-2.1601E-03	6.3663E-02	5.5275E-02	9.5082E-02	-3.3580E-02	60.39
84	2.7618E-02	7.0571E-02	-1.5237E-02	7.5427E-02	2.2762E-02	-72.32
MIDPT	V1	V2		VMAX		ANGLE
	1.8745E-02	3.7842E-01		3.7888E-01		87.16

ELEMENT ID 67 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
81	2.3974E-01	-2.5869E-01	1.0295E-01	2.6017E-01	-2.7912E-01	11.22
82	-4.5538E-01	-1.0862E+00	1.2761E-01	-4.3054E-01	-1.1110E+00	11.01
84	1.3254E-02	7.0572E-02	-7.1197E-02	1.1866E-01	-3.4835E-02	-55.96
85	-8.7122E-02	4.1347E-01	-4.6541E-02	4.1776E-01	-9.1413E-02	-84.73
MIDPT	V1	V2		VMAX		ANGLE
	-1.2972E+00	1.6520E+00		2.1005E+00		128.14

ELEMENT ID 68 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
83	-2.1613E-03	1.5265E-01	1.6361E-02	1.5436E-01	-3.8716E-03	84.03
84	2.7618E-02	1.1587E-01	2.9645E-03	1.1597E-01	2.7518E-02	88.08
86	-2.2465E-02	4.2540E-01	5.2172E-03	4.2546E-01	-2.2526E-02	89.33
87	-2.9108E-02	4.3117E-01	-8.1792E-03	4.3131E-01	-2.9253E-02	-88.98
MIDPT	V1	V2		VMAX		ANGLE
	9.5398E-03	4.7786E-01		4.7795E-01		88.86

ELEMENT ID 69 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
84	1.3254E-02	1.1587E-01	-5.2994E-02	1.3833E-01	-9.1995E-03	-67.04
85	-8.7121E-02	3.1040E-01	-4.6539E-02	3.1577E-01	-9.2497E-02	-83.41
87	-2.7828E-02	4.3117E-01	-3.3360E-03	4.3119E-01	-2.7852E-02	-89.58
88	-8.9261E-03	3.7482E-01	3.1184E-03	3.7485E-01	-8.9515E-03	89.53
MIDPT	V1	V2		VMAX		ANGLE
	-1.5481E-02	3.4633E-01		3.4667E-01		92.56

ELEMENT ID 70 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
86	-2.2465E-02	4.1533E-01	-1.4427E-02	4.1581E-01	-2.2940E-02	-88.11
87	-2.9108E-02	4.2658E-01	2.1996E-02	4.2764E-01	-3.0168E-02	87.24
89	1.7443E-01	4.5184E-03	1.9264E-02	1.7659E-01	2.3617E-03	6.39
90	-1.6579E-02	8.7016E-02	5.5687E-02	1.1127E-01	-4.0834E-02	66.46
MIDPT	V1	V2		VMAX		ANGLE
	-1.8848E-01	-5.6145E-01		5.9224E-01		-108.56

ELEMENT ID 71 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
87	-2.7828E-02	4.2658E-01	2.6839E-02	4.2816E-01	-2.9408E-02	86.63
88	-8.9256E-03	3.7508E-01	3.1184E-03	3.7511E-01	-8.9510E-03	89.54
90	-3.5162E-02	8.7017E-02	8.2157E-02	1.2831E-01	-7.6452E-02	63.32
91	-1.3798E-01	2.9244E-01	5.8436E-02	3.0024E-01	-1.4578E-01	82.40
MIDPT	V1	V2		VMAX		ANGLE
	-8.6956E-03	-4.2643E-01		4.2652E-01		-91.17

ELEMENT ID 72 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
89	1.7444E-01	-1.6212E-02	2.3597E-02	1.7731E-01	-1.9089E-02	6.95
90	-1.6580E-02	7.1379E-02	1.0893E-01	1.4487E-01	-9.0071E-02	55.99
92	3.7677E-01	-4.1227E-01	-8.3681E-03	3.7685E-01	-4.1236E-01	-.61
93	2.7174E-01	-5.8881E-01	7.6961E-02	2.7857E-01	-5.9564E-01	5.07

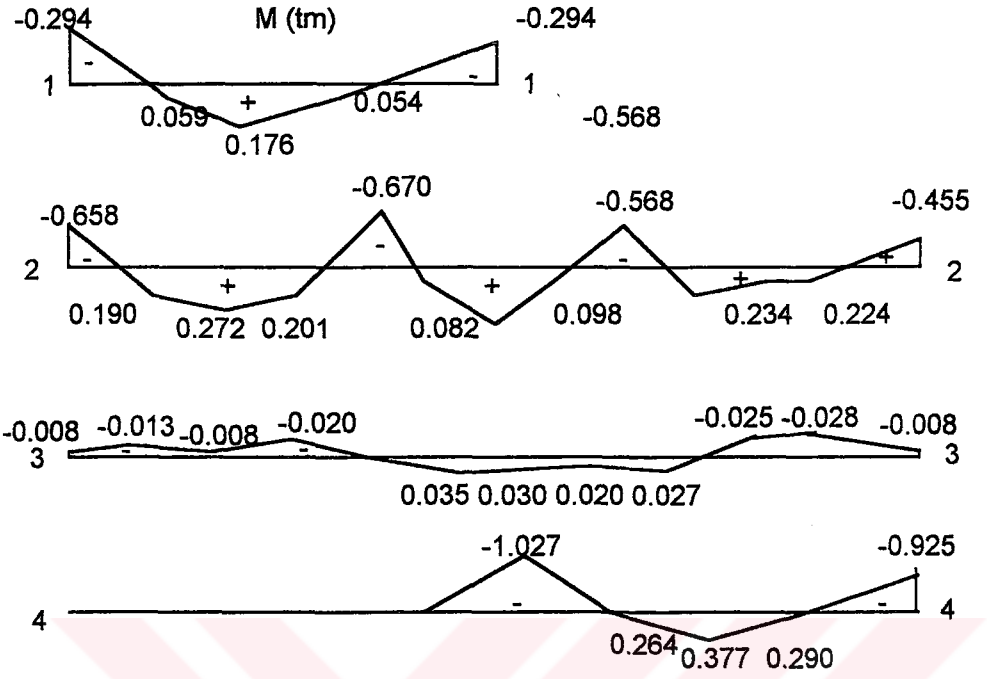
MIDPT	V1	V2	VMAX	ANGLE
	-4.2565E-01	-7.0515E-01	8.2366E-01	-121.12

ELEMENT ID 73 ----------
LOAD COND 1 ----------

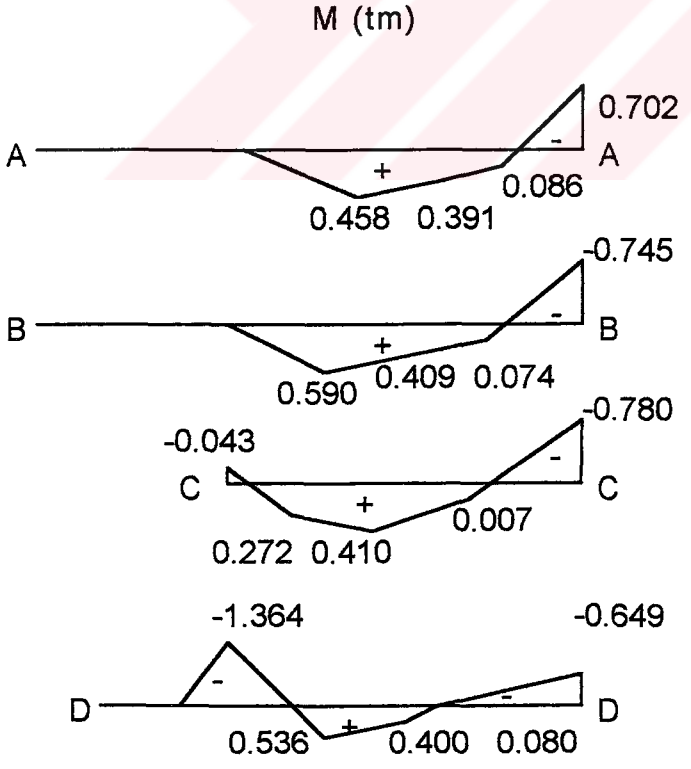
JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
90	-3.5161E-02	7.1379E-02	1.3540E-01	1.6361E-01	-1.2739E-01	55.74
91	-1.3799E-01	3.4114E-01	5.8437E-02	3.4817E-01	-1.4501E-01	83.15
93	3.0924E-01	-5.8881E-01	7.6963E-02	3.1579E-01	-5.9536E-01	4.86
94	-9.2492E-01	-1.0212E+00	2.9264E-06	-9.2492E-01	-1.0212E+00	.00

MIDPT	V1	V2	VMAX	ANGLE
	-1.7729E+00	-1.9511E+00	2.6363E+00	-132.26

3.4.2. Koridor Döşemesi Moment Diyagramları



Şekil 3.24. Koridor döşemesinin x doğrultusunda moment diyagramları



Şekil 3.25. Koridor döşemesinin y doğrultusunda moment diyagramları

3.5. Yapıya Etkiyen Deprem Yüklerinin Hesabı

3.5.1. Kat Ağırlıkları

$W_i = G_i + n\,G_i$ n=0.3 yük azaltma katsayısı [3]

1,7 katları

Döşeme ağırlıkları:
4x[0.545x(5x9.42+1.40x0.27)]+2[0.642x4.36x2.60]+0.642x(1.40x 2.40+2.00x4.76)+0.642x1.00x1.40=145.537 t

Kiriş ağırlıkları:
4x[2.4x3.85x0.2x0.45+2.4x0.52x0.2x0.45]+2x(2.4x4.36x0.2x0.45) =12.597 t

Duvar ağırlıkları:
4x[0.65x0.10x2.27x2.54 +0.65x0.33x4.71x 2.27 +0.65x0.33x9.42x 2.27+0.65x0.10x8.47x2.54+0.65x0.10x2.05x2.54+0.65x0.10x2.90 x2.54+0.65x0.10x1.00x2.54x3)+0.65x0.38x4.56x2.27=42.083 t

Kolon ağırlıkları:
12x2.4x0.30x0.30x2.72+8x2.4x0.5x0.3x2.72=14.884t

Perde ağırlıkları:
2x2.4x0.2x2.72x5.10+2x2.4x1.56x0.2x2.72+2x2.4x2.40x0.20x2.72 + 2.4x 1.2x0.2x2.72+2x2.4x2.8x0.2x2.72+2.4x3.36x0.2x2.72+2.4x 1.64x0.2x2.72+2x2.4x0.4x0.2x2.72=40.108 t

$W_{1,7}$=145.537+12.597+42.083+14.884+40.108=255.210 t

8.kat

Döşeme ağırlıkları:
4x(0.59x5x9.42+0.59x1.4x6.27)+ 2x(0.59x4.36x2.6)+0.53x(1.40x 2.40+2.0x4.76)+0.59x1.00x1.40=153.673 t

Kiriş ağırlıkları:
4x(2.4x3.88x0.2x0.45+2.4x8.52x0.2x0.45)+2x(2.4x4.36x0.2x0.45)
=12.597 t

Duvar ağırlıkları:
0.65x 0.1x2.27x1.27+ 0.65x 0.33 x4.71x1.135 +0.65x0.33 x9.42 x
1.135+0.65x0.10x8.47x1.27+0.65x0.10x2.05x1.27+0.65x0.1x2.9x
1.2+0.65x0.1x1.0x1.27+0.65x0.10x1.0x1.27+0.65x0.10x1.0x1.27+
0.65x0.33x4.56x2.27x2=9.423 t

Kolon ağırlıkları:
12x2.4x0.3x0.3x1.135+8x2.4x0.3x0.3x1.135=6.211 t

Perde ağırlıkları:
2 x2.4x0.2x 1.135x5.10 +2x2.4x1.56x0.2x1.135+2x2.40x2.40x0.2x
1.135x2.4x1.2x0.2x1.135+2x2.4x2.8x0.2x2.72+2.4x3.36x0.2x1.13
5+2.4x1.64x0.2x1.135+2x2.4x0.4x0.2x1.135=20.996 t

G_8=153.673+12.597+9.423+6.211+20.996=202.901 t

Zemin kat

Döşeme ağırlıkları:
0.545x18.84x10+0.642x4.56x10=131.953 t

Duvar ağırlıkları:
[0.65x0.10x2.27x 1.27+0.65x0.33x 4.71x1.135 +0.65x0.33x 9.42x
1.135+0.65x0.10x8.47x1.27+0.65x0.10x2.05x1.27+0.65x0.10x2.9
0x1.27+0.65x0.1x1.00x1.27+0.65x0.10x1.0x1.27+0.65x0.10x1.0x
1.27)x4+0.650.33x4.56x1.135x2=22.152 t

Kolon ağırlıkları:
(2.4x0.3x0.3x2.72x6+2.4x0.3x0.8x1.36x4)x2=10.967 t

Perde ağırlıkları:
2x [2.4x0.2x1.36 x(2x9.62+25.2+ 2.8x2+2.40)]+(1.00+3.12+4.2+
4.36x2)x2.4x0.2x2.72=90.713 t

Kuranglez ağırlıkları:
5x[2.4x0.2x1.6x(2+1.2)+2.4x0.2x0.6x1.6]=14.592 t

G_Z=131.953+22.152+10.967+90 713+14 592=270.377 t

Q_8=0.075x10.56x23.76=18.820 t
$Q_{2,7}$=2x0.2x9.22x9.8+0.35x4.36x9.8=51.097 t

W_8=202.901+0.3x18.820=208.547 t
W_7=255.210+0.3x51.097=270.940 t
W_6=270.540 t
W_5=270.540 t
W_4=270.540 t
W_3=270.540 t
W_2=270.540 t
W_1=270.540 t
W_Z=270.377 + 0.3 x 91.097 = 285.706 t

$\sum W \approx 2388.033$ t

3.5.2.Katlara Etkiyen Yatay Yükler

4.deprem bölgesi (Ankara)

F=C.W
C=G.K.S.I > Co / 2
Co=0.03 ⇒ deprem bölgesi katsayısı [3]
K=1.2 ⇒ yapı tipi katsayısı [3]
I =1 ⇒ yapı önem katsayısı [3]

S=1 / I0.8 + T - To I≤ 1.0
T=0.09 H /√ D veya T = (0.07~ 0.10) N
To = 0.65 sn ⇒ zemin periyodu [3]
H = 2.175 m D1 = 10 m D 2 = 23.40 m
N = 8

Y doğrultusu

$T1 \leq 0.09\ H \div \sqrt{D} = 0.09x21.75 \div \sqrt{23.40} = 0.405$

$T1 \leq (0.07 \sim 0.1)N = 0.56 \sim 0.8$

min T1=0.405 sn

X doğrultusu

$T2 \leq 0.09\ H \div \sqrt{D} = 0.09x21.75 \div \sqrt{10} = 0.619$

$T2 \leq (0.07 \sim 0.1)N = 0.56 \sim 0.8$

min T2=0.619sn

Y:S1=1 / I0.8 +0.405 - 0.65I=1.8> 1 S = 1 alınır

X:S2=1 / I0.8 +0.619 - 0.65I=1.3> 1 S = 1 alınır

$C = 0.03 \times 1.2 \times 1 \times 1 = 0.036 \Rightarrow C \geq Co/2$ 0.036>0.03 / 2 =0.015

$F = 0.036x2388.033 = 85.969\ t \Rightarrow H/D = 21.75/10 = 2.175 < 3$ Ft=0

W8 h8= 208.547x21.75 = 4535.897 tm

W7 h7= 270.540x19.03 = 5148.376 tm

W6 h6= 270.540x16.31 = 4412.507 tm

W5 h5= 270.540x13.59 = 3676.638 tm

W4 h4= 270.540x10.87 = 2940.769 tm

W3 h3= 270.540x8.15 = 2204.901 tm

W2 h2= 270.540x5.43 = 1469.032 tm

W1 h1= 270.540x2.72 = 735.868 tm

$\sum Wi.hi = 25123.988$ tm

F8= 4535897 / 25123.988 x 85.969 = 15.520 t

F7= 17.617 t

F6= 15.098 t

F5= 12.580 t

F4= 10.562 t

F3= 7.541 t

F2= 5.026 t

F1= 2.517 t

3.6.Döşemenin Kiriş Gibi Çalışan Kısmının Denetlenmesi

Döşemenin kiriş gibi çalışan kısmının denetlenmesi için SAP90 [5] veri bloku oluşturulmuş çözülmüş. Muto yöntemi tersten uygularak kiriş gibi çalışan kısmı hesaplanmıştır.

```
SYSTEM
L=1
RESTRAINTS
1,95,1          R=0,0,0,0,0,1
1,7,1           R=0,0,0,1,0,1
24,31,1         R=0,0,0,1,0,1
7,15,8          R=0,1,1,0,0,1
23,31,8         R=0,1,1,0,0,1
32,38,1         R=0,0,0,1,0,1
55,62,1         R=0,0,0,1,0,1
38,46,8         R=0,1,1,0,0,1
54,62,8         R=0,1,1,0,0,1
63,69,1         R=0,0,0,1,0,1
86,93,1         R=0,0,0,1,0,1
69,77,8         R=0,1,1,0,0,1
85,93,8         R=0,1,1,0,0,1
94,95,1         R=1,1,1,1,1,1

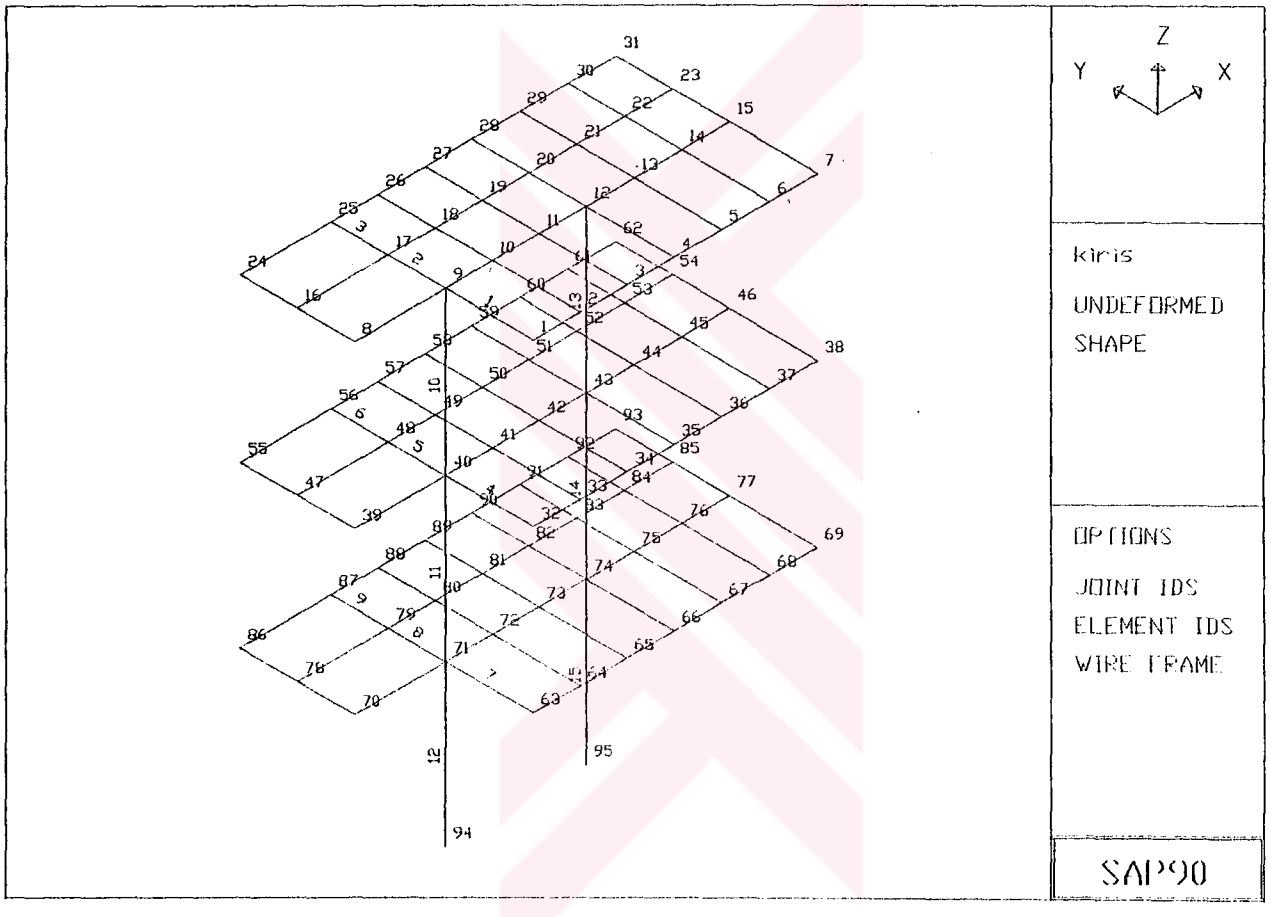
JOINTS
1   X=1.55   Y=0
4   X=3.95   Y=0                    G=1,4,1
7   X=6.4    Y=0                    G=4,7,1
9   X=1.55   Y=1.5
11  X=3.15   Y=1.5
12  X=3.95   Y=1.5
25  X=1.55   Y=3.45
27  X=3.15   Y=3.45                 Q=9,11,25,27,1,8
28  X=3.95   Y=3.45
15  X=6.4    Y=1.5
31  X=6.4    Y=3.45                 Q=12,15,28,31,1,8
8   X=0      Y=1.5
24  X=0      Y=3.45                 G=8,24,8
32  X=1.55   Y=0      Z=-2.72
35  X=3.95   Y=0      Z=-2.72      G=32,35,1
38  X=6.4    Y=0      Z=-2.72      G=35,38,1
40  X=1.55   Y=1.5    Z=-2.72
42  X=3.15   Y=1.5    Z=-2.72
43  X=3.95   Y=1.5    Z=-2.72
56  X=1.55   Y=3.45   Z=-2.72
58  X=3.15   Y=3.45   Z=-2.72      Q=40,42,56,58,1,8
59  X=3.95   Y=3.45   Z=-2.72
46  X=6.4    Y=1.5    Z=-2.72
62  X=6.4    Y=3.45   Z=-2.72      Q=43,46,59,62,1,8
39  X=0      Y=1.5    Z=-2.72
55  X=0      Y=3.45   Z=-2.72      G=39,55,8
63  X=1.55   Y=0      Z=-5.44
66  X=3.95   Y=0      Z=-5.44      G=63,66,1
69  X=6.4    Y=0      Z=-5.44      G=66,69,1
71  X=1.55   Y=1.5    Z=-5.44
73  X=3.15   Y=1.5    Z=-5.44
74  X=3.95   Y=1.5    Z=-5.44
87  X=1.55   Y=3.45   Z=-5.44
89  X=3.15   Y=3.45   Z=-5.44      Q=71,73,87,89,1,8
90  X=3.95   Y=3.45   Z=-5.44
77  X=6.4    Y=1.50   Z=-5.44
```

```
93  X=6.4     Y=3.45    Z=-5.44     Q=74,77,90,93,1,8
70  X=0       Y=1.5     Z=-5.44
86  X=0       Y=3.45    Z=-5.44     G=70,86,8
94  X=1.55    Y=1.5     Z=-8.16
95  X=3.95    Y=1.5     Z=-8.16

SHELL
NM=1
1  E=3025000          W=0
1  JQ=1,2,9,10        ETYPE=0    TH=0.18    G=6,1
7  JQ=8,9,16,17       ETYPE=0    TH=0.18    G=7,2
21 JQ=32,33,40,41     ETYPE=0    TH=0.18    G=6,1
27 JQ=39,40,47,48     ETYPE=0    TH=0.18    G=7,2
41 JQ=63,64,71,72     ETYPE=0    TH=0.18    G=6,1
47 JQ=70,71,78,79     ETYPE=0    TH=0.18    G=7,2

FRAME
NM=2
1      SH=R  T=0.45,0.20  E=3025000  G=1210000 W=0
2      SH=R  T=0.30,0.30  E=3025000  G=1210000 W=0
C KİRİŞLER
1   1  9   M=1  LP=3,0  RE=0,0
2   9 17   M=1  LP=3,0  RE=0,0                G=1,1,8,8
4  32 40   M=1  LP=3,0  RE=0,0
5  40 48   M=1  LP=3,0  RE=0,0                G=1,1,8,8
7  63 71   M=1  LP=3,0  RE=0,0
8  71 79   M=1  LP=3,0  RE=0,0                G=1,1,8,8
C KOLONLAR
10 40  9   M=2  LP=2,0  RE=0,0
11 71 40   M=2  LP=2,0  RE=0,0
12 94 71   M=2  LP=2,0  RE=0,0
13 43 12   M=2  LP=2,0  RE=0,0
14 74 43   M=2  LP=2,0  RE=0,0
15 95 74   M=2  LP=2,0  RE=0,0

LOAD
9  L=1  F=1.310
40 L=1  F=1.487
71 L=1  F=1.275
```


Z
Y
X
kinis
UNDEFORMED
SHAPE
OPTIONS
JOINT IDS
ELEMENT IDS
WIRE FRAME
SAP90

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1								
	1	.000			-.022			.123
		.000	.035	-.019		-.004	.003	
		1.500	.035	.033		-.004	-.003	
		1.500			-.022			.123
2								
	1	.000			-.016			-.141
		.000	-.056	.040		.008	-.004	
		.975	-.056	-.015		.008	.004	
		.975			-.016			-.141
3								
	1	.000			-.002			-.005
		.000	-.006	-.020		.001	-.000	
		.975	-.006	-.025		.001	.000	
		.975			-.002			-.005
4								
	1	.000			-.023			.309
		.000	.113	-.068		-.004	.003	
		1.500	.113	.102		-.004	-.003	
		1.500			-.023			.309
5								
	1	.000			-.017			-.350
		.000	-.175	.127		.008	-.004	
		.975	-.175	-.044		.008	.004	
		.975			-.017			-.350
6								
	1	.000			-.002			-.011
		.000	-.021	-.057		.001	-.001	
		.975	-.021	-.078		.001	.001	
		.975			-.002			-.011
7								
	1	.000			-.015			.459
		.000	.177	-.103		-.003	.003	
		1.500	.177	.162		-.003	-.003	
		1.500			-.015			.459
8								
	1	.000			-.016			-.519
		.000	-.268	.191		.006	-.003	
		.975	-.268	-.070		.006	.003	
		.975			-.016			-.519
9								
	1	.000			-.002			-.016

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.035	-.089		.001	-.000	
		.975	-.035	-.123		.001	.000	
		.975			-.002			-.016
10								
	1	.000			.656			
		.000	-.573	.565		-.012	.019	
		2.720	-.573	-.994		-.012	-.014	
		2.720			.656			
11								
	1	.000			2.445			
		.000	-1.295	1.596		-.024	.036	
		2.720	-1.295	-1.926		-.024	-.030	
		2.720			2.445			
12								
	1	.000			5.138			
		.000	-1.974	3.266		-.016	.014	
		2.720	-1.974	-2.103		-.016	-.029	
		2.720			5.138			
13								
	1	.000			-.395			
		.000	-.737	.788		.005	-.009	
		2.720	-.737	-1.216		.005	.005	
		2.720			-.395			
14								
	1	.000			-1.706			
		.000	-1.502	1.898		.015	-.022	
		2.720	-1.502	-2.188		.015	.017	
		2.720			-1.706			
15								
	1	.000			-3.801			
		.000	-2.098	3.376		.010	-.009	
		2.720	-2.098	-2.331		.010	.018	
		2.720			-3.801			

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)
1	.007250	.000000	.000083	.000000	.000092
2	.007250	.000000	.000004	.000000	.000078
3	.007250	.000000	-.000041	.000000	.000055
4	.007250	.000000	-.000070	.000000	-.000035
5	.007250	.000000	-.000084	.000000	.000011
6	.007250	.000000	-.000061	.000000	-.000059
7	.007250	.000000	.000000	.000000	-.000082
8	.007251	-.000000	.000365	-.000020	.000156
9	.007251	.000000	.000082	.000002	.000268
10	.007251	.000000	-.000011	.000002	.000027
11	.007250	.000000	-.000013	-.000005	-.000013
12	.007249	.000000	-.000059	-.000000	.000218
13	.007250	.000000	-.000106	.000005	-.000029
14	.007250	.000000	-.000064	.000003	-.000070
15	.007250	.000000	.000000	-.000000	-.000083
16	.007251	-.000000	.000346	-.000016	.000171
17	.007251	.000000	.000087	.000005	.000138
18	.007251	.000000	.000000	.000010	.000071
19	.007250	.000000	-.000038	-.000024	.000043
20	.007250	.000000	-.000068	-.000010	.000002
21	.007250	.000000	-.000084	.000021	.000000
22	.007250	.000000	-.000056	.000010	-.000058
23	.007250	.000000	.000000	.000000	-.000075
24	.007251	-.000000	.000338	.000000	.000178
25	.007251	.000000	.000090	.000000	.000133
26	.007250	.000000	.000004	.000000	.000084
27	.007250	.000000	-.000047	.000000	.000044
28	.007250	.000000	-.000072	.000000	.000033
29	.007250	.000000	-.000075	.000000	-.000014
30	.007250	.000000	-.000050	.000000	-.000049
31	.007250	.000000	.000000	.000000	-.000067
32	.005643	.000000	.000080	.000000	.000112
33	.005643	.000000	-.000026	.000000	.000085
34	.005643	.000000	-.000061	.000000	.000058
35	.005643	.000000	-.000089	.000000	-.000114
36	.005643	.000000	-.000119	.000000	.000049
37	.005642	.000000	-.000097	.000000	-.000088
38	.005642	.000000	.000000	.000000	-.000133
39	.005644	-.000000	.000605	-.000047	.000277
40	.005644	.000000	.000076	.000005	.000555
41	.005643	.000000	-.000065	.000004	-.000042
42	.005643	.000000	.000009	-.000017	-.000116
43	.005642	.000000	-.000055	-.000003	.000503
44	.005642	.000000	-.000172	.000009	-.000042
45	.005643	.000000	-.000106	.000004	-.000114
46	.005643	.000000	.000000	-.000001	-.000137
47	.005644	-.000000	.000559	-.000038	.000313
48	.005643	.000000	.000090	.000014	.000229
49	.005643	.000000	-.000039	.000024	.000071
50	.005643	.000000	-.000058	-.000066	.000029

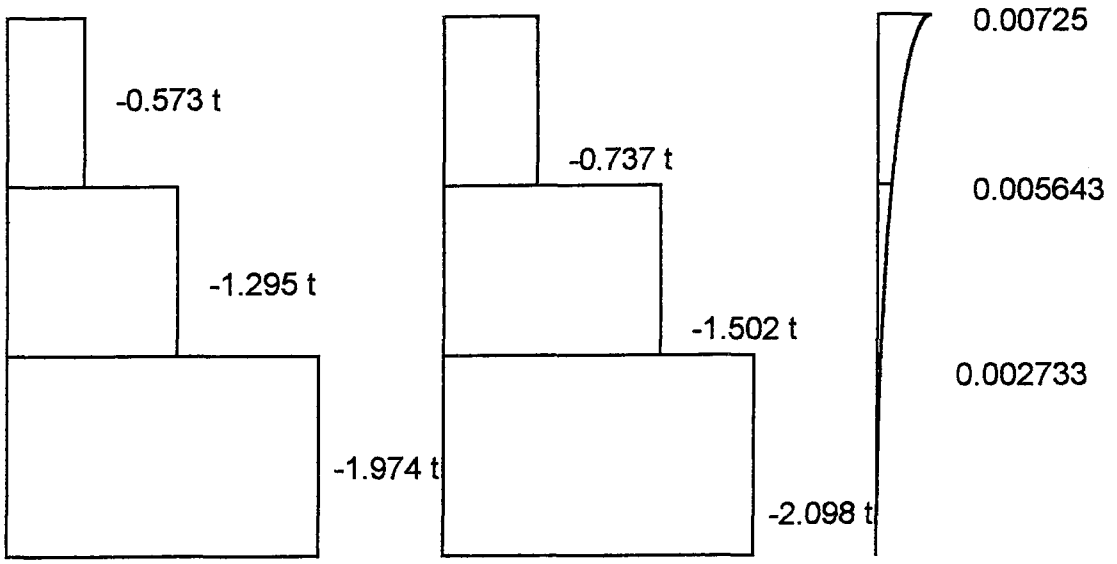
51	.005643	.000000	-.000090	-.000038	-.000025
52	.005643	.000000	-.000126	.000043	.000021
53	.005643	.000000	-.000090	.000022	-.000090
54	.005643	.000000	.000000	.000001	-.000120
55	.005643	-.000000	.000539	.000000	.000329
56	.005643	.000000	.000098	.000000	.000219
57	.005643	.000000	-.000029	.000000	.000109
58	.005643	.000000	-.000086	.000000	.000038
59	.005643	.000000	-.000108	.000000	.000053
60	.005643	.000000	-.000110	.000000	-.000018
61	.005643	.000000	-.000076	.000000	-.000072
62	.005643	.000000	.000000	.000000	-.000105
63	.002733	.000000	.000058	.000000	.000117
64	.002733	.000000	-.000061	.000000	.000078
65	.002733	.000000	-.000076	.000000	.000043
66	.002733	.000000	-.000092	.000000	-.000181
67	.002733	.000000	-.000129	.000000	.000077
68	.002733	.000000	-.000112	.000000	-.000098
69	.002733	.000000	.000000	.000000	-.000156
70	.002734	-.000000	.000763	-.000068	.000363
71	.002734	.000000	.000051	.000010	.000775
72	.002733	.000000	-.000120	.000006	-.000109
73	.002733	.000000	.000025	-.000026	-.000210
74	.002732	.000000	-.000038	-.000006	.000696
75	.002733	.000000	-.000204	.000010	-.000047
76	.002733	.000000	-.000126	.000005	-.000135
77	.002733	.000000	.000000	-.000001	-.000164
78	.002734	.000000	.000695	-.000055	.000416
79	.002734	.000000	.000074	.000023	.000292
80	.002733	.000000	-.000079	.000038	.000060
81	.002733	.000000	-.000074	-.000098	.000003
82	.002733	.000000	-.000096	-.000064	-.000053
83	.002733	.000000	-.000143	.000055	.000037
84	.002733	.000000	-.000106	.000029	-.000104
85	.002733	.000000	.000000	.000001	-.000142
86	.002734	.000000	.000666	.000000	.000440
87	.002733	.000000	.000086	.000000	.000276
88	.002733	.000000	-.000064	.000000	.000116
89	.002733	.000000	-.000115	.000000	.000020
90	.002733	.000000	-.000125	.000000	.000059
91	.002733	.000000	-.000124	.000000	-.000021
92	.002733	.000000	-.000088	.000000	-.000080
93	.002733	.000000	.000000	.000000	-.000121
94	.000000	.000000	.000000	.000000	.000000
95	.000000	.000000	.000000	.000000	.000000

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	.0000	.0000	.0000	.0297	.0000	.0404
2	.0000	.0000	.0000	.0175	.0000	.0359
3	.0000	.0000	.0000	-.0605	.0000	-.0091
4	.0000	.0000	.0000	-.0264	.0000	-.0347
5	.0000	.0000	.0000	.0489	.0000	-.0115
6	.0000	.0000	.0000	.0232	.0000	.0050
7	.0000	-.0048	.0619	.0027	.0000	.0031
8	.0000	.0000	.0000	.0000	.0000	-.0191
9	1.3100	.0000	.0000	.0000	.0000	-.0272
10	.0000	.0000	.0000	.0000	.0000	.0217
11	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.4277E-02
12	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.3232E-03
13	.1018E-11	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.2399E-02
14	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.7394E-02
15	.0000	-.0003	.1146	.0000	.0000	.0042
16	.0000	.0000	.0000	.0000	.0000	-.0358
17	.0000	.0000	.0000	.0000	.0000	-.0818
18	.0000	.0000	.0000	.0000	.0000	-.0164
19	.0000	.0000	.0000	.0000	.0000	.0163
20	.0000	.0000	.0000	.0000	.0000	.0388
21	.0000	.0000	.0000	.0000	.0000	.0207
22	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.6837E-02
23	.0000	.0081	.0665	.0000	.0000	.0021
24	.0000	.0000	.0000	.0137	.0000	-.0175
25	.0000	.0000	.0000	-.0260	.0000	-.0197
26	.0000E+00	.0000E+00	.0000E+00	-.5286E-02	.0000E+00	-.7100E-02
27	.0000	.0000	.0000	.0130	.0000	.0044
28	.0000E+00	.0000E+00	.0000E+00	.6986E-02	.0000E+00	.7072E-02
29	.0000	.0000	.0000	-.0135	.0000	.0079
30	.0000	.0000	.0000	-.0171	.0000	.0032
31	.0000	.0043	.0171	-.0028	.0000	.0005
32	.0000	.0000	.0000	.0973	.0000	.0420
33	.0000	.0000	.0000	.0462	.0000	.0375
34	.0000	.0000	.0000	-.1579	.0000	-.0091
35	.0000	.0000	.0000	-.0865	.0000	-.0355
36	.0000	.0000	.0000	.1080	.0000	-.0112
37	.0000	.0000	.0000	.0547	.0000	.0060
38	.0000	-.0062	.1133	.0063	.0000	.0036
39	.0000	.0000	.0000	.0000	.0000	-.0198
40	1.4870	.0000	.0000	.0000	.0000	-.0280
41	.0000	.0000	.0000	.0000	.0000	.0230
42	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.4786E-02
43	.1533E-11	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.1219E-02
44	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.3915E-02
45	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.9048E-02
46	.0000	-.0022	.2182	.0000	.0000	.0051
47	.0000	.0000	.0000	.0000	.0000	-.0371
48	.0000	.0000	.0000	.0000	.0000	-.0847

49	.0000	.0000	.0000	.0000	.0000	-.0168
50	.0000	.0000	.0000	.0000	.0000	.0174
51	.0000	.0000	.0000	.0000	.0000	.0410
52	.0000	.0000	.0000	.0000	.0000	.0225
53	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.8161E-02
54	.0000	.0069	.1221	.0000	.0000	.0027
55	.0000	.0000	.0000	.0312	.0000	-.0181
56	.0000	.0000	.0000	-.0836	.0000	-.0203
57	.0000	.0000	.0000	-.0108	.0000	-.0072
58	.0000	.0000	.0000	.0442	.0000	.0048
59	.0000	.0000	.0000	.0346	.0000	.0077
60	.0000	.0000	.0000	-.0177	.0000	.0087
61	.0000	.0000	.0000	-.0346	.0000	.0039
62	.0000	.0038	.0249	-.0061	.0000	.0008
63	.0000	.0000	.0000	.1464	.0000	.0340
64	.0000	.0000	.0000	.0719	.0000	.0318
65	.0000	.0000	.0000	-.2297	.0000	-.0046
66	.0000	.0000	.0000	-.1384	.0000	-.0256
67	.0000	.0000	.0000	.1453	.0000	-.0072
68	.0000	.0000	.0000	.0764	.0000	.0059
69	.0000	-.0060	.1404	.0088	.0000	.0034
70	.0000	.0000	.0000	.0000	.0000	-.0154
71	1.2750	.0000	.0000	.0000	.0000	-.0189
72	.0000	.0000	.0000	.0000	.0000	.0226
73	.1504E-11	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.8316E-02
74	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.4207E-02
75	-.1138E-11	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.4954E-02
76	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.9134E-02
77	.0000	-.0037	.2768	.0000	.0000	.0050
78	.0000	.0000	.0000	.0000	.0000	-.0283
79	.0000	.0000	.0000	.0000	.0000	-.0636
80	.0000	.0000	.0000	.0000	.0000	-.0100
81	.0000	.0000	.0000	.0000	.0000	.0166
82	.0000	.0000	.0000	.0000	.0000	.0345
83	.0000	.0000	.0000	.0000	.0000	.0195
84	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.8053E-02
85	.0000	.0038	.1531	.0000	.0000	.0029
86	.0000	.0000	.0000	.0447	.0000	-.0136
87	.0000	.0000	.0000	-.1352	.0000	-.0146
88	.0000	.0000	.0000	-.0177	.0000	-.0042
89	.0000	.0000	.0000	.0679	.0000	.0052
90	.0000	.0000	.0000	.0594	.0000	.0073
91	.0000	.0000	.0000	-.0154	.0000	.0078
92	.0000	.0000	.0000	-.0445	.0000	.0039
93	.0000	.0021	.0274	-.0081	.0000	.0010
94	-1.9741	-.0156	-5.1377	.0140	-3.2664	.0000
95	-2.0979	.0100	3.8013	-.0088	-3.3757	.0000
TOTAL	.2067E-10	-.3695E-12	.5773E-14	.6649E-01	-.6642E+01	-.5144E-01



Şekil 3.26. Kesme kuvveti ve yerdeğiştirme diyagramları

$\delta = T / D = 2.098 / D = 0.002733$ $\quad D = 767.65$

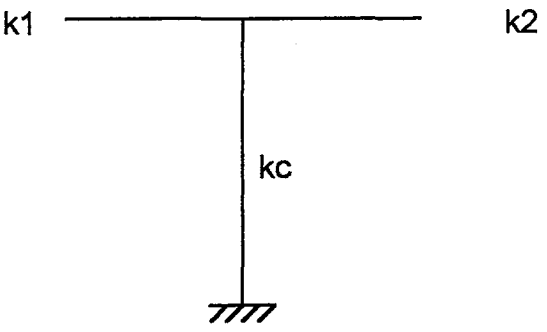
$D = 12EI\ a / h^3$ [4]

$I = bh^3 / 12 = 0.30 \times 0.30^3 / 12 = 0.000675$

$E = 3025000$

$a = (0.5 + \bar{k}) / (2 + \bar{k})$

$\bar{k} = (k1 + k2) / kc$



Şekil 3.27. Kolon ve kiriş rijitlikleri

$ki = Ii/li$

$D = 12.3025000.0.000675 / 2.72^3\ a$

$D = 1217.59a = 767.69 \Rightarrow a = 0.630$

$kc = 0.000675 / 2.72 = 2.481 \times 10^{-4}$

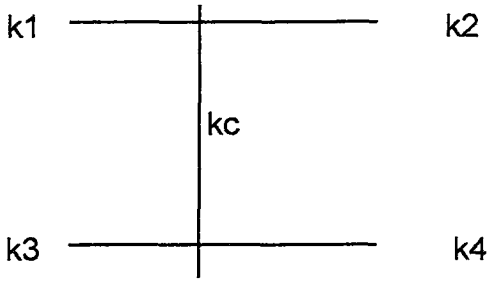
$k1 = bh^3 / (12.l) = b.0.18^3 / 12x2.4 = 2.025x\ 10^{-4}\ b$

$k2 = bh^3 / (12.l) = b.0.18^3 / 12x4.9 = 0.992x\ 10^{-4}\ b$

$\bar{k}$ = (0.992 x 10-4 + 2.025 x 10^{-4}) / b / 2.481 x 10^{-4} = 1.215 b

a= (0.5 + $\bar{k}$) / (2 + $\bar{k}$)=(0.5 + 1.215 b) / (2 + 1.216 b)=0.630

b1 = 1.69 m b1 = 169 cm



$\bar{k}$ = (k1 + k2 + k3 + k4) / 2kc

a = $\bar{k}$ / (2 + $\bar{k}$)
δ = T / D = 1.502 / D = (0.005643 - 0.002733)
D = 469.82
1217.59a = 469.82 a =0.386
kc = 2.481 x 10^{-4}
k1 = k3 =20.250 x 10^{-5} b
k2 = k4 = 9.918 x 10^{-5} b

$\bar{kc}$ = 1.215 b

$\bar{k}$ = 1.215 b
a = 1.215 b / (2 + 1.215 b) = 0.386
b2 = 1.03 b= 103 cm
b = b1 + b2 / 2 =(169 + 103) / 2 = 136 cm
b=150 cm alınacak

3.7.Yatay Yükten Oluşan Kesit Tesirleri Hesabı

3.7.1.X Doğrultusunda Yatay Yük Hesabı

Yapının yaklaşık olarak her iki doğrultuda da simetrik olduğu kabul edilerek bazı kabuller dikkate alınarak SAP90 [5] giriş bloku oluşturulmuş ve sistem çözülmüştür. Bu kısımda çizilen diyagramlar sadece çözüm için alınan kısımlar için çizilmiştir.

```
X DOĞRULTUSUNDA  YATAY  YÜK HESABI
SYSTEM
L=1
RESTRAINTS
1,97,1          R=0,0,0,0,0,0
89,97,1         R=1,1,1,1,1,1
10,87,11        R=0,0,1,0,0,0
11,88,11        R=0,0,1,0,0,0

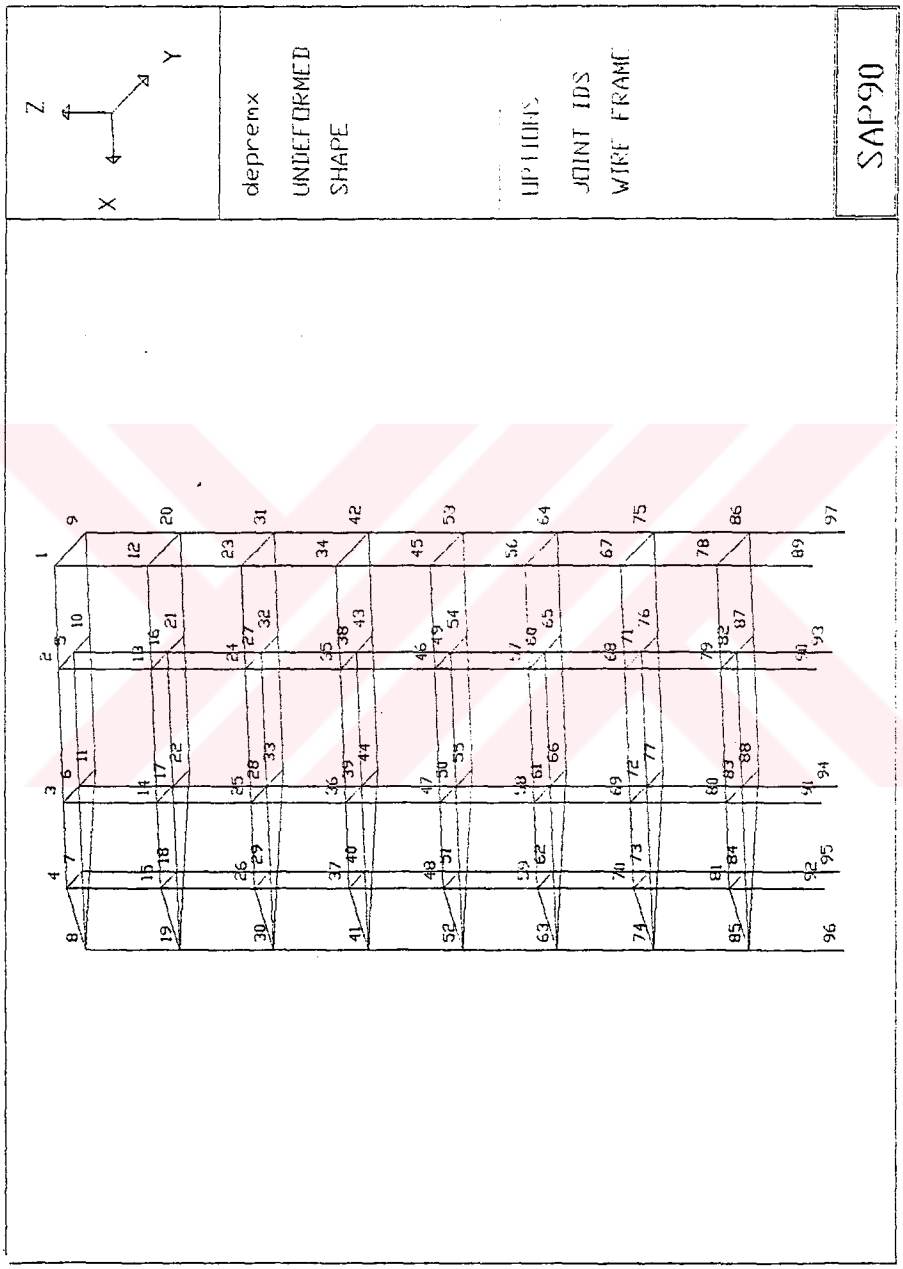
JOINTS
1   X=0      Y=0      Z=0
89  X=0      Y=0      Z=-21.76     G=1,89,11
2   X=3      Y=0      Z=0
90  X=3      Y=0      Z=-21.76     G=2,90,11
3   X=6.9    Y=0      Z=0
91  X=6.9    Y=0      Z=-21.76     G=3,91,11
4   X=9.37   Y=0      Z=0
92  X=9.37   Y=0      Z=-21.76     G=4,92,11
5   X=3      Y=2.4    Z=0
93  X=3      Y=2.4    Z=-21.76     G=5,93,11
6   X=6.9    Y=2.4    Z=0
94  X=6.9    Y=2.4    Z=-21.76     G=6,94,11
7   X=9.37   Y=2.4    Z=0
95  X=9.37   Y=2.4    Z=-21.76     G=7,95,11
8   X=11.65  Y=2.4    Z=0
96  X=11.65  Y=2.4    Z=-21.76     G=8,96,11
9   X=0      Y=4.85   Z=0
97  X=0      Y=4.85   Z=-21.76     G=9,97,11
10  X=3      Y=4.85   Z=0
87  X=3      Y=4.85   Z=-19.04     G=10,87,11
11  X=6.9    Y=4.85   Z=0
88  X=6.9    Y=4.85   Z=-19.04     G=11,88,11

FRAME
NM=13
1 A=.204 J=.00432 I=.0004133,.03688  AS=.17  E=3025000 G=1210000
2 A=.04  J=.01    I=.003399,.30873   AS=.033 E=3025000 G=1210000
3 A=.8   J=.00301 I=.0002,1.0000     AS=.66  E=3025000 G=1210000
4 A=.516 J=.00949 I=.263617,.1155472 AS=.43  E=3025000 G=1210000
5  SH=R     T=0.3,0.3     E=3025000  G=1210000  W=0.
6  SH=R     T=0.3,0.5     E=3025000  G=1210000  W=0.
7  SH=R     T=0.45,0.20   E=3025000  G=1210000  W=0.
8  SH=R     T=0.18,1.2    E=3025000  G=1210000  W=0.
9  SH=R     T=0.18,1.5    E=3025000  G=1210000  W=0.
10 SH=R     T=0.18,1.25   E=3025000  G=1210000  W=0.
11 SH=R     T=0.45,0.4    E=3025000  G=1210000  W=0.
12 SH=R     T=0.18,2.4    E=3025000  G=1210000  W=0.
13 A=.09 J=0 I=0,0 AS=0,0 E=3025000  G=1210000  W=0.
C KİRİŞLER
1  1  9   M=7  LP=3,0   RE=0,0.31  G=7,16,11,11
2  1  2   M=7  LP=-2,0  RE=0,0     G=7,16,11,11
3  2  3   M=7  LP=-2,0  RE=0,0     G=7,16,11,11
4  3  4   M=11 LP=-2,0  RE=0,0     G=7,16,11,11
5  5  6   M=12 LP=-2,0  RE=0,0     G=7,16,11,11
6  6  7   M=8  LP=-2,0  RE=0,0     G=7,16,11,11
```

```
7   7   8    M=8  LP=-2,0  RE=0,0.78  G=7,16,11,11
8   2   5    M=9  LP=3,0   RE=0,0     G=7,16,11,11
9   3   6    M=10 LP=3,0   RE=0,0     G=7,16,11,11
10  5   10   M=9  LP=3,0   RE=0,0     G=7,16,11,11
11  6   11   M=10 LP=3,0   RE=0,0     G=7,16,11,11
12  9   10   M=8  LP=-2,0  RE=0.6,0   G=7,16,11,11
13  10  11   M=8  LP=-2,0  RE=0,0     G=7,16,11,11
14  4   7    M=13 LP=3,0   RE=0.3,0.3 G=7,16,11,11
15  4   8    M=13 LP=3,0   RE=0,0     G=7,16,11,11
16  11  8    M=13 LP=3,0   RE=0,0     G=7,16,11,11
C KOLONLAR
129   1   12   M=5   LP=2,0  RE=0,0   G=7,1,11,11
137   2   13   M=5   LP=2,0  RE=0,0   G=7,1,11,11
145   3   14   M=5   LP=2,0  RE=0,0   G=7,1,11,11
153   4   15   M=3   LP=2,0  RE=0,0   G=7,1,11,11
161   5   16   M=5   LP=2,0  RE=0,0   G=6,1,11,11
168  82   93   M=6   LP=2,0  RE=0,0
169   6   17   M=5   LP=2,0  RE=0,0   G=6,1,11,11
176  83   94   M=6   LP=2,0  RE=0,0
177   7   18   M=2   LP=2,0  RE=0,0   G=7,1,11,11
185   8   19   M=4   LP=2,0  RE=0,0   G=7,1,11,11
193   9   20   M=1   LP=2,0  RE=0,0   G=7,1,11,11

LOAD
1    F=0,0.776
2    F=0,0.776
3    F=0,0.776
4    F=0,0.776
8    F=0,0.776
12   F=0,0.881
13   F=0,0.881
14   F=0,0.881
15   F=0,0.881
19   F=0,0.881
23   F=0,0.755
24   F=0,0.755
25   F=0,0.755
26   F=0,0.755
30   F=0,0.755
34   F=0,0.629
35   F=0,0.629
36   F=0,0.629
37   F=0,0.629
41   F=0,0.629
45   F=0,0.503
46   F=0,0.503
47   F=0,0.503
48   F=0,0.503
52   F=0,0.503
56   F=0,0.377
57   F=0,0.377
58   F=0,0.377
59   F=0,0.377
63   F=0,0.377
67   F=0,0.251
```

```
68  F=0,0.251
69  F=0,0.251
70  F=0,0.251
74  F=0,0.251
78  F=0,0.126
79  F=0,0.126
80  F=0,0.126
81  F=0,0.126
85  F=0,0.126
```


Z
Y
X
deprenx
UNDEFORMED
SHAPE
UPTIONS
JOINT IDS
WIRE FRAME
SAP90

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1								
	1	.000			-.060			-.007
		.000	-.607	1.102		.004	-.006	
		4.540	-.607	-1.653		.004	.012	
		4.850			-.060			-.007
2								
	1	.000			-.009			-.035
		.000	.011	-.031		-.016	.024	
		3.000	.011	.001		-.016	-.024	
		3.000			-.009			-.035
3								
	1	.000			.073			.000
		.000	.019	-.075		-.002	.004	
		3.900	.019	-.001		-.002	-.005	
		3.900			.073			.000
4								
	1	.000			.038			-.218
		.000	.143	-.258		-.011	.022	
		2.470	.143	.095		-.011	-.004	
		2.470			.038			-.218
5								
	1	.000			.099			-.010
		.000	.004	.001		-.134	.325	
		3.900	.004	.016		-.134	-.198	
		3.900			.099			-.010
6								
	1	.000			.063			-.186
		.000	-.139	.167		-.134	.094	
		2.470	-.139	-.175		-.134	-.237	
		2.470			.063			-.186
7								
	1	.000			.207			.009
		.000	-.105	.058		.003	-.144	
		1.500	-.105	-.100		.003	-.140	
		2.280			.207			.009
8								
	1	.000			-.483			-.008
		.000	-.287	.445		.128	-.015	
		2.400	-.287	-.243		.128	.293	
		2.400			-.483			-.008
9								
	1	.000			-.507			-.053

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.441	.607		.109	-.013	
		2.400	-.441	-.451		.109	.249	
		2.400			-.507			-.053
10								
	1	.000			.278			-.055
		.000	-.425	.696		.194	-.020	
		2.450	-.425	-.345		.194	.455	
		2.450			.278			-.055
11								
	1	.000			.017			.012
		.000	-.229	.501		.013	-.031	
		2.450	-.229	-.060		.013	.000	
		2.450			.017			.012
12								
	1	.000			.104			.405
		.600	-.091	.114		-.242	-.016	
		3.000	-.091	-.105		-.242	-.596	
		3.000			.104			.405
13								
	1	.000			-.090			.060
		.000	.016	-.050		.036	-.141	
		3.900	.016	.012		.036	-.000	
		3.900			-.090			.060
14								
	1	.000			-.543			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			-.543			
15								
	1	.000			-.045			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-.045			
16								
	1	.000			-.115			
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			-.115			
17								
	1	.000			-.863			.002
		.000	-.900	1.861		-.009	.019	
		4.540	-.900	-2.226		-.009	-.023	
		4.850			-.863			.002

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
18								
	1	.000			-.047			-.011
		.000	.048	-.090		.007	-.008	
		3.000	.048	.056		.007	.013	
		3.000			-.047			-.011
19								
	1	.000			.139			.010
		.000	.051	-.132		-.005	.009	
		3.900	.051	.065		-.005	-.009	
		3.900			.139			.010
20								
	1	.000			.512			-.114
		.000	.255	-.418		-.123	.229	
		2.470	.255	.211		-.123	-.074	
		2.470			.512			-.114
21								
	1	.000			-.426			.014
		.000	-.009	.024		-.143	.682	
		3.900	-.009	-.013		-.143	.123	
		3.900			-.426			.014
22								
	1	.000			-.645			-.095
		.000	-.166	.198		-.994	1.205	
		2.470	-.166	-.212		-.994	-1.251	
		2.470			-.645			-.095
23								
	1	.000			-.673			.016
		.000	-.155	.106		.428	-1.082	
		1.500	-.155	-.127		.428	-.440	
		2.280			-.673			.016
24								
	1	.000			-.764			.005
		.000	-.709	.934		.236	.020	
		2.400	-.709	-.769		.236	.585	
		2.400			-.764			.005
25								
	1	.000			-.708			-.035
		.000	-.697	.885		.416	-.223	
		2.400	-.697	-.788		.416	.776	
		2.400			-.708			-.035
26								
	1	.000			-.517			-.075

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.582	1.010		-.202	-.079	
		2.450	-.582	-.417		-.202	-.574	
		2.450			-.517			-.075
27								
	1	.000			.145			.012
		.000	-.311	.695		.195	-.288	
		2.450	-.311	-.066		.195	.189	
		2.450			.145			.012
28								
	1	.000			.027			.483
		.600	-.151	.219		.354	.169	
		3.000	-.151	-.143		.354	1.019	
		3.000			.027			.483
29								
	1	.000			.229			.066
		.000	.021	-.068		-.163	.445	
		3.900	.021	.012		-.163	-.189	
		3.900			.229			.066
30								
	1	.000			.940			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.940			
31								
	1	.000			.719			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.719			
32								
	1	.000			.039			
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			.039			
33								
	1	.000			-.546			.009
		.000	-1.116	2.282		-.007	.016	
		4.540	-1.116	-2.784		-.007	-.017	
		4.850			-.546			.009
34								
	1	.000			-.045			-.016
		.000	.105	-.182		.002	-.000	
		3.000	.105	.132		.002	.006	
		3.000			-.045			-.016

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
35								
	1	.000			.150			.018
		.000	.078	-.186		-.005	.010	
		3.900	.078	.117		-.005	-.010	
		3.900			.150			.018
36								
	1	.000			.495			-.064
		.000	.306	-.493		-.101	.203	
		2.470	.306	.262		-.101	-.047	
		2.470			.495			-.064
37								
	1	.000			-.358			.040
		.000	-.013	.030		-.174	.703	
		3.900	-.013	-.019		-.174	.023	
		3.900			-.358			.040
38								
	1	.000			-.580			-.072
		.000	-.166	.197		-.889	1.059	
		2.470	-.166	-.212		-.889	-1.137	
		2.470			-.580			-.072
39								
	1	.000			-.571			.032
		.000	-.173	.118		.378	-.994	
		1.500	-.173	-.141		.378	-.427	
		2.280			-.571			.032
40								
	1	.000			-.659			.017
		.000	-.915	1.199		.250	.012	
		2.400	-.915	-.997		.250	.613	
		2.400			-.659			.017
41								
	1	.000			-.619			-.025
		.000	-.775	.983		.400	-.197	
		2.400	-.775	-.877		.400	.762	
		2.400			-.619			-.025
42								
	1	.000			-.346			-.083
		.000	-.665	1.134		-.115	-.073	
		2.450	-.665	-.496		-.115	-.354	
		2.450			-.346			-.083
43								
	1	.000			.142			.014

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.325	.725		.172	-.257	
		2.450	-.325	-.072		.172	.165	
		2.450			.142			.014
44								
	1	.000			.035			.568
		.600	-.178	.267		.216	.179	
		3.000	-.178	-.159		.216	.696	
		3.000			.035			.568
45								
	1	.000			.150			.072
		.000	.023	-.076		-.130	.342	
		3.900	.023	.014		-.130	-.165	
		3.900			.150			.072
46								
	1	.000			.887			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.887			
47								
	1	.000			.690			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.690			
48								
	1	.000			-.025			
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			-.025			
49								
	1	.000			-.464			.016
		.000	-1.351	2.764		-.006	.013	
		4.540	-1.351	-3.369		-.006	-.013	
		4.850			-.464			.016
50								
	1	.000			-.044			-.011
		.000	.163	-.278		.000	.002	
		3.000	.163	.212		.000	.002	
		3.000			-.044			-.011
51								
	1	.000			.125			.027
		.000	.106	-.241		-.004	.008	
		3.900	.106	.173		-.004	-.009	
		3.900			.125			.027

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
52								
	1	.000			.421			-.022
		.000	.357	-.568		-.086	.174	
		2.470	.357	.314		-.086	-.039	
		2.470			.421			-.022
53								
	1	.000			-.300			.064
		.000	-.015	.033		-.157	.619	
		3.900	-.015	-.025		-.157	.009	
		3.900			-.300			.064
54								
	1	.000			-.498			-.043
		.000	-.162	.192		-.765	.906	
		2.470	-.162	-.208		-.765	-.983	
		2.470			-.498			-.043
55								
	1	.000			-.496			.052
		.000	-.193	.133		.315	-.847	
		1.500	-.193	-.157		.315	-.375	
		2.280			-.496			.052
56								
	1	.000			-.540			.028
		.000	-1.098	1.429		.223	.010	
		2.400	-1.098	-1.207		.223	.545	
		2.400			-.540			.028
57								
	1	.000			-.512			-.014
		.000	-.833	1.051		.346	-.167	
		2.400	-.833	-.948		.346	.664	
		2.400			-.512			-.014
58								
	1	.000			-.268			-.089
		.000	-.738	1.238		-.084	-.058	
		2.450	-.738	-.569		-.084	-.263	
		2.450			-.268			-.089
59								
	1	.000			.122			.015
		.000	-.334	.741		.145	-.218	
		2.450	-.334	-.077		.145	.138	
		2.450			.122			.015
60								
	1	.000			.030			.647

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.600	-.203	.315		.162	.149	
		3.000	-.203	-.172		.162	.538	
		3.000			.030			.647
61								
	1	.000			.114			.077
		.000	.025	-.084		-.106	.275	
		3.900	.025	.015		-.106	-.138	
		3.900			.114			.077
62								
	1	.000			.742			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.742			
63								
	1	.000			.585			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.585			
64								
	1	.000			-.035			
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			-.035			
65								
	1	.000			-.403			.022
		.000	-1.523	3.114		-.005	.012	
		4.540	-1.523	-3.799		-.005	-.013	
		4.850			-.403			.022
66								
	1	.000			-.036			-.007
		.000	.216	-.363		.002	-.001	
		3.000	.216	.284		.002	.005	
		3.000			-.036			-.007
67								
	1	.000			.107			.034
		.000	.130	-.285		-.004	.007	
		3.900	.130	.221		-.004	-.007	
		3.900			.107			.034
68								
	1	.000			.367			.021
		.000	.394	-.620		-.071	.148	
		2.470	.394	.352		-.071	-.028	
		2.470			.367			.021

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
69								
	1	.000			-.273			.085
		.000	-.016	.034		-.124	.512	
		3.900	-.016	-.028		-.124	.027	
		3.900			-.273			.085
70								
	1	.000			-.441			-.013
		.000	-.150	.177		-.657	.787	
		2.470	-.150	-.194		-.657	-.837	
		2.470			-.441			-.013
71								
	1	.000			-.446			.069
		.000	-.204	.141		.283	-.739	
		1.500	-.204	-.164		.283	-.315	
		2.280			-.446			.069
72								
	1	.000			-.445			.039
		.000	-1.235	1.600		.183	.009	
		2.400	-1.235	-1.365		.183	.449	
		2.400			-.445			.039
73								
	1	.000			-.422			-.002
		.000	-.856	1.076		.293	-.144	
		2.400	-.856	-.979		.293	.560	
		2.400			-.422			-.002
74								
	1	.000			-.264			-.090
		.000	-.777	1.286		-.093	-.051	
		2.450	-.777	-.617		-.093	-.278	
		2.450			-.264			-.090
75								
	1	.000			.105			.016
		.000	-.328	.724		.127	-.189	
		2.450	-.328	-.079		.127	.122	
		2.450			.105			.016
76								
	1	.000			.019			.696
		.600	-.219	.348		.167	.136	
		3.000	-.219	-.178		.167	.536	
		3.000			.019			.696
77								
	1	.000			.112			.079

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.027	-.088		-.097	.258	
		3.900	.027	.016		-.097	-.122	
		3.900			.112			.079
78								
	1	.000			.697			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.697			
79								
	1	.000			.518			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.518			
80								
	1	.000			-.017			
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			-.017			
81								
	1	.000			-.393			.026
		.000	-1.576	3.223		-.006	.012	
		4.540	-1.576	-3.934		-.006	-.016	
		4.850			-.393			.026
82								
	1	.000			-.019			-.002
		.000	.249	-.415		.008	-.010	
		3.000	.249	.330		.008	.013	
		3.000			-.019			-.002
83								
	1	.000			.097			.038
		.000	.142	-.304		-.003	.005	
		3.900	.142	.248		-.003	-.005	
		3.900			.097			.038
84								
	1	.000			.336			.056
		.000	.401	-.627		-.054	.125	
		2.470	.401	.364		-.054	-.009	
		2.470			.336			.056
85								
	1	.000			-.278			.099
		.000	-.015	.031		-.076	.376	
		3.900	-.015	-.029		-.076	.081	
		3.900			-.278			.099

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
86								
	1	.000			-.409			.015
		.000	-.128	.151		-.566	.703	
		2.470	-.128	-.166		-.566	-.696	
		2.470			-.409			.015
87								
	1	.000			-.427		*	.079
		.000	-.196	.137		.284	-.669	
		1.500	-.196	-.157		.284	-.243	
		2.280			-.427			.079
88								
	1	.000			-.385			.045
		.000	-1.277	1.646		.129	.011	
		2.400	-1.277	-1.418		.129	.321	
		2.400			-.385			.045
89								
	1	.000			-.351			.009
		.000	-.822	1.028		.240	-.127	
		2.400	-.822	-.944		.240	.448	
		2.400			-.351			.009
90								
	1	.000			-.338			-.086
		.000	-.761	1.246		-.145	-.051	
		2.450	-.761	-.620		-.145	-.406	
		2.450			-.338			-.086
91								
	1	.000			.091			.015
		.000	-.302	.663		.118	-.171	
		2.450	-.302	-.076		.118	.118	
		2.450			.091			.015
92								
	1	.000			.000			.695
		.600	-.219	.353		.233	.139	
		3.000	-.219	-.171		.233	.699	
		3.000			.000			.695
93								
	1	.000			.145			.076
		.000	.026	-.085		-.105	.292	
		3.900	.026	.015		-.105	-.118	
		3.900			.145			.076
94								
	1	.000			.771			

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.771			
95								
	1	.000			.491			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.491			
96								
	1	.000			.031			
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			.031			
97								
	1	.000			-.458			.026
		.000	-1.435	2.933		-.007	.012	
		4.540	-1.435	-3.583		-.007	-.019	
		4.850			-.458			.026
98								
	1	.000			.007			-.003
		.000	.247	-.410		.017	-.026	
		3.000	.247	.330		.017	.027	
		3.000			.007			-.003
99								
	1	.000			.075			.038
		.000	.134	-.283		-.001	.002	
		3.900	.134	.239		-.001	-.002	
		3.900			.075			.038
100								
	1	.000			.278			.093
		.000	.362	-.563		-.033	.093	
		2.470	.362	.331		-.033	.011	
		2.470			.278			.093
101								
	1	.000			-.287			.094
		.000	-.013	.025		.007	.155	
		3.900	-.013	-.025		.007	.183	
		3.900			-.287			.094
102								
	1	.000			-.356			.035
		.000	-.094	.111		-.433	.586	
		2.470	-.094	-.123		-.433	-.485	
		2.470			-.356			.035

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
103								
	1	.000			-.383			.073
		.000	-.163	.114		.283	-.552	
		1.500	-.163	-.129		.283	-.128	
		2.280			-.383			.073
104								
	1	.000			-.256			.045
		.000	-1.189	1.539		.041	.015	
		2.400	-1.189	-1.315		.041	.114	
		2.400			-.256			.045
105								
	1	.000			-.250			.016
		.000	-.714	.894		.155	-.104	
		2.400	-.714	-.820		.155	.269	
		2.400			-.250			.016
106								
	1	.000			-.479			-.073
		.000	-.657	1.063		-.235	-.049	
		2.450	-.657	-.548		-.235	-.624	
		2.450			-.479			-.073
107								
	1	.000			.060			.013
		.000	-.247	.539		.102	-.141	
		2.450	-.247	-.065		.102	.110	
		2.450			.060			.013
108								
	1	.000			-.019			.613
		.600	-.194	.320		.360	.110	
		3.000	-.194	-.147		.360	.975	
		3.000			-.019			.613
109								
	1	.000			.215			.065
		.000	.023	-.074		-.118	.351	
		3.900	.023	.013		-.118	-.110	
		3.900			.215			.065
110								
	1	.000			.882			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.882			
111								
	1	.000			.435			

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.435			
112	----------							
	1	.000			.127			
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			.127			
113	----------							
	1	.000			-.608			.019
		.000	-.973	1.988		.003	-.009	
		4.540	-.973	-2.428		.003	.003	
		4.850			-.608			.019
114	----------							
	1	.000			.063			.003
		.000	.184	-.305		.007	-.013	
		3.000	.184	.246		.007	.007	
		3.000			.063			.003
115	----------							
	1	.000			.018			.025
		.000	.094	-.196		.003	-.006	
		3.900	.094	.169		.003	.006	
		3.900			.018			.025
116	----------							
	1	.000			.009			.077
		.000	.245	-.381		.064	-.063	
		2.470	.245	.224		.064	.096	
		2.470			.009			.077
117	----------							
	1	.000			.043			.112
		.000	-.009	.017		.180	-.462	
		3.900	-.009	-.020		.180	.241	
		3.900			.043			.112
118	----------							
	1	.000			.080			.074
		.000	-.048	.057		.234	-.180	
		2.470	-.048	-.063		.234	.396	
		2.470			.080			.074
119	----------							
	1	.000			.030			.047
		.000	-.097	.069		.070	.086	
		1.500	-.097	-.076		.070	.191	
		2.280			.030			.047

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
120								
	1	.000			-.406			.033
		.000	-.948	1.140		-.150	-.021	
		2.400	-.948	-1.135		-.150	-.380	
		2.400			-.406			.033
121								
	1	.000			-.352			.016
		.000	-.528	.627		-.142	.035	
		2.400	-.528	-.640		-.142	-.305	
		2.400			-.352			.016
122								
	1	.000			-.002			-.046
		.000	-.516	.875		-.086	.092	
		2.450	-.516	-.388		-.086	-.119	
		2.450			-.002			-.046
123								
	1	.000			-.085			.008
		.000	-.181	.406		-.084	.123	
		2.450	-.181	-.037		-.084	-.083	
		2.450			-.085			.008
124								
	1	.000			-.086			.425
		.600	-.128	.213		.044	-.066	
		3.000	-.128	-.094		.044	.039	
		3.000			-.086			.425
125								
	1	.000			-.000			.037
		.000	.014	-.048		.042	-.080	
		3.900	.014	.008		.042	.083	
		3.900			-.000			.037
126								
	1	.000			.562			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.562			
127								
	1	.000			.095			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.095			
128								
	1	.000			.094			

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.000	.000		.000	.000	
		5.345	.000	.000		.000	.000	
		5.345			.094			
129								
	1	.000			.596			-.018
		.000	.013	-.024		.700	-1.067	
		2.720	.013	.012		.700	.837	
		2.720			.596			-.018
130								
	1	.000			1.448			-.030
		.000	.051	-.080		.725	-1.014	
		2.720	.051	.059		.725	.957	
		2.720			1.448			-.030
131								
	1	.000			2.459			-.045
		.000	.089	-.132		.935	-1.310	
		2.720	.089	.110		.935	1.234	
		2.720			2.459			-.045
132								
	1	.000			3.647			-.061
		.000	.128	-.184		1.100	-1.519	
		2.720	.128	.164		1.100	1.473	
		2.720			3.647			-.061
133								
	1	.000			4.954			-.072
		.000	.158	-.221		1.202	-1.633	
		2.720	.158	.209		1.202	1.636	
		2.720			4.954			-.072
134								
	1	.000			6.282			-.074
		.000	.171	-.233		1.194	-1.584	
		2.720	.171	.232		1.194	1.664	
		2.720			6.282			-.074
135								
	1	.000			7.470			-.060
		.000	.157	-.204		1.005	-1.266	
		2.720	.157	.224		1.005	1.466	
		2.720			7.470			-.060
136								
	1	.000			8.259			-.038
		.000	.097	-.101		.529	-.524	
		2.720	.097	.163		.529	.914	
		2.720			8.259			-.038

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
137								
	1	.000			.278			-.014
		.000	.046	-.068		.307	-.480	
		2.720	.046	.057		.307	.355	
		2.720			.278			-.014
138								
	1	.000			.985			-.030
		.000	.095	-.136		.412	-.599	
		2.720	.095	.123		.412	.522	
		2.720			.985			-.030
139								
	1	.000			1.927			-.046
		.000	.150	-.211		.502	-.710	
		2.720	.150	.197		.502	.655	
		2.720			1.927			-.046
140								
	1	.000			3.083			-.061
		.000	.204	-.284		.587	-.812	
		2.720	.204	.271		.587	.784	
		2.720			3.083			-.061
141								
	1	.000			4.404			-.073
		.000	.244	-.337		.639	-.857	
		2.720	.244	.327		.639	.881	
		2.720			4.404			-.073
142								
	1	.000			5.787			-.076
		.000	.258	-.352		.620	-.805	
		2.720	.258	.349		.620	.882	
		2.720			5.787			-.076
143								
	1	.000			7.089			-.066
		.000	.231	-.309		.597	-.698	
		2.720	.231	.319		.597	.925	
		2.720			7.089			-.066
144								
	1	.000			8.127			-.033
		.000	.127	-.156		.313	-.238	
		2.720	.127	.189		.313	.615	
		2.720			8.127			-.033
145								
	1	.000			.317			-.014

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.144	-.204		.260	-.389	
		2.720	.144	.188		.260	.318	
		2.720			.317			-.014
146								
	1	.000			.810			-.030
		.000	.187	-.261		.315	-.443	
		2.720	.187	.249		.315	.414	
		2.720			.810			-.030
147								
	1	.000			1.357			-.046
		.000	.242	-.337		.355	-.487	
		2.720	.242	.322		.355	.478	
		2.720			1.357			-.046
148								
	1	.000			1.939			-.061
		.000	.293	-.406		.390	-.524	
		2.720	.293	.390		.390	.536	
		2.720			1.939			-.061
149								
	1	.000			2.532			-.073
		.000	.325	-.450		.404	-.527	
		2.720	.325	.435		.404	.571	
		2.720			2.532			-.073
150								
	1	.000			3.094			-.076
		.000	.326	-.449		.378	-.475	
		2.720	.326	.438		.378	.553	
		2.720			3.094			-.076
151								
	1	.000			3.580			-.066
		.000	.278	-.379		.347	-.396	
		2.720	.278	.378		.347	.549	
		2.720			3.580			-.066
152								
	1	.000			3.957			-.033
		.000	.145	-.189		.183	-.130	
		2.720	.145	.205		.183	.368	
		2.720			3.957			-.033
153								
	1	.000			.143			-.004
		.000	.069	-.095		.211	-.218	
		2.720	.069	.093		.211	.356	
		2.720			.143			-.004

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
154								
	1	.000			.398			-.078
		.000	.086	-.118		2.676	.242	
		2.720	.086	.116		2.676	7.520	
		2.720			.398			-.078
155								
	1	.000			.704			-.126
		.000	.106	-.146		4.919	7.456	
		2.720	.106	.143		4.919	20.836	
		2.720			.704			-.126
156								
	1	.000			1.061			-.165
		.000	.124	-.171		6.800	20.814	
		2.720	.124	.167		6.800	39.310	
		2.720			1.061			-.165
157								
	1	.000			1.454			-.193
		.000	.135	-.186		8.447	39.331	
		2.720	.135	.181		8.447	62.307	
		2.720			1.454			-.193
158								
	1	.000			1.856			-.202
		.000	.132	-.183		10.006	62.363	
		2.720	.132	.178		10.006	89.578	
		2.720			1.856			-.202
159								
	1	.000			2.217			-.191
		.000	.111	-.153		11.486	89.671	
		2.720	.111	.148		11.486	120.914	
		2.720			2.217			-.191
160								
	1	.000			2.462			-.094
		.000	.055	-.077		12.179	120.991	
		2.720	.055	.072		12.179	154.117	
		2.720			2.462			-.094
161								
	1	.000			.134			-.012
		.000	-.033	.047		.627	-.930	
		2.720	-.033	-.043		.627	.775	
		2.720			.134			-.012
162								
	1	.000			.017			-.029

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.044	.060		.730	-1.017	
		2.720	-.044	-.060		.730	.970	
		2.720			.017			-.029
163								
	1	.000			-.221			-.046
		.000	-.052	.069		.869	-1.201	
		2.720	-.052	-.071		.869	1.162	
		2.720			-.221			-.046
164								
	1	.000			-.567			-.062
		.000	-.059	.079		.984	-1.346	
		2.720	-.059	-.081		.984	1.329	
		2.720			-.567			-.062
165								
	1	.000			-1.009			-.073
		.000	-.061	.082		1.041	-1.407	
		2.720	-.061	-.085		1.041	1.424	
		2.720			-1.009			-.073
166								
	1	.000			-1.509			-.076
		.000	-.058	.077		1.012	-1.339	
		2.720	-.058	-.080		1.012	1.413	
		2.720			-1.509			-.076
167								
	1	.000			-2.028			-.068
		.000	-.047	.062		.796	-1.059	
		2.720	-.047	-.065		.796	1.107	
		2.720			-2.028			-.068
168								
	1	.000			-2.450			-.078
		.000	-.026	.032		1.380	-1.015	
		2.720	-.026	-.039		1.380	2.740	
		2.720			-2.450			-.078
169								
	1	.000			-.069			-.011
		.000	-.060	.086		.524	-.777	
		2.720	-.060	-.077		.524	.649	
		2.720			-.069			-.011
170								
	1	.000			-.299			-.030
		.000	-.063	.086		.526	-.726	
		2.720	-.063	-.085		.526	.706	
		2.720			-.299			-.030

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
171								
	1	.000			-.596			-.046
		.000	-.068	.092		.572	-.784	
		2.720	-.068	-.092		.572	.772	
		2.720			-.596			-.046
172								
	1	.000			-.948			-.062
		.000	-.070	.096		.598	-.810	
		2.720	-.070	-.096		.598	.816	
		2.720			-.948			-.062
173								
	1	.000			-1.342			-.073
		.000	-.068	.093		.592	-.789	
		2.720	-.068	-.093		.592	.821	
		2.720			-1.342			-.073
174								
	1	.000			-1.749			-.077
		.000	-.059	.080		.543	-.704	
		2.720	-.059	-.081		.543	.773	
		2.720			-1.749			-.077
175								
	1	.000			-2.135			-.069
		.000	-.043	.058		.412	-.527	
		2.720	-.043	-.059		.412	.594	
		2.720			-2.135			-.069
176								
	1	.000			-2.444			-.077
		.000	-.023	.026		.732	-.415	
		2.720	-.023	-.036		.732	1.577	
		2.720			-2.444			-.077
177								
	1	.000			-.034			-.093
		.000	-.143	.233		.680	-.195	
		2.720	-.143	-.157		.680	1.654	
		2.720			-.034			-.093
178								
	1	.000			-.044			-.262
		.000	-.115	.160		1.162	1.544	
		2.720	-.115	-.154		1.162	4.705	
		2.720			-.044			-.262
179								
	1	.000			-.037			-.405

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.125	.176		1.542	4.601	
		2.720	-.125	-.165		1.542	8.796	
		2.720			-.037			-.405
180								
	1	.000			-.006			-.540
		.000	-.128	.176		1.880	8.701	
		2.720	-.128	-.172		1.880	13.816	
		2.720			-.006			-.540
181								
	1	.000			.047			-.638
		.000	-.123	.163		2.123	13.733	
		2.720	-.123	-.170		2.123	19.509	
		2.720			.047			-.638
182								
	1	.000			.115			-.665
		.000	-.105	.132		2.203	19.446	
		2.720	-.105	-.153		2.203	25.437	
		2.720			.115			-.665
183								
	1	.000			.183			-.598
		.000	-.077	.084		2.037	25.399	
		2.720	-.077	-.125		2.037	30.941	
		2.720			.183			-.598
184								
	1	.000			.232			-.287
		.000	-.027	.006		1.311	30.968	
		2.720	-.027	-.068		1.311	34.535	
		2.720			.232			-.287
185								
	1	.000			-.105			-.138
		.000	.073	.182		.753	.009	
		2.720	.073	.380		.753	2.058	
		2.720			-.105			-.138
186								
	1	.000			-.260			-.244
		.000	-.071	.628		.703	2.074	
		2.720	-.071	.436		.703	3.985	
		2.720			-.260			-.244
187								
	1	.000			-.433			-.376
		.000	-.189	.712		.568	4.017	
		2.720	-.189	.199		.568	5.563	
		2.720			-.433			-.376

FRAME ELEMENT FORCES

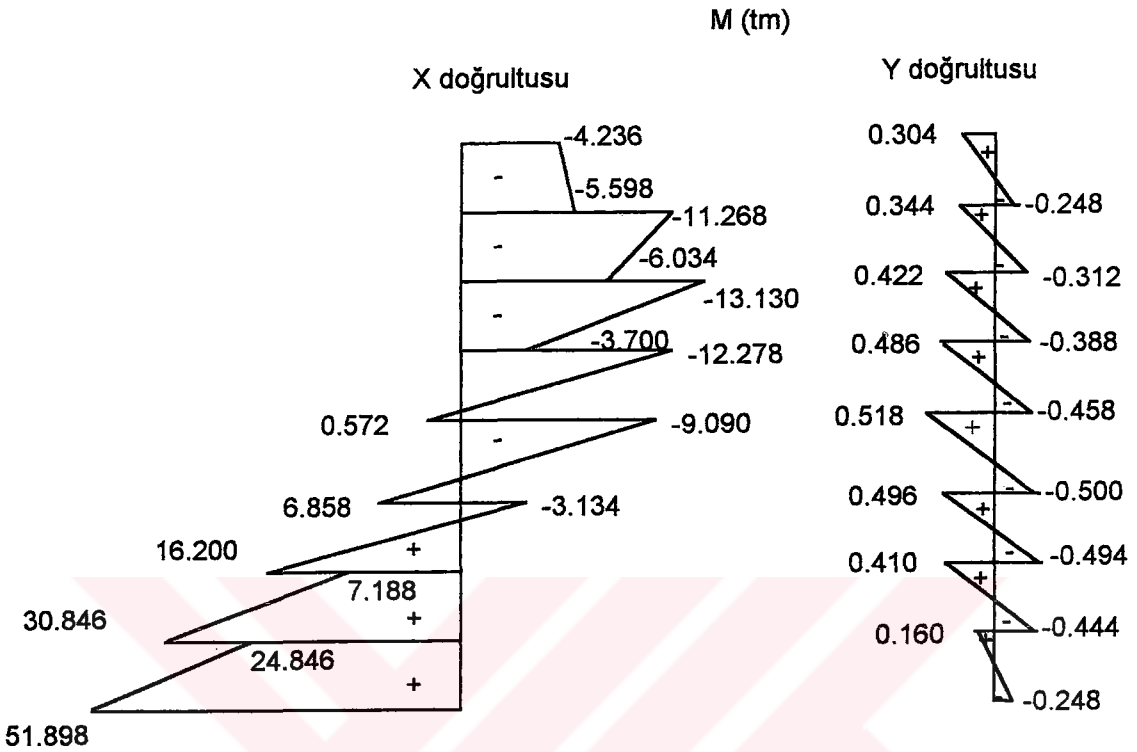
ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
188								
	1	.000			-.626			-.506
		.000	-.313	.506		.442	5.615	
		2.720	-.313	-.346		.442	6.817	
		2.720			-.626			-.506
189								
	1	.000			-.829			-.600
		.000	-.418	-.023		.279	6.887	
		2.720	-.418	-1.160		.279	7.645	
		2.720			-.829			-.600
190								
	1	.000			-1.025			-.622
		.000	-.479	-.850		.030	7.724	
		2.720	-.479	-2.153		.030	7.805	
		2.720			-1.025			-.622
191								
	1	.000			-1.188			-.529
		.000	-.450	-1.897		-.259	7.878	
		2.720	-.450	-3.121		-.259	7.173	
		2.720			-1.188			-.529
192								
	1	.000			-1.285			-.284
		.000	-.271	-2.969		-.228	7.220	
		2.720	-.271	-3.706		-.228	6.599	
		2.720			-1.285			-.284
193								
	1	.000			-.516			-.117
		.000	-.108	.162		-.182	-2.246	
		2.720	-.108	-.132		-.182	-2.741	
		2.720			-.516			-.117
194								
	1	.000			-1.265			-.099
		.000	-.126	.179		1.036	-5.729	
		2.720	-.126	-.164		1.036	-2.913	
		2.720			-1.265			-.099
195								
	1	.000			-2.203			-.167
		.000	-.154	.218		1.798	-6.610	
		2.720	-.154	-.202		1.798	-1.721	
		2.720			-2.203			-.167
196								
	1	.000			-3.351			-.233

FRAME ELEMENT FORCES

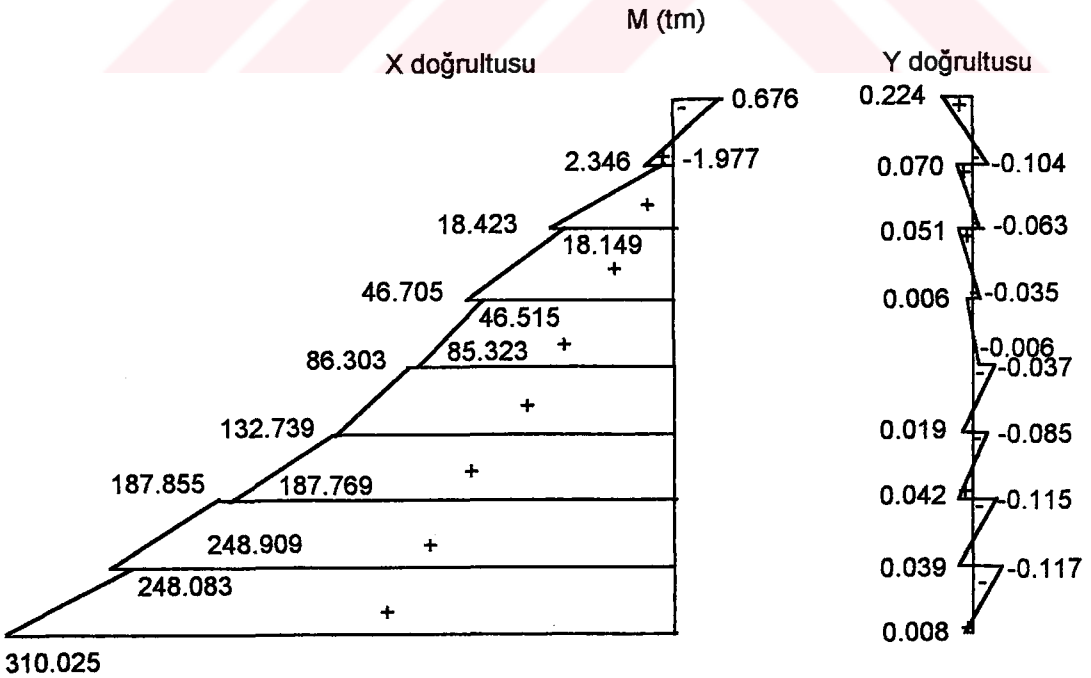
ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.179	.250		2.424	-6.155	
		2.720	-.179	-.236		2.424	.438	
		2.720			-3.351			-.233
197	----------							
	1	.000			-4.655			-.284
		.000	-.192	.266		2.994	-4.528	
		2.720	-.192	-.257		2.994	3.615	
		2.720			-4.655			-.284
198	----------							
	1	.000			-6.012			-.300
		.000	-.186	.254		3.620	-1.503	
		2.720	-.186	-.253		3.620	8.343	
		2.720			-6.012			-.300
199	----------							
	1	.000			-7.253			-.216
		.000	-.160	.210		4.438	3.702	
		2.720	-.160	-.227		4.438	15.774	
		2.720			-7.253			-.216
200	----------							
	1	.000			-8.098			-.119
		.000	-.077	.082		5.090	12.619	
		2.720	-.077	-.127		5.090	26.465	
		2.720			-8.098			-.119

3.7.2. X Doğrultusunda Kesit Tesir Diyagramları

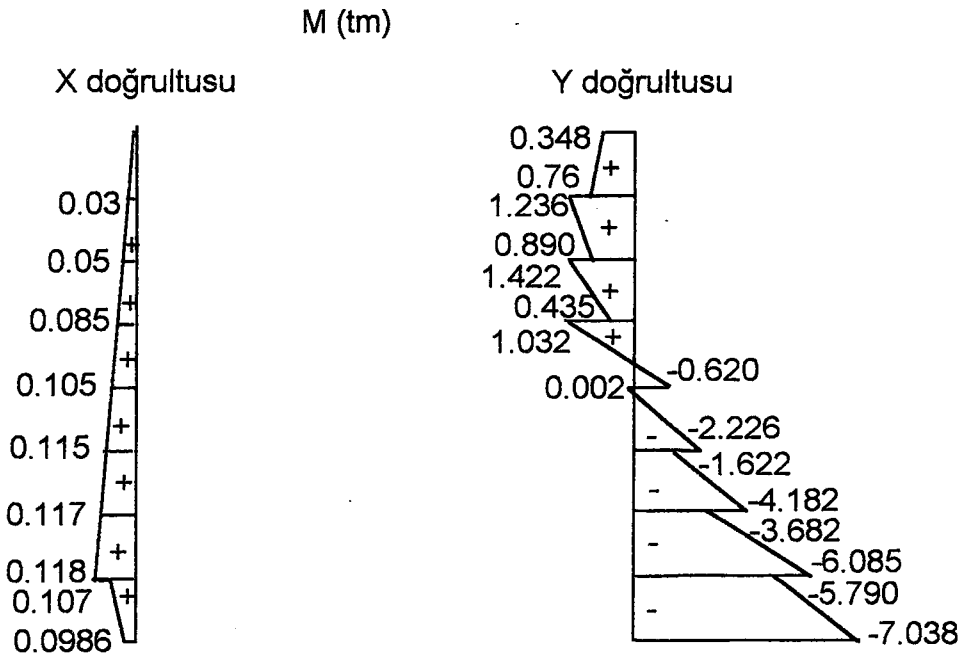
A) Moment Diyagramları



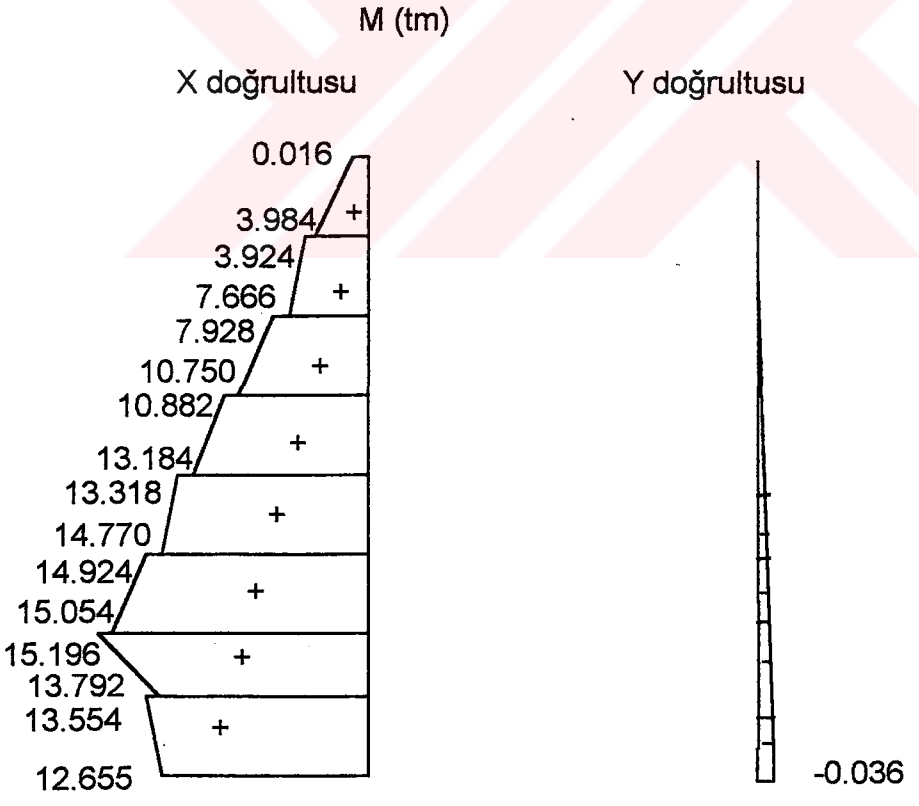
Şekil 3.28. P1 perdesi moment diyagramı



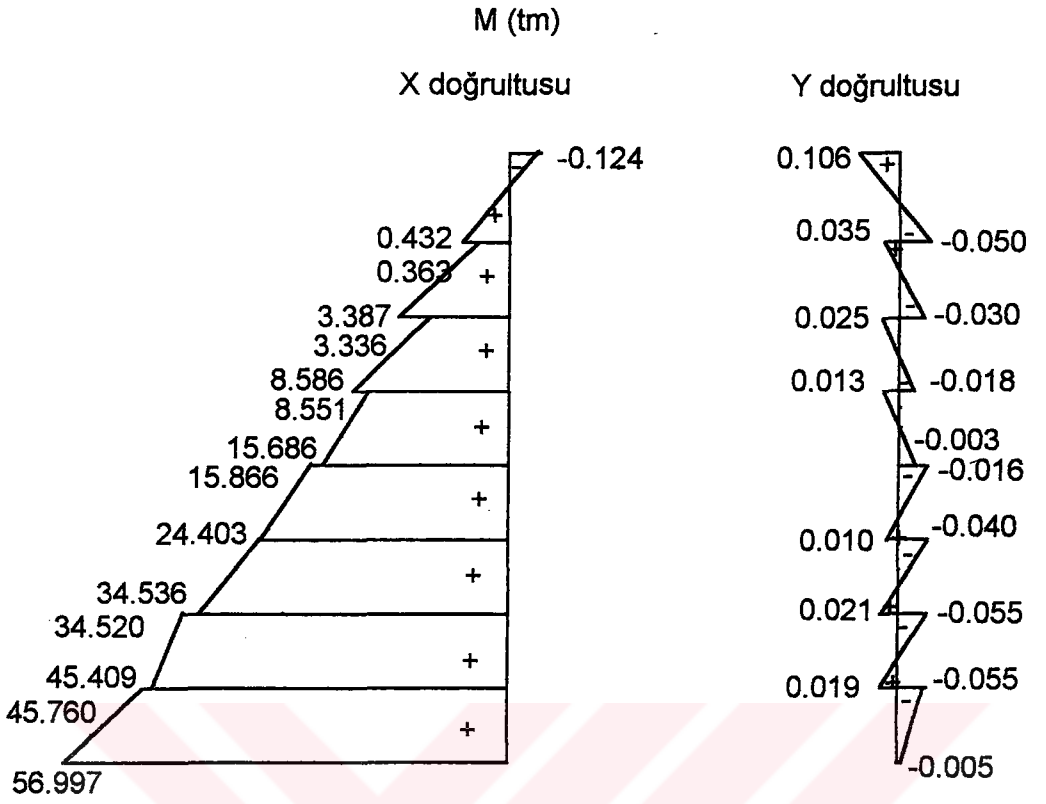
Şekil 3.29. P2 perdesi moment diyagramı



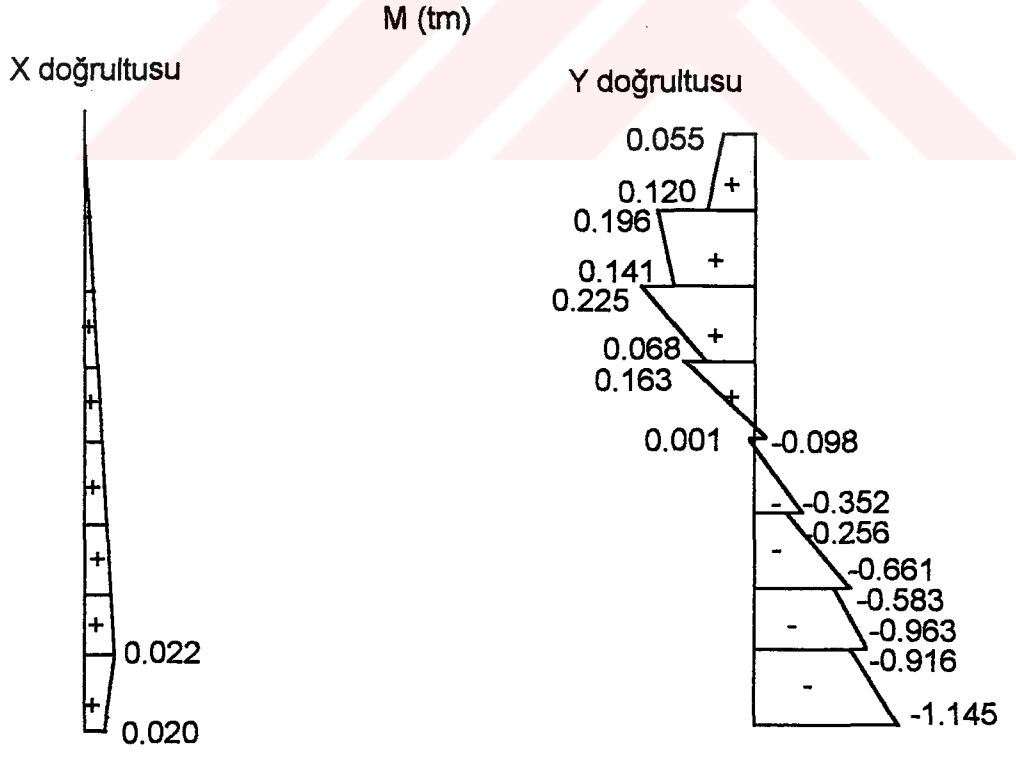
Şekil 3.30. P3(I) ve P4 perdeleri moment diyagramları



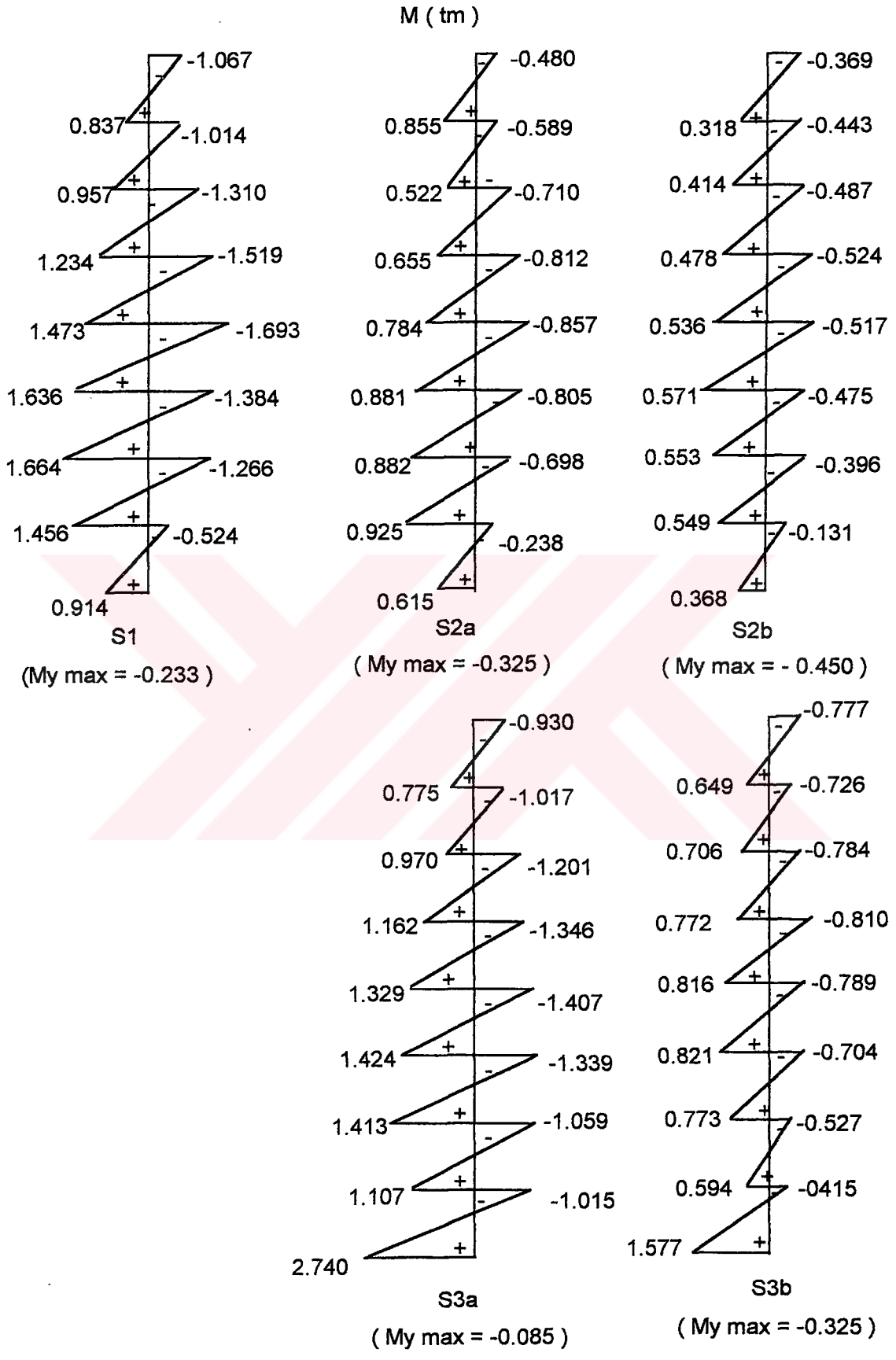
Şekil 3.31. P3 perdesi moment diyagramı



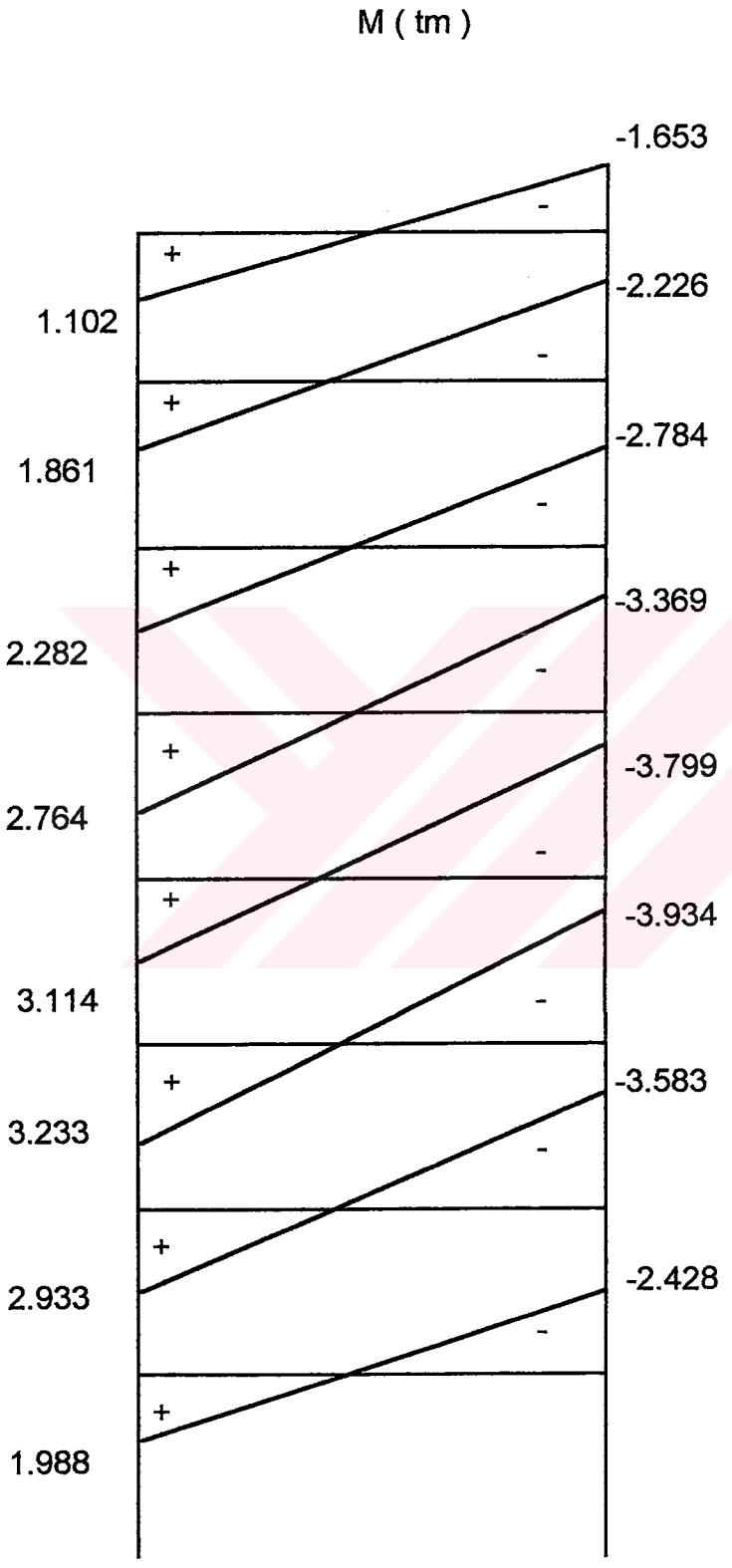
Şekil 3.32. P6 perdesi moment diyagramı



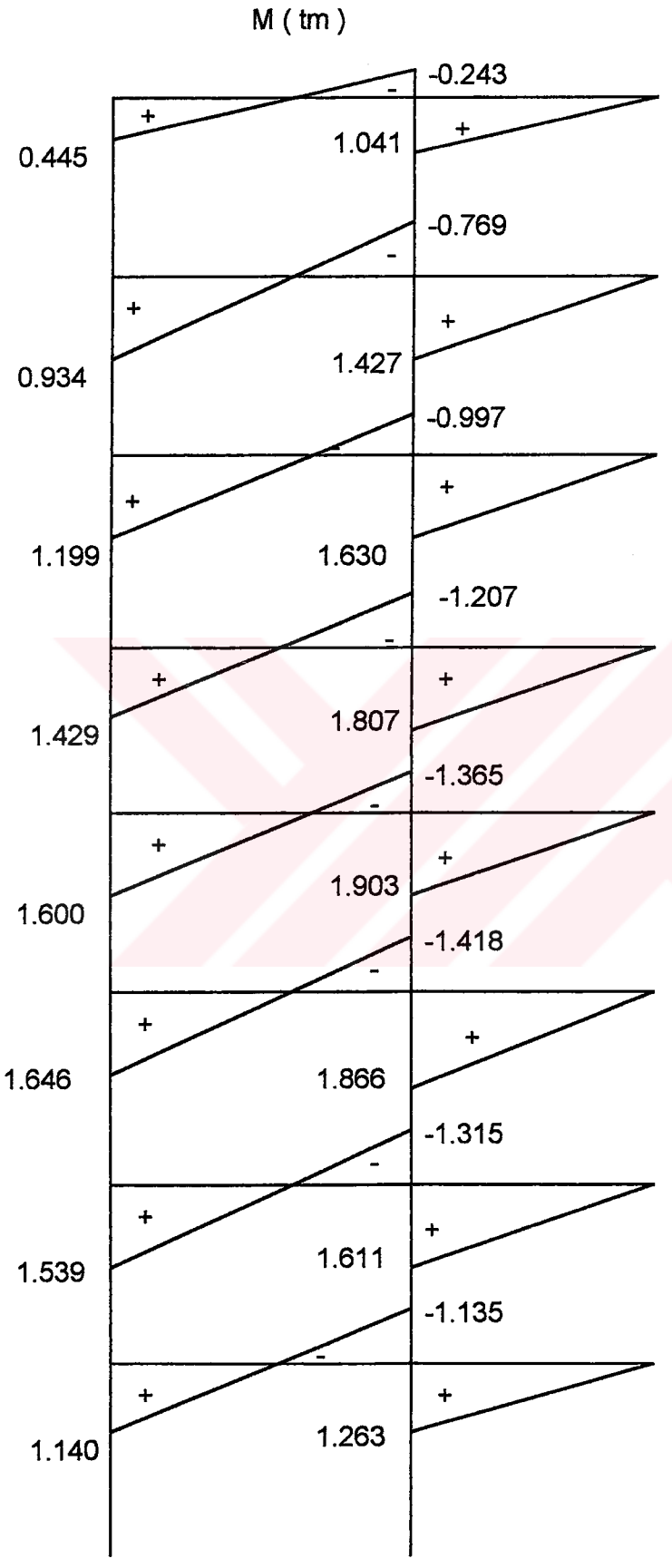
Şekil 3.33. P5 perdesi moment diyagramı



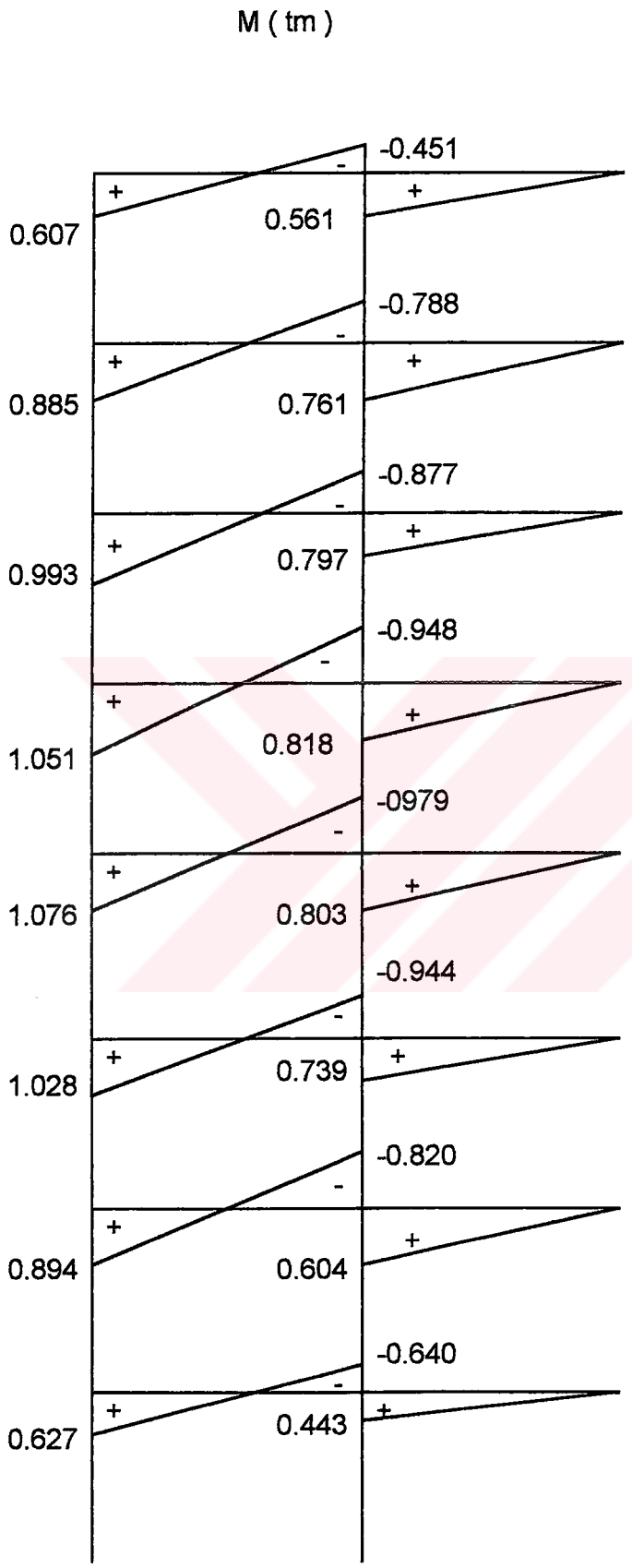
Şekil 3.34. Kolon moment diyagramları



Şekil 3.35. 1-1 aksı kirişleri moment diyagramları

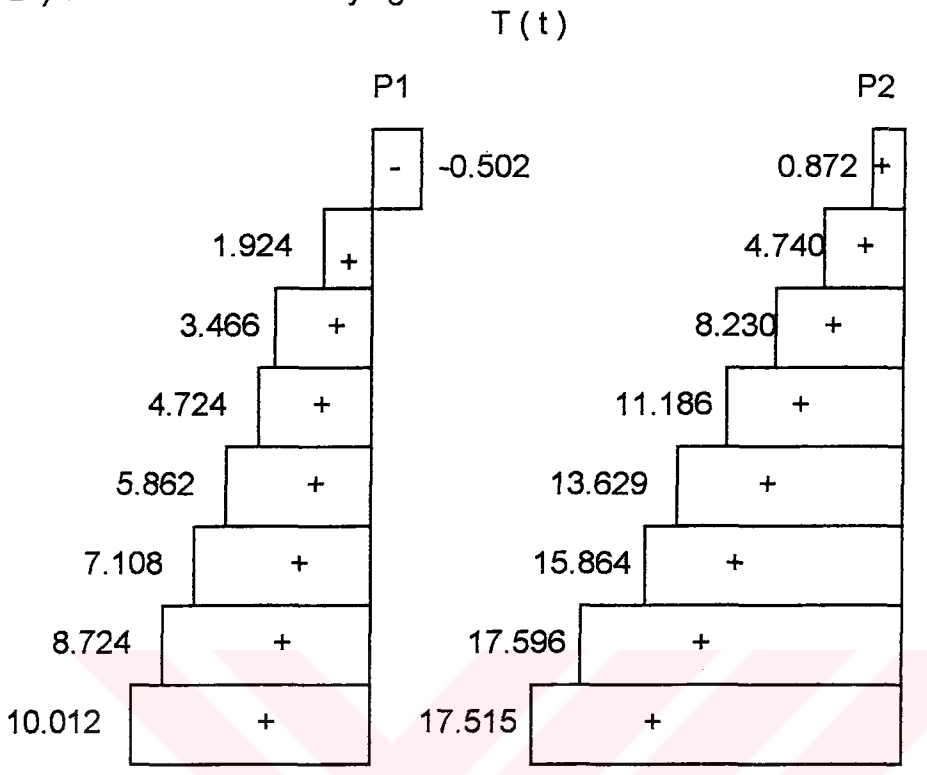


Şekil 3.36. 2-2 aksı kolon şeridi moment diyagramları

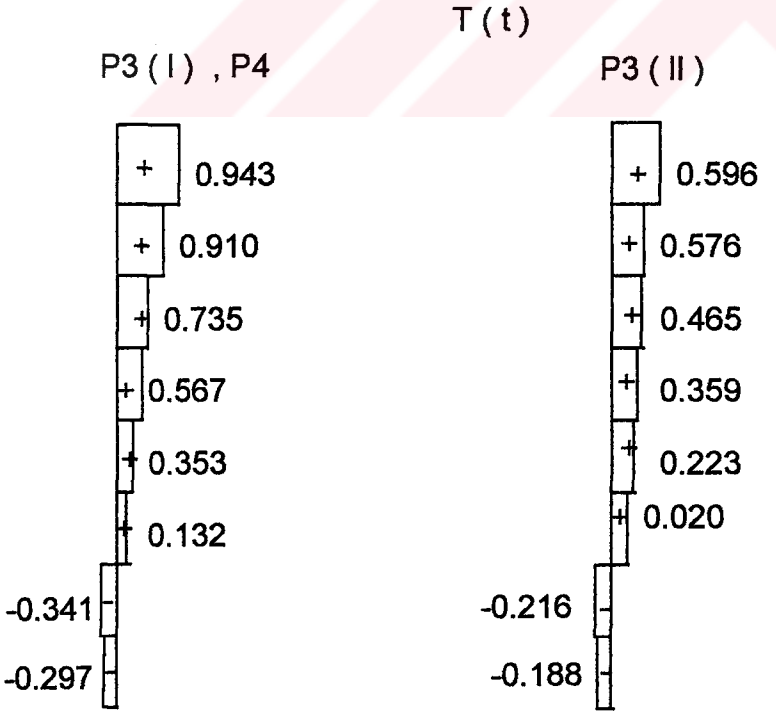


Şekil 3.37. 3-3 aksı kolon şeridi moment diyagramları

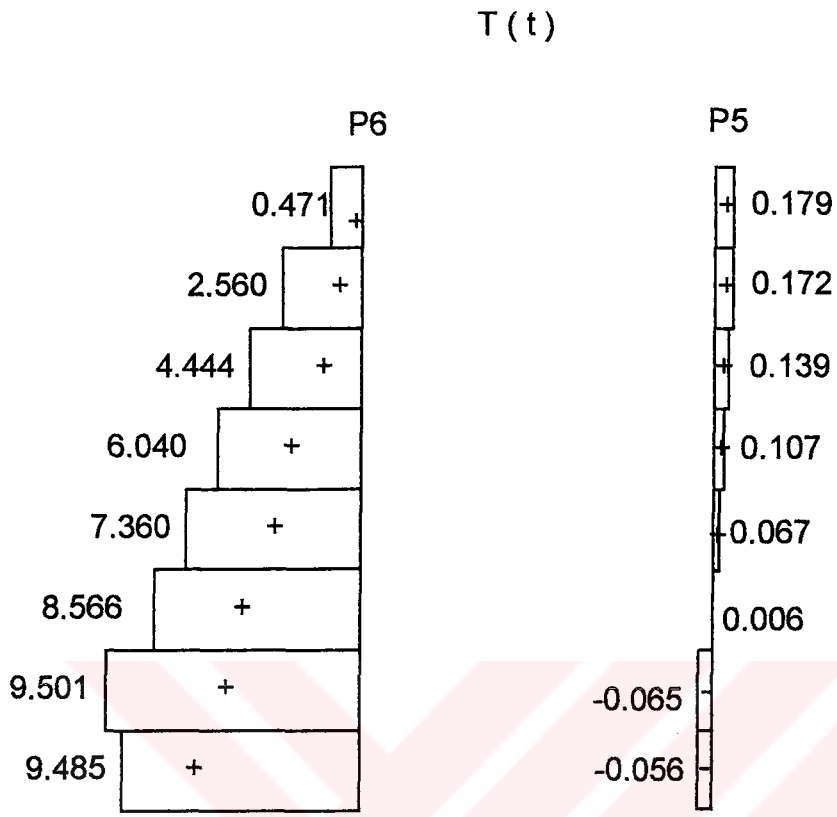
B) Kesme kuvveti diyagramları



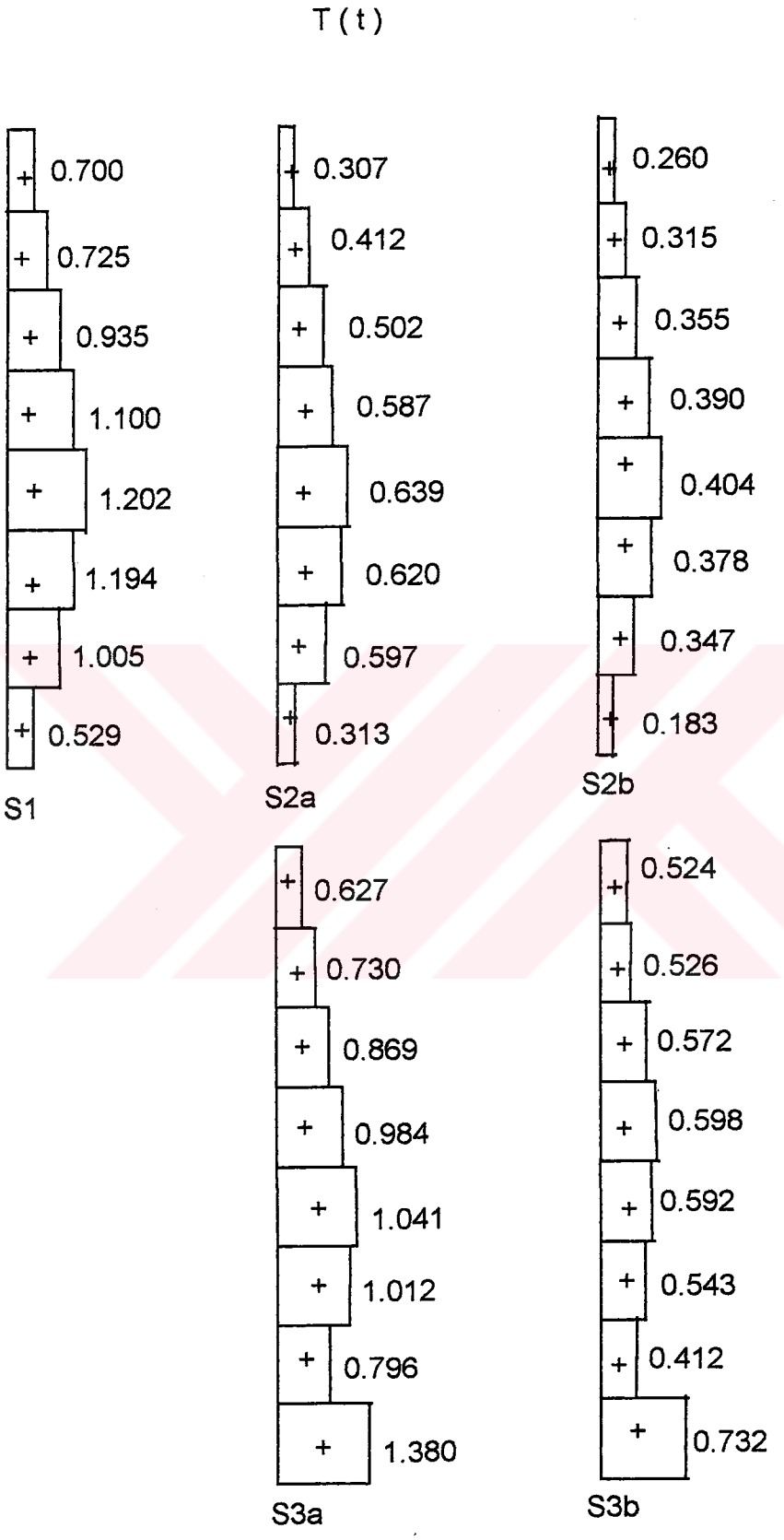
Şekil 3.38. P1 ve P2 perdeleri kesme kuvveti diyagramları



Şekil 3.39. P3(I) , P4 ve P3 (II) perdeleri kesme kuvveti diyagramları



Şekil 3.40. P6 , P5 perdeleri kesme kuvveti diyagramları



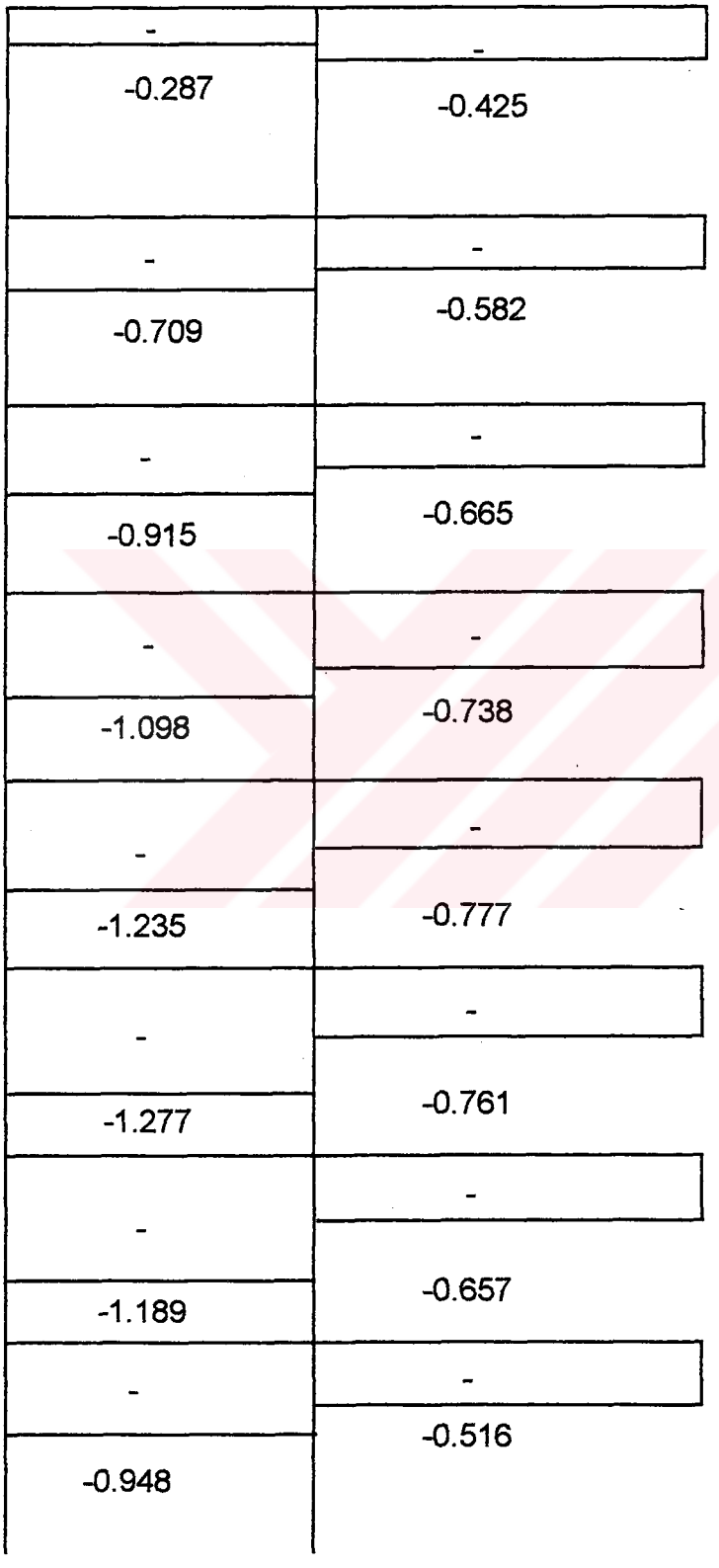
Şekil 3.41. Kolon kesme kuvveti diyagramları

T (t)

-
-0.607
-
-0.900
-
-1.116
-
-1.351
-
-1.523
-
-1.576
-
-1.435
-
-0.973

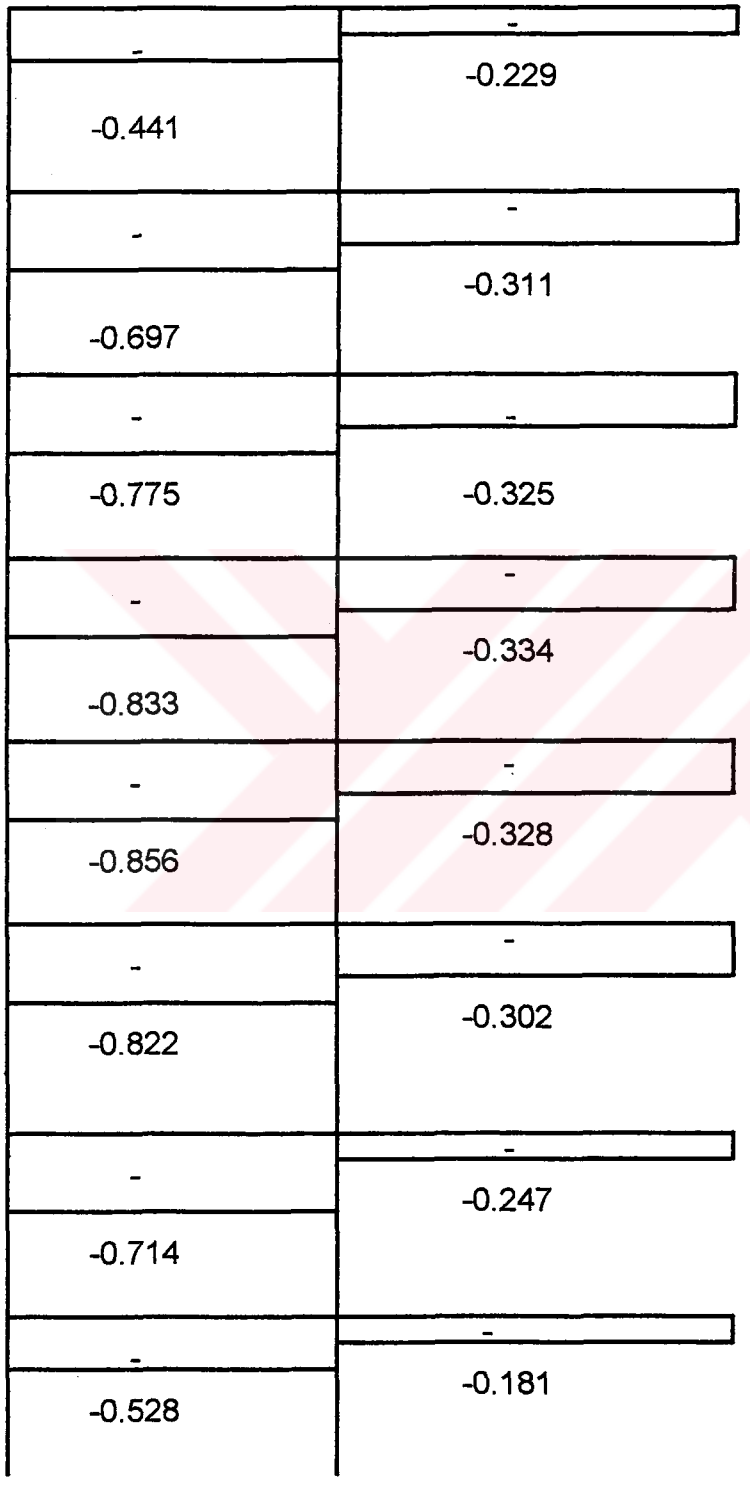
Şekil 3.42. 1-1 aksı kirişleri kesme kuvveti diyagramları

T (t)



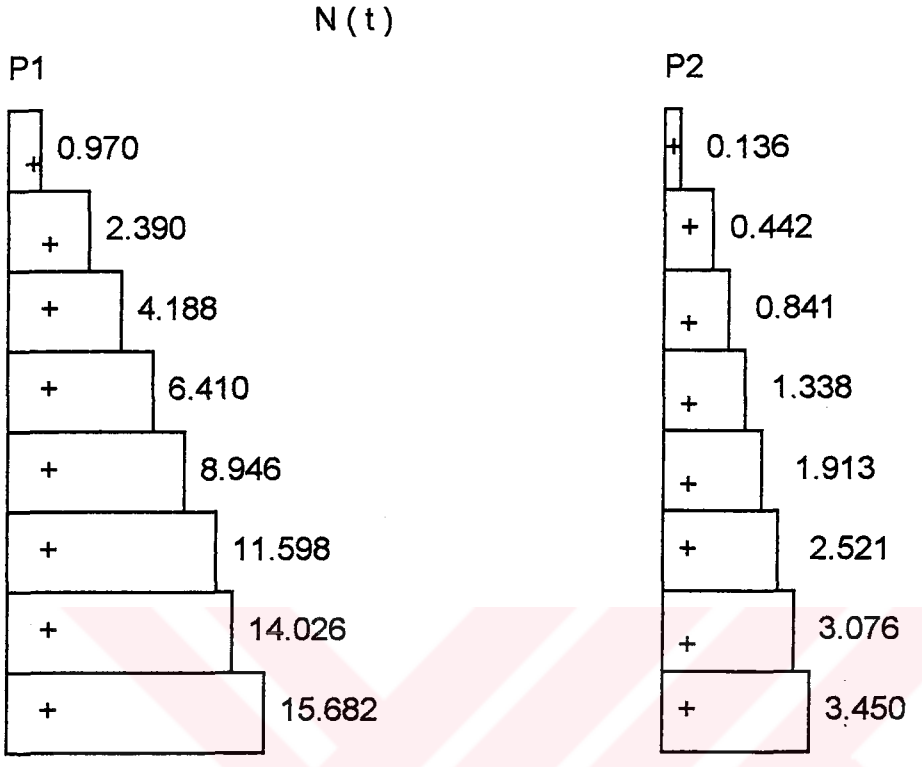
Şekil 3.43. 2-2 aksı kolon şeridi kesme kuvveti diyagramları

T (t)

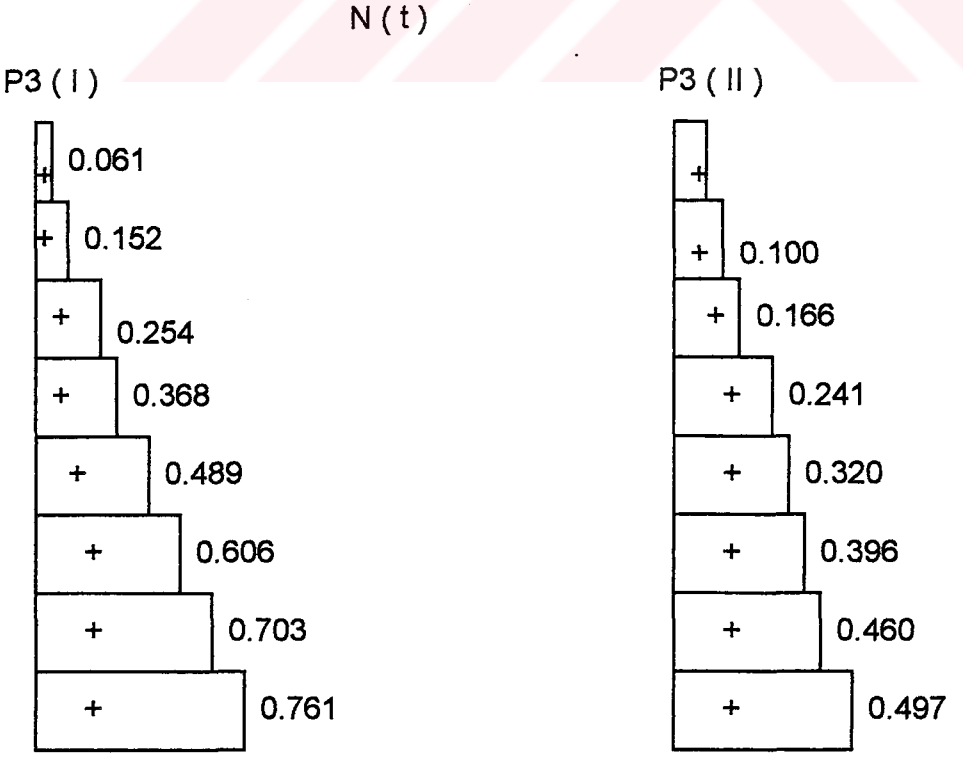


Şekil 3.44. 3-3 aksı kolon şeridi kesme kuvveti diyagramları

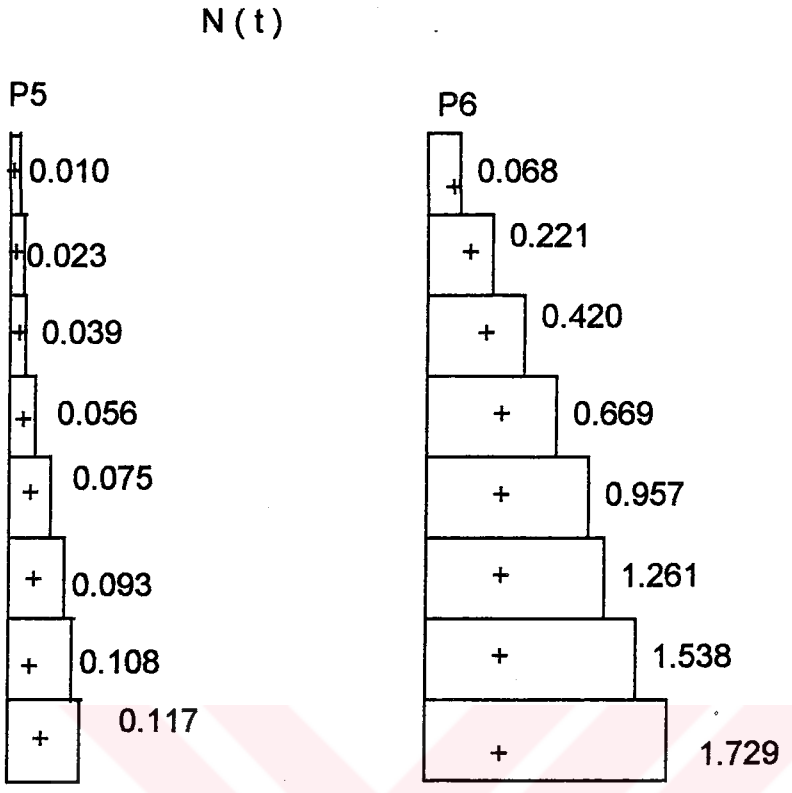
C) Normal Kuvvet Diyagramları



Şekil 3.45. P1 ve P2 perdeleri normal kuvvet diyagramları

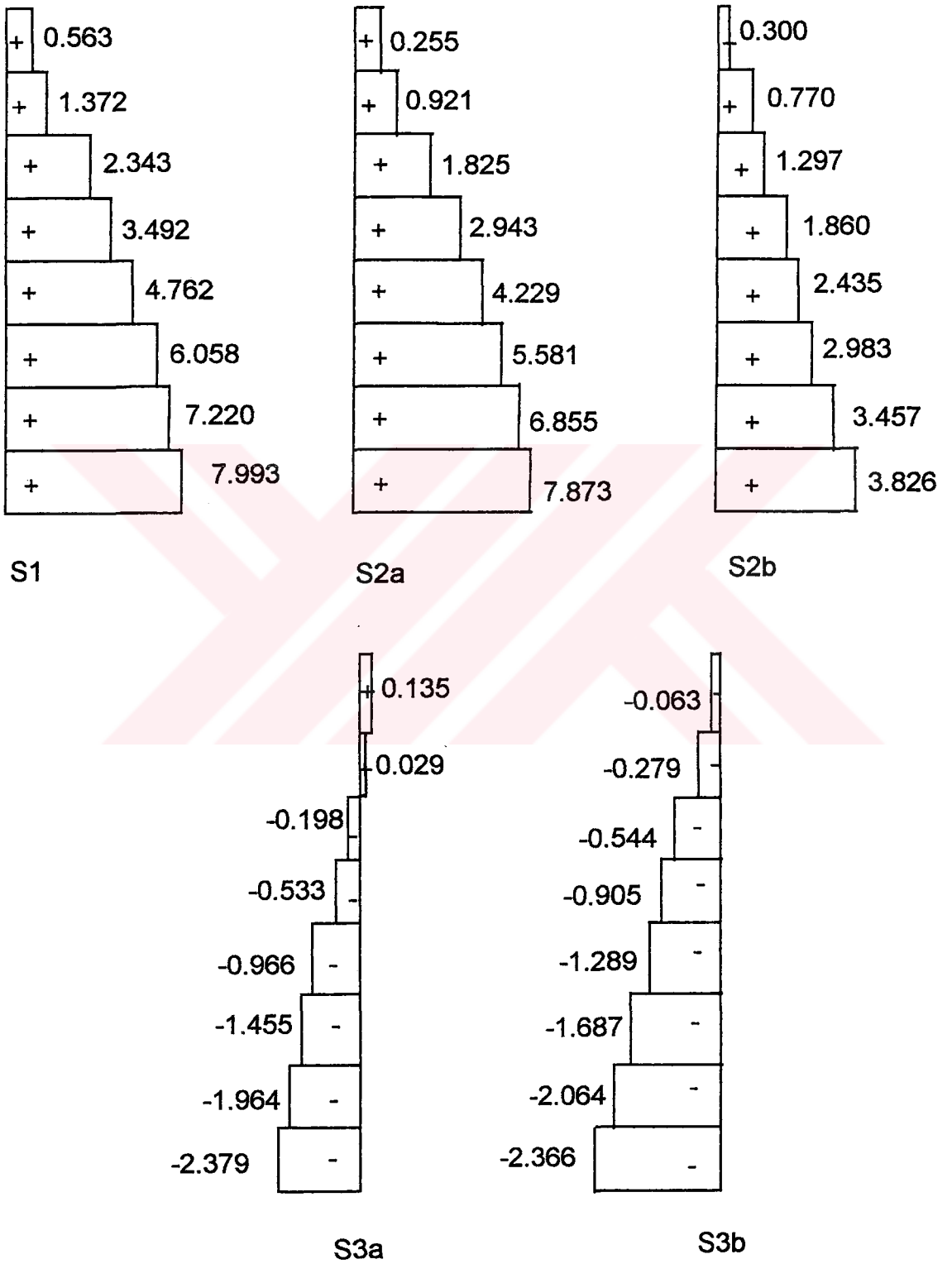


Şekil 3.46. P3 (I) ve P3 (II) perdeleri normal kuvvet diyagramları



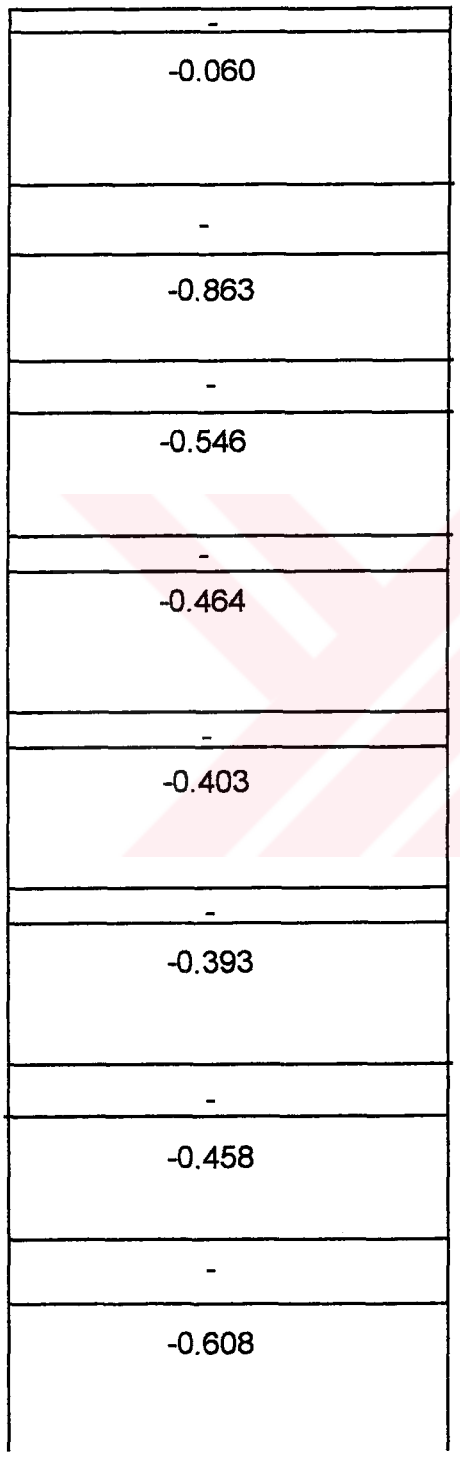
Şekil 3.47. P5 ve P6 perdeleri normal kuvvet diyagramları

N (t)

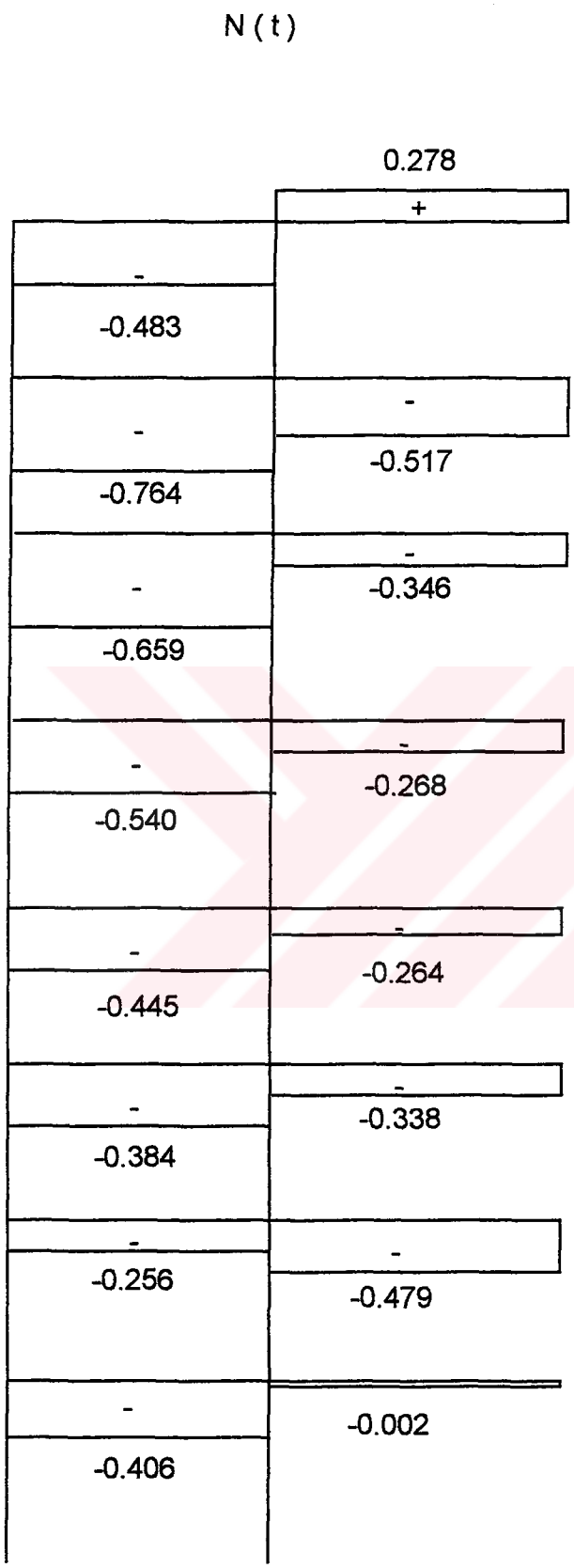


Şekil 3.48. Kolon normal kuvvet diyagramları

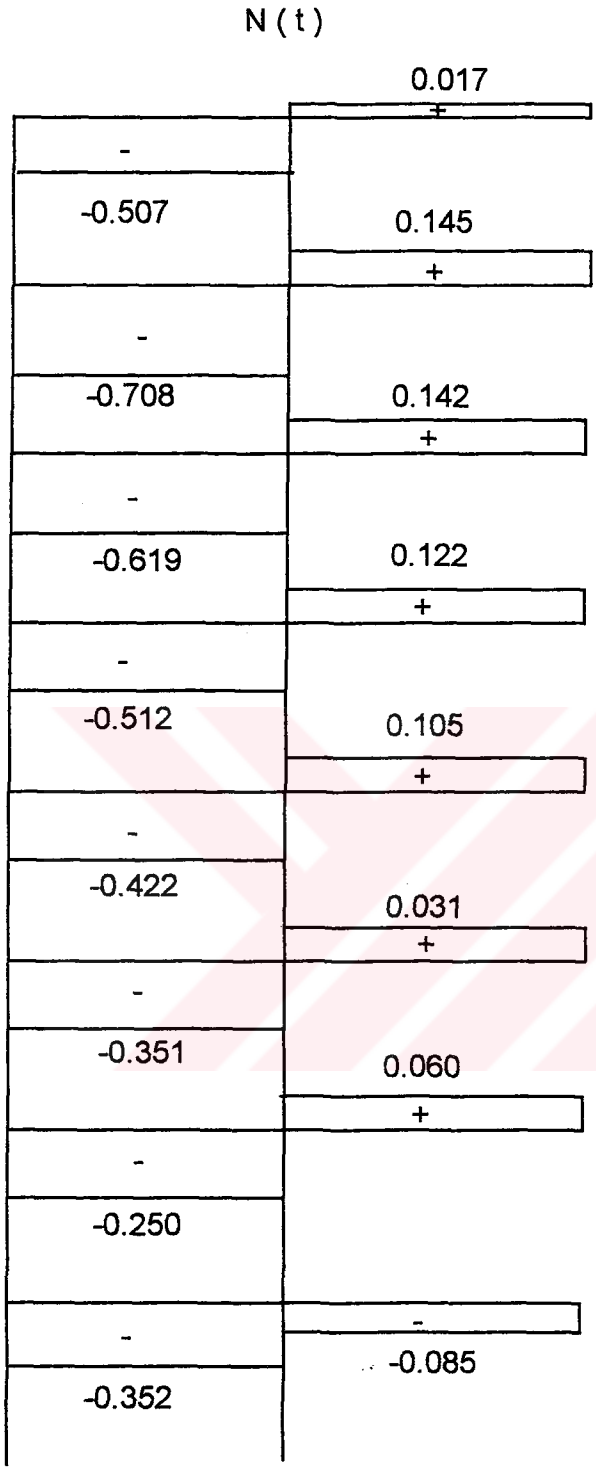
N (t)



Şekil 3.49. 1-1 aksı kirişleri normal kuvvet diyagramları



Şekil 3.50. 2-2 aksı kolon şeridi normal kuvvet diyagramları



Şekil 3.51. 3-3 aksı kolon şeridi normal kuvvet diyagramları

3.7.3 Y Doğrultusunda Yatay Yük Hesabı

Yapıya yatay yükün sadece y doğrultusunda etkidiği kabul edilerek SAP90 [5] veri bloku oluşturulmuş ve çözülmüştür.

```
Y DOĞRULTUSUNDA  YATAY  YÜK HESABI
SYSTEM
L=1
RESTRAINTS
1,97,1          R=0,0,0,0,0,0
89,97,1         R=1,1,1,1,1,1
10,87,11        R=0,0,1,0,0,0
11,88,11        R=0,0,1,0,0,0

JOINTS
1   X=0      Y=0      Z=0
89  X=0      Y=0      Z=-21.76     G=1,89,11
2   X=3      Y=0      Z=0
90  X=3      Y=0      Z=-21.76     G=2,90,11
3   X=6.9    Y=0      Z=0
91  X=6.9    Y=0      Z=-21.76     G=3,91,11
4   X=9.37   Y=0      Z=0
92  X=9.37   Y=0      Z=-21.76     G=4,92,11
5   X=3      Y=2.4    Z=0
93  X=3      Y=2.4    Z=-21.76     G=5,93,11
6   X=6.9    Y=2.4    Z=0
94  X=6.9    Y=2.4    Z=-21.76     G=6,94,11
7   X=9.37   Y=2.4    Z=0
95  X=9.37   Y=2.4    Z=-21.76     G=7,95,11
8   X=11.65  Y=2.4    Z=0
96  X=11.65  Y=2.4    Z=-21.76     G=8,96,11
9   X=0      Y=4.85   Z=0
97  X=0      Y=4.85   Z=-21.76     G=9,97,11
10  X=3      Y=4.85   Z=0
87  X=3      Y=4.85   Z=-19.04     G=10,87,11
11  X=6.9    Y=4.85   Z=0
88  X=6.9    Y=4.85   Z=-19.04     G=11,88,11

FRAME
NM=14
1 A=.204 J=.00432 I=.0004133,.03688  AS=.17  E=3025000 G=1210000
2 A=.04  J=.00301 I=.0002,.30873     AS=.033 E=3025000 G=1210000
3 A=.8   J=.01    I=.003399,1        AS=.66  E=3025000 G=1210000
4 A=.516 J=.00949 I=.263617,.1155472 AS=.43  E=3025000 G=1210000
5  SH=R     T=0.3,0.3    E=3025000  G=1210000  W=0.
6  SH=R     T=0.3,0.5    E=3025000  G=1210000  W=0.
7  SH=R     T=0.45,0.20  E=3025000  G=1210000  W=0.
8  SH=R     T=0.18,1.2   E=3025000  G=1210000  W=0.
9  SH=R     T=0.18,1.5   E=3025000  G=1210000  W=0.
10 SH=R     T=0.18,1.25  E=3025000  G=1210000  W=0.
11 SH=R     T=0.45,0.4   E=3025000  G=1210000  W=0.
12 SH=R     T=0.18,2.4   E=3025000  G=1210000  W=0.
13 SH=R     T=0.18,0.6   E=3025000  G=1210000  W=0.
14 A=.09 J=0 I=0 AS=0,0  E=3025000  G=1210000  W=0
C KİRİŞLER
1  1  9   M=7  LP=3,0   RE=0,0.31  G=7,16,11,11
2  1  2   M=7  LP=-2,0  RE=0,0     G=7,16,11,11
3  2  3   M=7  LP=-2,0  RE=0,0     G=7,16,11,11
4  3  4   M=11 LP=-2,0  RE=0,0     G=7,16,11,11
```

```
5   5   6    M=12 LP=-2,0  RE=0,0      G=7,16,11,11
6   6   7    M=8  LP=-2,0  RE=0,0      G=7,16,11,11
7   7   8    M=8  LP=-2,0  RE=0,0.78   G=7,16,11,11
8   2   5    M=9  LP=3,0   RE=0,0      G=7,16,11,11
9   3   6    M=10 LP=3,0   RE=0,0      G=7,16,11,11
10  5   10   M=9  LP=3,0   RE=0,0      G=7,16,11,11
11  6   11   M=10 LP=3,0   RE=0,0      G=7,16,11,11
12  9   10   M=8  LP=-2,0  RE=0.6,0    G=7,16,11,11
13  10  11   M=8  LP=-2,0  RE=0,0      G=7,16,11,11
14  4   7    M=14 LP=3,0   RE=0.3,0.3 G=7,16,11,11
15  4   8    M=14 LP=3,0   RE=0,0      G=7,16,11,11
16  11  8    M=13 LP=3,0   RE=0,0      G=7,16,11,11
C KOLONLAR
129   1   12   M=5   LP=2,0  RE=0,0    G=7,1,11,11
137   2   13   M=5   LP=2,0  RE=0,0    G=7,1,11,11
145   3   14   M=5   LP=2,0  RE=0,0    G=7,1,11,11
153   4   15   M=2   LP=2,0  RE=0,0    G=7,1,11,11
161   5   16   M=5   LP=2,0  RE=0,0    G=6,1,11,11
168  82   93   M=6   LP=2,0  RE=0,0
169   6   17   M=5   LP=2,0  RE=0,0    G=6,1,11,11
176  83   94   M=6   LP=2,0  RE=0,0
177   7   18   M=3   LP=2,0  RE=0,0    G=7,1,11,11
185   8   19   M=4   LP=2,0  RE=0,0    G=7,1,11,11
193   9   20   M=1   LP=2,0  RE=0,0    G=7,1,11,11

LOAD
1    F=1.940
9    F=1.940
12   F=2.202
20   F=2.202
23   F=1.887
31   F=1.887
34   F=1.573
42   F=1.573
45   F=1.258
53   F=1.258
56   F=0.943
64   F=0.943
67   F=0.628
75   F=0.628
78   F=0.315
86   F=0.315
```

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1								
	1	.000			.100			-.009
		.000	-.073	.126		-.005	.012	
		4.540	-.073	-.204		-.005	-.010	
		4.850			.100			-.009
2								
	1	.000			-1.470			.022
		.000	-.357	.695		-.002	.006	
		3.000	-.357	-.376		-.002	-.001	
		3.000			-1.470			.022
3								
	1	.000			-.515			.007
		.000	-.476	.860		.000	.001	
		3.900	-.476	-.995		.000	.001	
		3.900			-.515			.007
4								
	1	.000			.084			-.003
		.000	-.064	-.095		.008	-.046	
		2.470	-.064	-.254		.008	-.025	
		2.470			.084			-.003
5								
	1	.000			-.127			.028
		.000	-.362	.767		.228	-.612	
		3.900	-.362	-.647		.228	.279	
		3.900			-.127			.028
6								
	1	.000			.546			.021
		.000	-.702	.738		.288	-.438	
		2.470	-.702	-.996		.288	.274	
		2.470			.546			.021
7								
	1	.000			2.418			.041
		.000	-2.990	2.034		-.288	.437	
		1.500	-2.990	-2.451		-.288	.004	
		2.280			2.418			.041
8								
	1	.000			.141			.072
		.000	-.200	.229		.143	.025	
		2.400	-.200	-.251		.143	.368	
		2.400			.141			.072
9								
	1	.000			.053			-.078

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.098	.104		-.093	.072	
		2.400	-.098	-.131		-.093	-.151	
		2.400			.053			-.078
10								
	1	.000			.040			-.249
		.000	.029	-.095		-.721	1.002	
		2.450	.029	-.024		-.721	-.765	
		2.450			.040			-.249
11								
	1	.000			.011			-.088
		.000	.020	-.095		-.388	.586	
		2.450	.020	-.045		-.388	-.364	
		2.450			.011			-.088
12								
	1	.000			-1.424			.020
		.600	-.340	.554		.126	.141	
		3.000	-.340	-.262		.126	.444	
		3.000			-1.424			.020
13								
	1	.000			-.702			-.004
		.000	-.003	-.013		.166	-.321	
		3.900	-.003	-.024		.166	.326	
		3.900			-.702			-.004
14								
	1	.000			-.310			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			-.310			
15								
	1	.000			.392			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			.392			
16								
	1	.000			-.360			-.014
		.000	.058	-.080		-.013	.038	
		5.345	.058	.231		-.013	-.033	
		5.345			-.360			-.014
17								
	1	.000			.000			-.000
		.000	-.108	.222		.001	-.003	
		4.540	-.108	-.269		.001	.002	
		4.850			.000			-.000

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
18								
	1	.000			-2.118			.019
		.000	-.809	1.370		-.006	.006	
		3.000	-.809	-1.057		-.006	-.013	
		3.000			-2.118			.019
19								
	1	.000			-1.327			.011
		.000	-.707	1.346		-.007	.016	
		3.900	-.707	-1.410		-.007	-.012	
		3.900			-1.327			.011
20								
	1	.000			-.855			.028
		.000	-.482	.596		-.066	.135	
		2.470	-.482	-.594		-.066	-.029	
		2.470			-.855			.028
21								
	1	.000			-1.527			.040
		.000	-.663	1.362		-.035	.385	
		3.900	-.663	-1.225		-.035	.248	
		3.900			-1.527			.040
22								
	1	.000			-2.177			.026
		.000	-1.099	1.211		-.335	.472	
		2.470	-1.099	-1.503		-.335	-.354	
		2.470			-2.177			.026
23								
	1	.000			-2.458			.041
		.000	-3.873	2.814		.169	-.329	
		1.500	-3.873	-2.995		.169	-.076	
		2.280			-2.458			.041
24								
	1	.000			-.013			.118
		.000	-.297	.358		.701	-.036	
		2.400	-.297	-.355		.701	1.646	
		2.400			-.013			.118
25								
	1	.000			.062			-.018
		.000	-.127	.145		.348	-.151	
		2.400	-.127	-.159		.348	.684	
		2.400			.062			-.018
26								
	1	.000			.027			-.440

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.006	-.050		-.814	1.260	
		2.450	.006	-.035		-.814	-.735	
		2.450			.027			-.440
27								
	1	.000			.379			-.160
		.000	.008	-.075		-.307	.460	
		2.450	.008	-.056		-.307	-.293	
		2.450			.379			-.160
28								
	1	.000			-2.208			.028
		.600	-.605	.979		.138	.082	
		3.000	-.605	-.472		.138	.414	
		3.000			-2.208			.028
29								
	1	.000			-1.394			-.007
		.000	-.009	-.032		.165	-.321	
		3.900	-.009	-.067		.165	.324	
		3.900			-1.394			-.007
30								
	1	.000			.635			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.635			
31								
	1	.000			-1.148			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-1.148			
32								
	1	.000			-1.216			-.014
		.000	.069	-.111		.015	-.032	
		5.345	.069	.260		.015	.048	
		5.345			-1.216			-.014
33								
	1	.000			.024			-.002
		.000	-.124	.252		.002	-.005	
		4.540	-.124	-.312		.002	.005	
		4.850			.024			-.002
34								
	1	.000			-1.798			.019
		.000	-.965	1.626		-.007	.006	
		3.000	-.965	-1.270		-.007	-.014	
		3.000			-1.798			.019

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
35								
	1	.000			-1.051			.010
		.000	-.770	1.473		-.007	.015	
		3.900	-.770	-1.529		-.007	-.012	
		3.900			-1.051			.010
36								
	1	.000			-.585			.035
		.000	-.655	.861		-.047	.114	
		2.470	-.655	-.757		-.047	-.003	
		2.470			-.585			.035
37								
	1	.000			-1.214			.038
		.000	-.724	1.485		-.056	.382	
		3.900	-.724	-1.338		-.056	.161	
		3.900			-1.214			.038
38								
	1	.000			-1.705			.029
		.000	-1.173	1.298		-.309	.412	
		2.470	-1.173	-1.598		-.309	-.351	
		2.470			-1.705			.029
39								
	1	.000			-1.319			.040
		.000	-4.563	3.300		.174	-.351	
		1.500	-4.563	-3.544		.174	-.090	
		2.280			-1.319			.040
40								
	1	.000			.004			.128
		.000	-.304	.366		.626	-.028	
		2.400	-.304	-.364		.626	1.475	
		2.400			.004			.128
41								
	1	.000			.036			-.012
		.000	-.125	.143		.328	-.126	
		2.400	-.125	-.157		.328	.662	
		2.400			.036			-.012
42								
	1	.000			.066			-.481
		.000	-.003	-.035		-.677	1.094	
		2.450	-.003	-.043		-.677	-.566	
		2.450			.066			-.481
43								
	1	.000			.287			-.176

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.005	-.056		-.275	.412	
		2.450	-.005	-.069		-.275	-.261	
		2.450			.287			-.176
44								
	1	.000			-1.827			.036
		.600	-.662	1.068		.084	.061	
		3.000	-.662	-.519		.084	.263	
		3.000			-1.827			.036
45								
	1	.000			-1.150			-.008
		.000	-.008	-.038		.150	-.302	
		3.900	-.008	-.069		.150	.284	
		3.900			-1.150			-.008
46								
	1	.000			.521			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.521			
47								
	1	.000			-.769			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-.769			
48								
	1	.000			-.978			-.019
		.000	.079	-.131		.012	-.023	
		5.345	.079	.292		.012	.043	
		5.345			-.978			-.019
49								
	1	.000			.015			-.002
		.000	-.140	.285		.002	-.005	
		4.540	-.140	-.351		.002	.005	
		4.850			.015			-.002
50								
	1	.000			-1.494			.018
		.000	-1.105	1.845		-.006	.005	
		3.000	-1.105	-1.468		-.006	-.012	
		3.000			-1.494			.018
51								
	1	.000			-.873			.010
		.000	-.819	1.577		-.006	.012	
		3.900	-.819	-1.619		-.006	-.010	
		3.900			-.873			.010

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
52								
	1	.000			-.480			.037
		.000	-.818	1.121		-.038	.095	
		2.470	-.818	-.898		-.038	.002	
		2.470			-.480			.037
53								
	1	.000			-1.019			.037
		.000	-.789	1.618		-.054	.339	
		3.900	-.789	-1.457		-.054	.128	
		3.900			-1.019			.037
54								
	1	.000			-1.441			.028
		.000	-1.268	1.403		-.278	.363	
		2.470	-1.268	-1.728		-.278	-.323	
		2.470			-1.441			.028
55								
	1	.000			-1.215			.040
		.000	-5.329	3.864		.161	-.326	
		1.500	-5.329	-4.129		.161	-.085	
		2.280			-1.215			.040
56								
	1	.000			-.000			.145
		.000	-.305	.368		.528	-.024	
		2.400	-.305	-.364		.528	1.242	
		2.400			-.000			.145
57								
	1	.000			.028			.000
		.000	-.114	.131		.280	-.106	
		2.400	-.114	-.142		.280	.566	
		2.400			.028			.000
58								
	1	.000			.058			-.526
		.000	-.013	-.020		-.554	.903	
		2.450	-.013	-.051		-.554	-.454	
		2.450			.058			-.526
59								
	1	.000			.254			-.193
		.000	-.017	-.039		-.221	.331	
		2.450	-.017	-.081		-.221	-.211	
		2.450			.254			-.193
60								
	1	.000			-1.532			.042

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.600	-.724	1.166		.066	.044	
		3.000	-.724	-.572		.066	.202	
		3.000			-1.532			.042
61								
	1	.000			-.978			-.009
		.000	-.006	-.047		.124	-.252	
		3.900	-.006	-.070		.124	.232	
		3.900			-.978			-.009
62								
	1	.000			.431			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.431			
63								
	1	.000			-.625			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-.625			
64								
	1	.000			-.846			-.024
		.000	.089	-.150		.011	-.021	
		5.345	.089	.324		.011	.039	
		5.345			-.846			-.024
65								
	1	.000			.006			-.001
		.000	-.147	.299		.003	-.006	
		4.540	-.147	-.369		.003	.005	
		4.850			.006			-.001
66								
	1	.000			-1.222			.016
		.000	-1.197	1.989		-.005	.004	
		3.000	-1.197	-1.604		-.005	-.011	
		3.000			-1.222			.016
67								
	1	.000			-.730			.009
		.000	-.833	1.611		-.005	.011	
		3.900	-.833	-1.637		-.005	-.009	
		3.900			-.730			.009
68								
	1	.000			-.419			.037
		.000	-.946	1.335		-.034	.088	
		2.470	-.946	-1.002		-.034	.005	
		2.470			-.419			.037

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
69								
	1	.000			-.886			.034
		.000	-.819	1.681		-.070	.357	
		3.900	-.819	-1.514		-.070	.084	
		3.900			-.886			.034
70								
	1	.000			-1.303			.026
		.000	-1.304	1.445		-.271	.356	
		2.470	-1.304	-1.776		-.271	-.314	
		2.470			-1.303			.026
71								
	1	.000			-1.189			.038
		.000	-5.840	4.240		.164	-.327	
		1.500	-5.840	-4.520		.164	-.081	
		2.280			-1.189			.038
72								
	1	.000			-.008			.155
		.000	-.292	.354		.464	-.023	
		2.400	-.292	-.347		.464	1.090	
		2.400			-.008			.155
73								
	1	.000			.022			.012
		.000	-.099	.115		.260	-.099	
		2.400	-.099	-.123		.260	.526	
		2.400			.022			.012
74								
	1	.000			.057			-.547
		.000	-.022	-.003		-.435	.731	
		2.450	-.022	-.056		-.435	-.334	
		2.450			.057			-.547
75								
	1	.000			.222			-.202
		.000	-.028	-.020		-.169	.253	
		2.450	-.028	-.089		-.169	-.162	
		2.450			.222			-.202
76								
	1	.000			-1.252			.045
		.600	-.756	1.214		.043	.025	
		3.000	-.756	-.600		.043	.128	
		3.000			-1.252			.045
77								
	1	.000			-.817			-.010

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.004	-.053		.100	-.206	
		3.900	-.004	-.069		.100	.183	
		3.900			-.817			-.010
78								
	1	.000			.399			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.399			
79								
	1	.000			-.569			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-.569			
80								
	1	.000			-.723			-.027
		.000	.094	-.164		.011	-.021	
		5.345	.094	.341		.011	.037	
		5.345			-.723			-.027
81								
	1	.000			-.006			-.001
		.000	-.141	.287		.003	-.008	
		4.540	-.141	-.353		.003	.008	
		4.850			-.006			-.001
82								
	1	.000			-.974			.014
		.000	-1.199	1.981		-.006	.005	
		3.000	-1.199	-1.616		-.006	-.012	
		3.000			-.974			.014
83								
	1	.000			-.613			.008
		.000	-.787	1.529		-.005	.011	
		3.900	-.787	-1.539		-.005	-.009	
		3.900			-.613			.008
84								
	1	.000			-.395			.035
		.000	-.996	1.436		-.034	.092	
		2.470	-.996	-1.025		-.034	.009	
		2.470			-.395			.035
85								
	1	.000			-.805			.030
		.000	-.791	1.623		-.108	.444	
		3.900	-.791	-1.462		-.108	.022	
		3.900			-.805			.030

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
86								
	1	.000			-1.275			.023
		.000	-1.251	1.386		-.298	.395	
		2.470	-1.251	-1.703		-.298	-.341	
		2.470			-1.275			.023
87								
	1	.000			-1.366			.034
		.000	-5.888	4.281		.191	-.369	
		1.500	-5.888	-4.551		.191	-.082	
		2.280			-1.366			.034
88								
	1	.000			-.021			.153
		.000	-.258	.313		.434	-.026	
		2.400	-.258	-.305		.434	1.017	
		2.400			-.021			.153
89								
	1	.000			.018			.022
		.000	-.079	.092		.270	-.104	
		2.400	-.079	-.098		.270	.544	
		2.400			.018			.022
90								
	1	.000			.070			-.529
		.000	-.028	.013		-.309	.570	
		2.450	-.028	-.056		-.309	-.186	
		2.450			.070			-.529
91								
	1	.000			.203			-.195
		.000	-.036	-.003		-.114	.168	
		2.450	-.036	-.090		-.114	-.110	
		2.450			.203			-.195
92								
	1	.000			-.992			.045
		.600	-.732	1.173		.008	.001	
		3.000	-.732	-.583		.008	.019	
		3.000			-.992			.045
93								
	1	.000			-.683			-.011
		.000	-.002	-.054		.077	-.167	
		3.900	-.002	-.063		.077	.134	
		3.900			-.683			-.011
94								
	1	.000			.423			

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.423			
95								
	1	.000			-.587			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-.587			
96								
	1	.000			-.635			-.029
		.000	.093	-.164		.012	-.024	
		5.345	.093	.332		.012	.040	
		5.345			-.635			-.029
97								
	1	.000			-.020			-.000
		.000	-.117	.238		.005	-.011	
		4.540	-.117	-.294		.005	.011	
		4.850			-.020			-.000
98								
	1	.000			-.760			.010
		.000	-1.060	1.744		-.007	.006	
		3.000	-1.060	-1.436		-.007	-.014	
		3.000			-.760			.010
99								
	1	.000			-.549			.006
		.000	-.657	1.284		-.006	.011	
		3.900	-.657	-1.279		-.006	-.010	
		3.900			-.549			.006
100								
	1	.000			-.453			.030
		.000	-.920	1.348		-.039	.106	
		2.470	-.920	-.924		-.039	.010	
		2.470			-.453			.030
101								
	1	.000			-.805			.023
		.000	-.672	1.380		-.159	.580	
		3.900	-.672	-1.241		-.159	-.040	
		3.900			-.805			.023
102								
	1	.000			-1.420			.017
		.000	-1.061	1.175		-.340	.470	
		2.470	-1.061	-1.446		-.340	-.370	
		2.470			-1.420			.017

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
103								
	1	.000			-1.846			.026
		.000	-5.204	3.790		.224	-.416	
		1.500	-5.204	-4.016		.224	-.080	
		2.280			-1.846			.026
104								
	1	.000			-.030			.132
		.000	-.197	.241		.431	-.031	
		2.400	-.197	-.231		.431	1.004	
		2.400			-.030			.132
105								
	1	.000			.021			.025
		.000	-.054	.064		.299	-.121	
		2.400	-.054	-.066		.299	.597	
		2.400			.021			.025
106								
	1	.000			.093			-.452
		.000	-.030	.023		-.180	.419	
		2.450	-.030	-.049		-.180	-.021	
		2.450			.093			-.452
107								
	1	.000			.193			-.166
		.000	-.037	.011		-.057	.082	
		2.450	-.037	-.080		-.057	-.057	
		2.450			.193			-.166
108								
	1	.000			-.753			.039
		.600	-.627	1.004		-.036	-.029	
		3.000	-.627	-.501		-.036	-.115	
		3.000			-.753			.039
109								
	1	.000			-.574			-.010
		.000	-.000	-.050		.057	-.135	
		3.900	-.000	-.050		.057	.088	
		3.900			-.574			-.010
110								
	1	.000			.530			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.530			
111								
	1	.000			-.752			

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-.752			
112	----------							
	1	.000			-.574			-.027
		.000	.080	-.144		.014	-.031	
		5.345	.080	.285		.014	.044	
		5.345			-.574			-.027
113	----------							
	1	.000			-.035			-.001
		.000	-.072	.146		.006	-.013	
		4.540	-.072	-.180		.006	.014	
		4.850			-.035			-.001
114	----------							
	1	.000			-.524			.005
		.000	-.746	1.222		-.009	.008	
		3.000	-.746	-1.015		-.009	-.018	
		3.000			-.524			.005
115	----------							
	1	.000			-.459			.003
		.000	-.428	.842		-.006	.012	
		3.900	-.428	-.827		-.006	-.011	
		3.900			-.459			.003
116	----------							
	1	.000			-.528			.020
		.000	-.660	.992		-.043	.112	
		2.470	-.660	-.639		-.043	.006	
		2.470			-.528			.020
117	----------							
	1	.000			-.634			.014
		.000	-.492	1.004		-.196	.642	
		3.900	-.492	-.915		-.196	-.122	
		3.900			-.634			.014
118	----------							
	1	.000			-1.159			.013
		.000	-.739	.834		-.271	.420	
		2.470	-.739	-.992		-.271	-.250	
		2.470			-1.159			.013
119	----------							
	1	.000			-1.782			.013
		.000	-3.469	2.548		.180	-.311	
		1.500	-3.469	-2.655		.180	-.041	
		2.280			-1.782			.013

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
120								
	1	.000			-.058			.108
		.000	-.108	.129		.444	-.043	
		2.400	-.108	-.129		.444	1.023	
		2.400			-.058			.108
121								
	1	.000			.022			.041
		.000	-.029	.033		.320	-.135	
		2.400	-.029	-.036		.320	.634	
		2.400			.022			.041
122								
	1	.000			.138			-.316
		.000	-.029	.036		-.117	.375	
		2.450	-.029	-.035		-.117	.089	
		2.450			.138			-.316
123								
	1	.000			.113			-.123
		.000	-.032	.024		-.058	.087	
		2.450	-.032	-.054		-.058	-.054	
		2.450			.113			-.123
124								
	1	.000			-.534			.028
		.600	-.417	.662		-.079	-.048	
		3.000	-.417	-.339		-.079	-.237	
		3.000			-.534			.028
125								
	1	.000			-.417			-.007
		.000	-.005	-.023		.059	-.149	
		3.900	-.005	-.045		.059	.083	
		3.900			-.417			-.007
126								
	1	.000			.606			
		.300	.000	.000		.000	.000	
		2.100	.000	.000		.000	.000	
		2.400			.606			
127								
	1	.000			-.977			
		.000	.000	.000		.000	.000	
		3.310	.000	.000		.000	.000	
		3.310			-.977			
128								
	1	.000			-.398			-.018

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.053	-.098		.011	-.029	
		5.345	.053	.184		.011	.033	
		5.345			-.398			-.018
129								
	1	.000			.429			-.017
		.000	-.475	.704		.097	-.148	
		2.720	-.475	-.587		.097	.117	
		2.720			.429			-.017
130								
	1	.000			1.347			-.020
		.000	-.558	.782		.091	-.124	
		2.720	-.558	-.735		.091	.124	
		2.720			1.347			-.020
131								
	1	.000			2.436			-.021
		.000	-.644	.893		.108	-.147	
		2.720	-.644	-.860		.108	.147	
		2.720			2.436			-.021
132								
	1	.000			3.681			-.021
		.000	-.721	.987		.117	-.156	
		2.720	-.721	-.976		.117	.162	
		2.720			3.681			-.021
133								
	1	.000			5.025			-.019
		.000	-.755	1.014		.118	-.153	
		2.720	-.755	-1.041		.118	.167	
		2.720			5.025			-.019
134								
	1	.000			6.365			-.016
		.000	-.721	.941		.107	-.133	
		2.720	-.721	-1.021		.107	.157	
		2.720			6.365			-.016
135								
	1	.000			7.542			-.011
		.000	-.584	.723		.080	-.091	
		2.720	-.584	-.866		.080	.126	
		2.720			7.542			-.011
136								
	1	.000			8.360			-.006
		.000	-.369	.358		.036	-.026	
		2.720	-.369	-.645		.036	.072	
		2.720			8.360			-.006

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
137								
	1	.000			.319			-.027
		.000	-.812	1.165		.143	-.215	
		2.720	-.812	-1.045		.143	.174	
		2.720			.319			-.027
138								
	1	.000			.514			-.020
		.000	-.902	1.240		.129	-.176	
		2.720	-.902	-1.213		.129	.174	
		2.720			.514			-.020
139								
	1	.000			.622			-.020
		.000	-1.023	1.402		.133	-.182	
		2.720	-1.023	-1.380		.133	.179	
		2.720			.622			-.020
140								
	1	.000			.642			-.020
		.000	-1.115	1.520		.132	-.181	
		2.720	-1.115	-1.513		.132	.179	
		2.720			.642			-.020
141								
	1	.000			.570			-.019
		.000	-1.143	1.546		.124	-.168	
		2.720	-1.143	-1.563		.124	.170	
		2.720			.570			-.019
142								
	1	.000			.415			-.017
		.000	-1.069	1.428		.104	-.138	
		2.720	-1.069	-1.480		.104	.144	
		2.720			.415			-.017
143								
	1	.000			.209			-.012
		.000	-.850	1.108		.075	-.094	
		2.720	-.850	-1.203		.075	.111	
		2.720			.209			-.012
144								
	1	.000			-.001			.002
		.000	-.470	.546		.020	-.016	
		2.720	-.470	-.733		.020	.039	
		2.720			-.001			.002
145								
	1	.000			-.314			-.025

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.692	.978		.061	-.094	
		2.720	-.692	-.903		.061	.073	
		2.720			-.314			-.025
146								
	1	.000			-.412			-.021
		.000	-.816	1.120		.064	-.090	
		2.720	-.816	-1.099		.064	.084	
		2.720			-.412			-.021
147								
	1	.000			-.402			-.021
		.000	-.953	1.303		.060	-.084	
		2.720	-.953	-1.290		.060	.079	
		2.720			-.402			-.021
148								
	1	.000			-.289			-.021
		.000	-1.067	1.450		.056	-.079	
		2.720	-1.067	-1.453		.056	.074	
		2.720			-.289			-.021
149								
	1	.000			-.077			-.020
		.000	-1.118	1.506		.049	-.069	
		2.720	-1.118	-1.534		.049	.065	
		2.720			-.077			-.020
150								
	1	.000			.212			-.017
		.000	-1.066	1.419		.039	-.054	
		2.720	-1.066	-1.480		.039	.051	
		2.720			.212			-.017
151								
	1	.000			.529			-.012
		.000	-.862	1.122		.027	-.037	
		2.720	-.862	-1.222		.027	.036	
		2.720			.529			-.012
152								
	1	.000			.790			.000
		.000	-.473	.555		.012	-.014	
		2.720	-.473	-.731		.012	.018	
		2.720			.790			.000
153								
	1	.000			-.064			-.025
		.000	-.186	.254		-.034	-.003	
		2.720	-.186	-.253		-.034	-.095	
		2.720			-.064			-.025

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
154								
	1	.000			-.546			-.054
		.000	-.251	.341		-.165	-.066	
		2.720	-.251	-.341		-.165	-.514	
		2.720			-.546			-.054
155								
	1	.000			-1.201			-.058
		.000	-.307	.415		-.154	-.480	
		2.720	-.307	-.419		-.154	-.897	
		2.720			-1.201			-.058
156								
	1	.000			-2.019			-.056
		.000	-.356	.480		-.138	-.860	
		2.720	-.356	-.487		-.138	-1.235	
		2.720			-2.019			-.056
157								
	1	.000			-2.965			-.051
		.000	-.383	.514		-.117	-1.197	
		2.720	-.383	-.527		-.117	-1.517	
		2.720			-2.965			-.051
158								
	1	.000			-3.961			-.041
		.000	-.373	.498		-.086	-1.482	
		2.720	-.373	-.517		-.086	-1.717	
		2.720			-3.961			-.041
159								
	1	.000			-4.881			-.031
		.000	-.308	.407		-.063	-1.687	
		2.720	-.308	-.432		-.063	-1.858	
		2.720			-4.881			-.031
160								
	1	.000			-5.541			-.026
		.000	-.164	.207		-.122	-1.838	
		2.720	-.164	-.238		-.122	-2.169	
		2.720			-5.541			-.026
161								
	1	.000			.134			-.022
		.000	-.737	1.088		.128	-.184	
		2.720	-.737	-.917		.128	.163	
		2.720			.134			-.022
162								
	1	.000			.494			-.021

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.724	1.004		.133	-.182	
		2.720	-.724	-.967		.133	.179	
		2.720			.494			-.021
163								
	1	.000			.917			-.021
		.000	-.814	1.128		.138	-.188	
		2.720	-.814	-1.087		.138	.187	
		2.720			.917			-.021
164								
	1	.000			1.414			-.021
		.000	-.877	1.201		.142	-.194	
		2.720	-.877	-1.183		.142	.194	
		2.720			1.414			-.021
165								
	1	.000			1.962			-.020
		.000	-.889	1.200		.137	-.185	
		2.720	-.889	-1.218		.137	.189	
		2.720			1.962			-.020
166								
	1	.000			2.524			-.017
		.000	-.827	1.087		.120	-.159	
		2.720	-.827	-1.163		.120	.167	
		2.720			2.524			-.017
167								
	1	.000			3.028			-.012
		.000	-.633	.800		.084	-.110	
		2.720	-.633	-.921		.084	.118	
		2.720			3.028			-.012
168								
	1	.000			3.441			-.005
		.000	-.560	.507		.084	-.061	
		2.720	-.560	-1.016		.084	.168	
		2.720			3.441			-.005
169								
	1	.000			.222			-.021
		.000	-.968	1.395		.018	-.029	
		2.720	-.968	-1.239		.018	.020	
		2.720			.222			-.021
170								
	1	.000			.523			-.021
		.000	-.974	1.339		.035	-.050	
		2.720	-.974	-1.310		.035	.045	
		2.720			.523			-.021

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
171								
	1	.000			.851			-.021
		.000	-1.086	1.491		.034	-.047	
		2.720	-1.086	-1.462		.034	.045	
		2.720			.851			-.021
172								
	1	.000			1.233			-.021
		.000	-1.165	1.592		.035	-.049	
		2.720	-1.165	-1.578		.035	.047	
		2.720			1.233			-.021
173								
	1	.000			1.647			-.020
		.000	-1.178	1.595		.035	-.048	
		2.720	-1.178	-1.609		.035	.046	
		2.720			1.647			-.020
174								
	1	.000			2.063			-.017
		.000	-1.092	1.456		.031	-.041	
		2.720	-1.092	-1.513		.031	.042	
		2.720			2.063			-.017
175								
	1	.000			2.435			-.012
		.000	-.833	1.093		.021	-.030	
		2.720	-.833	-1.173		.021	.027	
		2.720			2.435			-.012
176								
	1	.000			2.685			-.007
		.000	-.687	.740		.036	-.031	
		2.720	-.687	-1.127		.036	.067	
		2.720			2.685			-.007
177								
	1	.000			2.287			-.162
		.000	-1.872	3.030		-.267	-.020	
		2.720	-1.872	-2.061		-.267	-.746	
		2.720			2.287			-.162
178								
	1	.000			5.062			-.188
		.000	-1.590	2.255		-.399	-.761	
		2.720	-1.590	-2.070		-.399	-1.845	
		2.720			5.062			-.188
179								
	1	.000			8.452			-.188

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-1.976	2.827		-.437	-1.856	
		2.720	-1.976	-2.546		-.437	-3.046	
		2.720			8.452			-.188
180								
	1	.000			12.513			-.185
		.000	-2.202	3.046		-.430	-3.057	
		2.720	-2.202	-2.942		-.430	-4.227	
		2.720			12.513			-.185
181								
	1	.000			17.048			-.172
		.000	-2.315	3.074		-.394	-4.239	
		2.720	-2.315	-3.223		-.394	-5.311	
		2.720			17.048			-.172
182								
	1	.000			21.685			-.144
		.000	-2.224	2.760		-.328	-5.322	
		2.720	-2.224	-3.289		-.328	-6.215	
		2.720			21.685			-.144
183								
	1	.000			25.829			-.099
		.000	-1.798	1.947		-.294	-6.224	
		2.720	-1.798	-2.944		-.294	-7.024	
		2.720			25.829			-.099
184								
	1	.000			28.559			-.038
		.000	-1.175	.595		-.449	-7.024	
		2.720	-1.175	-2.601		-.449	-8.247	
		2.720			28.559			-.038
185								
	1	.000			-3.048			-.188
		.000	2.374	4.995		-.173	.134	
		2.720	2.374	11.451		-.173	-.336	
		2.720			-3.048			-.188
186								
	1	.000			-6.990			-.180
		.000	-1.962	17.704		-.053	-.188	
		2.720	-1.962	12.366		-.053	-.333	
		2.720			-6.990			-.180
187								
	1	.000			-11.632			-.177
		.000	-4.687	19.738		-.107	-.176	
		2.720	-4.687	6.990		-.107	-.467	
		2.720			-11.632			-.177

FRAME ELEMENT FORCES

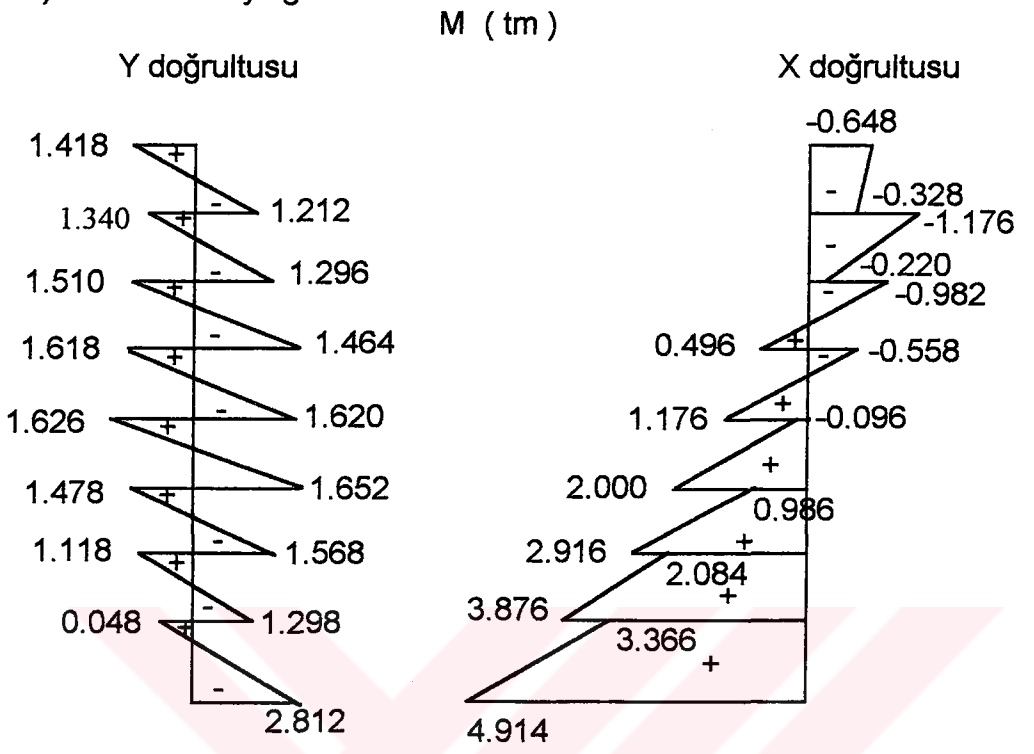
ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
188								
	1	.000			-17.049			-.175
		.000	-7.089	15.574		-.192	-.301	
		2.720	-7.089	-3.707		-.192	-.824	
		2.720			-17.049			-.175
189								
	1	.000			-22.983			-.165
		.000	-9.317	5.683		-.266	-.654	
		2.720	-9.317	-19.661		-.266	-1.377	
		2.720			-22.983			-.165
190								
	1	.000			-28.964			-.138
		.000	-11.658	-10.209		-.311	-1.216	
		2.720	-11.658	-41.918		-.311	-2.063	
		2.720			-28.964			-.138
191								
	1	.000			-34.248			-.088
		.000	-14.538	-33.577		-.240	-1.930	
		2.720	-14.538	-73.121		-.240	-2.584	
		2.720			-34.248			-.088
192								
	1	.000			-37.770			-.022
		.000	-17.352	-67.588		.116	-2.503	
		2.720	-17.352	-114.786		.116	-2.187	
		2.720			-37.770			-.022
193								
	1	.000			.268			-.077
		.000	-.512	.749		.026	-.246	
		2.720	-.512	-.642		.026	-.174	
		2.720			.268			-.077
194								
	1	.000			.764			-.074
		.000	-.506	.699		.165	-.505	
		2.720	-.506	-.678		.165	-.056	
		2.720			.764			-.074
195								
	1	.000			1.301			-.079
		.000	-.569	.785		.225	-.443	
		2.720	-.569	-.762		.225	.170	
		2.720			1.301			-.079
196								
	1	.000			1.886			-.078

FRAME ELEMENT FORCES

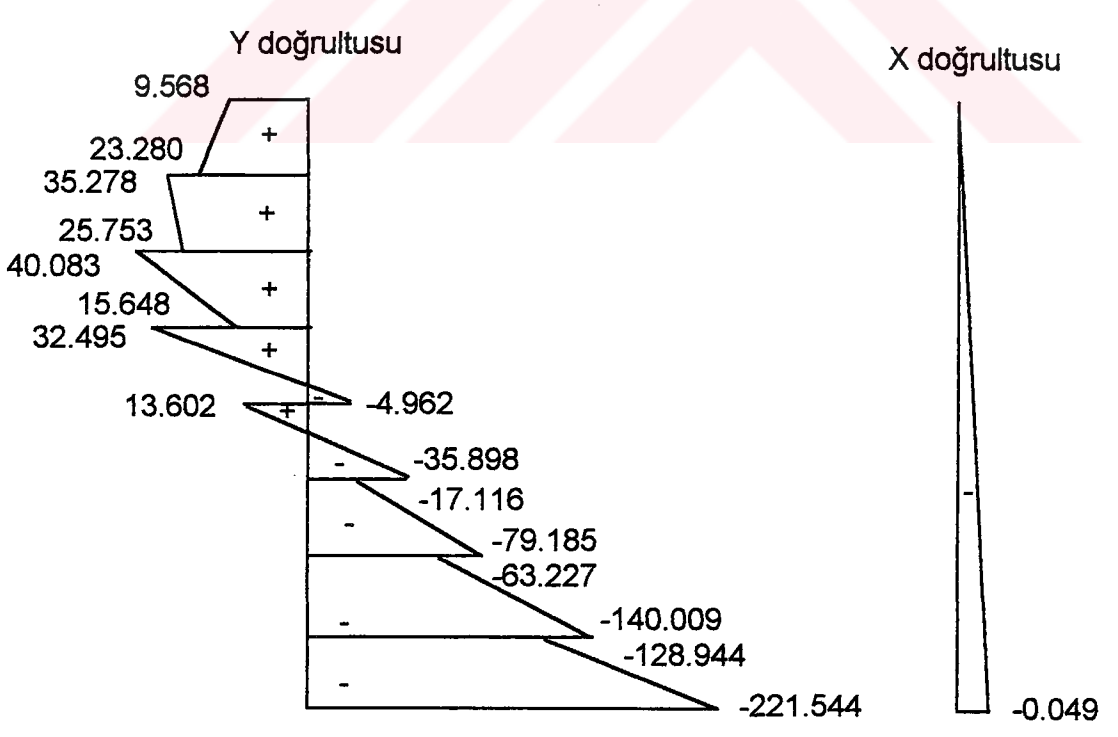
ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-.612	.837		.277	-.266	
		2.720	-.612	-.829		.277	.487	
		2.720			1.886			-.078
197	----------							
	1	.000			2.494			-.071
		.000	-.621	.838		.314	.027	
		2.720	-.621	-.852		.314	.880	
		2.720			2.494			-.071
198	----------							
	1	.000			3.085			-.059
		.000	-.576	.760		.327	.438	
		2.720	-.576	-.807		.327	1.327	
		2.720			3.085			-.059
199	----------							
	1	.000			3.595			-.039
		.000	-.456	.573		.311	.958	
		2.720	-.456	-.666		.311	1.803	
		2.720			3.595			-.039
200	----------							
	1	.000			3.941			-.024
		.000	-.243	.245		.267	1.573	
		2.720	-.243	-.416		.267	2.299	
		2.720			3.941			-.024

3.7.4. Y Doğrultusunda Kesit Tesirleri Diyagramları

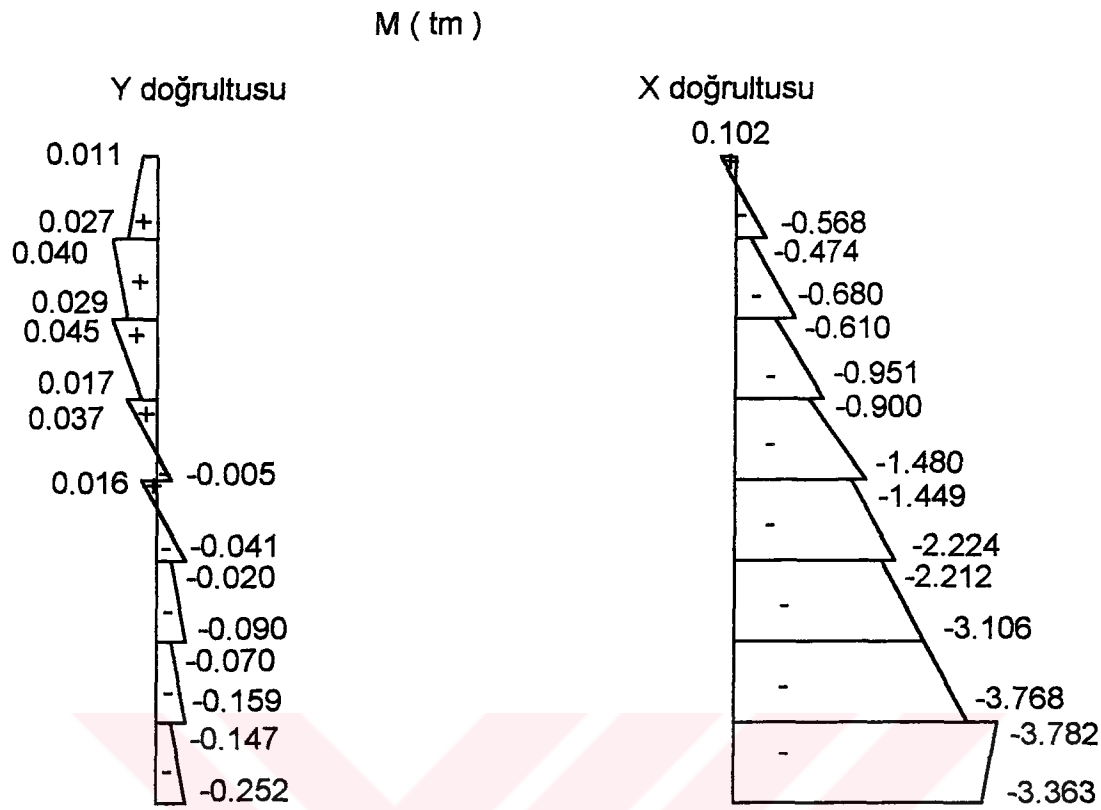
A) Moment Diyagramları



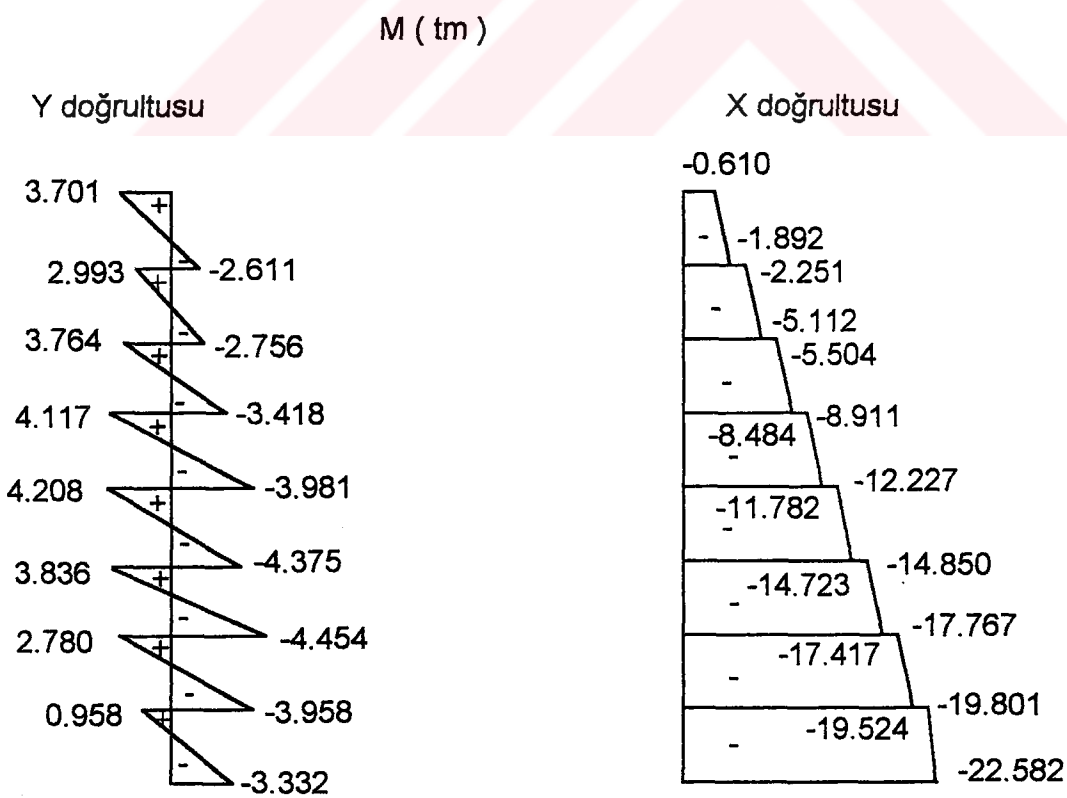
Şekil 3.52. P1 perdesi moment diyagramları



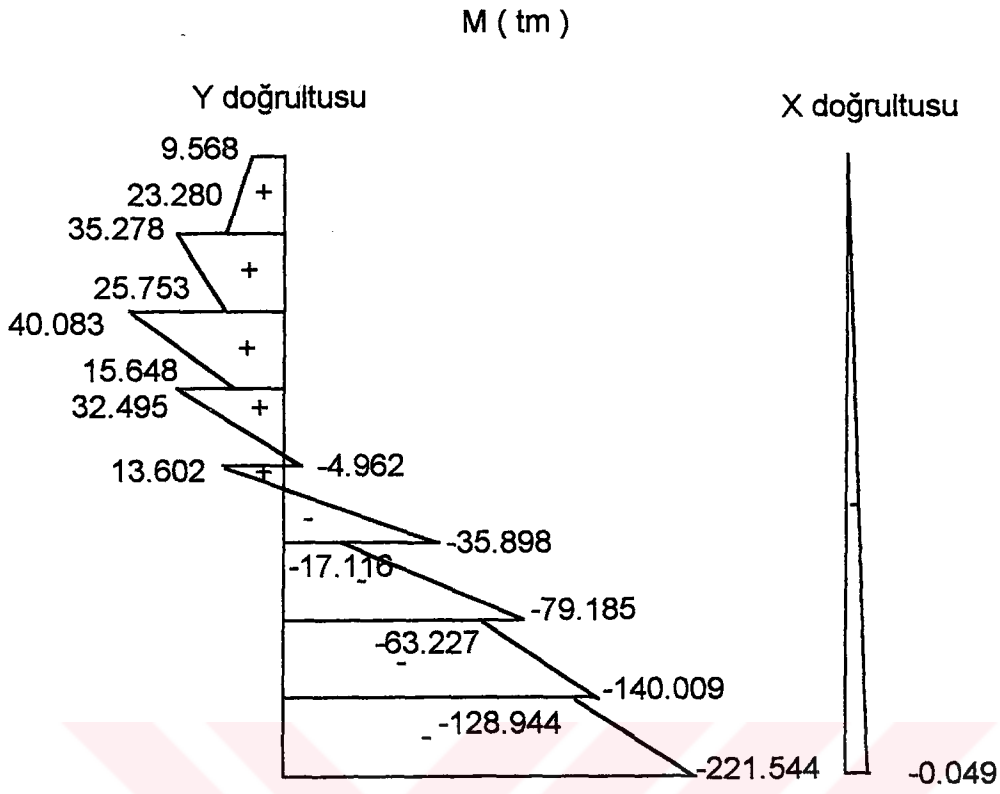
Şekil 3.53. P3 (I) perdesi moment diyagramları



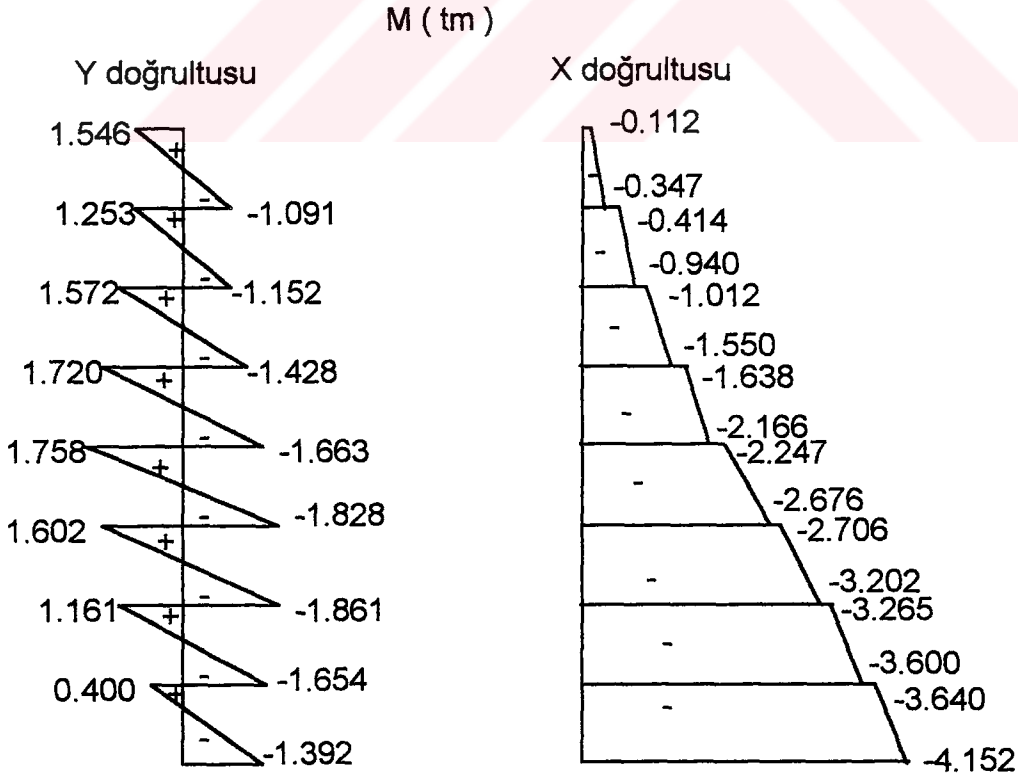
Şekil 3.54. P3 (II) perdesi moment diyagramları



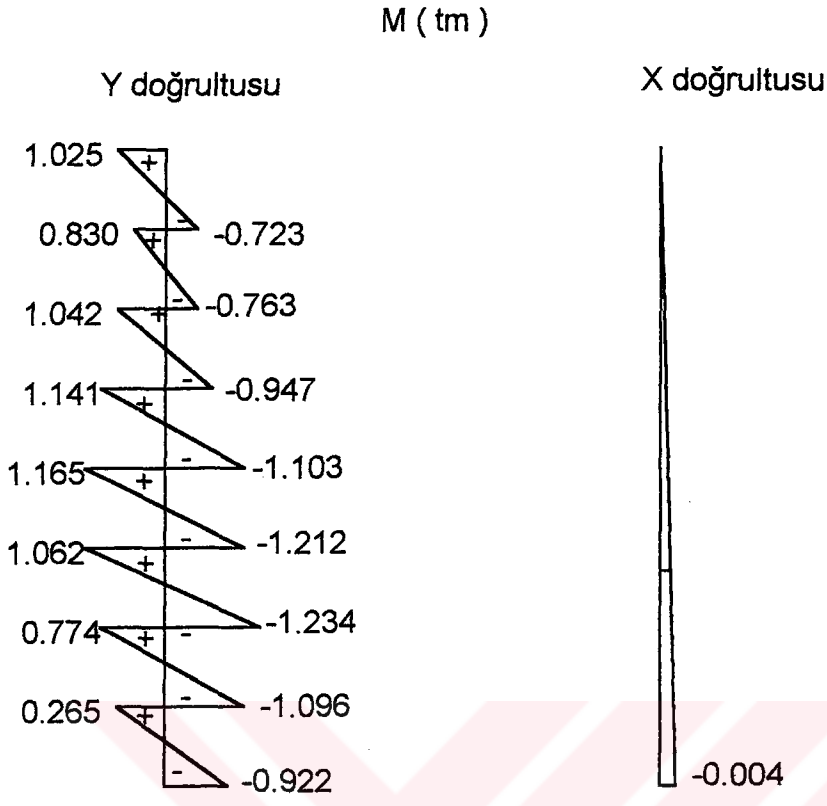
Şekil 3.55. P2 perdesi moment diyagramları



Şekil 3.56. P4 perdesi moment diyagramları

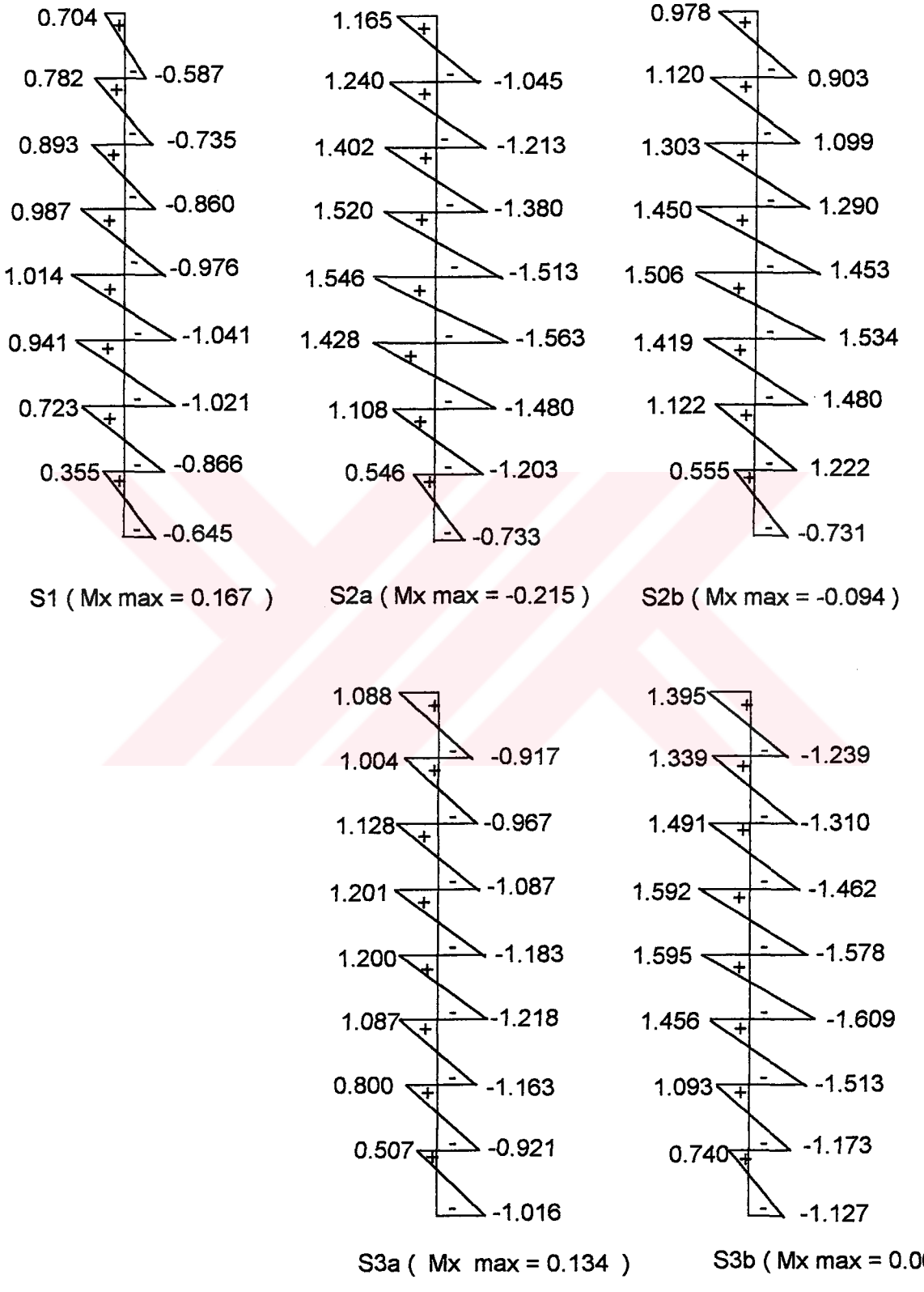


Şekil 3.57. P6 perdesi moment diyagramları

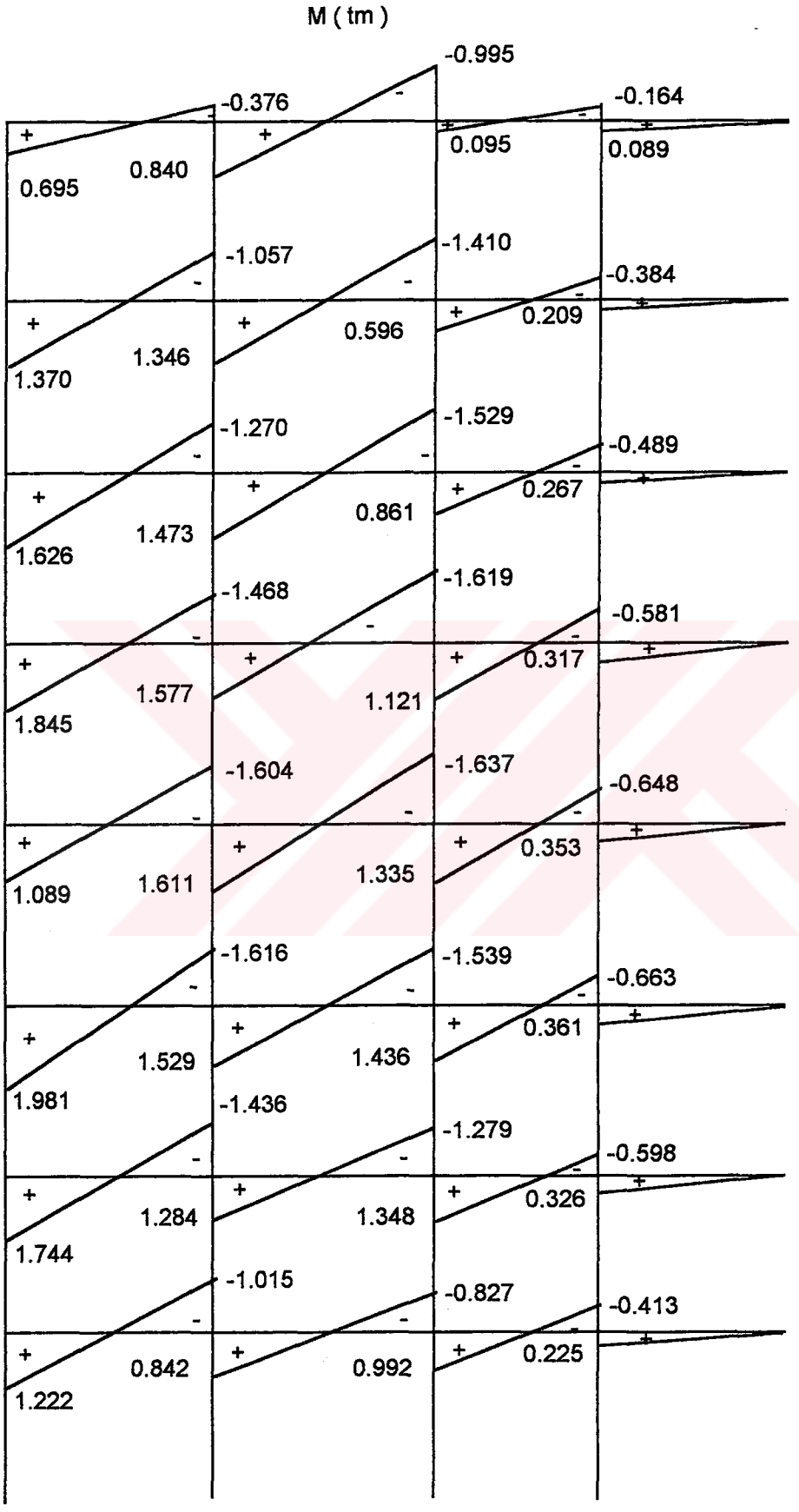


Şekil 3.58. P5 perdesi moment diyagramları

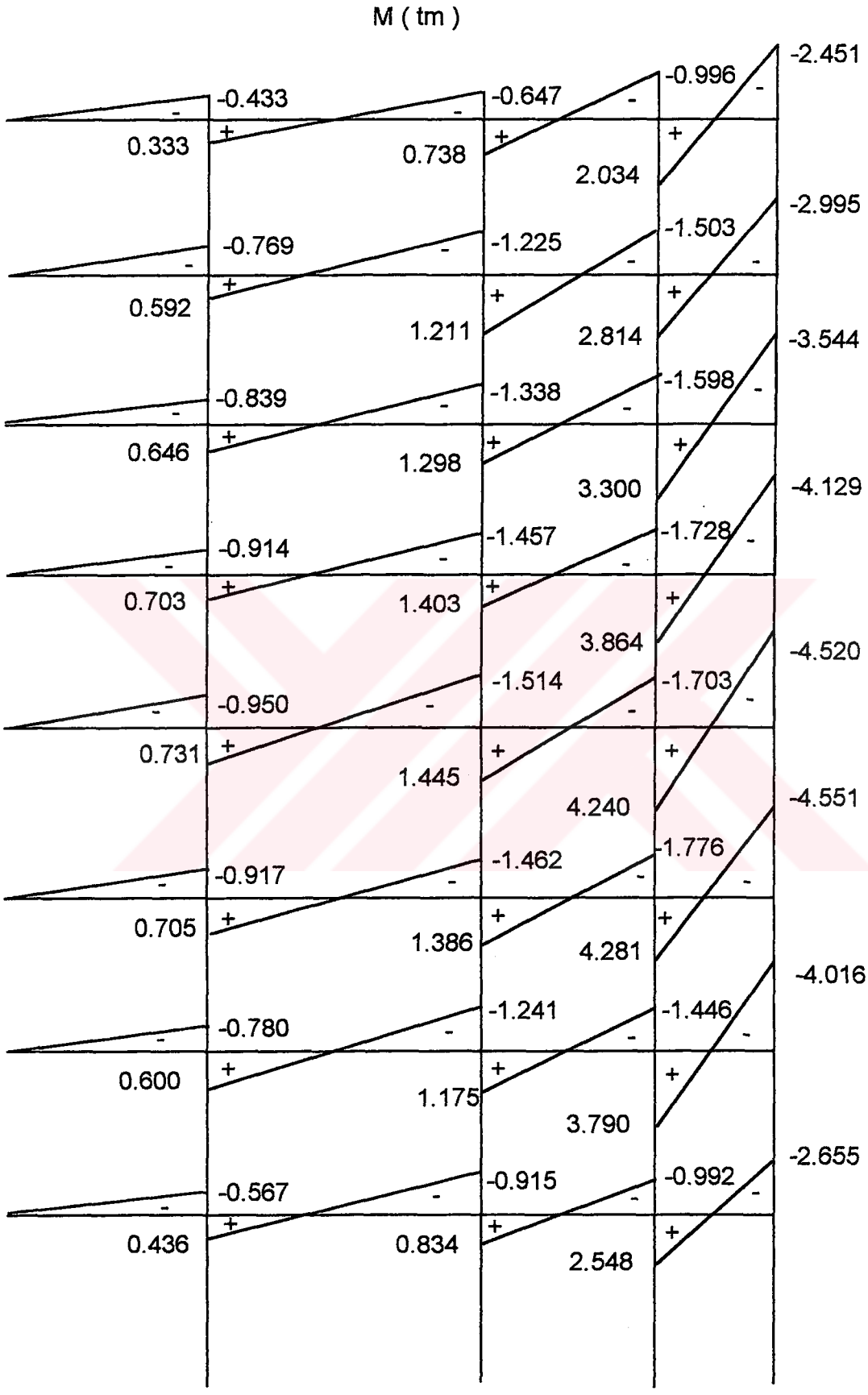
M (tm)



Şekil 3.59. Kolon moment diyagramları

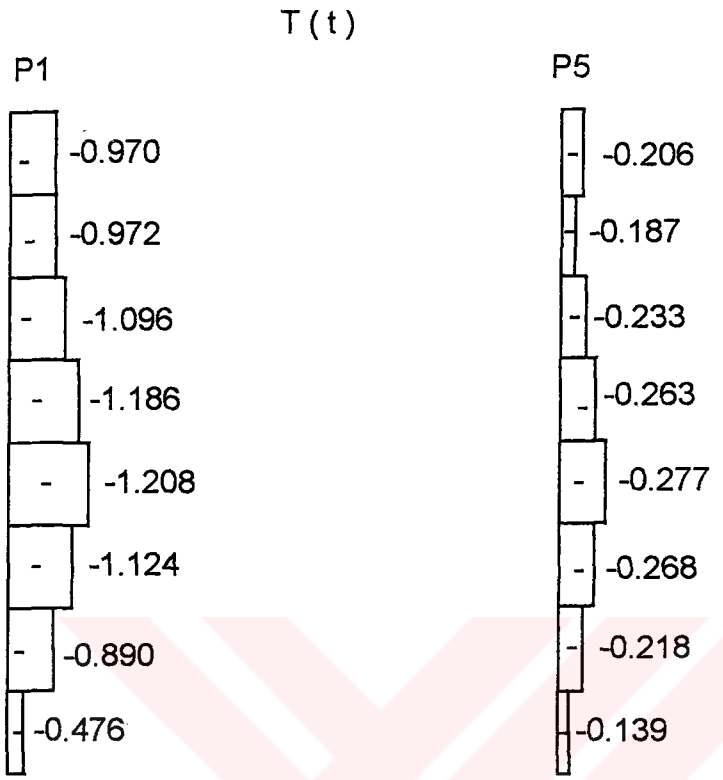


Şekil 3.60. E-E aksı kirişleri moment diyagramları

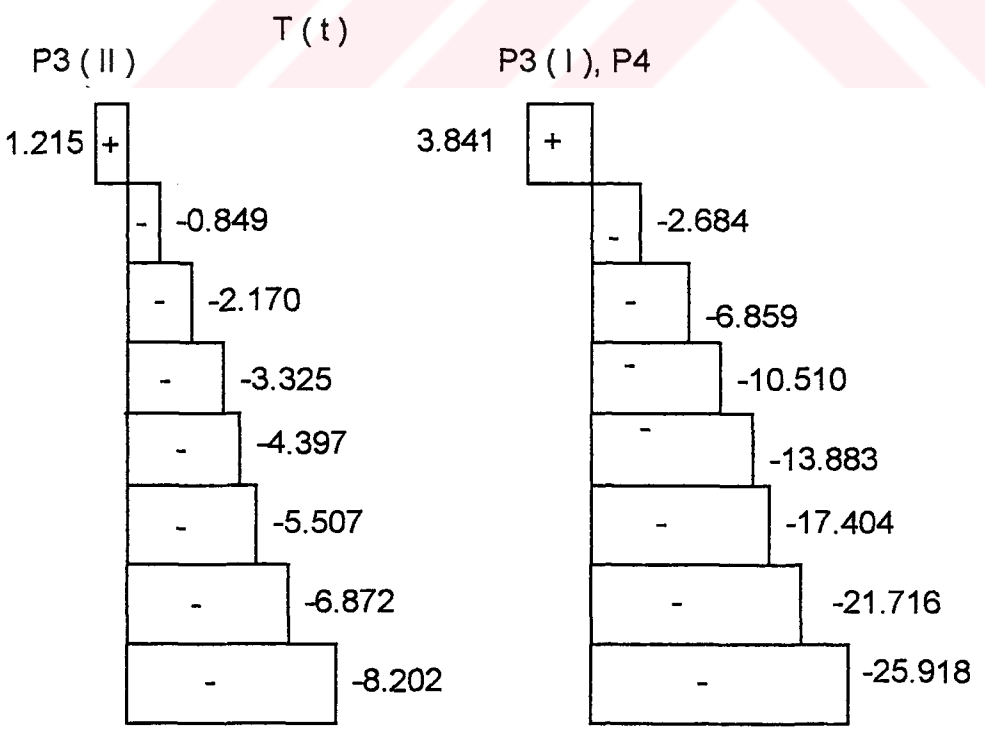


Şekil 3.61. D-D aksı kolon şeridi moment diyagramları

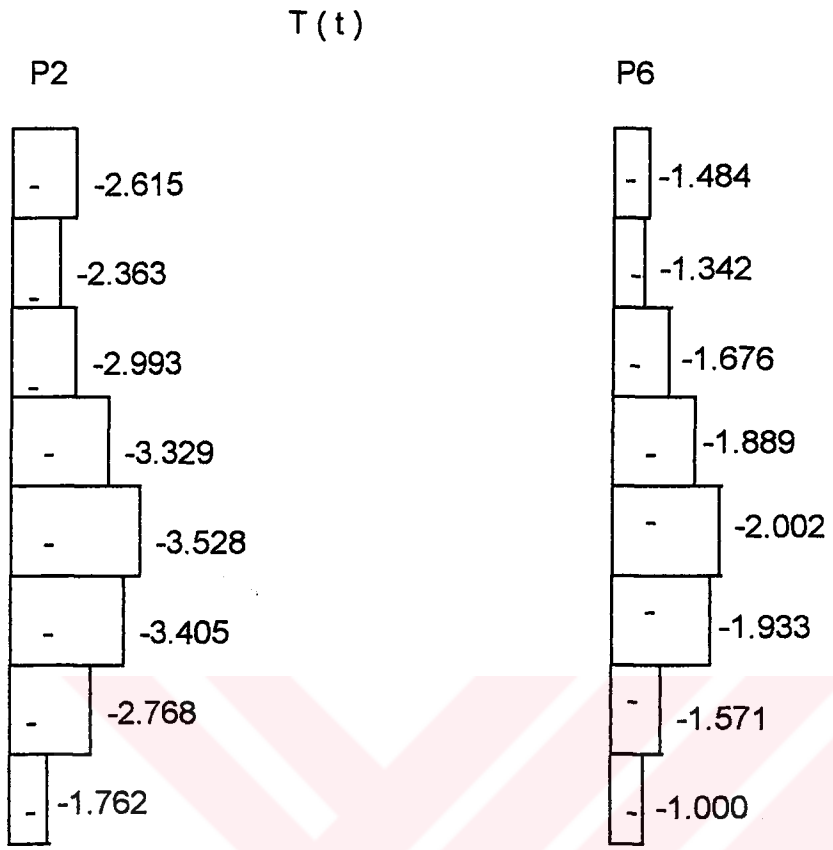
B) Kesme Kuvveti Diyagramları



Şekil 3.62. P1 ve P5 perdeleri kesme kuvveti diyagramları

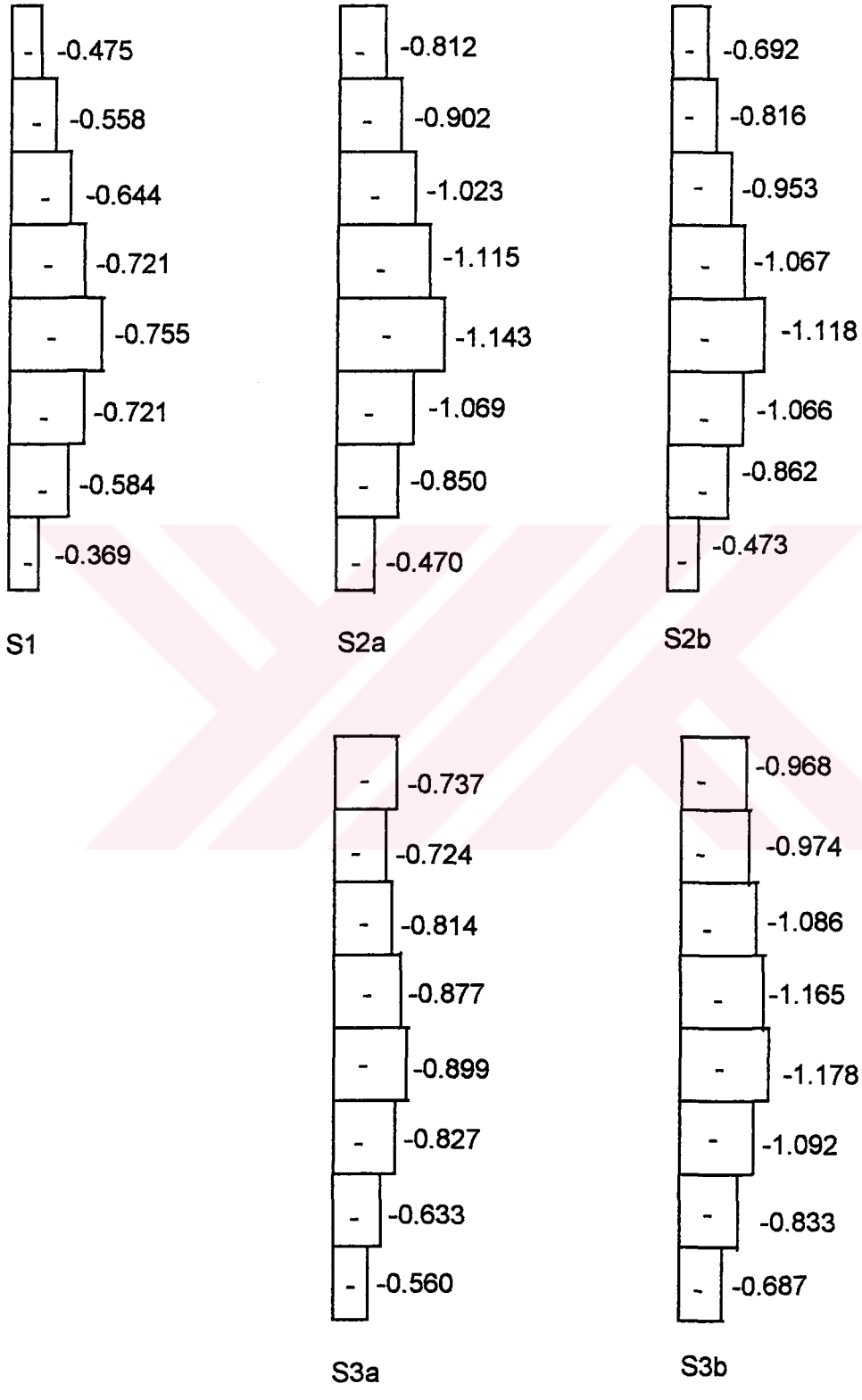


Şekil 3.63.P3 (II) , P (I) ve P4 perdeleri kesme kuvveti diyagramları



Şekil 3.64. P2 ve P6 perdeleri kesme kuvveti diyagramları

T (t)



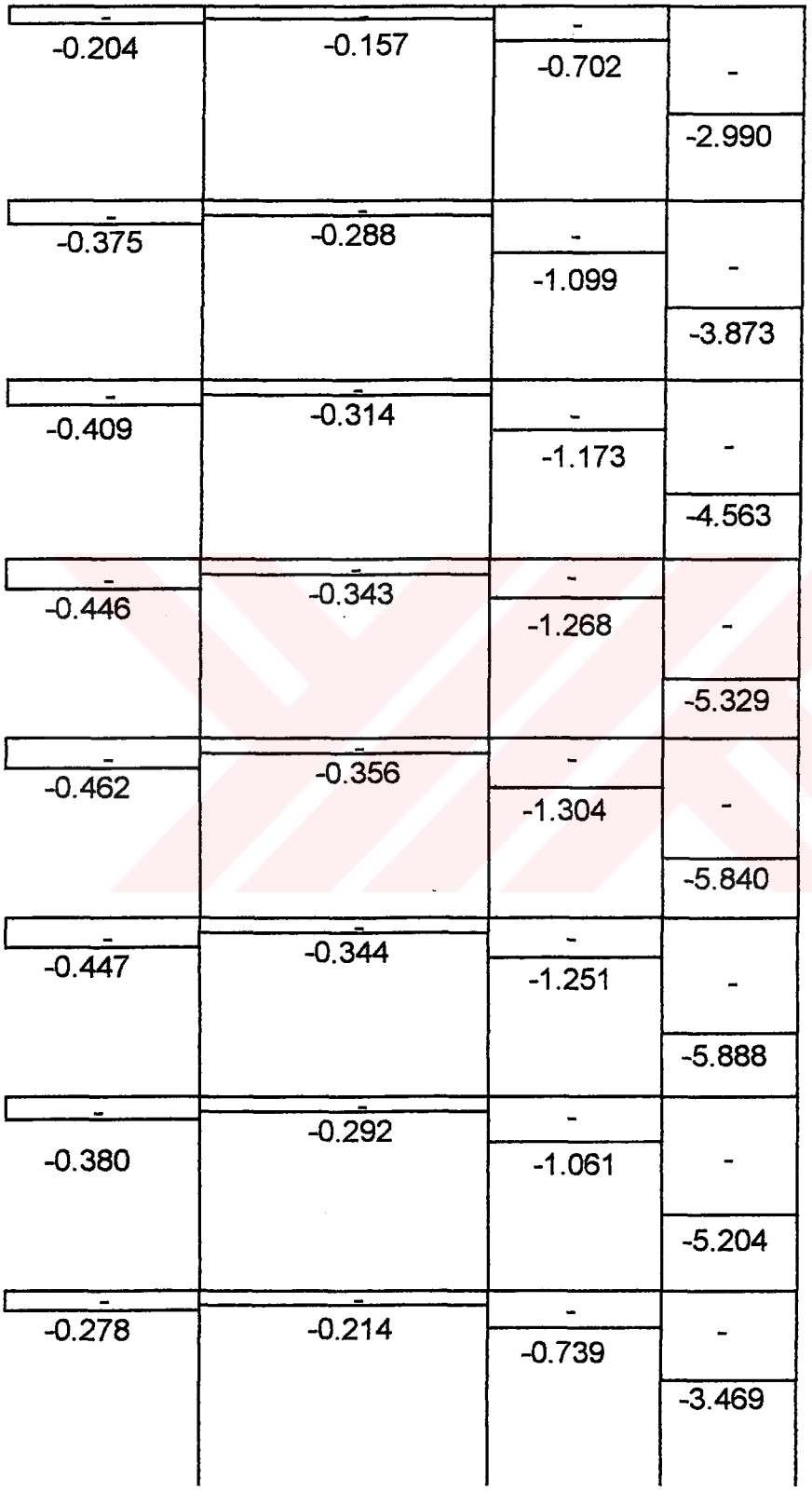
Şekil 3.65. Kolon kesme kuvveti diyagramları

T (t)

-	-	-	-
-0.357	-0.476	-0.024	-0.040
-	-	-	-
-0.809	-0.707	-0.178	-0.303
-	-	-	-
-0.965	-0.770	-0.242	-0.413
-	-	-	-
-1.105	-0.819	-0.303	-0.515
-	-	-	-
-1.197	-0.833	-0.300	-0.595
-	-	-	-
-1.199	-0.787	-0.369	-0.627
-	-	-	-
-1.060	-0.657	-0.341	-0.579
-	-	-	-
-0.746	-0.428	-0.244	-0.416

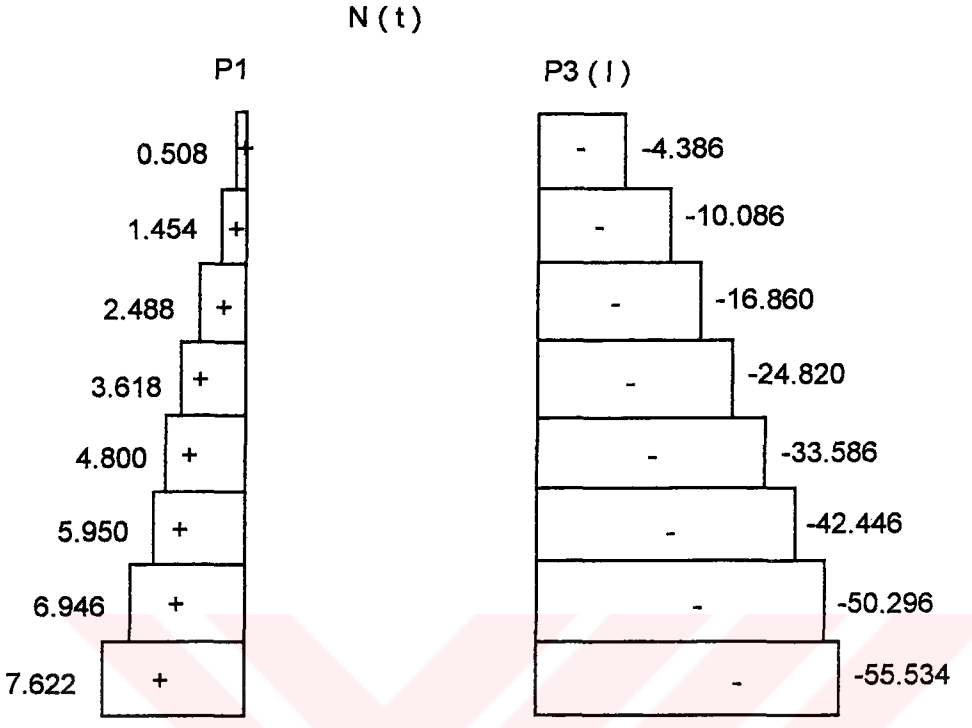
Şekil 3.66. E-E aksı kirişleri kesme kuvveti diyagramları

T (t)

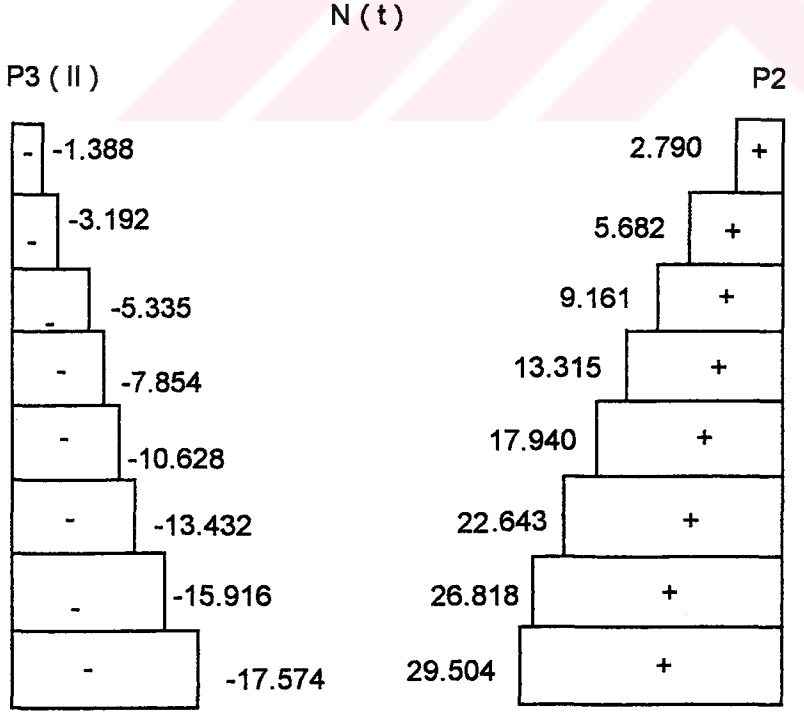


Şekil 3.67. D-D aksı kolon şeridi kesme kuvveti diyagramları

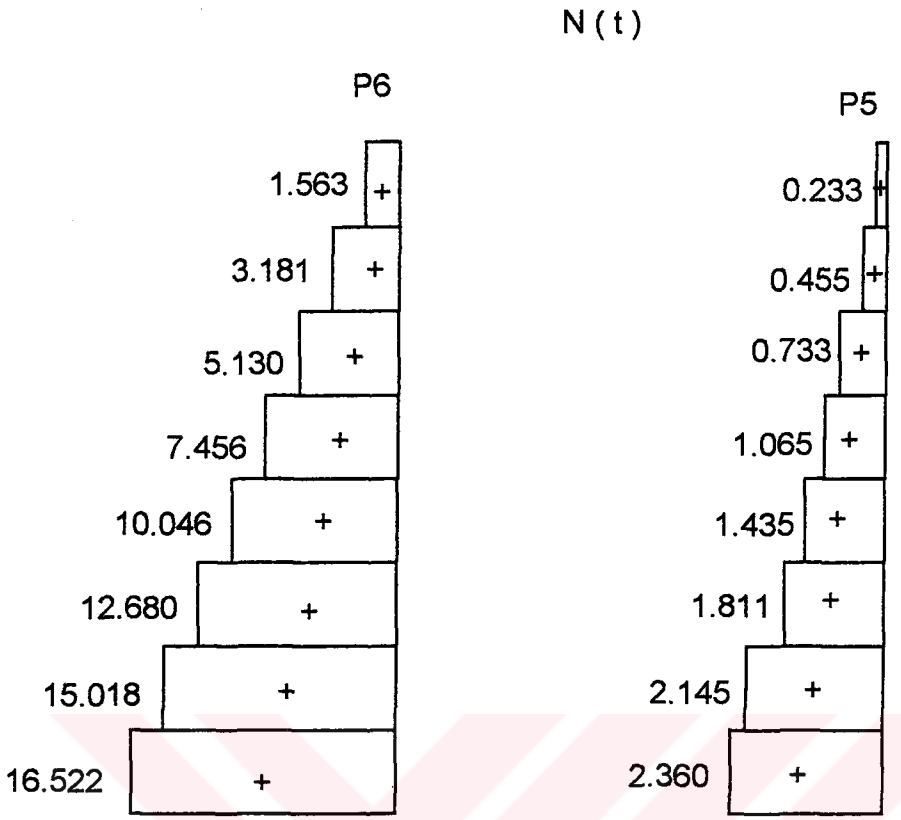
C) Normal Kuvvet Diyagramları



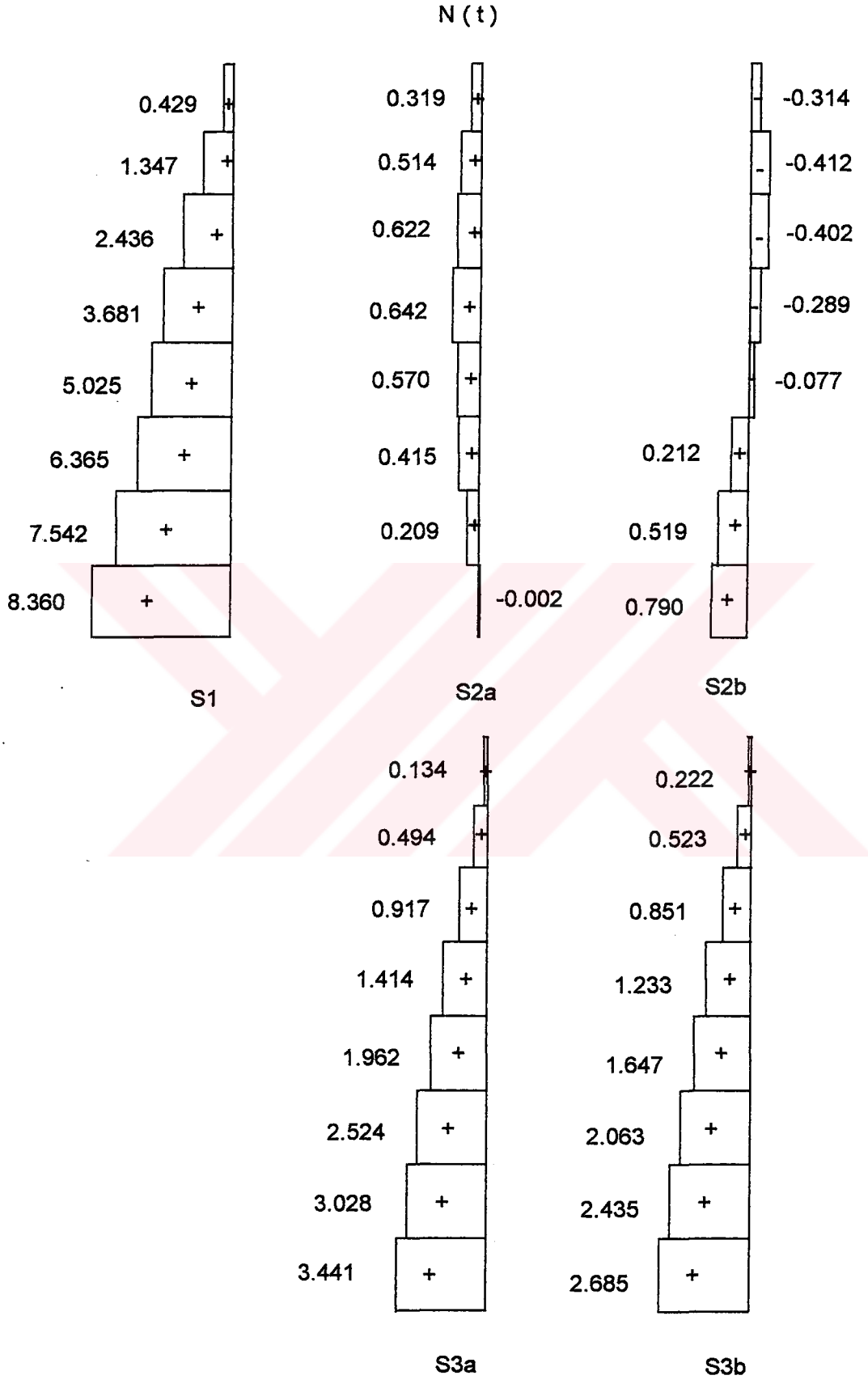
Şekil 3.68. P1 ve P3 (I) perdeleri normal kuvvet diyagramları



Şekil 3.69. P3 (II) ve P2 perdeleri normal kuvvet diyagramları

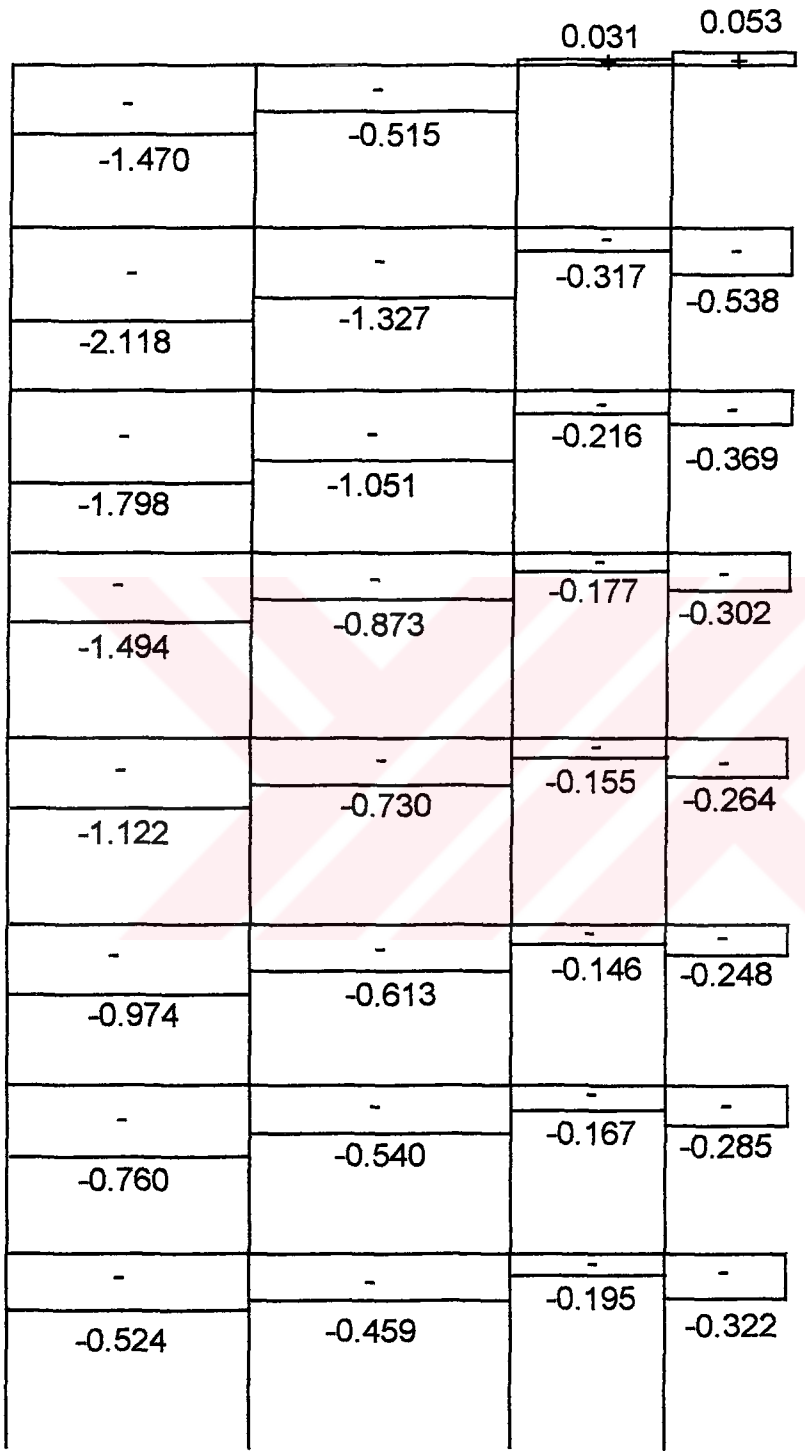


Şekil 3.70. P6 ve P5 perdeleri normal kuvvet diyagramları

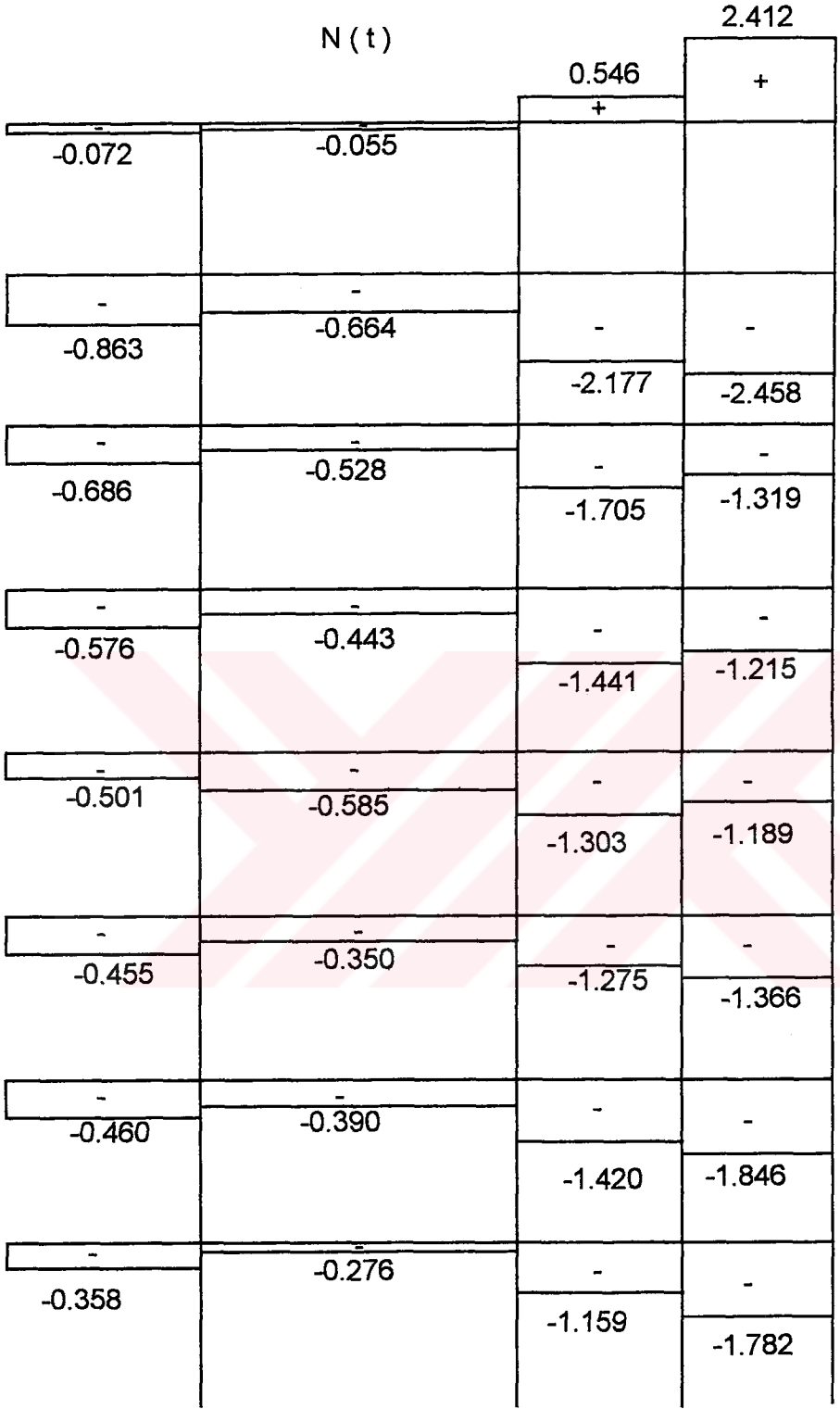


Şekil 3.71. Kolon normal kuvvet diyagramları

N (t)



Şekil 3.72. E-E aksı kirişleri normal kuvvet diyagramları



Şekil 3.73. D-D aksı kolon şeridi normal kuvvet diyagramları

3.8. Bodrum Perdesi Etkisi

Bodrum kenarlarının perde olmasıdan dolayı bu bölgedeki düşey taşıyıcı perdelerde büyük kesme kuvveti oluşmaktadır. Bu kısımda bu etki incelenmiştir.

```
BODRUM KISMI PERDE KUVVETLERİ(X)
SYSTEM
L=1

RESTRAINTS
2,4,2          R=0,1,0,0,0,0
1,3,2          R=1,1,1,1,1,1

JOINTS
1    X=0       Y=0     Z=0
2    X=0       Y=0     Z=2.72
3    X=5       Y=0     Z=0
4    X=5       Y=0     Z=2.72

CONSTRAINTS
4  C=2,0,0,0,0,0

FRAME
NM=2
1      SH=R  T=10,0.40    E=3025000  G=1210000 W=0.
2      SH=R  T=5.21,0.4   E=3025000  G=1210000 W=0.
1  1   2  M=2  LP=2,0
2  3   4  M=1  LP=2,0

LOAD
2 F=54.1,0,0,0,734,0


 F R A M E   E L E M E N T   F O R C E S

ELT LOAD DIST     1-2 PLANE     AXIAL   1-3 PLANE   AXIAL
 ID COND ENDI  SHEAR    MOMENT  FORCE SHEAR   MOMENT TORQ
  1 ----------------------------------------------
     1   .000                     .000
         .000   59.993  570.818
        2.720   59.993  734.000
        2.720                     .000
  2 ----------------------------------------------
     1   .000                     .000
         .000 -114.093  310.334
        2.720 -114.093     .000
        2.720                     .000
```

```
BODRUM KISMI PERDE KUVVETLERİ(Y)
SYSTEM
L=1

RESTRAINTS
2,4,2          R=0,1,0,0,0,0
1,3,2          R=1,1,1,1,1,1

JOINTS
1    X=0       Y=0     Z=0
2    X=0       Y=0     Z=2.72
3    X=11.7    Y=0     Z=0
4    X=11.7    Y=0     Z=2.72

CONSTRAINTS
4  C=2,0,0,0,0,0

FRAME
NM=2
1      SH=R  T=23.4,0.40    E=3025000  G=1210000 W=0.
2      SH=R  T=3.16,0.45    E=3025000  G=1210000 W=0.
1  1  2  M=2  LP=2,0
2  3  4  M=1  LP=2,0

LOAD
2 F=68.24,0,0,0,443.08,0


F R A M E   E L E M E N T   F O R C E S

ELT LOAD DIST     1-2 PLANE      AXIAL   1-3 PLANE    AXIAL
 ID COND ENDI  SHEAR     MOMENT  FORCE SHEAR   MOMENT  TORQ
  1 ---------------------------------------------
     1   .000                     .000
         .000  107.736   150.037
        2.720  107.736   443.080
        2.720                     .000
  2 ---------------------------------------------
     1   .000                     .000
         .000 -175.976   478.656
        2.720 -175.976      .000
        2.720                     .000
```

BÖLÜM 4. KESİT HESAPLARI

4.1. Döşeme Betonarme Kesit Hesapları

Kirişsiz döşemelerde momentler kolon ve açıklık şeritlerine paylaştırılmaktadır. Kolon şeridi genişliği 1/4 l1 veya 1/4 l2' den küçüğü alınarak belirlenir. Açıklık şeridi iki aks arasından kolon şeridinin dışında kalan kısımdır.

Burada kolon şeritlerine yatay yükten gelen etkide dikkate alınarak en elverişsiz yük durumu elde edilmiştir.

4.1.1. Döşemenin X Doğrultusunda Kesit Hesapları

hf= 18 cm

d = 18-2 = 16 cm

kd= d /√ (10 Msd / b) ⇒ ks [4]

as= ks M / d

[d]: cm

[b]: m

[M]: tm

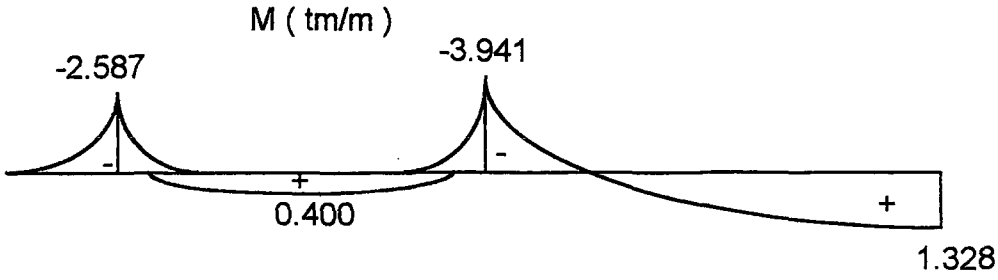
Malzeme BS 25 , BÇ I

Asmin = 0.002 x 16x100 ≅ 3.2 cm^2

* koyulan kesitlere minumum donatı konulmuştur.

Tablo 4.1. 2-2,1-1 aksları arası açıklık şeridi

Md tm/m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
0.222	10.74	5.30	0.755*	∅10/20 (3.93)		
-0.119	14.66	5.30	0.394*		∅10/40 (1.97)	
0.358	8.45	5.33	0.130*	∅10/20 (3.93)		
-0.040	25.29	5.30	0.132*	∅10/40 (1.97)		



Şekil 4.1. 2-2 aksı kolon şeridi elverişsiz moment değerleri

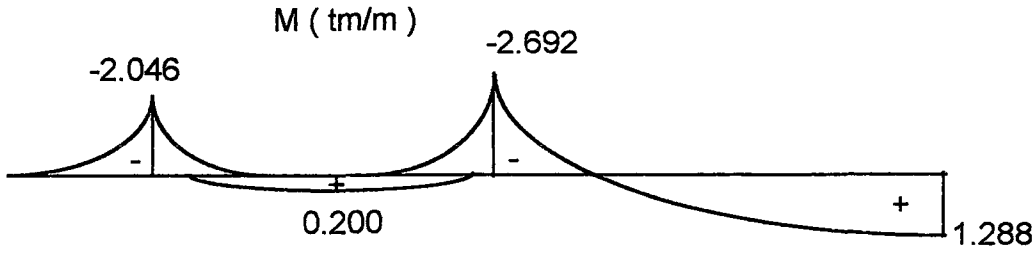
Tablo 4.2. 2-2 aksı kolon şeridi

Md tm/m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
-2.587	3.69	5.45	8.82		∅10/40 (1.97)	∅10/11 (7.14)
0.400	8.00	5.33	1.33*	∅10/20 (3.93)		
-3.942	2.99	5.55	13.67		∅10/40+∅10/35 (4.21)	∅10/11 (7.14)
1.328	4.39	5.39	4.47	∅10/17.5 (4.49)		

Mesnetlere ek donatı gerekmemektedir

Tablo 4.3. 2-2,3-3 aksları arası açıklık şeridi

Md tm/m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
-0.993	5.070	5.37	3.33		∅10/20 (3.93)	
-0.703	6.034	5.34	2.35*	∅10/20 (3.93)		
-0.492	7.213	5.35	1.66*		∅10/34+∅10/20 (6.24)	
1.354	4.348	5.39	4.56	∅10/17 (4.62)		



Şekil 4.2. 3-3 aksı kolon şeridi elverişsiz moment değerleri

Tablo 4.4. 3-3 aksı kolon şeridi

Md tm / m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
-2.046	3.56	5.45	6.86		∅10/40 (1.97)	∅10/16 (4.91)
0.200	11.31	5.30	0.66*	∅10/20 (3.93)		
-2.692	3.03	5.49	9.14		∅10/40+∅10/36 (4.15)	∅10/15.5 (5.07)
1.288	4.46	5.38	4.33	∅10/18 (4.36)		

Mesnetlere deprem`den dolayı ek donatı gerekmemektedir.

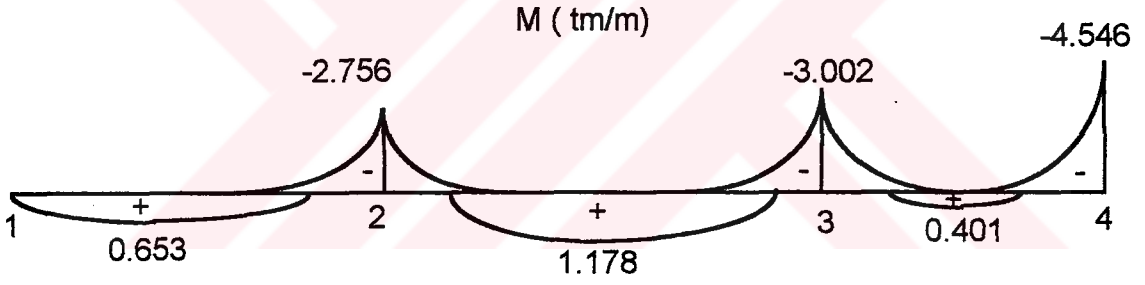
Tablo 4.5. 3-3,4-4 aksları arası açıklık şeridi

Md tm / m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
-1.116	4.78	5.42	3.78		∅10/20 (3.93)	
-0.152	12.98	5.30	0.51*	∅10/20 (3.93)		
-0.481	7.29	5.36	1.61*		∅10/20+∅10/40 (5.91)	
0.624	6.41	5.35	2.08*	∅10/20 (3.93)		

4.1.2. Döşemenin Y Doğrultusunda Kesit Hesapları

Tablo 4.6. E-E,D-D aksları arası açıklık şeridi

Md tm/m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
0.405	7.95	5.35	1.35*	∅10/20 (3.93)		
-0.972	5.13	5.38	3.27		∅10/40+∅10/40 (3.93)	
0.925	5.26	5.38	3.11	∅10/20 (3.93)		
-0.798	5.66	5.38	2.68*		∅10/40+∅10/40 (3.93)	
0.326	8.86	5.33	1.09*	∅10/20 (3.93)		



Şekil 4.3. D-D aksı kolon şeridi elverişsiz moment değerleri

Tablo 4.7. D-D aksı kolon şeridi

Md tm/m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
0.659	6.23	5.38	2.22*	∅10/20 (3.93)		
-2.756	3.04	5.50	9.38		∅10/40+∅10/40 (3.93)	∅10/14 (5.61)
1.178	4.66	5.39	3.93	∅10/20 (3.93)		

-3.002	2.92	5.50	10.17		∅10/40+∅10/40 (3.93)	∅10/12.5 (6.28)
0.401	7.99	5.32	1.33*	∅10/20 (3.93)		
-4.546	2.37	5.65	16.05		∅10/40 (1.97)	∅14/10.5 (14.66)

4 Mesnetine gereken ek alt mesnet donatısı hesabında üst donatı ihmal edilmiştir.

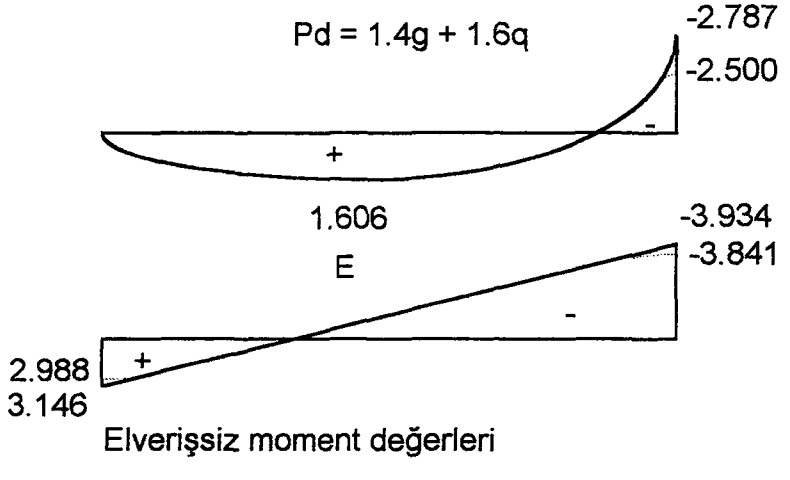
Md =4.281-(0.265/1.5)=4.104 ⇒ kd=2.48 ⇒ ks=5.60

As=14.36 cm^2 ⇒ mevcut ∅10/40 (1.97) ⇒ Ek ∅14/12 (12.83)

Tablo 4.8. C-C aksı kolon şeridi

Md tm/m	kd	ks	As cm2/m	Seçilen	Mevcut	Ek
-2.612	3.13	5.49	8.86	∅10/8.5 (3.24)		
0.835	5..64	5.38	2.81	∅10/20 (3.93)		
-2.256	3.37	5.49	7.74	∅10/10 (7.85)		

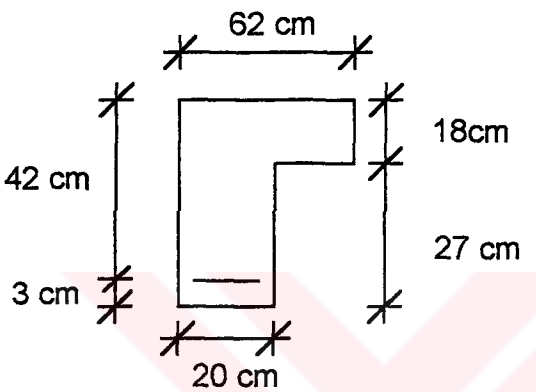
4.2. Kenar Kirişleri Kesit Hesapları



Şekil 4.4. 1-1 aksı kirişi

Tablo 4.9. 1-1 aksı kirişi moment değerleri

MI	0	+1.606	-2.600
ME	± 2.988		±3.841
Md	-2.988 +2.988	+1.606	-5.575 +1.241



Şekil 4.5. Açıklık şeridi tabla genişligi

Etkili tabla genişliği

b = bw + lp / 10 ≤ b1 + 6.hf

b = 20 + 413 / 10 ± 61.3 = 62 cm ≤ 20 + 6x18 = 128 cm

Msd = 1.606

kd = d / √(10 x msd / b)=42 / √ (10x1.606/0.62) =8.25⇒ kx = 0.05

x = 2.1 < 16 Oldugu için dikdörtgen kesit hesabı yapılacaktır.

ks = 5.32

As = 10x5.32x1.606 / 42 = 2.03 cm^2

Asmin = (12 / 1910) x 20x 42 = 5.28 cm^2

As < Asmin seçilen donatı 3 ∅ 16 (1 pilye + 2 düz) (6.03 cm^2)

Diğer kirişlerin açıklık momentleri daha küçük olduğu için tüm kirişler içinde aynı donatı kullanılacaktır.

As gövde = 0.08xAs = 0.08 x 2.03 = 0.163 cm^2 ⇒ 2 Ø 12

Mesnet donatısı hesabı

Sol mesnet

Mesnet momenti düzeltmesi

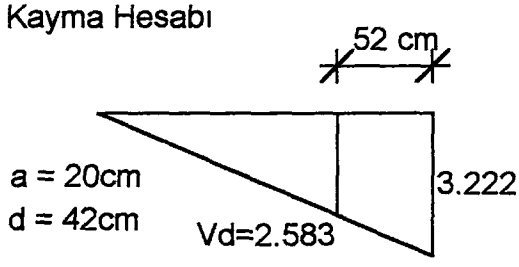
ΔM = 1.576 x 0.30 / 3 = 0.158

Md = M - ΔM = -3.146 + 0.158 = 2.988
kd = 42 / √ (10x2.988/0.20) = 3.43
ks = 5.47
As = 10x5.43x2.988 / 42 = 3.89 cm^2
Asmin = 5.28 cm^2 ⇒ (1 ∅ 16 mevcut + 2 ∅ 16 ek) (6.03 cm^2)

Mesnet alt kesiti için donatı gerekip gerekmediğinin denetimi
As = 4.02 cm^2
As'= 6.03 cm^2
0.85^2x250x20xX +6.03x302500x0.0035x(X-2) / X = 4.02x2200
X =2.25 cm
ε_s' =(2.25 - 2) x 0.0035 / 2.25 = 0.00038
σ_s'=ε_s'x E_s = 117.63 t
a = 1.9125 cm
Mn = 0.85x250x20x2.25x(42.225 / 2)+6.03x117.63x42 = 4.2 tm
Mesnette ek donatıya gerek yoktur.

Sağ mesnet
Mesnet moment düzeltmesi
ΔM= 3.859 x0.2 / 3 = 0.217 tm
M'= 5.792 - 0.217 = 5.574 tm
kd = 42 / √ (10x5.574 / 42) = 2.52 ⇒ ks = 5.69
As = 10x5.69x5.574 / 42 = 7.55 cm^2
1 ∅ 16 mevcut (pilye) +3 ∅ 16 ek (8.04)
Alt kısımına ek donatı gerekmez

Kayma Hesabı



Şekil 4.6. 1-1 aksı kirişi elverişsiz kesme kuvveti değerleri

Vcr = 0.65 x fctd x bw x d=0.65x11.5x20x42= 6279 kg = 6.279 t
Vr = 0.25 x fcd x bw x d=0.25x170x20x42= 35700 kg = 35.700 t
Vr > Vcr > Vd = 2.583 t minumum donatı konulacaktır.

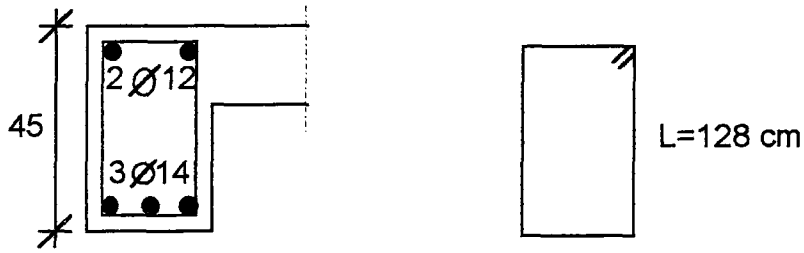
Aswmin = (0.15 fctd / fywd) S x b_w

S ≤ d / 2 , b , 20 cm =42 / 2 , 20, 20 ⇒ S = 20 cm

Aswmin = (0.15x11.5 / 1910) 20 x 20 = 0.361

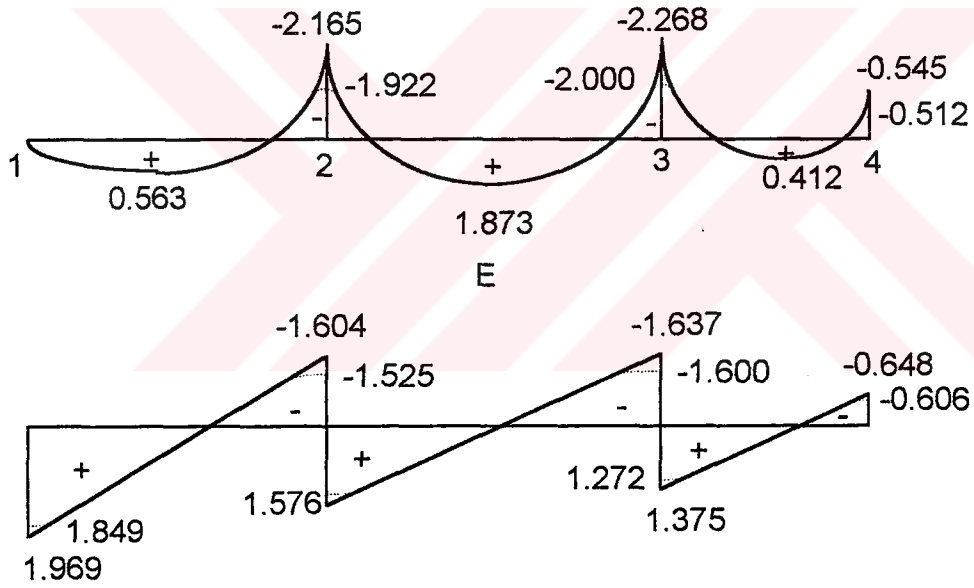
Asw = n. Ao ⇒ Ao = 0.36 / 2 = 0.18

Seçilen ∅ 8 / 20 (çift kollu)



Şekil 4.7. 1-1 aksı kirişi açıklık donatı detayı detayı

Pd = 1.4g + 1.6q



Şekil 4.8. E-E aksı kirişi moment değerleri

Tablo 4.10. E-E aksı kirişi düzeltilmiş moment değerleri

Ml	0	+0.563	-1.922	-1.922	+1.873	-2.000	-2.000	+0.412	-0.512
ME	±1.849		± 1.525	±1.576		± 1.600	±1.272		±0.606
Md	-1.849	+0.563	-2.806	-2.857	+1.873	-2.933	-2.605	+0.412	-0.947

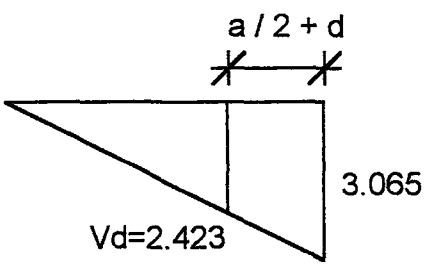
Tablo 4.11. E-E aksı kirişi kesit hesapları

Md tm	kd	ks	As cm^2	Seçilen	Mevcut	Ek
-1.849	4.36	5.39	2.37		1Ø16 (2.01)	2Ø18 (4.02)
0.563	14.16	5.30	0.71*	3Ø16 (6.03)		
-2.857	3.51	5.48	3.73		1Ø16+1Ø16 (4.02)	1Ø18 (2.01)
1.873	7.76	5.34	2.38	3Ø16 (6.03)		
-2.993	3.47	5.47	3.820		1Ø16+1Ø16 (4.02)	2Ø18 (5.09)
0.412	16.55	5.30	0.520*	3Ø16 (6.06)		
-0.947	6.10	5.37	1.211*		1Ø16 (2.01)	2Ø16 (4.02)

Sadece 4 nolu mesnet için ek donatı denetimi yapılacaktır.

Mn=4.2 t >1.849 t ek mesnet donatısına gerek yoktur.

Kayma hesabı



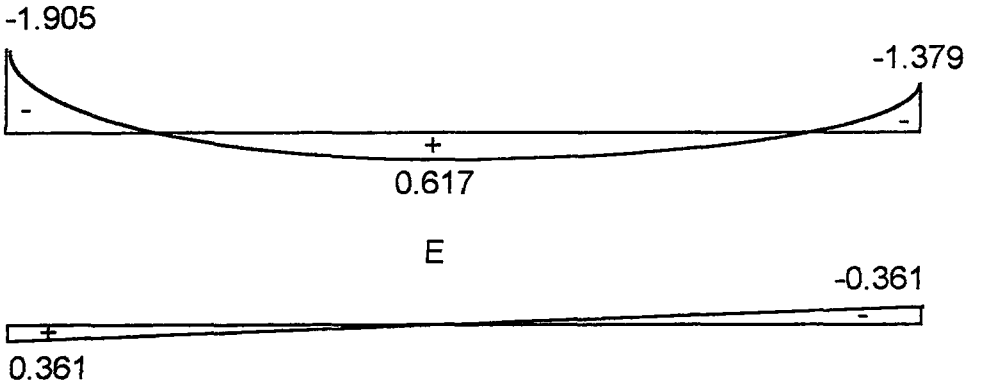
Şekil 4.9. E-E aksı kirişleri elverişsiz kayma kuvveti değerleri

Vcr = 0.65 x 11.5 x 20 x 42 = 6279 = 6.279 t
Vr = 0.25 x 170 x 20 x 42 = 35700 = 35.7 t
Vr > Vcr > Vd = 2.423 t ⇒ minimum donatı konacaktır.
Seçilen 8 / 20 (1.00) (çift kollu)

4.3. Merdiven Kesit Hesapları

4.3.1. Merdiven Kirişi Kesit Hesapları

Pd = 1.4g + 1.6q



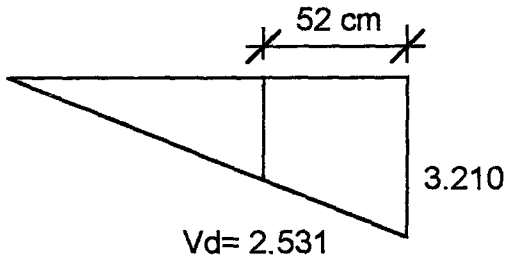
Şekil 4.10. Merdiven kirişi moment değerleri

Açıklık şeridi
Etkili tabla genişliği
b = bw + lp / 10 < b1 + bhf
b = 20 + 436 / 10 = 63.6 ≤ 20 + 6.16 = 128 cm
kd =42 / √(10x0.617/0.64)=13.53 ⇒ minimum donatı konacaktır.
Asmin = (12 / 19109)x20x42 = 5.28 cm^2 ⇒ 3∅16
As gövde = 0.08xAs = 0.08x5.28 = 0.163 cm^2 ⇒ 2∅12

Mesnet donatısı hesapları
Sol mesnet
M = -1.905 tm
ΔM = 3.210x0.20 / 3 = 0.214 tm
Md = M- ΔM = 1.905 - 0.214 = 1.690 tm
kd = 42 / √ (10x 1.690 / 0.2) = 4.57 ⇒ ks = 5.38
As = 10x5.38x 1.690 / 42 = 2.16 cm^2
Asmin = 5.28 cm^2 ⇒ 3∅16 (6.03)

Sağ mesnet
1.379< 1.905 olduğundan bu kesitede minimum donatı konacaktır
Seçilen 3 ∅16 (6.03)

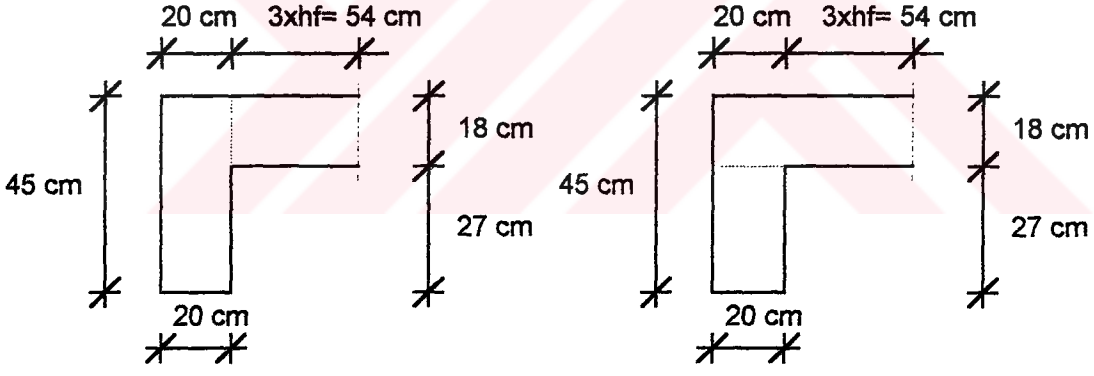
Kayma Hesabı



Şekil 4.11. Merdiven kirişi kayma değerleri

Vcr = 0.65 x 11.5 x 20 x 42 = 6279 = 6.279 t
Vr = 0.25 x 170 x 20 x 42 = 35700 = 35.7 t
Vr > Vcr > Vd = 2.531 t ⇒ minimum donatı konacaktır.
Seçilen ∅8 / 20 (1.00) (çift kollu)

Burulma denetimi

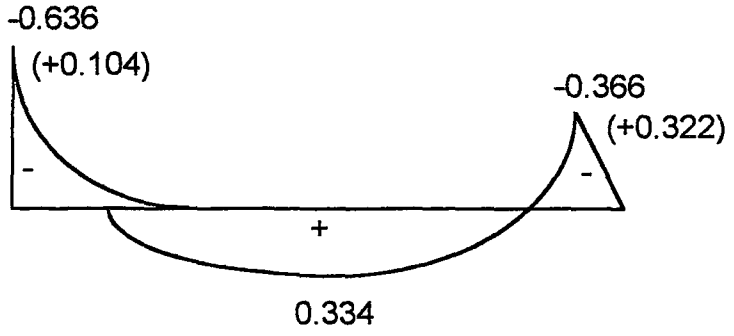


Şekil 4.12. Burulma kesiti

tdmax = -0.449 tm
$S = \Sigma x^2y / 3 = (20^2x45 + 18^2x54)/ 3 = 11.832\ cm^3$
$S = \Sigma x^2y / 3 = (20^2 x27 + 18^2x74)/ 3 = 11.592\ cm^3$
Büyük olan kullanılacak.
$Tcr = 1.35\ fctd \times S = 1.35 \times 115 \times 11832 \times 10^{-6} = 1.830$ tm
$(Vd/Vcr)^2+(Td/Tcr)^2=(2.531 / 6.279)^2+(0.449 / 1.830)^2=0.222 < 1$
$Td / (Vdxbw) = 0.88 \leq 1$
Minimum etriye yeterli olacaktır.

4.3.2. Merdiven Döşemesi Kesit Hesapları

A) Y doğrultusu



Şekil 4.13. Y doğrultusunda merdiven döşemesi moment değerleri

Açıklık

kd = 16 / √ (10x0.334 / 10) = 8.75 ⇒ ks≅5.32

As = 10x5.32x0.334 / 16 = 1.110 ⇒ Asmin ≅ 3.2 cm^2

Seçilen ∅10 / 20 (3.93)

Sol kesit

kd = 16 / √ (10x0.636 / 10) = 6.34 ⇒ ks = 5.34

As = 10 x 5.34 x 0.636 / 16 = 2.12 cm^2 ⇒ Asmin = 3.2 cm^2

Seçilen ∅ 10 / 20 (3.97)

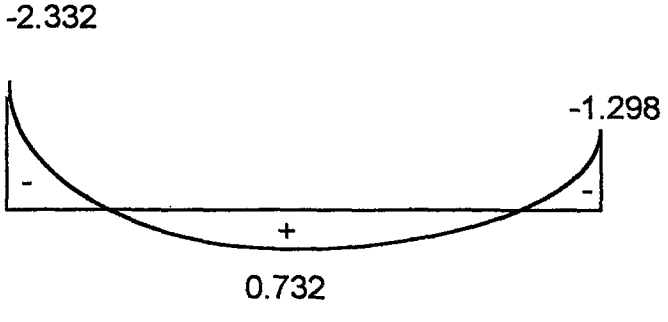
Sağ kesit

kd = 16 / √ (10x0.366 / 10) = 8.36 ⇒ ks = 5.32

As = 10x5.32x0.366 / 16 = 1.22 cm^2 ⇒ Asmin = 3.2 cm^2

Seçilen ∅ 10 / 20 (3.97)

B) X doğrultusu



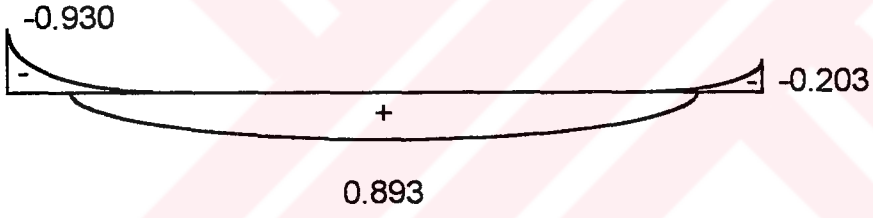
Şekil 4.14. X doğrultusunda merdiven döşemesi moment değerleri

Açıklık
kd = 16 / √ (10x 0.732 / 10) = 5.91 ⇒ ks = 5.37
As = 10 x 5.37 x 0.732 / 16 = 2.45 cm^2 ⇒ Asmin = 3.2 cm^2
Seçilen ∅10 / 20 (3.97)

Sol kesit
kd = 16 / √ (10x2.332 / 10) = 3.31 ⇒ ks = 5.49
As = 10 x 5.49 x 2.332 / 16 = 8.00 cm^2
Seçilen ∅ 11 / 9.5 (6.27)

Sağ kesit
kd = 16 / √ (10x1.298 / 10) = 4.44 ⇒ ks = 5.39
As = 10x5.39x1.298 / 16 = 4.37 cm^2
Seçilen ∅ 10 / 18 (4.36)

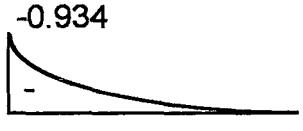
4.3.3. Merdiven Basamak Döşemesi Kesit Hesapları



Şekil 4.15. Merdiven basamak kısmı elverişsiz momentleri (Y doğrultusu)

kd = 16 / √ (10 x 0.893 / 1) = 5.35 ⇒ ks = 5.38
As= 10x5.38x0.893 / 16 = 3.19 cm^2
Asmin = 3.2 cm^2
Seçilen ∅10 / 20 (3.93)

Sağ kesit
0.203 < 0.930 olduğu için minimum donatı konacaktır.
Seçilen ∅10 / 20 (3.93)



Şekil 4.16. Merdiven basamak kısmı elverişsiz momentleri (X doğrultusu)

kd = 16 / √ (10 x 0.934 / 10) = 5.24 ⇒ ks = 5.38
As = 10 x 5.38 x 0.934 x 116 = 3.14
Asmin = 3.2 cm^2
Seçilen ∅10 / 20 (3.93)

4.4. Koridor Döşemesi Kesit Hesapları

Y doğrultusu

Açıklık
Mdmax = 0.377 tm
kd = 16 / √ (10 x 0.377 / 10) = 8.24 ⇒ ks = 5.32
As = 10 x 5.32 x 0.377 / 16 = 1.25 cm^2
Asmin = 3.2 cm^2
Seçilen ∅ 10 / 20 (3.93)

Mesnetler
Mdmax = -1.027
kd = 16 / √ (10x1.027 / 1.0) = 4.99 ⇒ ks = 5.39
As = 10 x 5.39 x 1.027 / 16 = 3.46 cm^2
Asmin = 3.2 cm^2
Mevcut ∅10 / 40 (1.97) + Ek ∅10 / 40 (1.97)

X doğrultusu

Açıklık
Mdmax = 0.536
kd = 16 / √ (10x1.536 / 1.0) = 6.9 ⇒ ks = 5.34
As = 10.5.34 x 0.536 / 16 = 1.789cm^2
Asmin = 3.2 cm^2
Seçilen ∅10 / 20 (3.93)

Mesnetler
Mdmax = -1.364
kd = 16 / √ (10x1.364 / 1.0) = 4.33 ⇒ ks = 5.40
As = 10 x 5.40 x 1.364 / 16 = 4.6 cm^2
Mevcut ∅ 10 / 40 (1.97) +Ek ∅ 10 / 15 (2.63)

4.5. Kolon Kesit Hesapları

4.5.1. S1 kolonları

Tablo 4.12. Kolon yük değerleri

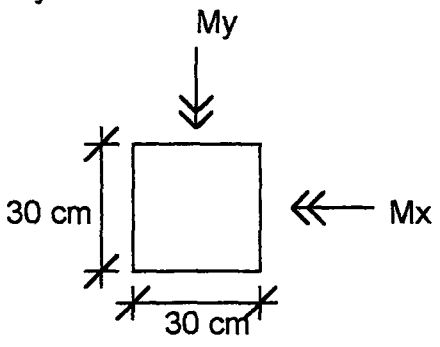
S1				
katlar	N t	Mx tm	My tm	kombinezon
8,7,6,5	27.975	0.669	0.086	1.4g+1.6q
4,3,2,1,B	65.275	0.669	0.086	1.4g+1.6q
8,7,6,5	22.331	1.565	0.290	1g+1q+1e
4,3,2,1,B	51.876	2.100	0.290	1g+1q+1e
8,7,6,5	27.975	1.965	0.290	Elverişsiz
4,3,2,1,B	65.275	2.110	0.290	Elverişsiz

8,7,6 ve 5 katları

N= 27.975 t

Mx = 1.965 tm

My = 0.290 tm



Şekil 4.17. S1 kolonu kesiti

n =27.975 /(0.3 x 0.3 x 1700) = 0.183

mx =1.965 /(0.3^2 x 0.3 x 1700) = 0.043 $\Rightarrow$ W $\cong$ 0.05

my =0.290 /(0.3^2 x0.3 x 1700) = 0.006

As = 0.05 x 30 x 30 / 20.5 =2.19 cm^2
Asmin = 0.01x30x30 = 9 cm^2
Seçilen 8∅14 (12.32 cm^2)
Etriye ∅ 8 / 15 cm

4,3,2,1ve bodrum katları
N = 65.275 t
Mx = 2.110 tm
My = 0.290 tm

n = 65.275 /(0.30x0.30 x 1700) =0.43
mx = 2.110 /(0.30^2x0.30x1700) =0.006 ⇒ W ≅ 0.06
my = 0.290 /(0.3^2x0.30x1700) = 0.43

As = 0.06x30x30 / 20.5 = 2.63 cm^2
Asmin = 9 cm^2
Seçilen 8 ∅ 14 (12.32)
Etriye ∅ 8 / 15 cm

4.5.2. S2 kolonları

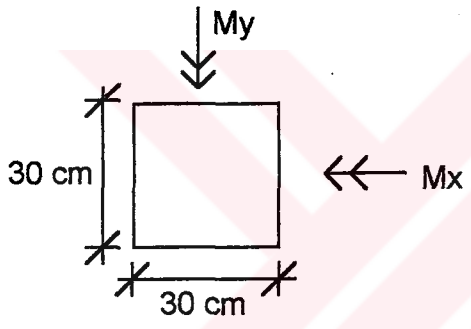
Tablo 4.13. Kolon yük değerleri

S2				
katlar	N t	Mx tm	My tm	kombinezon
8,7,6,5	41.179	0.422	0.200	1.4g+1.6q
4,3,2,1,B	95.779	0.422	0.200	1.4g+1.6q
8,7,6,5	30.395	1.093	0.485	1g+1q+1e
4,3,2,1,B	71.725	1.206	0.485	1g+1q+1e
8,7,6,5	41.179	1.093	0.485	Elverişsiz
4,3,2,1,B	95.779	1.204	0.485	Elverişsiz

8,7,6 ve 5 katları
N = 41.179 t
Mx = 1.093 tm
My = 0.485 tm

n = 41.179 / (0.3x0.3x1700) =0.27
mx = 1.093 / (0.30^2 x0.30x1700)=0.024 ⇒ W ≅ 0.05
my = 0.485 / (0.30^2 x0.30x1700)=0.001

As = 0.05x30x30 / 20.5 =2.20 cm^2
Asmin = 9 cm^2
Seçilen 8 ∅ 14 (12.32)
Etriye ∅ 8 / 15cm



Şekil 4.18. S2 kolonu kesiti

4,3,2,1 ve bodrum katları
N = 95.779 t
Mx = 1.206 tm emin = 0.03 Mmin =95.779x0.03 =2.880
My = 0.485 tm

n = 95.779 / (0.3x0.3x 1700) = 0.626
mx = 2.880 / (0.30^2x0.30x1700) = 0.063 ⇒ W ≅ 0.10
my = 0.485 / (0.30^2x0.30x1700) = 0.01

As = 0.10x30x30 / 20.5 = 4.39 cm^2
Asmin = 9 cm^2
Seçilen 8 ∅ 14 (12.32)
Etriye ∅ 8 / 15 cm

4.5.3. S3 Kolonları

Tablo 4.14. Kolon yük değerleri

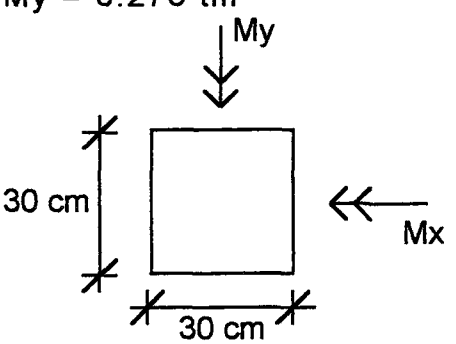
S3				
katlar	N t	Mx tm	My tm	kombinezon
8,7,6,5	67.656	0.730	0.273	1.4g+1.6q
4,3,2	126.285	0.730	0.273	1.4g+1.6q
1,B	165.371	0.730	0.273	1.4g+1.6q
8,7,6,5	46.009	1.832	0.267	1g+1q+1e
4,3,2	87.631	1.910	0.267	1g+1q+1e
1,B	113.688	3.226	0.267	1g+1q+1e
8,7,6,5	67.656	1.832	0.273	Elverişsiz
4,3,2	126.285	1.910	0.273	Elverişsiz
1,B	165.371	3.226	0.273	Elverişsiz

8,7,6 ve 5 katları

N= 67.656 t

Mx = 1.832 tm emin = 0.03 Mmin =67.656x0.03=2.020

My = 0.273 tm



Şekil 4.19. S3 kolonun 8,7,6,5,4,3 ve 2. katlardaki kesiti

n = 67.656 / (0.3x0.3x1700) =0.442
mx = 2.020 / (0.3^2x0.3x1700) =0.044 ⇒ W ≅ 0.04
my = 0.273 / (0.3^2x0.3x1700) =0.006

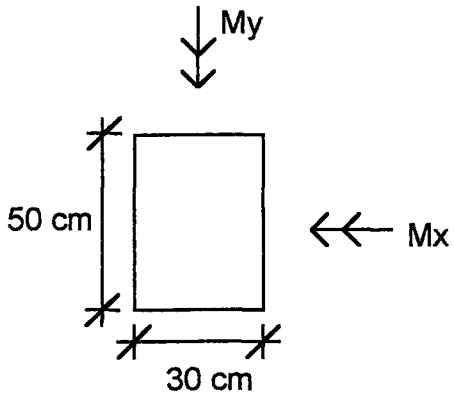
As = 0.04x30x30 / 20.5 = 1.75 cm^2
Asmin = 0.01x30x30= 9 cm^2
Seçilen 8 ∅ 14 (12.32)
Etriye için ∅ 8 / 15 cm

4,3 ve 2 katları
N =126.285 t
Mx = 1.910 tm emin=0.03 Mmin=0.03x126.285=3.788 tm
My = 0.273 tm

n = 126.285 / (0.3x0.3x1700) = 0.825
mx = 3.788 / (0.3^2x0.3x1700) = 0.082 ⇒ W=0.2
my = 0.273 / (0.3^2x0.3x1700) = 0.006

As = 0.2x30x30 / 20.5 = 8.78 cm^2
Asmin = 0.01x30x30 = 9 cm^2
Seçilen 8 ∅ 14 (12.32)
Etriye için ∅ 8 / 15

1. ve bodrum katları
N = 165.371 t
Mx = 3.226 tm emin=0.03 Mmin=0.03x165.371=4.961 tm
My = 0.273 tm



Şekil 4.20. S3 kolonu 1. ve bodrum katları kesiti

n = 165.371 / (0.3x0.3x1700)= 1.08
mx = 4.961 / (0.3^2x0.3x1700)= 0.108 ⇒ W ≅ 0.45
my = 0.273 / (0.3^2x0.3x1700)= 0.006

As =0.45x30x30 / 20.5 =19.756 cm^2
Asmin = 0.01x30x30 = 9 cm^2
Seçilen 16 ∅ 14 (24.64 cm^2)
Etriye için ∅ 8 / 15 cm

4.6. Perde Hesapları

4.6.1. P1 Perdesi

8,7,6 ve 5 katları
Mx = 13.130 tm
My = 0.486 tm
N = 65 t

mx = 13.130 /(16.4^2x0.2x1700) =0.014
my = 0.486 /(0.2^2x1.64x1700) =0.004 ⇒ W ≅0.06
n = 65 /(164. 0.2 .1700) =0.116

As =0.06x164x20 / 20.5 = 9.6 cm^2
Asmin= 0.01x20x164 =32.8 cm^2

100 cm için
As = 100x32.8 / 164 =20 cm^2

Bir yüzdeki donatı
Asv = 20 / 2 = 10 cm^2
Seçilen ∅ 14 / 15 cm (10.26 cm^2)
Sv=15
Sc=7.5

Yatay donatı
Kesme kuvvetleri küçük olduğundan minimum donatı yeterli olaçaktır.
AsH min = 0.00125 x 20 x 100 = 2.5 cm^2

Seçilen ∅ 12 / 30 cm (3.77 cm^2)
luc =0.1xlw =0.1x164 =16.4 cm
ρ_{ucmin} = 0.005
$As_{uc}min$ =0.005x20x164 =1.64 cm^2
Mevcut 4 ∅ 14 (6.16 cm^2)

4,3,2,1 ve bodrum katları
Mx = 51.898 tm
My = 0.518 tm
N = 152 t

mx = 51.898 / (1.64^2x0.2x1700) = 0.056
my = 0.518 / (0.2^2x1.64x1700)=0.005 ⇒ W ≅ 0.1
n = 152 / (1.64x0.2x1700) = 0.273

As = 0.1x20x164 / 20.5 = 16 cm^2
Asmin =0.01x20x164 =32.8 cm^2
100 cm için
As =100 x32.8 / 164 =20 cm2

Bir yüzdeki donatı
Asv= 20 / 2 = 10 cm^2
Seçilen ∅ 14 / 15 cm (10.26 cm^2)
Sv=15
Sc=7.5

Yatay donatı
Vd = 10.012 t
Vcr = 0.65xf_{ctd} x b x d =0.65x115x0.2x1.64 = 24.518 t > Vd
AsH min = 0.00125 x 20 x 100 = 2.5 cm^2
Seçilen ∅ 12 / 30 cm (3.77 cm^2)
luc = 16.4 cm
$As_{uc}min$ =1.64 cm^2
Mevcut 4 ∅ 14 (6.16 cm^2)

4.6.2. P2 Perdesi

8.7.6 ve 5 katları
Mx = 85.323 tm
My = 0.224 tm
N = 114 500 t
mx = 85.323 /(5.1^2 x0.2 x1700) = 0.009
my = 0.224 / (0.2^2 x 5.1 x 1700) = 0.001 $\Rightarrow$ W $\cong$ 0.04
n = 114.5 / (5.1 x 0.2 x 1700) = 0.066

As = 0.04x510x20 / 20.5 = 19.90 cm^2
Asmin = 106 cm2
100 cm için
As = 106.100 / 510 =20.8 cm^2

Bir yüzdeki donatı
Asv = 20.8 / 2 =10.4
Seçilen ∅ 14 / 14 (11.00 cm^2)
Sv=14
Sc=7

Yatay donatı
Kesme kuvvetleri küçük olduğundan minimum donatı yeterli olaçaktır.
AsH min = 0.00125x20 x 100 = 2.5 cm^2
Seçilen ∅ 12 / 30 (9.77 cm^2)
luc =0.01x510 = 51 cm
As_{uc}min = 0.005 x 20 x51 =5.1 cm^2
Mevcut 12 ∅ 14 (18.48 cm^2)

4,3,2,1 ve bodrum katları
Mx = 310.025 tm
My = 0.117 tm
N = 265 t

mx = 310.025 /(5.1^{2}x0.2x1700) = 0.035
my = 0.224 / (0.2^{2}x5.1x1700) $\cong$0.001 $\Rightarrow$ W $\cong$0.001
n = 265 /(5.1x0.2x1700) = 0.15

As = 0.1x510x20 / 20.5 = 49 .75 cm^2
Asmin = 106 cm
100 cm için
As = 106.100 / 510 = 20.8 cm^2

Bir yüzdeki donatı
Asv =20.8 / 2 = 10.4 cm^2

Seçilen ∅ 14 / 14 cm (11.00 cm^2)
Sv = 14 cm
Sc =7 cm

Yatay donatı
Vd = 20.875 t
Vcr = 0.65x115x0.2x5.1 = 76.245 t > Vd
AsH min =0.00125 x 20 x 100 = 2.5 cm^2
Seçilen ∅ 12 / 30 (3.77 cm^2)
luc =0.01x510 = 51 cm
As_{uc}min = 0.005 x 20 x51 =5.1 cm^2
Mevcut 12 ∅ 14 (18.48 cm^2)

4.6.3. P3 ve P4 Perdeleri

A) P4 Perdesi ve P3 Perdesinin I. kısmı

8,7,6 ve 5 katları
Mx = 0.014 tm
My = 40.083 tm
N = 46 t

mx = 0.014 / (0.2^2x3.16x1700) ≅ 0.0
my = 40.083 / (3.16^2x0.2x1700) = 0.038 ⇒ W ≅ 0.06
n = 46 / (3.16 x 0.2 x 1700) = 0.04

As = 0.06x316x20 / 20.5 =18.49 cm^2
Asmin =0.01x3.16x20= 63.2 cm^2
100 cm için
As = 63.2x100 / 3.16 = 20 cm^2

Bir yüze düşen donatı
Asv = 20 / 2 = 10 cm^2
Seçilen ∅ 14 / 15 (10.26 cm^2)
Sv = 15 cm
Sc = 7.5 cm

Yatay donatı
Kesme kuvvetleri küçük olduğundan minimum donatı yeterli olaçaktır.
AsH = 0.00125 x 20 x 100 = 2.5 cm^2
Seçilen ∅ 12 / 30 (3.77 cm^2)
luc =0.01x316 = 31.6 cm
$As_{uc}min$ = 0.005 x 20 x 31.6 = 3.16 cm^2
Mevcut 8 ∅ 14 (12.32 cm^2)

4.3.2.1 ve Bodrum katları
Mx = 0.055 tm
My = 221.544 tm
N = 106 t

mx = 0.055 / (0.2^2x3.16x1700) ≅ 0
my = 221.544 / (3.16^2x0.2x1700) = 0.065
n = 106 / (3.16x0.2x1700) = 0.1

As = 0.1x316 x20 / 20.5 =30.83 cm^2
Asmin =0.01 x 20 x 316 = 63.2 cm^2
100 cm için
As = 63.2 x100 / 316 = 20 cm^2

Bir yüze düşen donatı
Asv = 20 / 2 = 10 cm^2
Seçilen ∅ 14 / 15 (10.26 cm^2)
Sv = 15 cm
Sc = 7.5 cm

Yatay donatı
Vd = 25.918 t
Vcr = 0.65x115x0.2x3.16 = 47.242 t > Vd

AsH min = 0.00125 x 20 x 100 = 2.5 cm^2
Seçilen ∅ 12 / 30 (3.77 cm^2)
luc =0.01x316 = 31.6 cm
As_{uc}min = 0.005 x 20 x 31.6 = 3.16 cm^2
Mevcut 8 ∅ 14 (12.32 cm^2)

B) P3 perdesi II. kısmı
Mx=15.196 tm
N=71 t

mx = 15.196/(2^2x0.2x1700)=0.011
n = 71/(0.2x2x1700)=0.104 ⇒ W ≅ 0.05

As=7x0.05x20x240/ (3x20.5) =27.31 cm^2
As min = 48 cm^2
Bir yüze ve 100 cm'ye düşen donatı
Asv = 10 cm^2
Seçilen ∅ 14 / 15 (10.26 cm2)
Sv=15 cm
Sc=7.5 cm

Yatay donatı
Kesme kuvveti çok küçük olduğundan kesme denetimi yapılmadan minimum donatı konacaktır.
AsH min = 0.00125x20x100 = 2.5 cm^2
Seçilen ∅ 12 / 30 cm (3.77 cm^2)

4.6.4. P6 Perdesi

Mx = 56.997 tm
My = 0.106 tm
N = 145 t

mx = 56.997 / (2.9^2x0.2x1700) = 0.02
my = 0.106 / (0.2^2 x2.9x1700) ≅ 0.001 ⇒ W ≅ 0.06
n = 145 / (2.9x0.2x1700) = 0.15

As = 0.06x290x20 / 20.5 / 16.97 cm

Asmin = 0.01x290x20 = 58 cm^2
Bir yüze ve 100 cm düşen donatı
Asv = 10 cm^2
Seçilen ∅ 14 / 15 (10.26 cm^2)
Sv = 15 cm
Sc = 7.5 cm

Yatay donatı
Kesme kuvveti çok küçük olduğu için kesme denetimi yapılmadan minumum donatı konacaktır
AsH = 0.00125 x 20 x 100 = 2.5 cm^2
Seçilen ∅ 12 / 30 (3.77 cm^2)

4.6.5. P5 Perdesi

Mx = 1.145 tm
N = 20.12 t
0.01x h = 0.06
Mx min = 0.06 x 20.12 = 1.207 tm

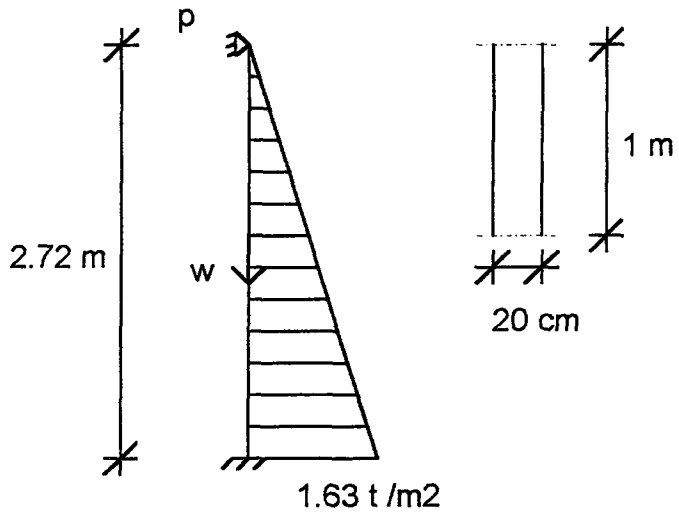
mx = 1.207 / (0.6^2 x0.2x1700) ≅ 0.01
n = 20.12 / (0.2.0.6 x 1700) ≅ 0.1 ⇒ W = 0.05

As = 7x0.05x20x60/(3x20.5)= 6.83 cm^2
Asmin = 0.01 x 20 x 60 = 12 cm^2
Seçilen ∅ 14 / 15 cm
Sv = 15 cm
Sc = 7.5 cm

Yatay donatı
AsH min = 0.00125 x 20 x 100 = 2.5 cm^2
Seçilen ∅ 12 / 30 (3.77 cm^2)

4.7.Bodrum Kısmı Kenar Perdesi Hesapları

Zemin etkisi ve taban gerilmeleri
ka = $Cos^2\rho$ / $(1 + Sin\ \rho)^2$ =$Cos^2 30°$ / $(1+Sin30°)^2$ = 0.333
ka.W.h = 0.333x1.8x2.72= 1.63 t / m^2
W =0.2x1x2.72x2.4=1.306 t / m



Şekil 4.21. Bodrum perdesi yükleri

Deprem durumundaki yükler

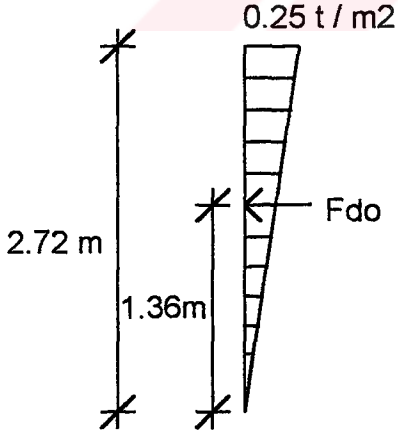
$\rho = 30°$

$\theta = \arctan(a / \rho) = \arctan(C_o) = \arctan(0.08) = 4.6°$

$ka' = \cos^2(\rho - \theta) / \{ \cos^2\theta [1 + \sqrt{(\sin\rho (\tan\theta \cos\rho))}]^2 \} = 0.383$

$(ka' - ka)\, w\, h = (0.383 - 0.333) \times 1.8 \times 2.72 = 0.25\ t / m^2$

$F_{do} = C_o W_o = 0.03 \times 2.72 \times 1.0 \times 0.2 = 0.016\ t / m$



Şekil 4.22. Bodrum perdesi deprem yükleri

4.7.1. Bodrum Perdesi SAP90 Girdi Bloku

Bu kısımda bodrum kenar perdesinin birim boyu alınmış SAP90 [5] girdi bloku oluşturulmuş ve çözülmüştür.

```
BODRUM KISMI PERDE KUVVETLERİ
SYSTEM
L=2

RESTRAINTS
5          R=1,1,1,0,0,0
2,4,1      R=0,0,0,0,0,0
1          R=1,1,1,1,1,1

JOINTS
1   X=0       Y=0     Z=0
2   X=0       Y=0     Z=0.91
3   X=0       Y=0     Z=1.36
4   X=0       Y=0     Z=1.81
5   X=0       Y=0     Z=2.72

FRAME
NM=1
1  SH=R  T=0.20,1    E=3025000  G=1210000
1  1  2  M=1  LP=3,0
2  2  3  M=1  LP=3,0
3  3  4  M=1  LP=3,0
4  4  5  M=1  LP=3,0

LOAD
2  L=1  F=2.216
3  L=1  F=0,0,-.48
3  L=2  F=0.016
4  L=2  F=0.34

COMBO
1  C=1.4,0
2  C=1,1

F R A M E   E L E M E N T   F O R C E S

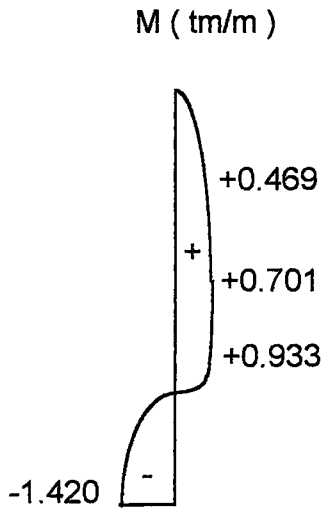
ELT LOAD DIST    1-2 PLANE    AXIAL    1-3 PLANE    AXIAL
 ID COMB ENDI  SHEAR   MOMENT FORCE  SHEAR   MOMENT  TORQ
  1 ------------------------------
      1 .000                   -.336
        .000   .000     .000         -2.587    1.420
        .910   .000     .000         -2.587    -.933
        .910                   -.336

      2 .000                   -.240
        .000   .000     .000         -2.018    1.147
        .910   .000     .000         -2.018    -.690
        .910                   -.240
  2 ------------------------------
      1 .000                   -.336
        .000   .000     .000           .516    -.933
        .450   .000     .000           .516    -.701
        .450                   -.336
```

```
    2 .000                        -.240
      .000    .000      .000              .198     -.690
      .450    .000      .000              .198     -.600
      .450                        -.240
3 ------------------------------
    1 .000                         .336
      .000    .000      .000              .516     -.701
      .450    .000      .000              .516     -.469
      .450                         .336

    2 .000                         .240
      .000    .000      .000              .214     -.600
      .450    .000      .000              .214     -.504
      .450                         .240
4 ------------------------------
    1 .000                         .336
      .000    .000      .000              .516     -.469
      .910    .000      .000              .516      .000
      .910                         .336

    2 .000                         .240
      .000    .000      .000              .554     -.504
      .910    .000      .000              .554      .000
      .910                         .240
```



Şekil 4.23. Bodrum perdesi moment diyagramı

4.7.2. Bodrum Perdesinin Kesit Hesapları

Tablo 4.15. Bodrum perdesi kesit hesapları

M (tm/m)	kd	ks	As (cm^2)	As min (cm^2)	Seçilen
0.469	8.08	5.32	1.43	4.375	∅ 12 / 20 (5.65)
-1.420	5.39	5.39	3.77	4.375	∅12 / 20 (5.65)

Yatay donatı

Ön yüz 0.0025x20x100x 2 / 3 = 3.33 cm^2 /m

Seçilen ∅ 10 / 20 (3.93)

Arka yüz 0.0025x20x100x 1 / 3 = 1.66 cm^2 /m

Seçilen ∅ 10 / 20 (3.93)

BÖLÜM 5. TEMEL HESAPLARI

Malzeme BS 25 BÇ I
Zemin gerilmesi σ_{em} = 2.2 kg / cm^2 .

Radye temel yapılmasına karar verilmiştir.

X doğrultusu	Y doğrultusu
N = 3850 t	N = 3850 t
Mx = 1065.04 tm	Mx = 87.58 tm
My = 29.44 tm	My = 663.131 tm

Yaklaşık hesap
Temel alanı = 23.4 x 10 = 234 cm^2
Birim boya düşen en büyük moment M ≅ 100.47 tm / m

d(cm) = kd x [√ (10 x Msd (tm) / b (m)]
kd = 2.08 seçilir (dengeli donatı bölgesinde)
d = 2.05 x[√ (10 x 100.47 / 1)] = 64.87 cm
seçilen d = 72 cm

Temel ağırlık merkezi
X = 500 cm
Y = 1170 cm
Düşey yüklerin bileşke noktası
Xb = 445 cm
Yb = 1165 cm
ex = 550 - 445 = 55 cm
ey = 1170 - 1165 = 5 cm

Kullanma yükleri altında zemin gerilmesi tahkiki

Temel ağırlığı
Ng = 234 x 0.8 x 2.4 ≅ 450 t

σ = (450 + 3850) / 234 = 18.37 < σ_{em}

X doğrultusu
ΣN= 3850 / 1.33 = 2894.73 t
ΣMx=1065.04 /1.33=800.781 tm
ΣMy=29.44 / 1.33 = 22.135 tm

Y doğrultusu
ΣN=2894.73 t
ΣMx=87.58/1.33=65.85 tm
ΣMy=663.13/1.33=498.59 tm

X doğrultusu için
σ =[Σ(N + Ng) / A] ±[Mx / Iy].χ ± [My / Ix].y
σ_{max} =(2894.73 +450) / 234 +[(800.781+0.55 x 2894.73)x4.45 / (10^3 x 23.4 / 12)] +[(22.135 +0.05x2894.73)x11.65 /(23.4^3x 10 / 12)]
σ_{max}= 19.93 t / m^2 < 22 t / m^2

σ_{min} =(2894.73 + 450) / 234 -[(800.781+0.55 x 2894.73)x5.55 / (10^3x23.4 / 12)] -[(22.135+0.05x2984.73)x11.75/(23.4^3x10/ 12)]
σ_{min} = 7.30 t / m^2 > 0

Y doğrultusu için

σ_{max}=(2894.73 + 450) / 234 +[(87.58 +0.55 x 2894.73)x4.45 / (10^3x23.4)/12] +[(498.59 +0.05x2894.73)x11.75/(23.4^3x10/12)]
σ_{max}=15.00 t /m^2

σ_{min} =(2894.73 + 450) / 234 -[(87.58 + 0.55 x 2894.73) / (10^3 x 2.34 / 12)]x 5.55 -[(498.59 +0.05 x 2894.73 x1175) / (23.4^3 x10 /12)]
σ_{min} = 14.47 t / m^2 > 0

5.1.Temel Plağına Gelen Yükler

σ_1= (3850 / 234) +[(1065.04 +0.55 x 3850)x4.45 /(10^3 x 23.4 / 12)] +[(29.44 + 0.05 x 3850) x 11.65 / (23.4^3 x10 / 12)]
σ_1 = 23.95 t / m^2
σ_2 = (3850 / 234) +[(1065.04 + 0.55 x 3850)x 4.45 / (10^3 x23.4 / 12)] -[(29.4 + 0.05 x 3850)x11.75 /(23.4^3 x 10 /12)]

σ_2 = 23.47 t / m^2

σ_3 = (3850 / 234) -[(1065.04 + 0.55 x 3850)x5.55 /(10^3 x23.4 /12)]+[(29.4 + 0.05 x 3850) x 11.75 / (23.4^3 x10 / 12)]

σ_3 = 7.64 t /m^2

σ_4 = (3850 / 234) -[(1065.04 + 0.55 x 3850)x5.35 / (10^3x23.4 / 12)] -[(29.4 + 0.05 x 3850) x11.65 / (23.4^3 .20 / 12)]

σ_4 = 7.15 t /m^2

Y doğrultusundaki değerler daha küçük olacağından bu doğrultu için hesap yapılmamıştır.

5.2. Radye Temel SAP90 Verileri ve Çıktıları

Temel üç kısımda ele alınarak hesaplanmıştır. Bu kısımda SAP90 [5] verileri oluşturulmuş , sistem çözülmüş ve kesit tesir değerleri elde edilmiştir.

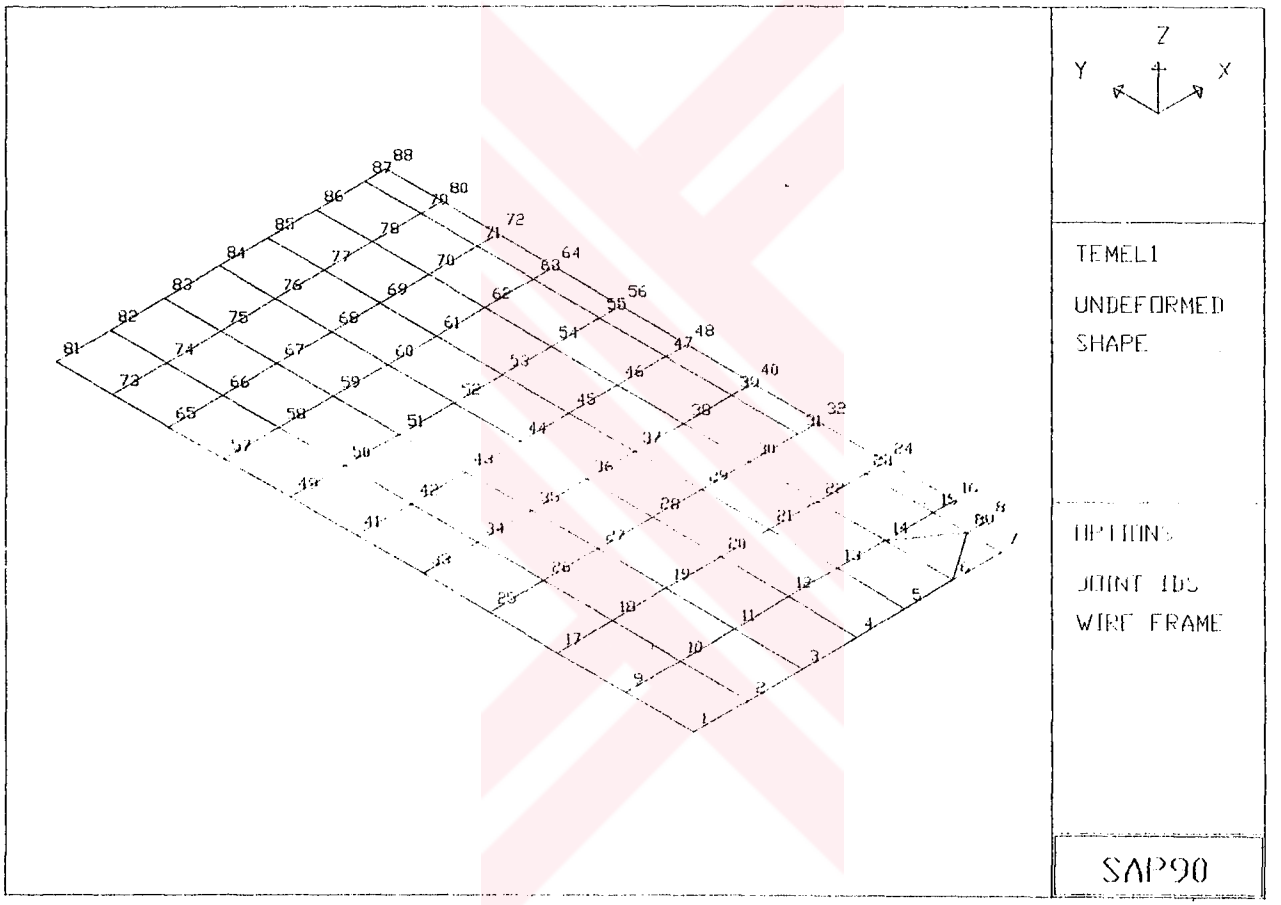
```
RADYE TEMEL
SYSTEM
L=1
RESTRAINTS
1,89,1          R=1,1,0,0,0,1
1               R=1,1,1,0,0,1
7,8,1           R=1,1,1,1,1,1
89              R=1,1,1,1,1,1
25,28,3         R=1,1,1,0,0,1
57,60,3         R=1,1,1,0,0,1
81,88,1         R=1,1,1,1,1,1
16,80,8         R=1,1,0,0,1,1

JOINTS
1   X=0       Y=0
3   X=1.6     Y=0
4   X=2.4     Y=0
7   X=4.54    Y=0
8   X=4.85    Y=0.5
16  X=4.85    Y=1
17  X=0       Y=2
19  X=1.6     Y=2             Q=1,3,17,19,1,8
20  X=2.4     Y=2
23  X=4.54    Y=2             Q=4,7,20,23,1,8
25  X=0       Y=3
27  X=1.6     Y=3
28  X=2.4     Y=3
31  X=4.54    Y=3
32  X=4.85    Y=3             G=16,32,8
49  X=0       Y=5.925
51  X=1.6     Y=5.925         Q=25,27,49,51,1,8
52  X=2.4     Y=5.925
57  X=0       Y=6.9
55  X=4.54    Y=5.925         Q=28,31,52,55,1,8
59  X=1.6     Y=6.9
60  X=2.4     Y=6.9
63  X=4.54    Y=6.9
64  X=4.85    Y=6.9           G=32,64,8
81  X=0       Y=9.37
83  X=1.6     Y=9.37          Q=57,59,81,83,1,8
84  X=2.4     Y=9.37
87  X=4.54    Y=9.37          Q=60,63,84,87,1,8
89  X=4.54    Y=0.5
88  X=4.85    Y=9.37          G=64,88,8

POTENTIAL
1 81 8  P=23.95,23.72
2 82 8  P=22.78,22.52
3 83 8  P=21.63,21.32
4 84 8  P=20.47,20.12
5 85 8  P=19.31,18.92
6 86 8  P=18.15,17.72
7 87 8  P=16.99,16.52
8 88 8  P=15.80,15.32
89      P=15.70
```

```
SHELL
NM=1   P=1
1   E=3025000
1   JQ=1,2,9,10      ETYPE=2    TH=0.8   G=5,1
6   JQ=6,7,89        ETYPE=2    TH=0.8   LP=2     G=1,1
7   JQ=6,89,14       ETYPE=2    TH=0.8   LP=2     G=1,1
8   JQ=14,89,15      ETYPE=2    TH=0.8   LP=2     G=1,1
9   JQ=89,8,15,16    ETYPE=2    TH=0.8   G=1,1
10  JQ=9,10,17,18    ETYPE=2    TH=0.8   G=7,9

FRAME
NM=1
1    SH=R  T=2.72,0.20  E=3025000  G=1210000
C KİRİŞLER
80   1  9   M=1  LP=3,0    G=2,1,8,8
83   25 33  M=1  LP=3,0    G=6,1,8,8
90   1  2   M=1  LP=-2,0   G=5,1,1,1
```


Z
Y
X
TEMEL1
UNDEFORMED
SHAPE
OPTIONS
JOINT IDS
WIRE FRAME
SAP90

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
80								
	1	.000			.000			-.177
		.000	-5.806	-2.242				
		1.000	-5.806	-8.048				
		1.000			.000			-.177
81								
	1	.000			.000			.116
		.000	4.378	-8.525				
		1.000	4.378	-4.147				
		1.000			.000			.116
82								
	1	.000			.000			-.155
		.000	11.410	1.346				
		1.000	11.410	12.756				
		1.000			.000			-.155
83								
	1	.000			.000			-.000
		.000	-14.479	11.600				
		.975	-14.479	-2.517				
		.975			.000			-.000
84								
	1	.000			.000			-.096
		.000	-6.545	-9.875				
		.975	-6.545	-16.257				
		.975			.000			-.096
85								
	1	.000			.000			.101
		.000	5.290	-16.702				
		.975	5.290	-11.545				
		.975			.000			.101
86								
	1	.000			.000			.098
		.000	14.286	-4.740				
		.975	14.286	9.189				
		.975			.000			.098
87								
	1	.000			.000			.296
		.000	-5.978	11.586				
		.823	-5.978	6.664				
		.823			.000			.296
88								
	1	.000			.000			.125

FRAME ELEMENT FORCES

ELT ID	LOAD COND	DIST END	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-1.996	3.381				
		.823	-1.996	1.738				
		.823			.000			.125
89								
	1	.000			.000			.072
		.000	1.706	1.741				
		.823	1.706	3.145				
		.823			.000			.072
90								
	1	.000			.000			.187
		.000	-9.611	-5.026				
		.800	-9.611	-12.714				
		.800			.000			.187
91								
	1	.000			.000			-.016
		.000	-3.858	-19.387				
		.800	-3.858	-22.473				
		.800			.000			-.016
92								
	1	.000			.000			.039
		.000	2.151	-23.276				
		.800	2.151	-21.555				
		.800			.000			.039
93								
	1	.000			.000			.009
		.000	6.668	-16.846				
		.713	6.668	-12.090				
		.713			.000			.009
94								
	1	.000			.000			-.188
		.000	10.320	-2.757				
		.713	10.320	4.605				
		.713			.000			-.188
95								
	1	.000			.000			-.203
		.000	8.413	19.755				
		.713	8.413	25.756				
		.713			.000			-.203

SHELL ELEMENT FORCES

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID 1 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	1.6320E+01	7.9119E+00	2.8074E+00	1.7172E+01	7.0607E+00	16.87
2	-1.8577E+01	-1.5458E+00	2.2802E+00	-1.2458E+00	-1.8877E+01	82.51
9	-3.7609E+00	-9.2208E+00	9.9308E-01	-3.5859E+00	-9.3959E+00	9.99
10	-1.1317E+00	-5.5689E+00	4.6592E-01	-1.0833E+00	-5.6173E+00	5.93

MIDPT	V1	V2	VMAX	ANGLE
	-2.1982E+01	-1.1237E+01	2.4688E+01	-152.92

ELEMENT ID 2 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
2	4.3421E+00	-1.5458E+00	7.1395E-01	4.4275E+00	-1.6311E+00	6.82
3	-9.6673E+00	4.7106E-01	-8.2724E-03	4.7107E-01	-9.6673E+00	-89.95
10	-7.0125E+00	-5.5689E+00	-1.8456E-02	-5.5687E+00	-7.0127E+00	-89.27
11	-1.9238E+00	-9.9294E+00	-7.4067E-01	-1.8558E+00	-9.9973E+00	-5.24

MIDPT	V1	V2	VMAX	ANGLE
	-6.3078E+00	-8.1146E+00	1.0278E+01	-127.86

ELEMENT ID 3 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
3	-6.7571E+00	4.7106E-01	4.1531E-01	4.9484E-01	-6.7809E+00	86.72
4	1.0540E+00	-1.0071E-01	2.7765E-01	1.1173E+00	-1.6400E-01	12.84
11	-2.6940E+00	-9.9294E+00	7.2256E-01	-2.6225E+00	-1.0001E+01	5.65
12	-3.6974E+00	-8.3745E+00	5.8490E-01	-3.6254E+00	-8.4465E+00	7.02

MIDPT	V1	V2	VMAX	ANGLE
	4.5620E+00	-9.5092E+00	1.0547E+01	-64.37

ELEMENT ID 4 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
4	-1.5339E+01	-1.0071E-01	4.7542E-02	-1.0056E-01	-1.5339E+01	89.82
5	1.1658E+01	1.1221E+00	-4.2485E-01	1.1675E+01	1.1050E+00	-2.31
12	7.2097E-01	-8.3745E+00	1.7416E+00	1.0430E+00	-8.6965E+00	10.48
13	-7.0509E+00	-4.7637E+00	1.2692E+00	-4.1989E+00	-7.6157E+00	66.01

MIDPT	V1	V2	VMAX	ANGLE
	1.5170E+01	-7.7420E+00	1.7031E+01	-27.04

ELEMENT ID 5 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
5	-2.0775E+01	1.1221E+00	-1.9441E+00	1.2934E+00	-2.0946E+01	-84.97
6	2.1010E+01	3.4018E-01	-3.0063E+00	2.1439E+01	-8.8202E-02	-8.11
13	1.6057E+00	-4.7636E+00	4.1304E+00	3.6367E+00	-6.7946E+00	26.18
14	-7.3270E+00	1.3351E+01	3.0682E+00	1.3796E+01	-7.7727E+00	81.74

MIDPT	V1	V2	VMAX	ANGLE
	2.9102E+01	2.0733E+00	2.9176E+01	4.08

ELEMENT ID 6 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	-1.4137E+01	-1.5828E+01	-7.0471E-01	-1.3882E+01	-1.6084E+01	-19.90
7	1.9927E+01	0.0000E+00	-1.5630E+00	2.0048E+01	-1.2186E-01	-4.46
89	1.8723E+01	-7.9249E-05	3.9843E+00	1.9536E+01	-8.1268E-01	11.53
89	1.8723E+01	-3.9679E-10	3.9843E+00	1.9536E+01	-8.1259E-01	11.53

MIDPT	V1	V2	VMAX	ANGLE
	-5.8847E+01	1.2034E+00	5.8860E+01	178.83

ELEMENT ID 7 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	-1.0753E+01	3.4018E-01	-8.7853E+00	5.1834E+00	-1.5596E+01	-61.13
89	2.3404E+01	2.5174E+01	-8.1774E+00	3.2514E+01	1.6064E+01	-48.09
14	-1.5753E+01	1.3351E+01	4.0617E+00	1.3907E+01	-1.6309E+01	82.20
14	-1.5752E+01	1.3351E+01	4.0617E+00	1.3907E+01	-1.6309E+01	82.20

MIDPT	V1	V2	VMAX	ANGLE
	-6.4235E+01	-4.8582E+00	6.4419E+01	-175.67

ELEMENT ID 8 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	1.1627E+00	3.9530E+00	1.2834E+01	1.5468E+01	-1.0352E+01	48.10
89	2.4796E+01	4.2322E+01	-1.1746E+00	4.2400E+01	2.4718E+01	-86.18
15	6.7733E+00	7.2413E+00	-2.2030E-02	7.2424E+00	6.7723E+00	-87.31
15	6.7734E+00	7.2415E+00	-2.2100E-02	7.2426E+00	6.7724E+00	-87.30

MIDPT	V1	V2	VMAX	ANGLE
	-1.0171E+01	8.8183E+01	8.8768E+01	96.58

ELEMENT ID 9 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
89	0.0000E+00	4.2322E+01	-2.3459E+00	4.2451E+01	-1.2963E-01	-86.84
8	0.0000E+00	3.3544E+01	0.0000E+00	3.3544E+01	0.0000E+00	90.00
15	9.5732E+00	7.2416E+00	-2.0145E+00	1.0735E+01	6.0799E+00	-29.97
16	5.5614E+00	1.6841E+01	3.3139E-01	1.6851E+01	5.5517E+00	88.32

MIDPT	V1	V2	VMAX	ANGLE
	-5.8078E+00	-4.4216E+01	4.4596E+01	-97.48

ELEMENT ID 10 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
9	-3.7610E+00	-7.2649E+00	-1.2649E+00	-3.3521E+00	-7.6738E+00	-17.91
10	-1.1316E+00	-5.9458E+00	-2.0057E+00	-4.0548E-01	-6.6719E+00	-19.90
17	3.9524E-01	5.6528E+00	-3.1443E+00	7.1224E+00	-1.0744E+00	-64.95
18	-8.9915E+00	-1.6803E+00	-3.8850E+00	-1.4400E-03	-1.0670E+01	-66.63

MIDPT	V1	V2	VMAX	ANGLE
	-6.1027E+00	7.6656E+00	9.7982E+00	128.52

ELEMENT ID 11 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
10	-7.0126E+00	-5.9458E+00	-2.4901E+00	-3.9326E+00	-9.0258E+00	-51.05
11	-1.9237E+00	-1.0440E+01	-2.2818E+00	-1.3509E+00	-1.1013E+01	-14.09

18	-7.9292E+00	-1.6804E+00	-3.3873E+00	-1.9655E-01	-9.4130E+00	-66.34
19	3.4327E-02	-5.7062E-02	-3.1790E+00	3.1680E+00	-3.1907E+00	-44.59
MIDPT	V1	V2		VMAX		ANGLE
	7.2605E+00	7.5847E+00		1.0500E+01		46.25

ELEMENT ID 12 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
11	-2.6939E+00	-1.0440E+01	-8.1858E-01	-2.6084E+00	-1.0526E+01	-5.97
12	-3.6975E+00	-7.6233E+00	2.8181E+00	-2.2260E+00	-9.0947E+00	27.57
19	1.3427E+00	-5.7108E-02	-3.3464E+00	4.0616E+00	-2.7760E+00	-39.09
20	1.0449E+01	-1.0963E+01	2.9023E-01	1.0453E+01	-1.0967E+01	.78
MIDPT	V1	V2		VMAX		ANGLE
	2.5365E+00	8.0675E+00		8.4569E+00		72.55

ELEMENT ID 13 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
12	7.2109E-01	-7.6233E+00	3.9748E+00	2.3114E+00	-9.2136E+00	21.81
13	-7.0511E+00	-3.0899E+00	7.6888E+00	2.8693E+00	-1.3010E+01	52.22
20	9.1514E+00	-1.0963E+01	8.9518E+00	1.2558E+01	-1.4370E+01	20.84
21	5.3449E+00	-1.2953E+00	1.2666E+01	1.5119E+01	-1.1069E+01	37.66
MIDPT	V1	V2		VMAX		ANGLE
	-3.1388E+00	4.4340E+00		5.4325E+00		125.30

ELEMENT ID 14 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
13	1.6059E+00	-3.0899E+00	1.0550E+01	1.0066E+01	-1.1550E+01	38.73
14	-7.3272E+00	1.2920E+00	1.0860E+01	8.6664E+00	-1.4702E+01	55.82
21	2.1465E+00	-1.2952E+00	1.3328E+01	1.3864E+01	-1.3013E+01	41.32
22	-6.1289E+00	2.2481E+00	1.3638E+01	1.2326E+01	-1.6207E+01	53.54
MIDPT	V1	V2		VMAX		ANGLE
	-9.2845E+00	1.8101E+00		9.4593E+00		168.97

ELEMENT ID 15 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	1.1627E+00	1.2920E+00	8.5600E+00	9.7876E+00	-7.3329E+00	45.22
15	6.7734E+00	1.2222E+01	4.5419E+00	1.4794E+01	4.2015E+00	60.48
22	-7.8812E+00	2.2481E+00	1.0836E+01	9.1444E+00	-1.4778E+01	57.53
23	-6.7144E+00	-2.1886E+00	6.8176E+00	2.7318E+00	-1.1635E+01	54.18
MIDPT	V1	V2		VMAX		ANGLE
	7.0263E+00	-1.2360E+01		1.4218E+01		-60.38

ELEMENT ID 16 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
15	9.5732E+00	1.2222E+01	2.5495E+00	1.3771E+01	8.0247E+00	58.73
16	5.5614E+00	1.3801E+01	3.3143E-01	1.3815E+01	5.5481E+00	87.70
23	-7.4824E+00	-2.1887E+00	3.3961E+00	-5.2978E-01	-9.1413E+00	63.97
24	-6.0033E+00	-2.7179E+00	1.1781E+00	-2.3392E+00	-6.3820E+00	72.18
MIDPT	V1	V2		VMAX		ANGLE
	-3.2384E+00	-2.2620E+01		2.2851E+01		-98.15

ELEMENT ID 17 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
17	3.9531E-01	-1.5937E+01	-1.0579E+00	4.6355E-01	-1.6006E+01	-3.69
18	-8.9916E+00	3.5437E+00	-2.0184E+00	3.8606E+00	-9.3086E+00	-81.08
25	4.6815E-01	1.7731E+01	2.2481E+00	1.8019E+01	1.8020E-01	82.70
26	-1.3867E+01	8.8294E+00	1.2876E+00	8.9023E+00	-1.3940E+01	86.76

MIDPT	V1	V2	VMAX	ANGLE
	-1.1520E+01	1.8277E+01	2.1604E+01	122.22

ELEMENT ID 18 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
18	-7.9292E+00	3.5437E+00	-1.5206E+00	3.7418E+00	-8.1274E+00	-82.58
19	3.4376E-02	-2.6760E-01	-4.7201E+00	4.6059E+00	-4.8391E+00	-44.08
26	-1.3511E+01	8.8295E+00	1.3196E+00	8.9071E+00	-1.3588E+01	86.63
27	-1.0381E+01	2.1730E+01	-1.8798E+00	2.1839E+01	-1.0491E+01	-86.66

MIDPT	V1	V2	VMAX	ANGLE
	9.7732E+00	9.6422E+00	1.3729E+01	44.61

ELEMENT ID 19 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
19	1.3426E+00	-2.6760E-01	-4.8875E+00	5.4909E+00	-4.4158E+00	-40.32
20	1.0449E+01	-1.3745E+01	6.1618E-01	1.0465E+01	-1.3761E+01	1.46
27	-1.2734E+01	2.1730E+01	-1.1186E+00	2.1766E+01	-1.2770E+01	-88.14
28	5.2044E+01	4.7267E+01	4.3850E+00	5.4649E+01	4.4663E+01	30.71

MIDPT	V1	V2	VMAX	ANGLE
	4.9947E+01	4.8385E+01	6.9540E+01	44.09

ELEMENT ID 20 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
20	9.1515E+00	-1.3745E+01	9.2778E+00	1.2439E+01	-1.7033E+01	19.51
21	5.3449E+00	-3.2003E-01	1.4336E+01	1.7125E+01	-1.2101E+01	39.41
28	5.2550E+01	4.7267E+01	4.7654E+00	5.5357E+01	4.4460E+01	30.50
29	-9.6904E+00	2.0967E+01	9.8234E+00	2.3844E+01	-1.2568E+01	73.67

MIDPT	V1	V2	VMAX	ANGLE
	-5.0807E+01	4.8240E+01	7.0060E+01	136.48

ELEMENT ID 21 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
21	2.1465E+00	-3.2003E-01	1.4998E+01	1.5961E+01	-1.4135E+01	42.65
22	-6.1290E+00	2.2341E+00	1.1851E+01	1.0620E+01	-1.4515E+01	54.72
29	-7.2664E+00	2.0967E+01	9.8614E+00	2.4070E+01	-1.0370E+01	72.53
30	-1.4360E+01	3.7574E+00	6.7149E+00	5.9748E+00	-1.6577E+01	71.73

MIDPT	V1	V2	VMAX	ANGLE
	-1.5909E+01	6.9940E+00	1.7378E+01	156.27

ELEMENT ID 22 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
22	-7.8813E+00	2.2341E+00	9.0491E+00	7.5430E+00	-1.3190E+01	59.60
23	-6.7144E+00	-1.3947E+00	6.1604E+00	2.6556E+00	-1.0765E+01	56.68

30	-1.4205E+01	3.7573E+00	5.8549E+00	5.4972E+00	-1.5945E+01	73.45
31	-1.6589E+01	-1.7281E+00	2.9663E+00	-1.1579E+00	-1.7159E+01	79.12
MIDPT	V1	V2		VMAX		ANGLE
	-4.0475E+00	-3.4547E+00		5.3214E+00		-139.52

ELEMENT ID 23 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
23	-7.4825E+00	-1.3947E+00	2.7390E+00	-3.4377E-01	-8.5334E+00	69.01
24	-6.0033E+00	-1.7786E+00	1.1780E+00	-1.4723E+00	-6.3096E+00	75.43
31	-1.6618E+01	-1.7281E+00	1.9284E+00	-1.4824E+00	-1.6863E+01	82.74
32	-1.7009E+01	-2.3493E+00	3.6749E-01	-2.3401E+00	-1.7018E+01	88.57
MIDPT	V1	V2		VMAX		ANGLE
	9.4380E-01	-5.4873E+00		5.5679E+00		-80.24

ELEMENT ID 24 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
25	4.6822E-01	2.2441E+01	1.0546E+00	2.2492E+01	4.1772E-01	87.26
26	-1.3867E+01	7.5768E+00	2.4262E+00	7.8479E+00	-1.4138E+01	83.63
33	-3.9308E-01	-2.1285E+01	3.6199E+00	2.1636E-01	-2.1895E+01	9.56
34	-6.3192E+00	1.9984E+00	4.9915E+00	4.3366E+00	-8.6574E+00	64.90
MIDPT	V1	V2		VMAX		ANGLE
	-1.0032E+01	-2.3570E+01		2.5616E+01		-113.06

ELEMENT ID 25 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
26	-1.3511E+01	7.5768E+00	2.4583E+00	7.8596E+00	-1.3793E+01	83.44
27	-1.0381E+01	2.2023E+01	6.6904E+00	2.3350E+01	-1.1708E+01	78.78
34	-6.7604E+00	1.9985E+00	4.5335E+00	3.9224E+00	-8.6844E+00	67.01
35	3.5000E+00	-5.6364E+00	8.7656E+00	8.8164E+00	-1.0953E+01	31.24
MIDPT	V1	V2		VMAX		ANGLE
	1.0497E+01	-1.1755E+01		1.5759E+01		-48.24

ELEMENT ID 26 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
27	-1.2734E+01	2.2023E+01	7.4517E+00	2.3553E+01	-1.4265E+01	78.40
28	5.2045E+01	4.7290E+01	3.2426E+00	5.3688E+01	4.5647E+01	26.88
35	4.6572E+00	-5.6365E+00	1.0384E+01	1.1100E+01	-1.2079E+01	31.82
36	1.4134E+01	-2.1279E+01	6.1752E+00	1.5180E+01	-2.2325E+01	9.61
MIDPT	V1	V2		VMAX		ANGLE
	4.9418E+01	-5.4609E+01		7.3650E+01		-47.86

ELEMENT ID 27 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
28	5.2550E+01	4.7290E+01	3.6227E+00	5.4397E+01	4.5444E+01	27.01
29	-9.6908E+00	2.0999E+01	-7.0514E-01	2.1015E+01	-9.7070E+00	-88.68
36	1.3969E+01	-2.1279E+01	-1.2728E+00	1.4015E+01	-2.1325E+01	-2.07
37	5.2294E+00	-9.3139E+00	-5.6005E+00	7.1361E+00	-1.1221E+01	-18.80
MIDPT	V1	V2		VMAX		ANGLE
	-5.4773E+01	-5.6776E+01		7.8890E+01		-133.97

ELEMENT ID 28 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
29	-7.2664E+00	2.0999E+01	-6.6703E-01	2.1014E+01	-7.2821E+00	-88.65
30	-1.4360E+01	3.9176E+00	1.9077E+00	4.1146E+00	-1.4557E+01	84.10
37	4.2139E+00	-9.3139E+00	-5.7482E+00	6.3266E+00	-1.1426E+01	-20.18
38	-1.1763E+01	-7.1033E+00	-3.1735E+00	-5.4963E+00	-1.3370E+01	-63.14

MIDPT	V1	V2	VMAX	ANGLE
	-2.1383E+01	-1.7587E+01	2.7686E+01	-140.56

ELEMENT ID 29 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
30	-1.4205E+01	3.9176E+00	1.0478E+00	3.9780E+00	-1.4265E+01	86.70
31	-1.6589E+01	-1.9091E+00	1.4764E+00	-1.7621E+00	-1.6736E+01	84.31
38	-1.1474E+01	-7.1032E+00	-1.3213E+00	-6.7348E+00	-1.1842E+01	-74.42
39	-1.6977E+01	-8.2097E+00	-8.9270E-01	-8.1197E+00	-1.7067E+01	-84.24

MIDPT	V1	V2	VMAX	ANGLE
	-7.9584E+00	-8.2820E+00	1.1486E+01	-133.86

ELEMENT ID 30 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
31	-1.6618E+01	-1.9091E+00	4.3860E-01	-1.8960E+00	-1.6631E+01	88.29
32	-1.7009E+01	-2.4891E+00	3.6747E-01	-2.4798E+00	-1.7019E+01	88.55
39	-1.7050E+01	-8.2097E+00	-9.9852E-02	-8.2086E+00	-1.7051E+01	-89.35
40	-1.7472E+01	-8.3145E+00	-1.7098E-01	-8.3113E+00	-1.7476E+01	-88.93

MIDPT	V1	V2	VMAX	ANGLE
	-1.8656E+00	-6.4479E+00	6.7124E+00	-106.14

ELEMENT ID 31 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
33	-3.9305E-01	8.2208E+00	4.3603E+00	1.0043E+01	-2.2149E+00	67.32
34	-6.3192E+00	-5.4799E+00	5.2438E+00	-6.3903E-01	-1.1160E+01	47.29
41	3.1286E-01	-1.1545E+01	9.2918E-01	3.8523E-01	-1.1617E+01	4.45
42	-2.7183E+00	-9.1056E+00	1.8126E+00	-2.2397E+00	-9.5841E+00	14.79

MIDPT	V1	V2	VMAX	ANGLE
	-9.1174E+00	-1.0891E+01	1.4204E+01	-129.93

ELEMENT ID 32 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
34	-6.7605E+00	-5.4799E+00	4.7857E+00	-1.2919E+00	-1.0948E+01	48.81
35	3.5002E+00	-4.7208E+00	5.6628E+00	6.3870E+00	-7.6077E+00	27.01
42	-2.4858E+00	-9.1056E+00	1.6992E+00	-2.0751E+00	-9.5163E+00	13.59
43	3.5013E+00	-1.9995E+01	2.5763E+00	3.7805E+00	-2.0274E+01	6.18

MIDPT	V1	V2	VMAX	ANGLE
	6.9892E+00	-8.5957E+00	1.1079E+01	-50.89

ELEMENT ID 33 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
35	4.6573E+00	-4.7208E+00	7.2812E+00	8.6287E+00	-8.6922E+00	28.61
36	1.4134E+01	-1.8989E+01	5.2722E+00	1.4953E+01	-1.9808E+01	8.83

43	3.5049E+00	-1.9995E+01	2.5499E+00	3.7784E+00	-2.0268E+01	6.12
44	5.4923E+00	-2.1255E+01	5.4088E-01	5.5032E+00	-2.1266E+01	1.16
MIDPT	V1	V2		VMAX		ANGLE
	2.3122E+00	-1.1506E+01		1.1736E+01		-78.64

ELEMENT ID 34 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
36	1.3969E+01	-1.8989E+01	-2.1755E+00	1.4112E+01	-1.9132E+01	-3.76
37	5.2294E+00	-9.6978E+00	-4.3373E+00	6.3982E+00	-1.0867E+01	-15.08
44	5.5374E+00	-2.1255E+01	4.2858E-01	5.5443E+00	-2.1262E+01	.92
45	1.8412E+00	-2.2925E+01	-1.7332E+00	1.9619E+00	-2.3046E+01	-3.98
MIDPT	V1	V2		VMAX		ANGLE
	-6.0455E+00	-1.0976E+01		1.2531E+01		-118.85

ELEMENT ID 35 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
37	4.2141E+00	-9.6978E+00	-4.4851E+00	5.5347E+00	-1.1018E+01	-16.41
38	-1.1763E+01	-7.6947E+00	-4.1533E+00	-5.1043E+00	-1.4354E+01	-58.05
45	1.8652E+00	-2.2925E+01	-1.8268E+00	1.9991E+00	-2.3059E+01	-4.19
46	-7.6004E+00	-1.7149E+01	-1.4950E+00	-7.3718E+00	-1.7378E+01	-8.69
MIDPT	V1	V2		VMAX		ANGLE
	-1.5107E+01	-1.1167E+01		1.8786E+01		-143.53

ELEMENT ID 36 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
38	-1.1474E+01	-7.6947E+00	-2.3011E+00	-6.6067E+00	-1.2562E+01	-64.70
39	-1.6977E+01	-8.5528E+00	-1.2861E+00	-8.3608E+00	-1.7169E+01	-81.51
46	-7.8791E+00	-1.7149E+01	-1.4559E+00	-7.6558E+00	-1.7372E+01	-8.72
47	-1.5022E+01	-1.3817E+01	-4.4089E-01	-1.3673E+01	-1.5166E+01	-71.90
MIDPT	V1	V2		VMAX		ANGLE
	-7.9974E+00	-6.1251E+00		1.0073E+01		-142.55

ELEMENT ID 37 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
39	-1.7050E+01	-8.5528E+00	-4.9329E-01	-8.5242E+00	-1.7078E+01	-86.69
40	-1.7472E+01	-8.6766E+00	-1.7098E-01	-8.6733E+00	-1.7476E+01	-88.89
47	-1.4855E+01	-1.3817E+01	-3.5317E-01	-1.3708E+01	-1.4964E+01	-72.88
48	-1.5612E+01	-1.3515E+01	-3.0862E-02	-1.3515E+01	-1.5613E+01	-89.16
MIDPT	V1	V2		VMAX		ANGLE
	-1.7593E+00	-4.1413E+00		4.4995E+00		-113.02

ELEMENT ID 38 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
41	3.1288E-01	-9.7845E+00	-5.9357E-01	3.4765E-01	-9.8193E+00	-3.35
42	-2.7183E+00	-9.5360E+00	-1.3232E+00	-2.4705E+00	-9.7839E+00	-10.61
49	-3.0487E-01	6.1909E+00	-4.4343E+00	8.4396E+00	-2.5535E+00	-63.11
50	-5.6575E+00	-6.6630E+00	-5.1640E+00	-9.7190E-01	-1.1349E+01	-42.22
MIDPT	V1	V2		VMAX		ANGLE
	-9.1791E+00	8.7538E+00		1.2684E+01		136.36

ELEMENT ID 39 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
42	-2.4858E+00	-9.5360E+00	-1.4367E+00	-2.2043E+00	-9.8176E+00	-11.09
43	3.5014E+00	-1.9820E+01	-2.2049E+00	3.7080E+00	-2.0027E+01	-5.35
50	-6.1594E+00	-6.6631E+00	-4.5823E+00	-1.8220E+00	-1.1000E+01	-43.43
51	3.4300E+00	-6.7033E+00	-5.3505E+00	5.7321E+00	-9.0055E+00	-23.28
MIDPT	V1	V2		VMAX		ANGLE
	6.5091E+00	7.2395E+00		9.7354E+00		48.04

ELEMENT ID 40 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
43	3.5049E+00	-1.9820E+01	-2.2313E+00	3.7164E+00	-2.0031E+01	-5.42
44	5.4922E+00	-2.1364E+01	-4.4904E-01	5.4997E+00	-2.1372E+01	-.96
51	4.4893E+00	-6.7034E+00	-6.7592E+00	7.6682E+00	-9.8824E+00	-25.19
52	1.3196E+01	-2.0020E+01	-4.9770E+00	1.3926E+01	-2.0750E+01	-8.34
MIDPT	V1	V2		VMAX		ANGLE
	2.0400E+00	9.6436E+00		9.8570E+00		78.06

ELEMENT ID 41 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
44	5.5374E+00	-2.1364E+01	-5.6130E-01	5.5491E+00	-2.1376E+01	-1.19
45	1.8412E+00	-2.2880E+01	1.3204E+00	1.9115E+00	-2.2950E+01	3.05
52	1.3105E+01	-2.0020E+01	1.9234E+00	1.3216E+01	-2.0131E+01	3.31
53	4.5619E+00	-1.1233E+01	3.8051E+00	5.4308E+00	-1.2102E+01	12.86
MIDPT	V1	V2		VMAX		ANGLE
	-6.0303E+00	9.3004E+00		1.1084E+01		122.96

ELEMENT ID 42 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
45	1.8652E+00	-2.2880E+01	1.2269E+00	1.9259E+00	-2.2941E+01	2.83
46	-7.6004E+00	-1.7138E+01	8.7911E-01	-7.5201E+00	-1.7218E+01	5.22
53	3.7532E+00	-1.1233E+01	3.8889E+00	4.7023E+00	-1.2182E+01	13.71
54	-1.1390E+01	-9.1845E+00	3.5411E+00	-6.5784E+00	-1.3996E+01	53.65
MIDPT	V1	V2		VMAX		ANGLE
	-1.4519E+01	9.5642E+00		1.7386E+01		146.63

ELEMENT ID 43 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
46	-7.8790E+00	-1.7138E+01	9.1817E-01	-7.7889E+00	-1.7228E+01	5.61
47	-1.5022E+01	-1.3835E+01	1.0242E-01	-1.3827E+01	-1.5031E+01	85.10
54	-1.0986E+01	-9.1845E+00	1.8715E+00	-8.0084E+00	-1.2163E+01	57.85
55	-1.6375E+01	-9.6972E+00	1.0557E+00	-9.5343E+00	-1.6538E+01	81.23
MIDPT	V1	V2		VMAX		ANGLE
	-7.8061E+00	5.0573E+00		9.3011E+00		147.06

ELEMENT ID 44 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
47	-1.4855E+01	-1.3835E+01	1.9013E-01	-1.3801E+01	-1.4889E+01	79.77
48	-1.5612E+01	-1.3534E+01	-3.0858E-02	-1.3534E+01	-1.5613E+01	-89.15

55	-1.6388E+01	-9.6972E+00	3.6609E-01	-9.6773E+00	-1.6408E+01	86.88
56	-1.6859E+01	-9.7745E+00	1.4511E-01	-9.7715E+00	-1.6862E+01	88.83
MIDPT	V1	V2		VMAX		ANGLE
	-1.8000E+00	3.3374E+00		3.7919E+00		118.34

ELEMENT ID 45 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
49	-3.0485E-01	-2.1288E+01	-4.4075E+00	5.8334E-01	-2.2176E+01	-11.39
50	-5.6576E+00	3.5408E-01	-5.4818E+00	3.6000E+00	-8.9036E+00	-59.37
57	7.4357E-01	2.1854E+01	-3.1663E+00	2.2318E+01	2.7889E-01	-81.65
58	-1.1943E+01	4.2855E+00	-4.2406E+00	5.3267E+00	-1.2985E+01	-76.20
MIDPT	V1	V2		VMAX		ANGLE
	-1.0002E+01	2.2797E+01		2.4895E+01		113.69

ELEMENT ID 46 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
50	-6.1595E+00	3.5408E-01	-4.9001E+00	2.9810E+00	-8.7863E+00	-61.80
51	3.4301E+00	-7.4861E+00	-8.3747E+00	7.9683E+00	-1.2024E+01	-28.45
58	-1.1137E+01	4.2854E+00	-3.2807E+00	4.9543E+00	-1.1806E+01	-78.48
59	-8.5309E+00	1.7440E+01	-6.7553E+00	1.9092E+01	-1.0183E+01	-76.26
MIDPT	V1	V2		VMAX		ANGLE
	9.2833E+00	1.0456E+01		1.3982E+01		48.40

ELEMENT ID 47 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
51	4.4892E+00	-7.4861E+00	-9.7834E+00	9.9719E+00	-1.2969E+01	-29.27
52	1.3196E+01	-2.2272E+01	-5.7741E+00	1.4113E+01	-2.3189E+01	-9.02
59	-1.0747E+01	1.7441E+01	-6.8659E+00	1.9024E+01	-1.2330E+01	-77.01
60	4.7978E+01	4.1802E+01	-2.8567E+00	4.9096E+01	4.0683E+01	-21.39
MIDPT	V1	V2		VMAX		ANGLE
	4.5137E+01	5.0653E+01		6.7846E+01		48.30

ELEMENT ID 48 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
52	1.3105E+01	-2.2272E+01	1.1263E+00	1.3141E+01	-2.2308E+01	1.82
53	4.5618E+00	-1.0763E+01	5.1393E+00	6.1257E+00	-1.2327E+01	16.93
60	4.8165E+01	4.1802E+01	-3.5251E+00	4.9732E+01	4.0235E+01	-23.97
61	-8.5584E+00	1.6681E+01	4.8793E-01	1.6690E+01	-8.5679E+00	88.89
MIDPT	V1	V2		VMAX		ANGLE
	-5.0518E+01	5.2558E+01		7.2901E+01		133.87

ELEMENT ID 49 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
53	3.7533E+00	-1.0763E+01	5.2231E+00	5.4372E+00	-1.2447E+01	17.87
54	-1.1390E+01	-8.6606E+00	2.9755E+00	-6.7518E+00	-1.3299E+01	57.32
61	-6.8232E+00	1.6681E+01	9.6571E-01	1.6720E+01	-6.8628E+00	87.65
62	-1.3102E+01	2.1191E+00	-1.2818E+00	2.2263E+00	-1.3209E+01	-85.22
MIDPT	V1	V2		VMAX		ANGLE
	-1.9382E+01	1.6451E+01		2.5422E+01		139.68

ELEMENT ID 50 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
54	-1.0986E+01	-8.6606E+00	1.3059E+00	-8.0749E+00	-1.1572E+01	65.84
55	-1.6375E+01	-9.4056E+00	8.3605E-01	-9.3067E+00	-1.6474E+01	83.25
62	-1.3616E+01	2.1190E+00	-4.8107E-01	2.1337E+00	-1.3631E+01	-88.25
63	-1.6314E+01	-2.3655E+00	-9.5089E-01	-2.3009E+00	-1.6378E+01	-86.12
MIDPT	V1	V2		VMAX		ANGLE
	-7.5002E+00	8.4797E+00		1.1321E+01		131.49

ELEMENT ID 51 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
55	-1.6388E+01	-9.4056E+00	1.4644E-01	-9.4025E+00	-1.6391E+01	88.80
56	-1.6859E+01	-9.4787E+00	1.4511E-01	-9.4759E+00	-1.6862E+01	88.87
63	-1.6519E+01	-2.3655E+00	-2.3913E-01	-2.3614E+00	-1.6523E+01	-89.03
64	-1.6745E+01	-2.7827E+00	-2.4047E-01	-2.7786E+00	-1.6749E+01	-89.01
MIDPT	V1	V2		VMAX		ANGLE
	-1.5190E+00	7.0399E+00		7.2019E+00		102.18

ELEMENT ID 52 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
57	7.4363E-01	1.1724E+01	-4.6958E+00	1.3458E+01	-9.9071E-01	-69.73
58	-1.1943E+01	6.9784E+00	-3.7425E+00	7.6918E+00	-1.2657E+01	-79.21
65	-4.5674E-01	-9.4018E+00	-2.4308E+00	1.6113E-01	-1.0020E+01	-14.26
66	-6.8184E+00	4.1468E+00	-1.4774E+00	4.3424E+00	-7.0139E+00	-82.46
MIDPT	V1	V2		VMAX		ANGLE
	-9.1543E+00	-1.3357E+01		1.6193E+01		-124.42

ELEMENT ID 53 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
58	-1.1137E+01	6.9784E+00	-2.7825E+00	7.3962E+00	-1.1555E+01	-81.46
59	-8.5310E+00	1.6574E+01	6.8274E-01	1.6593E+01	-8.5495E+00	88.44
66	-7.3590E+00	4.1469E+00	-5.0576E-01	4.1691E+00	-7.3812E+00	-87.49
67	1.9559E+00	3.4001E+00	2.9594E+00	5.7242E+00	-3.6830E-01	51.86
MIDPT	V1	V2		VMAX		ANGLE
	1.0216E+01	-5.3885E+00		1.1550E+01		-27.81

ELEMENT ID 54 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
59	-1.0747E+01	1.6574E+01	5.7222E-01	1.6586E+01	-1.0759E+01	88.80
60	4.7978E+01	4.2318E+01	-3.8948E+00	4.9963E+01	4.0333E+01	-27.00
67	2.8935E+00	3.4000E+00	3.8850E+00	7.0400E+00	-7.4650E-01	46.86
68	1.5948E+01	-9.4680E+00	-5.8200E-01	1.5962E+01	-9.4813E+00	-1.31
MIDPT	V1	V2		VMAX		ANGLE
	4.8886E+01	-4.5033E+01		6.6467E+01		-42.65

ELEMENT ID 55 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
60	4.8166E+01	4.2318E+01	-4.5635E+00	5.0662E+01	3.9822E+01	-28.68
61	-8.5588E+00	1.6470E+01	-8.6321E+00	1.9158E+01	-1.1247E+01	-72.70

68	1.5854E+01	-9.4680E+00	-8.4775E+00	1.8430E+01	-1.2044E+01	-16.90
69	4.9688E+00	2.8159E+00	-1.2546E+01	1.6485E+01	-8.6999E+00	-42.55
MIDPT	V1	V2		VMAX		ANGLE
	-5.2144E+01	-4.5444E+01		6.9168E+01		-138.93

ELEMENT ID 56 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
61	-6.8232E+00	1.6470E+01	-8.1543E+00	1.9040E+01	-9.3941E+00	-72.50
62	-1.3102E+01	2.0772E+00	-4.8535E+00	3.4964E+00	-1.4521E+01	-73.70
69	4.2488E+00	2.8159E+00	-1.2247E+01	1.5800E+01	-8.7354E+00	-43.33
70	-8.9346E+00	3.0252E+00	-8.9460E+00	7.8059E+00	-1.3715E+01	-61.88
MIDPT	V1	V2		VMAX		ANGLE
	-1.8612E+01	-3.0887E+00		1.8867E+01		-170.58

ELEMENT ID 57 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	-1.3616E+01	2.0772E+00	-4.0527E+00	3.0619E+00	-1.4601E+01	-76.34
63	-1.6314E+01	-2.3909E+00	-1.8893E+00	-2.1391E+00	-1.6565E+01	-82.41
70	-8.4276E+00	3.0251E+00	-5.9207E+00	5.5356E+00	-1.0938E+01	-67.02
71	-1.1515E+01	1.0193E+00	-3.7574E+00	2.0594E+00	-1.2555E+01	-74.53
MIDPT	V1	V2		VMAX		ANGLE
	-6.3234E+00	5.6793E+00		8.4994E+00		138.07

ELEMENT ID 58 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
63	-1.6519E+01	-2.3909E+00	-1.1776E+00	-2.2934E+00	-1.6617E+01	-85.27
64	-1.6745E+01	-2.7959E+00	-2.4047E-01	-2.7918E+00	-1.6749E+01	-89.01
71	-1.1565E+01	1.0193E+00	-1.5952E+00	1.2184E+00	-1.1764E+01	-82.89
72	-1.1743E+01	7.9540E-01	-6.5806E-01	8.2984E-01	-1.1778E+01	-87.00
MIDPT	V1	V2		VMAX		ANGLE
	-1.1582E+00	7.2748E+00		7.3665E+00		99.05

ELEMENT ID 59 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
65	-4.5671E-01	3.8518E+00	-1.1134E+00	4.1225E+00	-7.2740E-01	-76.34
66	-6.8184E+00	8.8179E-01	6.1851E-02	8.8229E-01	-6.8189E+00	89.54
73	-5.4174E-02	-3.2007E+00	-1.5370E+00	5.7199E-01	-3.8269E+00	-22.17
74	-2.3830E+00	-1.8772E+00	-3.6180E-01	-1.6887E+00	-2.5715E+00	-62.48
MIDPT	V1	V2		VMAX		ANGLE
	-5.9461E+00	-4.4894E+00		7.4506E+00		-142.95

ELEMENT ID 60 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
66	-7.3590E+00	8.8179E-01	1.0334E+00	1.0094E+00	-7.4866E+00	82.96
67	1.9560E+00	3.3404E+00	2.1315E+00	4.8893E+00	4.0706E-01	54.00
74	-2.2843E+00	-1.8772E+00	8.8175E-01	-1.1758E+00	-2.9857E+00	51.50
75	1.4017E+00	-4.9254E+00	1.9798E+00	1.9702E+00	-5.4938E+00	16.02
MIDPT	V1	V2		VMAX		ANGLE
	7.9414E+00	-5.3226E+00		9.5601E+00		-33.83

ELEMENT ID 61 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
67	2.8935E+00	3.3404E+00	3.0570E+00	6.1821E+00	5.1793E-02	47.09
68	1.5948E+01	-7.5730E+00	-3.3130E-01	1.5953E+01	-7.5777E+00	-.81
75	1.5419E+00	-4.9254E+00	8.1619E-01	1.6433E+00	-5.0268E+00	7.08
76	3.3513E+00	-2.7213E+00	-2.5721E+00	4.2943E+00	-3.6643E+00	-20.13

MIDPT	V1	V2	VMAX	ANGLE
	6.5684E+00	-6.3087E+00	9.1073E+00	-43.84

ELEMENT ID 62 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
68	1.5854E+01	-7.5730E+00	-8.2266E+00	1.8455E+01	-1.0173E+01	-17.54
69	4.9688E+00	2.2257E+00	-1.1548E+01	1.5227E+01	-8.0322E+00	-41.61
76	3.3386E+00	-2.7213E+00	-4.8977E+00	6.0678E+00	-5.4505E+00	-29.13
77	2.1490E+00	-9.8324E-01	-8.2194E+00	8.9501E+00	-7.7844E+00	-39.61

MIDPT	V1	V2	VMAX	ANGLE
	-4.4206E+00	-3.6589E+00	5.7384E+00	-140.39

ELEMENT ID 63 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
69	4.2489E+00	2.2257E+00	-1.1249E+01	1.4532E+01	-8.0572E+00	-42.43
70	-8.9347E+00	2.6739E+00	-1.0220E+01	8.6230E+00	-1.4884E+01	-59.80
77	1.9849E+00	-9.8320E-01	-9.5136E+00	1.0130E+01	-9.1278E+00	-40.57
78	-1.9203E+00	4.5833E+00	-8.4846E+00	1.0418E+01	-7.7550E+00	-55.48

MIDPT	V1	V2	VMAX	ANGLE
	-9.8702E+00	6.5321E-01	9.8918E+00	176.21

ELEMENT ID 64 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
70	-8.4276E+00	2.6739E+00	-7.1949E+00	6.2103E+00	-1.1964E+01	-63.83
71	-1.1515E+01	8.3967E-01	-4.2390E+00	2.1542E+00	-1.2829E+01	-72.77
78	-2.1066E+00	4.5833E+00	-7.0034E+00	8.9995E+00	-6.5228E+00	-57.77
79	-4.1891E+00	7.0810E+00	-4.0475E+00	8.3840E+00	-5.4920E+00	-72.16

MIDPT	V1	V2	VMAX	ANGLE
	-3.3911E+00	9.0936E+00	9.7053E+00	110.45

ELEMENT ID 65 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
71	-1.1565E+01	8.3967E-01	-2.0767E+00	1.1781E+00	-1.1904E+01	-80.74
72	-1.1743E+01	6.0848E-01	-6.5806E-01	6.4344E-01	-1.1778E+01	-86.96
79	-4.0343E+00	7.0810E+00	-2.0775E+00	7.4566E+00	-4.4099E+00	-79.75
80	-4.2028E+00	7.3111E+00	-6.5882E-01	7.3487E+00	-4.2404E+00	-86.74

MIDPT	V1	V2	VMAX	ANGLE
	-5.5960E-01	1.2437E+01	1.2450E+01	92.58

ELEMENT ID 66 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
73	-5.4160E-02	-2.7043E+00	-1.1243E+00	3.5858E-01	-3.1170E+00	-20.16
74	-2.3830E+00	-2.3816E+00	-5.3233E-01	-1.8499E+00	-2.9146E+00	-45.04

81	-2.7123E-07	3.3258E+00	-5.5417E-01	3.4157E+00	-8.9910E-02	-80.78
82	-1.1931E-05	5.2192E+00	3.7838E-02	5.2194E+00	-2.8624E-04	89.58
MIDPT	V1	V2		VMAX		ANGLE
	-7.6300E-01	9.0178E+00		9.0501E+00		94.84

ELEMENT ID 67 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
74	-2.2843E+00	-2.3816E+00	7.1119E-01	-1.6201E+00	-3.0458E+00	43.04
75	1.4018E+00	-4.1844E+00	9.2557E-01	1.5511E+00	-4.3337E+00	9.17
82	-1.1437E-05	5.2192E+00	3.7857E-02	5.2194E+00	-2.8601E-04	89.58
83	7.0182E-06	4.4050E+00	2.5224E-01	4.4194E+00	-1.4390E-02	86.73
MIDPT	V1	V2		VMAX		ANGLE
	1.4860E+00	1.0100E+01		1.0209E+01		81.63

ELEMENT ID 68 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
75	1.5419E+00	-4.1844E+00	-2.3806E-01	1.5517E+00	-4.1942E+00	-2.38
76	3.3512E+00	-3.5075E+00	-1.4267E+00	3.6361E+00	-3.7924E+00	-11.29
83	7.7199E-06	4.4050E+00	2.5223E-01	4.4194E+00	-1.4388E-02	86.73
84	1.6779E-05	5.6337E+00	-9.3636E-01	5.7852E+00	-1.5154E-01	-80.81
MIDPT	V1	V2		VMAX		ANGLE
	1.7263E+00	9.2818E+00		9.4410E+00		79.46

ELEMENT ID 69 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
76	3.3385E+00	-3.5075E+00	-3.7522E+00	4.9945E+00	-5.1635E+00	-23.81
77	2.1490E+00	-3.5067E-01	-4.9408E+00	5.9956E+00	-4.1973E+00	-37.90
84	1.6715E-05	5.6337E+00	-9.3639E-01	5.7853E+00	-1.5155E-01	-80.81
85	1.0759E-05	1.2235E+01	-2.1250E+00	1.2594E+01	-3.5853E-01	-80.42
MIDPT	V1	V2		VMAX		ANGLE
	2.5862E+00	1.1529E+01		1.1815E+01		77.36

ELEMENT ID 70 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	1.9849E+00	-3.5067E-01	-6.2350E+00	7.1606E+00	-5.5263E+00	-39.70
78	-1.9203E+00	4.5057E+00	-6.2490E+00	8.3193E+00	-5.7339E+00	-58.61
85	9.9381E-06	1.2235E+01	-2.1250E+00	1.2594E+01	-3.5854E-01	-80.42
86	-9.6143E-06	2.1623E+01	-2.1390E+00	2.1832E+01	-2.0957E-01	-84.40
MIDPT	V1	V2		VMAX		ANGLE
	2.2546E+00	1.8019E+01		1.8159E+01		82.87

ELEMENT ID 71 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
78	-2.1065E+00	4.5057E+00	-4.7678E+00	7.0015E+00	-4.6023E+00	-62.37
79	-4.1890E+00	6.7952E+00	-3.4042E+00	7.7647E+00	-5.1585E+00	-74.10
86	-1.0547E-05	2.1623E+01	-2.1390E+00	2.1832E+01	-2.0957E-01	-84.40
87	-2.0974E-05	2.8444E+01	-7.7538E-01	2.8465E+01	-2.1142E-02	-88.44
MIDPT	V1	V2		VMAX		ANGLE
	1.7332E+00	2.5453E+01		2.5512E+01		86.10

ELEMENT ID 72 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
79	-4.0342E+00	6.7952E+00	-1.4342E+00	6.9819E+00	-4.2209E+00	-82.58
80	-4.2028E+00	7.0161E+00	-6.5881E-01	7.0547E+00	-4.2413E+00	-86.65
87	-2.0199E-05	2.8444E+01	-7.7535E-01	2.8465E+01	-2.1140E-02	-88.44
88	-2.1042E-05	2.9215E+01	-9.0898E-06	2.9215E+01	-2.1042E-05	-90.00

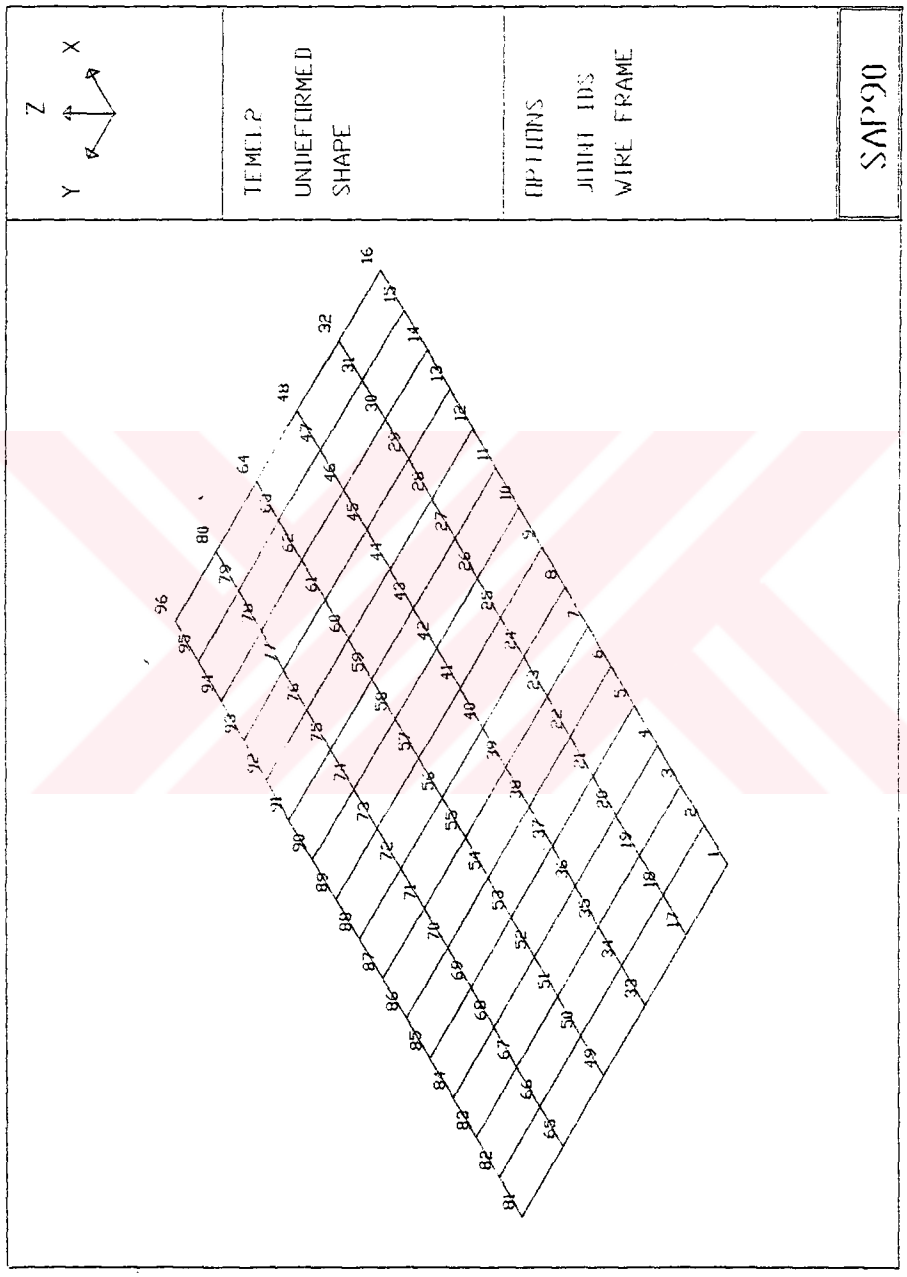
MIDPT	V1	V2	VMAX	ANGLE
	5.2833E-01	2.9129E+01	2.9134E+01	88.96

```
RADYE TEMEL
SYSTEM
L=1
JOINTS
1       X=0     Y=0     Z=0
16      X=4.56  Y=0     Z=0
81      X=0     Y=2.7   Z=0
96      X=4.56  Y=2.7   Z=0     Q=1,16,81,96,1,16

SHELL
NM=1    Z=1
1     E=3.025E+06     W=21.75
1     JQ=1,2,17,18    ETYPE=2  M=1  TH=0.8  G=15,5

RESTRAINTS
1     96    1     R=1,1,0,0,0,1
1     16    15    R=1,1,1,1,1,1
81    96    15    R=1,1,1,1,1,1
83    85    1     R=1,1,0,0,1,1
17    65    16    R=1,1,1,1,1,1
32    80    16    R=1,1,1,1,1,1
86    95    1     R=1,1,1,1,1,1
82                R=1,1,1,1,1,1

FRAME
NM=1
1   SH=R   T=2.72,0.20  E=3025000  G=1210000
C KİRİŞLER
76  1  2  M=1  LP=-2,0  G=14,1,1,1
```


Z
X
Y
TEMP1.P
UNDEFORMED
SHAPE
OPTIONS
JOINT IDS
WIRE FRAME
SAP90

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
76								
	1	.000			.000			.043
		.000	-3.304	18.231				
		.304	-3.304	17.227				
		.304			.000			.043
77								
	1	.000			.000			.140
		.000	-3.901	12.063				
		.304	-3.901	10.877				
		.304			.000			.140
78								
	1	.000			.000			.163
		.000	-3.716	5.452				
		.304	-3.716	4.322				
		.304			.000			.163
79								
	1	.000			.000			.139
		.000	-3.172	-.574				
		.304	-3.172	-1.538				
		.304			.000			.139
80								
	1	.000			.000			.102
		.000	-2.456	-5.534				
		.304	-2.456	-6.280				
		.304			.000			.102
81								
	1	.000			.000			.063
		.000	-1.658	-9.199				
		.304	-1.658	-9.704				
		.304			.000			.063
82								
	1	.000			.000			.028
		.000	-.828	-11.467				
		.304	-.828	-11.719				
		.304			.000			.028
83								
	1	.000			.000			-.004
		.000	.011	-12.297				
		.304	.011	-12.294				
		.304			.000			-.004
84								
	1	.000			.000			-.035

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	.846	-11.685				
		.304	.846	-11.428				
		.304			.000			-.035
85								
	1	.000			.000			-.068
		.000	1.665	-9.645				
		.304	1.665	-9.139				
		.304			.000			-.068
86								
	1	.000			.000			-.102
		.000	2.449	-6.218				
		.304	2.449	-5.474				
		.304			.000			-.102
87								
	1	.000			.000			-.136
		.000	3.154	-1.496				
		.304	3.154	-.537				
		.304			.000			-.136
88								
	1	.000			.000			-.157
		.000	3.695	4.330				
		.304	3.695	5.454				
		.304			.000			-.157
89								
	1	.000			.000			-.135
		.000	3.888	10.852				
		.304	3.888	12.034				
		.304			.000			-.135
90								
	1	.000			.000			-.040
		.000	3.309	17.190				
		.304	3.309	18.196				
		.304			.000			-.040

S H E L L E L E M E N T F O R C E S

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID 1 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	1.7663E+01	0.0000E+00	3.3362E-01	1.7670E+01	-6.2990E-03	1.08
2	-1.3153E+01	-5.1844E-01	2.1756E+00	-1.5430E-01	-1.3517E+01	80.50
17	9.0401E+00	9.9144E-07	1.9131E-01	9.0442E+00	-4.0459E-03	1.21
18	8.5582E+00	1.9802E-01	2.0333E+00	9.0265E+00	-2.7026E-01	12.97

MIDPT	V1	V2	VMAX	ANGLE
	-5.1740E+01	6.7225E+00	5.2175E+01	172.60

ELEMENT ID 2 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
2	1.9649E+01	-5.1844E-01	2.9242E+00	2.0065E+01	-9.3389E-01	8.09
3	-1.6731E+01	-2.5883E-02	3.2925E+00	5.9964E-01	-1.7356E+01	79.24
18	-8.4176E-02	1.9801E-01	2.5756E+00	2.6364E+00	-2.5226E+00	46.57
19	5.6191E+00	-1.0795E+00	2.9439E+00	6.7290E+00	-2.1894E+00	20.66

MIDPT	V1	V2	VMAX	ANGLE
	-5.1101E+01	8.9923E-01	5.1109E+01	178.99

ELEMENT ID 3 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
3	1.7951E+01	-2.5883E-02	3.4670E+00	1.8597E+01	-6.7134E-01	10.55
4	-1.6708E+01	9.8941E-02	3.2643E+00	7.1068E-01	-1.7319E+01	79.39
19	-3.6278E+00	-1.0795E+00	3.0323E+00	9.3546E-01	-5.6428E+00	56.40
20	3.4308E+00	-2.1831E+00	2.8296E+00	4.6095E+00	-3.3618E+00	22.62

MIDPT	V1	V2	VMAX	ANGLE
	-4.6200E+01	-3.7554E+00	4.6352E+01	-175.35

ELEMENT ID 4 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
4	1.4659E+01	9.8941E-02	3.0788E+00	1.5283E+01	-5.2531E-01	11.46
5	-1.4928E+01	1.4056E-01	2.6557E+00	5.9491E-01	-1.5382E+01	80.29
20	-4.9636E+00	-2.1831E+00	2.6843E+00	-5.5040E-01	-6.5962E+00	58.69
21	1.6886E+00	-3.1130E+00	2.2612E+00	2.5858E+00	-4.0102E+00	21.64

MIDPT	V1	V2	VMAX	ANGLE
	-3.8452E+01	-6.5173E+00	3.9001E+01	-170.38

ELEMENT ID 5 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
5	1.0701E+01	1.4056E-01	2.3677E+00	1.1208E+01	-3.6599E-01	12.08
6	-1.2204E+01	1.4278E-01	1.8826E+00	4.2345E-01	-1.2485E+01	81.52
21	-5.1908E+00	-3.1130E+00	2.0484E+00	-1.8551E+00	-6.4487E+00	58.45
22	2.4091E-01	-3.8342E+00	1.5633E+00	7.7151E-01	-4.3648E+00	18.75

MIDPT	V1	V2	VMAX	ANGLE
	-2.9330E+01	-8.2908E+00	3.0479E+01	-164.22

ELEMENT ID 6 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	6.5296E+00	1.4278E-01	1.5856E+00	6.9015E+00	-2.2919E-01	13.20
7	-8.9343E+00	1.3154E-01	1.1087E+00	2.6516E-01	-9.0679E+00	83.13
22	-4.7891E+00	-3.8342E+00	1.3597E+00	-2.8706E+00	-5.7528E+00	54.67
23	-1.0040E+00	-4.3316E+00	8.8282E-01	-7.8434E-01	-4.5513E+00	13.98

MIDPT	V1	V2	VMAX	ANGLE
	-1.9627E+01	-9.3837E+00	2.1755E+01	-154.45

ELEMENT ID 7 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
7	2.3841E+00	1.3154E-01	8.3621E-01	2.6606E+00	-1.4494E-01	18.30
8	-5.3337E+00	1.2086E-01	3.8749E-01	1.4825E-01	-5.3611E+00	85.96
23	-4.0376E+00	-4.3316E+00	7.1425E-01	-3.4554E+00	-4.9138E+00	39.18
24	-2.1002E+00	-4.5955E+00	2.6554E-01	-2.0723E+00	-4.6235E+00	6.01

MIDPT	V1	V2	VMAX	ANGLE
	-9.7331E+00	-9.9756E+00	1.3937E+01	-134.30

ELEMENT ID 8 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
8	-1.6175E+00	1.2086E-01	1.3953E-01	1.3199E-01	-1.6287E+00	85.44
9	-1.5108E+00	1.1735E-01	-2.8959E-01	1.6733E-01	-1.5608E+00	-80.21
24	-3.0959E+00	-4.5955E+00	1.2746E-01	-3.0851E+00	-4.6063E+00	4.82
25	-3.0814E+00	-4.6192E+00	-3.0165E-01	-3.0244E+00	-4.6763E+00	-10.71

MIDPT	V1	V2	VMAX	ANGLE
	1.7697E-01	-1.0164E+01	1.0166E+01	-89.00

ELEMENT ID 9 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
9	-5.4168E+00	1.1735E-01	-5.2884E-01	1.6744E-01	-5.4668E+00	-84.59
10	2.4765E+00	1.2173E-01	-9.5675E-01	2.8162E+00	-2.1799E-01	-19.55
25	-2.0350E+00	-4.6192E+00	-4.2880E-01	-1.9657E+00	-4.6885E+00	-9.18
26	-3.9457E+00	-4.3983E+00	-8.5671E-01	-3.2859E+00	-5.0581E+00	-37.60

MIDPT	V1	V2	VMAX	ANGLE
	1.0025E+01	-9.9785E+00	1.4145E+01	-44.87

ELEMENT ID 10 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
10	-8.9612E+00	1.2173E-01	-1.2054E+00	2.7898E-01	-9.1184E+00	-82.57
11	6.5716E+00	1.2960E-01	-1.6457E+00	6.9677E+00	-2.6644E-01	-13.53
26	-8.8192E-01	-4.3983E+00	-9.9583E-01	-6.1949E-01	-4.6607E+00	-14.76
27	-4.6355E+00	-3.9342E+00	-1.4361E+00	-2.8066E+00	-5.7631E+00	-51.86

MIDPT	V1	V2	VMAX	ANGLE
	1.9762E+01	-9.3961E+00	2.1882E+01	-25.43

ELEMENT ID 11 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
11	-1.2162E+01	1.2960E-01	-1.9106E+00	4.1973E-01	-1.2452E+01	-81.37
12	1.0675E+01	1.2938E-01	-2.3539E+00	1.1176E+01	-3.7219E-01	-12.03

27	3.8203E-01	-3.9342E+00	-1.5980E+00	9.0928E-01	-4.4615E+00	-18.26
28	-5.0193E+00	-3.2303E+00	-2.0413E+00	-1.8961E+00	-6.3535E+00	-56.83
MIDPT	V1	V2		VMAX		ANGLE
	2.9255E+01	-8.3318E+00		3.0418E+01		-15.90

ELEMENT ID 12 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
12	-1.4836E+01	1.2938E-01	-2.6118E+00	5.7210E-01	-1.5278E+01	-80.38
13	1.4577E+01	9.2999E-02	-3.0025E+00	1.5175E+01	-5.0472E-01	-11.26
28	1.8118E+00	-3.2303E+00	-2.2093E+00	2.6429E+00	-4.0613E+00	-20.61
29	-4.8463E+00	-2.2876E+00	-2.5999E+00	-6.6925E-01	-6.4646E+00	-58.10
MIDPT	V1	V2		VMAX		ANGLE
	3.8171E+01	-6.6001E+00		3.8737E+01		-9.81

ELEMENT ID 13 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
13	-1.6608E+01	9.2999E-02	-3.1707E+00	6.7467E-01	-1.7190E+01	-79.60
14	1.7853E+01	-2.3715E-02	-3.3637E+00	1.8465E+01	-6.3568E-01	-10.31
29	3.5001E+00	-2.2875E+00	-2.7151E+00	4.5744E+00	-3.3619E+00	-21.59
30	-3.6271E+00	-1.1451E+00	-2.9082E+00	7.7577E-01	-5.5480E+00	-56.55
MIDPT	V1	V2		VMAX		ANGLE
	4.5801E+01	-3.8776E+00		4.5965E+01		-4.84

ELEMENT ID 14 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	-1.6674E+01	-2.3715E-02	-3.1920E+00	5.6725E-01	-1.7265E+01	-79.51
15	1.9585E+01	-5.1149E-01	-2.8427E+00	1.9980E+01	-9.0586E-01	-7.90
30	5.5946E+00	-1.1451E+00	-2.8196E+00	6.6186E+00	-2.1691E+00	-19.96
31	-2.0146E-01	1.8116E-01	-2.4703E+00	2.4676E+00	-2.4879E+00	-47.21
MIDPT	V1	V2		VMAX		ANGLE
	5.0793E+01	7.5197E-01		5.0799E+01		.85

ELEMENT ID 15 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
15	-1.3178E+01	-5.1149E-01	-2.1125E+00	-1.6846E-01	-1.3521E+01	-80.78
16	1.7680E+01	-1.0237E-15	-3.1119E-01	1.7685E+01	-5.4759E-03	-1.01
31	8.4422E+00	1.8117E-01	-1.9658E+00	8.8861E+00	-2.6275E-01	-12.73
32	8.8581E+00	9.0708E-07	-1.6449E-01	8.8612E+00	-3.0527E-03	-1.06
MIDPT	V1	V2		VMAX		ANGLE
	5.1709E+01	6.5667E+00		5.2124E+01		7.24

ELEMENT ID 16 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
17	9.0401E+00	0.0000E+00	1.9133E-01	9.0441E+00	-4.0475E-03	1.21
18	8.5583E+00	9.3121E-02	1.0277E-01	8.5596E+00	9.1874E-02	.70
33	1.2580E+01	-2.7854E-06	-1.4365E-02	1.2580E+01	-1.9190E-05	-.07
34	4.3894E+00	-5.5632E-01	-1.0292E-01	4.3916E+00	-5.5846E-01	-1.19
MIDPT	V1	V2		VMAX		ANGLE
	-1.4644E+01	-8.9264E-01		1.4671E+01		-176.51

ELEMENT ID 17 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
18	-8.4303E-02	9.3121E-02	6.4510E-01	6.5558E-01	-6.4676E-01	48.92
19	5.6193E+00	-1.0713E+00	7.7384E-01	5.7076E+00	-1.1597E+00	6.51
34	6.6341E+00	-5.5633E-01	-2.3011E-01	6.6414E+00	-5.6368E-01	-1.83
35	-1.8434E-01	-1.3627E+00	-1.0137E-01	-1.7568E-01	-1.3714E+00	-4.88

MIDPT	V1	V2	VMAX	ANGLE
	-3.4544E+00	-4.4764E-01	3.4832E+00	-172.62

ELEMENT ID 18 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
19	-3.6280E+00	-1.0713E+00	8.6229E-01	-8.0770E-01	-3.8916E+00	73.00
20	3.4310E+00	-2.1802E+00	8.4998E-01	3.5569E+00	-2.3062E+00	8.43
35	2.2435E+00	-1.3627E+00	-1.7694E-01	2.2522E+00	-1.3714E+00	-2.80
36	-2.5280E+00	-2.5941E+00	-1.8925E-01	-2.3689E+00	-2.7532E+00	-40.05

MIDPT	V1	V2	VMAX	ANGLE
	1.8376E+00	-6.9348E-01	1.9641E+00	-20.68

ELEMENT ID 19 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
20	-4.9637E+00	-2.1802E+00	7.0464E-01	-2.0120E+00	-5.1319E+00	76.57
21	1.6888E+00	-3.0944E+00	6.2898E-01	1.7701E+00	-3.1757E+00	7.37
36	-2.7214E-01	-2.5941E+00	-2.5140E-01	-2.4523E-01	-2.6210E+00	-6.11
37	-3.5404E+00	-3.8328E+00	-3.2707E-01	-3.3283E+00	-4.0448E+00	-32.96

MIDPT	V1	V2	VMAX	ANGLE
	3.7956E+00	-1.3158E+00	4.0172E+00	-19.12

ELEMENT ID 20 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
21	-5.1909E+00	-3.0944E+00	4.1620E-01	-3.0148E+00	-5.2705E+00	79.17
22	2.4100E-01	-3.8149E+00	3.5819E-01	2.7239E-01	-3.8463E+00	5.01
37	-1.6283E+00	-3.8328E+00	-3.5572E-01	-1.5724E+00	-3.8888E+00	-8.94
38	-3.7337E+00	-4.8505E+00	-4.1372E-01	-3.5971E+00	-4.9871E+00	-18.27

MIDPT	V1	V2	VMAX	ANGLE
	4.0418E+00	-1.8334E+00	4.4382E+00	-24.40

ELEMENT ID 21 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
22	-4.7892E+00	-3.8149E+00	1.5463E-01	-3.7910E+00	-4.8131E+00	81.19
23	-1.0040E+00	-4.3085E+00	1.4435E-01	-9.9769E-01	-4.3147E+00	2.50
38	-2.3355E+00	-4.8505E+00	-3.8977E-01	-2.2764E+00	-4.9095E+00	-8.61
39	-3.5307E+00	-5.5829E+00	-4.0005E-01	-3.4555E+00	-5.6582E+00	-10.65

MIDPT	V1	V2	VMAX	ANGLE
	3.2516E+00	-2.1727E+00	3.9107E+00	-33.75

ELEMENT ID 22 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
23	-4.0376E+00	-4.3085E+00	-2.4215E-02	-4.0355E+00	-4.3106E+00	-5.07
24	-2.1002E+00	-4.5715E+00	8.6725E-03	-2.1001E+00	-4.5715E+00	.20

39	-2.7105E+00	-5.5829E+00	-3.1148E-01	-2.6771E+00	-5.6163E+00	-6.12
40	-3.1936E+00	-5.9668E+00	-2.7859E-01	-3.1659E+00	-5.9945E+00	-5.68
MIDPT	V1	V2		VMAX		ANGLE
	1.8599E+00	-2.3638E+00		3.0078E+00		-51.80

ELEMENT ID 23 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
24	-3.0959E+00	-4.5715E+00	-1.2941E-01	-3.0846E+00	-4.5828E+00	-4.97
25	-3.0815E+00	-4.5968E+00	-7.1532E-02	-3.0781E+00	-4.6002E+00	-2.70
40	-2.9253E+00	-5.9668E+00	-1.4714E-01	-2.9182E+00	-5.9739E+00	-2.76
41	-2.8408E+00	-5.9814E+00	-8.9266E-02	-2.8383E+00	-5.9840E+00	-1.63
MIDPT	V1	V2		VMAX		ANGLE
	1.2983E-01	-2.3836E+00		2.3871E+00		-86.88

ELEMENT ID 24 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
25	-2.0350E+00	-4.5968E+00	-1.9868E-01	-2.0197E+00	-4.6121E+00	-4.41
26	-3.9457E+00	-4.3770E+00	-1.4572E-01	-3.9011E+00	-4.4216E+00	-17.03
41	-3.1224E+00	-5.9814E+00	4.7807E-02	-3.1216E+00	-5.9822E+00	.96
42	-2.4820E+00	-5.6462E+00	1.0077E-01	-2.4788E+00	-5.6494E+00	1.82
MIDPT	V1	V2		VMAX		ANGLE
	-1.6328E+00	-2.2831E+00		2.8069E+00		-125.57

ELEMENT ID 25 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
26	-8.8186E-01	-4.3770E+00	-2.8484E-01	-8.5880E-01	-4.4000E+00	-4.63
27	-4.6356E+00	-3.9139E+00	-2.5832E-01	-3.8309E+00	-4.7185E+00	-72.20
42	-3.3037E+00	-5.6462E+00	2.1564E-01	-3.2840E+00	-5.6659E+00	5.22
43	-2.0253E+00	-4.9823E+00	2.4216E-01	-2.0056E+00	-5.0020E+00	4.65
MIDPT	V1	V2		VMAX		ANGLE
	-3.1445E+00	-2.0773E+00		3.7687E+00		-146.55

ELEMENT ID 26 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
27	3.8212E-01	-3.9139E+00	-4.2030E-01	4.2286E-01	-3.9546E+00	-5.54
28	-5.0194E+00	-3.2109E+00	-4.2496E-01	-3.1161E+00	-5.1143E+00	-77.41
43	-3.3705E+00	-4.9823E+00	3.2069E-01	-3.3090E+00	-5.0437E+00	10.85
44	-1.2999E+00	-4.0166E+00	3.1603E-01	-1.2636E+00	-4.0529E+00	6.55
MIDPT	V1	V2		VMAX		ANGLE
	-4.1062E+00	-1.7506E+00		4.4638E+00		-156.91

ELEMENT ID 27 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
28	1.8119E+00	-3.2109E+00	-5.9288E-01	1.8810E+00	-3.2800E+00	-6.64
29	-4.8464E+00	-2.2797E+00	-6.0919E-01	-2.1424E+00	-4.9836E+00	-77.30
44	-3.1330E+00	-4.0166E+00	3.5703E-01	-3.0068E+00	-4.1428E+00	19.47
45	-1.7386E-02	-2.8088E+00	3.4072E-01	2.3600E-02	-2.8497E+00	6.86
MIDPT	V1	V2		VMAX		ANGLE
	-4.0677E+00	-1.2895E+00		4.2672E+00		-162.41

ELEMENT ID 28 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
29	3.5003E+00	-2.2797E+00	-7.2440E-01	3.5897E+00	-2.3691E+00	-7.04
30	-3.6272E+00	-1.1315E+00	-7.0025E-01	-9.4841E-01	-3.8103E+00	-75.35
45	-2.2626E+00	-2.8087E+00	3.5115E-01	-2.0908E+00	-2.9805E+00	26.07
46	2.3072E+00	-1.5350E+00	3.7530E-01	2.3435E+00	-1.5713E+00	5.53
MIDPT	V1	V2		VMAX		ANGLE
	-2.2150E+00	-7.8409E-01		2.3497E+00		-160.51

ELEMENT ID 29 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
30	5.5948E+00	-1.1315E+00	-6.1167E-01	5.6500E+00	-1.1866E+00	-5.15
31	-2.0159E-01	7.2906E-02	-5.0183E-01	4.5592E-01	-5.8460E-01	-52.65
46	-1.8247E-01	-1.5350E+00	3.2931E-01	-1.0655E-01	-1.6109E+00	12.98
47	6.3561E+00	-6.2035E-01	4.3916E-01	6.3837E+00	-6.4789E-01	3.59
MIDPT	V1	V2		VMAX		ANGLE
	2.9634E+00	-6.5419E-01		3.0347E+00		-12.45

ELEMENT ID 30 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
31	8.4423E+00	7.2906E-02	2.6836E-03	8.4423E+00	7.2906E-02	.02
32	8.8581E+00	5.4116E-16	-1.6451E-01	8.8611E+00	-3.0541E-03	-1.06
47	4.0572E+00	-6.2034E-01	2.4578E-01	4.0701E+00	-6.3322E-01	3.00
48	1.2055E+01	-3.1060E-06	7.8594E-02	1.2056E+01	-5.1548E-04	.37
MIDPT	V1	V2		VMAX		ANGLE
	1.4289E+01	-1.1919E+00		1.4338E+01		-4.77

ELEMENT ID 31 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
33	1.2580E+01	0.0000E+00	-1.4373E-02	1.2580E+01	-1.6422E-05	-.07
34	4.3894E+00	-4.9094E-01	-3.1711E-01	4.4099E+00	-5.1146E-01	-3.70
49	1.0480E+01	-1.3425E-06	-3.5146E-01	1.0492E+01	-1.1774E-02	-1.92
50	4.3378E+00	-2.6813E-01	-6.5420E-01	4.4289E+00	-3.5924E-01	-7.93
MIDPT	V1	V2		VMAX		ANGLE
	-2.4198E+01	-7.8954E-01		2.4211E+01		-178.13

ELEMENT ID 32 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
34	6.6341E+00	-4.9094E-01	-4.4431E-01	6.6617E+00	-5.1854E-01	-3.55
35	-1.8440E-01	-1.3831E+00	-7.1420E-01	1.4862E-01	-1.7161E+00	-25.00
50	3.9495E+00	-2.6813E-01	-1.1794E+00	4.2568E+00	-5.7552E-01	-14.61
51	5.8262E-01	-1.0312E+00	-1.4493E+00	1.4345E+00	-1.8831E+00	-30.45
MIDPT	V1	V2		VMAX		ANGLE
	-1.8113E+01	-3.5569E-01		1.8117E+01		-178.88

ELEMENT ID 33 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
35	2.2436E+00	-1.3831E+00	-7.8978E-01	2.4081E+00	-1.5476E+00	-11.77
36	-2.5281E+00	-2.6085E+00	-9.1309E-01	-1.6543E+00	-3.4823E+00	-43.74

51	1.9881E-01	-1.0312E+00	-1.7232E+00	1.4134E+00	-2.2458E+00	-35.18
52	-1.3595E+00	-1.9077E+00	-1.8465E+00	2.3314E-01	-3.5003E+00	-40.78
MIDPT	V1	V2		VMAX		ANGLE
	-1.2140E+01	5.6908E-01		1.2153E+01		177.32

ELEMENT ID 34 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
36	-2.7210E-01	-2.6085E+00	-9.7524E-01	8.1469E-02	-2.9621E+00	-19.93
37	-3.5404E+00	-3.8394E+00	-9.8286E-01	-2.6957E+00	-4.6841E+00	-40.68
52	-1.9383E+00	-1.9077E+00	-1.9207E+00	-2.2426E-03	-3.8438E+00	-45.23
53	-1.9283E+00	-2.8058E+00	-1.9283E+00	-3.8947E-01	-4.3447E+00	-38.59
MIDPT	V1	V2		VMAX		ANGLE
	-7.1099E+00	1.5808E+00		7.2835E+00		167.46

ELEMENT ID 35 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
37	-1.6283E+00	-3.8394E+00	-1.0115E+00	-1.2354E+00	-4.2323E+00	-21.23
38	-3.7337E+00	-4.8492E+00	-9.3115E-01	-3.2060E+00	-5.3769E+00	-29.54
53	-2.6774E+00	-2.8059E+00	-1.8172E+00	-9.2330E-01	-4.5600E+00	-43.99
54	-2.1136E+00	-3.6103E+00	-1.7368E+00	-9.7077E-01	-4.7532E+00	-33.35
MIDPT	V1	V2		VMAX		ANGLE
	-4.0276E+00	2.3684E+00		4.6723E+00		149.54

ELEMENT ID 36 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
38	-2.3354E+00	-4.8492E+00	-9.0719E-01	-2.0422E+00	-5.1424E+00	-17.91
39	-3.5307E+00	-5.5735E+00	-7.3404E-01	-3.2943E+00	-5.8099E+00	-17.85
54	-2.6638E+00	-3.6103E+00	-1.4762E+00	-1.5868E+00	-4.6873E+00	-36.11
55	-1.9721E+00	-4.1674E+00	-1.3031E+00	-1.3660E+00	-4.7735E+00	-24.95
MIDPT	V1	V2		VMAX		ANGLE
	-1.8820E+00	3.0187E+00		3.5573E+00		121.94

ELEMENT ID 37 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
39	-2.7105E+00	-5.5735E+00	-6.4547E-01	-2.5717E+00	-5.7123E+00	-12.14
40	-3.1936E+00	-5.9607E+00	-3.8554E-01	-3.1409E+00	-6.0135E+00	-7.79
55	-2.2072E+00	-4.1674E+00	-9.0663E-01	-1.8522E+00	-4.5224E+00	-21.39
56	-1.8501E+00	-4.3683E+00	-6.4671E-01	-1.6937E+00	-4.5247E+00	-13.59
MIDPT	V1	V2		VMAX		ANGLE
	-6.9089E-01	3.6315E+00		3.6966E+00		100.77

ELEMENT ID 38 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
40	-2.9253E+00	-5.9607E+00	-2.5408E-01	-2.9042E+00	-5.9819E+00	-4.75
41	-2.8408E+00	-5.9867E+00	1.3423E-02	-2.8408E+00	-5.9867E+00	.24
56	-1.9326E+00	-4.3683E+00	-2.1382E-01	-1.9139E+00	-4.3869E+00	-4.98
57	-1.9329E+00	-4.2517E+00	5.3683E-02	-1.9317E+00	-4.2529E+00	1.33
MIDPT	V1	V2		VMAX		ANGLE
	2.1288E-01	3.9609E+00		3.9666E+00		86.92

ELEMENT ID 39 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
41	-3.1224E+00	-5.9867E+00	1.5050E-01	-3.1146E+00	-5.9946E+00	3.00
42	-2.4820E+00	-5.6522E+00	3.8942E-01	-2.4348E+00	-5.6993E+00	6.90
57	-1.8596E+00	-4.2517E+00	4.3143E-01	-1.7842E+00	-4.3271E+00	9.92
58	-2.0472E+00	-3.9536E+00	6.7034E-01	-1.8351E+00	-4.1657E+00	17.56

MIDPT	V1	V2	VMAX	ANGLE
	1.2651E+00	3.9652E+00	4.1621E+00	72.30

ELEMENT ID 40 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
42	-3.3037E+00	-5.6522E+00	5.0429E-01	-3.2000E+00	-5.7559E+00	11.62
43	-2.0253E+00	-4.9863E+00	7.0485E-01	-1.8661E+00	-5.1455E+00	12.73
58	-1.8274E+00	-3.9536E+00	1.0019E+00	-1.4297E+00	-4.3513E+00	21.65
59	-2.0766E+00	-3.4990E+00	1.2024E+00	-1.3908E+00	-4.1848E+00	29.70

MIDPT	V1	V2	VMAX	ANGLE
	2.6142E+00	3.6097E+00	4.4569E+00	54.09

ELEMENT ID 41 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
43	-3.3705E+00	-4.9863E+00	7.8338E-01	-3.0531E+00	-5.3038E+00	22.06
44	-1.2998E+00	-4.0217E+00	9.3561E-01	-1.0093E+00	-4.3123E+00	17.25
59	-1.7183E+00	-3.4990E+00	1.4908E+00	-8.7218E-01	-4.3450E+00	29.58
60	-1.8705E+00	-2.8706E+00	1.6430E+00	-6.5312E-01	-4.0880E+00	36.54

MIDPT	V1	V2	VMAX	ANGLE
	4.4654E+00	2.9438E+00	5.3484E+00	33.39

ELEMENT ID 42 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
44	-3.1330E+00	-4.0217E+00	9.7661E-01	-2.5044E+00	-4.6503E+00	32.77
45	-1.7347E-02	-2.8176E+00	1.0595E+00	3.3836E-01	-3.1733E+00	18.56
60	-1.3853E+00	-2.8706E+00	1.8555E+00	-1.2940E-01	-4.1265E+00	34.09
61	-1.1759E+00	-2.0956E+00	1.9384E+00	3.5643E-01	-3.6280E+00	38.33

MIDPT	V1	V2	VMAX	ANGLE
	7.0965E+00	2.0071E+00	7.3749E+00	15.79

ELEMENT ID 43 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
45	-2.2627E+00	-2.8176E+00	1.0700E+00	-1.4348E+00	-3.6455E+00	37.73
46	2.3072E+00	-1.5506E+00	1.0359E+00	2.5678E+00	-1.8111E+00	14.12
61	-5.8561E-01	-2.0956E+00	2.0114E+00	8.0777E-01	-3.4890E+00	34.71
62	3.8778E-01	-1.2428E+00	1.9772E+00	1.7112E+00	-2.5662E+00	33.80

MIDPT	V1	V2	VMAX	ANGLE
	1.0861E+01	8.4128E-01	1.0893E+01	4.43

ELEMENT ID 44 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
46	-1.8253E-01	-1.5506E+00	9.8987E-01	3.3666E-01	-2.0698E+00	27.68
47	6.3562E+00	-5.4591E-01	7.3674E-01	6.4340E+00	-6.2368E-01	6.03

62	1.0390E+00	-1.2428E+00	1.8002E+00	2.0294E+00	-2.2332E+00	28.82
63	3.3361E+00	-4.2266E-01	1.5471E+00	3.8910E+00	-9.7752E-01	19.73
MIDPT	V1	V2		VMAX		ANGLE
	1.6033E+01	-4.3352E-01		1.6039E+01		-1.55

ELEMENT ID 45 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
47	4.0572E+00	-5.4591E-01	5.4336E-01	4.1204E+00	-6.0918E-01	6.64
48	1.2055E+01	0.0000E+00	7.8601E-02	1.2056E+01	-5.1246E-04	.37
63	3.9068E+00	-4.2265E-01	9.7348E-01	4.1156E+00	-6.3146E-01	12.11
64	8.9034E+00	-2.1161E-06	5.0872E-01	8.9324E+00	-2.8975E-02	3.26
MIDPT	V1	V2		VMAX		ANGLE
	2.2170E+01	-1.4147E+00		2.2215E+01		-3.65

ELEMENT ID 46 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
49	1.0480E+01	0.0000E+00	-3.5146E-01	1.0492E+01	-1.1773E-02	-1.92
50	4.3378E+00	-1.6362E-01	-1.2366E+00	4.6551E+00	-4.8094E-01	-14.39
65	5.9975E+00	-3.5664E-06	-7.4044E-01	6.0876E+00	-9.0065E-02	-6.93
66	2.5318E+00	-7.1231E-01	-1.6255E+00	3.2061E+00	-1.3866E+00	-22.53
MIDPT	V1	V2		VMAX		ANGLE
	-1.6523E+01	-3.4195E+00		1.6874E+01		-168.31

ELEMENT ID 47 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
50	3.9495E+00	-1.6362E-01	-1.7617E+00	4.6009E+00	-8.1504E-01	-20.29
51	5.8261E-01	-9.8816E-01	-2.0940E+00	2.0337E+00	-2.4392E+00	-34.72
66	1.9867E+00	-7.1231E-01	-2.0295E+00	3.0744E+00	-1.8000E+00	-28.19
67	1.8449E-01	-4.9075E-01	-2.3618E+00	2.2327E+00	-2.5389E+00	-40.93
MIDPT	V1	V2		VMAX		ANGLE
	-8.9976E+00	-1.1405E+00		9.0696E+00		-172.78

ELEMENT ID 48 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
51	1.9881E-01	-9.8816E-01	-2.3679E+00	2.0465E+00	-2.8358E+00	-37.96
52	-1.3595E+00	-1.8851E+00	-2.5665E+00	9.5762E-01	-4.2022E+00	-42.08
67	-7.1194E-01	-4.9075E-01	-2.4969E+00	1.8980E+00	-3.1007E+00	-46.27
68	-1.8595E+00	1.1568E-01	-2.6955E+00	1.9988E+00	-3.7426E+00	-55.06
MIDPT	V1	V2		VMAX		ANGLE
	-4.6893E+00	1.6600E+00		4.9744E+00		160.51

ELEMENT ID 49 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
52	-1.9384E+00	-1.8851E+00	-2.6407E+00	7.2912E-01	-4.5526E+00	-45.29
53	-1.9283E+00	-2.9799E+00	-2.7583E+00	3.5387E-01	-5.2621E+00	-39.60
68	-1.8097E+00	1.1569E-01	-2.8275E+00	2.1399E+00	-3.8339E+00	-54.40
69	-2.8926E+00	7.8981E-01	-2.9451E+00	2.4219E+00	-4.5247E+00	-61.01
MIDPT	V1	V2		VMAX		ANGLE
	-2.1106E+00	4.9562E+00		5.3868E+00		113.07

ELEMENT ID 50 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
53	-2.6774E+00	-2.9799E+00	-2.6472E+00	-1.7716E-01	-5.4802E+00	-43.37
54	-2.1136E+00	-3.4589E+00	-2.3697E+00	-3.2291E-01	-5.2496E+00	-37.08
69	-1.7219E+00	7.8981E-01	-3.2823E+00	3.0483E+00	-3.9803E+00	-55.47
70	-1.0977E+00	-1.6134E-01	-3.0048E+00	2.4116E+00	-3.6705E+00	-49.43
MIDPT	V1	V2		VMAX		ANGLE
	7.7792E-01	7.4565E+00		7.4970E+00		84.04

ELEMENT ID 51 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
54	-2.6638E+00	-3.4589E+00	-2.1091E+00	-9.1509E-01	-5.2076E+00	-39.66
55	-1.9721E+00	-4.1927E+00	-1.5090E+00	-1.2089E+00	-4.9558E+00	-26.83
70	-2.3051E-01	-1.6134E-01	-2.0499E+00	1.8542E+00	-2.2461E+00	-45.48
71	-1.4165E-01	7.0587E-01	-1.4498E+00	1.7925E+00	-1.2283E+00	-53.15
MIDPT	V1	V2		VMAX		ANGLE
	1.3936E+00	9.5629E+00		9.6639E+00		81.71

ELEMENT ID 52 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
55	-2.2072E+00	-4.1927E+00	-1.1126E+00	-1.7088E+00	-4.6910E+00	-24.13
56	-1.8501E+00	-4.4608E+00	-6.1394E-01	-1.7129E+00	-4.5980E+00	-12.59
71	-7.4327E-02	7.0588E-01	-7.9291E-01	1.1995E+00	-5.6791E-01	-58.10
72	-4.3989E-01	1.6939E+00	-2.9426E-01	1.7337E+00	-4.7973E-01	-82.29
MIDPT	V1	V2		VMAX		ANGLE
	5.7816E-01	1.1875E+01		1.1889E+01		87.21

ELEMENT ID 53 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
56	-1.9325E+00	-4.4608E+00	-1.8105E-01	-1.9197E+00	-4.4737E+00	-4.08
57	-1.9329E+00	-4.2856E+00	2.2097E-01	-1.9123E+00	-4.3061E+00	5.32
72	-4.0757E-01	1.6939E+00	-4.3149E-02	1.6947E+00	-4.0845E-01	-88.82
73	-6.0147E-01	1.8292E+00	3.5886E-01	1.8810E+00	-6.5335E-01	81.77
MIDPT	V1	V2		VMAX		ANGLE
	-6.4141E-02	1.2683E+01		1.2683E+01		90.29

ELEMENT ID 54 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
57	-1.8596E+00	-4.2856E+00	5.9871E-01	-1.7199E+00	-4.4253E+00	13.14
58	-2.0472E+00	-3.9882E+00	9.6649E-01	-1.6480E+00	-4.3874E+00	22.44
73	-6.1457E-01	1.8292E+00	6.8155E-01	2.0064E+00	-7.9179E-01	75.42
74	-6.7909E-01	1.7183E+00	1.0493E+00	2.1127E+00	-1.0735E+00	69.40
MIDPT	V1	V2		VMAX		ANGLE
	-2.6124E-01	1.2155E+01		1.2158E+01		91.23

ELEMENT ID 55 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
58	-1.8274E+00	-3.9882E+00	1.2980E+00	-1.2190E+00	-4.5966E+00	25.11
59	-2.0766E+00	-3.5243E+00	1.6460E+00	-1.0024E+00	-4.5985E+00	33.13

74	-7.3127E-01	1.7183E+00	1.3749E+00	2.3348E+00	-1.3478E+00	65.85
75	-7.0064E-01	1.4275E+00	1.7228E+00	2.3883E+00	-1.6615E+00	60.85
MIDPT	V1	V2		VMAX		ANGLE
	-2.1719E-01	1.1013E+01		1.1015E+01		91.13

ELEMENT ID 56 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
59	-1.7183E+00	-3.5243E+00	1.9343E+00	-4.8655E-01	-4.7560E+00	32.49
60	-1.8705E+00	-2.8886E+00	2.2395E+00	-8.2957E-02	-4.6762E+00	38.60
75	-7.8734E-01	1.4275E+00	2.0476E+00	2.6479E+00	-2.0078E+00	59.20
76	-6.3316E-01	1.0468E+00	2.3527E+00	2.7050E+00	-2.2913E+00	54.82
MIDPT	V1	V2		VMAX		ANGLE
	2.1286E-01	9.2328E+00		9.2352E+00		88.68

ELEMENT ID 57 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
60	-1.3853E+00	-2.8886E+00	2.4519E+00	4.2756E-01	-4.7015E+00	36.48
61	-1.1759E+00	-2.0943E+00	2.6541E+00	1.0584E+00	-4.3286E+00	40.09
76	-7.5012E-01	1.0468E+00	2.6282E+00	2.9259E+00	-2.6292E+00	54.44
77	-3.7473E-01	6.4952E-01	2.8304E+00	3.0138E+00	-2.7390E+00	50.13
MIDPT	V1	V2		VMAX		ANGLE
	1.2884E+00	6.8495E+00		6.9696E+00		79.35

ELEMENT ID 58 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
61	-5.8561E-01	-2.0943E+00	2.7271E+00	1.4895E+00	-4.1694E+00	37.27
62	3.8778E-01	-1.2264E+00	2.7205E+00	2.4184E+00	-3.2571E+00	36.74
77	-5.1633E-01	6.4951E-01	2.9699E+00	3.0932E+00	-2.9600E+00	50.55
78	2.7213E-01	3.2855E-01	2.9634E+00	3.2639E+00	-2.6632E+00	45.27
MIDPT	V1	V2		VMAX		ANGLE
	3.3475E+00	3.9589E+00		5.1845E+00		49.78

ELEMENT ID 59 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	1.0390E+00	-1.2264E+00	2.5435E+00	2.6906E+00	-2.8781E+00	33.00
63	3.3361E+00	-3.6540E-01	2.1707E+00	4.3379E+00	-1.3672E+00	24.77
78	1.1561E-01	3.2855E-01	2.7949E+00	3.0190E+00	-2.5748E+00	46.09
79	1.6103E+00	3.3569E-02	2.4220E+00	3.3691E+00	-1.7252E+00	35.99
MIDPT	V1	V2		VMAX		ANGLE
	6.7021E+00	5.8274E-01		6.7274E+00		4.97

ELEMENT ID 60 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
63	3.9068E+00	-3.6540E-01	1.5971E+00	4.4378E+00	-8.9642E-01	18.39
64	8.9035E+00	0.0000E+00	5.0872E-01	8.9324E+00	-2.8973E-02	3.26
79	1.4848E+00	3.3568E-02	1.7444E+00	2.6485E+00	-1.1301E+00	33.71
80	3.5926E+00	1.6807E-07	6.5609E-01	3.7086E+00	-1.1607E-01	10.03
MIDPT	V1	V2		VMAX		ANGLE
	1.1958E+01	-3.2106E+00		1.2381E+01		-15.03

ELEMENT ID 61 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
65	5.9975E+00	0.0000E+00	-7.4044E-01	6.0876E+00	-9.0061E-02	-6.93
66	2.5318E+00	-1.2692E+00	-1.9409E+00	3.3477E+00	-2.0851E+00	-22.80
81	3.0028E-05	1.4703E-05	-2.1511E-05	4.5200E-05	-4.6941E-07	-35.20
82	1.2676E-05	2.9365E+00	-1.2004E+00	3.3648E+00	-4.2825E-01	-70.37
MIDPT	V1	V2		VMAX		ANGLE
	-4.3292E+00	-5.4484E-02		4.3295E+00		-179.28

ELEMENT ID 62 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
66	1.9867E+00	-1.2692E+00	-2.3448E+00	3.2133E+00	-2.4958E+00	-27.61
67	1.8448E-01	9.6915E-02	-2.6504E+00	2.7914E+00	-2.5101E+00	-44.53
82	2.6649E+00	2.9365E+00	-3.3296E+00	6.1331E+00	-5.3166E-01	-46.17
83	-2.6649E+00	-6.4721E-01	-3.6352E+00	2.1165E+00	-5.4287E+00	-52.76
MIDPT	V1	V2		VMAX		ANGLE
	-1.3554E+01	2.2001E+00		1.3731E+01		170.78

ELEMENT ID 63 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
67	-7.1194E-01	9.6915E-02	-2.7855E+00	2.5072E+00	-3.1222E+00	-49.13
68	-1.8595E+00	-6.4511E-01	-2.4236E+00	1.2462E+00	-3.7508E+00	-52.03
83	1.4547E+00	-6.4722E-01	-2.4685E+00	3.0867E+00	-2.2792E+00	-33.47
84	-1.4548E+00	8.0854E-01	-2.1066E+00	2.0682E+00	-2.7145E+00	-59.12
MIDPT	V1	V2		VMAX		ANGLE
	-6.0859E+00	1.8474E+00		6.3601E+00		163.11

ELEMENT ID 64 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
68	-1.8097E+00	-6.4511E-01	-2.5557E+00	1.3938E+00	-3.8486E+00	-51.42
69	-2.8926E+00	2.9840E+00	-1.8939E+00	3.5414E+00	-3.4501E+00	-73.60
84	-1.0136E+00	8.0853E-01	-2.5908E+00	2.6438E+00	-2.8489E+00	-54.69
85	1.0136E+00	-2.8997E+00	-1.9290E+00	1.8046E+00	-3.6907E+00	-22.30
MIDPT	V1	V2		VMAX		ANGLE
	1.4878E+00	-1.9249E+00		2.4329E+00		-52.30

ELEMENT ID 65 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
69	-1.7219E+00	2.9840E+00	-2.2310E+00	3.8735E+00	-2.6114E+00	-68.26
70	-1.0976E+00	-2.1636E+00	-1.8342E+00	2.7942E-01	-3.5407E+00	-36.90
85	-3.1061E+00	-2.8996E+00	4.0562E+00	1.0546E+00	-7.0604E+00	45.73
86	3.1061E+00	1.6406E+01	4.4530E+00	1.7759E+01	1.7528E+00	73.10
MIDPT	V1	V2		VMAX		ANGLE
	2.2887E+01	1.3051E+01		2.6347E+01		29.69

ELEMENT ID 66 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
70	-2.3050E-01	-2.1636E+00	-8.7922E-01	1.0957E-01	-2.5037E+00	-21.15
71	-1.4164E-01	1.0251E+00	-8.2685E-01	1.4536E+00	-5.7021E-01	-62.60

86	-1.1541E-06	1.6406E+01	-8.5442E-02	1.6406E+01	-4.4613E-04	-89.70
87	-7.0918E-07	1.5005E+01	-3.3066E-02	1.5005E+01	-7.3578E-05	-89.87
MIDPT	V1	V2		VMAX		ANGLE
	1.6161E+00	3.0310E+01		3.0353E+01		86.95

ELEMENT ID 67 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
71	-7.4314E-02	1.0251E+00	-1.6998E-01	1.0507E+00	-9.9997E-02	-81.41
72	-4.3989E-01	1.6048E+00	-9.7615E-02	1.6094E+00	-4.4454E-01	-87.27
87	-3.7209E-07	1.5005E+01	-3.3071E-02	1.5005E+01	-7.3262E-05	-89.87
88	-2.2024E-06	1.4733E+01	3.9297E-02	1.4733E+01	-1.0702E-04	89.85
MIDPT	V1	V2		VMAX		ANGLE
	-3.4773E-01	2.5338E+01		2.5340E+01		90.79

ELEMENT ID 68 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
72	-4.0756E-01	1.6048E+00	1.5349E-01	1.6164E+00	-4.1920E-01	85.66
73	-6.0147E-01	1.8049E+00	2.9550E-01	1.8407E+00	-6.3723E-01	83.10
88	-2.0406E-06	1.4733E+01	3.9299E-02	1.4733E+01	-1.0687E-04	89.85
89	-3.0114E-06	1.4276E+01	1.8131E-01	1.4278E+01	-2.3053E-03	89.27
MIDPT	V1	V2		VMAX		ANGLE
	-5.3040E-01	2.4170E+01		2.4176E+01		91.26

ELEMENT ID 69 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
73	-6.1456E-01	1.8049E+00	6.1818E-01	1.9537E+00	-7.6336E-01	76.47
74	-6.7908E-01	1.6669E+00	8.0025E-01	1.9139E+00	-9.2605E-01	72.85
89	-3.0770E-06	1.4276E+01	1.8131E-01	1.4278E+01	-2.3055E-03	89.27
90	-3.4000E-06	1.3430E+01	3.6338E-01	1.3440E+01	-9.8282E-03	88.45
MIDPT	V1	V2		VMAX		ANGLE
	-9.1514E-01	2.3038E+01		2.3056E+01		92.27

ELEMENT ID 70 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
74	-7.3126E-01	1.6669E+00	1.1258E+00	2.1126E+00	-1.1769E+00	68.40
75	-7.0064E-01	1.3736E+00	1.3273E+00	2.0209E+00	-1.3480E+00	64.00
90	-3.6613E-06	1.3430E+01	3.6338E-01	1.3440E+01	-9.8287E-03	88.45
91	-3.5079E-06	1.2007E+01	5.6491E-01	1.2033E+01	-2.6524E-02	87.31
MIDPT	V1	V2		VMAX		ANGLE
	-1.3615E+00	2.1400E+01		2.1443E+01		93.64

ELEMENT ID 71 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
75	-7.8733E-01	1.3736E+00	1.6521E+00	2.2671E+00	-1.6809E+00	61.59
76	-6.3315E-01	9.9324E-01	1.8520E+00	2.2027E+00	-1.8426E+00	56.85
91	-3.9420E-06	1.2007E+01	5.6491E-01	1.2033E+01	-2.6525E-02	87.31
92	-3.1700E-06	9.9388E+00	7.6483E-01	9.9973E+00	-5.8515E-02	85.63
MIDPT	V1	V2		VMAX		ANGLE
	-1.7597E+00	1.8786E+01		1.8868E+01		95.35

ELEMENT ID 72 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
76	-7.5012E-01	9.9324E-01	2.1275E+00	2.4207E+00	-2.1776E+00	56.14
77	-3.7472E-01	6.1710E-01	2.2858E+00	2.4602E+00	-2.2178E+00	51.12
92	-3.7557E-06	9.9388E+00	7.6483E-01	9.9973E+00	-5.8517E-02	85.63
93	-1.8762E-06	7.2464E+00	9.2314E-01	7.3621E+00	-1.1576E-01	82.85
MIDPT	V1	V2		VMAX		ANGLE
	-1.9061E+00	1.4942E+01		1.5063E+01		97.27

ELEMENT ID 73 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	-5.1633E-01	6.1710E-01	2.4254E+00	2.5411E+00	-2.4403E+00	51.58
78	2.7213E-01	3.2882E-01	2.4597E+00	2.7604E+00	-2.1594E+00	45.33
93	-2.5851E-06	7.2463E+00	9.2315E-01	7.3621E+00	-1.1576E-01	82.85
94	1.3625E-06	4.1519E+00	9.5752E-01	4.3621E+00	-2.1018E-01	77.62
MIDPT	V1	V2		VMAX		ANGLE
	-1.4851E+00	9.7911E+00		9.9031E+00		98.62

ELEMENT ID 74 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
78	1.1560E-01	3.2882E-01	2.2912E+00	2.5159E+00	-2.0715E+00	46.33
79	1.6103E+00	2.0705E-01	2.0483E+00	3.0738E+00	-1.2564E+00	35.55
94	5.7880E-07	4.1518E+00	9.5751E-01	4.3620E+00	-2.1018E-01	77.62
95	8.0625E-06	1.2704E+00	7.1461E-01	1.5913E+00	-3.2091E-01	65.82
MIDPT	V1	V2		VMAX		ANGLE
	-1.1343E-02	3.7253E+00		3.7253E+00		90.17

ELEMENT ID 75 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
79	1.4848E+00	2.0705E-01	1.3707E+00	2.3582E+00	-6.6632E-01	32.50
80	3.5926E+00	0.0000E+00	6.5608E-01	3.7086E+00	-1.1607E-01	10.03
95	7.4342E-06	1.2703E+00	7.1460E-01	1.5912E+00	-3.2091E-01	65.82
96	1.7987E-05	6.3603E-06	1.0712E-05	2.4362E-05	-1.4108E-08	30.76
MIDPT	V1	V2		VMAX		ANGLE
	2.2518E+00	-1.3661E+00		2.6338E+00		-31.24

```
RADYE TEMEL
SYSTEM
L=1
RESTRAINTS
1,97,1          R=1,1,0,0,0,1
1,21,5          R=1,1,1,1,1,1
41,45,1         R=1,1,1,1,1,1
26,36,5         R=1,1,0,0,1,1
5,25,5          R=1,1,1,1,1,1
66,69,1         R=1,1,1,1,1,1
50              R=1,1,1,1,1,1
73,82,3         R=1,1,1,1,1,1
94              R=1,1,1,1,1,1
95,97,1         R=1,1,1,1,1,1
85,91,3         R=1,1,0,0,1,1
2,4,1           R=1,1,0,1,0,1
70              R=1,1,0,1,0,1
92,93,1         R=1,1,0,1,0,1

JOINTS
1   X=0       Y=0
5   X=1.6     Y=0
41  X=0       Y=4.6
45  X=1.6     Y=4.6     Q=1,5,41,45,1,5
46  X=1.952   Y=2.3
66  X=1.952   Y=4.6
50  X=3.36    Y=2.3
70  X=3.36    Y=4.6     Q=46,50,66,70,1,5
71  X=3.76    Y=0.9
73  X=4.56    Y=0.9
80  X=3.76    Y=2.3
82  X=4.56    Y=2.3     Q=71,73,80,82,1,3
83  X=3.76    Y=2.875
85  X=4.56    Y=2.875
92  X=3.76    Y=4.6
94  X=4.56    Y=4.6     Q=83,85,92,94,1,3
95  X=3.36    Y=0.9
97  X=3.36    Y=1.833   G=95,97,1

SHELL
NM=1  Z=1
1  E=3025000        W=21.88
1  JQ=1,2,6,7       ETYPE=2    TH=0.8   G=4,8
33 JQ=25,46,30,51   ETYPE=2    TH=0.8   G=1,4
37 JQ=46,47,51,52   ETYPE=2    TH=0.8   G=4,4
53 JQ=95,71,96,74   ETYPE=2    TH=0.8   G=1,1
54 JQ=96,74,97,77   ETYPE=2    TH=0.8   G=1,1
55 JQ=97,77,50,80   ETYPE=2    TH=0.8   G=1,1
56 JQ=50,80,55,83   ETYPE=2    TH=0.8   G=1,1
57 JQ=55,83,60,86   ETYPE=2    TH=0.8   G=1,1
58 JQ=60,86,65,89   ETYPE=2    TH=0.8   G=1,1
59 JQ=65,89,70,92   ETYPE=2    TH=0.8   G=1,1
60 JQ=71,72,74,75   ETYPE=2    TH=0.8   G=2,3
66 JQ=80,81,83,84   ETYPE=2    TH=0.8   G=2,4
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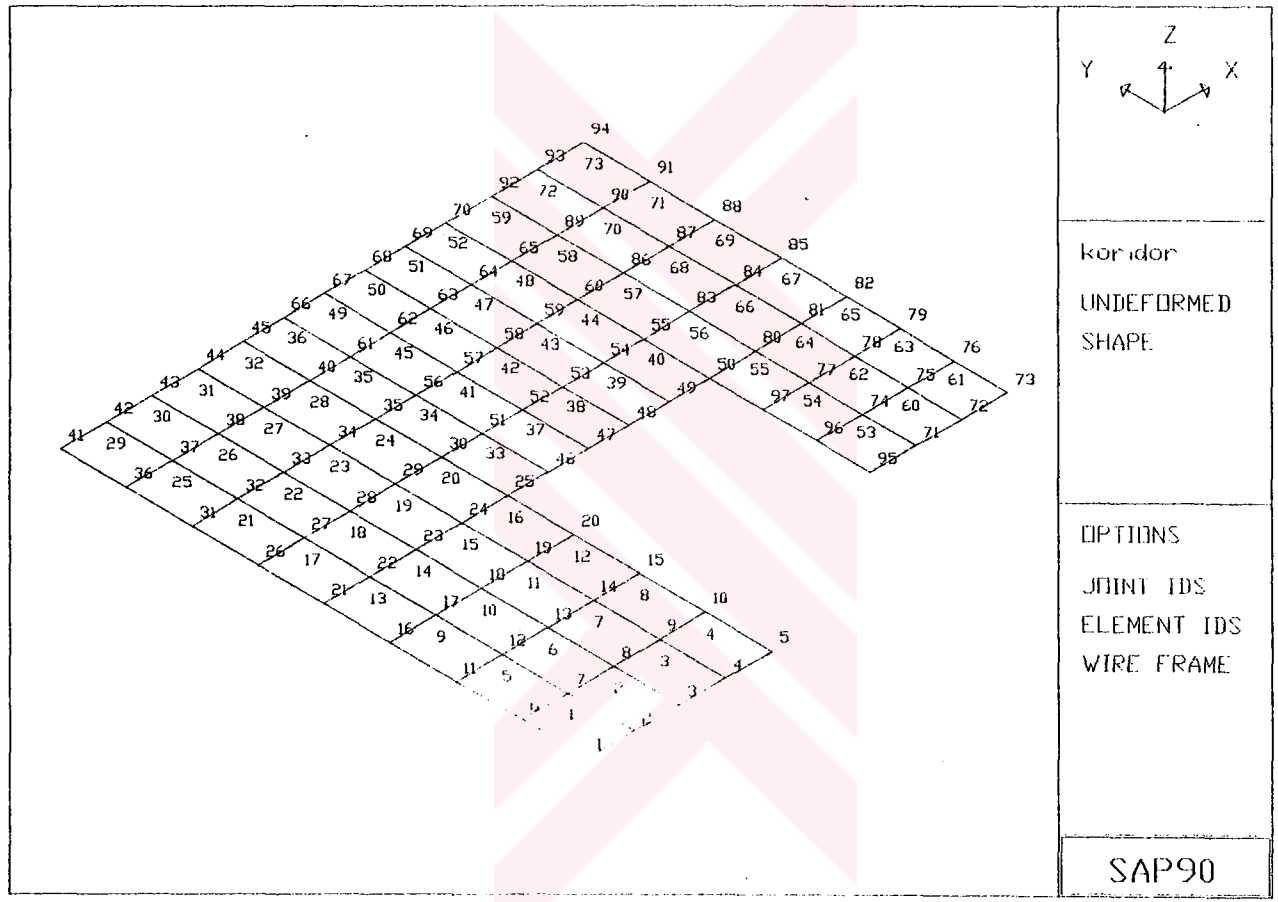
Z
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JOINT IDS
ELEMENT IDS
WIRE FRAME
SAP90

S H E L L E L E M E N T F O R C E S

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID 1 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
1	3.5301E+00	0.0000E+00	0.0000E+00	3.5301E+00	0.0000E+00	.00
2	-7.0856E-01	-1.0510E-02	-8.7175E-03	-1.0401E-02	-7.0867E-01	-89.28
6	3.4760E+00	-1.4732E-07	-1.4351E-02	3.4761E+00	-5.9399E-05	-.24
7	-7.0455E-01	-2.9424E-02	-2.3069E-02	-2.8636E-02	-7.0534E-01	-88.05

MIDPT	V1	V2	VMAX	ANGLE
	-1.0549E+01	-3.8240E-02	1.0549E+01	-179.79

ELEMENT ID 2 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
2	-7.0397E-01	-1.0510E-02	-8.7175E-03	-1.0401E-02	-7.0407E-01	-89.28
3	-2.1180E+00	-7.6539E-03	1.9440E-04	-7.6539E-03	-2.1180E+00	90.00
7	-7.0764E-01	-2.9424E-02	-2.7623E-02	-2.8301E-02	-7.0877E-01	-87.67
8	-2.0631E+00	-8.4887E-02	-1.8711E-02	-8.4710E-02	-2.0632E+00	-89.46

MIDPT	V1	V2	VMAX	ANGLE
	-3.4947E+00	-6.1326E-02	3.4952E+00	-178.99

ELEMENT ID 3 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
3	-2.1175E+00	-7.6539E-03	1.9440E-04	-7.6539E-03	-2.1175E+00	90.00
4	-7.0339E-01	-1.1076E-02	8.5790E-03	-1.0970E-02	-7.0350E-01	89.29
8	-2.0641E+00	-8.4887E-02	1.9686E-02	-8.4691E-02	-2.0643E+00	89.43
9	-7.0863E-01	-2.7228E-02	2.8070E-02	-2.6074E-02	-7.0978E-01	87.65

MIDPT	V1	V2	VMAX	ANGLE
	3.4959E+00	-6.0243E-02	3.4965E+00	-.99

ELEMENT ID 4 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
4	-7.0823E-01	-1.1076E-02	8.5790E-03	-1.0971E-02	-7.0833E-01	89.30
5	3.5295E+00	0.0000E+00	0.0000E+00	3.5295E+00	0.0000E+00	.00
9	-7.0483E-01	-2.7228E-02	2.2344E-02	-2.6492E-02	-7.0556E-01	88.11
10	3.4768E+00	-1.3632E-07	1.3766E-02	3.4769E+00	-5.4636E-05	.23

MIDPT	V1	V2	VMAX	ANGLE
	1.0548E+01	-3.5492E-02	1.0548E+01	-.19

ELEMENT ID 5 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
6	3.4760E+00	0.0000E+00	-1.4351E-02	3.4761E+00	-5.9251E-05	-.24
7	-7.0457E-01	-2.2286E-02	-6.7646E-02	-1.5644E-02	-7.1122E-01	-84.39
11	3.1860E+00	-6.2221E-07	-6.7021E-02	3.1874E+00	-1.4099E-03	-1.20
12	-7.2098E-01	-1.2427E-01	-1.2032E-01	-1.0093E-01	-7.4432E-01	-79.02

MIDPT	V1	V2	VMAX	ANGLE
	-1.0201E+01	-2.2192E-01	1.0203E+01	-178.75

ELEMENT ID 6 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
7	-7.0764E-01	-2.2286E-02	-7.2200E-02	-1.4763E-02	-7.1516E-01	-84.05
8	-2.0631E+00	-8.7893E-02	-1.8695E-02	-8.7716E-02	-2.0632E+00	-89.46
12	-6.8233E-01	-1.2427E-01	-9.3882E-02	-1.0890E-01	-6.9770E-01	-80.70
13	-1.7807E+00	-1.1900E-01	-4.0377E-02	-1.1802E-01	-1.7817E+00	-88.61

MIDPT	V1	V2	VMAX	ANGLE
	-3.1050E+00	1.8032E-02	3.1050E+00	179.67

ELEMENT ID 7 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
8	-2.0641E+00	-8.7893E-02	1.9703E-02	-8.7697E-02	-2.0643E+00	89.43
9	-7.0862E-01	-1.9511E-02	7.2830E-02	-1.1898E-02	-7.1623E-01	84.03
13	-1.7769E+00	-1.1900E-01	4.0360E-02	-1.1802E-01	-1.7779E+00	88.61
14	-6.9034E-01	-1.2990E-01	9.3486E-02	-1.1472E-01	-7.0552E-01	80.78

MIDPT	V1	V2	VMAX	ANGLE
	3.0885E+00	9.7808E-03	3.0885E+00	.18

ELEMENT ID 8 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
9	-7.0485E-01	-1.9511E-02	6.7104E-02	-1.3003E-02	-7.1136E-01	84.46
10	3.4768E+00	0.0000E+00	1.3766E-02	3.4769E+00	-5.4500E-05	.23
14	-7.3170E-01	-1.2990E-01	1.2080E-01	-1.0656E-01	-7.5504E-01	79.06
15	3.1970E+00	-6.5038E-07	6.7460E-02	3.1984E+00	-1.4235E-03	1.21

MIDPT	V1	V2	VMAX	ANGLE
	1.0231E+01	-2.2933E-01	1.0234E+01	-1.28

ELEMENT ID 9 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
11	3.1860E+00	0.0000E+00	-6.7021E-02	3.1874E+00	-1.4092E-03	-1.20
12	-7.2100E-01	-6.6035E-02	-8.8878E-02	-5.4188E-02	-7.3284E-01	-82.41
16	2.3055E+00	1.0245E-06	-1.7216E-02	2.3056E+00	-1.2753E-04	-.43
17	3.3836E-02	2.0463E-01	-3.9073E-02	2.1314E-01	2.5321E-02	-77.71

MIDPT	V1	V2	VMAX	ANGLE
	-7.6367E+00	1.8072E-01	7.6388E+00	178.64

ELEMENT ID 10 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
12	-6.8233E-01	-6.6035E-02	-6.2444E-02	-5.9772E-02	-6.8859E-01	-84.27
13	-1.7807E+00	-2.4455E-01	-4.6575E-02	-2.4314E-01	-1.7821E+00	-88.27
17	-1.4182E-01	2.0463E-01	1.6777E-01	2.7256E-01	-2.0975E-01	67.96
18	-2.2300E+00	1.0237E+00	1.8364E-01	1.0341E+00	-2.2403E+00	86.78

MIDPT	V1	V2	VMAX	ANGLE
	-3.5828E+00	1.3779E+00	3.8386E+00	158.96

ELEMENT ID 11 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
13	-1.7769E+00	-2.4455E-01	3.4161E-02	-2.4379E-01	-1.7777E+00	88.72

14	-6.9033E-01	-6.3779E-02	6.4707E-02	-5.7166E-02	-6.9694E-01	84.17
18	-2.2389E+00	1.0237E+00	-2.1901E-01	1.0384E+00	-2.2535E+00	-86.18
19	-5.2716E-02	1.3850E-01	-1.8846E-01	2.5422E-01	-1.6844E-01	-58.45
MIDPT	V1	V2		VMAX		ANGLE
	3.6507E+00	1.3551E+00		3.8941E+00		20.36

ELEMENT ID 12 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
14	-7.3172E-01	-6.3779E-02	9.2019E-02	-5.1334E-02	-7.4416E-01	82.30
15	3.1970E+00	0.0000E+00	6.7460E-02	3.1984E+00	-1.4228E-03	1.21
19	1.2694E-01	1.3849E-01	6.5169E-02	1.9814E-01	6.7295E-02	47.53
20	2.1971E+00	6.9342E-07	4.0611E-02	2.1979E+00	-7.4967E-04	1.06
MIDPT	V1	V2		VMAX		ANGLE
	7.4520E+00	1.1449E-01		7.4528E+00		.88

ELEMENT ID 13 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
16	2.3055E+00	0.0000E+00	-1.7214E-02	2.3056E+00	-1.2852E-04	-.43
17	3.3828E-02	-3.9074E-01	5.2777E-01	3.9040E-01	-7.4732E-01	34.04
21	7.8934E+00	2.5764E-05	1.6916E+00	8.2406E+00	-3.4724E-01	11.60
22	-2.4204E+00	5.1458E+00	2.2366E+00	5.7575E+00	-3.0321E+00	74.70
MIDPT	V1	V2		VMAX		ANGLE
	-1.2760E+01	6.1769E+00		1.4176E+01		154.17

ELEMENT ID 14 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
17	-1.4181E-01	-3.9074E-01	7.3461E-01	4.7881E-01	-1.0114E+00	40.19
18	-2.2300E+00	1.6534E+00	2.0341E-01	1.6641E+00	-2.2406E+00	87.01
22	-2.1441E+00	5.1458E+00	1.8662E-01	5.1506E+00	-2.1488E+00	88.53
23	-3.2822E+00	1.5768E+00	-3.4458E-01	1.6011E+00	-3.3065E+00	-85.96
MIDPT	V1	V2		VMAX		ANGLE
	-4.9859E+00	3.4197E+00		6.0460E+00		145.55

ELEMENT ID 15 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
18	-2.2389E+00	1.6534E+00	-1.9925E-01	1.6636E+00	-2.2491E+00	-87.08
19	-5.2702E-02	-5.2666E-01	-7.6503E-01	5.1122E-01	-1.0906E+00	-36.39
23	-3.2674E+00	1.5768E+00	5.1995E-01	1.6320E+00	-3.3226E+00	83.94
24	-2.2774E+00	5.7581E+00	-4.5828E-02	5.7584E+00	-2.2777E+00	-89.67
MIDPT	V1	V2		VMAX		ANGLE
	5.2210E+00	3.9839E+00		6.5674E+00		37.35

ELEMENT ID 16 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
19	1.2694E-01	-5.2666E-01	-5.1140E-01	4.0704E-01	-8.0676E-01	-28.71
20	2.1971E+00	0.0000E+00	4.0608E-02	2.1979E+00	-7.5028E-04	1.06
24	-2.5466E+00	5.7581E+00	-2.3915E+00	6.3976E+00	-3.1860E+00	-75.03
25	8.0447E+00	2.8830E-05	-1.8395E+00	8.4454E+00	-4.0062E-01	-12.29
MIDPT	V1	V2		VMAX		ANGLE
	1.2557E+01	6.8451E+00		1.4302E+01		28.60

ELEMENT ID 17 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
21	7.8935E+00	1.4038E+01	1.6917E+00	1.4473E+01	7.4585E+00	75.58
22	-2.4205E+00	2.1210E+00	1.0935E+00	2.3706E+00	-2.6701E+00	77.14
26	1.9061E+00	-6.3214E+00	-7.4011E-01	1.9721E+00	-6.3875E+00	-5.10
27	1.2761E-01	-1.1712E+00	-1.3382E+00	9.6568E-01	-2.0093E+00	-32.06
MIDPT	V1	V2		VMAX		ANGLE
	-1.9345E+01	-2.2062E+01		2.9342E+01		-131.25

ELEMENT ID 18 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
22	-2.1441E+00	2.1210E+00	-9.5650E-01	2.3257E+00	-2.3487E+00	-77.92
23	-3.2822E+00	3.0070E+00	-2.9505E-01	3.0208E+00	-3.2960E+00	-87.32
27	9.9344E-03	-1.1712E+00	-9.5814E-01	5.4488E-01	-1.7062E+00	-29.18
28	-1.6328E+00	-2.0618E+00	-2.9669E-01	-1.4812E+00	-2.2134E+00	-27.07
MIDPT	V1	V2		VMAX		ANGLE
	-3.4790E+00	-5.6168E+00		6.6069E+00		-121.77

ELEMENT ID 19 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
23	-3.2674E+00	3.0070E+00	5.6951E-01	3.0583E+00	-3.3187E+00	84.86
24	-2.2774E+00	2.1474E+00	1.3003E+00	2.5012E+00	-2.6312E+00	74.78
28	-1.6467E+00	-2.0618E+00	5.6241E-01	-1.2548E+00	-2.4537E+00	34.87
29	3.0371E-01	-1.2220E+00	1.2932E+00	1.0423E+00	-1.9605E+00	29.73
MIDPT	V1	V2		VMAX		ANGLE
	3.6632E+00	-5.5106E+00		6.6171E+00		-56.39

ELEMENT ID 20 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
24	-2.5467E+00	2.1474E+00	-1.0454E+00	2.3697E+00	-2.7689E+00	-78.00
25	8.0448E+00	1.6817E+01	-1.5008E+00	1.7066E+01	7.7951E+00	-80.56
29	3.9952E-01	-1.2220E+00	1.6405E+00	1.4187E+00	-2.2411E+00	31.85
30	2.4799E+00	-8.4174E+00	1.1851E+00	2.6073E+00	-8.5448E+00	6.14
MIDPT	V1	V2		VMAX		ANGLE
	2.0511E+01	-2.6011E+01		3.3125E+01		-51.74

ELEMENT ID 21 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
26	1.9061E+00	-4.6696E+00	-7.4008E-01	1.9883E+00	-4.7519E+00	-6.34
27	1.2762E-01	-2.2108E+00	-1.0455E+00	5.2690E-01	-2.6100E+00	-20.90
31	1.0935E-01	-4.5322E+00	-2.1392E-02	1.0945E-01	-4.5323E+00	-.26
32	1.6814E-01	-4.9912E+00	-3.2682E-01	1.8876E-01	-5.0118E+00	-3.61
MIDPT	V1	V2		VMAX		ANGLE
	-8.9968E-01	-3.0618E+00		3.1912E+00		-106.38

ELEMENT ID 22 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
27	9.9534E-03	-2.2108E+00	-6.6544E-01	1.9408E-01	-2.3949E+00	-15.47

28	-1.6328E+00	-1.6078E+00	-3.4205E-01	-1.2780E+00	-1.9626E+00	-46.05
32	1.4296E-01	-4.9912E+00	-3.7187E-01	1.6975E-01	-5.0180E+00	-4.12
33	9.3604E-02	-4.7772E+00	-4.8485E-02	9.4086E-02	-4.7777E+00	-.57
MIDPT	V1	V2		VMAX		ANGLE
	-1.6046E+00	-4.3653E+00		4.6509E+00		-110.18

ELEMENT ID 23 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
28	-1.6467E+00	-1.6078E+00	5.1705E-01	-1.1099E+00	-2.1447E+00	46.08
29	3.0373E-01	-2.5685E+00	8.0655E-01	5.1472E-01	-2.7795E+00	14.66
33	9.8573E-02	-4.7772E+00	1.1932E-02	9.8602E-02	-4.7773E+00	.14
34	2.2306E-01	-5.2221E+00	3.0143E-01	2.3970E-01	-5.2387E+00	3.16
MIDPT	V1	V2		VMAX		ANGLE
	1.7152E+00	-4.3398E+00		4.6664E+00		-68.43

ELEMENT ID 24 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
29	3.9953E-01	-2.5685E+00	1.1538E+00	7.9531E-01	-2.9643E+00	18.93
30	2.4799E+00	-5.7406E+00	7.0429E-01	2.5398E+00	-5.8005E+00	4.86
34	2.6462E-01	-5.2221E+00	2.0406E-01	2.7220E-01	-5.2297E+00	2.13
35	2.9918E-02	-4.6929E+00	-2.4548E-01	4.2644E-02	-4.7056E+00	-2.97
MIDPT	V1	V2		VMAX		ANGLE
	6.5532E-01	-2.5203E+00		2.6041E+00		-75.42

ELEMENT ID 25 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
31	1.0934E-01	-4.8626E+00	-2.1391E-02	1.0943E-01	-4.8627E+00	-.25
32	1.6814E-01	-4.8392E+00	-5.4690E-02	1.6874E-01	-4.8398E+00	-.63
36	4.2001E-02	-1.0393E+00	-1.0648E-02	4.2106E-02	-1.0395E+00	-.56
37	4.4013E-02	-1.0329E+00	-4.3947E-02	4.5803E-02	-1.0347E+00	-2.33
MIDPT	V1	V2		VMAX		ANGLE
	9.4697E-02	6.5511E+00		6.5518E+00		89.17

ELEMENT ID 26 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
32	1.4296E-01	-4.8392E+00	-9.9737E-02	1.4495E-01	-4.8412E+00	-1.15
33	9.3612E-02	-4.7376E+00	-1.1916E-01	9.6549E-02	-4.7406E+00	-1.41
37	4.8514E-02	-1.0329E+00	-7.2664E-02	5.3374E-02	-1.0377E+00	-3.83
38	7.6371E-02	-1.0591E+00	-9.2087E-02	8.3790E-02	-1.0665E+00	-4.61
MIDPT	V1	V2		VMAX		ANGLE
	2.0221E-02	6.4600E+00		6.4600E+00		89.82

ELEMENT ID 27 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
33	9.8581E-02	-4.7376E+00	-5.8752E-02	9.9295E-02	-4.7383E+00	-.70
34	2.2306E-01	-5.0311E+00	-9.4155E-02	2.2475E-01	-5.0328E+00	-1.03
38	7.6621E-02	-1.0591E+00	-1.3257E-01	9.1890E-02	-1.0744E+00	-6.57
39	4.1458E-02	-9.7099E-01	-1.6797E-01	6.8599E-02	-9.9813E-01	-9.18
MIDPT	V1	V2		VMAX		ANGLE
	-1.6731E-02	6.6408E+00		6.6408E+00		90.14

ELEMENT ID 28 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
34	2.6462E-01	-5.0311E+00	-1.9152E-01	2.7154E-01	-5.0381E+00	-2.07
35	2.9905E-02	-5.1273E+00	-2.3655E-01	4.0732E-02	-5.1381E+00	-2.62
39	3.3154E-02	-9.7099E-01	-1.9643E-01	7.0212E-02	-1.0080E+00	-10.68
40	2.4518E-03	-8.8848E-01	-2.4146E-01	6.3685E-02	-9.4971E-01	-14.23

MIDPT	V1	V2	VMAX	ANGLE
	-3.4031E-01	7.1039E+00	7.1121E+00	92.74

ELEMENT ID 29 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
36	4.2001E-02	-1.0363E+00	-1.0648E-02	4.2106E-02	-1.0364E+00	-.57
37	4.4012E-02	-1.0390E+00	-2.5607E-02	4.4617E-02	-1.0396E+00	-1.35
41	2.1029E-07	8.4236E+00	-1.8945E-07	8.4236E+00	2.1029E-07	-90.00
42	2.2036E-07	8.4559E+00	-1.4959E-02	8.4560E+00	-2.6242E-05	-89.90

MIDPT	V1	V2	VMAX	ANGLE
	2.1032E-02	1.6445E+01	1.6445E+01	89.93

ELEMENT ID 30 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
37	4.8513E-02	-1.0390E+00	-5.4323E-02	5.1220E-02	-1.0417E+00	-2.85
38	7.6371E-02	-1.0287E+00	-7.6042E-02	8.1579E-02	-1.0339E+00	-3.92
42	2.4290E-07	8.4559E+00	-1.4959E-02	8.4560E+00	-2.6221E-05	-89.90
43	3.8237E-07	8.5552E+00	-3.6678E-02	8.5553E+00	-1.5686E-04	-89.75

MIDPT	V1	V2	VMAX	ANGLE
	1.0328E-01	1.6536E+01	1.6536E+01	89.64

ELEMENT ID 31 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
38	7.6621E-02	-1.0287E+00	-1.1653E-01	8.8772E-02	-1.0409E+00	-5.95
39	4.1457E-02	-9.8473E-01	-1.3706E-01	5.9448E-02	-1.0027E+00	-7.48
43	3.8362E-07	8.5552E+00	-3.6678E-02	8.5553E+00	-1.5686E-04	-89.75
44	2.0757E-07	8.7334E+00	-5.7214E-02	8.7338E+00	-3.7459E-04	-89.63

MIDPT	V1	V2	VMAX	ANGLE
	9.4911E-02	1.6733E+01	1.6733E+01	89.68

ELEMENT ID 32 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
39	3.3153E-02	-9.8473E-01	-1.6552E-01	5.9391E-02	-1.0110E+00	-9.01
40	2.4515E-03	-8.9286E-01	-1.7171E-01	3.4254E-02	-9.2466E-01	-10.49
44	1.6599E-07	8.7334E+00	-5.7214E-02	8.7338E+00	-3.7463E-04	-89.63
45	1.2275E-08	8.9429E+00	-6.3406E-02	8.9434E+00	-4.4952E-04	-89.59

MIDPT	V1	V2	VMAX	ANGLE
	1.4998E-01	1.6988E+01	1.6989E+01	89.49

ELEMENT ID 33 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
25	9.0926E+00	1.6817E+01	4.4709E+00	1.8863E+01	7.0467E+00	65.41

46	-1.1112E+00	-3.1762E+00	3.5958E+00	1.5974E+00	-5.8848E+00	36.99
30	2.2459E+00	-8.4174E+00	-6.6822E-01	2.2876E+00	-8.4591E+00	-3.57
51	1.7763E-02	-1.0088E+00	-1.5433E+00	1.1309E+00	-2.1219E+00	-35.80
MIDPT	V1	V2		VMAX		ANGLE
	-2.6597E+01	-2.2544E+01		3.4866E+01		-139.71

ELEMENT ID 34 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
30	2.2459E+00	-5.7406E+00	-1.1489E+00	2.4079E+00	-5.9026E+00	-8.03
51	1.7758E-02	-3.0683E+00	-1.4863E+00	6.1715E-01	-3.6677E+00	-21.96
35	8.0800E-02	-4.6929E+00	-3.1474E-01	1.0146E-01	-4.7135E+00	-3.76
56	-2.1541E-02	-5.3225E+00	-6.5210E-01	5.7499E-02	-5.4016E+00	-6.91
MIDPT	V1	V2		VMAX		ANGLE
	-1.8595E+00	-2.0076E+00		2.7364E+00		-132.81

ELEMENT ID 35 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
35	8.0789E-02	-5.1273E+00	-3.0581E-01	9.8684E-02	-5.1452E+00	-3.35
56	-2.1541E-02	-5.0832E+00	-3.2729E-01	-4.6682E-04	-5.1043E+00	-3.68
40	-1.1053E-02	-8.8847E-01	-2.4087E-01	5.0719E-02	-9.5025E-01	-14.38
61	-7.0043E-02	-7.7356E-01	-2.6234E-01	1.7013E-02	-8.6062E-01	-18.36
MIDPT	V1	V2		VMAX		ANGLE
	-1.1620E-01	7.3724E+00		7.3734E+00		90.90

ELEMENT ID 36 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
40	-1.1053E-02	-8.9286E-01	-1.7111E-01	2.0987E-02	-9.2490E-01	-10.61
61	-7.0044E-02	-7.9661E-01	-1.5870E-01	-3.6891E-02	-8.2976E-01	-11.80
45	-5.5344E-08	8.9429E+00	-6.3406E-02	8.9434E+00	-4.4958E-04	-89.59
66	-3.5069E-07	9.1104E+00	-5.0994E-02	9.1107E+00	-2.8578E-04	-89.68
MIDPT	V1	V2		VMAX		ANGLE
	1.0353E-01	1.7203E+01		1.7203E+01		89.66

ELEMENT ID 37 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
46	-8.7417E-01	-3.1762E+00	-1.6171E+00	-4.0320E-02	-4.0100E+00	-27.28
47	-3.5102E+00	5.5102E-01	-1.2784E+00	9.1993E-01	-3.8791E+00	-73.90
51	-8.4778E-02	-1.0088E+00	-1.0471E+00	5.9772E-01	-1.6913E+00	-33.10
52	-2.0868E+00	-3.3404E+00	-7.0847E-01	-1.7677E+00	-3.6595E+00	-24.25
MIDPT	V1	V2		VMAX		ANGLE
	-5.5969E+00	-5.3704E-01		5.6226E+00		-174.52

ELEMENT ID 38 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
47	-3.5043E+00	5.5102E-01	-1.8328E-01	5.5929E-01	-3.5125E+00	-87.42
48	-3.5519E+00	5.2350E-01	2.4373E-01	5.3803E-01	-3.5664E+00	86.59
52	-2.0716E+00	-3.3404E+00	-1.6259E-01	-2.0511E+00	-3.3609E+00	-7.19
53	-2.1945E+00	-3.2622E+00	2.6441E-01	-2.1326E+00	-3.3241E+00	13.17
MIDPT	V1	V2		VMAX		ANGLE
	-2.0633E-01	-5.4627E+00		5.4666E+00		-92.16

ELEMENT ID 39 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
48	-3.5504E+00	5.2350E-01	1.2895E+00	8.9738E-01	-3.9243E+00	73.83
49	-1.0793E+00	-3.0681E+00	1.6164E+00	-1.7593E-01	-3.9715E+00	29.20
53	-2.2282E+00	-3.2622E+00	7.9220E-01	-1.7993E+00	-3.6912E+00	28.44
54	-2.6591E-01	-8.8846E-01	1.1190E+00	5.8433E-01	-1.7387E+00	37.23
MIDPT	V1	V2		VMAX		ANGLE
	5.4325E+00	-4.6808E-01		5.4526E+00		-4.92

ELEMENT ID 40 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
49	-1.2560E+00	-3.0681E+00	-3.5704E+00	1.5215E+00	-5.8456E+00	-37.88
50	9.3447E+00	1.6378E+01	-4.6458E+00	1.8688E+01	7.0348E+00	-63.56
54	-3.4170E-01	-8.8849E-01	1.6002E+00	1.0083E+00	-2.2385E+00	40.15
55	1.4039E+00	-7.6736E+00	5.2482E-01	1.4342E+00	-7.7039E+00	3.30
MIDPT	V1	V2		VMAX		ANGLE
	2.6530E+01	-2.2074E+01		3.4512E+01		-39.76

ELEMENT ID 41 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
51	-8.4764E-02	-3.0683E+00	-9.9015E-01	2.1394E-01	-3.3670E+00	-16.79
52	-2.0868E+00	-2.8854E+00	-7.2515E-01	-1.6583E+00	-3.3139E+00	-30.58
56	-3.5605E-02	-5.3225E+00	-6.9857E-01	5.5141E-02	-5.4133E+00	-7.40
57	-4.0447E-01	-4.7914E+00	-4.3358E-01	-3.6203E-01	-4.8338E+00	-5.59
MIDPT	V1	V2		VMAX		ANGLE
	-2.8607E+00	-2.8648E+00		4.0485E+00		-134.96

ELEMENT ID 42 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
52	-2.0716E+00	-2.8854E+00	-1.7927E-01	-2.0338E+00	-2.9232E+00	-11.89
53	-2.1945E+00	-2.8076E+00	3.5376E-01	-2.0330E+00	-2.9692E+00	24.54
57	-4.1636E-01	-4.7914E+00	-1.7362E-01	-4.0948E-01	-4.7983E+00	-2.27
58	-3.6688E-01	-4.8554E+00	3.5940E-01	-3.3828E-01	-4.8840E+00	4.55
MIDPT	V1	V2		VMAX		ANGLE
	-9.4551E-02	-1.9237E+00		1.9261E+00		-92.81

ELEMENT ID 43 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
53	-2.2282E+00	-2.8076E+00	8.8155E-01	-1.5900E+00	-3.4458E+00	35.90
54	-2.6589E-01	-2.8818E+00	1.1190E+00	1.4745E-01	-3.2951E+00	20.27
58	-2.9332E-01	-4.8554E+00	7.1220E-01	-1.8473E-01	-4.9640E+00	8.67
59	-6.4938E-01	-5.1959E+00	9.4964E-01	-4.5900E-01	-5.3863E+00	11.34
MIDPT	V1	V2		VMAX		ANGLE
	1.9871E+00	-3.1184E+00		3.6977E+00		-57.49

ELEMENT ID 44 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
54	-3.4170E-01	-2.8818E+00	1.6001E+00	4.3113E-01	-3.6546E+00	25.78

55	1.4039E+00	-5.1752E+00	1.4080E+00	1.6926E+00	-5.4638E+00	11.59
59	1.2825E-01	-5.1959E+00	9.5226E-01	2.9344E-01	-5.3611E+00	9.84
60	-3.2123E-01	-4.4889E+00	7.6016E-01	-1.8690E-01	-4.6232E+00	10.02
MIDPT	V1	V2		VMAX		ANGLE
	7.1438E-01	-1.9612E+00		2.0873E+00		-69.99

ELEMENT ID 45 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
56	-3.5602E-02	-5.0832E+00	-3.7375E-01	-8.0782E-03	-5.1107E+00	-4.21
57	-4.0446E-01	-4.8154E+00	-3.1906E-01	-3.8150E-01	-4.8384E+00	-4.12
61	-7.2337E-02	-7.7356E-01	-2.4060E-01	2.2782E-03	-8.4818E-01	-17.23
62	-1.0384E-02	-7.1533E-01	-1.8591E-01	3.5641E-02	-7.6135E-01	-13.90
MIDPT	V1	V2		VMAX		ANGLE
	-2.0439E-01	7.4682E+00		7.4710E+00		91.57

ELEMENT ID 46 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
57	-4.1635E-01	-4.8154E+00	-5.9110E-02	-4.1555E-01	-4.8162E+00	-.77
58	-3.6687E-01	-4.9718E+00	1.1916E-01	-3.6379E-01	-4.9749E+00	1.48
62	-2.2306E-02	-7.1533E-01	-1.7899E-01	2.1191E-02	-7.5882E-01	-13.66
63	4.0393E-01	-8.5245E-01	-7.1671E-04	4.0393E-01	-8.5245E-01	-.03
MIDPT	V1	V2		VMAX		ANGLE
	4.6725E-01	7.6538E+00		7.6680E+00		86.51

ELEMENT ID 47 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
58	-2.9331E-01	-4.9718E+00	4.7195E-01	-2.4618E-01	-5.0190E+00	5.70
59	-6.4938E-01	-4.7983E+00	9.8454E-01	-4.2761E-01	-5.0201E+00	12.69
63	3.3626E-01	-8.5245E-01	6.4146E-02	3.3971E-01	-8.5590E-01	3.08
64	2.0703E+00	-2.0246E+00	5.7673E-01	2.1500E+00	-2.1042E+00	7.87
MIDPT	V1	V2		VMAX		ANGLE
	1.2482E+00	7.4502E+00		7.5541E+00		80.49

ELEMENT ID 48 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
59	1.2826E-01	-4.7983E+00	9.8717E-01	3.1870E-01	-4.9887E+00	10.92
60	-3.2124E-01	-4.9360E+00	8.9332E-01	-1.5434E-01	-5.1029E+00	10.58
64	-1.0185E+00	-2.0246E+00	1.3580E+00	-7.3340E-02	-2.9697E+00	34.84
65	2.1231E-01	-9.7876E-01	1.2642E+00	1.0142E+00	-1.7807E+00	32.39
MIDPT	V1	V2		VMAX		ANGLE
	1.7548E+00	5.5864E+00		5.8555E+00		72.56

ELEMENT ID 49 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
61	-7.2338E-02	-7.9661E-01	-1.3696E-01	-4.7303E-02	-8.2164E-01	-10.36
62	-1.0382E-02	-6.9208E-01	-1.2430E-01	1.1576E-02	-7.1404E-01	-10.02
66	-3.6218E-07	9.1104E+00	-5.0994E-02	9.1107E+00	-2.8578E-04	-89.68
67	-5.1983E-08	9.2164E+00	-3.8334E-02	9.2165E+00	-1.5950E-04	-89.76
MIDPT	V1	V2		VMAX		ANGLE
	2.3752E-01	1.7267E+01		1.7268E+01		89.21

ELEMENT ID 50 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
62	-2.2306E-02	-6.9208E-01	-1.1738E-01	-2.3314E-03	-7.1206E-01	-9.66
63	4.0394E-01	-7.2124E-01	-1.7578E-01	4.3076E-01	-7.4806E-01	-8.68
67	-1.1167E-07	9.2164E+00	-3.8335E-02	9.2165E+00	-1.5956E-04	-89.76
68	2.0224E-06	9.4391E+00	-9.6740E-02	9.4401E+00	-9.8935E-04	-89.41

MIDPT	V1	V2	VMAX	ANGLE
	7.4293E-01	1.7285E+01	1.7301E+01	87.54

ELEMENT ID 51 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
63	3.3625E-01	-7.2124E-01	-1.1093E-01	3.4776E-01	-7.3275E-01	-5.92
64	2.0704E+00	-2.3903E+00	-4.7925E-01	2.1213E+00	-2.4412E+00	-6.06
68	1.6836E-06	9.4391E+00	-9.6747E-02	9.4401E+00	-9.8984E-04	-89.41
69	1.0366E-05	1.1143E+01	-4.6506E-01	1.1162E+01	-1.9366E-02	-87.61

MIDPT	V1	V2	VMAX	ANGLE
	2.4879E+00	1.9557E+01	1.9714E+01	82.75

ELEMENT ID 52 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
64	-1.0185E+00	-2.3903E+00	3.0206E-01	-9.5496E-01	-2.4539E+00	11.88
65	2.1232E-01	-9.2099E-01	1.7884E+00	1.5217E+00	-2.2304E+00	36.21
69	1.2331E+01	1.1143E+01	-4.6502E-01	1.2491E+01	1.0983E+01	-19.03
70	-3.4254E+00	7.7952E+00	1.0213E+00	7.8874E+00	-3.5176E+00	84.84

MIDPT	V1	V2	VMAX	ANGLE
	-2.1967E+01	2.3570E+01	3.2219E+01	132.98

ELEMENT ID 53 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
95	1.9623E+00	1.3196E-05	-3.1874E-02	1.9628E+00	-5.0441E-04	-.93
71	-9.8084E-01	7.4476E-03	-8.9087E-02	1.5414E-02	-9.8880E-01	-84.89
96	1.5071E+00	3.8285E-05	-9.4730E-02	1.5130E+00	-5.8930E-03	-3.58
74	-7.9544E-01	-2.2400E-01	-1.5256E-01	-1.8582E-01	-8.3362E-01	-75.95

MIDPT	V1	V2	VMAX	ANGLE
	-6.6924E+00	-3.9173E-01	6.7039E+00	-176.65

ELEMENT ID 54 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
96	1.5070E+00	1.1861E-04	-9.5358E-02	1.5130E+00	-5.8918E-03	-3.61
74	-7.9559E-01	-2.3035E-01	-1.6976E-01	-1.8328E-01	-8.4265E-01	-74.50
97	3.7882E-01	7.7397E-05	-6.0644E-02	3.8829E-01	-9.3958E-03	-8.88
77	-1.8522E-02	3.4788E-01	-1.3576E-01	3.9270E-01	-6.3340E-02	-71.73

MIDPT	V1	V2	VMAX	ANGLE
	-3.3011E+00	4.3260E-01	3.3294E+00	172.53

ELEMENT ID 55 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
97	3.7884E-01	5.0402E-05	-6.0561E-02	3.8829E-01	-9.3965E-03	-8.87

77	-1.8923E-02	1.0410E-01	4.1572E-01	4.6284E-01	-3.7766E-01	49.21
50	5.5452E+00	-1.3645E-03	1.6713E+00	6.0099E+00	-4.6605E-01	15.54
80	-2.9590E+00	5.8393E+00	2.1536E+00	6.3381E+00	-3.4578E+00	76.96
MIDPT	V1	V2		VMAX		ANGLE
	-7.4117E+00	7.3362E+00		1.0428E+01		135.29

ELEMENT ID 56 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
50	5.5439E+00	1.6378E+01	1.1543E+00	1.6500E+01	5.4223E+00	83.99
80	-2.9608E+00	2.9396E+00	1.1234E+00	3.1462E+00	-3.1675E+00	79.58
55	2.2889E+00	-7.6736E+00	-1.1920E+00	2.4295E+00	-7.8143E+00	-6.73
83	1.1624E-01	-7.6396E-01	-1.2230E+00	9.7589E-01	-1.6236E+00	-35.10
MIDPT	V1	V2		VMAX		ANGLE
	-1.7427E+01	-2.4213E+01		2.9832E+01		-125.74

ELEMENT ID 57 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
55	2.2889E+00	-5.1752E+00	-3.0877E-01	2.3016E+00	-5.1879E+00	-2.36
83	1.1624E-01	-1.8317E+00	-7.5599E-01	3.7521E-01	-2.0907E+00	-18.91
60	-4.7554E-01	-4.4889E+00	6.7149E-01	-3.6617E-01	-4.5983E+00	9.25
86	3.0918E-01	-5.1046E+00	2.2427E-01	3.1846E-01	-5.1139E+00	2.37
MIDPT	V1	V2		VMAX		ANGLE
	-3.0108E-02	-3.3673E+00		3.3675E+00		-90.51

ELEMENT ID 58 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
60	-4.7555E-01	-4.9360E+00	8.0464E-01	-3.3484E-01	-5.0767E+00	9.92
86	3.0919E-01	-4.9838E+00	4.5999E-01	3.4886E-01	-5.0235E+00	4.93
65	-4.9816E-02	-9.7875E-01	1.1197E+00	6.9794E-01	-1.7265E+00	33.74
89	-2.0983E+00	-5.4219E-02	7.7506E-01	2.0643E-01	-2.3589E+00	71.41
MIDPT	V1	V2		VMAX		ANGLE
	-1.0317E+00	6.8660E+00		6.9431E+00		98.55

ELEMENT ID 59 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
65	-4.9804E-02	-9.2099E-01	1.6439E+00	1.2153E+00	-2.1861E+00	37.58
89	-2.0983E+00	1.9453E-01	7.2307E-01	4.0351E-01	-2.3073E+00	73.88
70	-2.9068E+00	7.7951E+00	1.0213E+00	7.8917E+00	-3.0034E+00	84.60
92	-4.5364E+00	4.9471E+00	1.0044E-01	4.9482E+00	-4.5374E+00	89.39
MIDPT	V1	V2		VMAX		ANGLE
	-5.6805E+00	9.4097E+00		1.0991E+01		121.12

ELEMENT ID 60 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
71	-9.8075E-01	7.4105E-03	-5.8707E-02	1.0886E-02	-9.8423E-01	-86.61
72	-9.8273E-01	7.2434E-03	5.6796E-02	1.0491E-02	-9.8597E-01	86.73
74	-7.2082E-01	-2.2406E-01	-5.8297E-02	-2.1731E-01	-7.2757E-01	-83.40
75	-7.0365E-01	-2.2249E-01	5.7204E-02	-2.1579E-01	-7.1036E-01	83.31
MIDPT	V1	V2		VMAX		ANGLE
	1.9878E-02	-2.0540E-01		2.0636E-01		-84.47

ELEMENT ID 61 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
72	-9.8032E-01	7.2434E-03	9.0020E-02	1.5382E-02	-9.8846E-01	84.83
73	1.9623E+00	0.0000E+00	3.2345E-02	1.9628E+00	-5.3302E-04	.94
75	-7.8266E-01	-2.2249E-01	1.5280E-01	-1.8352E-01	-8.2163E-01	75.69
76	1.4955E+00	-1.1140E-06	9.5127E-02	1.5015E+00	-6.0279E-03	3.63

MIDPT	V1	V2	VMAX	ANGLE
	6.6604E+00	-3.9033E-01	6.6719E+00	-3.35

ELEMENT ID 62 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
74	-7.2082E-01	-2.3056E-01	-7.5740E-02	-2.1913E-01	-7.3226E-01	-81.42
75	-7.0365E-01	-2.4211E-01	7.7920E-02	-2.2931E-01	-7.1645E-01	80.67
77	-2.9185E-01	3.4771E-01	-5.1180E-02	3.5178E-01	-2.9591E-01	-85.45
78	-4.1554E-01	4.4347E-01	1.0248E-01	4.5552E-01	-4.2760E-01	83.29

MIDPT	V1	V2	VMAX	ANGLE
	-8.0527E-02	1.7383E+00	1.7401E+00	92.65

ELEMENT ID 63 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
75	-7.8267E-01	-2.4211E-01	1.7352E-01	-1.9121E-01	-8.3358E-01	73.65
76	1.4955E+00	0.0000E+00	9.5127E-02	1.5015E+00	-6.0267E-03	3.63
78	-1.2708E-01	4.4346E-01	1.1479E-01	4.6569E-01	-1.4931E-01	79.04
79	4.7405E-01	2.2203E-06	3.6401E-02	4.7683E-01	-2.7766E-03	4.37

MIDPT	V1	V2	VMAX	ANGLE
	3.4732E+00	5.3857E-01	3.5148E+00	8.81

ELEMENT ID 64 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
77	-2.9184E-01	1.0445E-01	5.0037E-01	4.4448E-01	-6.3187E-01	55.80
78	-4.1554E-01	3.1209E-01	-4.5604E-01	5.3166E-01	-6.3511E-01	-64.29
80	-2.6536E+00	5.8411E+00	3.3389E-01	5.8542E+00	-2.6667E+00	87.75
81	-2.5170E+00	5.0627E+00	-6.2251E-01	5.1134E+00	-2.5678E+00	-85.34

MIDPT	V1	V2	VMAX	ANGLE
	-3.4072E-01	8.8453E+00	8.8518E+00	92.21

ELEMENT ID 65 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
78	-1.2708E-01	3.1209E-01	-4.4373E-01	5.8760E-01	-4.0258E-01	-58.16
79	4.7405E-01	0.0000E+00	3.6397E-02	4.7683E-01	-2.7783E-03	4.37
81	-2.8767E+00	5.0626E+00	-2.0114E+00	5.5431E+00	-3.3572E+00	-76.57
82	5.4643E+00	2.5348E-05	-1.5312E+00	5.8641E+00	-3.9981E-01	-14.63

MIDPT	V1	V2	VMAX	ANGLE
	7.8184E+00	6.2902E+00	1.0035E+01	38.82

ELEMENT ID 66 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
80	-2.6536E+00	2.9396E+00	-6.9265E-01	3.0241E+00	-2.7381E+00	-83.04

81	-2.5171E+00	3.1042E+00	1.5347E-01	3.1084E+00	-2.5212E+00	88.44
83	2.5920E-02	-7.6393E-01	-6.6328E-01	4.0294E-01	-1.1409E+00	-29.62
84	-3.3141E-01	-8.4682E-01	1.8283E-01	-2.7314E-01	-9.0509E-01	17.68
MIDPT	V1	V2		VMAX		ANGLE
	-2.2493E-01	-4.5408E+00		4.5464E+00		-92.84

ELEMENT ID 67 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
81	-2.8768E+00	3.1042E+00	-1.2354E+00	3.3493E+00	-3.1219E+00	-78.78
82	5.4644E+00	1.3034E+01	-1.5312E+00	1.3332E+01	5.1663E+00	-78.99
84	-1.5905E-01	-8.4684E-01	8.5433E-01	4.1800E-01	-1.4239E+00	34.04
85	1.0454E+00	-4.9614E+00	5.5847E-01	1.0969E+00	-5.0129E+00	5.27
MIDPT	V1	V2		VMAX		ANGLE
	1.5566E+01	-1.9823E+01		2.5205E+01		-51.86

ELEMENT ID 68 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
83	2.5935E-02	-1.8317E+00	-1.9633E-01	4.6457E-02	-1.8522E+00	-5.97
84	-3.3140E-01	-1.3904E+00	-3.5573E-02	-3.3021E-01	-1.3916E+00	-1.92
86	2.6958E-01	-5.1047E+00	-6.2604E-02	2.7030E-01	-5.1054E+00	-.67
87	3.4928E-01	-5.1738E+00	9.8147E-02	3.5103E-01	-5.1755E+00	1.02
MIDPT	V1	V2		VMAX		ANGLE
	-1.1447E-01	-5.7341E+00		5.7352E+00		-91.14

ELEMENT ID 69 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
84	-1.5904E-01	-1.3904E+00	6.3590E-01	1.1039E-01	-1.6599E+00	22.96
85	1.0454E+00	-3.7246E+00	5.5845E-01	1.1099E+00	-3.7891E+00	6.59
87	3.3392E-01	-5.1738E+00	4.0031E-02	3.3421E-01	-5.1741E+00	.42
88	1.0711E-01	-4.4977E+00	-3.7420E-02	1.0741E-01	-4.4980E+00	-.47
MIDPT	V1	V2		VMAX		ANGLE
	1.8576E-01	-4.1558E+00		4.1599E+00		-87.44

ELEMENT ID 70 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
86	2.6958E-01	-4.9838E+00	1.7312E-01	2.7527E-01	-4.9895E+00	1.89
87	3.4929E-01	-5.1188E+00	-2.6394E-01	3.6200E-01	-5.1315E+00	-2.76
89	-2.0931E+00	-5.4219E-02	-2.3117E-01	-2.8339E-02	-2.1190E+00	-83.61
90	1.9894E-01	-1.0442E+00	-6.6822E-01	4.8999E-01	-1.3352E+00	-23.54
MIDPT	V1	V2		VMAX		ANGLE
	2.2616E+00	6.7371E+00		7.1066E+00		71.44

ELEMENT ID 71 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
87	3.3393E-01	-5.1188E+00	-3.2206E-01	3.5288E-01	-5.1378E+00	-3.37
88	1.0710E-01	-4.5008E+00	-3.7419E-02	1.0741E-01	-4.5011E+00	-.47
90	4.2192E-01	-1.0442E+00	-9.8585E-01	9.1739E-01	-1.5396E+00	-26.68
91	1.6558E+00	-3.5092E+00	-7.0121E-01	1.7493E+00	-3.6027E+00	-7.60
MIDPT	V1	V2		VMAX		ANGLE
	1.0434E-01	5.1170E+00		5.1181E+00		88.83

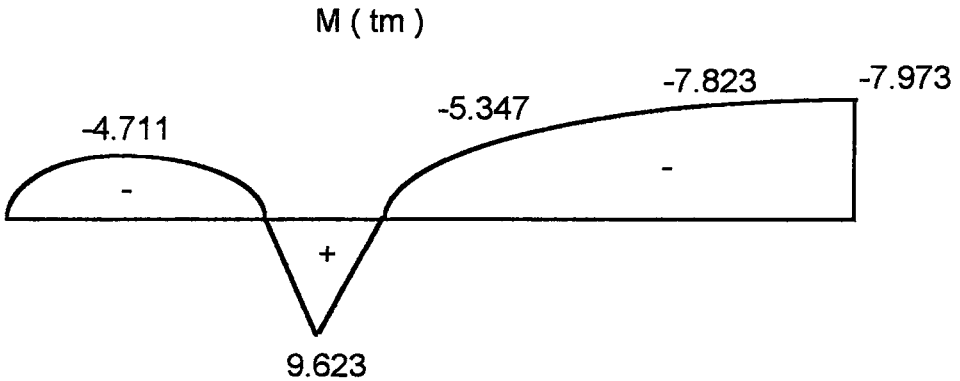
ELEMENT ID 72 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
89	-2.0932E+00	1.9453E-01	-2.8316E-01	2.2906E-01	-2.1277E+00	-83.05
90	1.9895E-01	-8.5652E-01	-1.3071E+00	1.0808E+00	-1.7384E+00	-34.01
92	-4.5210E+00	4.9471E+00	1.0041E-01	4.9481E+00	-4.5221E+00	89.39
93	-3.2607E+00	7.0655E+00	-9.2350E-01	7.1474E+00	-3.3427E+00	-84.93
MIDPT	V1	V2		VMAX		ANGLE
	5.1076E+00	8.4615E+00		9.8836E+00		58.88

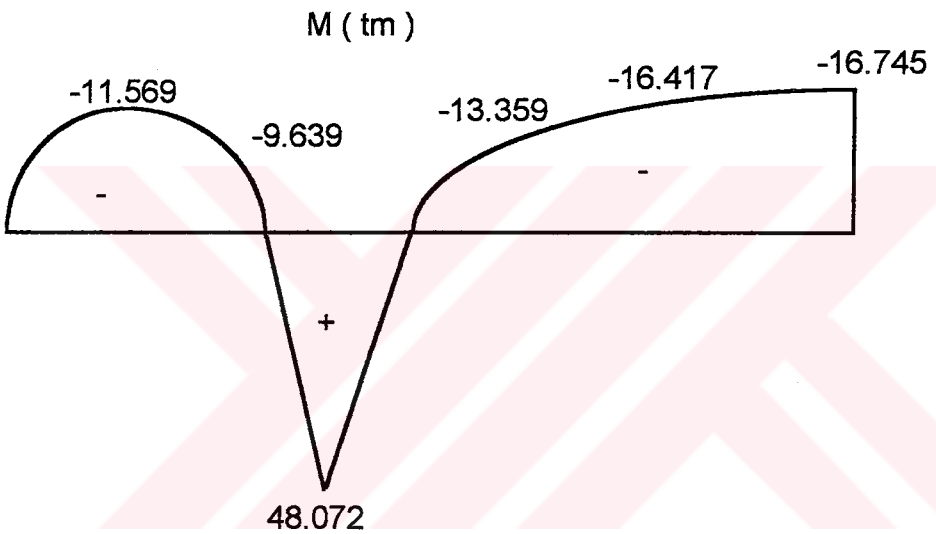
ELEMENT ID 73 ----------
LOAD COND 1 ----------

JOINT	M11	M22	M12	MMAX	MMIN	ANGLE
90	4.2192E-01	-8.5652E-01	-1.6247E+00	1.5286E+00	-1.9632E+00	-34.26
91	1.6558E+00	-4.0936E+00	-7.0122E-01	1.7401E+00	-4.1779E+00	-6.85
93	-3.7108E+00	7.0655E+00	-9.2353E-01	7.1441E+00	-3.7894E+00	-85.14
94	1.1099E+01	1.2254E+01	-3.5115E-05	1.2254E+01	1.1099E+01	-90.00
MIDPT	V1	V2		VMAX		ANGLE
	2.1274E+01	2.3412E+01		3.1634E+01		47.74

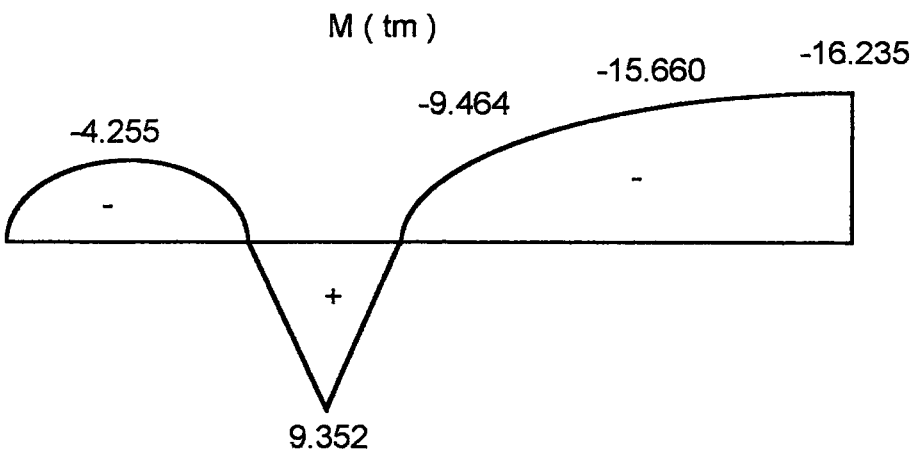
5.3. Radye Temel Moment Diyagramları



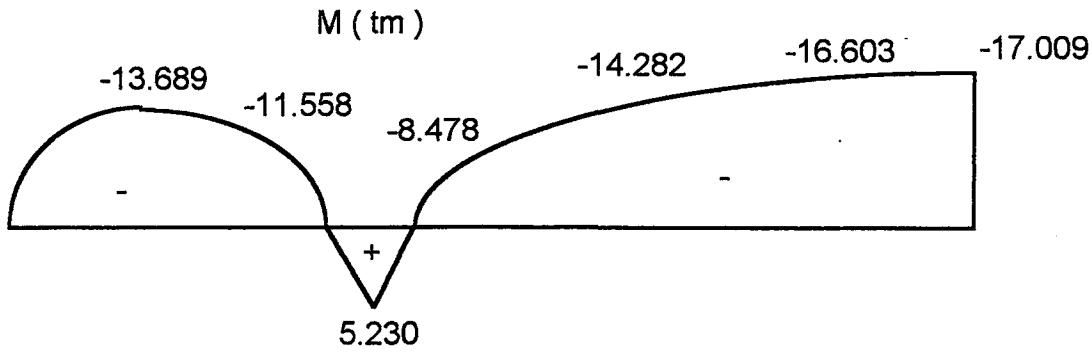
Şekil 5.1. 4-4,3-3 aksı açıklık şeridi



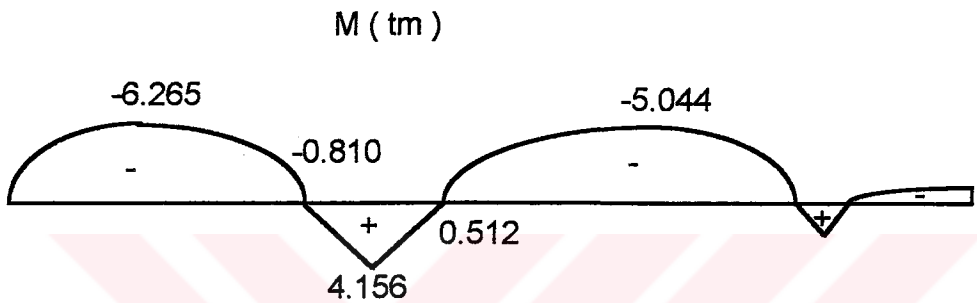
Şekil 5.2. 3-3 aksı kolon şeridi



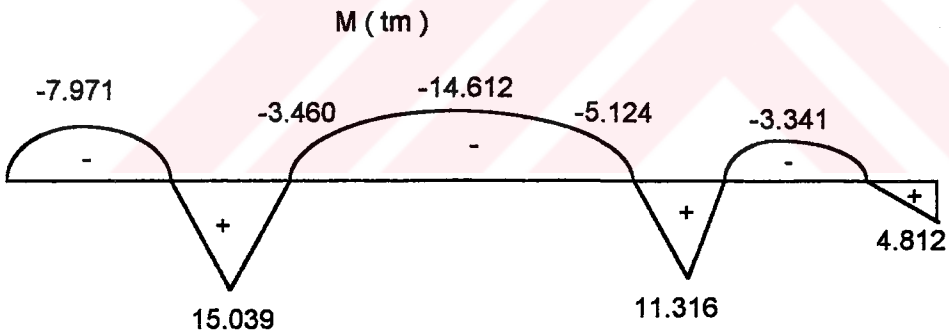
Şekil 5.3. 3-3, 2-2 aksları arası açıklık şeridi



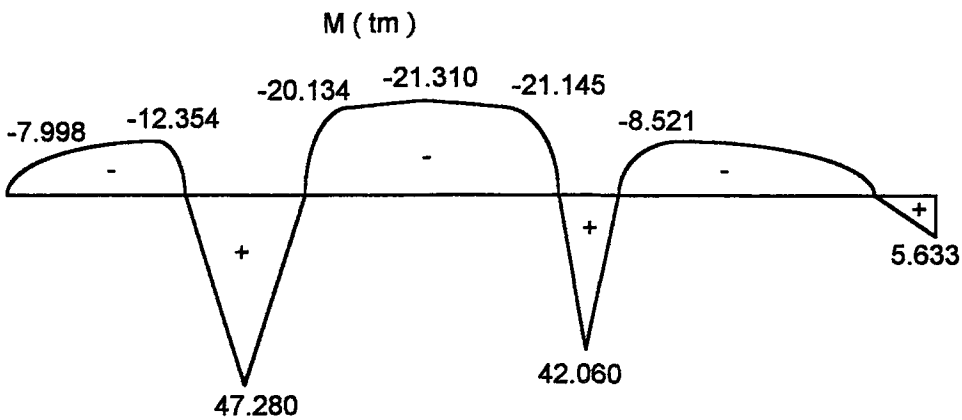
Şekil 5.4. 2-2 aksı kolon şeridi



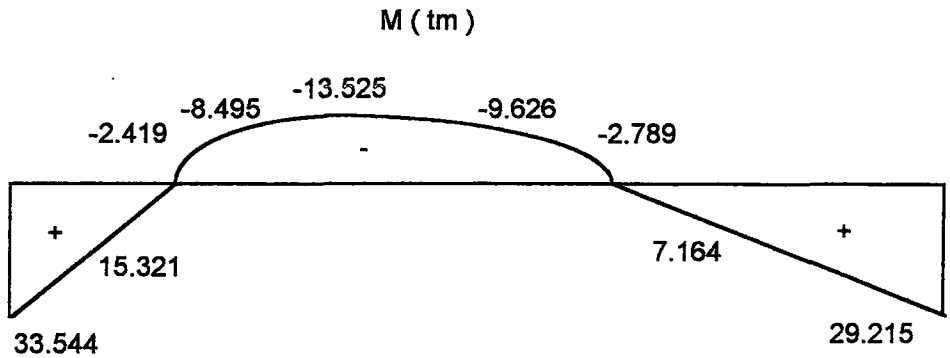
Şekil 5.5. 2-2 1-1 aksları arası açıklık şeridi



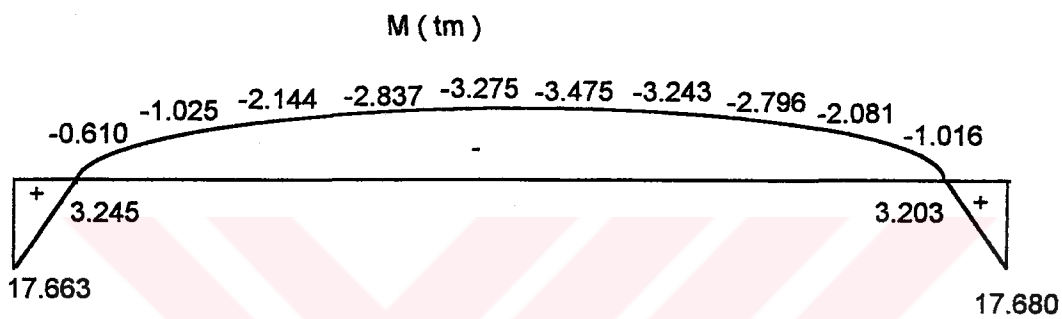
Şekil 5.6. E-E , D-D aksları arası açıklık şeridi



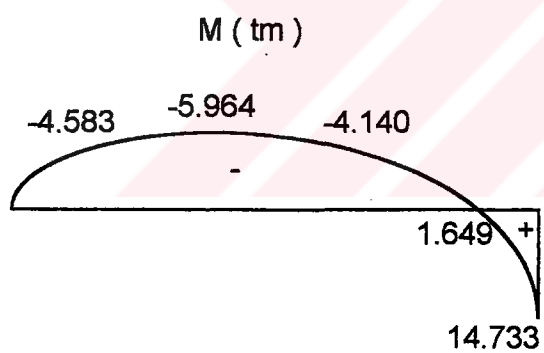
Şekil 5.7. D - D aksı kolon şeridi



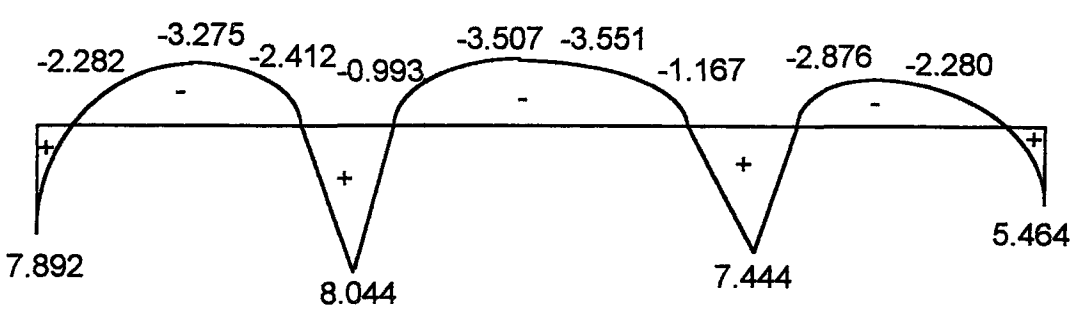
Şekil 5.8. C - C aksı açıklık şeridi



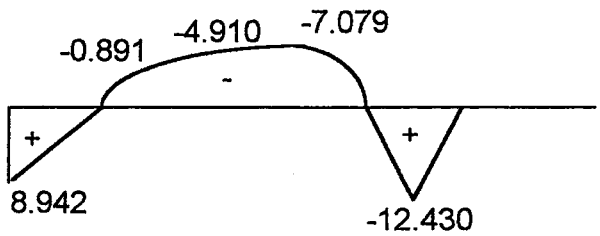
Şekil 5.9. Y doğrultusunda merdiven kısmı moment diyagramı



Şekil 5.10. X doğrultusunda merdiven kısmı moment diyagramı



Şekil 5.11. Y doğrultusunda koridor kısmı moment diyagramı



Şekil 5.12. X doğrultusunda koridor kısmı moment diyagramı

5.4. Radye Temel Betonarme Hesapları

Asmin = 0.002 x 72 x 100 = 14.4 cm^2 ⇒ ∅ 18 / 16 (15.90 cm^2)
d = 72 cm

* olan kesitlere minumum donatı konmuştur.

Tablo 5.1. 4-4,3-3 aksları arası açıklık şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-4.711	10.49	5.30	14.4*	∅ 18 / 16 (15.90)		
9.623	7.33	5.34	14.4*		∅ 18/32+∅ 18/32 (15.90)	
-7.973	8.06	5.32	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.2. 3-3 aksı kolon şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-11.569	6.69	5.38	14.4*	∅ 18 / 16 (15.90)		
48.072	3.28	5.49	36.65		∅18/32+∅18/32 (15.90)	∅ 22 / 16 (23.76)
-16.745	5.56	5.39	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.3. 3-3,2-2 aksları arası açıklık şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-4.255	11.04	5.30	14.4*	∅ 18 / 16 (15.90)		
9.352	7.44	5.34	14.4*		∅18/32+∅18/32 (15.90)	
-16.235	5.65	5.37	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.4. 2-2 aksı kolon şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-13.689	6.15	5.34	14.4*	∅ 18 / 16 (15.90)		
5.230	9.96	5.30	14.4*		∅18/32+∅18/32 (15.90)	
-17.009	5.52	5.38	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.5. 2-2,1-1 aksları arası açıklık şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-6.265	9.09	5.31	14.4*	∅ 18 / 16 (15.90)		
4.156	11.17	5.30	14.4*		∅18/32+∅18/32 (15.90)	
-5.044	10.14	5.30	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.6. E-E,D-D aksları arası açıklık şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-7.971	8.06	5.34	14.4*	∅ 18 / 16 (15.90)		
15.039	5.87	5.38	14.4*	∅ 18 / 16 (15.90)		
-14.612	5.95	5.38	14.4*	∅ 18 / 16 (15.90)		
11.316	6.77	5.37	14.4*	∅ 18 / 16 (15.90)		
-3.341	12.45	5.30	14.4*	∅ 18 / 16 (15.90)		
4.812	10.38	5.30	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.7. D-D aksı kolon şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-12.354	6.48	5.36	14.4*	∅ 18 / 16 (15.90)		
47.280	3.31	5.49	36.05	∅ 18 / 16 (15.90)		∅ 22 /16 (23.76)
-21.310	4.93	5.39	15.93	∅ 18 / 16 (15.90)		
42.060	3.51	5.48	32.01	∅ 18 / 16 (15.90)		∅ 20 / 16 (19.54)
-8.521	7.80	5.35	14.4*	∅ 18 / 16 (15.90)		
5.633	9.59	5.30	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.8. C-C aksı açıklık şeridi

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
33.544	3.93	5.39	25.11	∅ 18 / 10 (25.45)		
-13.525	6.19	5.36	14.4*	∅ 18 / 16 (15.90)		
29.219	4.21	5.41	21.95	∅18 / 11.5 (22.13)		

Tablo 5.9. Y doğrultusunda merdiven kısmı betonarme hesapları

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
17.663	5.41	5.38	14.4*	∅ 18 / 16 (15.90)		
-3.475	12.21	5.30	14.4*	∅ 18 / 16 (15.90)		
17.680	5.42	5.38	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.10. X doğrultusunda merdiven kısmı betonarme hesapları

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
-5.964	9.32	5.30	14.4*	∅ 18 / 16 (15.90)		
14.733	5.93	5.37	14.4*	∅ 18 / 16 (15.90)		

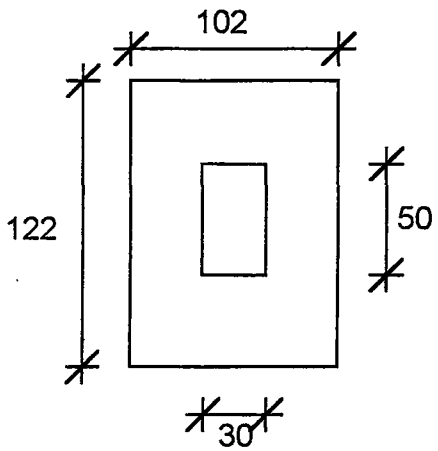
Tablo 5.11. Y doğrultusunda koridor kısmı betonarme hesapları

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
7.892	8.10	5.32	14.4*	∅ 18 / 16 (15.90)		
-3.275	12.58	5.30	14.4*	∅ 18 / 16 (15.90)		
8.044	8.03	5.32	14.4*	∅ 18 / 16 (15.90)		
-3.551	12.08	5.30	14.4*	∅ 18 / 16 (15.90)		
7.444	8.34	5.32	14.4*	∅ 18 / 16 (15.90)		
-2.880	13.42	5.30	14.4*	∅ 18 / 16 (15.90)		
5.464	9.74	5.30	14.4*	∅ 18 / 16 (15.90)		

Tablo 5.12. X doğrultusunda koridor kısmı betonarme hesapları

Md (tm)	kd	ks	As (cm^2)	Seçilen	Mevcut	Ek
8.942	7.61	5.35	14.4*	∅ 18 / 16 (15.90)		
-7.079	8.65	5.32	14.4*	∅ 18 / 16 (15.90)		
12.430	6.45	5.36	14.4*	∅ 18 / 16 (15.90)		

5.5. S3 Kolonları İçin Zımbalama Tahkiki



Vpd ≅165 - (1.02 x 1.22) x 20.70 = 139.24 t

ex = 0.625

ey = 0.225

α = 1 / [1 + 1.5 x (0.625 + 0.225) / √(1.02 x 1.22)] = 0.466

Vcr = γ fctd Upd = 0.466x1.15x2x(1.02+1.22)x0.72= 172.85 t

Vcr =172.85 > Vpd = 139.24 sağlar

SONUÇ

Sonuç olarak diyebilirizki bir yapıda perdelerin bulunması, o yapıdaki kolonların kesit tesirlerini azaltmakta ve dolayısıyla kolon kesitleri küçük tutulabilmektedir. Ayrıca kat yüksekliğinin sınırlı oldugu durumlarda kirişsiz döşeme yapılması uygun olmaktadır. Kirişsiz döşeme yapılması durumunda hesaplar çok dikkatli yapılmalı zımbalama etkisine dikkat edilmelidir.

Bilgisayarla yapılan hesapların hızlı ve bazı kolaylıkları nedeniyle yaygın olarak kullanılmalarını sağlamaktadır. Fakat bazı durumlarda bilgisayar kullanılmadanda kolaylıkla hesap yapılması mümkünken bilgisayar alışkanlıgı nedeniyle hep bilgisayar kullanılmaya yönelinmektedir. Ayrıca bilgisayarla yapılan tüm hesaplar doğrudur yaklaşımıda yanlıştır. Bilgisayarlar kendilerine verilen değerlere baglı olarak hesap yapmaktadır. Girilen degerler yanlışsa elde edilen degerlerde yanlış olmaktadır. Bu nedenle bilgisayar sonuçlarına körü körüne baglanmak yanlış olacaktır.

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ÖZGEÇMİŞ

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Windows, Microsoft Word, Lotus 1-2-3, AutoCAD, Professional Write

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