



وزارة التعليم العالي
والبحث العلمي
الجامعة التكنولوجية
هندسة البناء والانشاءات
فرع الهندسة الانشائية

التصميم والتحليل باستخدام Sap2000 V.14

مشروع مقدم لقسم البناء والانشاءات كجزء من
متطلبات نيل شهادة البكالوريوس

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نيل شهادة
البكالوريوس

الإهداء

الى اغلى الناس

الى اغلى الاحبة

الى من جلبني الى هذا العالم واحاطنا حباً ورعاية واهتماماً .
أمي أبي

اهدي لكم قلبي ... اصدقائي وزملائي ...

اهدي لكم روحي .. اساتذتي الافاضل ..

بلدي الحبيب العراق اهدي لك هذا البحث المتواضع .

شكر وتقدير

الصلاة والسلام على المبعوث رحمة للعالمين ابي القاسم محمد صلى الله عليه وسلم وعلى ال بيته من الائمة الغر الميامين عليهم صلوات الله اجمعين .

نحمد الله تعالى اولاً على كل نعمه التي لاتعد ولا تحصى ومنها نعمة العقل التي ميز بها الانسان دون سائر خلقه ليطرق من خلالها ميادين العلم والمعرفة ومنها ميدان بحثنا هذا .
وأود ان اسجل شكري وتقديري للسادة القائمين على هذا الصرح العلمي - هندسة البناء والانشاءات- والتي ضمت بين جدرانها طلبة العلم والمعرفة من اجل توظيف ما حصلوا عليه من تلك العلوم في خدمة البلد وإعادة إعمار ه .

واقدم شكري الجزيل الى استاذتي العزيزه

الدكتورة نسرين صالح محمد

كما اشكر الاساتذه كافة الذين لم ييخلوا علينا من خلال بذلهم الجهود الطيبة لتيسير العلم والمعرفة لنا..... .

ومن الله التوفيق

سامر عبدالزهرة مطر

الفصل الأول

مقدمة عن برنامج

Sap2000

1-1 ماهو ال-Sap2000:-

برنامج ساب هو من البرامج الأولى في تحليل القوى و الاجهادات على المنشآت و تصميمها و هذا البرنامج يستخدم طريقة العناصر المحددة (Finite Elements) و التي اعتمدتها المواصفات العالمية في حل المنشآت... و يجب علينا لحل أي منشأ أن نتبع خطوات محددة و هي بالترتيب :-

١- تعريف الوحدات Units .

٢- رسم المنشأ Drawing .

٣- التعريفات Define .

٤- تحليل المنشأ Run Analysis .

٥- النتائج Outputs .

٦- التصميم Design .

يحتوي الساب على مصطلحات مهمة يجب أن نتعرض لها قبل أن نخوض غمار التجربة وهي...

١- (Skeletal Structural) و هي منشآت هيكلية مثل الكمرات و الإطارات و الجمالونات (Beams & Truss & Frames) .

٢- (Structural Non-Skeletal) و هي منشآت غير هيكلية مثل البلاطات (Slaps) .

الفصل الثاني

التحليل والتصميم باستخدام
الكمبيوتر

1-2 التحليل والتصميم باستخدام الكمبيوتر:-


بعد النقر المزدوج على أيقونة الساب ننفذ الآتي...

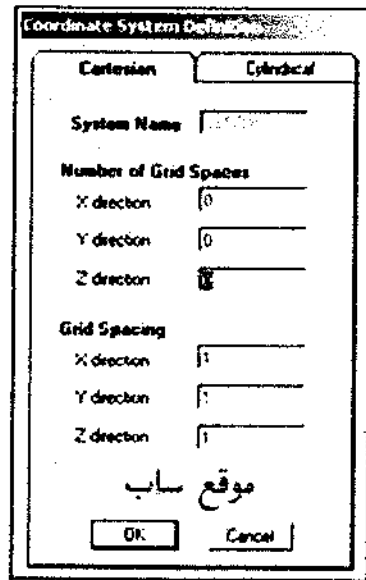
- 1- بعد فتح برنامج الساب و تحديد وحدات الأطوال و الأحمال المستخدمة من المربع المنسل كما بالشكل.



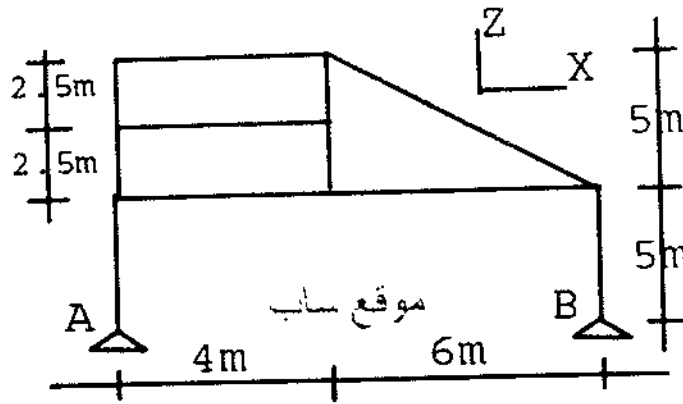
- 2- نختار (New Model From Template < File) ... (بالنماذج الجاهزة).
- أو (Model New < File) ... (شبكة للرسم).

2-2 الرسم عن طريق الشبكة المنتظمة او غير المنتظمة :-

من الأمر New Model < File أو من الضغط على هذه الأيقونة  ليظهر الشكل التالي ...



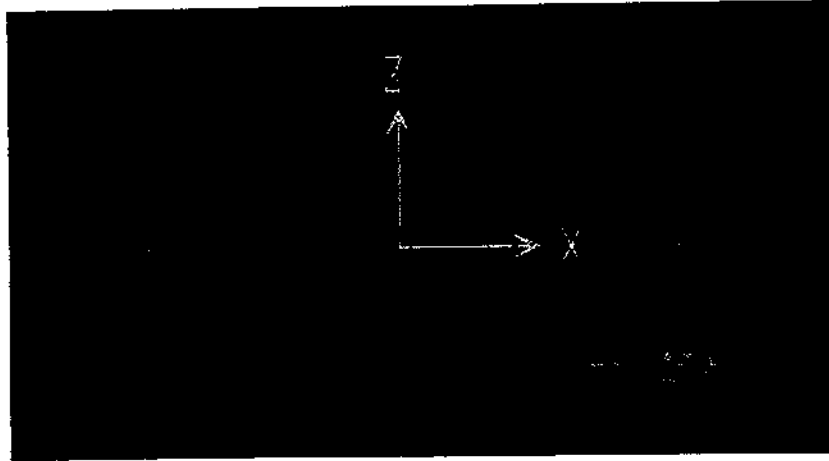
مثلا أريد إدخال هذا الشكل على الساب...



بما أن الشكل غير منتظم يفضل أن أدخل قيم (Grid Spaces Number of) (بصفر) و من ثم اضغط على (OK) ليظهر محورين من المحاور (X,Y,Z) .
 بعد ذلك نختار المستوى الذي يحتله المنشأ و كما هو مبين بالرسم فهو يحتل المستوى (XZ)
 عن طريق هذه المجموعة من الأيقونات

3-d	xy	xz	yz	60°
-----	----	----	----	-----

 كما بالشكل ..



و بعد ذلك عن طريق الأمر (Grid Edit) و الذي عرفنا كيفية استخدامه سابقا نكمل رسم الشكل المعطى .. و باختصار.. يجب علينا أن نفرض أن نقطة (A) في الشكل المعطى هي نقطة الصفر في محاور (X&Z) و نضيف بقية الـ (Grids) .

3-2 تعريف أنواع القطاعات و إدخالها على الشكل الموجود:-

يمكننا معرفة مادة و أبعاد القطاع ...

و لتعريف مادة القطاع نختار (Materials < Define) ليظهر المربع كما بالشكل..

Define Materials

Materials: **CONC**, OTHER, STEEL

Click to: Add New Material, Modify/Show Material

OK, Cancel

موقع ساب

بعد ذلك نختار مادة القطاع إما خرسانة أو صلب ،، و يمكن إضافة أي مادة أخرى بالضغط على (Add New Materials) و يمكن تغيير أو إضافة الخواص للمادة بالضغط على (Modify/Show Material) ليظهر الآتي...

Material Property Data

Material Name: []

Type of Material: ☒ Isotropic, ☐ Orthotropic

Type of Design: []

Analysis Property Data:

Mass per unit Volume	2.245E-07
Weight per unit Volume	8.680E-05
Modulus of Elasticity	3600
Poisson's Ratio	0.2
Coeff of Thermal Expansion	5.500E-06
Shear Module	1500

Design Property Data:

Reinforcing yield stress, fy	60
Concrete strength (Cylinder), fc	4
Shear steel yield stress, fyv	40
Concrete shear strength, kv	4

OK, Cancel

موقع ساب

و كما بالشكل يوجد العديد من الخواص التي يمكن تغييرها. أما بالنسبة لشكل و أبعاد القطاع فيمكن التحكم به عن طريق (Sections Frame < Define) ليظهر لنا الشكل التالي..

Define Frame Sections

Frame Sections: Name: [FSEC1]

Click to: Import I/Wide Flange, Add I/Wide Flange, Modify/Show Section

OK, Cancel

موقع ساب

لو أردنا تغيير خصائص أو اسم القطاع الموجود أصلاً نضغط على ..

(Modify/Show Sections) ليظهر لي الشكل التالي...

أما بالنسبة للمثال فيوجد عندي قطاعين و لوجود قطاع واحد فقط (معرف) يجب إضافة قطاع

آخر بالضغط على القائمة المنسدلة و التي كتب أمامها في الصورة (Add) و نختار..

(Add Rectangular) بفرض أن قطاعي مستطيل.. ليظهر نفس الشكل الذي يظهر عند

الضغط على (Sections Modify/Show) ..

Rectangular Section

Section Name: SEC2

Properties: Section Properties, Modification Factors, Material: CONC

Dimensions: Depth 13, Width 12

موقع سب

Concrete Reinforcement

OK Cancel

و ثم نقوم باختيار مادة القطاع و عمقه و عرضه و نغير الاسم الخاص بالقطاع..

و بعد ذلك نضغط على (Reinforcement) ليظهر الشكل التالي...

Reinforcement Data

Element Class: Column, Beam

Concrete Cover to Rebar Center: Top 0.05, Bottom 0.05

Reinforcement Overrides for Ductile Beams: Left Top 0, Right Top 0, Left Bottom 0, Right Bottom 0

موقع سب

OK Cancel

و يجب اختيار نوع القطاع إما (Beam or Column) و وضع سمك الـ (cover).

4-2 أنواع الأحمال و كيفية وضع كل نوع على الشكل الموجود:-

يوجد عدة أنواع من الأحمال و يمكن أن نقسمها إلى ثلاث أقسام و هي:-

١- أحمال على نقطة (Load Joint).

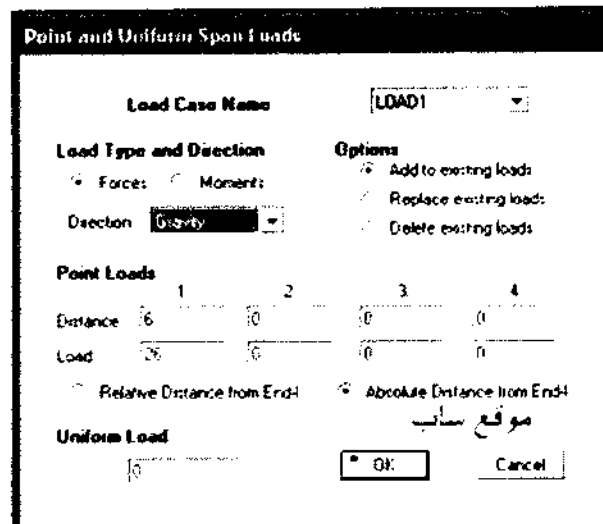
٢- حمل على كمر أو ما شابه (Load Frame).

٣- الأحمال على البلاطات (Load Surface).

ولادخال الاحمال :-

نختار (Point and Uniform < Frame Static Loads < Assign) أو اضغط على

الأيقونة  فيظهر المربع كما بالشكل.



* فندخل بعد القوة عن بداية الباكية في خانة الطول (Distance) و هذه تدخل إما بالنسبة

المئوية أو بالقيم الطولية الحقيقية و قد استخدمت الثانية في المثال و ندخل قيمة القوة

في خانة الأحمال (Load) و قد أعطانا ٤ خانات لكل من المسافات و الأحمال و لاحتتمال

وجود أكثر من قوة على نفس الباكية. بعد ذلك نضغط (OK) فتظهر القوة المطلوبة.

الفصل الثالث

انواع الابنية

تصنف الابنية من الناحية الانشائية وفق احد الانواع التالية:-

- ١ - **بناء هيكلية:-** يتميز هذا البناء بوجود هيكل حامل من الاعتاب والاعمدة تقوم بنقل احمال الارضيات والجدران الى الاسس .
- تكون هذه الهياكل اما معدنية او خرسانية او مركبة منهما وفي الحالة الاولى فانها تصنع وفق مقاطع واطوال قياسية، يتميز الهيكل المعدني بسرعة التركيب والرفع عند الحاجة، ويمكن الاستفادة منه مرة ثانية بعد رفعه، ان تحمل المعادن لاجهادات الشد والضغط بدرجة عالية يجعل مساحة المقاطع المطلوبة قليلة مقارنة مع المواد الاخرى الامر الذي يقلل من الاحمال المسلطة على الاسس ويوفر في المساحات التي تشغلها الاعمدة وفضاءاً راسياً اكبر لذا فان المنشآت المعدنية اصبحت مفضلة في الابنية المتعددة الطوابق والابنية ذات الفضاءات الواسعة جداً مثل ابنية المصانع والمخازن والمعارض وغيرها، تحتاج الهياكل المعدنية الى الوقاية من الحريق وصيانة مستمرة لاحتمال تاثرها بالعوامل الجوية، ان وجوب التزام المصمم بالمقاطع القياسية المنتجة والمتوفرة يحد كثيراً من التصرف الهندسي في التصميم، تستورد كافة المقاطع المعدنية المستعملة في البناء في الوقت الحاضر لذا من المتوقع ان تكون الكلفة مرتفعة، حفاظاً على الاقتصاد الوطني يفضل استعمال البدائل المنتجة محلياً حتى في حالة تساوي الكلفة او ارتفاعها نسبياً .
- تكون الهياكل الخرسانية المسلحة اما مصبوبة موقعياً او مسبقة الصب، تتميز الهياكل الخرسانية المسلحة بان جميع موادها الاولى ما عدا فولاذ التسليح مصنعة محلياً وتتوفر الايدي العاملة، تعطي الخرسانة للمصمم حرية التصرف في انتاج الانماط البنائية والاشكال المرغوبة وتتميز بمقاومتها الجيدة للحريق وكذلك بدوامها العالي .
- تعتبر الهياكل ثقيلة الوزن ويستغرق انشاؤها زمناً اطول من الهياكل المعدنية وتحتاج الى سيطرة على نوعية الانتاج والتنفيذ، تكون هذه الهياكل دائمية لا يمكن رفعها ونصبها في محل اخر، تنفذ الجدران في الابنية الهيكلية بعد اكمال الهيكل ويمكن رفع اي جدار من دون التأثير على سلامة المنشأ .

- ٢ - **بناء غير هيكلية:-** تنقل احمال الارضيات في هذا النوع من البناء الى الاسس بواسطة جدران حاملة لا يمكن رفعها بعد البناء بخلاف الابنية الهيكلية، يتبع هذا الاسلوب في الابنية الاعتيادية ذات الطوابق القليلة لان تعدد الطوابق يعني زيادة سمك الجدران الامر الذي يسبب نقصان في المساحات الصافية للطوابق وتبسيط احمال كبيرة على الاسس .

- ٣ - **بناء مشترك هيكلية وغير هيكلية:-** ويكون هنالك اعمدة واعتاب خرسانية او معدنية تعمل كهيكل في جزء من البناء وجدران حاملة في بعض الاجزاء الاخرى . يتبع هذا الاسلوب لمطلبات انشائية ومعمارية ولاسباب اقتصادية ايضاً من الضروري

توفير التفاصيل الانشائية والتمددية واعداد التصميم بشكل يؤمن ملافاة حدوث هطول
تفاضلي للاسس باكثر من الحد المسموح

الفصل الرابع

وصف المنشأ

والاحمال المسطرة على المنشأ

4-1 وصف المنشأ:-

البنية عبارة عن دار استراحة بمساحة (23.74 m*25.28 m) تتكون من طابقين، وكل طابق يتكون من ثلاث مناطق متشابهة من حيث الشكل والابعاد، وكل منطقة تتكون من غرفتي نوم، مطبخ، صالة جلوس وحمام، بالإضافة الى وجود الممرات والبالكونيات.

4-2 الاحمال:-

4-2-1 انواع الاحمال على الابنية

الاحمال الرئيسية على اي بنية هي الاحمال الحية والميتة ولكن بصورة عامة تقسم الاحمال على الابنية الى :

- ١- الحمل الحي .
- ٢- الحمل الميت .
- ٣- القوة الميكانيكية المشار اليها باحمال الرياح والهزات الارضية .
- ٤- الاحمال الديناميكية الناتجة من الاحمال المركزة .
- ٥- احمال الجليد .
- ٦- ضغط السوائل في الخزانات .
- ٧- القوة الناتجة من الحرارة وتغيراتها .
- ٨- قوى التربة مثل القوة المسلطة على الجدران الساندة او ارضيات الاعمدة .

وسناتي على ذكر بعض هذه الانواع وهي الرئيسية وذات العلاقة بالمشروع .

١- الحمل الحي :-

هو الحمل الذي يتغير مقداره وموقعه خلال فترة المشأ ولا يمكن تحديده بدقة لانه قد يكون موجوداً وتأثيره الكامل موزع على كل المنشأ او يكون متحركاً او اصطدامياً او فجائياً من الحمل الحي يمكن ان يعطى كقيمة افتراضية اعتماداً على طريقة اشغال المشأ وتشمل :

- محلات سكنية .
- منشآت خدمية .
- منشآت تجميعية .
- محلات العمل .
- محلات تجارية .
- منشآت صناعية .
- منآت الخزن .

٢- الحمل الميت :-

هو الحمل الذي يمثل وزن المنشأ او الاجزاء الانشائية الداخلية فيه كالكاشي والبياض والسقوف الثانوية والقواطع وغيرها من الاجزاء الانشائية ويمكن تحديد الحمل الميت بدقة عالية في الحسابات اما عند التصميم سيفرض للمنشأ ابعاد قد تكون اكبر من الابعاد الحقيقية او الابعاد التي نحتاجها على اساس قوى القص والعزوم المسلطة وفي هذه الحالة تكون امينة ضمن مدى محدد وان الاجزاء ذات الابعاد الكبيرة نسبياً تعتبر ذات حمل اقوى من تلك الاجزاء ذات الابعاد الاقل. اما اذا حصل العكس فيجب اعتماد ابعاد اخرى تتناسب مع حجم الاحمال المسلطة وبذلك تتغير حسابات الحمل الميت .

2-2-4 معاملات الامان (Safety Factors)

ان معاملات الامان تستخدم لزيادة مقدار الاحمال المسلطة على المنشأ وان هذه الزيادة ضرورية للاعتبارات التالية :-

- ١- احتمالت تغير المواد في بناء الاجزاء المختلفة للمنشأ بسبب اختلاف مكوناتها مما يؤثر سلباً على مقاومة الاحمال والخصائص الفيزيائية الاخرى .
- ٢- عدم التأكد بان هذه الاحمال المحسوبة هي نفسها الاحمال الحقيقية التي سوف يتعرض لها المنشأ .
- ٣- احتمالية تغير القوى الداخلية في المنشأ .
- ٤- احتمالية التآكل والتلف الذي يقود لإنهيار المنشأ .
- ٥- احتمالية حدوث احمال صدمية كبيرة قادرة على احداث الفشل في المنشأ او في احد اجزائه .
- ٦- وعدم دقة تنفيذ العمل بالابعاد والاشكال المطلوبة .

الاحمال المسلطة على الطوابق :-

وزن مونة الكاشي = 1 kn/m^2

Full Ceiling = 0.7 kn/m^2

Plaster = 0.3 kn/m^2

الحمل الكلي = 2 kn/m^2

الاحمال المسلطة على السطح :-

Full Ceiling = 0.7 kn/m^2

Plaster = 0.3 kn/m^2

Earth Fill = $0.13 \times 18 = 2.3 \text{ kn/m}^2$

Sand = $0.03 \times 16 = 0.5 \text{ kn/m}^2$

Pre-Cast Unit = $0.05 \times 24 = 1.2 \text{ kn/m}^2$

الحمل الكلي = 5 kn/m^2

وزن المنشأ :-

● الاحمال الميتة على الـ (Beam) :-

$$13.4352 \text{ kn/m}^2 = 0.24 * 3.11 * 18 = \text{للطباق الاول}$$

$$2.16 \text{ kn/m}^2 = 0.12 * 1 * 18 = \text{للـ سطح}$$

● الاحمال المسلطة على الـ (Slab) :-

$$\gamma * h * L * t / A = \text{Pressure}$$

$$18 * 3.11 * (1.5 + 2.02) * .24 / [(1.5 + 2.02) * (3.24 + 3.75) =$$

$$+ (1/22.5 * \pi * 6.14^2 - 1.5 * 5.14/2)]$$

$$1.82 \text{ kn/m}^2 =$$

الفصل الخامس

إدخال البيانات

SAP 2000®

1. Model geometry

This section provides model geometry information, including items such as joint coordinates, joint restraints, and element connectivity.

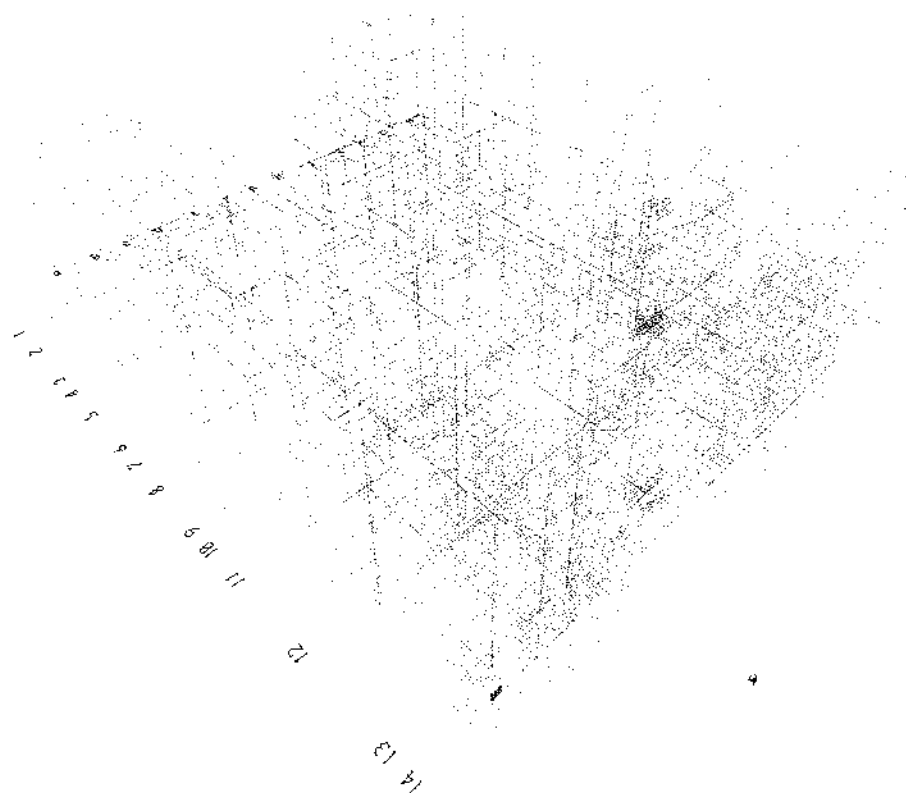


Figure 1: Finite element model

1.1. Joint coordinates

Table 1: Joint Coordinates

Table 1: Joint Coordinates					
GlobalZ in	GlobalY in	GlobalX in	CoordType	CoordSys	Joint
4.610	23.740	13.520	Cartesian	GLOBAL	1
0.000	23.740	13.520	Cartesian	GLOBAL	2
4.610	23.740	15.760	Cartesian	GLOBAL	3
0.000	23.740	15.760	Cartesian	GLOBAL	4
4.610	23.740	18.260	Cartesian	GLOBAL	5
0.000	23.740	18.260	Cartesian	GLOBAL	6
4.610	22.240	20.280	Cartesian	GLOBAL	7
0.000	22.240	20.280	Cartesian	GLOBAL	8
4.610	22.240	18.260	Cartesian	GLOBAL	9
0.000	22.240	18.260	Cartesian	GLOBAL	10

Table 1: Joint Coordinates

GlobalZ in	GlobalY in	GlobalX in	CoordType	CoordSys	Joint
4.610	19.990	20.280	Cartesian	GLOBAL	11
0.000	19.990	20.280	Cartesian	GLOBAL	12
4.610	19.990	18.260	Cartesian	GLOBAL	13
0.000	19.990	18.260	Cartesian	GLOBAL	14
4.610	19.990	15.280	Cartesian	GLOBAL	15
0.000	19.990	15.280	Cartesian	GLOBAL	16
4.610	19.990	13.520	Cartesian	GLOBAL	17
0.000	19.990	13.520	Cartesian	GLOBAL	18
4.610	18.990	11.500	Cartesian	GLOBAL	19
0.000	18.990	11.500	Cartesian	GLOBAL	20
4.610	18.990	6.760	Cartesian	GLOBAL	21
0.000	18.990	6.760	Cartesian	GLOBAL	22
4.610	17.490	20.280	Cartesian	GLOBAL	23
0.000	17.490	20.280	Cartesian	GLOBAL	24
4.610	17.490	18.260	Cartesian	GLOBAL	25
0.000	17.490	18.260	Cartesian	GLOBAL	26
4.610	17.490	16.760	Cartesian	GLOBAL	27
0.000	17.490	16.760	Cartesian	GLOBAL	28
4.610	17.490	15.280	Cartesian	GLOBAL	29
0.000	17.490	15.280	Cartesian	GLOBAL	30
4.610	17.490	13.520	Cartesian	GLOBAL	31
0.000	17.490	13.520	Cartesian	GLOBAL	32
4.610	17.490	11.500	Cartesian	GLOBAL	33
0.000	17.490	11.500	Cartesian	GLOBAL	34
4.610	15.240	6.760	Cartesian	GLOBAL	35
0.000	15.240	6.760	Cartesian	GLOBAL	36
4.610	15.240	8.520	Cartesian	GLOBAL	37
0.000	15.240	8.520	Cartesian	GLOBAL	38
4.610	15.240	11.500	Cartesian	GLOBAL	39
0.000	15.240	11.500	Cartesian	GLOBAL	40
4.610	15.240	13.520	Cartesian	GLOBAL	41
0.000	15.240	13.520	Cartesian	GLOBAL	42
7.720	23.740	18.260	Cartesian	GLOBAL	43
7.720	23.740	15.760	Cartesian	GLOBAL	44
7.720	23.740	13.520	Cartesian	GLOBAL	45
7.720	19.990	13.520	Cartesian	GLOBAL	46
4.610	14.240	6.608E-17	Cartesian	GLOBAL	47
0.000	14.240	6.608E-17	Cartesian	GLOBAL	48
4.610	14.240	4.740	Cartesian	GLOBAL	49
0.000	14.240	4.740	Cartesian	GLOBAL	50
4.610	14.240	20.280	Cartesian	GLOBAL	51
0.000	14.240	20.280	Cartesian	GLOBAL	52
4.610	14.240	16.760	Cartesian	GLOBAL	53
0.000	14.240	16.760	Cartesian	GLOBAL	54
4.610	14.240	13.520	Cartesian	GLOBAL	55
0.000	14.240	13.520	Cartesian	GLOBAL	56
4.610	12.740	20.280	Cartesian	GLOBAL	57
0.000	12.740	20.280	Cartesian	GLOBAL	58
4.610	12.740	4.740	Cartesian	GLOBAL	59
0.000	12.740	4.740	Cartesian	GLOBAL	60
4.610	12.740	6.760	Cartesian	GLOBAL	61
0.000	12.740	6.760	Cartesian	GLOBAL	62
4.610	12.740	8.520	Cartesian	GLOBAL	63
0.000	12.740	8.520	Cartesian	GLOBAL	64
4.610	12.740	10.000	Cartesian	GLOBAL	65
0.000	12.740	10.000	Cartesian	GLOBAL	66
4.610	12.740	11.500	Cartesian	GLOBAL	67
0.000	12.740	11.500	Cartesian	GLOBAL	68
4.610	12.740	13.520	Cartesian	GLOBAL	69
0.000	12.740	13.520	Cartesian	GLOBAL	70
4.610	10.490	6.608E-17	Cartesian	GLOBAL	71
4.610	10.490	16.760	Cartesian	GLOBAL	72
4.610	10.490	1.760	Cartesian	GLOBAL	73
0.000	10.490	1.760	Cartesian	GLOBAL	74
4.610	10.490	4.740	Cartesian	GLOBAL	75
0.000	10.490	4.740	Cartesian	GLOBAL	76

Table 1: Joint Coordinates

GlobalZ in	GlobalY in	GlobalX in	CoordType	CoordSys	Joint
4.610	10.490	6.760	Cartesian	GLOBAL	77
0.000	10.490	6.760	Cartesian	GLOBAL	78
4.610	10.490	18.260	Cartesian	GLOBAL	79
0.000	10.490	18.260	Cartesian	GLOBAL	80
4.610	10.490	20.280	Cartesian	GLOBAL	81
0.000	10.490	20.280	Cartesian	GLOBAL	82
4.610	9.490	6.760	Cartesian	GLOBAL	83
0.000	9.490	6.760	Cartesian	GLOBAL	84
4.610	9.490	10.000	Cartesian	GLOBAL	85
0.000	9.490	10.000	Cartesian	GLOBAL	86
4.610	9.490	15.280	Cartesian	GLOBAL	87
0.000	9.490	15.280	Cartesian	GLOBAL	88
4.610	9.490	13.520	Cartesian	GLOBAL	89
0.000	9.490	13.520	Cartesian	GLOBAL	90
4.610	7.990	6.608E-17	Cartesian	GLOBAL	91
0.000	7.990	6.608E-17	Cartesian	GLOBAL	92
4.610	7.990	1.760	Cartesian	GLOBAL	93
0.000	7.990	1.760	Cartesian	GLOBAL	94
4.610	7.990	4.740	Cartesian	GLOBAL	95
0.000	7.990	4.740	Cartesian	GLOBAL	96
4.610	7.990	6.760	Cartesian	GLOBAL	97
0.000	7.990	6.760	Cartesian	GLOBAL	98
4.610	7.990	13.520	Cartesian	GLOBAL	99
0.000	7.990	13.520	Cartesian	GLOBAL	100
4.610	7.990	3.240	Cartesian	GLOBAL	101
0.000	7.990	3.240	Cartesian	GLOBAL	102
4.610	5.750	11.500	Cartesian	GLOBAL	103
0.000	5.750	11.500	Cartesian	GLOBAL	104
4.610	5.750	13.520	Cartesian	GLOBAL	105
0.000	5.750	13.520	Cartesian	GLOBAL	106
4.610	4.750	6.760	Cartesian	GLOBAL	107
0.000	4.750	6.760	Cartesian	GLOBAL	108
4.610	4.750	8.520	Cartesian	GLOBAL	109
0.000	4.750	8.520	Cartesian	GLOBAL	110
4.610	4.750	6.608E-17	Cartesian	GLOBAL	111
0.000	4.750	6.608E-17	Cartesian	GLOBAL	112
4.610	4.750	3.240	Cartesian	GLOBAL	113
0.000	4.750	3.240	Cartesian	GLOBAL	114
4.610	1.000	6.760	Cartesian	GLOBAL	115
0.000	1.000	6.760	Cartesian	GLOBAL	116
4.610	1.000	4.740	Cartesian	GLOBAL	117
0.000	1.000	4.740	Cartesian	GLOBAL	118
4.610	0.000	6.608E-17	Cartesian	GLOBAL	119
0.000	0.000	6.608E-17	Cartesian	GLOBAL	120
4.610	0.000	1.760	Cartesian	GLOBAL	121
0.000	0.000	1.760	Cartesian	GLOBAL	122
4.610	0.282	3.240	Cartesian	GLOBAL	123
4.610	9.782	16.760	Cartesian	GLOBAL	124
4.610	5.032	10.000	Cartesian	GLOBAL	125
7.720	19.990	15.280	Cartesian	GLOBAL	126
7.720	19.990	18.260	Cartesian	GLOBAL	127
7.720	22.240	18.260	Cartesian	GLOBAL	128
7.720	22.240	20.280	Cartesian	GLOBAL	129
7.720	19.990	20.280	Cartesian	GLOBAL	130
4.610	18.990	9.000	Cartesian	GLOBAL	131
0.000	18.990	9.000	Cartesian	GLOBAL	132
4.610	14.240	2.240	Cartesian	GLOBAL	133
0.000	14.240	2.240	Cartesian	GLOBAL	134
7.720	17.490	18.260	Cartesian	GLOBAL	135
4.610	0.282	8.520	Cartesian	GLOBAL	136
4.610	-0.940	8.520	Cartesian	GLOBAL	137
4.610	9.782	22.040	Cartesian	GLOBAL	138
4.610	8.560	22.040	Cartesian	GLOBAL	139
4.610	5.032	15.280	Cartesian	GLOBAL	140
4.610	3.810	15.280	Cartesian	GLOBAL	141
7.720	17.490	15.280	Cartesian	GLOBAL	142

Table 1: Joint Coordinates

GlobalZ in	GlobalY in	GlobalX in	CoordType	CoordSys	Joint
7.720	17.490	20.280	Cartesian	GLOBAL	143
7.720	17.490	13.520	Cartesian	GLOBAL	144
7.720	15.240	13.520	Cartesian	GLOBAL	145
7.720	14.240	13.520	Cartesian	GLOBAL	146
4.610	3.627	14.733	Cartesian	GLOBAL	147
4.610	3.512	14.168	Cartesian	GLOBAL	148
4.610	3.467	13.520	Cartesian	GLOBAL	149
4.610	3.512	13.016	Cartesian	GLOBAL	150
4.610	3.627	12.447	Cartesian	GLOBAL	151
4.610	3.810	11.894	Cartesian	GLOBAL	152
4.610	3.982	11.365	Cartesian	GLOBAL	153
4.610	4.276	10.869	Cartesian	GLOBAL	154
4.610	4.627	10.411	Cartesian	GLOBAL	155
4.610	8.377	21.493	Cartesian	GLOBAL	156
4.610	8.262	20.928	Cartesian	GLOBAL	157
4.610	8.217	20.280	Cartesian	GLOBAL	158
4.610	8.262	19.776	Cartesian	GLOBAL	159
4.610	8.377	19.207	Cartesian	GLOBAL	160
4.610	8.560	18.654	Cartesian	GLOBAL	161
4.610	8.732	18.125	Cartesian	GLOBAL	162
4.610	9.026	17.629	Cartesian	GLOBAL	163
4.610	9.377	17.171	Cartesian	GLOBAL	164
7.720	12.740	13.520	Cartesian	GLOBAL	165
4.610	-1.123	7.973	Cartesian	GLOBAL	166
4.610	-1.238	7.408	Cartesian	GLOBAL	167
4.610	-1.283	6.760	Cartesian	GLOBAL	168
4.610	-1.238	6.256	Cartesian	GLOBAL	169
4.610	-1.123	5.687	Cartesian	GLOBAL	170
4.610	-0.940	5.134	Cartesian	GLOBAL	171
4.610	-0.768	4.605	Cartesian	GLOBAL	172
4.610	-0.475	4.109	Cartesian	GLOBAL	173
4.610	-0.123	3.651	Cartesian	GLOBAL	174
4.610	0.832	4.470	Cartesian	GLOBAL	175
4.610	0.678	4.192	Cartesian	GLOBAL	176
4.610	0.538	3.907	Cartesian	GLOBAL	177
4.610	0.414	3.614	Cartesian	GLOBAL	178
4.610	0.305	3.316	Cartesian	GLOBAL	179
4.610	0.212	3.012	Cartesian	GLOBAL	180
4.610	0.134	2.703	Cartesian	GLOBAL	181
4.610	0.073	2.391	Cartesian	GLOBAL	182
4.610	0.028	2.077	Cartesian	GLOBAL	183
0.000	0.282	3.240	Cartesian	GLOBAL	184
0.000	5.032	10.000	Cartesian	GLOBAL	185
4.610	10.332	17.990	Cartesian	GLOBAL	186
4.610	10.178	17.712	Cartesian	GLOBAL	187
4.610	10.038	17.427	Cartesian	GLOBAL	188
4.610	9.914	17.134	Cartesian	GLOBAL	189
4.610	9.805	16.836	Cartesian	GLOBAL	190
4.610	9.712	16.532	Cartesian	GLOBAL	191
4.610	9.634	16.223	Cartesian	GLOBAL	192
4.610	9.573	15.911	Cartesian	GLOBAL	193
4.610	9.528	15.597	Cartesian	GLOBAL	194
4.610	5.582	11.230	Cartesian	GLOBAL	195
4.610	5.428	10.952	Cartesian	GLOBAL	196
4.610	5.288	10.667	Cartesian	GLOBAL	197
4.610	5.164	10.374	Cartesian	GLOBAL	198
4.610	5.055	10.076	Cartesian	GLOBAL	199
4.610	4.962	9.772	Cartesian	GLOBAL	200
4.610	4.884	9.463	Cartesian	GLOBAL	201
4.610	4.823	9.151	Cartesian	GLOBAL	202
4.610	4.778	8.837	Cartesian	GLOBAL	203
4.610	24.480	18.260	Cartesian	GLOBAL	204
4.610	24.480	15.760	Cartesian	GLOBAL	205
4.610	19.730	11.500	Cartesian	GLOBAL	206
4.610	19.730	9.000	Cartesian	GLOBAL	207
4.610	14.980	4.740	Cartesian	GLOBAL	208

Table 1: Joint Coordinates

GlobalZ in	GlobalY in	GlobalX in	CoordType	CoordSys	Joint
4.610	14.980	2.240	Cartesian	GLOBAL	209
0.000	9.782	16.760	Cartesian	GLOBAL	210
1.707	1.340	7.474	Cartesian	GLOBAL	211
1.500	1.000	7.420	Cartesian	GLOBAL	212
4.610	7.990	-0.790	Cartesian	GLOBAL	213
4.610	4.750	-0.790	Cartesian	GLOBAL	214
4.610	0.000	0.120	Cartesian	GLOBAL	215
4.610	-0.940	0.120	Cartesian	GLOBAL	216
4.610	-0.940	1.760	Cartesian	GLOBAL	217
7.720	9.490	13.520	Cartesian	GLOBAL	218
7.720	7.990	13.520	Cartesian	GLOBAL	219
7.720	17.490	16.760	Cartesian	GLOBAL	220
7.720	14.240	16.760	Cartesian	GLOBAL	221
7.720	14.240	20.280	Cartesian	GLOBAL	222
7.720	12.740	20.280	Cartesian	GLOBAL	223
7.720	10.490	20.280	Cartesian	GLOBAL	224
7.720	10.490	18.260	Cartesian	GLOBAL	225
7.720	14.240	4.740	Cartesian	GLOBAL	226
7.720	14.240	2.240	Cartesian	GLOBAL	227
7.720	14.240	6.608E-17	Cartesian	GLOBAL	228
7.720	10.490	6.608E-17	Cartesian	GLOBAL	229
7.720	10.490	1.760	Cartesian	GLOBAL	230
7.720	10.490	4.740	Cartesian	GLOBAL	231
7.720	12.740	4.740	Cartesian	GLOBAL	232
7.720	12.740	6.760	Cartesian	GLOBAL	233
7.720	10.490	6.760	Cartesian	GLOBAL	234
7.720	7.990	4.740	Cartesian	GLOBAL	235
7.720	7.990	1.760	Cartesian	GLOBAL	236
7.720	7.990	6.760	Cartesian	GLOBAL	237
4.610	4.750	6.880	Cartesian	GLOBAL	238
4.610	3.810	6.880	Cartesian	GLOBAL	239
4.610	3.810	8.520	Cartesian	GLOBAL	240
4.610	8.550	15.280	Cartesian	GLOBAL	241
4.610	8.550	13.593	Cartesian	GLOBAL	242
4.610	9.490	13.593	Cartesian	GLOBAL	243
7.720	7.990	6.608E-17	Cartesian	GLOBAL	244
7.720	18.990	11.500	Cartesian	GLOBAL	245
7.720	18.990	9.000	Cartesian	GLOBAL	246
7.720	18.990	6.760	Cartesian	GLOBAL	247
7.720	15.240	6.760	Cartesian	GLOBAL	248
7.720	15.240	8.520	Cartesian	GLOBAL	249
7.720	15.240	11.500	Cartesian	GLOBAL	250
7.720	17.490	11.500	Cartesian	GLOBAL	251
7.720	12.740	11.500	Cartesian	GLOBAL	252

1.2. Joint restraints

Table 2: Joint Restraint Assignments

Table 2: Joint Restraint Assignments						
R3	R2	R1	U3	U2	U1	Joint
Yes	Yes	Yes	Yes	Yes	Yes	2
Yes	Yes	Yes	Yes	Yes	Yes	4
Yes	Yes	Yes	Yes	Yes	Yes	6
Yes	Yes	Yes	Yes	Yes	Yes	8
Yes	Yes	Yes	Yes	Yes	Yes	10
Yes	Yes	Yes	Yes	Yes	Yes	12
Yes	Yes	Yes	Yes	Yes	Yes	14
Yes	Yes	Yes	Yes	Yes	Yes	16
Yes	Yes	Yes	Yes	Yes	Yes	18
Yes	Yes	Yes	Yes	Yes	Yes	20
Yes	Yes	Yes	Yes	Yes	Yes	22

Table 2: Joint Restraint Assignments

R3	R2	R1	U3	U2	U1	Joint
Yes	Yes	Yes	Yes	Yes	Yes	24
Yes	Yes	Yes	Yes	Yes	Yes	26
Yes	Yes	Yes	Yes	Yes	Yes	28
Yes	Yes	Yes	Yes	Yes	Yes	30
Yes	Yes	Yes	Yes	Yes	Yes	32
Yes	Yes	Yes	Yes	Yes	Yes	34
Yes	Yes	Yes	Yes	Yes	Yes	36
Yes	Yes	Yes	Yes	Yes	Yes	38
Yes	Yes	Yes	Yes	Yes	Yes	40
Yes	Yes	Yes	Yes	Yes	Yes	42
Yes	Yes	Yes	Yes	Yes	Yes	48
Yes	Yes	Yes	Yes	Yes	Yes	50
Yes	Yes	Yes	Yes	Yes	Yes	52
Yes	Yes	Yes	Yes	Yes	Yes	54
Yes	Yes	Yes	Yes	Yes	Yes	56
Yes	Yes	Yes	Yes	Yes	Yes	58
Yes	Yes	Yes	Yes	Yes	Yes	60
Yes	Yes	Yes	Yes	Yes	Yes	62
Yes	Yes	Yes	Yes	Yes	Yes	64
Yes	Yes	Yes	Yes	Yes	Yes	66
Yes	Yes	Yes	Yes	Yes	Yes	68
Yes	Yes	Yes	Yes	Yes	Yes	70
Yes	Yes	Yes	Yes	Yes	Yes	74
Yes	Yes	Yes	Yes	Yes	Yes	76
Yes	Yes	Yes	Yes	Yes	Yes	78
Yes	Yes	Yes	Yes	Yes	Yes	80
Yes	Yes	Yes	Yes	Yes	Yes	82
Yes	Yes	Yes	Yes	Yes	Yes	84
Yes	Yes	Yes	Yes	Yes	Yes	86
Yes	Yes	Yes	Yes	Yes	Yes	88
Yes	Yes	Yes	Yes	Yes	Yes	90
Yes	Yes	Yes	Yes	Yes	Yes	92
Yes	Yes	Yes	Yes	Yes	Yes	94
Yes	Yes	Yes	Yes	Yes	Yes	96
Yes	Yes	Yes	Yes	Yes	Yes	98
Yes	Yes	Yes	Yes	Yes	Yes	100
Yes	Yes	Yes	Yes	Yes	Yes	102
Yes	Yes	Yes	Yes	Yes	Yes	104
Yes	Yes	Yes	Yes	Yes	Yes	106
Yes	Yes	Yes	Yes	Yes	Yes	108
Yes	Yes	Yes	Yes	Yes	Yes	110
Yes	Yes	Yes	Yes	Yes	Yes	112
Yes	Yes	Yes	Yes	Yes	Yes	114
Yes	Yes	Yes	Yes	Yes	Yes	116
Yes	Yes	Yes	Yes	Yes	Yes	118
Yes	Yes	Yes	Yes	Yes	Yes	120
Yes	Yes	Yes	Yes	Yes	Yes	122
Yes	Yes	Yes	Yes	Yes	Yes	132
Yes	Yes	Yes	Yes	Yes	Yes	134
Yes	Yes	Yes	Yes	Yes	Yes	184
Yes	Yes	Yes	Yes	Yes	Yes	185
Yes	Yes	Yes	Yes	Yes	Yes	210
Yes	Yes	Yes	Yes	Yes	Yes	212
Yes	Yes	Yes	Yes	Yes	Yes	267
Yes	Yes	Yes	Yes	Yes	Yes	368
Yes	Yes	Yes	Yes	Yes	Yes	370
Yes	Yes	Yes	Yes	Yes	Yes	372
Yes	Yes	Yes	Yes	Yes	Yes	374
Yes	Yes	Yes	Yes	Yes	Yes	376
Yes	Yes	Yes	Yes	Yes	Yes	378
Yes	Yes	Yes	Yes	Yes	Yes	380
Yes	Yes	Yes	Yes	Yes	Yes	382
Yes	Yes	Yes	Yes	Yes	Yes	384
Yes	Yes	Yes	Yes	Yes	Yes	386
Yes	Yes	Yes	Yes	Yes	Yes	388
Yes	Yes	Yes	Yes	Yes	Yes	390

Table 2: Joint Restraint Assignments

R3	R2	R1	U3	U2	U1	Joint
Yes	Yes	Yes	Yes	Yes	Yes	392
Yes	Yes	Yes	Yes	Yes	Yes	394
Yes	Yes	Yes	Yes	Yes	Yes	396
Yes	Yes	Yes	Yes	Yes	Yes	623
Yes	Yes	Yes	Yes	Yes	Yes	624
Yes	Yes	Yes	Yes	Yes	Yes	626
Yes	Yes	Yes	Yes	Yes	Yes	628
Yes	Yes	Yes	Yes	Yes	Yes	630
Yes	Yes	Yes	Yes	Yes	Yes	632
Yes	Yes	Yes	Yes	Yes	Yes	634
Yes	Yes	Yes	Yes	Yes	Yes	636
Yes	Yes	Yes	Yes	Yes	Yes	638
Yes	Yes	Yes	Yes	Yes	Yes	640
Yes	Yes	Yes	Yes	Yes	Yes	642
Yes	Yes	Yes	Yes	Yes	Yes	644
Yes	Yes	Yes	Yes	Yes	Yes	646
Yes	Yes	Yes	Yes	Yes	Yes	648
Yes	Yes	Yes	Yes	Yes	Yes	650
Yes	Yes	Yes	Yes	Yes	Yes	652
Yes	Yes	Yes	Yes	Yes	Yes	879
Yes	Yes	Yes	Yes	Yes	Yes	880
Yes	Yes	Yes	Yes	Yes	Yes	882
Yes	Yes	Yes	Yes	Yes	Yes	884
Yes	Yes	Yes	Yes	Yes	Yes	885
Yes	Yes	Yes	Yes	Yes	Yes	888
Yes	Yes	Yes	Yes	Yes	Yes	890
Yes	Yes	Yes	Yes	Yes	Yes	892
Yes	Yes	Yes	Yes	Yes	Yes	894
Yes	Yes	Yes	Yes	Yes	Yes	896
Yes	Yes	Yes	Yes	Yes	Yes	898
Yes	Yes	Yes	Yes	Yes	Yes	900
Yes	Yes	Yes	Yes	Yes	Yes	902
Yes	Yes	Yes	Yes	Yes	Yes	904
Yes	Yes	Yes	Yes	Yes	Yes	906
Yes	Yes	Yes	Yes	Yes	Yes	908

1.3. Element connectivity

Table 3: Connectivity - Frame

Table 3: Connectivity - Frame

Length in	JointJ	JointI	Frame
4.610	2	1	1
4.610	4	3	2
4.610	6	5	3
4.610	8	7	4
4.610	10	9	5
4.610	12	11	6
4.610	14	13	7
4.610	16	15	8
4.610	18	17	9
4.610	20	19	10
4.610	22	21	11
4.610	24	23	12
4.610	26	25	13
4.610	28	27	14
4.610	30	29	15
4.610	32	31	16
4.610	34	33	17
4.610	36	35	18
4.610	38	37	19
4.610	40	39	20

Table 3: Connectivity - Frame

Length in	JointJ	JointI	Frame
4.610	42	41	21
4.610	48	47	24
4.610	50	49	25
4.610	52	51	26
4.610	54	53	27
4.610	56	55	28
4.610	58	57	29
4.610	60	59	30
4.610	62	61	31
4.610	64	63	32
4.610	66	65	33
4.610	68	67	34
4.610	70	69	35
3.110	315	123	36
4.610	74	73	37
4.610	76	75	38
4.610	78	77	39
4.610	80	79	40
4.610	82	81	41
4.610	84	83	42
4.610	86	85	43
4.610	88	87	44
4.610	90	89	45
4.610	92	91	46
4.610	94	93	47
4.610	96	95	48
4.610	98	97	49
4.610	100	99	50
4.610	102	101	51
4.610	104	103	52
4.610	106	105	53
4.610	108	107	54
4.610	110	109	55
4.610	112	111	56
4.610	114	113	57
4.610	116	115	58
4.610	118	117	59
4.610	120	119	60
4.610	122	121	61
4.610	132	131	66
4.610	134	133	67
0.079	123	179	80
0.239	180	123	108
0.079	124	190	109
0.239	191	124	110
0.079	125	199	111
0.239	200	125	112
0.577	147	141	129
0.577	148	147	130
0.649	149	148	131
0.506	150	149	132
0.580	151	150	133
0.582	152	151	134
0.556	153	152	135
0.577	154	153	136
0.577	155	154	137
0.577	125	155	138
0.577	156	139	139
0.577	157	156	140
0.649	158	157	141
0.506	159	158	142
0.580	160	159	143
0.582	161	160	152
0.556	162	161	159
0.577	163	162	162
0.577	164	163	163

Table 3: Connectivity - Frame

Length in	Joint.J	JointI	Frame
0.577	124	164	166
0.577	166	137	167
0.577	167	166	168
0.649	168	167	169
0.506	169	168	179
0.580	170	169	180
0.582	171	170	181
0.556	172	171	182
0.577	173	172	183
0.577	174	173	184
0.577	123	174	185
4.610	184	123	186
4.610	185	125	187
0.318	175	117	188
0.318	176	175	189
0.318	177	176	190
0.318	178	177	191
0.318	179	178	192
4.610	210	124	193
0.318	181	180	194
0.318	182	181	195
0.318	183	182	196
0.318	121	183	197
0.318	187	186	199
0.318	188	187	200
0.318	189	188	201
0.318	190	189	202
0.318	192	191	204
0.318	193	192	205
0.318	194	193	206
0.318	196	195	209
0.318	197	196	210
0.318	198	197	211
0.318	199	198	212
0.318	201	200	214
0.318	202	201	215
0.318	203	202	216
0.313	186	79	218
0.319	87	194	219
0.318	195	103	220
0.318	109	203	221
0.120	215	119	231
4.610	267	71	235
0.120	238	107	255
0.073	89	243	264
2.283	168	115	269
2.283	149	105	270
2.273	158	81	271
0.318	279	274	297
0.318	280	279	298
0.318	281	280	299
0.318	282	281	300
0.318	283	282	301
0.318	285	284	302
0.318	286	285	303
0.318	287	286	304
0.318	288	287	305
0.318	290	289	306
0.318	291	290	307
0.318	292	291	308
0.318	293	292	309
0.318	295	294	310
0.318	296	295	311
0.318	297	296	312
0.318	299	298	313
0.318	300	299	314

Table 3: Connectivity - Frame

Length in	JointJ	JointI	Frame
0.318	301	300	315
0.318	302	301	316
0.318	304	303	317
0.318	305	304	318
0.318	306	305	319
0.313	289	225	320
0.319	307	297	321
0.318	298	263	322
0.318	308	306	323
0.079	315	283	333
0.239	284	315	334
0.079	316	293	335
0.239	294	316	336
0.079	317	302	337
0.239	303	317	338
1.761	224	256	341
0.577	324	323	342
0.577	325	324	343
0.649	326	325	344
0.506	327	326	345
0.580	328	327	346
0.582	329	328	347
0.556	330	329	348
0.577	331	330	349
0.577	332	331	350
0.577	317	332	351
0.577	333	321	352
0.577	334	333	353
0.649	335	334	354
0.506	336	335	355
0.580	337	336	356
0.582	338	337	357
0.556	339	338	358
0.577	340	339	359
0.577	341	340	360
0.577	316	341	361
0.577	342	319	362
0.577	343	342	363
0.649	344	343	364
0.506	345	344	365
0.580	346	345	366
0.582	347	346	367
0.556	348	347	368
0.577	349	348	369
0.577	350	349	370
0.577	315	350	371
0.120	355	278	378
0.120	358	268	381
0.073	218	363	388
2.283	344	273	393
2.283	326	262	394
2.273	335	224	395
3.110	5	43	397
3.110	3	44	398
3.110	1	45	399
3.110	9	128	400
3.110	7	129	401
3.110	11	130	402
3.110	13	127	403
3.110	15	126	404
3.110	17	46	405
3.110	19	245	407
3.110	246	131	408
3.110	21	247	409
3.110	23	143	410
3.110	25	135	411

Table 3: Connectivity - Frame

Length in	JointJ	JointI	Frame
3.110	27	220	412
3.110	29	142	413
3.110	33	251	414
3.110	144	31	415
3.110	37	249	416
3.110	35	248	417
3.110	39	250	418
3.110	41	145	419
3.110	51	222	420
3.110	55	146	422
3.110	49	226	423
3.110	228	47	424
3.110	227	133	425
3.110	57	223	426
3.110	65	255	427
3.110	63	253	428
3.110	61	233	429
3.110	59	232	430
3.110	67	252	431
3.110	69	165	432
3.110	77	234	433
3.110	75	231	434
3.110	73	230	435
3.110	71	229	436
3.110	79	225	437
3.110	81	224	438
3.110	85	261	439
3.110	53	221	442
3.110	89	218	443
3.110	87	307	444
3.110	83	254	445
3.110	97	237	446
3.110	95	235	447
3.110	93	236	448
3.110	91	244	449
3.110	99	219	450
3.110	105	262	451
3.110	103	263	452
3.110	125	317	453
3.110	109	308	454
3.110	107	268	455
3.110	113	276	456
3.110	111	277	457
3.110	115	273	458
3.110	117	274	459
1.760	262	257	460
1.760	273	266	462
3.110	121	288	463
3.110	119	278	464
0.474	2801	5	467
0.026	2678	2801	468
0.448	2792	2678	469
0.052	2675	2792	470
0.422	2783	2675	471
0.078	2672	2783	472
0.396	2774	2672	473
0.104	2668	2774	474
0.370	2765	2668	475
0.130	3	2765	476
0.344	2756	3	477
0.474	2747	2756	478
0.474	2738	2747	479
0.474	2729	2738	480
0.474	1	2729	481
0.469	2728	1	482
0.469	2726	2728	483

Table 3: Connectivity - Frame

Length in	JointJ	JointI	Frame
0.469	2724	2726	484
0.469	2722	2724	485
0.469	2720	2722	486
0.469	2718	2720	487
0.469	2716	2718	488
0.469	17	2716	489
0.474	2714	17	490
0.474	2730	2714	491
0.474	2739	2730	492
0.338	15	2739	493
0.136	2748	15	494
0.361	2818	2748	495
0.113	2757	2818	496
0.383	2824	2757	497
0.091	2766	2824	498
0.406	2830	2766	499
0.068	2775	2830	500
0.429	2836	2775	501
0.045	2784	2836	502
0.451	2842	2784	503
0.023	2793	2842	504
0.474	13	2793	505

Table 4: Frame Section Assignments

Table 4: Frame Section Assignments

MatProp	DesignSect	AnalSect	Frame
Default	Column	Column	1
Default	Column	Column	2
Default	Column	Column	3
Default	Column	Column	4
Default	Column	Column	5
Default	Column	Column	6
Default	Column	Column	7
Default	Column	Column	8
Default	Column	Column	9
Default	Column	Column	10
Default	Column	Column	11
Default	Column	Column	12
Default	Column	Column	13
Default	Column	Column	14
Default	Column	Column	15
Default	Column	Column	16
Default	Column	Column	17
Default	Column	Column	18
Default	Column	Column	19
Default	Column	Column	20
Default	Column	Column	21
Default	Column	Column	24
Default	Column	Column	25
Default	Column	Column	26
Default	Column	Column	27
Default	Column	Column	28
Default	Column	Column	29
Default	Column	Column	30
Default	Column	Column	31
Default	Column	Column	32
Default	Column	Column	33
Default	Column	Column	34
Default	Column	Column	35
Default	Column	Column	36
Default	Column	Column	37
Default	Column	Column	38
Default	Column	Column	39
Default	Column	Column	40
Default	Column	Column	41

Table 4: Frame Section Assignments

MatProp	DesignSect	AnalSect	Frame
Default	Column	Column	42
Default	Column	Column	43
Default	Column	Column	44
Default	Column	Column	45
Default	Column	Column	46
Default	Column	Column	47
Default	Column	Column	48
Default	Column	Column	49
Default	Column	Column	50
Default	Column	Column	51
Default	Column	Column	52
Default	Column	Column	53
Default	Column	Column	54
Default	Column	Column	55
Default	Column	Column	56
Default	Column	Column	57
Default	Column	Column	58
Default	Column	Column	59
Default	Column	Column	60
Default	Column	Column	61
Default	Column	Column	66
Default	Column	Column	67
Default	Beam	Beam	80
Default	Beam	Beam	108
Default	Beam	Beam	109
Default	Beam	Beam	110
Default	Beam	Beam	111
Default	Beam	Beam	112
Default	Beam	Beam	129
Default	Beam	Beam	130
Default	Beam	Beam	131
Default	Beam	Beam	132
Default	Beam	Beam	133
Default	Beam	Beam	134
Default	Beam	Beam	135
Default	Beam	Beam	136
Default	Beam	Beam	137
Default	Beam	Beam	138
Default	Beam	Beam	139
Default	Beam	Beam	140
Default	Beam	Beam	141
Default	Beam	Beam	142
Default	Beam	Beam	143
Default	Beam	Beam	152
Default	Beam	Beam	159
Default	Beam	Beam	162
Default	Beam	Beam	163
Default	Beam	Beam	166
Default	Beam	Beam	167
Default	Beam	Beam	168
Default	Beam	Beam	169
Default	Beam	Beam	179
Default	Beam	Beam	180
Default	Beam	Beam	181
Default	Beam	Beam	182
Default	Beam	Beam	183
Default	Beam	Beam	184
Default	Beam	Beam	185
Default	Column	Column	186
Default	Column	Column	187
Default	Beam	Beam	188
Default	Beam	Beam	189
Default	Beam	Beam	190
Default	Beam	Beam	191
Default	Beam	Beam	192
Default	Column	Column	193

Table 4: Frame Section Assignments

MatProp	DesignSect	AnalSect	Frame
Default	Beam	Beam	194
Default	Beam	Beam	195
Default	Beam	Beam	196
Default	Beam	Beam	197
Default	Beam	Beam	199
Default	Beam	Beam	200
Default	Beam	Beam	201
Default	Beam	Beam	202
Default	Beam	Beam	204
Default	Beam	Beam	205
Default	Beam	Beam	206
Default	Beam	Beam	209
Default	Beam	Beam	210
Default	Beam	Beam	211
Default	Beam	Beam	212
Default	Beam	Beam	214
Default	Beam	Beam	215
Default	Beam	Beam	216
Default	Beam	Beam	218
Default	Beam	Beam	219
Default	Beam	Beam	220
Default	Beam	Beam	221
Default	Beam	Beam	231
Default	Column	Column	235
Default	Beam	Beam	255
Default	Beam	Beam	264
Default	Sec. Beam	Sec. Beam	269
Default	Sec. Beam	Sec. Beam	270
Default	Sec. Beam	Sec. Beam	271
Default	Beam	Beam	297
Default	Beam	Beam	298
Default	Beam	Beam	299
Default	Beam	Beam	300
Default	Beam	Beam	301
Default	Beam	Beam	302
Default	Beam	Beam	303
Default	Beam	Beam	304
Default	Beam	Beam	305
Default	Beam	Beam	306
Default	Beam	Beam	307
Default	Beam	Beam	308
Default	Beam	Beam	309
Default	Beam	Beam	310
Default	Beam	Beam	311
Default	Beam	Beam	312
Default	Beam	Beam	313
Default	Beam	Beam	314
Default	Beam	Beam	315
Default	Beam	Beam	316
Default	Beam	Beam	317
Default	Beam	Beam	318
Default	Beam	Beam	319
Default	Beam	Beam	320
Default	Beam	Beam	321
Default	Beam	Beam	322
Default	Beam	Beam	323
Default	Beam	Beam	333
Default	Beam	Beam	334
Default	Beam	Beam	335
Default	Beam	Beam	336
Default	Beam	Beam	337
Default	Beam	Beam	338
Default	Beam	Beam	341
Default	Beam	Beam	342
Default	Beam	Beam	343
Default	Beam	Beam	344

Table 4: Frame Section Assignments

MatProp	DesignSect	AnalSect	Frame
Default	Beam	Beam	345
Default	Beam	Beam	346
Default	Beam	Beam	347
Default	Beam	Beam	348
Default	Beam	Beam	349
Default	Beam	Beam	350
Default	Beam	Beam	351
Default	Beam	Beam	352
Default	Beam	Beam	353
Default	Beam	Beam	354
Default	Beam	Beam	355
Default	Beam	Beam	356
Default	Beam	Beam	357
Default	Beam	Beam	358
Default	Beam	Beam	359
Default	Beam	Beam	360
Default	Beam	Beam	361
Default	Beam	Beam	362
Default	Beam	Beam	363
Default	Beam	Beam	364
Default	Beam	Beam	365
Default	Beam	Beam	366
Default	Beam	Beam	367
Default	Beam	Beam	368
Default	Beam	Beam	369
Default	Beam	Beam	370
Default	Beam	Beam	371
Default	Beam	Beam	378
Default	Beam	Beam	381
Default	Beam	Beam	388
Default	Sec. Beam	Sec. Beam	393
Default	Sec. Beam	Sec. Beam	394
Default	Sec. Beam	Sec. Beam	395
Default	Column	Column	397
Default	Column	Column	398
Default	Column	Column	399
Default	Column	Column	400
Default	Column	Column	401
Default	Column	Column	402
Default	Column	Column	403
Default	Column	Column	404
Default	Column	Column	405
Default	Column	Column	407
Default	Column	Column	408
Default	Column	Column	409
Default	Column	Column	410
Default	Column	Column	411
Default	Column	Column	412
Default	Column	Column	413
Default	Column	Column	414
Default	Column	Column	415
Default	Column	Column	416
Default	Column	Column	417
Default	Column	Column	418
Default	Column	Column	419
Default	Column	Column	420
Default	Column	Column	422
Default	Column	Column	423
Default	Column	Column	424
Default	Column	Column	425
Default	Column	Column	426
Default	Column	Column	427
Default	Column	Column	428
Default	Column	Column	429
Default	Column	Column	430
Default	Column	Column	431

Table 4: Frame Section Assignments

MatProp	DesignSect	AnalSect	Frame
Default	Column	Column	432
Default	Column	Column	433
Default	Column	Column	434
Default	Column	Column	435
Default	Column	Column	436
Default	Column	Column	437
Default	Column	Column	438
Default	Column	Column	439
Default	Column	Column	442
Default	Column	Column	443
Default	Column	Column	444
Default	Column	Column	445
Default	Column	Column	446
Default	Column	Column	447
Default	Column	Column	448
Default	Column	Column	449
Default	Column	Column	450
Default	Column	Column	451
Default	Column	Column	452
Default	Column	Column	453
Default	Column	Column	454
Default	Column	Column	455
Default	Column	Column	456
Default	Column	Column	457
Default	Column	Column	458
Default	Column	Column	459
Default	Beam	Beam	460
Default	Beam	Beam	462
Default	Column	Column	463
Default	Column	Column	464
Default	Beam	Beam	467
Default	Beam	Beam	468
Default	Beam	Beam	469
Default	Beam	Beam	470
Default	Beam	Beam	471
Default	Beam	Beam	472
Default	Beam	Beam	473
Default	Beam	Beam	474
Default	Beam	Beam	475
Default	Beam	Beam	476
Default	Beam	Beam	477
Default	Beam	Beam	478
Default	Beam	Beam	479
Default	Beam	Beam	480
Default	Beam	Beam	481
Default	Beam	Beam	482
Default	Beam	Beam	483
Default	Beam	Beam	484
Default	Beam	Beam	485
Default	Beam	Beam	486
Default	Beam	Beam	487
Default	Beam	Beam	488
Default	Beam	Beam	489
Default	Beam	Beam	490
Default	Beam	Beam	491
Default	Beam	Beam	492
Default	Beam	Beam	493
Default	Beam	Beam	494
Default	Beam	Beam	495
Default	Beam	Beam	496
Default	Beam	Beam	497
Default	Beam	Beam	498
Default	Beam	Beam	499
Default	Beam	Beam	500
Default	Beam	Beam	501
Default	Beam	Beam	502

Table 4: Frame Section Assignments

MatProp	DesignSect	AnalSect	Frame
Default	Beam	Beam	503
Default	Beam	Beam	504
Default	Beam	Beam	505
Default	Beam	Beam	506
Default	Beam	Beam	507
Default	Beam	Beam	508
Default	Beam	Beam	509
Default	Beam	Beam	510
Default	Beam	Beam	511
Default	Beam	Beam	512
Default	Beam	Beam	513
Default	Beam	Beam	514
Default	Beam	Beam	515

Table 5: Connectivity - Area

Table 5: Connectivity - Area

Joint4	Joint3	Joint2	Joint1	Area
290	289	225	224	23
316	293	292	291	23
338	339	340	341	23
	335	336	337	23
333	334	335	224	24
	256	320	321	24
190	124	72	79	26
186	187	188	189	26
299	298	263	262	27
317	302	301	300	27
329	330	331	332	27
	326	327	328	27
324	325	326	262	28
	257	322	323	28
243	89	258	72	29
192	193	194	87	29
		124	191	29
280	279	274	273	31
315	283	282	281	31
347	348	349	350	31
	344	345	346	31
187	186	79	81	54
124	190	189	188	54
161	162	163	164	54
	158	159	160	54
156	157	158	81	55
	259	138	139	55
196	195	103	105	57
125	199	198	197	57
152	153	154	155	57
	149	150	151	57
147	148	149	105	58
	260	140	141	58
176	175	117	115	61
123	179	178	177	61
171	172	173	174	61
	168	169	170	61
167	168	115	265	65
	136	137	166	65
343	344	273	266	67
	318	319	342	67
293	316	272	225	69
289	290	291	292	69
363	218	352	272	70
295	296	297	307	70
		316	294	70

Table 5: Connectivity - Area

Joint4	Joint3	Joint2	Joint1	Area
369	368	212	211	74
371	370	368	369	75
373	372	370	371	76
375	374	372	373	77
377	376	374	375	81
379	378	376	377	82
381	380	378	379	83
383	382	380	381	84
385	384	382	383	85
387	386	384	385	86
302	317	364	263	87
298	299	300	301	87
358	268	365	364	88
304	305	306	308	88
		317	303	88
283	315	366	274	89
279	280	281	282	89
355	278	367	366	90
285	286	287	288	90
		315	284	90
199	125	264	103	91
195	196	197	198	91
238	107	269	264	92
201	202	203	109	92
		125	200	92
179	123	270	117	93
175	176	177	178	93
215	119	271	270	94
181	182	183	121	94
		123	180	94
389	388	386	387	95
391	390	388	389	96
393	392	390	391	97
395	394	392	393	98
397	396	394	395	99
399	369	211	398	100
400	371	369	399	101
401	373	371	400	102
402	375	373	401	103
403	377	375	402	104
404	379	377	403	105
405	381	379	404	106
406	383	381	405	107
407	385	383	406	108
408	387	385	407	109
409	389	387	408	110
410	391	389	409	111
411	393	391	410	112
412	395	393	411	113
413	397	395	412	114
415	399	398	414	115
416	400	399	415	116
417	401	400	416	117
418	402	401	417	118
419	403	402	418	119
420	404	403	419	120
421	405	404	420	121
422	406	405	421	122
423	407	406	422	123
424	408	407	423	124
425	409	408	424	125
426	410	409	425	126
427	411	410	426	127
428	412	411	427	128
429	413	412	428	129
431	415	414	430	130

Table 5: Connectivity - Area

Joint4	Joint3	Joint2	Joint1	Area
432	416	415	431	131
433	417	416	432	132
434	418	417	433	133
435	419	418	434	134
436	420	419	435	135
437	421	420	436	136
438	422	421	437	137
439	423	422	438	138
440	424	423	439	139
441	425	424	440	140
442	426	425	441	141
443	427	426	442	142
444	428	427	443	143
445	429	428	444	144
447	431	430	446	145
448	432	431	447	146
449	433	432	448	147
450	434	433	449	148
451	435	434	450	149
452	436	435	451	150
453	437	436	452	151
454	438	437	453	152
455	439	438	454	153
456	440	439	455	154
457	441	440	456	155
458	442	441	457	156
459	443	442	458	157
460	444	443	459	158
461	445	444	460	159
463	447	446	462	160
464	448	447	463	161
465	449	448	464	162
466	450	449	465	163
467	451	450	466	164
468	452	451	467	165
469	453	452	468	166
470	454	453	469	167
471	455	454	470	168
472	456	455	471	169
473	457	456	472	170
474	458	457	473	171
475	459	458	474	172
476	460	459	475	173
477	461	460	476	174
479	463	462	478	175
480	464	463	479	176
481	465	464	480	177
482	466	465	481	178
483	467	466	482	179
484	468	467	483	180
485	469	468	484	181
486	470	469	485	182
487	471	470	486	183
488	472	471	487	184
489	473	472	488	185
490	474	473	489	186
491	475	474	490	187
492	476	475	491	188
493	477	476	492	189
495	479	478	494	190
496	480	479	495	191
497	481	480	496	192
498	482	481	497	193
499	483	482	498	194
500	484	483	499	195
501	485	484	500	196

Table 5: Connectivity - Area

Joint4	Joint3	Joint2	Joint1	Area
502	486	485	501	197
503	487	486	502	198
504	488	487	503	199
505	489	488	504	200
506	490	489	505	201
507	491	490	506	202
508	492	491	507	203
509	493	492	508	204
511	495	494	510	205
512	496	495	511	206
513	497	496	512	207
514	498	497	513	208
515	499	498	514	209
516	500	499	515	210
517	501	500	516	211
518	502	501	517	212
519	503	502	518	213
520	504	503	519	214
521	505	504	520	215
522	506	505	521	216
523	507	506	522	217
524	508	507	523	218
525	509	508	524	219
527	511	510	526	220
528	512	511	527	221
529	513	512	528	222
530	514	513	529	223
531	515	514	530	224
532	516	515	531	225
533	517	516	532	226
534	518	517	533	227
535	519	518	534	228
536	520	519	535	229
537	521	520	536	230
538	522	521	537	231
539	523	522	538	232
540	524	523	539	233
541	525	524	540	234
543	527	526	542	235
544	528	527	543	236
545	529	528	544	237
546	530	529	545	238
547	531	530	546	239
548	532	531	547	240
549	533	532	548	241
550	534	533	549	242
551	535	534	550	243
552	536	535	551	244
553	537	536	552	245
554	538	537	553	246
555	539	538	554	247
556	540	539	555	248
557	541	540	556	249
559	543	542	558	250
560	544	543	559	251
561	545	544	560	252
562	546	545	561	253
563	547	546	562	254
564	548	547	563	255
565	549	548	564	256
566	550	549	565	257
567	551	550	566	258
568	552	551	567	259
569	553	552	568	260
570	554	553	569	261
571	555	554	570	262

Table 5: Connectivity - Area

Joint4	Joint3	Joint2	Joint1	Area
572	556	555	571	263
573	557	556	572	264
575	559	558	574	265
576	560	559	575	266
577	561	560	576	267
578	562	561	577	268
579	563	562	578	269
580	564	563	579	270
581	565	564	580	271
582	566	565	581	272
583	567	566	582	273
584	568	567	583	274
585	569	568	584	275
586	570	569	585	276
587	571	570	586	277
588	572	571	587	278
589	573	572	588	279
591	575	574	590	280
592	576	575	591	281
593	577	576	592	282
594	578	577	593	283
595	579	578	594	284
596	580	579	595	285

Table 6: Area Section Assignments

Table 6: Area Section Assignments

MatProp	Section	Area
Default	Slab	23
Default	Slab	24
Default	Slab	26
Default	Slab	27
Default	Slab	28
Default	Slab	29
Default	Slab	31
Default	Slab	54
Default	Slab	55
Default	Slab	57
Default	Slab	58
Default	Slab	61
Default	Slab	65
Default	Slab	67
Default	Slab	69
Default	Slab	70
Default	Sta.	74
Default	Sta.	75
Default	Sta.	76
Default	Sta.	77
Default	Sta.	81
Default	Sta.	82
Default	Sta.	83
Default	Sta.	84
Default	Sta.	85
Default	Sta.	86
Default	Slab	87
Default	Slab	88
Default	Slab	89
Default	Slab	90
Default	Slab	91
Default	Slab	92
Default	Slab	93
Default	Slab	94
Default	Sta.	95
Default	Sta.	96
Default	Sta.	97
Default	Sta.	98

Table 6: Area Section Assignments

MatProp	Section	Area
Default	Sta.	99
Default	Sta.	100
Default	Sta.	101
Default	Sta.	102
Default	Sta.	103
Default	Sta.	104
Default	Sta.	105
Default	Sta.	106
Default	Sta.	107
Default	Sta.	108
Default	Sta.	109
Default	Sta.	110
Default	Sta.	111
Default	Sta.	112
Default	Sta.	113
Default	Sta.	114
Default	Sta.	115
Default	Sta.	116
Default	Sta.	117
Default	Sta.	118
Default	Sta.	119
Default	Sta.	120
Default	Sta.	121
Default	Sta.	122
Default	Sta.	123
Default	Sta.	124
Default	Sta.	125
Default	Sta.	126
Default	Sta.	127
Default	Sta.	128
Default	Sta.	129
Default	Sta.	130
Default	Sta.	131
Default	Sta.	132
Default	Sta.	133
Default	Sta.	134
Default	Sta.	135
Default	Sta.	136
Default	Sta.	137
Default	Sta.	138
Default	Sta.	139
Default	Sta.	140
Default	Sta.	141
Default	Sta.	142
Default	Sta.	143
Default	Sta.	144
Default	Sta.	145
Default	Sta.	146
Default	Sta.	147
Default	Sta.	148
Default	Sta.	149
Default	Sta.	150
Default	Sta.	151
Default	Sta.	152
Default	Sta.	153
Default	Sta.	154
Default	Sta.	155
Default	Sta.	156
Default	Sta.	157
Default	Sta.	158
Default	Sta.	159
Default	Sta.	160
Default	Sta.	161
Default	Sta.	162
Default	Sta.	163
Default	Sta.	164

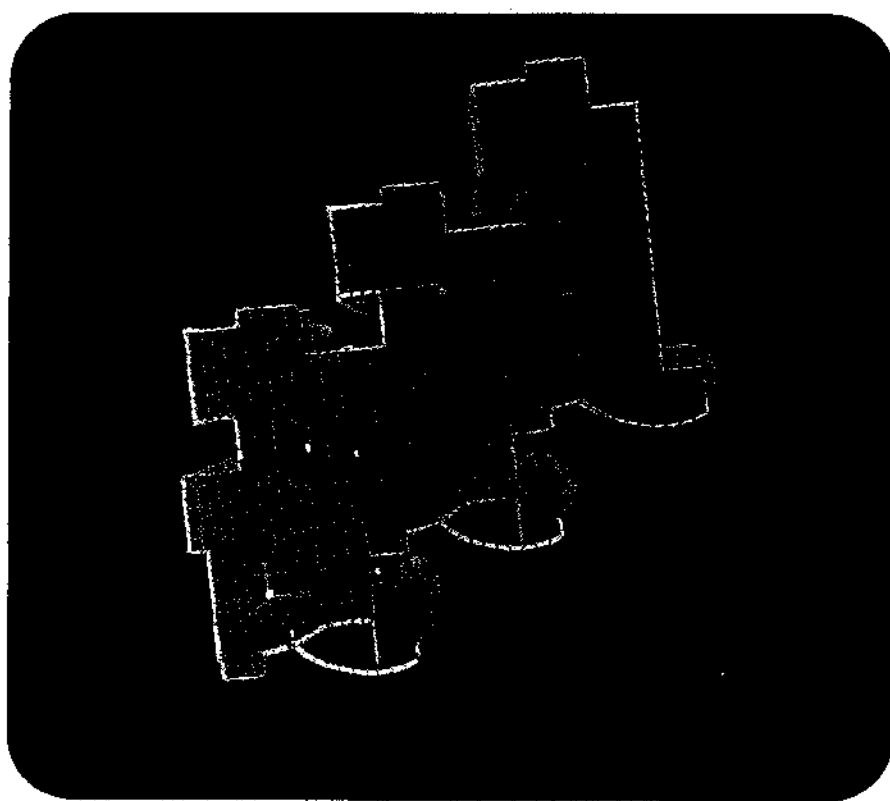
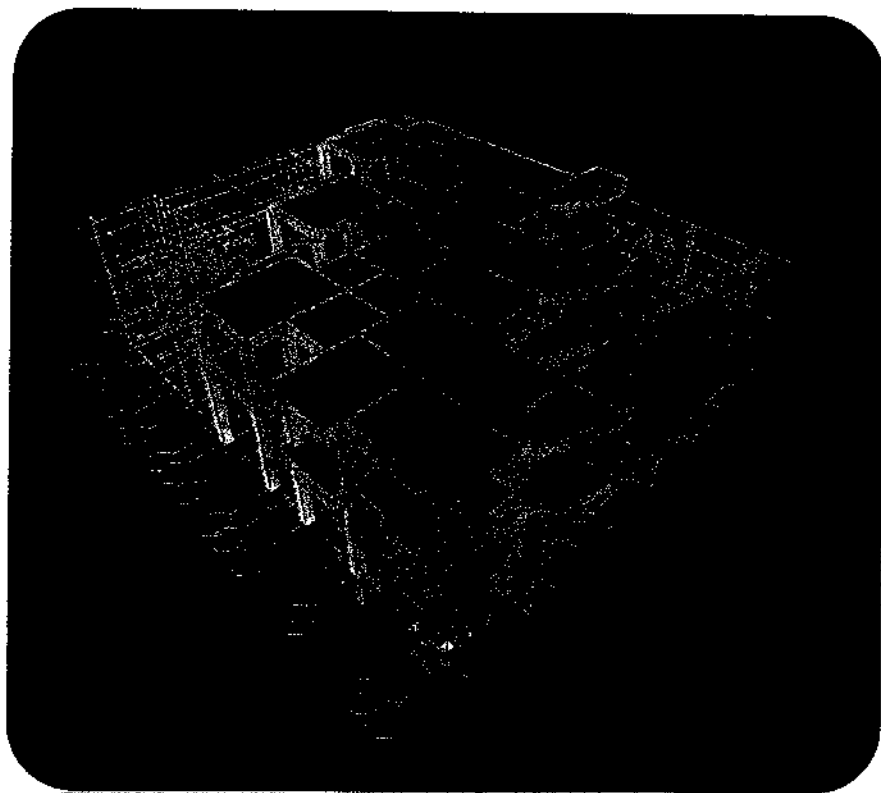
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Table 6: Area Section Assignments

MatProp	Section	Area
Default	Sta.	165
Default	Sta.	166
Default	Sta.	167
Default	Sta.	168
Default	Sta.	169
Default	Sta.	170
Default	Sta.	171
Default	Sta.	172
Default	Sta.	173
Default	Sta.	174
Default	Sta.	175
Default	Sta.	176
Default	Sta.	177
Default	Sta.	178
Default	Sta.	179
Default	Sta.	180
Default	Sta.	181
Default	Sta.	182
Default	Sta.	183
Default	Sta.	184
Default	Sta.	185
Default	Sta.	186
Default	Sta.	187
Default	Sta.	188
Default	Sta.	189
Default	Sta.	190
Default	Sta.	191
Default	Sta.	192
Default	Sta.	193
Default	Sta.	194
Default	Sta.	195
Default	Sta.	196
Default	Sta.	197
Default	Sta.	198
Default	Sta.	199
Default	Sta.	200
Default	Sta.	201
Default	Sta.	202
Default	Sta.	203
Default	Sta.	204
Default	Sta.	205
Default	Sta.	206
Default	Sta.	207
Default	Sta.	208
Default	Sta.	209
Default	Sta.	210
Default	Sta.	211
Default	Sta.	212
Default	Sta.	213
Default	Sta.	214
Default	Sta.	215
Default	Sta.	216
Default	Sta.	217
Default	Sta.	218
Default	Sta.	219
Default	Sta.	220
Default	Sta.	221
Default	Sta.	222
Default	Sta.	223
Default	Sta.	224
Default	Sta.	225
Default	Sta.	226
Default	Sta.	227
Default	Sta.	228
Default	Sta.	229
Default	Sta.	230

Table 6: Area Section Assignments

MatProp	Section	Area
Default	Sta.	231
Default	Sta.	232
Default	Sta.	233
Default	Sta.	234
Default	Sta.	235
Default	Sta.	236
Default	Sta.	237
Default	Sta.	238
Default	Sta.	239
Default	Sta.	240
Default	Sta.	241
Default	Sta.	242
Default	Sta.	243
Default	Sta.	244
Default	Sta.	245
Default	Sta.	246
Default	Sta.	247
Default	Sta.	248
Default	Sta.	249
Default	Sta.	250
Default	Sta.	251
Default	Sta.	252
Default	Sta.	253
Default	Sta.	254
Default	Sta.	255
Default	Sta.	256
Default	Sta.	257
Default	Sta.	258
Default	Sta.	259
Default	Sta.	260
Default	Sta.	261
Default	Sta.	262
Default	Sta.	263
Default	Sta.	264
Default	Sta.	265
Default	Sta.	266
Default	Sta.	267
Default	Sta.	268
Default	Sta.	269
Default	Sta.	270
Default	Sta.	271
Default	Sta.	272
Default	Sta.	273
Default	Sta.	274
Default	Sta.	275
Default	Sta.	276
Default	Sta.	277
Default	Sta.	278
Default	Sta.	279
Default	Sta.	280
Default	Sta.	281
Default	Sta.	282
Default	Sta.	283
Default	Sta.	284
Default	Sta.	285
Default	Sta.	286
Default	Sta.	287
Default	Sta.	288
Default	Sta.	289
Default	Sta.	290
Default	Sta.	291
Default	Sta.	292
Default	Sta.	293
Default	Sta.	294



الفصل السادس

تحليل وتصميم المنشأ
والنتائج المستخرجة

Table: Base Reactions, Part 1 of 3

Table: Base Reactions, Part 1 of 3								
GlobalX	GlobalMZ	GlobalMY	GlobalMX	GlobalFZ	GlobalFY	GlobalFX	CaseType	OutputCase
m	KN-m	KN-m	KN-m	KN	KN	KN		
0.00000	71.4730	-179370.939	190502.3560	17070.930	5.585	3.024	Combination	COMB1

Table: Base Reactions, Part 2 of 3

Table: Base Reactions, Part 2 of 3								
ZCentroidF	YCentroidF	XCentroidF	ZCentroidF	YCentroidF	XCentroidF	GlobalZ	GlobalY	OutputCase
Y	Y	Y	X	X	X			
m	m	m	m	m	m	m	m	
-105.02858	577.38771	-381.76049	151.89877	-761.95689	309.85553	0.00000	0.00000	COMB1

Table: Base Reactions, Part 3 of 3

Table: Base Reactions, Part 3 of 3			
ZCentroidFZ	YCentroidF	XCentroidF	OutputCase
	Z	Z	
m	m	m	
0.22269	29.48096	29.64994	COMB1

Table: Element Forces - Area Shells, Part 1 of 4

Table: Element Forces - Area Shells, Part 1 of 4								
F12	F22	F11	CaseType	OutputCase	Joint	ShellType	AreaElem	Area
KN/m	KN/m	KN/m						
0.98	6.72	-11.04	Combination	COMB1	~1	Shell-Thin	1	23
0.88	8.20	-6.10	Combination	COMB1	~2	Shell-Thin	1	23
2.43	7.97	-6.16	Combination	COMB1	~3	Shell-Thin	1	23
2.57	6.51	-10.99	Combination	COMB1	~4	Shell-Thin	1	23
1.52	9.61	-5.69	Combination	COMB1	~2	Shell-Thin	2	23
0.67	11.75	1.49	Combination	COMB1	~5	Shell-Thin	2	23
1.50	11.37	1.35	Combination	COMB1	~6	Shell-Thin	2	23
2.40	9.19	-5.80	Combination	COMB1	~3	Shell-Thin	2	23
-1.20	18.31	3.58	Combination	COMB1	~5	Shell-Thin	3	23
-0.85	18.37	3.77	Combination	COMB1	~7	Shell-Thin	3	23
1.13	13.46	2.30	Combination	COMB1	~8	Shell-Thin	3	23
0.81	13.37	2.02	Combination	COMB1	~6	Shell-Thin	3	23
0.36	21.82	4.83	Combination	COMB1	~7	Shell-Thin	4	23
1.43	23.21	9.61	Combination	COMB1	~9	Shell-Thin	4	23
2.78	18.49	8.38	Combination	COMB1	~10	Shell-Thin	4	23
1.68	16.91	3.40	Combination	COMB1	~8	Shell-Thin	4	23
1.51	27.46	10.84	Combination	COMB1	~9	Shell-Thin	5	23
3.46	29.72	18.49	Combination	COMB1	~11	Shell-Thin	5	23
6.56	21.52	16.41	Combination	COMB1	~12	Shell-Thin	5	23
4.55	19.10	8.67	Combination	COMB1	~10	Shell-Thin	5	23
7.73	41.72	42.71	Combination	COMB1	224	Shell-Thin	6	23
6.75	20.84	36.49	Combination	COMB1	~13	Shell-Thin	6	23
7.40	14.14	14.07	Combination	COMB1	~12	Shell-Thin	6	23
8.83	35.01	20.41	Combination	COMB1	~11	Shell-Thin	6	23
4.09	20.16	34.32	Combination	COMB1	~13	Shell-Thin	7	23
1.71	13.04	32.28	Combination	COMB1	~14	Shell-Thin	7	23
5.30	8.46	18.42	Combination	COMB1	~15	Shell-Thin	7	23
7.42	16.49	21.05	Combination	COMB1	~12	Shell-Thin	7	23
2.18	10.83	24.24	Combination	COMB1	~14	Shell-Thin	8	23
0.99	6.03	23.06	Combination	COMB1	~16	Shell-Thin	8	23
2.45	4.76	19.14	Combination	COMB1	~17	Shell-Thin	8	23
4.36	9.66	21.72	Combination	COMB1	~15	Shell-Thin	8	23
0.73	5.64	22.66	Combination	COMB1	~16	Shell-Thin	9	23
9.131E-02	3.53	22.10	Combination	COMB1	~18	Shell-Thin	9	23
1.22	2.38	18.15	Combination	COMB1	~19	Shell-Thin	9	23

Table: Element Forces - Area Shells, Part 1 of 4

F12	F22	F11	CaseType	OutputCase	Joint	ShellType	AreaElem	Area
KN/m	KN/m	KN/m						
1.96	4.45	18.86	Combination	COMB1	~17	Shell-Thin	9	23
0.13	1.98	16.85	Combination	COMB1	~18	Shell-Thin	10	23
7.262E-03	0.22	16.32	Combination	COMB1	~20	Shell-Thin	10	23
0.51	0.26	16.39	Combination	COMB1	~21	Shell-Thin	10	23
0.65	2.02	16.93	Combination	COMB1	~19	Shell-Thin	10	23
-0.22	0.27	16.50	Combination	COMB1	~20	Shell-Thin	11	23
-0.68	-0.21	16.37	Combination	COMB1	~22	Shell-Thin	11	23
-0.15	-1.06	13.51	Combination	COMB1	~23	Shell-Thin	11	23
0.31	-0.56	13.68	Combination	COMB1	~21	Shell-Thin	11	23
-0.42	-1.83	10.96	Combination	COMB1	~22	Shell-Thin	12	23
-6.705E-02	-2.80	10.66	Combination	COMB1	~24	Shell-Thin	12	23
0.14	-2.44	11.80	Combination	COMB1	~25	Shell-Thin	12	23
-0.22	-1.49	12.06	Combination	COMB1	~23	Shell-Thin	12	23
-0.16	-2.78	10.78	Combination	COMB1	~24	Shell-Thin	13	23
-0.22	-3.14	10.68	Combination	COMB1	~26	Shell-Thin	13	23
1.078E-02	-3.40	9.71	Combination	COMB1	~27	Shell-Thin	13	23
9.379E-02	-3.07	9.80	Combination	COMB1	~25	Shell-Thin	13	23
-0.17	-3.50	9.47	Combination	COMB1	~26	Shell-Thin	14	23
-0.25	-3.91	9.35	Combination	COMB1	~28	Shell-Thin	14	23
-0.24	-4.20	8.26	Combination	COMB1	~29	Shell-Thin	14	23
-0.14	-3.81	8.37	Combination	COMB1	~27	Shell-Thin	14	23
-0.33	-4.23	8.26	Combination	COMB1	~28	Shell-Thin	15	23
-0.55	-4.47	8.17	Combination	COMB1	225	Shell-Thin	15	23
-0.64	-4.88	6.82	Combination	COMB1	~30	Shell-Thin	15	23
-0.38	-4.68	6.84	Combination	COMB1	~29	Shell-Thin	15	23
-0.46	-5.37	3.98	Combination	COMB1	225	Shell-Thin	16	23
-0.41	-5.37	3.99	Combination	COMB1	~31	Shell-Thin	16	23
-0.49	-5.08	6.65	Combination	COMB1	~32	Shell-Thin	16	23
-0.71	-4.85	6.80	Combination	COMB1	~30	Shell-Thin	16	23
5.536E-03	-5.33	2.37	Combination	COMB1	~31	Shell-Thin	17	23
0.25	-5.02	1.94	Combination	COMB1	289	Shell-Thin	17	23
-7.634E-02	-5.42	4.67	Combination	COMB1	~33	Shell-Thin	17	23
-0.51	-5.30	5.55	Combination	COMB1	~32	Shell-Thin	17	23
0.20	-5.15	1.16	Combination	COMB1	289	Shell-Thin	18	23
0.60	-4.93	0.51	Combination	COMB1	~34	Shell-Thin	18	23
0.42	-5.07	2.84	Combination	COMB1	~35	Shell-Thin	18	23
2.965E-02	-5.32	3.46	Combination	COMB1	~33	Shell-Thin	18	23
0.48	-5.13	-0.11	Combination	COMB1	~34	Shell-Thin	19	23
1.00	-4.79	-0.93	Combination	COMB1	290	Shell-Thin	19	23
1.01	-4.65	0.70	Combination	COMB1	~36	Shell-Thin	19	23
0.50	-5.03	1.48	Combination	COMB1	~35	Shell-Thin	19	23
0.75	-5.17	-1.70	Combination	COMB1	290	Shell-Thin	20	23
1.17	-4.62	-2.23	Combination	COMB1	~37	Shell-Thin	20	23
1.47	-4.15	-1.20	Combination	COMB1	~38	Shell-Thin	20	23
1.08	-4.67	-0.67	Combination	COMB1	~36	Shell-Thin	20	23
0.95	-4.94	-3.03	Combination	COMB1	~37	Shell-Thin	21	23
1.45	-4.39	-3.68	Combination	COMB1	291	Shell-Thin	21	23
2.08	-3.85	-3.30	Combination	COMB1	~39	Shell-Thin	21	23
1.55	-4.23	-2.64	Combination	COMB1	~38	Shell-Thin	21	23
1.14	-4.71	-4.38	Combination	COMB1	291	Shell-Thin	22	23
1.19	-3.33	-4.27	Combination	COMB1	~40	Shell-Thin	22	23
2.56	-3.65	-5.44	Combination	COMB1	~41	Shell-Thin	22	23
2.28	-4.13	-5.20	Combination	COMB1	~39	Shell-Thin	22	23
1.10	-3.93	-5.81	Combination	COMB1	~40	Shell-Thin	23	23
1.32	-3.39	-6.10	Combination	COMB1	292	Shell-Thin	23	23
3.21	-4.00	-7.57	Combination	COMB1	~42	Shell-Thin	23	23
2.89	-4.31	-7.53	Combination	COMB1	~41	Shell-Thin	23	23
1.09	-3.60	-6.61	Combination	COMB1	292	Shell-Thin	24	23

Table: Element Forces - Area Shells, Part 1 of 4

F12 KN/m	F22 KN/m	F11 KN/m	CaseType	OutputCase	Joint	ShellType	AreaElem	Area
1.22	-3.45	-6.77	Combination	COMB1	~43	Shell-Thin	24	23
3.62	-4.38	-9.17	Combination	COMB1	~44	Shell-Thin	24	23
3.49	-4.58	-9.14	Combination	COMB1	~42	Shell-Thin	24	23
1.10	-3.71	-7.47	Combination	COMB1	~43	Shell-Thin	25	23
1.64	-5.35	-8.34	Combination	COMB1	~45	Shell-Thin	25	23
3.97	-4.55	-10.20	Combination	COMB1	~46	Shell-Thin	25	23
3.86	-4.84	-10.20	Combination	COMB1	~44	Shell-Thin	25	23
1.57	-5.53	-8.67	Combination	COMB1	~45	Shell-Thin	26	23
2.57	-8.25	-10.14	Combination	COMB1	~47	Shell-Thin	26	23
4.20	-3.12	-10.67	Combination	COMB1	~48	Shell-Thin	26	23
4.16	-4.71	-11.01	Combination	COMB1	~46	Shell-Thin	26	23
2.93	-7.57	-9.41	Combination	COMB1	~47	Shell-Thin	27	23
3.81	-9.23	-10.39	Combination	COMB1	293	Shell-Thin	27	23
4.73	-5.39	-12.86	Combination	COMB1	~49	Shell-Thin	27	23
3.78	-3.87	-11.31	Combination	COMB1	~48	Shell-Thin	27	23
2.59	-10.90	-12.30	Combination	COMB1	293	Shell-Thin	28	23
3.40	-11.32	-12.81	Combination	COMB1	~50	Shell-Thin	28	23
6.18	-3.95	-11.05	Combination	COMB1	~51	Shell-Thin	28	23
5.08	-4.36	-11.64	Combination	COMB1	~49	Shell-Thin	28	23
4.01	-10.40	-12.02	Combination	COMB1	~50	Shell-Thin	29	23
5.08	-10.15	-12.93	Combination	COMB1	316	Shell-Thin	29	23
5.70	-7.21	-13.55	Combination	COMB1	~52	Shell-Thin	29	23
4.83	-7.61	-12.44	Combination	COMB1	~51	Shell-Thin	29	23
5.18	-7.02	-12.65	Combination	COMB1	~52	Shell-Thin	30	23
5.23	-6.23	-13.62	Combination	COMB1	~53	Shell-Thin	30	23
4.65	-7.51	-11.14	Combination	COMB1	~49	Shell-Thin	30	23
4.77	-12.09	-12.46	Combination	COMB1	~51	Shell-Thin	30	23
5.09	-7.15	-13.64	Combination	COMB1	~53	Shell-Thin	31	23
5.63	-6.00	-13.12	Combination	COMB1	~54	Shell-Thin	31	23
4.30	-6.54	-11.06	Combination	COMB1	~55	Shell-Thin	31	23
4.22	-7.56	-11.00	Combination	COMB1	~49	Shell-Thin	31	23
5.32	-6.82	-12.57	Combination	COMB1	~54	Shell-Thin	32	23
6.02	-5.81	-11.65	Combination	COMB1	~56	Shell-Thin	32	23
4.67	-4.30	-9.92	Combination	COMB1	~57	Shell-Thin	32	23
4.09	-5.82	-10.63	Combination	COMB1	~55	Shell-Thin	32	23
5.62	-6.34	-11.43	Combination	COMB1	~56	Shell-Thin	33	23
6.39	-5.01	-9.82	Combination	COMB1	~58	Shell-Thin	33	23
5.44	-3.03	-8.60	Combination	COMB1	~59	Shell-Thin	33	23
4.70	-4.37	-10.08	Combination	COMB1	~57	Shell-Thin	33	23
6.20	-4.89	-9.47	Combination	COMB1	~58	Shell-Thin	34	23
7.16	-3.79	-7.09	Combination	COMB1	341	Shell-Thin	34	23
6.85	-2.96	-6.63	Combination	COMB1	~60	Shell-Thin	34	23
5.75	-4.00	-8.93	Combination	COMB1	~59	Shell-Thin	34	23
6.77	-4.97	-6.79	Combination	COMB1	341	Shell-Thin	35	23
6.70	-5.21	-6.89	Combination	COMB1	~61	Shell-Thin	35	23
6.47	-3.95	-6.64	Combination	COMB1	~62	Shell-Thin	35	23
6.70	-3.22	-6.33	Combination	COMB1	~60	Shell-Thin	35	23
6.68	-3.98	-7.74	Combination	COMB1	~61	Shell-Thin	36	23
7.07	-3.07	-7.11	Combination	COMB1	340	Shell-Thin	36	23
7.28	-3.07	-5.65	Combination	COMB1	~63	Shell-Thin	36	23
6.61	-4.54	-6.78	Combination	COMB1	~62	Shell-Thin	36	23
7.38	-3.49	-7.59	Combination	COMB1	340	Shell-Thin	37	23
7.41	-3.41	-7.55	Combination	COMB1	~64	Shell-Thin	37	23
7.61	-3.12	-5.87	Combination	COMB1	~65	Shell-Thin	37	23
7.47	-3.38	-6.05	Combination	COMB1	~63	Shell-Thin	37	23
6.26	-3.44	-10.48	Combination	COMB1	~64	Shell-Thin	38	23
7.53	5.744E-02	-8.47	Combination	COMB1	339	Shell-Thin	38	23
8.95	-0.17	-5.63	Combination	COMB1	~66	Shell-Thin	38	23

Table: Element Forces - Area Shells, Part 2 of 4

Table: Element Forces - Area Shells, Part 2 of 4

M11	FVM	FAngle	FMin	FMax	OutputCase	Joint	AreaElem	Area
KN-m/m	KN/m	Degrees	KN/m	KN/m				
-0.5370	15.62	86.849	-11.09	6.77	COMB1	~1	1	23
-1.8860	12.52	86.473	-6.15	8.26	COMB1	~2	1	23
-1.1655	12.97	80.527	-6.56	8.37	COMB1	~3	1	23
0.2613	15.95	81.823	-11.36	6.88	COMB1	~4	1	23
-1.8204	13.65	84.396	-5.84	9.76	COMB1	~2	2	23
-4.9391	11.15	86.295	1.44	11.80	COMB1	~5	2	23
-2.6860	11.07	81.695	1.13	11.59	COMB1	~6	2	23
-1.1972	13.73	81.134	-6.18	9.56	COMB1	~3	2	23
-4.3404	16.94	-85.381	3.48	18.41	COMB1	~5	3	23
-6.7694	16.87	-86.664	3.72	18.42	COMB1	~7	3	23
-4.3808	12.62	84.267	2.19	13.57	COMB1	~8	3	23
-2.8490	12.56	85.925	1.96	13.43	COMB1	~6	3	23
-6.4390	19.87	88.799	4.82	21.83	COMB1	~7	4	23
-8.8603	20.35	84.042	9.46	23.36	COMB1	~9	4	23
-5.8216	16.74	75.586	7.67	19.20	COMB1	~10	4	23
-4.4469	15.77	83.001	3.19	17.12	COMB1	~8	4	23
-8.8034	24.10	84.858	10.70	27.60	COMB1	~9	5	23
-11.3571	26.68	74.165	17.51	30.70	COMB1	~11	5	23
-6.8618	22.55	55.642	11.92	26.01	COMB1	~12	5	23
-5.6815	18.34	69.461	6.96	20.81	COMB1	~10	5	23
-13.2307	44.29	43.165	34.46	49.96	COMB1	224	6	23
-6.5603	33.79	20.396	18.33	39.00	COMB1	~13	6	23
-6.9151	19.05	45.131	6.71	21.50	COMB1	~12	6	23
-10.8842	34.09	64.785	16.25	39.17	COMB1	~11	6	23
-7.6374	30.70	14.997	19.07	35.41	COMB1	~13	7	23
-4.4257	28.29	5.042	12.89	32.44	COMB1	~14	7	23
-4.2091	18.42	23.380	6.17	20.72	COMB1	~15	7	23
-7.1174	23.09	36.461	11.00	26.53	COMB1	~12	7	23
-5.5726	21.37	8.995	10.48	24.59	COMB1	~14	8	23
-3.9813	20.79	3.300	5.97	23.12	COMB1	~16	8	23
-3.2952	17.77	9.407	4.35	19.55	COMB1	~17	8	23
-4.1967	20.31	17.943	8.25	23.13	COMB1	~15	8	23
-4.5260	20.47	2.458	5.61	22.69	COMB1	~16	9	23
-3.8099	20.56	0.282	3.53	22.10	COMB1	~18	9	23
-3.2605	17.22	4.387	2.28	18.24	COMB1	~19	9	23
-3.7373	17.41	7.599	4.19	19.12	COMB1	~17	9	23
-3.7985	15.95	0.491	1.98	16.85	COMB1	~18	10	23
-4.7286	16.21	0.026	0.22	16.32	COMB1	~20	10	23
-3.7027	16.28	1.806	0.24	16.40	COMB1	~21	10	23
-3.4718	16.05	2.475	2.00	16.96	COMB1	~19	10	23
-4.3879	16.37	-0.770	0.27	16.50	COMB1	~20	11	23
-5.3504	16.51	-2.347	-0.23	16.40	COMB1	~22	11	23
-4.3045	14.07	-0.577	-1.06	13.51	COMB1	~23	11	23
-3.8596	13.98	1.259	-0.56	13.69	COMB1	~21	11	23
-4.5086	12.00	-1.899	-1.84	10.98	COMB1	~22	12	23
-6.6711	12.31	-0.285	-2.80	10.66	COMB1	~24	12	23
-5.1116	13.19	0.572	-2.44	11.80	COMB1	~25	12	23
-4.5317	12.88	-0.915	-1.49	12.07	COMB1	~23	12	23
-4.9160	12.41	-0.664	-2.78	10.79	COMB1	~24	13	23
-9.1049	12.55	-0.924	-3.14	10.69	COMB1	~26	13	23
-6.3173	11.78	0.047	-3.40	9.71	COMB1	~27	13	23
-5.6494	11.65	0.417	-3.07	9.80	COMB1	~25	13	23
-7.1812	11.63	-0.746	-3.50	9.47	COMB1	~26	14	23
-8.7469	11.81	-1.088	-3.91	9.36	COMB1	~28	14	23
-7.7939	10.99	-1.121	-4.20	8.27	COMB1	~29	14	23

Table: Element Forces - Area Shells, Part 2 of 4

M11 KN-m/m	FVM KN/m	FAngle Degrees	FMin KN/m	FMax KN/m	OutputCase	Joint	AreaElem	Area
-7.0539	10.79	-0.660	-3.81	8.37	COMB1	~27	14	23
-4.4848	11.02	-1.494	-4.24	8.27	COMB1	~28	15	23
-19.2507	11.14	-2.506	-4.49	8.19	COMB1	225	15	23
-13.0656	10.24	-3.117	-4.91	6.86	COMB1	~30	15	23
-8.6073	10.05	-1.896	-4.69	6.85	COMB1	~29	15	23
-36.7341	8.16	-2.834	-5.39	4.00	COMB1	225	16	23
7.0078	8.17	-2.494	-5.39	4.01	COMB1	~31	16	23
-17.6795	10.22	-2.403	-5.10	6.67	COMB1	~32	16	23
-9.1570	10.21	-3.468	-4.90	6.84	COMB1	~30	16	23
-35.2952	6.83	0.041	-5.33	2.37	COMB1	~31	17	23
10.0019	6.23	2.079	-5.03	1.95	COMB1	289	17	23
-14.1234	8.75	-0.433	-5.42	4.68	COMB1	~33	17	23
-6.1531	9.43	-2.702	-5.32	5.57	COMB1	~32	17	23
-28.9471	5.82	1.781	-5.15	1.16	COMB1	289	18	23
8.8210	5.31	6.231	-5.00	0.58	COMB1	~34	18	23
-11.6762	6.98	3.001	-5.09	2.86	COMB1	~35	18	23
-5.0880	7.66	0.194	-5.32	3.46	COMB1	~33	18	23
-22.9481	5.15	5.435	-5.18	-6.014E-02	COMB1	~34	19	23
7.5518	4.72	13.724	-5.03	-0.69	COMB1	290	19	23
-9.0802	5.33	10.301	-4.83	0.88	COMB1	~36	19	23
-3.1518	5.97	4.343	-5.06	1.52	COMB1	~35	19	23
-19.9304	4.74	11.749	-5.32	-1.55	COMB1	290	20	23
8.7963	4.48	22.191	-5.09	-1.75	COMB1	~37	20	23
-6.8364	4.49	22.526	-4.76	-0.59	COMB1	~38	20	23
-1.9842	4.76	14.161	-4.94	-0.40	COMB1	~36	20	23
-15.5224	4.62	22.487	-5.33	-2.64	COMB1	~37	21	23
8.6891	4.80	38.198	-5.53	-2.54	COMB1	291	21	23
-4.7333	5.10	41.248	-5.68	-1.48	COMB1	~39	21	23
-0.2994	4.57	31.443	-5.18	-1.70	COMB1	~38	21	23
-11.9741	4.97	40.854	-5.70	-3.39	COMB1	291	22	23
8.4827	4.40	55.735	-5.08	-2.52	COMB1	~40	22	23
-2.7124	6.54	54.631	-7.26	-1.84	COMB1	~41	22	23
1.0464	6.18	51.631	-7.00	-2.32	COMB1	~39	22	23
-8.9993	5.48	65.249	-6.32	-3.43	COMB1	~40	23	23
8.3878	5.77	67.921	-6.64	-2.85	COMB1	292	23	23
-1.2977	8.60	59.549	-9.46	-2.11	COMB1	~42	23	23
2.3396	8.24	59.557	-9.23	-2.61	COMB1	~41	23	23
-7.3685	6.04	72.098	-6.97	-3.25	COMB1	292	24	23
8.9381	6.23	71.889	-7.17	-3.05	COMB1	~43	24	23
-0.5485	10.12	61.742	-11.12	-2.44	COMB1	~44	24	23
3.6359	9.96	61.580	-11.03	-2.69	COMB1	~42	24	23
-6.3858	6.74	74.866	-7.77	-3.41	COMB1	~43	25	23
9.1010	7.85	66.171	-9.06	-4.63	COMB1	~45	25	23
0.4500	11.21	62.731	-12.25	-2.51	COMB1	~46	25	23
4.0830	11.08	62.391	-12.22	-2.82	COMB1	~44	25	23
-4.8359	8.07	67.474	-9.32	-4.88	COMB1	~45	26	23
8.3502	10.34	55.128	-11.93	-6.46	COMB1	~47	26	23
1.1940	11.97	65.956	-12.55	-1.25	COMB1	~48	26	23
4.2371	11.97	63.563	-13.07	-2.64	COMB1	~46	26	23
-2.4172	10.02	53.709	-11.56	-5.42	COMB1	~47	27	23
7.1916	11.87	49.327	-13.67	-5.95	COMB1	293	27	23
2.7512	13.87	64.141	-15.16	-3.09	COMB1	~49	27	23
4.1021	11.92	67.269	-12.89	-2.28	COMB1	~48	27	23
-1.3855	12.49	52.594	-14.28	-8.92	COMB1	293	28	23
6.2188	13.48	51.171	-15.54	-8.59	COMB1	~50	28	23
2.3057	14.44	59.938	-14.63	-0.38	COMB1	~51	28	23
3.8077	13.45	62.818	-14.24	-1.75	COMB1	~49	28	23
-0.2445	13.26	50.710	-15.30	-7.12	COMB1	~50	29	23

Table: Element Forces - Area Shells, Part 3 of 4

Table: Element Forces - Area Shells, Part 3 of 4

MAngle Degrees	MMin KN-m/m	MMax KN-m/m	M12 KN-m/m	M22 KN-m/m	OutputCase	Joint	AreaElem	Area
60.023	-0.6330	-0.2484	0.1664	-0.3444	COMB1	~1	1	23
72.785	-1.9457	-1.2631	0.1930	-1.3229	COMB1	~2	1	23
40.097	-1.7781	-0.7313	0.5158	-1.3439	COMB1	~3	1	23
37.191	-0.3753	0.6278	0.4830	-0.0088	COMB1	~4	1	23
72.124	-1.9026	-1.0299	0.2549	-1.1122	COMB1	~2	2	23
59.068	-5.0827	-4.5392	0.2396	-4.6828	COMB1	~5	2	23
30.942	-3.8309	-2.2745	0.6864	-3.4194	COMB1	~6	2	23
40.019	-2.0297	-0.6102	0.6991	-1.4427	COMB1	~3	2	23
72.737	-4.5230	-2.4497	0.5876	-2.6323	COMB1	~5	3	23
30.085	-8.3638	-6.2342	0.9237	-7.8287	COMB1	~7	3	23
22.948	-7.1158	-3.8905	1.1580	-6.6255	COMB1	~8	3	23
28.403	-4.4040	-2.3942	0.8409	-3.9493	COMB1	~6	3	23
40.745	-7.7125	-5.4938	1.0971	-6.7673	COMB1	~7	4	23
23.134	-12.1627	-8.2575	1.4109	-11.5599	COMB1	~9	4	23
15.116	-11.6609	-5.3955	1.5774	-11.2348	COMB1	~10	4	23
22.617	-7.4303	-3.9290	1.2429	-6.9125	COMB1	~8	4	23
25.531	-12.2562	-8.0156	1.6492	-11.4684	COMB1	~9	5	23
18.445	-17.2453	-10.7021	1.9639	-16.5903	COMB1	~11	5	23
11.129	-16.9792	-6.4703	1.9903	-16.5877	COMB1	~12	5	23
16.486	-11.3040	-5.1890	1.6640	-10.8116	COMB1	~10	5	23
3.434	-31.3877	-13.1654	1.0895	-31.3223	COMB1	224	6	23
2.016	-20.2363	-6.5433	0.4815	-20.2194	COMB1	~13	6	23
10.751	-16.8895	-6.5555	1.8939	-16.5299	COMB1	~12	6	23
25.711	-16.3981	-9.6058	2.6550	-15.1196	COMB1	~11	6	23
1.916	-20.5306	-7.6229	0.4312	-20.5161	COMB1	~13	7	23
1.023	-16.6255	-4.4218	0.2180	-16.6216	COMB1	~14	7	23
5.424	-15.1474	-4.1104	1.0386	-15.0488	COMB1	~15	7	23
7.133	-16.8025	-6.9658	1.2120	-16.6509	COMB1	~12	7	23
3.034	-17.0162	-5.5405	0.6065	-16.9841	COMB1	~14	8	23
3.422	-16.6957	-3.9359	0.7602	-16.6502	COMB1	~16	8	23
4.112	-14.7714	-3.2359	0.8250	-14.7120	COMB1	~17	8	23
4.219	-15.0379	-4.1377	0.7998	-14.9789	COMB1	~15	8	23
4.195	-16.9283	-4.4593	0.9096	-16.8616	COMB1	~16	9	23
4.534	-16.5216	-3.7300	1.0080	-16.4417	COMB1	~18	9	23
4.772	-15.1559	-3.1776	0.9931	-15.0730	COMB1	~19	9	23
4.783	-14.9505	-3.6588	0.9383	-14.8720	COMB1	~17	9	23
4.967	-16.5266	-3.7023	1.1063	-16.4305	COMB1	~18	10	23
5.389	-17.4801	-4.6151	1.2028	-17.3666	COMB1	~20	10	23
5.366	-15.4473	-3.5991	1.1031	-15.3436	COMB1	~21	10	23
4.869	-15.2342	-3.3864	1.0021	-15.1488	COMB1	~19	10	23
5.847	-17.3972	-4.2515	1.3321	-17.2607	COMB1	~20	11	23
6.083	-18.5151	-5.2009	1.4030	-18.3656	COMB1	~22	11	23
6.115	-16.0236	-4.1700	1.2555	-15.8891	COMB1	~23	11	23
5.787	-15.5075	-3.7400	1.1804	-15.3879	COMB1	~21	11	23
5.463	-18.2449	-4.3830	1.3138	-18.1192	COMB1	~22	12	23
6.414	-18.9045	-6.5165	1.3752	-18.7499	COMB1	~24	12	23
6.481	-16.7121	-4.9619	1.3178	-16.5624	COMB1	~25	12	23
6.236	-16.0953	-4.3936	1.2636	-15.9572	COMB1	~23	12	23
6.043	-18.3651	-4.7653	1.4238	-18.2144	COMB1	~24	13	23
7.819	-20.4467	-8.8910	1.5575	-20.2328	COMB1	~26	13	23
7.294	-17.3195	-6.1371	1.4082	-17.1392	COMB1	~27	13	23
6.386	-16.8656	-5.5089	1.2553	-16.7251	COMB1	~25	13	23
8.311	-19.8927	-6.9099	1.8569	-19.6214	COMB1	~26	14	23
9.244	-19.8982	-8.4516	1.8149	-19.6028	COMB1	~28	14	23
8.512	-19.1349	-7.5398	1.6974	-18.8809	COMB1	~29	14	23
8.830	-17.5915	-6.7996	1.6369	-17.3373	COMB1	~27	14	23
6.276	-18.6450	-4.3136	1.5573	-18.4737	COMB1	~28	15	23

Table: Element Forces - Area Shells, Part 3 of 4

MAngle Degrees	MMin KN-m/m	MMax KN-m/m	M12 KN-m/m	M22 KN-m/m	OutputCase	Joint	AreaElem	Area
6.694	-27.4313	-19.1380	0.9601	-27.3186	COMB1	225	15	23
-0.332	-18.9326	-13.0654	-0.0340	-18.9324	COMB1	~30	15	23
4.619	-19.2911	-8.5376	0.8632	-19.2214	COMB1	~29	15	23
-73.802	-37.1459	-31.8537	-1.4177	-32.2655	COMB1	225	16	23
24.201	-16.3454	11.7249	10.4957	-11.6283	COMB1	~31	16	23
28.502	-21.4935	-16.5549	2.0711	-20.3690	COMB1	~32	16	23
26.404	-16.4138	-7.3682	3.6029	-14.6250	COMB1	~30	16	23
-62.529	-36.6830	-30.1616	-2.6691	-31.5493	COMB1	~31	17	23
27.909	-13.8824	16.7029	12.6510	-7.1814	COMB1	289	17	23
28.213	-19.4027	-12.6039	2.8323	-17.8832	COMB1	~33	17	23
27.213	-17.3397	-3.1951	5.7524	-14.3817	COMB1	~32	17	23
-49.230	-29.7599	-27.8539	-0.9426	-28.6667	COMB1	289	18	23
27.643	-13.3720	14.9085	11.6232	-7.2845	COMB1	~34	18	23
28.764	-18.3537	-9.6641	3.6655	-16.3416	COMB1	~35	18	23
27.402	-16.4823	-2.0259	5.9068	-13.4202	COMB1	~33	18	23
14.529	-24.8304	-22.8216	0.4878	-24.7040	COMB1	~34	19	23
26.883	-13.7258	13.0204	10.7869	-8.2572	COMB1	290	19	23
27.593	-16.3514	-7.0941	3.8001	-14.3653	COMB1	~36	19	23
26.716	-15.4892	-0.0265	6.2095	-12.3640	COMB1	~35	19	23
24.440	-23.5615	-19.1804	1.6502	-22.8115	COMB1	290	20	23
25.114	-11.6643	13.2917	9.5906	-7.1689	COMB1	~37	20	23
28.057	-14.9719	-4.5254	4.3360	-12.6609	COMB1	~38	20	23
26.693	-14.0903	1.0763	6.0870	-11.0298	COMB1	~36	20	23
26.494	-19.9923	-14.4118	2.2281	-18.8817	COMB1	~37	21	23
23.788	-10.7482	12.4660	8.5681	-6.9714	COMB1	291	21	23
27.952	-13.2390	-2.3382	4.5135	-10.8439	COMB1	~39	21	23
25.534	-12.8314	2.5603	5.9865	-9.9717	COMB1	~38	21	23
29.941	-17.7212	-10.0675	3.3102	-15.8146	COMB1	291	22	23
20.693	-10.3559	11.1706	7.1158	-7.6680	COMB1	~40	22	23
28.714	-11.4878	-0.0790	4.8072	-8.8545	COMB1	~41	22	23
24.316	-11.4847	3.6048	5.6621	-8.9262	COMB1	~39	22	23
29.401	-15.9954	-6.7779	3.9422	-13.7740	COMB1	~40	23	23
19.845	-9.0959	10.6651	6.3100	-6.8185	COMB1	292	23	23
27.651	-11.3392	1.4586	5.2609	-8.5830	COMB1	~42	23	23
23.164	-9.7563	4.5540	5.1755	-7.5419	COMB1	~41	23	23
30.838	-13.9396	-5.0264	3.9230	-11.5976	COMB1	292	24	23
19.188	-8.4035	11.0381	6.0348	-6.3034	COMB1	~43	24	23
26.536	-10.7729	2.0012	5.1058	-8.2232	COMB1	~44	24	23
20.825	-9.3534	5.5152	4.9406	-7.4742	COMB1	~42	24	23
28.126	-13.0930	-4.4695	3.5851	-11.1766	COMB1	~43	25	23
20.139	-7.9306	11.3916	6.2459	-5.6400	COMB1	~45	25	23
25.067	-9.9193	2.7186	4.8501	-7.6507	COMB1	~46	25	23
20.217	-8.9060	5.8445	4.7834	-7.1444	COMB1	~44	25	23
20.522	-12.3538	-3.7825	2.8141	-11.3004	COMB1	~45	26	23
23.422	-7.4233	11.3104	6.8331	-4.4632	COMB1	~47	26	23
22.945	-9.5297	3.1159	4.5398	-7.6078	COMB1	~48	26	23
20.629	-8.5381	6.0476	4.8093	-6.7275	COMB1	~46	26	23
15.502	-11.1628	-1.7443	2.4258	-10.4899	COMB1	~47	27	23
24.421	-7.0219	10.1220	6.4538	-4.0915	COMB1	293	27	23
22.419	-8.1488	4.6065	4.4969	-6.2935	COMB1	~49	27	23
22.521	-8.1476	6.2082	5.0793	-6.0414	COMB1	~48	27	23
19.870	-9.9987	-0.2605	3.1129	-8.8737	COMB1	293	28	23
24.215	-8.1173	9.1183	6.4473	-5.2178	COMB1	~50	28	23
24.288	-6.9629	4.1932	4.1826	-5.0754	COMB1	~51	28	23
22.266	-8.1184	5.8071	4.8830	-6.1190	COMB1	~49	28	23
20.757	-9.9483	1.1495	3.6779	-8.5544	COMB1	~50	29	23
24.514	-5.3174	8.2066	5.1055	-2.9892	COMB1	316	29	23
25.874	-8.2731	5.8533	5.5468	-5.5828	COMB1	~52	29	23

Table: Element Forces - Area Shells, Part 4 of 4

Table: Element Forces - Area Shells, Part 4 of 4							
VAngle Degrees	VMax KN/m	V23 KN/m	V13 KN/m	OutputCase	Joint	AreaElem	Area
54.284	5.90	4.79	3.44	COMB1	~1	1	23
57.443	5.77	4.87	3.11	COMB1	~2	1	23
63.929	6.92	6.22	3.04	COMB1	~3	1	23
60.925	6.97	6.09	3.39	COMB1	~4	1	23
79.080	14.81	14.54	2.81	COMB1	~2	2	23
55.295	17.77	14.61	10.12	COMB1	~5	2	23
41.470	13.53	8.96	10.14	COMB1	~6	2	23
73.174	9.46	9.05	2.74	COMB1	~3	2	23
74.242	20.20	19.44	5.49	COMB1	~5	3	23
63.409	21.62	19.33	9.68	COMB1	~7	3	23
46.731	14.23	10.36	9.75	COMB1	~8	3	23
61.784	11.86	10.45	5.61	COMB1	~6	3	23
65.449	19.26	17.52	8.00	COMB1	~7	4	23
55.080	21.37	17.52	12.23	COMB1	~9	4	23
52.018	19.66	15.50	12.10	COMB1	~10	4	23
62.523	17.32	15.36	7.99	COMB1	~8	4	23
55.100	22.01	18.05	12.59	COMB1	~9	5	23
45.331	25.44	18.09	17.88	COMB1	~11	5	23
49.027	26.93	20.33	17.66	COMB1	~12	5	23
58.712	23.82	20.36	12.37	COMB1	~10	5	23
59.291	63.78	54.84	32.57	COMB1	224	6	23
20.577	34.38	12.08	32.19	COMB1	~13	6	23
26.624	24.06	10.78	21.50	COMB1	~12	6	23
67.709	58.81	54.41	22.31	COMB1	~11	6	23
39.624	21.33	13.61	16.43	COMB1	~13	7	23
13.800	17.33	4.13	16.83	COMB1	~14	7	23
19.963	15.35	5.24	14.43	COMB1	~15	7	23
44.264	19.81	13.83	14.19	COMB1	~12	7	23
46.084	11.24	8.10	7.80	COMB1	~14	8	23
58.289	14.28	12.14	7.50	COMB1	~16	8	23
60.226	13.46	11.68	6.68	COMB1	~17	8	23
46.229	10.56	7.63	7.31	COMB1	~15	8	23
74.495	13.15	12.67	3.51	COMB1	~16	9	23
72.147	10.60	10.09	3.25	COMB1	~18	9	23
75.540	10.17	9.85	2.54	COMB1	~19	9	23
76.955	12.84	12.51	2.90	COMB1	~17	9	23
119.502	10.67	9.28	-5.25	COMB1	~18	10	23
109.262	15.92	15.03	-5.25	COMB1	~20	10	23
96.221	15.16	15.07	-1.64	COMB1	~21	10	23
100.757	9.52	9.35	-1.78	COMB1	~19	10	23
113.499	15.08	13.83	-6.01	COMB1	~20	11	23
107.604	19.94	19.00	-6.03	COMB1	~22	11	23
99.400	19.26	19.00	-3.15	COMB1	~23	11	23
103.191	14.22	13.85	-3.25	COMB1	~21	11	23
125.768	20.50	16.63	-11.98	COMB1	~22	12	23
124.792	21.11	17.34	-12.05	COMB1	~24	12	23
100.872	17.62	17.31	-3.32	COMB1	~25	12	23
102.137	16.97	16.59	-3.57	COMB1	~23	12	23
154.173	27.67	12.05	-24.90	COMB1	~24	13	23
135.199	34.88	24.58	-24.75	COMB1	~26	13	23
100.687	25.80	25.35	-4.78	COMB1	~27	13	23
113.360	13.51	12.40	-5.36	COMB1	~25	13	23
121.589	21.02	17.90	-11.01	COMB1	~26	14	23
152.714	11.44	5.25	-10.17	COMB1	~28	14	23
141.259	7.26	4.55	-5.67	COMB1	~29	14	23
109.647	18.95	17.84	-6.37	COMB1	~27	14	23
-170.849	98.92	-15.73	-97.66	COMB1	~28	15	23

Table: Element Forces - Area Shells, Part 4 of 4

VAngle Degrees	VMax KN/m	V23 KN/m	V13 KN/m	OutputCase	Joint	AreaElem	Area
156.989	107.82	42.15	-99.24	COMB1	225	15	23
129.572	67.64	52.14	-43.09	COMB1	~30	15	23
-164.228	34.95	-9.50	-33.63	COMB1	~29	15	23
40.081	313.41	201.79	239.80	COMB1	225	16	23
15.992	355.78	98.02	342.02	COMB1	~31	16	23
-129.380	75.63	-58.45	-47.98	COMB1	~32	16	23
138.234	126.64	84.35	-94.45	COMB1	~30	16	23
42.645	349.55	236.80	257.11	COMB1	~31	17	23
20.729	361.84	128.07	338.42	COMB1	289	17	23
-100.042	54.25	-53.42	-9.46	COMB1	~33	17	23
158.263	141.84	52.53	-131.76	COMB1	~32	17	23
45.581	291.79	208.41	204.22	COMB1	289	18	23
20.207	288.09	99.51	270.35	COMB1	~34	18	23
-111.660	55.86	-51.92	-20.62	COMB1	~35	18	23
147.212	102.48	55.50	-86.16	COMB1	~33	18	23
45.070	233.59	165.38	164.97	COMB1	~34	19	23
22.111	233.07	87.73	215.93	COMB1	290	19	23
-127.427	43.81	-34.79	-26.63	COMB1	~36	19	23
149.792	85.50	43.02	-73.89	COMB1	~35	19	23
44.914	216.78	153.06	153.52	COMB1	290	20	23
17.461	211.03	63.32	201.30	COMB1	~37	20	23
-113.315	36.66	-33.67	-14.51	COMB1	~38	20	23
141.533	82.08	51.06	-64.27	COMB1	~36	20	23
41.461	170.83	113.11	128.02	COMB1	~37	21	23
14.668	179.92	45.56	174.05	COMB1	291	21	23
-121.379	28.68	-24.48	-14.93	COMB1	~39	21	23
143.418	64.99	38.73	-52.18	COMB1	~38	21	23
37.066	129.46	78.03	103.30	COMB1	291	22	23
9.342	152.91	24.82	150.89	COMB1	~40	22	23
-143.301	12.42	-7.42	-9.96	COMB1	~41	22	23
140.331	58.59	37.40	-45.10	COMB1	~39	22	23
36.231	107.15	63.33	86.44	COMB1	~40	23	23
1.859	149.98	4.86	149.90	COMB1	292	23	23
-156.961	34.77	-13.61	-31.99	COMB1	~42	23	23
109.310	53.66	50.64	-17.75	COMB1	~41	23	23
34.692	123.43	70.25	101.49	COMB1	292	24	23
-2.256	188.65	-7.42	188.51	COMB1	~43	24	23
-143.345	44.86	-26.78	-35.99	COMB1	~44	24	23
124.514	70.51	58.10	-39.95	COMB1	~42	24	23
39.486	172.85	109.91	133.40	COMB1	~43	25	23
1.791	233.45	7.29	233.33	COMB1	~45	25	23
-136.003	64.27	-44.65	-46.24	COMB1	~46	25	23
120.589	102.29	88.06	-52.05	COMB1	~44	25	23
48.837	280.63	211.27	184.71	COMB1	~45	26	23
13.015	240.26	54.11	234.09	COMB1	~47	26	23
-119.703	115.72	-100.52	-57.34	COMB1	~48	26	23
114.903	143.92	130.54	-60.60	COMB1	~46	26	23
49.425	362.29	275.18	235.65	COMB1	~47	27	23
29.375	252.94	124.07	220.42	COMB1	293	27	23
-43.353	25.41	-17.45	18.48	COMB1	~49	27	23
171.740	126.90	18.23	-125.58	COMB1	~48	27	23
38.895	291.33	182.93	226.74	COMB1	293	28	23
42.707	255.17	173.06	187.50	COMB1	~50	28	23
175.485	163.92	12.90	-163.41	COMB1	~51	28	23
67.274	106.18	97.93	41.02	COMB1	~49	28	23
63.981	295.34	265.41	129.55	COMB1	~50	29	23
13.668	203.56	48.10	197.79	COMB1	316	29	23
-46.281	102.64	-74.18	70.93	COMB1	~52	29	23

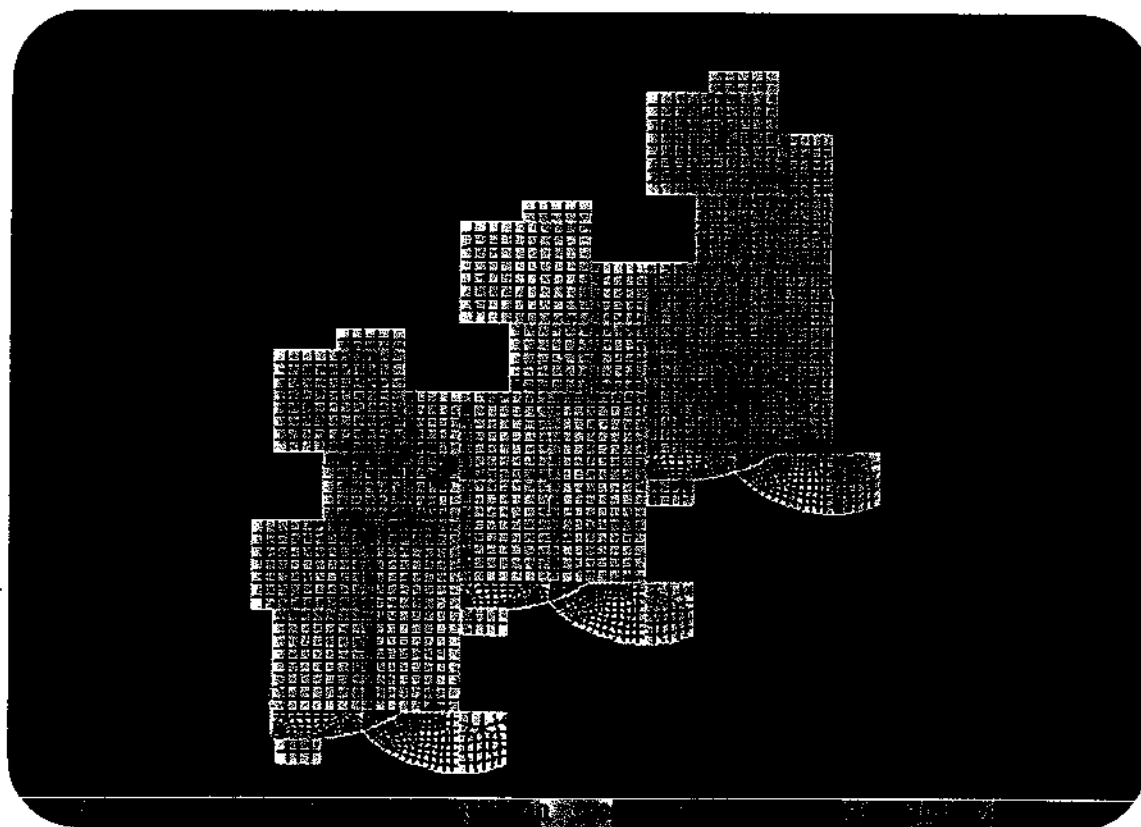


Table: Element Forces - Frames, Part 1 of 2

Table: Element Forces - Frames, Part 1 of 2

M2	T	V3	V2	P	CaseType	OutputCase	Station	Frame
KN-m	KN-m	KN	KN	KN			m	
7.4055	0.1042	1.442	0.447	-134.897	Combination	COMB1	0.00000	1
4.0807	0.1042	1.442	0.447	-150.192	Combination	COMB1	2.30500	1
0.7559	0.1042	1.442	0.447	-165.487	Combination	COMB1	4.61000	1
2.0138	0.1033	-0.246	-0.614	-207.323	Combination	COMB1	0.00000	2
2.5812	0.1033	-0.246	-0.614	-222.618	Combination	COMB1	2.30500	2
3.1486	0.1033	-0.246	-0.614	-237.913	Combination	COMB1	4.61000	2
-1.9195	0.1035	-1.460	-2.567	-116.365	Combination	COMB1	0.00000	3
1.4448	0.1035	-1.460	-2.567	-131.660	Combination	COMB1	2.30500	3
4.8091	0.1035	-1.460	-2.567	-146.955	Combination	COMB1	4.61000	3
0.8009	0.1114	-0.530	-2.085	-92.392	Combination	COMB1	0.00000	4
2.0227	0.1114	-0.530	-2.085	-107.687	Combination	COMB1	2.30500	4
3.2445	0.1114	-0.530	-2.085	-122.982	Combination	COMB1	4.61000	4
-0.6654	0.1102	-1.053	-1.563	-195.700	Combination	COMB1	0.00000	5
1.7626	0.1102	-1.053	-1.563	-210.995	Combination	COMB1	2.30500	5
4.1906	0.1102	-1.053	-1.563	-226.290	Combination	COMB1	4.61000	5
-3.1836	0.1098	-1.817	-2.499	-163.911	Combination	COMB1	0.00000	6
1.0048	0.1098	-1.817	-2.499	-179.206	Combination	COMB1	2.30500	6
5.1931	0.1098	-1.817	-2.499	-194.501	Combination	COMB1	4.61000	6
-4.1147	0.1127	-2.166	-2.452	-278.801	Combination	COMB1	0.00000	7
0.8791	0.1127	-2.166	-2.452	-294.096	Combination	COMB1	2.30500	7
5.8728	0.1127	-2.166	-2.452	-309.391	Combination	COMB1	4.61000	7
-5.5684	0.1191	-2.712	0.657	-247.554	Combination	COMB1	0.00000	8
0.6820	0.1191	-2.712	0.657	-262.849	Combination	COMB1	2.30500	8
6.9323	0.1191	-2.712	0.657	-278.144	Combination	COMB1	4.61000	8
-12.8510	0.1226	-5.110	0.033	-133.268	Combination	COMB1	0.00000	9

Table: Element Forces - Frames, Part 1 of 2

M2	T	V3	V2	P	CaseType	OutputCase	Station	Frame
KN-m	KN-m	KN	KN	KN			m	
-1.0727	0.1226	-5.110	0.033	-148.563	Combination	COMB1	2.30500	9
10.7056	0.1226	-5.110	0.033	-163.858	Combination	COMB1	4.61000	9
-2.8506	0.0930	-1.932	-2.788	-115.641	Combination	COMB1	0.00000	10
1.6015	0.0930	-1.932	-2.788	-130.936	Combination	COMB1	2.30500	10
6.0537	0.0930	-1.932	-2.788	-146.231	Combination	COMB1	4.61000	10
6.6227	0.0935	1.027	0.224	-132.635	Combination	COMB1	0.00000	11
4.2556	0.0935	1.027	0.224	-147.930	Combination	COMB1	2.30500	11
1.8886	0.0935	1.027	0.224	-163.225	Combination	COMB1	4.61000	11
-0.6083	0.1146	-0.983	-2.861	-200.563	Combination	COMB1	0.00000	12
1.6578	0.1146	-0.983	-2.861	-215.858	Combination	COMB1	2.30500	12
3.9239	0.1146	-0.983	-2.861	-231.152	Combination	COMB1	4.61000	12
-3.7887	0.1176	-2.060	-0.915	-250.584	Combination	COMB1	0.00000	13
0.9603	0.1176	-2.060	-0.915	-265.879	Combination	COMB1	2.30500	13
5.7094	0.1176	-2.060	-0.915	-281.174	Combination	COMB1	4.61000	13
2.9313	0.1185	0.070	-1.026	-218.165	Combination	COMB1	0.00000	14
2.7704	0.1185	0.070	-1.026	-233.460	Combination	COMB1	2.30500	14
2.6095	0.1185	0.070	-1.026	-248.755	Combination	COMB1	4.61000	14
-4.8025	0.1192	-2.463	-0.904	-178.603	Combination	COMB1	0.00000	15
0.8757	0.1192	-2.463	-0.904	-193.898	Combination	COMB1	2.30500	15
6.5539	0.1192	-2.463	-0.904	-209.193	Combination	COMB1	4.61000	15
0.4106	0.1116	-0.827	-1.465	-136.672	Combination	COMB1	0.00000	16
2.3159	0.1116	-0.827	-1.465	-151.967	Combination	COMB1	2.30500	16
4.2212	0.1116	-0.827	-1.465	-167.262	Combination	COMB1	4.61000	16
-1.9619	0.1075	-1.643	-1.724	-194.274	Combination	COMB1	0.00000	17
1.8257	0.1075	-1.643	-1.724	-209.569	Combination	COMB1	2.30500	17
5.6133	0.1075	-1.643	-1.724	-224.864	Combination	COMB1	4.61000	17
-13.6245	0.1136	-5.523	-0.195	-131.881	Combination	COMB1	0.00000	18
-0.8943	0.1136	-5.523	-0.195	-147.176	Combination	COMB1	2.30500	18
11.8359	0.1136	-5.523	-0.195	-162.471	Combination	COMB1	4.61000	18
-6.5256	0.1121	-3.188	0.342	-247.262	Combination	COMB1	0.00000	19
0.8216	0.1121	-3.188	0.342	-262.557	Combination	COMB1	2.30500	19
8.1689	0.1121	-3.188	0.342	-277.852	Combination	COMB1	4.61000	19
-5.6146	0.1085	-2.822	-2.881	-266.267	Combination	COMB1	0.00000	20
0.8901	0.1085	-2.822	-2.881	-281.562	Combination	COMB1	2.30500	20
7.3949	0.1085	-2.822	-2.881	-296.857	Combination	COMB1	4.61000	20
-8.0027	0.1070	-3.545	-1.473	-185.783	Combination	COMB1	0.00000	21
0.1675	0.1070	-3.545	-1.473	-201.078	Combination	COMB1	2.30500	21
8.3377	0.1070	-3.545	-1.473	-216.373	Combination	COMB1	4.61000	21
6.2352	0.0791	0.772	-0.060	-130.564	Combination	COMB1	0.00000	24
4.4550	0.0791	0.772	-0.060	-145.859	Combination	COMB1	2.30500	24
2.6749	0.0791	0.772	-0.060	-161.154	Combination	COMB1	4.61000	24
-3.5712	0.0768	-2.312	-3.076	-114.357	Combination	COMB1	0.00000	25
1.7585	0.0768	-2.312	-3.076	-129.652	Combination	COMB1	2.30500	25
7.0882	0.0768	-2.312	-3.076	-144.947	Combination	COMB1	4.61000	25
-8.6401	0.1159	-3.571	-3.437	-181.099	Combination	COMB1	0.00000	26
-0.4079	0.1159	-3.571	-3.437	-196.393	Combination	COMB1	2.30500	26
7.8243	0.1159	-3.571	-3.437	-211.688	Combination	COMB1	4.61000	26
-1.2633	0.1197	-1.282	-2.305	-438.227	Combination	COMB1	0.00000	27
1.6915	0.1197	-1.282	-2.305	-453.522	Combination	COMB1	2.30500	27
4.6463	0.1197	-1.282	-2.305	-468.817	Combination	COMB1	4.61000	27
-3.6808	0.1141	-2.150	1.198	-203.973	Combination	COMB1	0.00000	28
1.2745	0.1141	-2.150	1.198	-219.268	Combination	COMB1	2.30500	28
6.2298	0.1141	-2.150	1.198	-234.563	Combination	COMB1	4.61000	28
-2.4371	0.0830	-1.563	-3.634	-156.962	Combination	COMB1	0.00000	29
1.1648	0.0830	-1.563	-3.634	-172.257	Combination	COMB1	2.30500	29
4.7667	0.0830	-1.563	-3.634	-187.552	Combination	COMB1	4.61000	29
-2.8852	0.0889	-2.089	-2.020	-193.718	Combination	COMB1	0.00000	30
1.9307	0.0889	-2.089	-2.020	-209.013	Combination	COMB1	2.30500	30

Table: Element Forces - Frames, Part 1 of 2

M2	T	V3	V2	P	CaseType	OutputCase	Station	Frame
KN-m	KN-m	KN	KN	KN			m	
6.7466	0.0889	-2.089	-2.020	-224.308	Combination	COMB1	4.61000	30
-0.3565	0.0935	-1.231	-1.787	-135.396	Combination	COMB1	0.00000	31
2.4800	0.0935	-1.231	-1.787	-150.691	Combination	COMB1	2.30500	31
5.3166	0.0935	-1.231	-1.787	-165.986	Combination	COMB1	4.61000	31
-5.7315	0.1091	-2.929	-1.247	-178.451	Combination	COMB1	0.00000	32
1.0208	0.1091	-2.929	-1.247	-193.746	Combination	COMB1	2.30500	32
7.7731	0.1091	-2.929	-1.247	-209.041	Combination	COMB1	4.61000	32
1.8956	0.1090	-0.434	-1.415	-215.202	Combination	COMB1	0.00000	33
2.8954	0.1090	-0.434	-1.415	-230.497	Combination	COMB1	2.30500	33
3.8951	0.1090	-0.434	-1.415	-245.792	Combination	COMB1	4.61000	33
-4.3853	0.1093	-2.425	-1.208	-244.008	Combination	COMB1	0.00000	34
1.2045	0.1093	-2.425	-1.208	-259.303	Combination	COMB1	2.30500	34
6.7943	0.1093	-2.425	-1.208	-274.598	Combination	COMB1	4.61000	34

Table: Element Forces - Frames, Part 2 of 2

Table: Element Forces - Frames, Part 2 of 2

ElemStation	FrameElem	M3	OutputCase	Station	Frame
m		KN-m		m	
0.00000	1-1	2.2703	COMB1	0.00000	1
2.30500	1-1	1.2397	COMB1	2.30500	1
4.61000	1-1	0.2091	COMB1	4.61000	1
0.00000	2-1	-1.0047	COMB1	0.00000	2
2.30500	2-1	0.4098	COMB1	2.30500	2
4.61000	2-1	1.8244	COMB1	4.61000	2
0.00000	3-1	-7.0423	COMB1	0.00000	3
2.30500	3-1	-1.1247	COMB1	2.30500	3
4.61000	3-1	4.7929	COMB1	4.61000	3
0.00000	4-1	-5.4344	COMB1	0.00000	4
2.30500	4-1	-0.6283	COMB1	2.30500	4
4.61000	4-1	4.1777	COMB1	4.61000	4
0.00000	5-1	-3.8250	COMB1	0.00000	5
2.30500	5-1	-0.2214	COMB1	2.30500	5
4.61000	5-1	3.3823	COMB1	4.61000	5
0.00000	6-1	-6.5506	COMB1	0.00000	6
2.30500	6-1	-0.7896	COMB1	2.30500	6
4.61000	6-1	4.9714	COMB1	4.61000	6
0.00000	7-1	-6.4147	COMB1	0.00000	7
2.30500	7-1	-0.7617	COMB1	2.30500	7
4.61000	7-1	4.8912	COMB1	4.61000	7
0.00000	8-1	3.2013	COMB1	0.00000	8
2.30500	8-1	1.6864	COMB1	2.30500	8
4.61000	8-1	0.1716	COMB1	4.61000	8
0.00000	9-1	1.2596	COMB1	0.00000	9
2.30500	9-1	1.1846	COMB1	2.30500	9
4.61000	9-1	1.1095	COMB1	4.61000	9
0.00000	10-1	-7.3684	COMB1	0.00000	10
2.30500	10-1	-0.9425	COMB1	2.30500	10
4.61000	10-1	5.4834	COMB1	4.61000	10
0.00000	11-1	1.9372	COMB1	0.00000	11
2.30500	11-1	1.4211	COMB1	2.30500	11
4.61000	11-1	0.9051	COMB1	4.61000	11
0.00000	12-1	-7.4866	COMB1	0.00000	12
2.30500	12-1	-0.8919	COMB1	2.30500	12
4.61000	12-1	5.7028	COMB1	4.61000	12
0.00000	13-1	-1.4687	COMB1	0.00000	13
2.30500	13-1	0.6403	COMB1	2.30500	13

Table: Element Forces - Frames, Part 2 of 2

ElemStation	FrameElem	M3	OutputCase	Station	Frame
m		KN-m		m	
4.61000	13-1	2.7494	COMB1	4.61000	13
0.00000	14-1	-1.8202	COMB1	0.00000	14
2.30500	14-1	0.5458	COMB1	2.30500	14
4.61000	14-1	2.9119	COMB1	4.61000	14
0.00000	15-1	-1.4448	COMB1	0.00000	15
2.30500	15-1	0.6390	COMB1	2.30500	15
4.61000	15-1	2.7229	COMB1	4.61000	15
0.00000	16-1	-3.1800	COMB1	0.00000	16
2.30500	16-1	0.1960	COMB1	2.30500	16
4.61000	16-1	3.5721	COMB1	4.61000	16
0.00000	17-1	-3.9831	COMB1	0.00000	17
2.30500	17-1	-0.0084	COMB1	2.30500	17
4.61000	17-1	3.9663	COMB1	4.61000	17
0.00000	18-1	0.8958	COMB1	0.00000	18
2.30500	18-1	1.3443	COMB1	2.30500	18
4.61000	18-1	1.7928	COMB1	4.61000	18
0.00000	19-1	2.5636	COMB1	0.00000	19
2.30500	19-1	1.7761	COMB1	2.30500	19
4.61000	19-1	0.9885	COMB1	4.61000	19
0.00000	20-1	-7.4047	COMB1	0.00000	20
2.30500	20-1	-0.7650	COMB1	2.30500	20
4.61000	20-1	5.8748	COMB1	4.61000	20
0.00000	21-1	-3.0454	COMB1	0.00000	21
2.30500	21-1	0.3507	COMB1	2.30500	21
4.61000	21-1	3.7468	COMB1	4.61000	21
0.00000	24-1	1.4263	COMB1	0.00000	24
2.30500	24-1	1.5654	COMB1	2.30500	24
4.61000	24-1	1.7046	COMB1	4.61000	24
0.00000	25-1	-7.8923	COMB1	0.00000	25
2.30500	25-1	-0.8012	COMB1	2.30500	25
4.61000	25-1	6.2899	COMB1	4.61000	25
0.00000	26-1	-8.9962	COMB1	0.00000	26
2.30500	26-1	-1.0732	COMB1	2.30500	26
4.61000	26-1	6.8498	COMB1	4.61000	26
0.00000	27-1	-5.5347	COMB1	0.00000	27
2.30500	27-1	-0.2223	COMB1	2.30500	27
4.61000	27-1	5.0901	COMB1	4.61000	27
0.00000	28-1	5.3066	COMB1	0.00000	28
2.30500	28-1	2.5443	COMB1	2.30500	28
4.61000	28-1	-0.2181	COMB1	4.61000	28
0.00000	29-1	-9.4999	COMB1	0.00000	29
2.30500	29-1	-1.1228	COMB1	2.30500	29
4.61000	29-1	7.2543	COMB1	4.61000	29
0.00000	30-1	-4.5476	COMB1	0.00000	30
2.30500	30-1	0.1082	COMB1	2.30500	30
4.61000	30-1	4.7639	COMB1	4.61000	30
0.00000	31-1	-3.8285	COMB1	0.00000	31
2.30500	31-1	0.2905	COMB1	2.30500	31
4.61000	31-1	4.4094	COMB1	4.61000	31
0.00000	32-1	-2.1620	COMB1	0.00000	32
2.30500	32-1	0.7130	COMB1	2.30500	32
4.61000	32-1	3.5879	COMB1	4.61000	32
0.00000	33-1	-2.6805	COMB1	0.00000	33
2.30500	33-1	0.5807	COMB1	2.30500	33
4.61000	33-1	3.8418	COMB1	4.61000	33
0.00000	34-1	-2.0373	COMB1	0.00000	34
2.30500	34-1	0.7476	COMB1	2.30500	34
4.61000	34-1	3.5325	COMB1	4.61000	34

Table: Element Forces - Frames, Part 2 of 2

ElemStation m	FrameElem	M3 KN-m	OutputCase	Station m	Frame
0.00000	35-1	-0.5813	COMB1	0.00000	35
2.30500	35-1	1.1243	COMB1	2.30500	35
4.61000	35-1	2.8298	COMB1	4.61000	35
0.00000	36-1	-19.6544	COMB1	0.00000	36
1.55500	36-1	-2.9077	COMB1	1.55500	36
3.11000	36-1	13.8389	COMB1	3.11000	36
0.00000	37-1	1.6878	COMB1	0.00000	37
2.30500	37-1	1.7923	COMB1	2.30500	37
4.61000	37-1	1.8969	COMB1	4.61000	37
0.00000	38-1	-7.7493	COMB1	0.00000	38

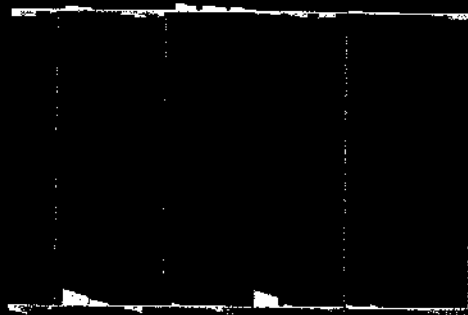


Table: Element Joint Forces - Areas, Part 1 of 2

Table: Element Joint Forces - Areas, Part 1 of 2

M1 KN-m	F3 KN	F2 KN	F1 KN	CaseType	OutputCase	Joint	AreaElem	Area
0.0264	-0.437	-0.621	-1.478	Combination	COMB1	~1	1	23
-0.1497	1.816	1.077	-0.940	Combination	COMB1	~2	1	23
-0.1561	-0.411	0.620	1.300	Combination	COMB1	~3	1	23
0.0118	-0.051	-1.076	1.118	Combination	COMB1	~4	1	23
0.1394	-1.188	-0.970	-0.627	Combination	COMB1	~2	2	23
-0.4728	3.457	1.350	0.010	Combination	COMB1	~5	2	23
-0.4353	-0.823	0.985	0.343	Combination	COMB1	~6	2	23
0.1439	-0.554	-1.365	0.274	Combination	COMB1	~3	2	23
0.3306	-2.042	-1.825	0.432	Combination	COMB1	~5	3	23
-0.8096	5.018	1.831	0.402	Combination	COMB1	~7	3	23

Table: Element Joint Forces - Areas, Part 1 of 2

M1	F3	F2	F1	CaseType	OutputCase	Joint	AreaElem	Area
KN-m	KN	KN	KN					
-0.7802	-1.536	1.663	-0.419	Combination	COMB1	~8	3	23
0.3951	-0.548	-1.669	-0.414	Combination	COMB1	~6	3	23
0.7400	-2.749	-2.087	0.666	Combination	COMB1	~7	4	23
-1.3114	6.501	2.686	1.238	Combination	COMB1	~9	4	23
-1.2641	-2.302	1.897	-0.850	Combination	COMB1	~10	4	23
0.8004	-0.520	-2.496	-1.054	Combination	COMB1	~8	4	23
1.3032	-3.688	-2.476	1.275	Combination	COMB1	~9	5	23
-1.9650	8.724	3.733	2.614	Combination	COMB1	~11	5	23
-1.9463	-3.537	2.139	-1.536	Combination	COMB1	~12	5	23
1.3193	-0.539	-3.395	-2.353	Combination	COMB1	~10	5	23
-3.4414	11.770	4.853	5.459	Combination	COMB1	224	6	23
-2.8903	-2.384	2.020	-3.403	Combination	COMB1	~13	6	23
1.9227	-2.707	-4.170	-4.545	Combination	COMB1	~12	6	23
1.9115	-5.714	-2.703	2.489	Combination	COMB1	~11	6	23
-2.3001	4.630	2.453	4.484	Combination	COMB1	~13	7	23
-2.1574	-2.594	1.168	-3.109	Combination	COMB1	~14	7	23
1.9379	0.399	-2.279	-3.910	Combination	COMB1	~15	7	23
2.0857	-1.504	-1.342	2.535	Combination	COMB1	~12	7	23
-1.8566	4.027	1.188	3.183	Combination	COMB1	~14	8	23
-1.8857	-0.837	0.638	-1.601	Combination	COMB1	~16	8	23
1.2847	4.147	-1.079	-3.035	Combination	COMB1	~17	8	23
1.3395	-6.684	-0.748	1.453	Combination	COMB1	~15	8	23
-1.7915	3.552	0.536	1.826	Combination	COMB1	~16	9	23
-1.7744	-0.674	0.326	-1.416	Combination	COMB1	~18	9	23
1.5565	1.576	-0.481	-1.723	Combination	COMB1	~19	9	23
1.5480	-3.991	-0.381	1.313	Combination	COMB1	~17	9	23
-1.7195	2.958	0.167	1.225	Combination	COMB1	~18	10	23
-1.7462	-0.443	0.065	-1.119	Combination	COMB1	~20	10	23
1.5715	1.359	-0.116	-1.223	Combination	COMB1	~21	10	23
1.5558	-3.463	-0.116	1.117	Combination	COMB1	~19	10	23
-1.7255	3.775	-0.043	1.049	Combination	COMB1	~20	11	23
-1.7615	-0.526	-0.033	-1.048	Combination	COMB1	~22	11	23
1.5391	1.550	0.054	-0.984	Combination	COMB1	~23	11	23
1.5165	-4.424	0.022	0.984	Combination	COMB1	~21	11	23
-1.7108	3.852	-0.194	0.722	Combination	COMB1	~22	12	23
-1.7219	-0.085	-0.203	-0.730	Combination	COMB1	~24	12	23
1.5020	1.521	0.219	-0.750	Combination	COMB1	~25	12	23
1.4740	-4.747	0.177	0.758	Combination	COMB1	~23	12	23
-1.6926	2.911	-0.281	0.656	Combination	COMB1	~24	13	23
-1.7139	0.954	-0.263	-0.659	Combination	COMB1	~26	13	23
1.4908	1.116	0.288	-0.637	Combination	COMB1	~27	13	23
1.4390	-4.667	0.256	0.641	Combination	COMB1	~25	13	23
-1.7009	3.446	-0.351	0.545	Combination	COMB1	~26	14	23
-1.6013	-0.579	-0.287	-0.605	Combination	COMB1	~28	14	23
1.5548	1.285	0.360	-0.524	Combination	COMB1	~29	14	23
1.4126	-3.852	0.278	0.584	Combination	COMB1	~27	14	23
-1.8418	-3.102	-0.437	0.458	Combination	COMB1	~28	15	23
-1.7784	8.317	-0.266	-0.600	Combination	COMB1	225	15	23
1.6198	-0.568	0.441	-0.427	Combination	COMB1	~30	15	23
1.3315	-4.341	0.261	0.569	Combination	COMB1	~29	15	23
-2.5169	18.219	-0.450	0.109	Combination	COMB1	225	16	23
-1.6934	-11.968	-0.197	-0.526	Combination	COMB1	~31	16	23
1.3964	-4.022	0.446	-0.152	Combination	COMB1	~32	16	23
0.7678	-1.953	0.202	0.569	Combination	COMB1	~30	16	23
-2.3764	18.238	-0.465	0.029	Combination	COMB1	~31	17	23
-1.5545	-12.364	-0.200	-0.342	Combination	COMB1	289	17	23
1.1420	-6.451	0.464	-0.067	Combination	COMB1	~33	17	23
0.6213	0.840	0.202	0.380	Combination	COMB1	~32	17	23

Table: Element Joint Forces - Areas, Part 1 of 2

M1 KN-m	F3 KN	F2 KN	F1 KN	CaseType	OutputCase	Joint	AreaElem	Area
-2.2475	14.502	-0.504	0.038	Combination	COMB1	289	18	23
-1.4943	-10.579	-0.245	-0.165	Combination	COMB1	~34	18	23
1.2739	-4.428	0.499	-0.079	Combination	COMB1	~35	18	23
0.8571	0.801	0.250	0.206	Combination	COMB1	~33	18	23
-1.9414	11.556	-0.471	0.053	Combination	COMB1	~34	19	23
-1.4230	-7.625	-0.281	0.019	Combination	COMB1	290	19	23
1.1357	-3.869	0.463	-0.090	Combination	COMB1	~36	19	23
0.8887	0.234	0.289	0.018	Combination	COMB1	~35	19	23
-1.7601	11.612	-0.441	0.058	Combination	COMB1	290	20	23
-1.3322	-8.233	-0.316	0.204	Combination	COMB1	~37	20	23
1.0246	-2.742	0.426	-0.088	Combination	COMB1	~38	20	23
0.9005	-0.338	0.332	-0.174	Combination	COMB1	~36	20	23
-1.4692	9.669	-0.390	0.051	Combination	COMB1	~37	21	23
-1.2045	-8.091	-0.372	0.405	Combination	COMB1	291	21	23
0.9604	-0.267	0.374	-0.078	Combination	COMB1	~39	21	23
0.9448	-1.003	0.388	-0.377	Combination	COMB1	~38	21	23
-1.2821	10.223	-0.321	0.011	Combination	COMB1	291	22	23
-1.1139	-9.348	-0.438	0.613	Combination	COMB1	~40	22	23
0.9428	2.983	0.289	-0.020	Combination	COMB1	~41	22	23
0.9834	-3.541	0.470	-0.605	Combination	COMB1	~39	22	23
-1.1076	10.525	-0.226	-0.079	Combination	COMB1	~40	23	23

Table: Element Joint Forces - Areas, Part 2 of 2

Table: Element Joint Forces - Areas, Part 2 of 2

M3 KN-m	M2 KN-m	OutputCase	Joint	AreaElem	Area
-0.0046	0.1303	COMB1	~1	1	23
-0.0041	0.2100	COMB1	~2	1	23
0.0035	-0.1030	COMB1	~3	1	23
0.0033	-0.0271	COMB1	~4	1	23
-0.0033	0.3967	COMB1	~2	2	23
0.0010	0.5578	COMB1	~5	2	23
0.0070	-0.3185	COMB1	~6	2	23
0.0030	-0.2303	COMB1	~3	2	23
-0.0047	0.7356	COMB1	~5	3	23
-0.0044	0.8525	COMB1	~7	3	23
0.0024	-0.5599	COMB1	~8	3	23
0.0020	-0.4710	COMB1	~6	3	23
-0.0019	1.0253	COMB1	~7	4	23
-0.0063	1.1924	COMB1	~9	4	23
8.847E-04	-0.7437	COMB1	~10	4	23
0.0044	-0.7130	COMB1	~8	4	23
-0.0063	1.3026	COMB1	~9	5	23
-0.0146	1.5690	COMB1	~11	5	23
9.033E-04	-0.8495	COMB1	~12	5	23
0.0087	-0.9247	COMB1	~10	5	23
0.0091	1.7512	COMB1	224	6	23
0.0138	-0.8987	COMB1	~13	6	23
0.0032	-1.0469	COMB1	~12	6	23
-0.0017	1.5555	COMB1	~11	6	23
0.0151	1.0087	COMB1	~13	7	23
0.0111	-0.5640	COMB1	~14	7	23
-0.0038	-0.6901	COMB1	~15	7	23
-0.0027	0.8599	COMB1	~12	7	23
0.0070	0.6837	COMB1	~14	8	23
0.0018	-0.3023	COMB1	~16	8	23
-0.0027	-0.9137	COMB1	~17	8	23

Table: Element Joint Forces - Areas, Part 2 of 2

M3	M2	OutputCase	Joint	AreaElem	Area
KN-m	KN-m				
4.011E-04	-0.0259	COMB1	~15	8	23
0.0017	0.3515	COMB1	~16	9	23
5.497E-04	-0.2604	COMB1	~18	9	23
-0.0015	-0.3982	COMB1	~19	9	23
-5.701E-04	0.1721	COMB1	~17	9	23
4.290E-04	0.2629	COMB1	~18	10	23
4.184E-05	-0.3045	COMB1	~20	10	23
-0.0010	-0.3205	COMB1	~21	10	23
-6.943E-04	0.2090	COMB1	~19	10	23
2.702E-04	0.2901	COMB1	~20	11	23
-2.516E-04	-0.3328	COMB1	~22	11	23
-9.768E-04	-0.3548	COMB1	~23	11	23
-4.840E-04	0.2285	COMB1	~21	11	23
-5.374E-04	0.3003	COMB1	~22	12	23
-1.155E-04	-0.3934	COMB1	~24	12	23
-5.134E-04	-0.3986	COMB1	~25	12	23
-9.712E-04	0.2593	COMB1	~23	12	23
-8.049E-05	0.3262	COMB1	~24	13	23
-1.189E-04	-0.5138	COMB1	~26	13	23
-4.345E-04	-0.4748	COMB1	~27	13	23
-3.906E-04	0.3148	COMB1	~25	13	23
-2.916E-04	0.4299	COMB1	~26	14	23
-3.454E-04	-0.5377	COMB1	~28	14	23
-4.502E-04	-0.4720	COMB1	~29	14	23
-3.618E-04	0.4719	COMB1	~27	14	23
-4.949E-04	0.3410	COMB1	~28	15	23
-6.569E-04	-1.2982	COMB1	225	15	23
-7.133E-04	-0.9934	COMB1	~30	15	23
-4.878E-04	0.6175	COMB1	~29	15	23
-0.0014	0.8602	COMB1	225	16	23
-0.0019	-0.7380	COMB1	~31	16	23
-4.951E-04	0.0537	COMB1	~32	16	23
-2.106E-04	1.7586	COMB1	~30	16	23
-0.0020	0.4816	COMB1	~31	17	23
-0.0020	-0.4018	COMB1	289	17	23
-2.836E-04	0.5413	COMB1	~33	17	23
-3.739E-04	1.5741	COMB1	~32	17	23
-0.0021	0.2911	COMB1	289	18	23
-0.0015	-0.3256	COMB1	~34	18	23
-2.641E-04	0.5985	COMB1	~35	18	23
-8.181E-04	1.3233	COMB1	~33	18	23
-0.0016	0.0744	COMB1	~34	19	23
-6.793E-04	-0.3144	COMB1	290	19	23
-7.587E-05	0.5897	COMB1	~36	19	23
-9.676E-04	1.0593	COMB1	~35	19	23
-7.830E-04	0.0428	COMB1	290	20	23
5.256E-05	-0.1145	COMB1	~37	20	23
3.347E-05	0.6195	COMB1	~38	20	23
-7.725E-04	0.8751	COMB1	~36	20	23
-1.552E-04	-0.0687	COMB1	~37	21	23
0.0010	-0.0600	COMB1	291	21	23
2.885E-04	0.6037	COMB1	~39	21	23
-8.189E-04	0.6736	COMB1	~38	21	23
7.470E-04	-0.1147	COMB1	291	22	23
0.0019	-0.0589	COMB1	~40	22	23
2.398E-04	0.4997	COMB1	~41	22	23
-8.603E-04	0.5103	COMB1	~39	22	23
9.888E-04	-0.1146	COMB1	~40	23	23

Table: Element Joint Forces - Frames, Part 1 of 2

Table: Element Joint Forces - Frames, Part 1 of 2

M2	M1	F3	F2	F1	CaseType	OutputCase	Joint	Frame
KN-m	KN-m	KN	KN	KN				
2.2703	7.4055	-134.897	1.442	-0.447	Combination	COMB1	1	1
-0.2091	-0.7559	165.487	-1.442	0.447	Combination	COMB1	2	1
-1.0047	2.0138	-207.323	-0.246	0.614	Combination	COMB1	3	2
-1.8244	-3.1486	237.913	0.246	-0.614	Combination	COMB1	4	2
-7.0423	-1.9195	-116.365	-1.460	2.567	Combination	COMB1	5	3
-4.7929	-4.8091	146.955	1.460	-2.567	Combination	COMB1	6	3
-5.4344	0.8009	-92.392	-0.530	2.085	Combination	COMB1	7	4
-4.1777	-3.2445	122.982	0.530	-2.085	Combination	COMB1	8	4
-3.8250	-0.6654	-195.700	-1.053	1.563	Combination	COMB1	9	5
-3.3823	-4.1906	226.290	1.053	-1.563	Combination	COMB1	10	5
-6.5506	-3.1836	-163.911	-1.817	2.499	Combination	COMB1	11	6
-4.9714	-5.1931	194.501	1.817	-2.499	Combination	COMB1	12	6
-6.4147	-4.1147	-278.801	-2.166	2.452	Combination	COMB1	13	7
-4.8912	-5.8728	309.391	2.166	-2.452	Combination	COMB1	14	7
3.2013	-5.5684	-247.554	-2.712	-0.657	Combination	COMB1	15	8
-0.1716	-6.9323	278.144	2.712	0.657	Combination	COMB1	16	8
1.2596	-12.8510	-133.268	-5.110	-0.033	Combination	COMB1	17	9
-1.1095	-10.7056	163.858	5.110	0.033	Combination	COMB1	18	9
-7.3684	-2.8506	-115.641	-1.932	2.788	Combination	COMB1	19	10
-5.4834	-6.0537	146.231	1.932	-2.788	Combination	COMB1	20	10
1.9372	6.6227	-132.635	1.027	-0.224	Combination	COMB1	21	11
-0.9051	-1.8886	163.225	-1.027	0.224	Combination	COMB1	22	11
-7.4866	-0.6083	-200.563	-0.983	2.861	Combination	COMB1	23	12
-5.7028	-3.9239	231.152	0.983	-2.861	Combination	COMB1	24	12
-1.4687	-3.7887	-250.584	-2.060	0.915	Combination	COMB1	25	13
-2.7494	-5.7094	281.174	2.060	-0.915	Combination	COMB1	26	13
-1.8202	2.9313	-218.165	0.070	1.026	Combination	COMB1	27	14
-2.9119	-2.6095	248.755	-0.070	-1.026	Combination	COMB1	28	14
-1.4448	-4.8025	-178.603	-2.463	0.904	Combination	COMB1	29	15
-2.7229	-6.5539	209.193	2.463	-0.904	Combination	COMB1	30	15
-3.1800	0.4106	-136.672	-0.827	1.465	Combination	COMB1	31	16
-3.5721	-4.2212	167.262	0.827	-1.465	Combination	COMB1	32	16
-3.9831	-1.9619	-194.274	-1.643	1.724	Combination	COMB1	33	17
-3.9663	-5.6133	224.864	1.643	-1.724	Combination	COMB1	34	17
0.8958	-13.6245	-131.881	-5.523	0.195	Combination	COMB1	35	18
-1.7928	-11.8359	162.471	5.523	-0.195	Combination	COMB1	36	18
2.5636	-6.5256	-247.262	-3.188	-0.342	Combination	COMB1	37	19
-0.9885	-8.1689	277.852	3.188	0.342	Combination	COMB1	38	19
-7.4047	-5.6146	-266.267	-2.822	2.881	Combination	COMB1	39	20
-5.8748	-7.3949	296.857	2.822	-2.881	Combination	COMB1	40	20
-3.0454	-8.0027	-185.783	-3.545	1.473	Combination	COMB1	41	21
-3.7468	-8.3377	216.373	3.545	-1.473	Combination	COMB1	42	21
1.4263	6.2352	-130.564	0.772	0.060	Combination	COMB1	47	24
-1.7046	-2.6749	161.154	-0.772	-0.060	Combination	COMB1	48	24
-7.8923	-3.5712	-114.357	-2.312	3.076	Combination	COMB1	49	25
-6.2899	-7.0882	144.947	2.312	-3.076	Combination	COMB1	50	25
-8.9962	-8.6401	-181.099	-3.571	3.437	Combination	COMB1	51	26
-6.8498	-7.8243	211.688	3.571	-3.437	Combination	COMB1	52	26
-5.5347	-1.2633	-438.227	-1.282	2.305	Combination	COMB1	53	27
-5.0901	-4.6463	468.817	1.282	-2.305	Combination	COMB1	54	27
5.3066	-3.6808	-203.973	-2.150	-1.198	Combination	COMB1	55	28
0.2181	-6.2298	234.563	2.150	1.198	Combination	COMB1	56	28
-9.4999	-2.4371	-156.962	-1.563	3.634	Combination	COMB1	57	29
-7.2543	-4.7667	187.552	1.563	-3.634	Combination	COMB1	58	29
-4.5476	-2.8852	-193.718	-2.089	2.020	Combination	COMB1	59	30

Table: Element Joint Forces - Frames, Part 1 of 2

M2	M1	F3	F2	F1	CaseType	OutputCase	Joint	Frame
KN-m	KN-m	KN	KN	KN				
-4.7639	-6.7466	224.308	2.089	-2.020	Combination	COMB1	60	30
-3.8285	-0.3565	-135.396	-1.231	1.787	Combination	COMB1	61	31
-4.4094	-5.3166	165.986	1.231	-1.787	Combination	COMB1	62	31
-2.1620	-5.7315	-178.451	-2.929	1.247	Combination	COMB1	63	32
-3.5879	-7.7731	209.041	2.929	-1.247	Combination	COMB1	64	32
-2.6805	1.8956	-215.202	-0.434	1.415	Combination	COMB1	65	33
-3.8418	-3.8951	245.792	0.434	-1.415	Combination	COMB1	66	33
-2.0373	-4.3853	-244.008	-2.425	1.208	Combination	COMB1	67	34
-3.5325	-6.7943	274.598	2.425	-1.208	Combination	COMB1	68	34
-0.5813	2.5825	-306.777	-0.129	0.740	Combination	COMB1	69	35
-2.8298	-3.1770	337.367	0.129	-0.740	Combination	COMB1	70	35
19.6544	1.1168	104.153	2.726	10.770	Combination	COMB1	123	36
13.8389	-9.5956	-83.517	-2.726	-10.770	Combination	COMB1	315	36
1.6878	-7.1899	-248.596	-3.538	0.045	Combination	COMB1	73	37
-1.8969	-9.1205	279.185	3.538	-0.045	Combination	COMB1	74	37
-7.7493	-6.6280	-267.640	-3.297	3.096	Combination	COMB1	75	38
-6.5239	-8.5708	298.230	3.297	-3.096	Combination	COMB1	76	38
-3.4705	-9.0103	-186.614	-4.026	1.715	Combination	COMB1	77	39
-4.4351	-9.5481	217.204	4.026	-1.715	Combination	COMB1	78	39
0.5682	2.3138	-324.108	-0.080	0.437	Combination	COMB1	79	40
-2.5836	-2.6815	354.698	0.080	-0.437	Combination	COMB1	80	40
0.4881	16.4533	-388.975	4.551	0.458	Combination	COMB1	81	41
-2.5974	4.5262	419.565	-4.551	-0.458	Combination	COMB1	82	41
5.7494	-4.4541	-208.362	-2.555	-1.241	Combination	COMB1	83	42
-0.0293	-7.3233	238.952	2.555	1.241	Combination	COMB1	84	42
-7.0418	-1.1209	-448.195	-1.405	2.893	Combination	COMB1	85	43
-6.2957	-5.3541	478.784	1.405	-2.893	Combination	COMB1	86	43
-8.2564	-1.1433	-191.721	-1.290	3.305	Combination	COMB1	87	44
-6.9807	-4.8021	222.311	1.290	-3.305	Combination	COMB1	88	44
-5.7832	-12.0594	-265.938	-4.861	2.503	Combination	COMB1	89	45
-5.7540	-10.3494	296.528	4.861	-2.503	Combination	COMB1	90	45
-2.3227	-0.1257	-128.681	-1.280	1.394	Combination	COMB1	91	46
-4.1024	-5.7769	159.271	1.280	-1.394	Combination	COMB1	92	46
-5.5467	-5.8240	-203.453	-3.096	2.432	Combination	COMB1	93	47
-5.6646	-8.4476	234.043	3.096	-2.432	Combination	COMB1	94	47
0.0633	-4.9184	-259.934	-2.745	0.625	Combination	COMB1	95	48
-2.9447	-7.7342	290.524	2.745	-0.625	Combination	COMB1	96	48
-0.4913	1.9539	-315.969	-0.486	0.805	Combination	COMB1	97	49
-3.2192	-4.1948	346.559	0.486	-0.805	Combination	COMB1	98	49
-9.0824	-5.4780	-168.968	-2.734	3.592	Combination	COMB1	99	50
-7.4773	-7.1264	199.558	2.734	-3.592	Combination	COMB1	100	50
-3.9338	4.2967	-148.407	0.199	1.912	Combination	COMB1	101	51
-4.8823	-3.3804	178.997	-0.199	-1.912	Combination	COMB1	102	51
-1.7469	3.9127	-288.451	0.255	1.261	Combination	COMB1	103	52
-4.0642	-2.7355	319.041	-0.255	-1.261	Combination	COMB1	104	52
2.1364	18.0230	-397.054	4.862	4.283E-03	Combination	COMB1	105	53
-2.1561	4.3922	427.644	-4.862	-4.283E-03	Combination	COMB1	106	53
-8.7664	-5.4285	-353.658	-2.871	3.545	Combination	COMB1	107	54
-7.5764	-7.8068	384.248	2.871	-3.545	Combination	COMB1	108	54
-5.8918	-3.2738	-188.468	-2.137	2.621	Combination	COMB1	109	55
-6.1890	-6.5799	219.057	2.137	-2.621	Combination	COMB1	110	55
6.9863	9.6864	-348.737	1.877	-1.559	Combination	COMB1	111	56
0.1990	-1.0339	379.326	-1.877	1.559	Combination	COMB1	112	56
-8.1604	-0.0925	-476.480	-1.217	3.338	Combination	COMB1	113	57
-7.2255	-5.5198	507.070	1.217	-3.338	Combination	COMB1	114	57
1.1527	11.2764	-432.756	2.531	0.399	Combination	COMB1	115	58
-2.9943	0.3917	463.346	-2.531	-0.399	Combination	COMB1	116	58
-1.1519	1.8640	-303.436	-0.555	1.146	Combination	COMB1	117	59

Table: Element Joint Forces - Frames, Part 2 of 2

Table: Element Joint Forces - Frames, Part 2 of 2

FrameElem	M3 KN-m	OutputCase	Joint	Frame
1	0.1042	COMB1	1	1
1	-0.1042	COMB1	2	1
2	0.1033	COMB1	3	2
2	-0.1033	COMB1	4	2
3	0.1035	COMB1	5	3
3	-0.1035	COMB1	6	3
4	0.1114	COMB1	7	4
4	-0.1114	COMB1	8	4
5	0.1102	COMB1	9	5
5	-0.1102	COMB1	10	5
6	0.1098	COMB1	11	6
6	-0.1098	COMB1	12	6
7	0.1127	COMB1	13	7
7	-0.1127	COMB1	14	7
8	0.1191	COMB1	15	8
8	-0.1191	COMB1	16	8
9	0.1226	COMB1	17	9
9	-0.1226	COMB1	18	9
10	0.0930	COMB1	19	10
10	-0.0930	COMB1	20	10
11	0.0935	COMB1	21	11
11	-0.0935	COMB1	22	11
12	0.1146	COMB1	23	12
12	-0.1146	COMB1	24	12
13	0.1176	COMB1	25	13
13	-0.1176	COMB1	26	13
14	0.1185	COMB1	27	14
14	-0.1185	COMB1	28	14
15	0.1192	COMB1	29	15
15	-0.1192	COMB1	30	15
16	0.1116	COMB1	31	16
16	-0.1116	COMB1	32	16
17	0.1075	COMB1	33	17
17	-0.1075	COMB1	34	17
18	0.1136	COMB1	35	18
18	-0.1136	COMB1	36	18
19	0.1121	COMB1	37	19
19	-0.1121	COMB1	38	19
20	0.1085	COMB1	39	20
20	-0.1085	COMB1	40	20
21	0.1070	COMB1	41	21
21	-0.1070	COMB1	42	21
22	0.0791	COMB1	47	24
22	-0.0791	COMB1	48	24
23	0.0768	COMB1	49	25
23	-0.0768	COMB1	50	25
24	0.1159	COMB1	51	26
24	-0.1159	COMB1	52	26
25	0.1197	COMB1	53	27
25	-0.1197	COMB1	54	27
26	0.1141	COMB1	55	28
26	-0.1141	COMB1	56	28
27	0.0830	COMB1	57	29
27	-0.0830	COMB1	58	29
28	0.0889	COMB1	59	30
28	-0.0889	COMB1	60	30
29	0.0935	COMB1	61	31

Table: Element Joint Forces - Frames, Part 2 of 2

FrameElem	M3 KN-m	OutputCase	Joint	Frame
29	-0.0935	COMB1	62	31
30	0.1091	COMB1	63	32
30	-0.1091	COMB1	64	32
31	0.1090	COMB1	65	33
31	-0.1090	COMB1	66	33
32	0.1093	COMB1	67	34
32	-0.1093	COMB1	68	34
33	0.1197	COMB1	69	35
33	-0.1197	COMB1	70	35
497	-0.0096	COMB1	123	36
497	0.0096	COMB1	315	36
34	0.0937	COMB1	73	37
34	-0.0937	COMB1	74	37
35	0.0910	COMB1	75	38
35	-0.0910	COMB1	76	38
36	0.0891	COMB1	77	39
36	-0.0891	COMB1	78	39
37	0.1560	COMB1	79	40
37	-0.1560	COMB1	80	40
38	0.1123	COMB1	81	41
38	-0.1123	COMB1	82	41
39	0.0970	COMB1	83	42
39	-0.0970	COMB1	84	42
40	0.1021	COMB1	85	43
40	-0.1021	COMB1	86	43
41	0.1268	COMB1	87	44
41	-0.1268	COMB1	88	44
42	0.1155	COMB1	89	45
42	-0.1155	COMB1	90	45
43	0.0966	COMB1	91	46
43	-0.0966	COMB1	92	46
44	0.0910	COMB1	93	47
44	-0.0910	COMB1	94	47
45	0.0933	COMB1	95	48
45	-0.0933	COMB1	96	48
46	0.0995	COMB1	97	49
46	-0.0995	COMB1	98	49
47	0.0556	COMB1	99	50
47	-0.0556	COMB1	100	50
48	0.0917	COMB1	101	51
48	-0.0917	COMB1	102	51
49	0.1180	COMB1	103	52
49	-0.1180	COMB1	104	52
50	0.0630	COMB1	105	53
50	-0.0630	COMB1	106	53
51	0.0916	COMB1	107	54
51	-0.0916	COMB1	108	54
52	0.1052	COMB1	109	55
52	-0.1052	COMB1	110	55
53	0.0860	COMB1	111	56
53	-0.0860	COMB1	112	56
54	0.0880	COMB1	113	57
54	-0.0880	COMB1	114	57
55	0.0574	COMB1	115	58
55	-0.0574	COMB1	116	58
56	0.1064	COMB1	117	59
56	-0.1064	COMB1	118	59
57	0.1168	COMB1	119	60

Table: Element Stresses - Area Shells, Part 2 of 4

S12Bot	S22Bot	S11Bot	SVMTop	SAngleTop	SMinTop	OutputCase	Joint	AreaElem	Area
KN/m2	KN/m2	KN/m2	KN/m2	Degrees	KN/m2				
33.37	-157.43	-313.38	249.82	-37.602	220.56	COMB1	~2	1	23
89.49	-161.73	-205.63	238.80	-63.369	111.32	COMB1	~3	1	23
85.29	31.23	-15.76	154.46	-68.517	-117.61	COMB1	~4	1	23
45.82	-118.79	-301.49	237.21	-32.058	195.66	COMB1	~2	2	23
39.28	-643.65	-733.44	756.94	-50.594	721.50	COMB1	~5	2	23
110.43	-456.04	-396.16	535.16	-64.994	365.10	COMB1	~6	2	23
116.84	-170.48	-208.60	279.06	-60.519	98.05	COMB1	~3	2	23
82.14	-303.26	-633.16	620.72	-22.941	446.57	COMB1	~5	3	23
134.29	-1082.44	-996.55	1193.54	-64.535	966.25	COMB1	~7	3	23
179.36	-926.54	-645.63	973.77	-69.713	606.50	COMB1	~8	3	23
130.20	-525.54	-417.23	618.29	-66.127	383.42	COMB1	~6	3	23
166.35	-905.98	-941.71	1100.22	-56.203	881.03	COMB1	~7	4	23
218.81	-1617.93	-1280.98	1701.99	-69.576	1300.96	COMB1	~9	4	23
250.51	-1592.78	-831.33	1587.31	-76.345	861.03	COMB1	~10	4	23
194.86	-952.31	-650.03	1026.39	-70.427	620.74	COMB1	~8	4	23
254.92	-1582.96	-1266.31	1720.27	-67.595	1275.82	COMB1	~9	5	23
311.90	-2339.94	-1611.11	2382.12	-73.302	1712.85	COMB1	~11	5	23
331.36	-2380.55	-947.23	2302.20	-80.151	1065.17	COMB1	~12	5	23
272.34	-1526.22	-808.87	1538.66	-75.547	837.09	COMB1	~10	5	23
202.08	-4489.77	-1771.07	4262.66	-87.369	2192.41	COMB1	224	6	23
105.98	-2928.70	-801.60	2747.22	-88.882	1165.74	COMB1	~13	6	23
321.07	-2408.81	-966.93	2255.82	-80.544	1066.45	COMB1	~12	6	23
442.42	-2092.88	-1530.56	2261.80	-67.503	1588.06	COMB1	~11	6	23
85.11	-2976.60	-974.01	2766.89	-88.639	1316.15	COMB1	~13	7	23
41.25	-2428.04	-502.43	2262.08	-89.202	824.94	COMB1	~14	7	23
162.29	-2215.03	-539.24	2048.91	-85.341	712.94	COMB1	~15	7	23
218.92	-2415.19	-962.37	2251.46	-84.190	1158.14	COMB1	~12	7	23
101.87	-2493.48	-714.67	2283.46	-87.219	953.22	COMB1	~14	8	23
118.96	-2467.40	-481.88	2265.28	-86.573	705.99	COMB1	~16	8	23
136.01	-2183.01	-398.57	2011.21	-86.130	582.44	COMB1	~17	8	23
141.78	-2198.54	-520.92	2036.49	-86.407	731.94	COMB1	~15	8	23
140.10	-2501.03	-565.63	2279.27	-85.722	782.25	COMB1	~16	9	23
151.65	-2448.58	-460.98	2238.12	-85.251	669.46	COMB1	~18	9	23
155.05	-2249.07	-398.33	2060.42	-85.210	567.86	COMB1	~19	9	23
150.53	-2208.52	-466.31	2020.18	-85.346	644.23	COMB1	~17	9	23
166.58	-2454.69	-485.53	2239.27	-84.853	639.12	COMB1	~18	10	23
180.46	-2603.87	-627.70	2335.34	-84.380	773.12	COMB1	~20	10	23
168.01	-2300.27	-473.47	2078.74	-84.465	621.55	COMB1	~21	10	23
153.54	-2262.20	-436.11	2063.77	-85.026	592.62	COMB1	~19	10	23
198.73	-2587.74	-575.68	2337.00	-83.872	719.11	COMB1	~20	11	23
207.05	-2755.87	-720.72	2463.19	-83.556	860.25	COMB1	~22	11	23
187.60	-2388.66	-578.14	2138.93	-83.602	692.01	COMB1	~23	11	23
178.63	-2310.97	-510.54	2081.81	-84.024	628.97	COMB1	~21	11	23
194.95	-2727.01	-621.48	2451.63	-84.305	711.25	COMB1	~22	12	23
205.95	-2826.49	-947.34	2474.04	-83.337	1029.85	COMB1	~24	12	23
198.38	-2496.58	-707.77	2206.45	-83.272	802.49	COMB1	~25	12	23
188.46	-2401.02	-619.44	2141.13	-83.480	718.29	COMB1	~23	12	23
212.79	-2746.07	-683.48	2449.88	-83.728	767.77	COMB1	~24	13	23
232.51	-3050.60	-1312.32	2647.70	-81.824	1385.42	COMB1	~26	13	23
211.28	-2587.87	-899.07	2259.31	-82.415	968.01	COMB1	~27	13	23
188.77	-2524.13	-798.41	2211.63	-83.381	874.62	COMB1	~25	13	23
277.69	-2960.72	-1029.82	2601.62	-81.382	1082.19	COMB1	~26	14	23
270.97	-2959.95	-1265.27	2575.55	-80.351	1312.31	COMB1	~28	14	23
253.40	-2853.13	-1127.76	2482.20	-81.137	1170.51	COMB1	~29	14	23
244.83	-2619.64	-1016.24	2283.99	-80.807	1060.07	COMB1	~27	14	23
231.96	-2792.21	-631.41	2504.84	-83.494	687.22	COMB1	~28	15	23
141.25	-4120.13	-2846.76	3648.96	-82.821	2909.94	COMB1	225	15	23
-8.29	-2864.24	-1925.72	2507.75	89.867	1993.96	COMB1	~30	15	23

Table: Element Stresses - Area Shells, Part 2 of 4

S12Bot	S22Bot	S11Bot	SVMTop	SAngleTop	SMinTop	OutputCase	Joint	AreaElem	Area
KN/m2	KN/m2	KN/m2	KN/m2	Degrees	KN/m2				
127.58	-2906.59	-1256.91	2489.31	-85.141	1314.12	COMB1	~29	15	23
-214.98	-4866.67	-5490.22	5221.37	15.201	4755.84	COMB1	225	16	23
1572.31	-1771.11	1071.13	3638.52	-65.541	-1748.25	COMB1	~31	16	23
308.19	-3080.73	-2618.67	2923.86	-59.418	2500.12	COMB1	~32	16	23
536.89	-2218.02	-1339.57	2126.47	-62.502	1124.39	COMB1	~30	16	23
-400.34	-4759.07	-5282.43	5080.42	26.570	4505.49	COMB1	~31	17	23
1898.92	-1102.30	1509.97	3960.56	-61.919	-2502.37	COMB1	289	17	23
424.46	-2709.56	-2095.14	2548.28	-60.562	1901.91	COMB1	~33	17	23
860.30	-2183.73	-895.24	2380.17	-62.143	493.31	COMB1	~32	17	23
-140.41	-4325.74	-4336.28	4318.57	37.756	4164.01	COMB1	289	18	23
1746.49	-1117.34	1325.71	3658.25	-62.229	-2237.13	COMB1	~34	18	23
551.90	-2476.59	-1737.23	2370.49	-60.539	1456.23	COMB1	~35	18	23
886.17	-2039.62	-745.91	2314.96	-62.121	311.84	COMB1	~33	18	23
75.59	-3731.25	-3442.74	3568.90	-74.645	3422.25	COMB1	~34	19	23
1623.04	-1262.52	1128.11	3457.80	-63.048	-1957.64	COMB1	290	19	23
575.05	-2178.06	-1358.53	2110.71	-62.067	1065.95	COMB1	~36	19	23
933.91	-1879.72	-465.35	2299.53	-62.995	6.75	COMB1	~35	19	23
251.30	-3447.56	-2998.08	3236.31	-65.197	2868.39	COMB1	290	20	23
1444.43	-1098.42	1308.31	3230.50	-64.873	-2002.57	COMB1	~37	20	23
657.77	-1919.86	-1031.47	1973.12	-61.869	675.66	COMB1	~38	20	23
918.44	-1677.82	-300.98	2176.84	-63.184	-164.51	COMB1	~36	20	23
338.97	-2856.94	-2343.51	2657.92	-63.440	2148.53	COMB1	~37	21	23
1292.48	-1067.64	1284.96	3007.96	-66.271	-1883.52	COMB1	291	21	23
687.45	-1645.85	-726.50	1811.87	-62.214	342.23	COMB1	~39	21	23
905.71	-1516.90	-58.14	2122.80	-64.511	-392.72	COMB1	~38	21	23
502.25	-2395.76	-1818.01	2284.64	-60.168	1492.75	COMB1	291	22	23
1073.33	-1166.86	1251.07	2793.76	-69.414	-1692.41	COMB1	~40	22	23
733.88	-1346.44	-434.08	1693.40	-61.647	-2.58	COMB1	~41	22	23
860.71	-1359.56	130.96	2029.52	-65.927	-557.30	COMB1	~39	22	23
596.83	-2085.76	-1378.95	2063.76	-60.884	994.57	COMB1	~40	23	23
953.09	-1039.72	1227.65	2572.73	-70.337	-1624.54	COMB1	292	23	23
805.20	-1307.43	-232.52	1795.89	-62.846	-239.73	COMB1	~42	23	23
790.78	-1152.83	313.29	1885.48	-67.260	-707.92	COMB1	~41	23	23
593.89	-1757.63	-1138.34	1813.13	-59.558	729.57	COMB1	292	24	23
911.30	-962.74	1306.87	2540.16	-71.007	-1684.03	COMB1	~43	24	23
783.96	-1255.40	-128.13	1761.42	-64.080	-327.02	COMB1	~44	24	23
758.54	-1144.03	499.69	1943.11	-69.706	-858.69	COMB1	~42	24	23
543.26	-1695.03	-995.21	1708.79	-62.355	641.73	COMB1	~43	25	23
945.08	-872.76	1323.46	2527.92	-70.080	-1743.40	COMB1	~45	25	23
747.36	-1170.37	16.48	1707.37	-65.649	-438.81	COMB1	~46	25	23
736.82	-1095.84	561.45	1922.18	-70.390	-912.21	COMB1	~44	25	23
429.97	-1722.73	-768.73	1619.56	-69.970	531.02	COMB1	~45	26	23
1037.81	-710.70	1201.83	2446.44	-66.828	-1736.45	COMB1	~47	26	23
701.99	-1156.79	125.75	1699.75	-67.907	-500.33	COMB1	~48	26	23
742.20	-1032.67	580.54	1897.76	-70.053	-944.86	COMB1	~46	26	23
378.51	-1611.34	-409.62	1529.40	-75.106	222.65	COMB1	~47	27	23
987.13	-659.87	1026.80	2223.54	-65.911	-1554.98	COMB1	293	27	23
698.21	-970.97	348.38	1666.40	-68.481	-733.63	COMB1	~49	27	23
780.80	-925.56	558.77	1868.13	-68.184	-969.26	COMB1	~48	27	23
479.87	-1385.54	-269.33	1443.12	-70.612	-13.46	COMB1	293	28	23
984.08	-839.28	868.77	2225.49	-66.099	-1417.91	COMB1	~50	28	23
658.29	-781.07	290.60	1440.72	-66.883	-655.76	COMB1	~51	28	23

Table: Element Stresses - Area Shells, Part 3 of 4

Table: Element Stresses - Area Shells, Part 3 of 4

S23Avg	S13Avg	SVMBot	SAngleBot	SMinBot	SMaxBot	OutputCase	Joint	AreaElem	Area
KN/m2	KN/m2	KN/m2	Degrees	KN/m2	KN/m2				
23.94	17.22	137.73	76.540	-142.87	-10.93	COMB1	~1	1	23
24.33	15.54	277.48	78.416	-320.22	-150.59	COMB1	~2	1	23
31.09	15.21	243.33	51.890	-275.83	-91.54	COMB1	~3	1	23
30.46	16.94	153.42	52.701	-80.73	96.20	COMB1	~4	1	23
72.72	14.03	274.76	76.682	-312.34	-107.94	COMB1	~2	2	23
73.05	50.59	696.25	69.406	-748.20	-628.89	COMB1	~5	2	23
44.82	50.71	469.93	37.415	-540.52	-311.68	COMB1	~6	2	23
45.26	13.69	279.23	49.632	-307.93	-71.15	COMB1	~3	2	23
97.20	27.43	566.65	76.764	-652.48	-283.94	COMB1	~5	3	23
96.67	48.39	1067.79	36.133	-1180.48	-898.51	COMB1	~7	3	23
51.81	48.77	879.56	25.967	-1013.89	-558.28	COMB1	~8	3	23
52.27	28.05	530.91	33.708	-612.40	-330.37	COMB1	~6	3	23
87.59	40.01	968.23	48.066	-1091.15	-756.54	COMB1	~7	4	23
87.62	61.17	1526.34	26.203	-1725.61	-1173.30	COMB1	~9	4	23
77.48	60.50	1446.44	16.672	-1667.80	-756.31	COMB1	~10	4	23
76.81	39.95	907.92	26.101	-1047.77	-554.56	COMB1	~8	4	23
90.24	62.95	1516.49	29.078	-1724.72	-1124.55	COMB1	~9	5	23
90.45	89.41	2143.11	20.280	-2455.19	-1495.86	COMB1	~11	5	23
101.65	88.28	2153.77	12.407	-2453.45	-874.33	COMB1	~12	5	23
101.80	61.86	1404.14	18.605	-1617.89	-717.20	COMB1	~10	5	23
274.19	162.86	3932.62	4.228	-4504.70	-1756.13	COMB1	224	6	23
60.42	160.94	2627.91	2.845	-2933.97	-796.33	COMB1	~13	6	23
53.90	107.52	2171.96	12.003	-2477.07	-898.67	COMB1	~12	6	23
272.06	111.53	2026.49	28.782	-2335.92	-1287.52	COMB1	~11	6	23
68.03	82.16	2632.75	2.429	-2980.22	-970.40	COMB1	~13	7	23
20.67	84.14	2221.04	1.227	-2428.92	-501.55	COMB1	~14	7	23
26.21	72.14	2025.44	6.137	-2234.63	-519.64	COMB1	~15	7	23
69.14	70.94	2139.81	8.386	-2447.46	-930.10	COMB1	~12	7	23
40.49	38.99	2230.99	3.267	-2499.30	-708.86	COMB1	~14	8	23
60.72	37.52	2274.58	3.416	-2474.50	-474.78	COMB1	~16	8	23
58.42	33.42	2027.26	4.334	-2193.31	-388.26	COMB1	~17	8	23
38.13	36.53	2004.99	4.797	-2210.44	-509.02	COMB1	~15	8	23
63.35	17.57	2284.58	4.119	-2511.11	-555.54	COMB1	~16	9	23
50.43	16.24	2268.99	4.338	-2460.09	-449.48	COMB1	~18	9	23
49.23	12.70	2096.00	4.756	-2261.97	-385.43	COMB1	~19	9	23
62.53	14.49	2033.01	4.902	-2221.43	-453.40	COMB1	~17	9	23
46.42	-26.27	2269.94	4.801	-2468.68	-471.54	COMB1	~18	10	23
75.15	-26.26	2374.32	5.175	-2620.21	-611.36	COMB1	~20	10	23
75.33	-8.21	2123.91	5.211	-2315.60	-458.15	COMB1	~21	10	23
46.76	-8.88	2095.69	4.773	-2275.02	-423.30	COMB1	~19	10	23
69.14	-30.06	2378.36	5.587	-2607.18	-556.24	COMB1	~20	11	23
95.02	-30.15	2501.33	5.751	-2776.72	-699.86	COMB1	~22	11	23
94.99	-15.73	2182.78	5.854	-2407.89	-558.91	COMB1	~23	11	23
69.23	-16.23	2125.35	5.612	-2328.52	-492.99	COMB1	~21	11	23
83.17	-59.91	2498.41	5.245	-2744.91	-603.58	COMB1	~22	12	23
86.69	-60.23	2517.16	6.182	-2848.79	-925.03	COMB1	~24	12	23
86.53	-16.82	2254.97	6.253	-2518.31	-686.03	COMB1	~25	12	23
82.96	-17.84	2183.55	5.973	-2420.74	-599.72	COMB1	~23	12	23
60.27	-124.52	2503.39	5.829	-2767.79	-661.76	COMB1	~24	13	23
122.88	-123.74	2680.89	7.488	-3081.16	-1281.76	COMB1	~26	13	23
126.76	-23.92	2304.91	7.024	-2613.90	-873.04	COMB1	~27	13	23
62.02	-26.79	2258.38	6.170	-2544.53	-778.01	COMB1	~25	13	23
89.51	-55.05	2647.40	8.024	-2999.86	-990.68	COMB1	~26	14	23
26.23	-50.85	2614.84	8.867	-3002.23	-1223.00	COMB1	~28	14	23

Table: Element Stresses - Area Shells, Part 3 of 4

S23Avg	S13Avg	SVMBot	SAngleBot	SMinBot	SMaxBot	OutputCase	Joint	AreaElem	Area
KN/m2	KN/m2	KN/m2	Degrees	KN/m2	KN/m2				
22.73	-28.33	2527.29	8.185	-2889.57	-1091.31	COMB1	~29	14	23
89.21	-31.85	2326.57	8.491	-2656.19	-979.69	COMB1	~27	14	23
-78.66	-488.30	2567.79	6.059	-2816.84	-606.79	COMB1	~28	15	23
210.74	-496.22	3662.02	6.254	-4135.61	-2831.28	COMB1	225	15	23
260.70	-215.45	2529.18	-0.506	-2864.31	-1925.65	COMB1	~30	15	23
-47.49	-168.15	2534.48	4.396	-2916.40	-1247.11	COMB1	~29	15	23
1008.96	1198.99	5219.82	-72.706	-5557.16	-4799.74	COMB1	225	16	23
490.10	1710.08	3687.50	23.946	-2469.36	1769.38	COMB1	~31	16	23
-292.27	-239.91	2926.75	26.572	-3234.87	-2464.52	COMB1	~32	16	23
421.75	-472.27	2146.53	25.357	-2472.46	-1085.13	COMB1	~30	16	23
1184.02	1285.57	5088.63	-61.585	-5499.03	-4542.47	COMB1	~31	17	23
640.36	1692.09	3997.15	27.739	-2100.92	2508.59	COMB1	289	17	23
-267.09	-47.30	2568.06	27.052	-2926.32	-1878.38	COMB1	~33	17	23
262.65	-658.79	2415.69	26.586	-2614.28	-464.69	COMB1	~32	17	23
1042.03	1021.10	4337.84	-46.075	-4471.52	-4190.50	COMB1	289	18	23
497.55	1351.77	3692.95	27.515	-2027.09	2235.46	COMB1	~34	18	23
-259.60	-103.10	2400.59	28.092	-2771.18	-1442.64	COMB1	~35	18	23
277.48	-430.78	2356.05	26.936	-2489.91	-295.62	COMB1	~33	18	23
826.89	824.87	3598.07	13.827	-3749.86	-3424.14	COMB1	~34	19	23
438.63	1079.64	3491.94	26.815	-2082.90	1948.49	COMB1	290	19	23
-173.96	-133.13	2150.03	27.264	-2474.40	-1062.19	COMB1	~36	19	23
215.09	-369.44	2343.44	26.433	-2343.98	-1.08	COMB1	~35	19	23
765.30	767.60	3275.29	24.096	-3559.96	-2885.68	COMB1	290	20	23
316.60	1006.51	3257.97	25.101	-1775.07	1984.96	COMB1	~37	20	23
-168.35	-72.55	2016.81	27.985	-2269.37	-681.95	COMB1	~38	20	23
255.30	-321.34	2220.65	26.573	-2137.21	158.40	COMB1	~36	20	23
565.54	640.10	2702.51	26.431	-3025.43	-2175.02	COMB1	~37	21	23
227.79	870.27	3028.92	23.847	-1638.97	1856.28	COMB1	291	21	23
-122.42	-74.66	1859.75	28.115	-2013.15	-359.21	COMB1	~39	21	23
193.65	-260.92	2162.67	25.578	-1950.41	375.37	COMB1	~38	21	23
390.15	516.52	2333.69	30.047	-2686.29	-1527.48	COMB1	291	22	23
124.11	754.43	2800.47	20.799	-1574.57	1658.78	COMB1	~40	22	23
-37.12	-49.81	1741.44	29.067	-1754.37	-26.16	COMB1	~41	22	23
187.01	-225.51	2065.45	24.556	-1752.83	524.22	COMB1	~39	22	23
316.66	432.18	2108.16	29.684	-2425.96	-1038.74	COMB1	~40	23	23
24.32	749.50	2567.04	20.027	-1387.12	1575.06	COMB1	292	23	23
-68.03	-159.96	1845.12	28.139	-1738.07	198.12	COMB1	~42	23	23
253.22	-88.73	1914.25	23.585	-1498.07	658.52	COMB1	~41	23	23
351.26	507.43	1855.38	31.232	-2117.75	-778.22	COMB1	292	24	23
-37.12	942.54	2526.73	19.383	-1283.36	1627.48	COMB1	~43	24	23
-133.89	-179.93	1809.81	27.143	-1657.31	273.78	COMB1	~44	24	23
290.49	-199.75	1963.75	21.353	-1440.58	796.24	COMB1	~42	24	23
549.56	666.99	1749.87	28.607	-1991.31	-698.93	COMB1	~43	25	23
36.47	1166.67	2519.50	20.358	-1223.45	1674.15	COMB1	~45	25	23
-223.23	-231.18	1750.70	25.775	-1531.25	377.36	COMB1	~46	25	23
440.28	-260.27	1939.08	20.821	-1376.05	841.65	COMB1	~44	25	23
1056.37	923.56	1670.04	21.016	-1887.91	-603.55	COMB1	~45	26	23
270.54	1170.45	2456.58	23.671	-1165.64	1656.77	COMB1	~47	26	23
-502.59	-286.71	1725.63	23.794	-1466.32	435.27	COMB1	~48	26	23
652.68	-303.00	1911.94	21.309	-1322.18	870.05	COMB1	~46	26	23
1375.90	1178.24	1591.85	16.104	-1720.63	-300.33	COMB1	~47	27	23
620.36	1102.09	2256.23	24.746	-1114.85	1481.79	COMB1	293	27	23
-87.23	92.40	1692.61	23.313	-1271.85	649.26	COMB1	~49	27	23
91.16	-627.92	1874.83	23.227	-1260.64	893.85	COMB1	~48	27	23
914.63	1133.70	1519.85	20.345	-1563.48	-91.39	COMB1	293	28	23
865.32	937.52	2256.88	24.524	-1288.24	1317.73	COMB1	~50	28	23
64.52	-817.07	1490.48	25.428	-1094.04	603.56	COMB1	~51	28	23
489.66	205.09	1830.59	23.108	-1263.02	836.36	COMB1	~49	28	23

Table: Element Stresses - Area Shells, Part 3 of 4

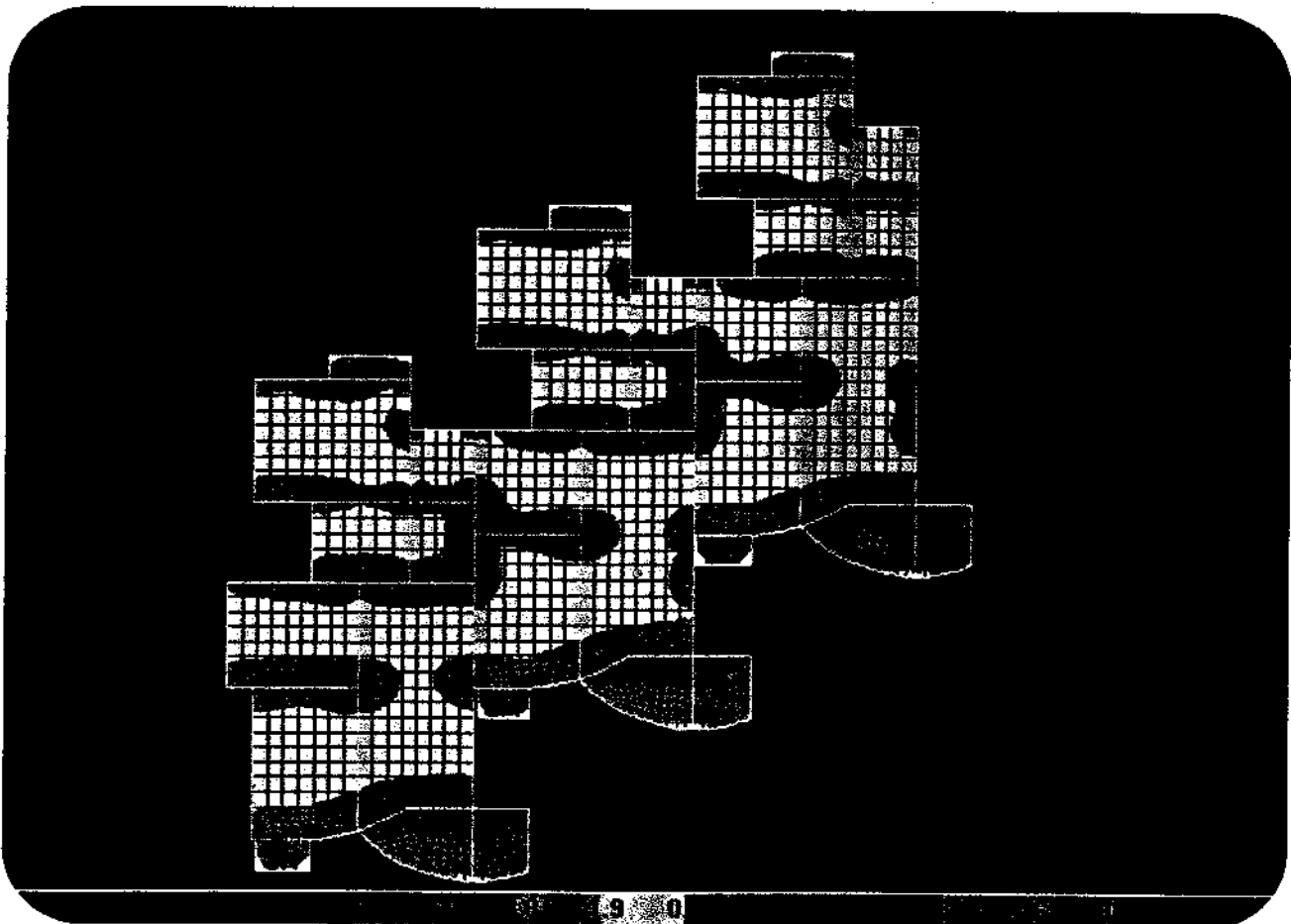
S23Avg	S13Avg	SVMBot	SAngleBot	SMinBot	SMaxBot	OutputCase	Joint	AreaElem	Area
KN/m2	KN/m2	KN/m2	Degrees	KN/m2	KN/m2				
1327.03	647.77	1625.85	21.359	-1558.74	126.80	COMB1	~50	29	23
240.50	988.96	1789.64	25.124	-870.17	1188.16	COMB1	316	29	23
-370.89	354.67	1872.21	26.678	-1305.86	839.12	COMB1	~52	29	23
666.52	-115.79	1575.92	22.949	-1047.22	765.20	COMB1	~51	29	23
217.82	135.35	1750.53	25.450	-1143.36	871.90	COMB1	~52	30	23
187.46	20.83	1663.73	26.030	-1003.16	917.31	COMB1	~53	30	23
319.28	-151.99	1612.93	22.070	-1091.84	760.79	COMB1	~49	30	23
582.03	-236.84	1814.94	25.832	-1411.58	635.70	COMB1	~51	30	23
302.81	-97.03	1878.94	27.266	-1321.94	828.92	COMB1	~53	31	23
379.91	-52.61	1560.52	26.200	-731.47	1060.42	COMB1	~54	31	23
187.29	90.33	1657.10	25.791	-1211.72	676.63	COMB1	~55	31	23
77.47	91.03	1709.92	24.442	-1256.94	690.20	COMB1	~49	31	23
324.56	-101.49	2003.69	28.765	-1428.10	862.39	COMB1	~54	32	23
391.37	-97.67	1408.13	27.700	-503.68	1087.02	COMB1	~56	32	23
181.57	45.42	1616.89	28.196	-1190.11	650.76	COMB1	~57	32	23
20.57	112.77	1649.59	26.268	-1187.92	695.53	COMB1	~55	32	23
270.61	-98.46	2030.40	29.994	-1469.44	847.39	COMB1	~56	33	23
382.03	-62.43	1299.36	30.505	-291.43	1128.90	COMB1	~58	33	23
99.13	87.00	1522.78	30.913	-1072.10	670.93	COMB1	~59	33	23
17.78	45.30	1578.05	29.175	-1110.29	696.13	COMB1	~57	33	23
248.38	-70.54	2053.72	32.149	-1450.03	900.06	COMB1	~58	34	23
333.55	-46.68	1266.57	34.665	-43.74	1244.14	COMB1	341	34	23
148.62	66.64	1460.49	34.209	-972.01	707.48	COMB1	~60	34	23
12.39	61.87	1507.44	31.881	-993.88	740.60	COMB1	~59	34	23
106.65	-55.74	2002.83	35.998	-1368.35	930.45	COMB1	341	35	23
156.44	-64.35	1091.36	30.657	-209.40	971.49	COMB1	~61	35	23
46.30	38.65	1390.97	36.109	-895.36	707.11	COMB1	~62	35	23
-8.21	43.56	1417.26	35.484	-832.40	804.03	COMB1	~60	35	23
79.40	-152.65	1663.43	39.870	-1298.12	576.97	COMB1	~61	36	23
163.80	-69.98	1046.02	30.683	52.30	1071.19	COMB1	340	36	23
71.67	91.91	1251.42	39.721	-841.95	596.08	COMB1	~63	36	23
-44.05	6.29	1256.78	35.515	-662.34	787.08	COMB1	~62	36	23
49.78	-166.30	1499.42	45.966	-1156.69	537.37	COMB1	340	37	23
91.63	-104.18	1023.32	26.182	-64.56	989.51	COMB1	~64	37	23
28.05	61.19	1117.65	42.107	-747.13	537.75	COMB1	~65	37	23
-41.93	49.83	1067.56	36.315	-451.60	767.55	COMB1	~63	37	23
30.21	-173.73	1233.38	46.271	-1033.25	332.21	COMB1	~64	38	23
97.92	-103.21	888.34	26.541	118.61	941.69	COMB1	339	38	23
35.77	74.49	952.56	43.472	-631.21	464.49	COMB1	~66	38	23
-33.46	9.43	951.71	37.821	-442.01	650.33	COMB1	~65	38	23
7.82	-143.30	1138.09	51.548	-940.90	324.09	COMB1	339	39	23
50.96	-120.80	889.81	26.700	-117.35	825.32	COMB1	~67	39	23
5.47	51.65	881.95	43.294	-552.77	464.33	COMB1	~68	39	23
-37.47	23.74	811.25	38.644	-287.82	628.10	COMB1	~66	39	23
-8.49	-130.76	960.38	47.299	-827.14	226.14	COMB1	~67	40	23
46.87	-105.15	804.36	25.673	-82.26	760.06	COMB1	338	40	23
13.84	29.68	778.58	40.975	-445.73	453.29	COMB1	~69	40	23
-42.07	5.09	801.85	38.677	-330.25	583.98	COMB1	~68	40	23
-5.02	-104.49	801.02	45.358	-650.03	244.84	COMB1	338	41	23
36.98	-82.90	728.54	24.832	-39.42	708.03	COMB1	~70	41	23
13.66	20.98	668.04	39.523	-331.45	437.50	COMB1	~71	41	23
-31.06	5.74	708.20	36.733	-262.97	539.10	COMB1	~69	41	23
-2.28	-85.80	654.93	43.992	-490.03	253.83	COMB1	~70	42	23
24.41	-68.34	640.46	22.688	-5.44	637.72	COMB1	337	42	23
5.55	21.75	563.51	41.107	-243.02	401.22	COMB1	~72	42	23
-23.74	13.91	616.67	35.110	-177.62	508.36	COMB1	~71	42	23
-15.49	-70.64	510.51	44.614	-386.42	192.31	COMB1	337	43	23
17.36	-61.29	560.41	27.512	10.21	565.44	COMB1	~73	43	23

Table: Element Stresses - Area Shells, Part 3 of 4

S23Avg	S13Avg	SVMBot	SAngleBot	SMinBot	SMaxBot	OutputCase	Joint	AreaElem	Area
KN/m2	KN/m2	KN/m2	Degrees	KN/m2	KN/m2				
7.02	16.78	497.67	41.352	-182.06	381.00	COMB1	~74	43	23
-27.50	9.64	534.46	36.435	-100.38	477.15	COMB1	~72	43	23
-3.74	-49.26	418.12	44.022	-230.80	251.85	COMB1	~73	44	23
10.26	-41.95	469.83	25.664	44.35	490.43	COMB1	336	44	23
5.21	15.92	382.37	44.544	-98.03	323.80	COMB1	~75	44	23
-10.24	12.61	453.76	37.248	-70.03	414.68	COMB1	~74	44	23
-10.44	-49.31	283.76	45.116	-150.07	177.21	COMB1	336	45	23
17.28	-45.77	381.34	28.509	123.60	427.81	COMB1	~76	45	23
14.85	17.42	275.04	46.001	-63.53	237.72	COMB1	~77	45	23
-12.99	14.44	355.42	39.228	4.65	357.72	COMB1	~75	45	23
15.67	-31.94	308.61	13.217	121.10	350.79	COMB1	335	46	23
13.86	21.09	97.81	58.643	-1.94	96.83	COMB1	~78	46	23
4.99	19.55	216.32	39.011	43.27	234.69	COMB1	~77	46	23
7.06	-34.54	221.20	49.686	-29.15	205.18	COMB1	~76	46	23
21.29	19.94	105.74	65.046	12.42	111.40	COMB1	~78	47	23
22.13	18.24	138.91	74.794	-146.24	-16.06	COMB1	~1	47	23
20.83	17.52	164.08	51.327	-90.66	98.74	COMB1	~4	47	23
20.02	19.31	221.11	40.154	52.33	242.59	COMB1	~77	47	23
71.08	22.41	2068.26	4.795	-2260.20	-462.02	COMB1	~17	48	23
59.94	17.47	2086.11	4.786	-2249.08	-377.47	COMB1	~19	48	23
57.10	8.54	1865.00	5.735	-2006.60	-326.25	COMB1	~79	48	23
69.96	14.23	1825.88	6.376	-1974.18	-346.16	COMB1	~80	48	23
62.11	10.01	1837.42	6.395	-1988.41	-353.28	COMB1	~80	49	23
62.98	11.46	1850.72	5.838	-1991.93	-325.65	COMB1	~79	49	23
64.04	11.32	1556.19	7.718	-1662.22	-239.93	COMB1	~81	49	23
63.45	9.93	1597.14	7.752	-1722.30	-290.08	COMB1	~82	49	23
60.73	9.35	1599.54	8.812	-1724.54	-289.55	COMB1	~82	50	23
62.72	12.51	1543.68	8.363	-1648.67	-237.51	COMB1	~81	50	23
64.91	6.73	1212.35	11.890	-1280.11	-149.37	COMB1	~83	50	23
63.32	3.74	1312.05	10.995	-1394.31	-183.92	COMB1	~84	50	23
50.79	1.47	1258.23	12.928	-1329.10	-156.34	COMB1	~84	51	23
57.72	2.80	1214.33	12.403	-1281.04	-146.78	COMB1	~83	51	23
60.34	13.92	890.26	17.340	-896.23	-12.06	COMB1	~85	51	23
53.74	11.75	914.23	17.894	-958.60	-96.37	COMB1	~86	51	23
68.40	36.51	908.27	20.104	-1011.27	-264.90	COMB1	~87	52	23
76.02	37.72	928.72	28.461	-1071.95	-509.40	COMB1	~8	52	23
78.22	54.94	1464.04	18.040	-1688.84	-778.97	COMB1	~10	52	23
71.19	53.04	1462.72	13.726	-1607.94	-356.23	COMB1	~88	52	23
68.17	13.06	1464.25	13.704	-1619.56	-389.30	COMB1	~88	53	23
53.93	18.07	1259.91	13.330	-1365.66	-248.54	COMB1	~84	53	23
61.31	22.66	918.39	18.651	-966.73	-105.85	COMB1	~86	53	23
73.19	17.07	902.96	20.186	-1004.00	-258.44	COMB1	~87	53	23
62.01	-15.64	1840.61	6.672	-1995.65	-364.69	COMB1	~80	54	23
62.44	51.84	1600.06	7.671	-1709.98	-249.04	COMB1	~82	54	23
25.12	55.02	1628.46	9.213	-1800.66	-431.19	COMB1	~89	54	23
26.76	-32.56	1771.64	7.590	-1891.82	-271.75	COMB1	~90	54	23
72.82	41.15	1460.77	14.008	-1598.53	-333.03	COMB1	~88	55	23
71.68	28.76	2021.07	7.509	-2238.03	-546.19	COMB1	~15	55	23
74.88	21.68	1809.57	7.736	-1980.27	-412.69	COMB1	~90	55	23
77.51	53.73	1591.61	10.084	-1725.90	-316.00	COMB1	~89	55	23
67.69	37.30	1605.80	9.196	-1714.13	-244.75	COMB1	~82	56	23
53.46	18.74	1297.85	10.967	-1400.46	-238.22	COMB1	~84	56	23
39.61	22.82	1548.60	11.730	-1704.68	-384.69	COMB1	~88	56	23
44.31	60.12	1585.35	8.512	-1748.92	-406.17	COMB1	~89	56	23
36.49	24.02	1953.28	6.202	-2136.34	-441.78	COMB1	~15	57	23
59.48	32.14	2060.91	3.855	-2233.03	-404.10	COMB1	~17	57	23
69.29	22.54	1841.72	6.772	-1991.88	-350.75	COMB1	~80	57	23
26.47	1.36	1882.21	5.949	-2034.29	-354.61	COMB1	~90	57	23

Table: Element Stresses - Area Shells, Part 3 of 4

S23Avg	S13Avg	SVMBot	SAngleBot	SMinBot	SMaxBot	OutputCase	Joint	AreaElem	Area
KN/m2	KN/m2	KN/m2	Degrees	KN/m2	KN/m2				
68.32	55.96	1463.92	12.724	-1617.75	-384.35	COMB1	~88	58	23
96.49	55.15	1429.03	20.486	-1647.32	-740.61	COMB1	~10	58	23
96.26	59.19	2134.24	10.885	-2433.86	-881.92	COMB1	~12	58	23
67.28	59.94	2012.55	8.293	-2208.29	-477.29	COMB1	~15	58	23
61.98	-5.23	2084.03	4.994	-2261.10	-417.29	COMB1	~19	59	23
68.00	-4.72	2116.32	4.962	-2308.10	-458.82	COMB1	~21	59	23
68.24	-7.90	1847.65	6.014	-2009.09	-382.88	COMB1	~91	59	23
62.35	-8.63	1863.58	5.729	-2005.65	-327.63	COMB1	~79	59	23
72.34	-11.44	2119.28	5.373	-2322.74	-494.26	COMB1	~21	60	23
79.23	-10.22	2179.54	5.454	-2405.97	-563.55	COMB1	~23	60	23
80.08	-20.16	1876.87	6.690	-2072.57	-487.66	COMB1	~92	60	23
73.28	-21.00	1850.52	6.041	-2003.11	-357.28	COMB1	~91	60	23
65.35	-6.94	1850.34	5.873	-1990.79	-323.61	COMB1	~79	61	23
70.34	-5.44	1841.98	5.961	-2003.25	-382.65	COMB1	~91	61	23
71.13	-5.57	1530.96	8.146	-1652.00	-281.02	COMB1	~93	61	23
66.33	-7.01	1557.70	7.542	-1656.08	-220.18	COMB1	~81	61	23



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8 38 2

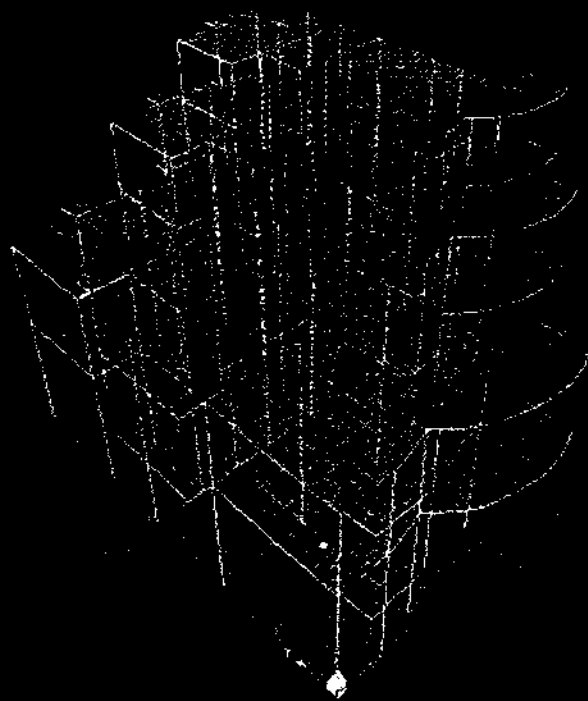
Table: Joint Displacements

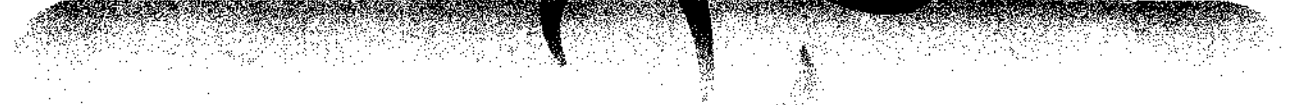
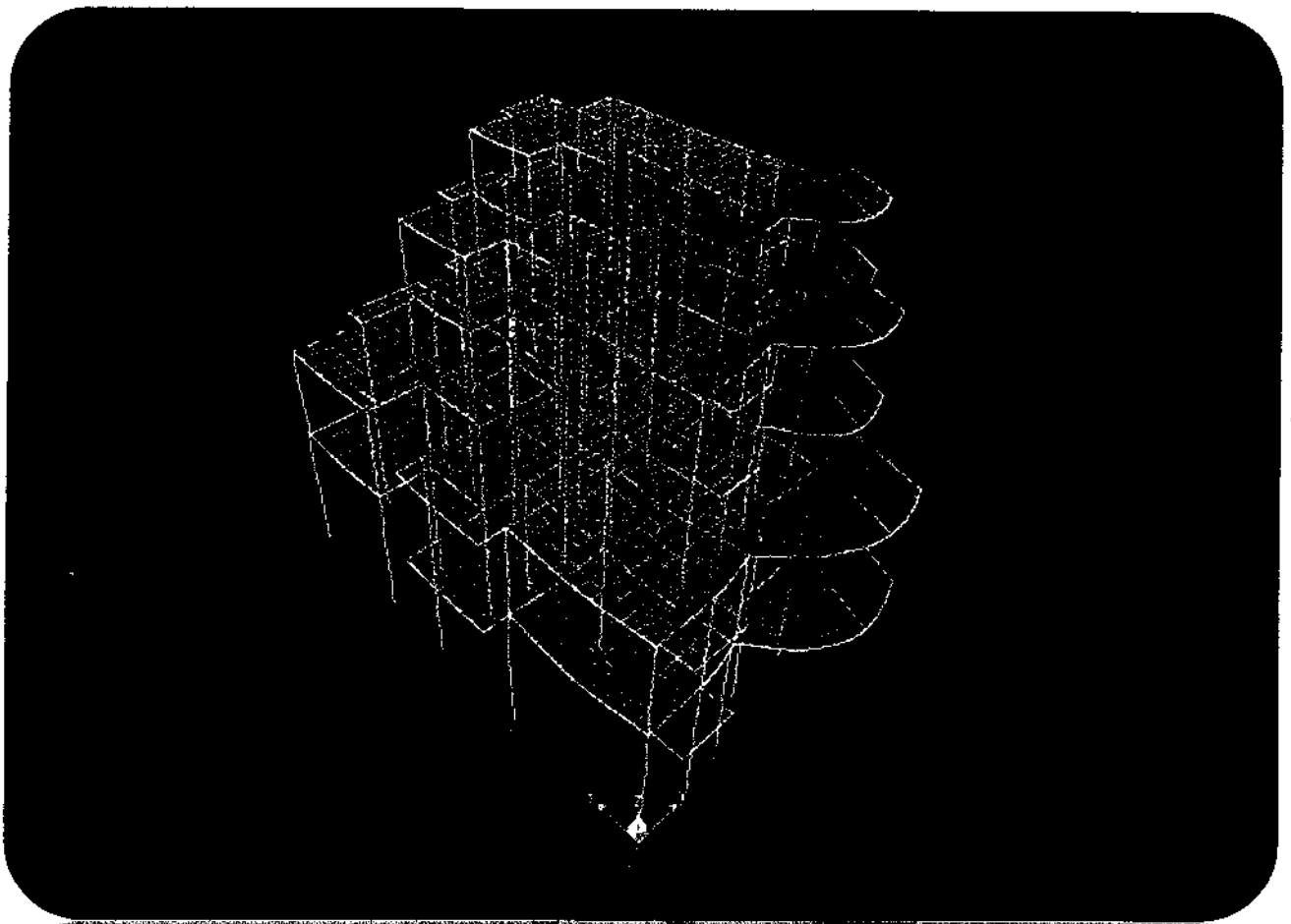
Joint	OutputCase	CaseType	U1	U2	U3	R1	R2
m	R3 m	m	Radians	Radians	Radians		
COMB1 Combination 8.355E-07		0.000011	-0.000035	-0.000015	0.000021	6.460E-06	1
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	2
COMB1 Combination 8.281E-07		0.000011	-0.000033	-0.000022	0.000013	2.136E-06	3
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	4
COMB1 Combination 8.300E-07		0.000011	-0.000031	-0.000013	7.528E-06	-5.860E-06	5
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	6
COMB1 Combination 8.929E-07		0.000012	-0.000029	-0.000011	0.000011	-3.274E-06	7
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	8
COMB1 Combination 8.833E-07		0.000012	-0.000031	-0.000021	9.184E-06	-1.154E-06	9
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	10
COMB1 Combination 8.803E-07		0.000014	-0.000029	-0.000018	5.235E-06	-4.114E-06	11
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	12
COMB1 Combination 9.037E-07		0.000014	-0.000031	-0.000029	4.581E-06	-3.969E-06	13
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	14
COMB1 Combination 9.550E-07		0.000014	-0.000034	-0.000026	3.553E-06	8.787E-06	15
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	16
COMB1 Combination 9.827E-07		0.000014	-0.000036	-0.000015	-5.589E-06	6.172E-06	17
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	18
COMB1 Combination 7.456E-07		0.000015	-0.000038	-0.000013	8.345E-06	-4.911E-06	19
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	20
COMB1 Combination 7.497E-07		0.000015	-0.000041	-0.000015	0.000022	7.405E-06	21
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	22
COMB1 Combination 9.187E-07		0.000017	-0.000029	-0.000022	8.638E-06	-4.647E-06	23
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	24
COMB1 Combination 9.426E-07		0.000016	-0.000031	-0.000027	5.004E-06	3.337E-06	25
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	26
COMB1 Combination 9.501E-07		0.000016	-0.000033	-0.000023	0.000014	2.844E-06	27
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	28
COMB1 Combination 9.552E-07		0.000016	-0.000034	-0.000019	4.563E-06	3.330E-06	29
COMB1 Combination 0.000000		0.000000	0.000000	0.000000	0.000000	0.000000	30

COMB1 Combination 8.944E-07	0.000016	-0.000036	-0.000015	0.000012	1.021E-06	21
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22
COMB1 Combination 8.615E-07	0.000016	-0.000038	-0.000021	9.513E-06	-4.393E-08	22
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23
COMB1 Combination 9.106E-07	0.000018	-0.000042	-0.000015	-4.660E-06	7.005E-06	20
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	24
COMB1 Combination 8.983E-07	0.000018	-0.000040	-0.000026	4.281E-06	9.254E-06	25
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	26
COMB1 Combination 8.696E-07	0.000018	-0.000038	-0.000028	4.638E-06	-3.986E-06	29
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	30
COMB1 Combination 8.579E-07	0.000018	-0.000036	-0.000020	8.729E-07	1.827E-06	31
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	32
COMB1 Combination 1.655E-06	0.000014	-0.000058	-0.000016	7.228E-06	-8.533E-06	32
COMB1 Combination 1.694E-06	0.000014	-0.000063	-0.000028	0.000019	2.435E-06	33
COMB1 Combination 1.629E-06	0.000014	-0.000066	-0.000018	0.000017	6.658E-06	34
COMB1 Combination 1.204E-06	0.000021	-0.000065	-0.000018	-5.363E-06	7.198E-06	35
COMB1 Combination 6.344E-07	0.000019	-0.000046	-0.000015	0.000023	8.157E-06	36
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	38
COMB1 Combination 6.157E-07	0.000020	-0.000043	-0.000013	9.163E-06	-4.175E-06	39
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	40
COMB1 Combination 9.294E-07	0.000020	-0.000029	-0.000020	-2.125E-06	-5.592E-06	41
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	42
COMB1 Combination 9.597E-07	0.000019	-0.000033	-0.000045	8.814E-06	-1.158E-06	42
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	43
COMB1 Combination 9.145E-07	0.000019	-0.000036	-0.000022	6.641E-06	0.000013	44
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	45
COMB1 Combination 6.657E-07	0.000021	-0.000029	-0.000017	6.069E-06	-5.850E-06	46
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	48
COMB1 Combination 7.130E-07	0.000021	-0.000043	-0.000021	0.000010	5.636E-07	49
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	50
COMB1 Combination 7.495E-07	0.000021	-0.000042	-0.000015	0.000013	1.513E-06	51
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	52
COMB1 Combination 8.748E-07	0.000020	-0.000040	-0.000019	5.319E-06	3.715E-06	52
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	53

COMB1 Combination 8.738E-07	0.000020	-0.000039	-0.000023	0.000015	3.026E-06	10
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11
COMB1 Combination 8.761E-07	0.000021	-0.000038	-0.000026	6.276E-06	3.895E-06	12
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13
COMB1 Combination 9.595E-07	0.000021	-0.000036	-0.000032	0.000015	5.858E-06	14
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15
COMB1 Combination 7.995E-07	0.000022	-0.000047	-0.000015	-3.638E-06	7.874E-06	16
COMB1 Combination 1.166E-06	0.000023	-0.000033	-0.000035	-0.000046	-5.072E-06	17
COMB1 Combination 7.513E-07	0.000022	-0.000045	-0.000026	5.030E-06	9.339E-06	18
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19
COMB1 Combination 7.294E-07	0.000022	-0.000043	-0.000028	5.061E-06	-3.193E-06	20
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21
COMB1 Combination 7.143E-07	0.000022	-0.000042	-0.000020	1.401E-06	2.513E-06	22
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23
COMB1 Combination 1.251E-06	0.000023	-0.000031	-0.000034	0.000013	8.211E-06	24
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	25
COMB1 Combination 9.002E-07	0.000023	-0.000028	-0.000040	0.000031	8.039E-06	26
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	27
COMB1 Combination 7.777E-07	0.000023	-0.000042	-0.000022	7.475E-06	0.000015	28
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	29
COMB1 Combination 8.185E-07	0.000023	-0.000039	-0.000046	0.000011	-1.944E-06	30
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	31
COMB1 Combination 1.017E-06	0.000024	-0.000034	-0.000021	9.532E-06	-3.323E-06	32
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	33
COMB1 Combination 9.258E-07	0.000024	-0.000036	-0.000028	-4.455E-06	-7.606E-08	34
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	35
COMB1 Combination 7.748E-07	0.000024	-0.000046	-0.000014	0.000015	4.637E-06	36
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	37
COMB1 Combination 7.298E-07	0.000024	-0.000045	-0.000022	6.835E-06	3.072E-07	38
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	39
COMB1 Combination 7.481E-07	0.000024	-0.000043	-0.000028	7.336E-06	7.837E-06	40
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	41
COMB1 Combination 7.978E-07	0.000024	-0.000042	-0.000033	0.000016	7.107E-06	42
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	43

COMB1 Combination 4.455E-07	0.000025	-0.000036	-0.000018	4.295E-06	-4.182E-06	99
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100
COMB1 Combination 7.354E-07	0.000024	-0.000044	-0.000016	0.000020	2.471E-06	101
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	102
COMB1 Combination 9.461E-07	0.000026	-0.000037	-0.000030	0.000017	6.037E-06	103
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	104
COMB1 Combination 5.050E-07	0.000026	-0.000035	-0.000041	0.000036	0.000011	105
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	106
COMB1 Combination 7.341E-07	0.000027	-0.000042	-0.000037	6.196E-06	-3.100E-06	107
COMB1 Combination 0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	108
COMB1 Combination	0.000027	-0.000040	-0.000020	8.614E-06	7.744E-07	109





المناقشة والاستنتاج :

من خلال عملي على هذا البرنامج لاحظت سهولة في ادخال البيانات، حيث يقوم برسم جميع اشكال العتبات سواء كانت مستقيمة او مقوسة (Curve)، سهولة في تعريف القطاعات (Column, Beam, Slab)

ولاحظت ان البرنامج يقوم بتصميم العتبات بتسليح اقل (Min. Reinforcement) لكون البرنامج اقتصادي

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