

الجامعة المصرية

الكلية الهندسية

قسم هندسة البناء والانشاءات

قسم الهندسة الإنشائية

مشروع تحليل وتصميم بناية باستخدام برنامج

STAAD PRO V8i

و برنامج المخططات الإنشائية بواسطة برنامج

AutoCAD

مستخرج السنوي من قسم هندسة البناء والانشاءات

كجزء من متطلبات نيل شهادة البكالوريوس

اعداد الطالب

ياسر وسام عبد الجليل

بإشراف

أ.م.ع. عبد الكريم

٢٠١١ م

٢٠١١

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

((وقال الذين اوتوا العلم ويليكم ثواب الله خير لمن

امن وعمل صالحا ولا يلقاها الا الصابرون))

صدق الله العظيم

شكر وتقدير

أتقدم بشكري وتقديري وامتناني الى استاذي الفاضل

الدكتور علاء كمال عبد الكريم

لما قدمه لي من جهد وتوجيه

وارشده لي بكـ اخلاص لا أقدم بحشي هذا

والي اضعه بين يده ثمرة ضيعة لجهوده الكريمة

واتقدم بشكري وتقديري الى كل الاساتذة الذين ساهموا في وصولنا الى هذه
المرحلة

مع خالص امتناني الى كل من ساهم في مساعدتي تقديم هذا البحث

والله ولي التوفيق

الإهداء

الى من كان دعاءها دليلى في ظلمتي
الى التي ذرقت الدموع من اجلي
الى ينبوع الحنان و القلب الطيب الوفي
الى نبض قلبي امي.....

الى الذين علموني كيف امسك القلم و زهدوا بعملهم لاجلي
الى من ابصرني بدروب الحياة و اثار امامي معالم الطريق
الى من وقف الى جانبي ومنحني من علمة و فضلة و توجيهه
الى اساتذتي مع فائق حبي و تقديرى.....

الفصل الأول

الفهرست

الأداة القرائية

الأهداء

الفصل الأول

١-١ انواع الابنية ١

٢-١ عناصر البناء الهيكلي ٢

٣-١ تصدع المباني ١١

الفصل الثاني

١-٢ برنامج STAAD pro ١٩

٢-٢ مصفوفة الصلابة ٢٤

الفصل الثالث

١-٣ وصف البنية ٢٨

٢-٣ ابعاد المقاطع الانشائية ٢٩

٣-٣ التحميل loading ٣٠

٤-٣ طريقة الادخال ٣٢

الفصل الرابع

نتائج التحليل الهندسي ٣٨

الفصل الخامس

المخططات الانشائية ٣٩

الخلاصة ٤٠

١-١ انواع الابنية

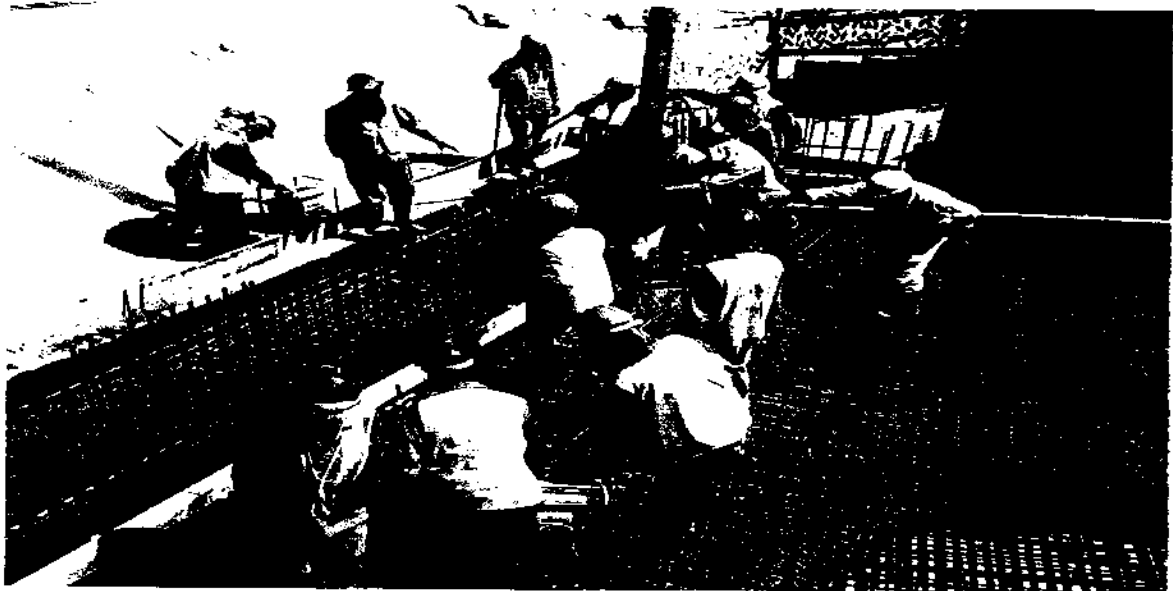
تقسم الابنية الى انواع وفق ما يلي

١-١-١ حسب طريقة التنفيذ

انجاز مرتفعي

يتم تنفيذ كافة فقرات الاعمال تقريبا في موقع العمل ويحتاج هذا الاسلوب في البناء الى ايدي عاملة كثيرة و متعددة الاصناف ، ويستوجب تهيئة و تصنيف المواد بصورة كلية او جزئية.

ان مجال تصرف المهندس المصمم في هذا النوع من الابنية واسع الحرية في اختيار الاشكال و المواد المناسبة ، من سلبيات هذا النوع بالتنفيذ تكون نسبة تلف المواد الاولية عالية وسرعة انجازه بطيئة مقارنة مع بقية انواع التنفيذ.



صب جالز

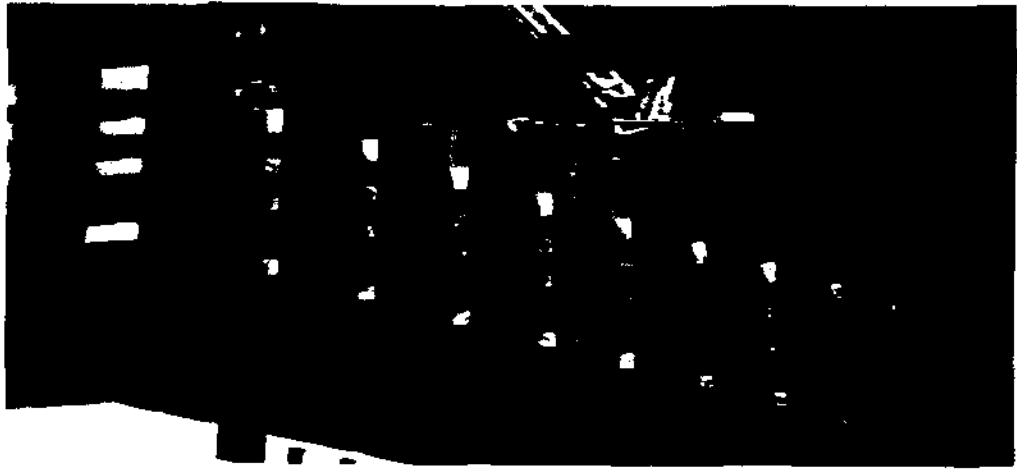
ينفذ هذا النوع باستخدام وحدات انشائية جاهزة مصنوعة في معامل متخصصة تكون خارج الموقع في معظم الحالات وتركب هذه الوحدات في موقع العمل بموجب اساليب وتفصيل هندسية معينة.

توجد انواع متعددة من البناء الجاهز بنسب مختلفة من التصنيع خارج موقع العمل و تختلف اساليب تصنيع البناء حسب المواد المستعملة فقد يكون البناء خرسانيا ، معدنيا ،بلاستيكيا او مركبا من عدة مواد مختلفة .



ان المعادن تتحمل اجهادات الشد والربط بدرجة عالية مما يجعل مساحة المقطع المطلوب اصغر مقارنة مع المواد الاخرى و بهذا يقلل من الاحمال النازلة على الاساس ويوفر من المساحات التي تشغلها الاعمدة بفضاء راسي اكبر لهذا فان المنشآت المعدنية اصبحت تستخدم في الابنية المتعددة الطوابق و الابنية ذات الفضاءات الواسعة جدا مثل ابنية المصانع والمخازن والمعارض وغيرها و تحتاج الهياكل المعدنية الى وقاية مستمرة من الحريق وكذلك تآثر بالظروف الجوية.

ان وجوب التزام المصمم بالمقاطع القياسية المنتجة والمتوفرة يحد كثيرا من تصرف الهندسي في التصميم وفي الوقت الحاضر تستورد كافة المقاطع المعدنية المستعملة في البناء لذا يكون هذا النوع من البناء ذو كلف عالية.



الهياكل الخرسانية المسلحة تكون اما مصبوبة موقعا او مسبقة الصب وتتميز الهيكل الخرسانية المسلحة بانه جميع موادها مصنعة محليا ماعدا حديد التسليح . و تعطي الهياكل الخرسانية للمصمم حرية التصرف في انتاج الانماط البنائية و الاشكال المرغوب بها و تتميز بقاومتها للحريق وكذلك بدوامها العالي و بثقل وزنها ويستغرق زمن انشاءها زمنا طويلا بالمقارنة مع الهياكل المعدنية و تحتاج الى سيطرة نوعية في الانتاج والتنفيذ و تكون هذه الهياكل دائمية لا يمكن رفعها او نصبها في مكان اخر.

تنفذ الجدران في الابنية الهيكلية بعد اكمال الهيكل ويمكن رفع الجدران من دون تاثير على سلامة المنشأ .



البناء غير الهيكلية

تنقل احمال الارضيات في هذا النوع من البناء الى الاسس بواسطة جدران حاملة للاتقال لايمكن رفعها بعد البناء بخلاف البناء الهيكلية و يتبع هذا الاسلوب في الابنية الاعتيادية ذات الطوابق القليلة لانه تعدد الطوابق يعني زيادة سمك الجدران الامر الذي يؤدي الى نقصان المساحات الصافية للطوابق وتسلط احمال كبيرة على الاساس ويجب ان تبني الجدران الحاملة قبل بناء السقوف و الارضيات.

البناء المشترك

في هذا النوع هناك اعمدة واعتاب خرسانية او معدنية تعمل كهيكل في جزء من البناء وايضا جدران حاملة في بعض الاجزاء الاخرى ويتبع هذا الاسلوب لتنفيذ متطلبات معمارية و انشائية لاسباب اقتصادية ايضا ومن الضروري توفير التفاصيل الانشائية و اعداد التصاميم بشكل ملائم لتجنب الهبوط التفاضلي للاسس اكثر من الحد المسموح به .

٢-١ عناصر البناء الهيكلي

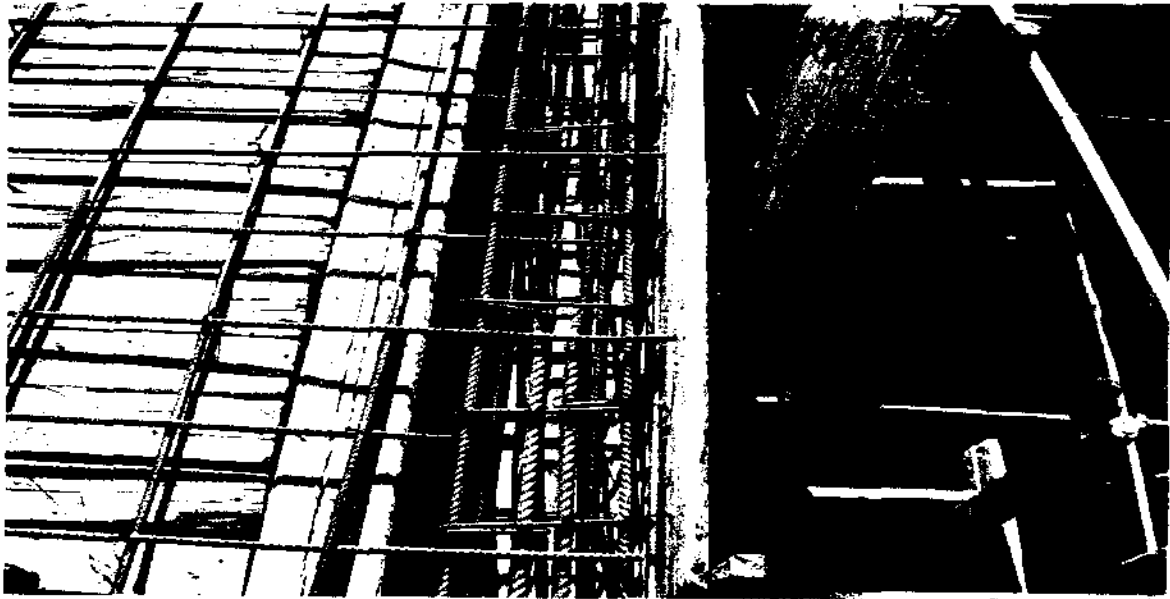
يتكون البناء الهيكلي الخرساني من ثلاثة عناصر رئيسية والتي يتكون من مجموعها الهيكل العام للابنية المختلفة سواء كانت صناعية ،سكنية ،تعليمية ام صحية ذات طابق واحد او متعددة الطوابق مع استعمال المواد المختلفة في انشائها كالحديد والخشب والخرسانة المسلحة وسنقتصر على بيان عمل وتفاصيل البناء باستعمال الخرسانة المسلحة المصبوبة موقعا.

ان النظام الهيكلي في الانشاء يتميز بميزات كثيرة لا تتوفر في غيره من الانظمة البنائية الاخرى كنظام الجدران المحملة للاتقال مثلا حيث يعطي مرونة كبيرة في تقسيم الفضاءات الداخلية وحسبما تتطلبها التصاميم المعدة لها كما ان بالامكان تغير حجوم هذه الفضاءات لمرات كثيرة اذا تطلب الامر اعادة تصميم القواطع الداخلية لانها عناصر غير انشائية بل اجزاء لقسيم الفضاءات الداخلية ولا تتحمل اي نوع من الاتقال سوى نقل نفسها فقط اما الاتقال الانشائية فيتحملها الهيكل العام للابنية باختلاف انواعها من اتقال ثابتة او متحركة.



ان هذه المرونة لا تتوفر في غيره من الانظمة الانشائية الاخرى كالبناء باستعمال الجدران الحاملة للاتقال كنظام انشائي في تشييد الابنية حيث لا يمكن رفع او تغيير

ان ارتفاع الروافد يجب ان لا يقل عن النسبة (٢٠/١) من المسافة الفاصل بين الاعمدة و في حالة عداد التصاميم الاولى لاي مشروع من قبل المهندس فان ارتفاعها يقدر بنسبة (١٠/١) من مسافة الفضاء الفاصل بين الاعمدة كتقدير اولي لها في حين يتراوح سمك هذه الروافد من (٣-١/١) من ارتفاعها وبصورة عامة فان هذه النسب هي تقديرات اولية لارتفاع و سمك الروافد الخرسانية ولكنها يجب ان يتم تصميمها حسب الاثقال المسلطة عليها.

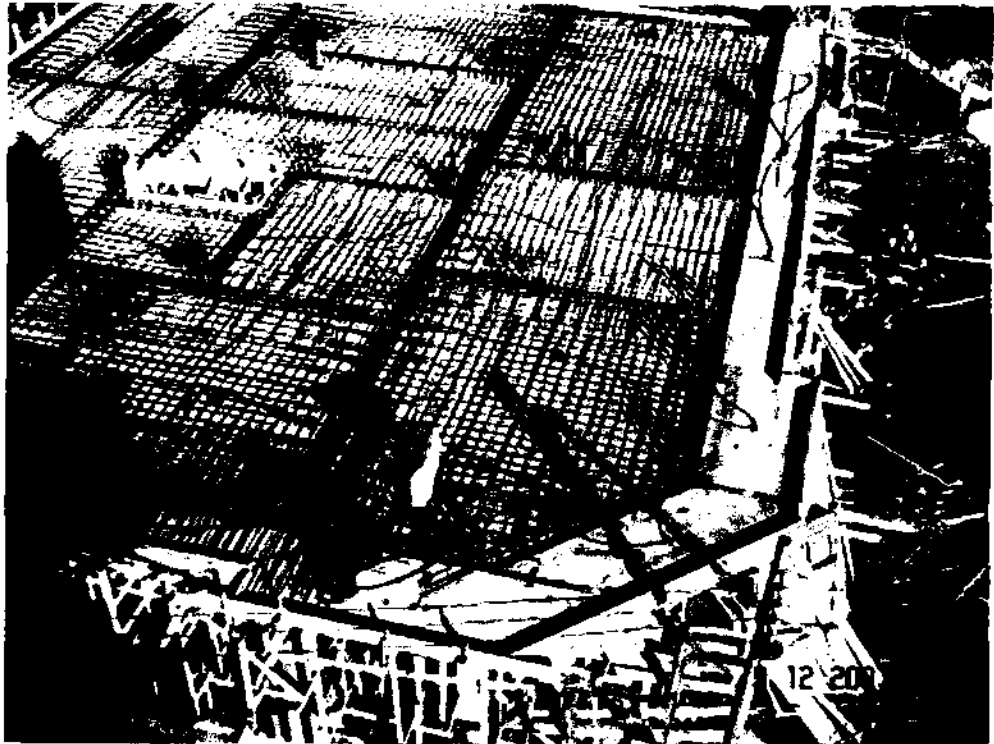


ان هنالك انواع مختلفة من الروافد المصبوبة موقعيا منها الروافد الاعتيادية والتي يكون موقعها اسفل الصبة الخرسانية للسقف اما النوع الثاني هي الروافد الراسية وهي التي يكون موقعها اعلى الصبة الخرسانية للسقف و تستعمل في الفضاءات الكبيرة ذات الطابق الواحد ذلك لعدم امكانية استعمال السقف كارضيات للطوابق العليا لوجود هذه الروافد ام النوع الاخر فهي الروابط المخفية وهي التي يتم تصميمها لتكون جزء من الصبة الخرسانية للسقف .

الارضيات و السقف Floors & Roof slabs

هي الاجزاء الافقية بالنسبة للابنية المختلفة حيث تجلس هذه الاجزاء فوق الروافد التي تربط الاعمدة مع بعضها لتقسم الابنية بواسطتها الى طوابق متعددة حيث يتم عملها من الخرسانة المسلحة و التي يكون تسليحها باتجاه واحد عندما تكون الصبة الخرائية تستند على الروافد من الجانبين او تكون مسلحة باتجاهين متعاكسين عندما تكون من الصبة الخرسانية مستندة على الروافد الاربعة التي تحيط بالفضاء.

ان هذه الارضيات و السقوف تقوم بنقل و تحميل جميع الاثقال و القوى المسلطة عليها و المتكونة من الاثقال الناتجة من وزن الارضيات والسقوف نفسها والاثقال الثابتة من مواد الانهاء و الاثاث الثابت ليتم نقلها الى الروافد و منها الى الاعمدة التي تقوم بنقلها الى الاساس ومنها الى التربة.



تجعلها تتحمل كل العيوب التي بها دون أن تشكل خطراً كبيراً على ساكنيها إلا في حالات الهزات الأرضية والكوارث الطبيعية.



المباني غير الخرسانية

يندر وجود مبان متوسطة العمر أو حديثة العمر غير خرسانية في المشرق العربي ، بينما قد تتوفر في المغرب العربي مبان حديثة ومتوسطة العمر تعتمد على جدران حاملة من الحجارة أما الأساسات والأسقف فهي من الخرسانة المسلحة ، كذلك قد يوجد في النادر بعض المباني التي تقام على جدران حاملة من الطوب بأنواعه المختلفة وبقيّة الهيكل من الخرسانة المسلحة .

أما النوع الآخر من المباني الحديثة غير الخرسانية فهو البناء من الفولاذ الصلب وقد نجد عدداً لا بأس به من هذه المباني في بعض عواصم الدول العربية والمدن الهامة بها وسوف لن نتطرق إليه المباني الخرسانية.

معظم المباني الخرسانية في العالم العربي الصغيرة منها والكبيرة لها النظام الإنشائي نفسه وهو عبارة عن هيكل من الأعمدة والحواسز والبلاطات التي تستند في الغالب على رقاب للأعمدة وجسور أرضية تنتهي إلى الأساسات المنفردة أو المستمرة أو

الحصائر وتستخدم الأوتاد في بعض الأبنية التي تتطلب تربتها مثل هذا النوع من الأساسات أنواع التصدعات وأسبابها في العالم العربي يفتقر العالم العربي على المستوى القطري والإقليمي والعربي على السواء إلى قاعدة للبيانات في المجالات المختلفة تحتوي على التجارب والأبحاث والخبرات التي توفر للباحث المعلومات الضرورية التي يحتاجها في هذا البحث أو ذاك وتساعد على التنسيق وتفاذي الإزواجية.

لذلك فمن الصعب جداً على المرء أن يعمم تجارب مدينة أو منطقة على قطر ويصعب كذلك تعميم تجارب بلد على عدة بلدان وستبقى هذه المشكلة حتى توجد مثل هذه القاعدة العامة للمعلومات التي يمكن الاستعانة بها على المستوى القطري والإقليمي والعربي ولم يكن لي من حيلة في الوصول إلى بعض التعميم حول موضوع التصدعات وأسبابها في العالم العربي إلا من خلال الاستعانة بمجلد البحوث الخاص بندوة تصدعات المباني في العالم العربي.



Figure 15. RC frame building with masonry infills in Algeria (after the 2003 Boumerdes earthquake). (a) masonry infill walls fail in both directions; (b) Masonry infill wall failure during diagonal cracking due to compression/strut action (photos: S. Brari)

تصدعات المباني في العالم العربي

تأتي في المرتبة الأولى سوء التنفيذ يلي ذلك التصدعات التي تحدث بفعل العوامل الجوية والظروف البيئية المحيطة مثل تصدعات الإنكماش والحرارة والتشققات الذاتية والتي تحدث في الخرسانة في عمرها الأول وهي الأخرى تعد تنفيذية في غالبيتها ، ومن هذا يمكن القول أن أكثر من ٥٠ % من التشققات تحدث بسبب سوء التنفيذ و النقاط التالية تبين بعض أسبابها

أسباب تتعلق بسوء التنفيذ

- ١- استعمال مواد أولية رديئة ولا تطابق المواصفات واستعمال خرسانة فقيرة وضعيفة ومقاومتها أقل بكثير من المطلوب في مواصفات المشروع.
- ٢- تقليل كمية التسليح وتقليل عرض القطاعات وسمكها.
- ٣- عدم مراعاة الظروف المناخية والبيئية المؤثرة وعدم أخذ الاحتياطات لفروق درجات الحرارة بين الخرسانة والجو الخارجي وخاصةً عند صب كميات ضخمة من الخرسانة.
- ٤- إهمال الدعم الجيد للشدات وعدم مراعاة أصول الصناعة والمواصفات في كيفية تثبيتها وخاصةً عند إنشاء الأتربة ، وفي بعض الحالات إزالة الشدات قبل حصول الخرسانة على المقاومة المطلوبة.
- ٥- إضافة أحمال جديدة فوق البلاطات أو الجسور أو الأعمدة دون مراعاة لما تتطلبه من حلول إنشائية صحيحة.
- ٦- إهمال التصريف الصحيح لمياه الأمطار وسوء تنفيذ الميول والصرف الصحي وعدم العزل الجيد للأنابيب.
- ٧- إهمال أنظمة ضبط الجودة ومراقبتها في المصنع والموقع.

٨- عدم اختيار جهاز الإشراف الجيد والمقاول الكفاء القادرين على استدراك الأخطاء وحل مشكلات التنفيذ.

٩- سوء اختيار أماكن الفواصل وتنفيذ بعضها وإهمال الآخر.

١٠- زيادة تحميل الأعضاء الخرسانية في عمرها الأول عما تتحمله مقاومتها كخزين مواد الإنشاء ومعدات التشييد.

١١- قطع قضبان التسليح وإيجاد فتحات في الخرسانة لم تؤخذ في التصميم الإنشائي.

١٢- فقدان الاهتمام والعناية بنقل ورفع وتركيب وتثبيت الوحدات مسبقة الصنع.

وفي المرتبة الثانية تأتي التصدعات التي تنشأ بسبب مشكلة في ميكانيكا التربة وهندسة الأساسات وكثير منها يتعلق بارتفاع المياه الجوفية ، وتبين النقاط التالية بعض الأسباب التي تؤدي إلى تصدعات في مجال ميكانيكا التربة وهندسة الأساسات.

أسباب تتعلق بميكانيكا التربة وهندسة الأساسات

١- تربة انتفاخية

٢- تربة انهيارية

٣- دراسات ناقصة وغير متكاملة عن أحوال التربة أو تخمين خاطئ لتحملها ، وإهمال تقارير خبراء التربة

٤- عدم تجانس التربة في المواقع

٥- هبوط التربة مع الزمن

٦- هبوط التربة تحت تأثير التأسيس لمباني مجاورة

٧- ارتفاع منسوب المياه الجوفية أو تأثير الأمطار والمجاري والزراعة والتسربات

٨- ردميات غير مناسبة

٩- تغير خواص التربة بتغير نسبة الرطوبة وارتفاع المياه الجوفية

- ١٠- زيادة الأحمال على الأساسات
- ١١- نسبة أملاح أو كلوريدات وكبريتات عالية
- ١٢- إهمال عزل القواعد والمنشآت التحتية بالشكل المناسب

أما النوع الذي يأتي في المرتبة الثالثة فهو صدأ التسليح والذي يتركز عادةً في المدن الساحلية والقريبة من البحار والأنهار ، ويبين الجدول التالي أهم الأسباب المؤدية إلى صدأ التسليح ومنه نرى أن جزءاً مهماً منها يرجع إلى سوء التنفيذ أو قصور التصميم فيما يخص الخرسانة والغطاء الخرساني.

أسباب تتعلق بصدأ حديد التسليح

- ١- توفر الكلور بكميات كبيرة قريباً من الأسطح الخرسانية.
- ٢- إهمال استعمال العوازل المختلفة التي تمنع أو تحد من تسرب الكلوريدات والرطوبة والهواء إلى داخل الخرسانة.
- ٣- زيادة نسبة الكلوريدات في الهواء أو الوسط من حول الخرسانة.
- ٤- تخزين المواد الكيميائية التي تعمل على صدأ التسليح.
- ٥- إهمال وقصور في تصميم وتنفيذ الغطاء الخرساني المطلوب
- ٦- ضعف الخرسانة
- ٧- زيادة نسبة الماء/الاسمنت.
- ٨- إهمال احتياطات الجو الحار والظروف البيئية الأخرى وأثر الحرارة على تعجيل التفاعلات الكهروكيميائية.
- ٩- رشوحات وتسربات التمديدات الصحية وغيرها
- ١٠- مياه الأمطار والمياه الجوفية ومياه الري والزراعة وغيرها
- ١١- المد والجزر
- ١٢- احتواء الحصى وماء الخلطة على نسبة عالية من الكلوريدات
- ١٣- انخفاض نسبة الاسمنت عن الحد الأدنى لها.

- ١٤- تطبيق المواصفات الأجنبية دون النظر إلى الظروف البيئية المختلفة
- ١٥- إهمال ضبط الجودة ومراقبتها بالنسبة للخرسانة وموادها.
- ١٦- ترك العناية بالمعالجة للأسطح الخرسانية المختلفة مما يساعد على وجود الانكماش والتشققات الحرارية التي تساعد على تسرب الأملاح والرطوبة والهواء إلى داخل الخرسانة.



وفي المرتبتين الأخيرتين قصور التصميم والكوارث الطبيعية ، وتبين النقاط التالية بعض الأخطاء في التصميم التي تؤدي إلى تصدعات في المباني.

أسباب تتعلق بأخطاء التصميم

- ١- عدم شمول المخططات والمواصفات للتفاصيل الضرورية واللازمة لحسن التنفيذ
- ٢- الاعتماد على مواصفات عالمية أو أجنبية قد لا تتناسب مع ظروف البلد وكفاءة العمال وطريقة التنفيذ
- ٣- اختيار مخططات نموذجية للعمائر أو للبيوت السكنية وتنفيذها في مناطق مختلفة دون مراعاة ظروف كل موقع
- ٤- اختيار مواد غير مناسبة أو صعوبة التنفيذ مع توفر المواد التي تعطي إمكانات أكبر وكذلك استخدام المواد في غير موضعها كاستخدام التسليح عالي المقاومة مع خرسانة ضعيفة جداً

- ٥- إغفال حساب بعض القوى الأفقية التي تنشأ من أشكال المباني
- ٦- إهمال توفير التسليح اللازم لمقاومة الانكماش والإجهادات الحرارية
- ٧- عدم تصميم الغطاء الخرساني بما يتناسب وظروف المنشأ والبيئة المحيطة
- ٨- عدم اختيار الاستشاري أو المهندس الكفاء للقيام بعملية التصميم
- ٩- النقص في مقاسات العناصر الإنشائية وتسليحها لمقاومة الأحمال والعزوم والقص .

لاستكمال الموضوع من جوانبه كافةً نورد النقاط التالية الذي يبين بعض أسباب التصدعات التي ترجع إلى سوء الاستعمال وإهمال الصيانة.

أسباب تتعلق بسوء استعمال المباني

- ١- زيادة الطوابق في المباني أو دور السكن القديمة
- ٢- تغطية الفرق في اختلاف المناسيب بكميات من الرمل لها أوزان كبيرة
- ٣- زيادة الأحمال نتيجة لأعمال الترميم كزيادة سمك البلاطة والطبقة العازلة لتفادي تسرب المياه والتخزين السيء لمواد الترميم فوق المبنى
- ٤- تغيير الغرض الذي أنشأ من أجله المبنى مثل أن يتحول مبنى سكني إلى مدرسة
- ٥- فقدان الصيانة الدورية والوقائية والعلاجية
- ٦- الصيانة والإصلاحات الخاطئة
- ٧- الصيانة المتأخرة بعد فوات الأوان واستفحال الأضرار

الفصل الثالث الحسن الثالث

• الاحمال الميتة (dead load)

• الاحمال الحية (live load)

٧- يقوم البرنامج بتحليل اجزاء وعناصر المنشا حسب طريقة التحليل الانشائي المستخدم

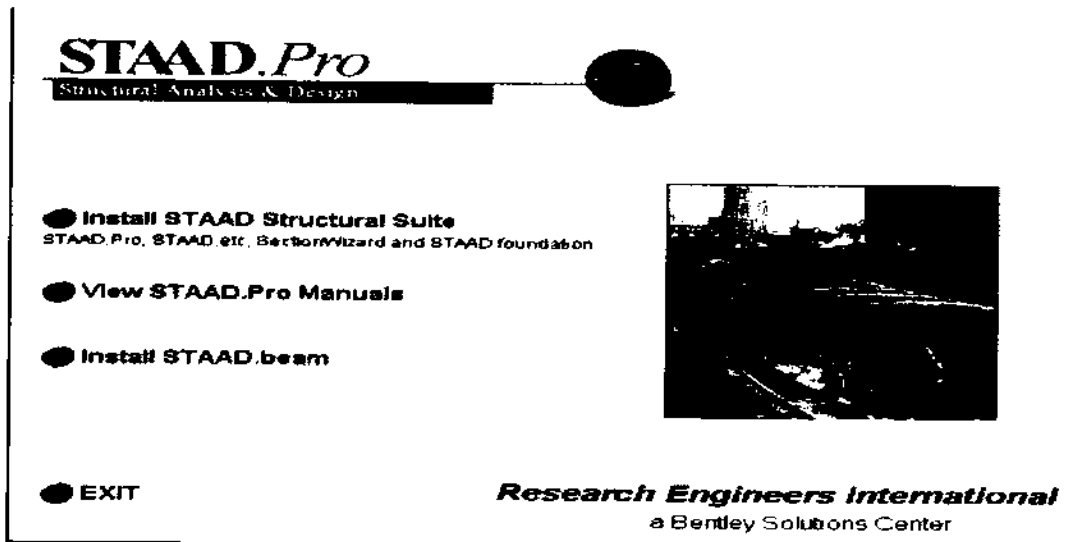
٨- يتم التصميم بالاعتماد على مواصفة عالمية معينة والتي جهز بها البرنامج مثل .ACI CODE

مميزات Staad pro

١- يحتوي البرنامج على عدد من نماذج المنشآت الجاهزة بقالبها العام مع امكانية تعديل كافة المتغيرات للحصول على النموذج باقل جهد ممكن.

٢- يتضمن البرنامج طرق فعالة و ادوات متنوعة لتمثيل المنشآت المعقدة بطريقة ثلاثية الابعاد من خلال واجهة البنائية.

٣- يتميز البرنامج بامكانية القوة في عرض النتائج عدديا و بيانيا كما يتضمن البرنامج برنامجا جزئيا في لعرض التقارير و يتميز البرنامج بامكانيات متقدمة لانشاء التقارير مخصصة و احترافية للمشروع .

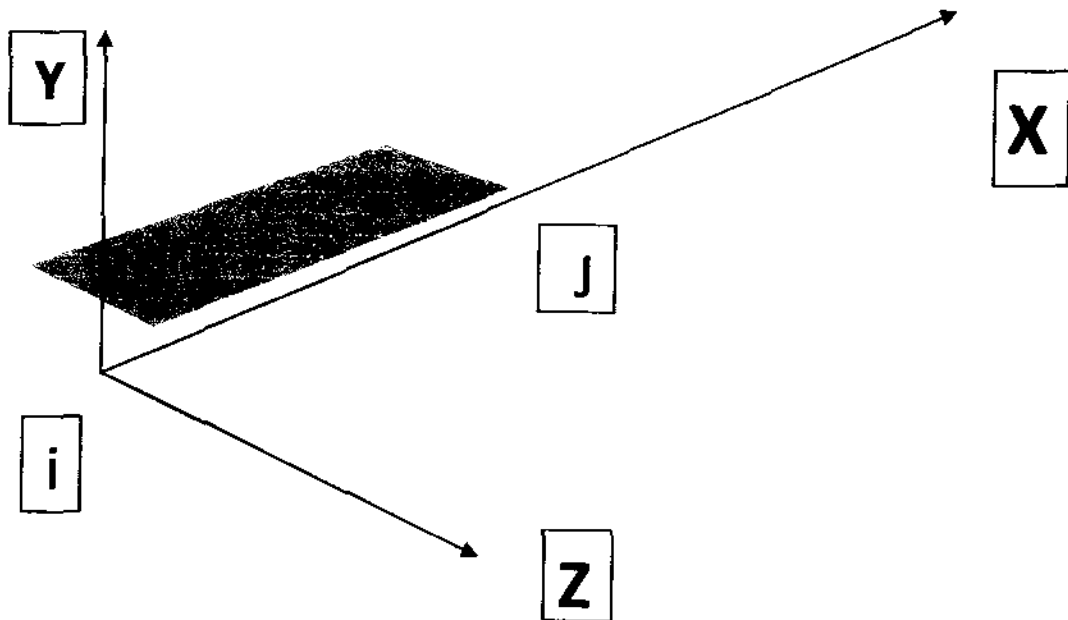


يستخدم **STAAD.PRO** نموذجين من جمل الاحداثيات لتعريف الشكل الهندسي للمنشأ وهما

الجملة الاحداثيات المحلية Local Coordinate System

يقترن مع كل عنصر من عناصر المنشأ جملة من الاحداثيات ديكرتية مستطيلة موضعية او محلية تحقق محاور احداثيات كل جملة محلية قاعدة اليد اليمنى. يظهر الشكل ادناه عنصر جاسى بوصلة بداية (i) و وصلة نهائية (j) ويقترن مع هذا العنصر جملة احداثيات موضعية معرفة بالنسبة الى جملة الاحداثيات الديكرتية وتصف بشكل كاف توضع هذا العنصر بالنسبة للجملة العام .

يحدد الاتجاه المحلي للمحور (X) من الوصلة (i) الى الوصلة (j) ويمكن تطبيق قاعدة اليمنى للحصول على الاتجاه الموجب لكل من المحورين (Y,Z)



٢١. نظام الإحداثيات العالمية Global Coordinate System

يتعامل البرنامج مع ثلاثة نماذج من جمل الأحداثيات العامة لتوصيف الشكل الهندسي للمنشأ وهي

٢١.١. نظام الإحداثيات الديكارتي التقليدي conventional Cartesian coordinate system

وتتألف جملة الأحداثيات الديكارتيية المستطية من نقطة مبدا (o) و ثلاث محاور متعامدة OZ-OY-OX تحقق قاعدة اليد اليمنى ويمكن استخدام هذه الجملة لتعريف نقاط الوصل واتجاهات القوى المطبقة ويرمز للانتقالات وق المحاور الثلاثية بالرمز u1-u2-u3 ويرمز للدورنات بالرمز u4-u5-u6 وفق المحاور OZ-OY-OX على الترتيب.

٢١.٢. نظام الإحداثيات الأسطوانية Cylindrical Coordinate system

تنشئ هذه الجملة باستبدال المحورين OY-OX في الجملة الديكارتيية التقليدية بنصف القطر و الزاوية مقاسة بالدرجات ام المحور OZ مطابقا للمحور OZ في الجملة الديكارتيية ويتم تحديد اتجاهه الموجب وفق قاعدة اليد اليمنى.

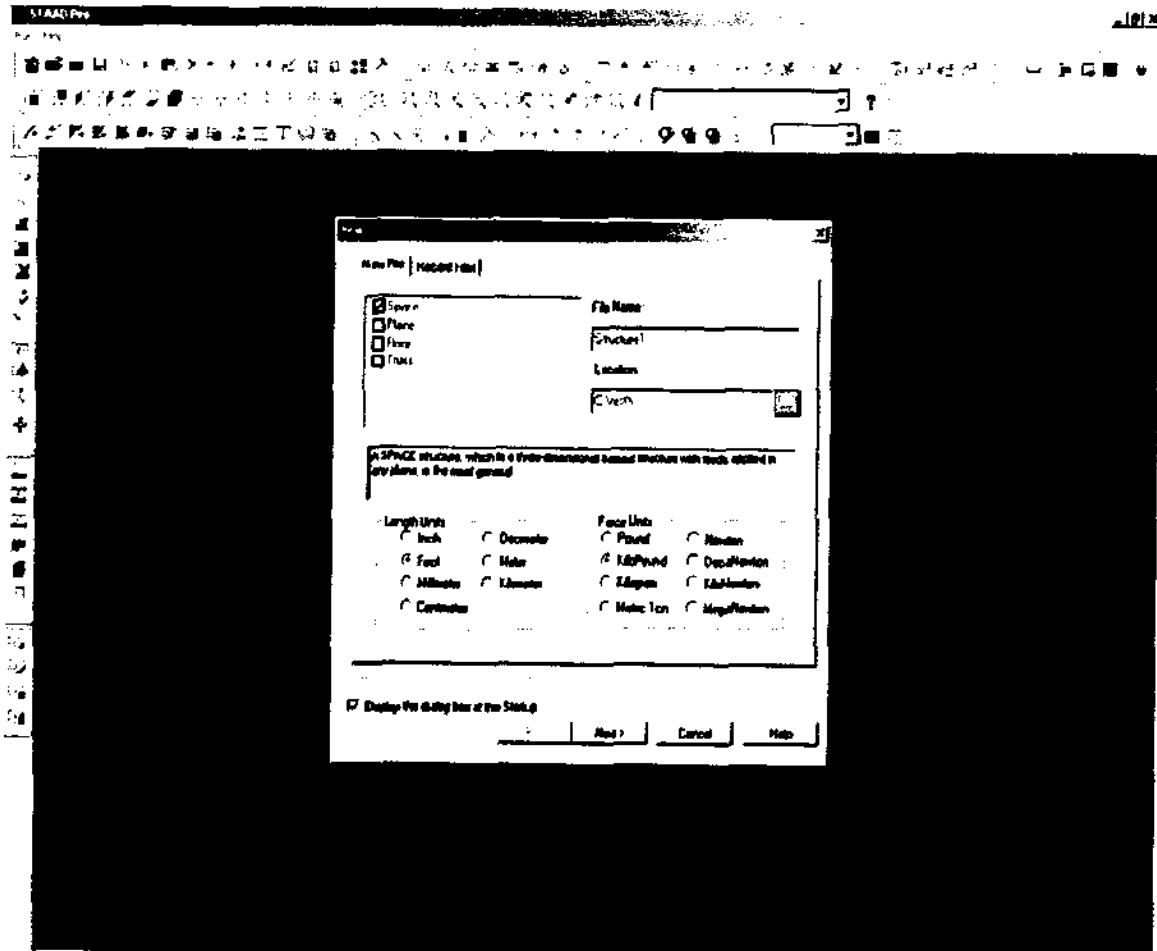
٢١.٣. نظام الإحداثيات الأسطوانية العكسي Reverse Cylindrical coordinate system

وهي نموذج من الأحداثيات الاسطوانية بحيث يقترن المستوي (r-θ) في هذه الجملة مع المستوي (x-z) من جملة الأحداثيات الديكارتيية التقليدية وتطبق قاعدة اليمنى لتعريف الاتجاه الموجب للمحور (y) .

نماذج المنشآت التي يتوجبها البرنالمج

يتألف المنشأ من مجموعة من العناصر الانشائية تماسك مع بعضها البعض لتؤلف منشأ يقاوم الحمولات التي يتعرض لها والمنشآت هي

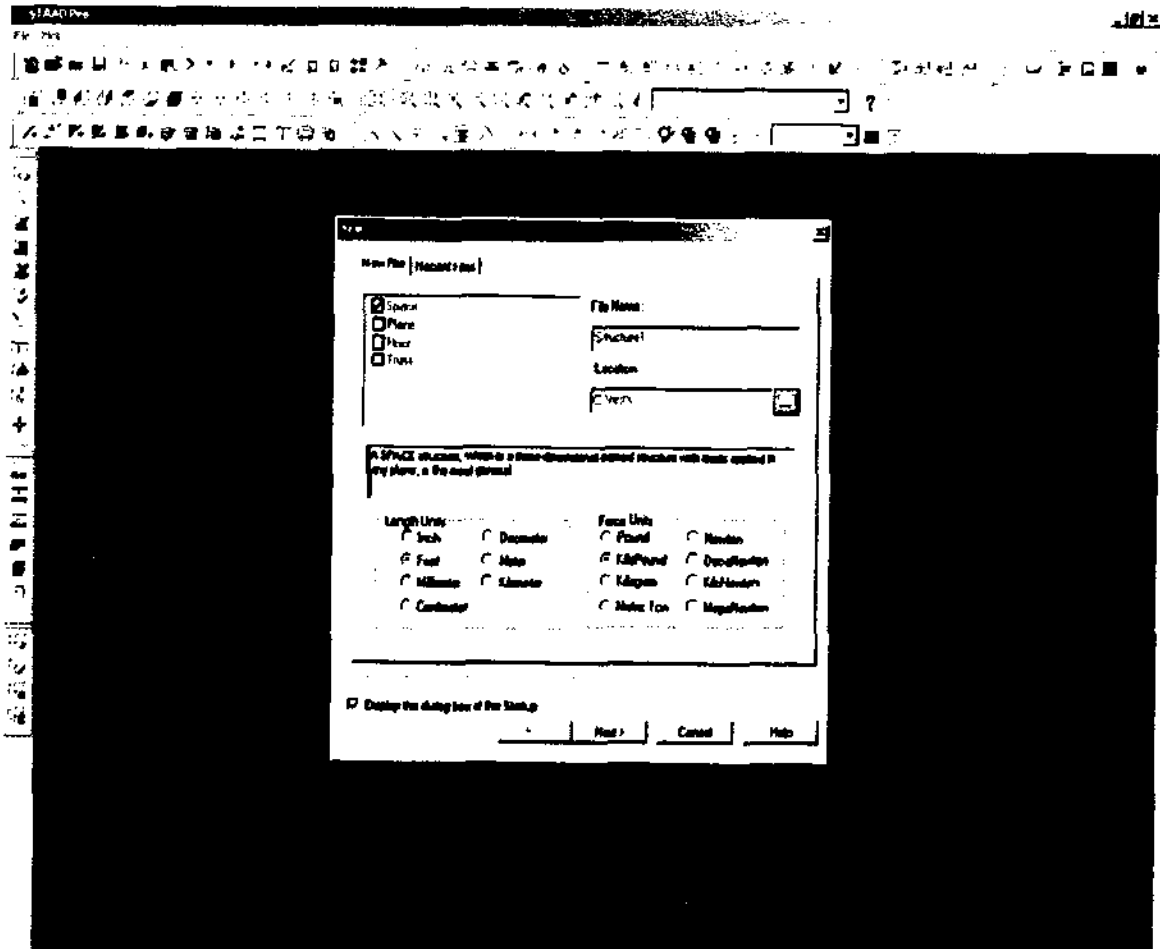
- المنشآت الثلاثية الابعاد Space structure
- المنشآت المستوية plain structure
- المنشآت الشبكية Truss structure
- منشآت الارضيات Floor structure



نماذج المنشآت التي يعالجها البرنامج

يتألف المنشأ من مجموعة من العناصر الانشائية تماسك مع بعضها البعض لتؤلف منشأ يقاوم الحمولات التي يتعرض لها والمنشآت هي

- المنشآت الثلاثية الابعاد Space structure
- المنشآت المستوية plain structure
- المنشآت الشبكية Truss structure
- منشآت الارضيات Floor structure



٢-٢ مصفوفة الصلابة

يعرف المنشأ في طريقة مصفوفة الصلابة بانه مجموعة من اجزاء مرتبطة ببعضها في مفاصل تدعى العقد (node) . ان الاحمال الخارجية تكافى باحمال تكون مسلطة في العقد . ان اعادة ارتباط اجزاء المنشأ في مواقع عقدة تستند على الشروط التالية .

- توازن القوى
- توافق الازاحات
- علاقة القوة بالازاحة

علية فان طريقة مصفوفة الصلابة تعتمد على تجزئة المنشأ الى اجزاء ترتبط ببعضها بعدد محدد من المفاصل التي ندعى العقد . ان الحالة المثلى لتمثيل المنشأ تعتمد على عدد الاجزاء المفروضة و شكلها و ابعادها على ان يكون المنشأ الاصلي ممثلا بالحالة المجزأة التي يجب ان يبقى فيها النموذج الازاحي قريب من الحل الصحيح. ويفترض ان جزء المنشأ مستقيم ومنتظم المقطع، وان خواص مادته ثابتة ، وان يرتبط بالاجاء القريبة منه بواسطة العقد . و نتيجة لذلك فان مواقع العقد يجب ان تكون التي يحصل فيها تغير في الشكل الهندسي او تغير في الاحمال المسلطة او تغير في خواص المادة . ان العلاقة الاساسية التي تربط الاحمال (F) والازاحات (Δ) في النهايات الحرة والصلابة (K) يمكن كتابتها بالشكل التالي

$$F=K * \Delta$$

حيث ان

F: تمثل مصفوفة الاحمال المسلطة على العقد

K: تمثل مصفوفة الصلابة للمنشأ

Δ : تمثل الازاحات في العقد

شكل مصفوفة الصلابة الكلية للمنشأ

ان ذلك يعني وضع مصفوفات الصلابة لاجزاء المنشأ الواحد بمصفوفة صلابة واحدة تدعى مصفوفة صلابة المنشأ ويعتمد ذلك على الايفاء بالشرطين التاليين :-

١. شرط توازن القوى

ان اي جزء من المنشأ يجب ان يكون في حالة توازن تحت تانثير القوى المؤثرة عليه ، و بالتالي يجب ان يكون المنشأ الكلي في حالة توازن . ان عدد حالات التوازن يعتمد على يعتمد على طبيعة الاجزاء المفروضة في المنشأ و عددها . ومن الملائم وضع حالات التوازن بدلالة القوى المؤثرة على العقد او مفاصل للمنشأ .اي ان مجموع القوى المؤثرة في الجزء تساوي صفر .

٢. شرط توافق الازاحات

اذا فرضنا اي عقدة في المنشأ ببعدين لها انحراف في كل من الاحداثيين (x) و (y) و دوران حول الاحداثي (Z) فان ذلك يعني ان هنالك ثلاث ازاحات في العقدة وان هذه الازاحات يجب ان تتوافق مع الازاحات في نهاية اي جزء من الاجزاء المربوطة بالعقدة وفي نقطة الربط.

فاذا كانت (n) دالة على عدد العقد في المنشأ و (m) دالة على عدد درجات الحرية في العقدة الواحدة فان المجموع الكلي لمعادلات التوافق يساوي (m*n) .

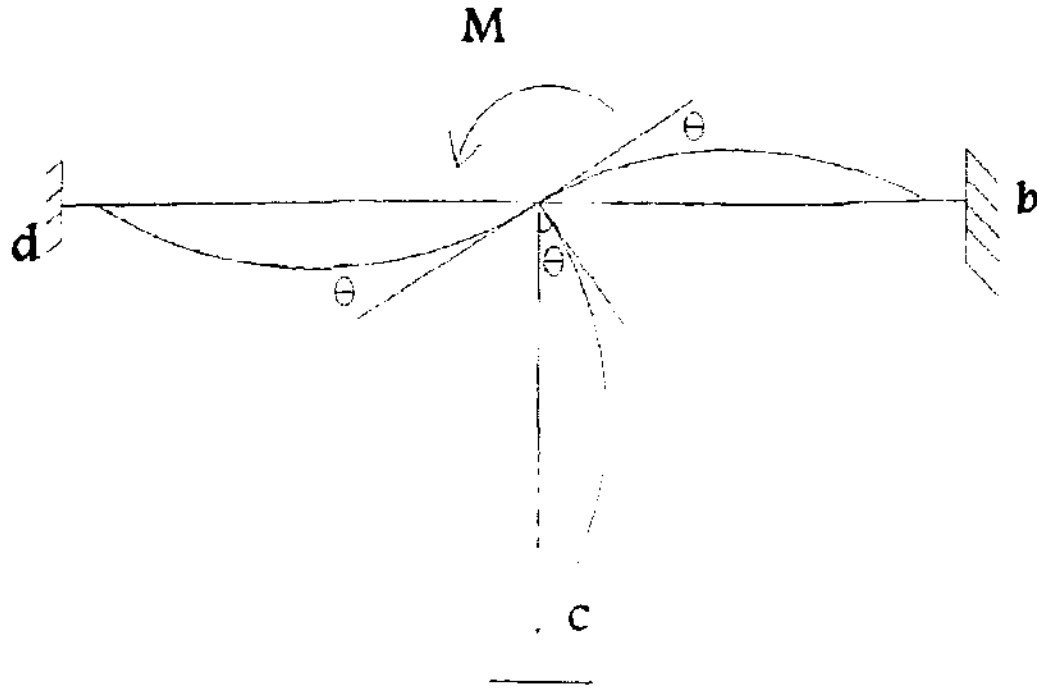
والايفاء بالشرطين المذكورين في اعلاة يمكن وضع مصفوفة صلابة اي جزء من اجزاء المنشأ في موقعها الصحيح في مصفوفة صلابة المنشأ

درجات حرية الحركة

نذكرنا ان اول خطوة في طريقة مصفوفة الصلابة هي تجزئة المنشأ الى مجموعة من الاجزاء المربوطة مع بعضها بواسطة العقد ويمكن تحديد مواقع العقد في منشأ كما يلي :-

- (١) مواقع المساند
- (٢) نهايات الاجزاء
- (٣) المفاصل في الهياكل والجملونات
- (٤) المواقع التي يتغير فيها المقطع
- (٥) نقاط الاحمال المركزة

بما ان اي منشأ خطي مستمر يكون محتويا على عدد غير محدود من الازاحات . لكن يمكن توضيح الشكل المزاح بعدد محدود من الازاحات . ان هذا العدد المحدود المعروف للشكل المزاح يدعى "عدد درجات حرية الحركة" فمثلا يمكن القول بان الهيكل الموضح بالشكل ادناه له درجة واحدة منحرفة الحركة ممثلة بدوران المفصل (a) بمقدار θ وبمعرفة دوران المفصل يمكن احتساب كل القوى الداخلية و معرفة الخط المرن الشكل المزاح اذا اهمل تغير الشكل محوريا ان عدد درجات حرية الحركة لمنشأ يساوي عدد مركبات الازاحة في العقد و بايجاد قيم هذه الازاحات فان ذلك يعني معرفة الشكل المزاح للمنشأ ولذلك ان الاجزاء بين العقد تعتبر منحنيًا مرنا معتمدة على ازاحات نهاياتها و الاحمال المسلطة وخواصها الهندسية.



لمعرفة دوران المفصل يمكن احتساب كل القوى الداخلية ومعرفة الخط المرن للشكل المزاح اذا اهمل تغير الشكل محوريا ان عدد درجات حرية الحركة لمنشأ يساوي عدد مركبات الازاحات في العقد و بايجاد قيم هذه الازاحات فان ذلك يعني معرفة الشكل المزاح للمنشأ.

للمنشآت نوات الابعاد الثلاثة يفرض ان لها ست درجات لحرية الحركة في كل عقدة اما اذا كان المنشأ ذا بعدين فيفرض ان له ثلاث درجات لحرية الحركة في كل عقدة و ان بعض من هذه الدرجات يمكن ان تكون مقيدا بسبب مساند المنشأ او بسبب فرض سلوكية معينة للمنشأ . وعليه فان الدرجات الباقية تكون ممثلة لعدد درجات حرية الحركة .

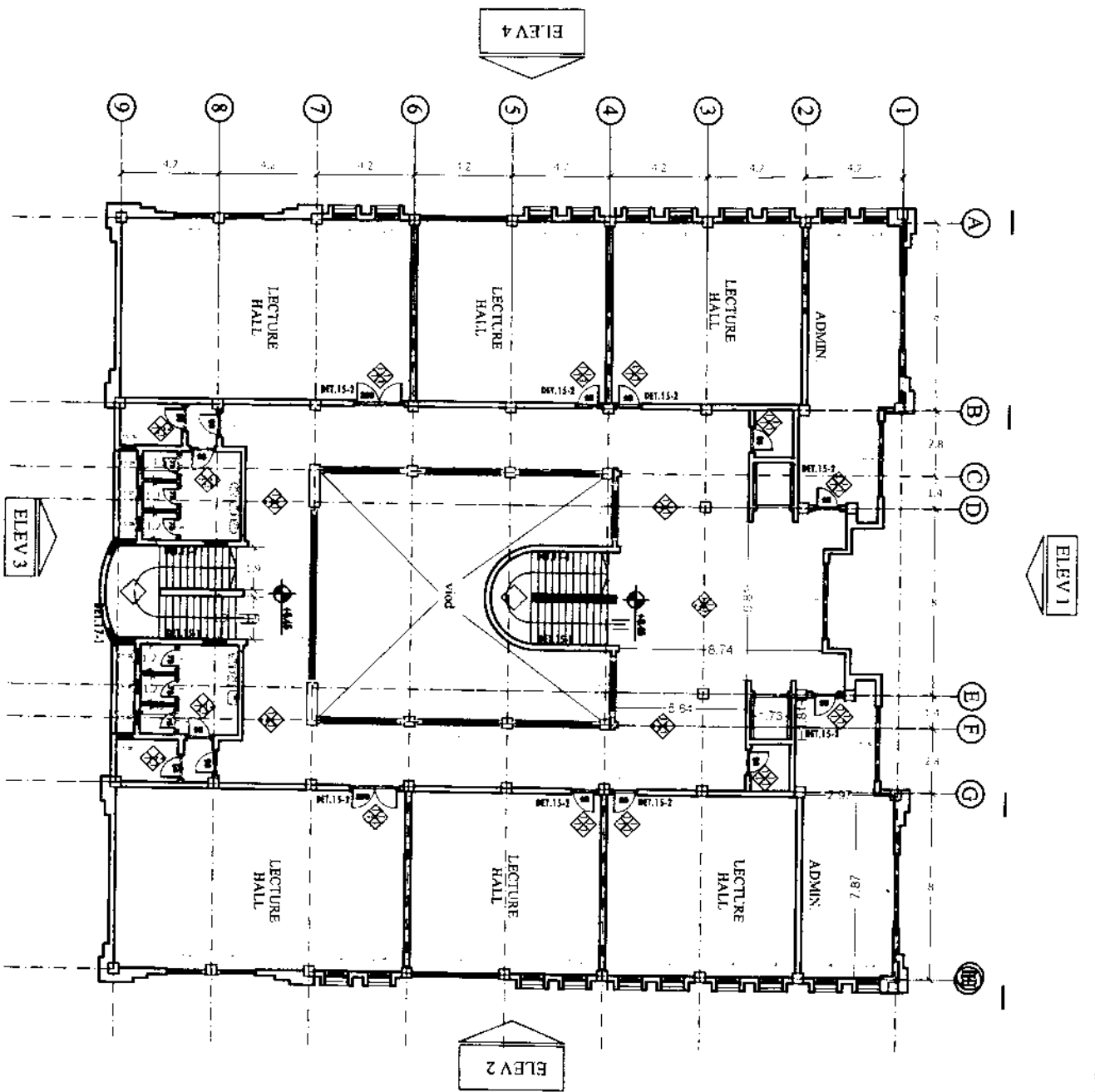
١٠٣ وصف البناية

تم اختيار بناية تقع في محافظة بغداد وهي قسم دراسي في الجامعة الاسلامية بمساحة ١١٢٠ متر مربع و البناية تتكون من اربع طوابق و هي مؤلفة من هيكل خرساني من الاعمدة العتبات و البلاطات الخرسانية و تستند البناية الى اساس حصيري.

تم تحليل البناية و تصميمها بالاعتماد على المواصفة الامريكية

(ACI 318M-code) .

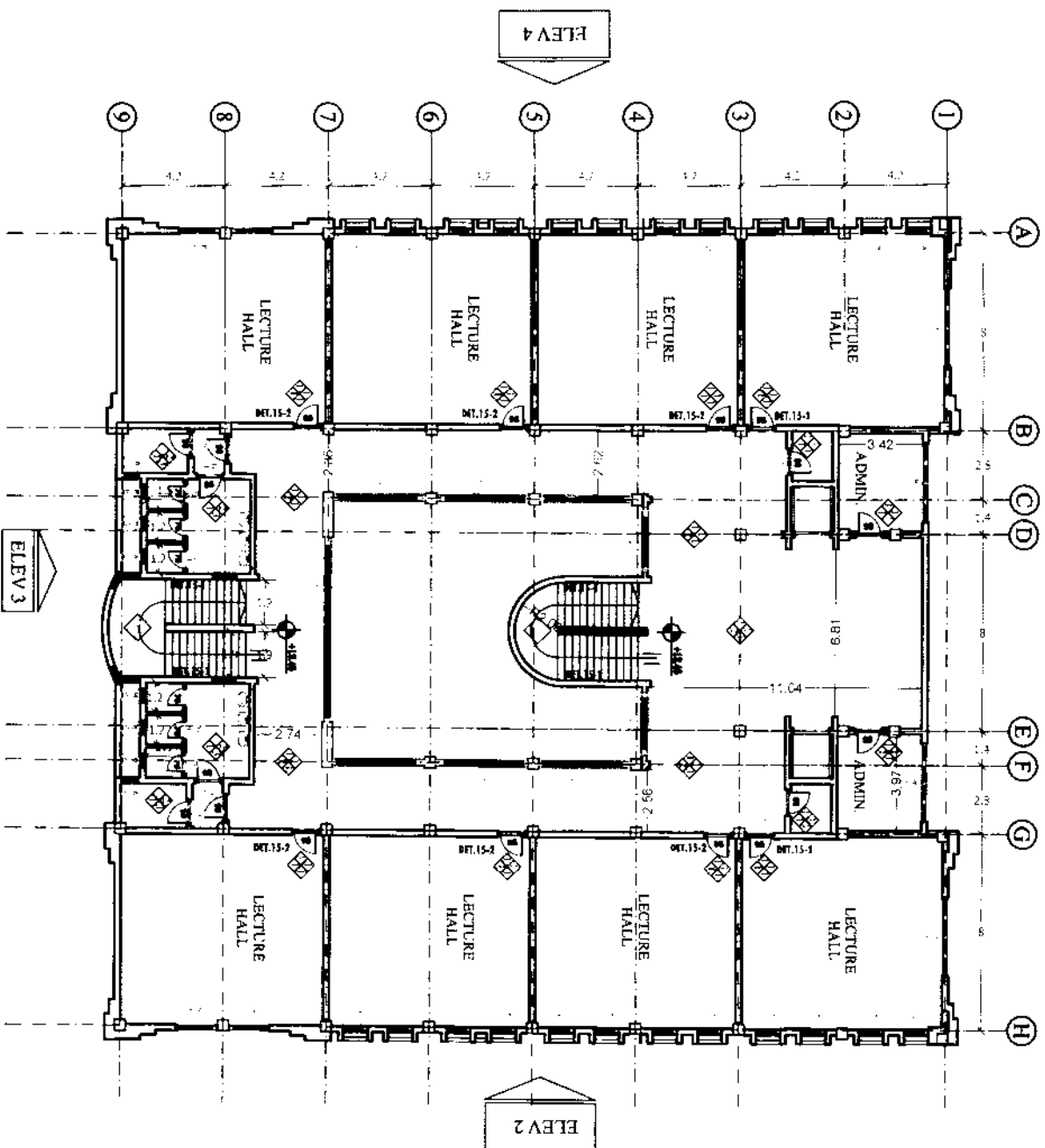
تفاصيل البناية مبينة في المخططات المعمارية التالية :



Notes:-

CLIENT:			
PROJECT:			
LOCATION:			
Department Building			
DRAWING TITLE:			
SECOND FLOOR PLAN			
CONTRACTOR:			
Scientific & Engineering Consulting Bureau			
UNIVERSITY OF TECHNOLOGY			
ENGINEER: M. F.			
DATE:			
BY:			
AS:			

Notes:-



THIRD FLOOR PLAN

CONSULTANT:
Scientific & Engineering Consultants Bureau
UNIVERSITY OF TECHNOLOGY

DESIGNED BY:

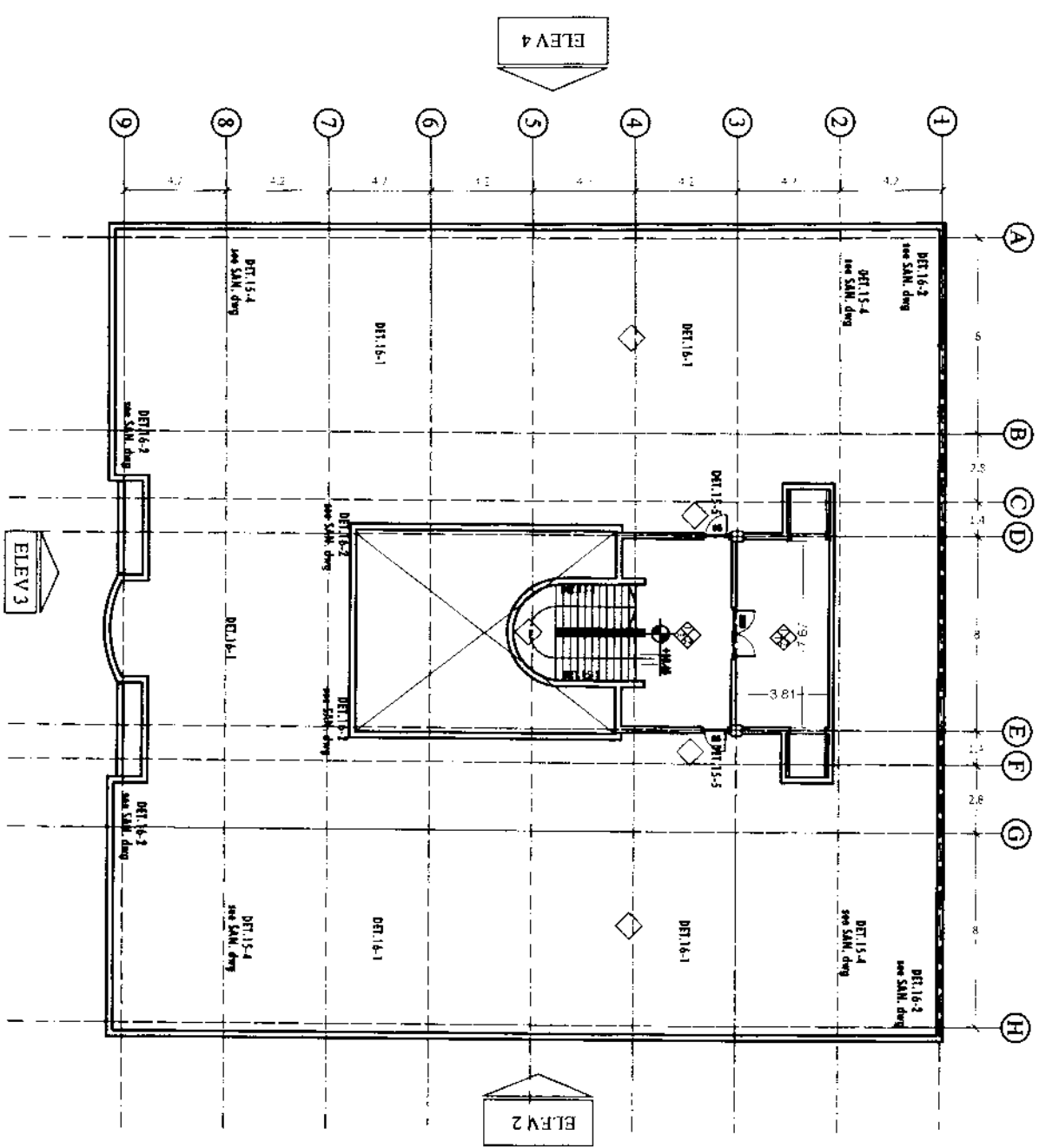
BUILDING:
Department Building
DRAWING TITLE:

PROJECT:

CHECKED:

NO.	DATE	BY	CHKD.	APP. NO.	APP. NAME
1	10/10/77	AB			

ELEV 1
ELEV 1



Notes:-

CLIENT :			
PROJECT :			
BUILDING :			
DRAWING TITLE :			
Department Building			
ROOF PLAN -1-			
COMMITTEE :			
Scientific & Engineering Consultants Bureau			
UNIVERSITY OF TECHNOLOGY			
DESIGNED BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY :			
DATE :			
BY			

ELEV 1



DATE _____

NOTES:

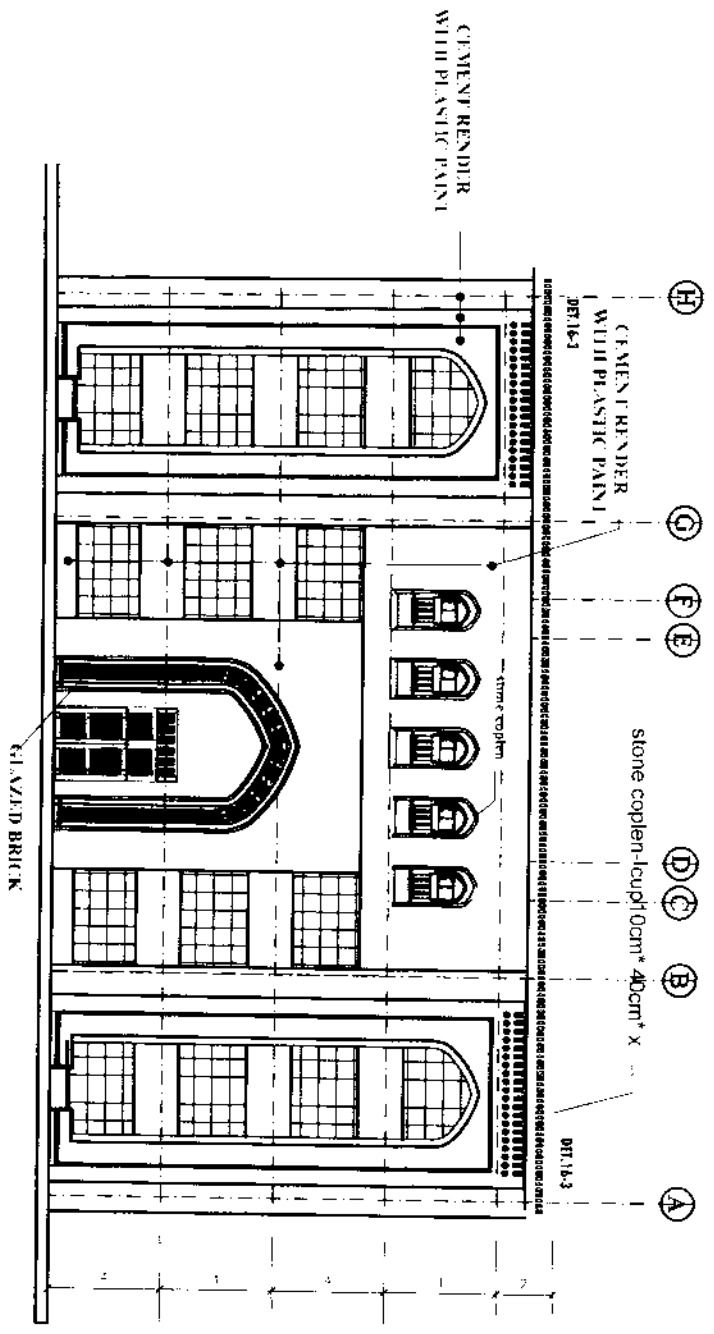
SLAVES TITLE:

CONCLUSIONS

ANNOUNCING

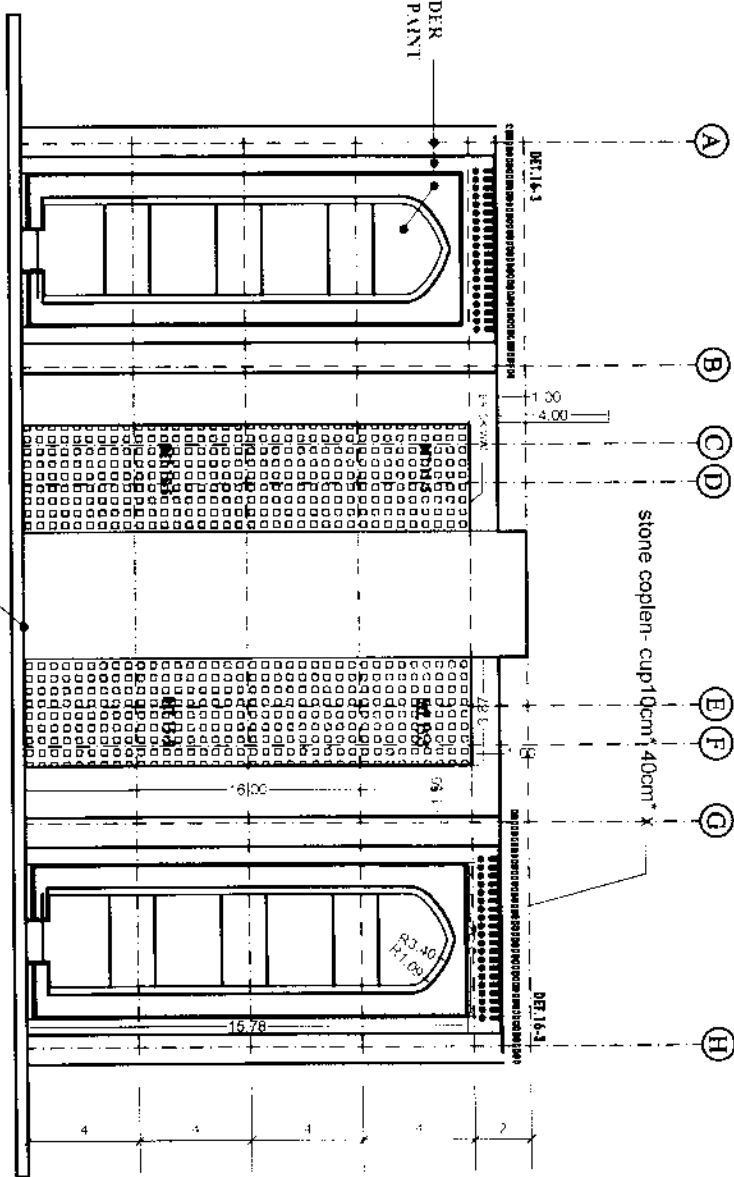
66-111-1	11/10/11	11/10/11	11/10/11	11/10/11
66-111-2	11/10/11	11/10/11	11/10/11	11/10/11

Notes:-



ELEVATION 1			
PROJECT :			
BUILDING :			
Department Building			
DRAWING TITLE :			
ELEV.-1-			
CONTRACTOR :			
Scaffolding & Engineering Consultants Benin			
UNIVERSITY OF TECHNOLOGY			
DRAWING BY :			
DATE :			
BY :			
CHECKED BY :			
DATE :			

Notes:-



CURT

PUBLISHER

DISCUSSION

Department Building

THE AFRICAN TRUTH!

XIX-3-

CONSULTANT:

Scientific & Engineering Consultants Bureau
UNIVERSITY OF TECHNOLOGY

RESEARCH BY

WCL:	AMC:	DATE	ROW NO.	RT. #
AD HOPPER	A2			

٢-٣ ابعاد المقاطع الإنشائية

• الأعمدة column

تم اختيار مقاطع الأعمدة حسب المخططات المعمارية وكانت الأبعاد كالاتي

١. 0.45×1.85

٢. 0.45×1.00

٣. 0.45×0.45

• الروافف beams

$h = (L \times (0.4 + F_y/700)) / 18.5$ one edge con.

$= (8 \times (0.4 + 420/700)) / 18.5$

$= 0.432 \text{ m}$

$h = (L \times (0.4 + F_y/700)) / 21$ two edge con.

$= (10.8 \times (0.4 + 420/700)) / 21$

$= 0.514 \text{ m}$

Use $h = 0.6$

Dim. Of beam $= 0.6 \times 0.3$

لكن في مناطق أخرى كان torsion عالي ولم يتحمل المقطع مما أدى إلى زيادة أبعاد المقطع وأصبح $(0.8 \times 0.5) \text{ m}$.

● سماك السقف

$$h = (\max \text{ parameter} / 180) \geq 90$$

$$= ((10000 + 4200) * 2) / 180$$

$$= 157.77 \text{ mm}$$

Use h slab = 160 mm

٢-٣ التحميل loading

● الأحمال الميتة

❖ الحمل الذاتي self weight

و يتم حسابة بالاعتماد على الابعاد السابقة

❖ احمال الارضيات

$$\text{Plate load} = (24 * 0.08 + 0.33) = 2.25 \text{ Kn/m}^2$$

❖ احمال السطح

$$\text{Plate load} = (24 * 0.05 + 18 * 0.13 + 0.3 + 0.3)$$

$$= 4.14 \text{ Kn/m}^2$$

❖ احمال الجدران

$$\text{Member load} = 18 * 0.24 * 4 = 17.24 \text{ kn/m}$$

❖ احمال القواطع الغير مستندة الى beam

$$\text{Plate load} = (18 * 0.24 * 4 * 2.25) / 16 = 2.5 \text{ kn/m}^2$$

• الإحمال الحية live load

- ❖ الممرات والدرج 5 kn/m^2
- ❖ الغرف الدراسية 2 kn /m^2
- ❖ السطح 1.5 kn/m^2

• إحمال الرياح wind load

هنا اهتمنا بتأثير حمل الرياح لانه ارتفاع البناية 16.5m و المواصفة تشترط ان يكون ارتفاع البناية 19m حتى يدخل تأثير wind load.

٣-٤ طريقة الإدخال

- بعد تشغيل البرنامج تظهر الشاشة ادناه والتي يتم من خلالها تعيين نوعية المنشأ وكذلك وحدة القياس الطول والقوة

اختيار نوعية المنشأ

ادخال وحدة الطول

ادخال وحدة القوة

File Name :
PORTAL

Location :
C:\Work\

A PLANT structure is bound by a global X-Y coordinate system with inputs in the same plane.

Length Units

- ☐ Inch
- ☐ Decimeter
- ☐ Foot
- ☐ Meter
- ☐ Millimeter
- ☐ Kilometer
- ☐ Centimeter

Force Units

- ☐ Pound
- ☐ Newton
- ☐ KiloPound
- ☐ DecaNewton
- ☐ KiloGram
- ☐ KiloNewton
- ☐ Metric Ton
- ☐ MegaNewton

☒ Display this dialog box at the Startup

< Back Next > Cancel Help

- بعد ذلك تظهر النافذة التالية التي تتم من خلالها عملية الاضافة

تظهر انواع الاختيارات

Welcome to your new design

- ☐ Add Plate
- ☐ Add Solid
- ☐ Open Structure Wizard
- ☐ Open STAAD Editor
- ☐ Edit Job Information

Begin building your model by creating new joints and beams using the construction grid, drawing tools and speeddraws.

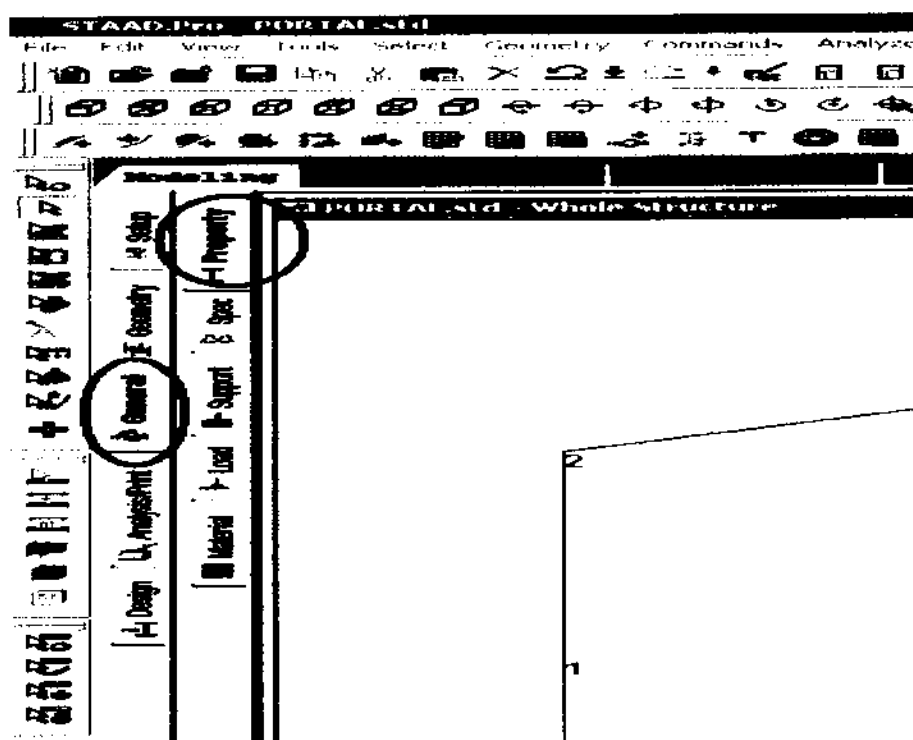
☒ Display this dialog box at the Startup

< Back Finish Cancel Help

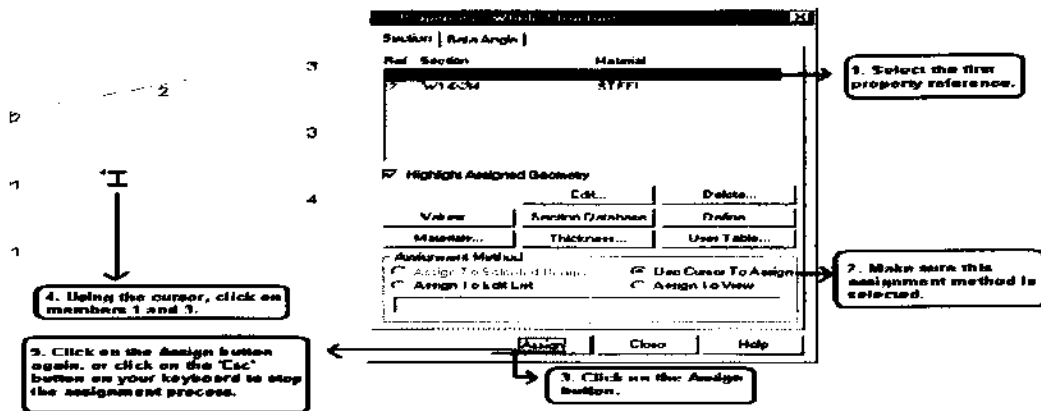
- سنأخذ هذا المثال البسيط لبيان عملية modeling



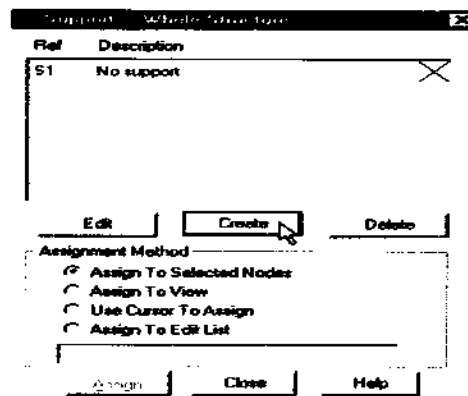
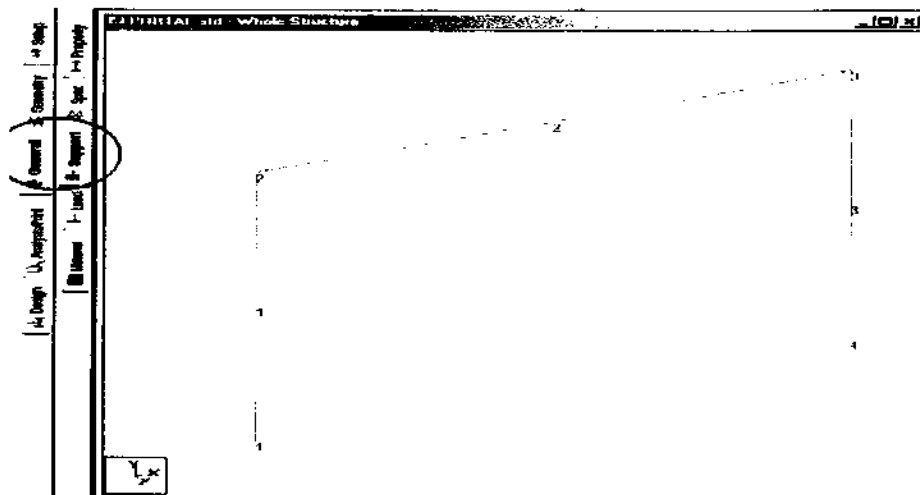
- نبدأ عملية ال modeling بإدخال خصائص المقاطع



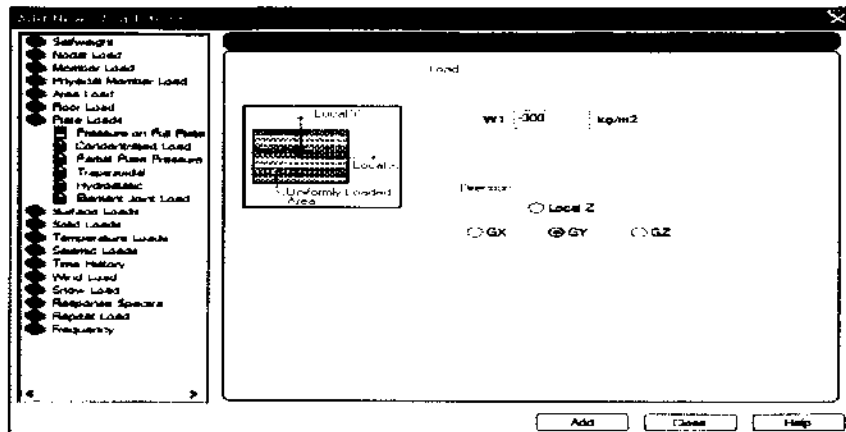
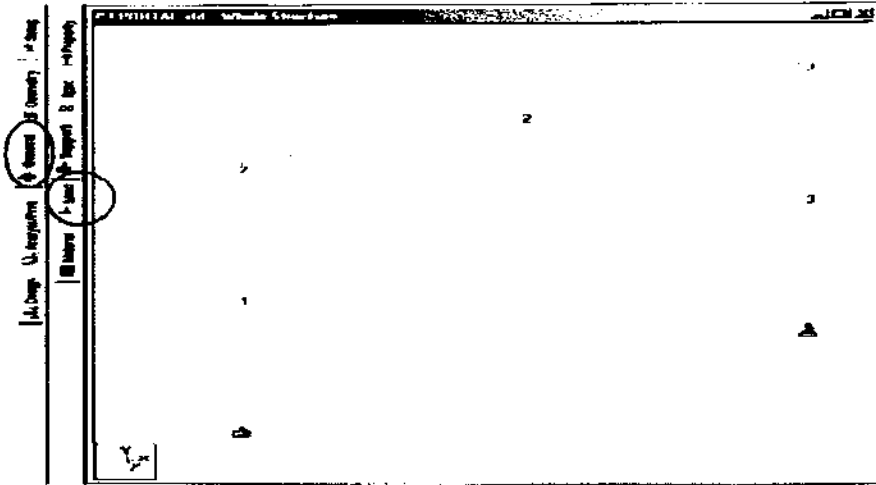
- هذا مثال يبين كيفية اختيار المقاطع وكذلك تخصيصها



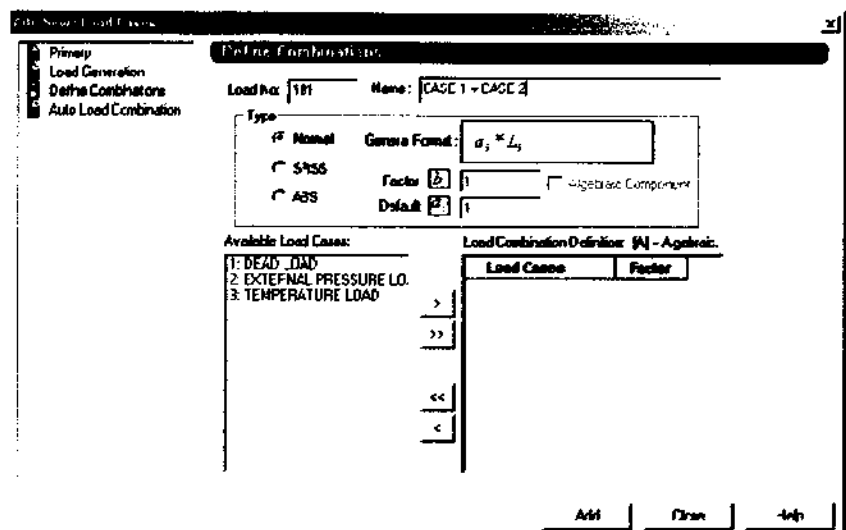
- نبدأ بالمرحلة الثانية وهي ادخال support



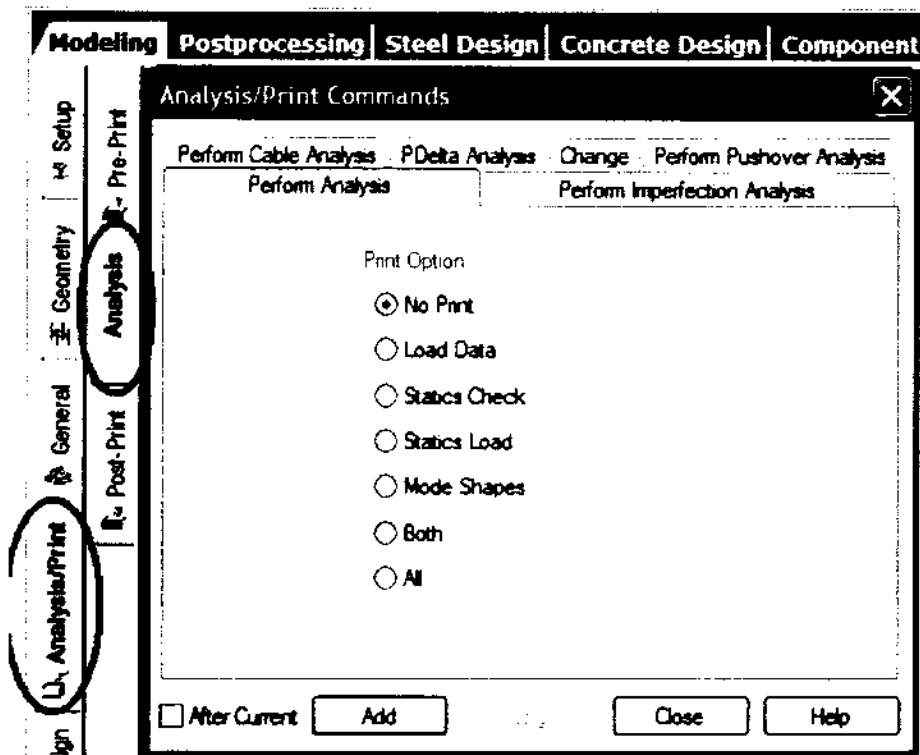
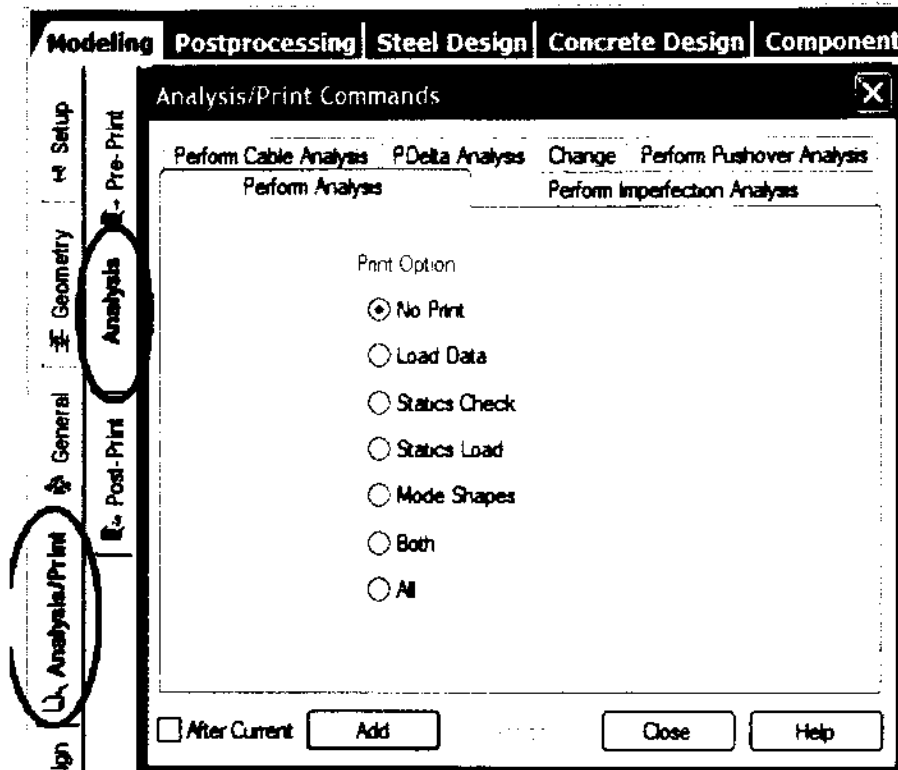
• نبدأ بالمرحلة الثالثة وهي ادخال load



• في بعض الاحيان نعمل load combination لتمثيل الواقع



• بعد الانتهاء من عملية modeling نبدأ بمرحلة Analysis



ملف الألف


```

*****
*                                     *
*      STAAD.Pro                     *
*      Version  2007   Build 04      *
*      Proprietary Program of        *
*      Research Engineers, Intl.      *
*      Date=    MAY 10, 2011         *
*      Time=    9:36:41              *
*                                     *
*      USER ID: Hewlett-Packard      *
*****

```

```

1. STAAD SPACE
INPUT FILE: design2.STD
2. START JOB INFORMATION
3. ENGINEER DATE 05-DEC-10
4. ENGINEER NAME YASIR W.J.
5. CHECKER NAME DR ALAA K.
6. JOB NAME BLUIDING DEPARTMENT
7. JOB CLIENT UNIVERSITY OT TECHNOLOGY
8. END JOB INFORMATION
9. INPUT WIDTH 79
10. UNIT METER KN
11. JOINT COORDINATES
12. 1 0 0 33.6; 2 0 0 29.4; 3 0 0 25.2; 4 0 0 21; 5 0 0 16.8; 6 0 0 12.6
13. 7 0 0 8.4; 8 0 0 4.2; 9 0 0 0; 10 8 0 0; 11 8 0 4.2; 12 8 0 8.4; 13 8 0 12.6
14. 14 8 0 16.8; 15 8 0 25.2; 16 8 0 21; 17 8 0 29.4; 18 8 0 33.6; 19 24.4 0 33.6
15. 20 24.4 0 29.4; 21 24.4 0 25.2; 22 24.4 0 21; 23 24.4 0 16.8; 24 24.4 0 12.6
16. 25 24.4 0 8.4; 26 24.4 0 4.2; 27 24.4 0 0; 28 32.4 0 0; 29 32.4 0 4.2
17. 30 32.4 0 8.4; 31 32.4 0 12.6; 32 32.4 0 16.8; 33 32.4 0 25.2; 34 32.4 0 21
18. 35 32.4 0 29.4; 36 32.4 0 33.6; 37 10.8 0 12.6; 38 10.8 0 16.8; 39 10.8 0 25.2
19. 40 10.8 0 21; 41 21.6 0 25.2; 42 21.6 0 21; 43 21.6 0 16.8; 44 21.6 0 12.6
20. 45 20.9 0 25.2; 46 20.9 0 12.6; 47 11.5 0 12.6; 48 11.5 0 25.2; 49 12.2 0 4.2
21. 50 12.2 0 8.4; 51 20.2 0 8.4; 52 20.2 0 4.2; 53 12.2 0 2.2; 54 20.2 0 2.2
22. 55 12.1779 0 12.6; 56 20.1758 0 12.6; 57 8 0 0.88; 58 15.1 0 2.98
23. 59 15.1 0 4.2; 60 24.4 0 0.88; 61 17.3 0 4.2; 62 17.3 0 2.98
24. 63 14.1779 0 12.6; 64 16.1779 0 12.6; 65 12.2 0 4.54; 66 20.2 0 4.54
25. 67 12.2 0 6.39; 68 20.2 0 6.39; 69 10.5 0 4.54; 70 10.5 0 6.39; 71 21.9 0 4.54
26. 72 21.9 0 6.39; 73 0 -4.5 29.4; 74 0 -4.5 25.2; 75 0 -4.5 21; 76 0 -4.5 16.8
27. 77 0 -4.5 12.6; 78 0 -4.5 8.4; 79 0 -4.5 4.2; 80 0 -4.5 0; 81 8 -4.5 4.2
28. 82 8 -4.5 8.4; 83 8 -4.5 12.6; 84 8 -4.5 16.8; 85 8 -4.5 25.2; 86 8 -4.5 21
29. 87 8 -4.5 29.4; 88 8 -4.5 33.6; 89 24.4 -4.5 33.6; 90 24.4 -4.5 29.4
30. 91 24.4 -4.5 25.2; 92 24.4 -4.5 21; 93 24.4 -4.5 16.8; 94 24.4 -4.5 12.6
31. 95 24.4 -4.5 8.4; 96 24.4 -4.5 4.2; 97 24.4 -4.5 0; 98 32.4 -4.5 0
32. 99 32.4 -4.5 4.2; 100 32.4 -4.5 8.4; 101 32.4 -4.5 16.8; 102 32.4 -4.5 25.2
33. 103 32.4 -4.5 21; 104 32.4 -4.5 29.4; 105 32.4 -4.5 33.6; 106 10.8 -4.5 21
34. 107 21.6 -4.5 21; 108 20.9 -4.5 25.2; 109 20.9 -4.5 12.6; 110 11.5 -4.5 12.6
35. 111 11.5 -4.5 25.2; 112 12.2 -4.5 8.4; 113 20.2 -4.5 4.2
36. 114 16.1779 -4.5 12.6; 115 16.1779 -4.5 15.5; 116 20.2 -4.5 4.54
37. 117 12.2 -4.5 6.39; 118 10.5 -4.5 4.54; 119 10.5 -4.5 6.39; 120 0 -4.5 33.6
38. 121 21.9 -4.5 4.54; 122 20.2 -4.5 6.39; 123 21.9 -4.5 6.39; 124 12.2 -4.5 2.2
39. 125 20.2 -4.5 2.2; 126 18.22 0 29.4; 127 12.65 0 12.6; 128 19.75 0 12.6
40. 129 21.6 -4.5 12.6; 130 12.1779 -4.5 12.6; 131 20.1758 -4.5 12.6

```

STAAD SPACE

-- PAGE NO. 2

41. 132 12.65 -4.5 12.6; 133 19.75 -4.5 12.6; 134 16.1779 -2 15.5
 42. 135 18.1779 -2 15.5; 136 17.4279 -2 16.5664; 137 16.1779 -2 17.25
 43. 138 14.1779 -2 15.5; 139 14.9279 -2 16.5664; 140 18.22 -4 28.55
 44. 141 18.22 -2 31.85; 142 16.27 -2 31.85; 143 16.27 -4 28.55; 144 13.82 -2 31.85
 45. 145 15.77 -2 31.85; 146 13.8 0 29.4; 147 18.1779 0 12.6; 148 18.22 0 30.4
 46. 149 13.8 0 30.4; 150 13.8 -4.5 30.4; 151 15.76 0 29.4; 152 13.82 0 33.6
 47. 153 18.22 0 33.6; 154 18.31 0 32.7; 155 13.73 0 32.7; 156 17.54 0 33.69
 48. 157 14.5 0 33.69; 158 13.82 -2 33.6; 159 18.22 -2 33.6; 160 18.31 -2 32.7
 49. 161 13.73 -2 32.7; 162 17.54 -2 33.69; 163 14.5 -2 33.69; 164 13.82 -4.5 33.6
 50. 165 18.22 -4.5 33.6; 166 18.31 -4.5 32.7; 167 13.73 -4.5 32.7
 51. 168 17.54 -4.5 33.69; 169 14.5 -4.5 33.69; 170 16.27 -2 33.6
 52. 171 15.77 -2 33.6; 172 8 0 30.4; 173 8 0 32.7; 174 0 0 30.4; 175 0 0 32.7
 53. 176 18.22 -4.5 30.4; 177 24.4 0 30.4; 178 24.4 0 32.7; 179 32.4 0 30.4
 54. 180 32.4 0 32.7; 181 21.6 0 29.4; 182 20.9 0 29.4; 183 18.22 0 25.2
 55. 184 13.8 0 25.2; 185 15.76 0 25.2; 186 10.8 0 29.4; 187 11.5 0 29.4
 56. 188 21.6 0 30.4; 189 20.9 0 30.4; 190 10.8 0 30.4; 191 11.5 0 30.4
 57. 192 21.6 0 32.7; 193 20.9 0 32.7; 194 10.8 0 32.7; 195 11.5 0 32.7
 58. 196 21.6 0 33.6; 197 20.9 0 33.6; 198 10.8 0 33.6; 199 11.5 0 33.6
 59. 200 10.8 0 8.4; 201 21.6 0 8.4; 202 20.9 0 8.4; 203 11.5 0 8.4
 60. 204 14.1779 0 8.4; 205 16.1779 0 8.4; 206 12.65 0 8.4; 207 19.75 0 8.4
 61. 208 18.1779 0 8.4; 209 10.5 0 8.4; 210 21.9 0 8.4; 211 10.5 0 12.6
 62. 212 21.9 0 12.6; 213 10.5 0 16.8; 214 21.9 0 16.8; 215 10.5 0 21
 63. 216 21.9 0 21; 217 10.5 0 25.2; 218 21.9 0 25.2; 219 10.5 0 29.4
 64. 220 21.9 0 29.4; 221 10.5 0 30.4; 222 21.9 0 30.4; 223 10.5 0 32.7
 65. 224 21.9 0 32.7; 225 10.5 0 33.6; 226 21.9 0 33.6; 227 8 0 6.39
 66. 228 24.4 0 6.39; 229 10.8 0 6.39; 230 21.6 0 6.39; 231 20.9 0 6.39
 67. 232 11.5 0 6.39; 233 24.4 0 4.54; 234 32.4 0 4.54; 235 32.4 0 6.39
 68. 236 21.9 0 4.2; 237 24.4 0 2.2; 238 32.4 0 2.2; 239 10.5 0 4.2; 240 8 0 4.54
 69. 241 0 0 4.54; 242 0 0 6.39; 243 10.8 -4.5 6.39; 244 21.6 -4.5 6.39
 70. 245 20.9 -4.5 6.39; 246 11.5 -4.5 6.39; 247 32.4 0 0.88; 248 14.1779 0 6.39
 71. 249 16.1779 0 6.39; 250 12.65 0 6.39; 251 19.75 0 6.39; 252 18.1779 0 6.39
 72. 253 18.6721 0 4.54; 254 14.1779 0 4.54; 255 16.1779 0 4.54; 256 12.65 0 4.54
 73. 257 19.75 0 4.54; 258 18.1779 0 4.54; 259 14.1779 0 4.2; 260 16.1779 0 4.2
 74. 261 12.65 0 4.2; 262 19.75 0 4.2; 263 18.1779 0 4.2; 264 18.6721 0 6.39
 75. 265 18.6721 0 4.2; 266 21.9 0 0.88; 267 10.5 0 0.88; 268 21.9 0 2.2
 76. 269 10.5 0 2.2; 270 12.2 0 0.88; 271 20.2 0 0.88; 272 8 0 2.2; 273 0 0 2.2
 77. 274 0 0 0.88; 275 18.6721 0 8.4; 276 18.6721 0 12.6; 277 14.1779 0 2.98
 78. 278 18.1779 0 2.98; 279 14.1779 0 12.6; 280 12.65 0 2.2; 281 12.65 0 0.88
 79. 282 12.2 0 2.98; 283 8 0 2.98; 284 0 0 2.98; 285 12.65 0 2.98; 286 10.5 0 2.98
 80. 287 15.1 0 4.54; 288 15.1 0 6.39; 289 15.1 0 8.4; 290 15.1 0 12.6
 81. 291 15.1 -2 15.5; 292 18.1779 0 2.2; 293 18.6721 0 2.98; 294 19.75 0 2.98
 82. 295 20.2 0 2.98; 296 21.9 0 2.98; 297 24.4 0 2.98; 298 32.4 0 2.98
 83. 299 19.75 0 2.2; 300 19.75 0 0.88; 301 18.6721 0 2.2; 302 17.3 0 6.39
 84. 303 17.3 0 8.4; 304 17.3 0 12.6; 305 17.3 0 4.54; 306 21.6 0 23.1
 85. 307 21.6 0 18.9; 308 21.6 0 14.7; 309 21.6 0 10.5; 310 21.6 0 27.3
 86. 311 24.4 0 23.1; 312 24.4 0 18.9; 313 24.4 0 14.7; 314 24.4 0 10.5
 87. 315 24.4 0 27.3; 316 21.9 0 23.1; 317 21.9 0 18.9; 318 21.9 0 14.7
 88. 319 21.9 0 10.5; 320 21.9 0 27.3; 321 32.4 0 23.1; 322 32.4 0 18.9
 89. 323 32.4 0 14.7; 324 32.4 0 10.5; 325 32.4 0 27.3; 326 20.9 0 27.3
 90. 327 18.22 0 27.3; 328 15.76 0 27.3; 329 13.8 0 27.3; 330 11.5 0 27.3
 91. 331 10.8 0 27.3; 332 10.5 0 27.3; 333 8 0 27.3; 334 0 0 27.3; 335 10.8 0 10.5
 92. 336 10.8 0 23.1; 337 10.8 0 18.9; 338 10.8 0 14.7; 339 10.5 0 10.5
 93. 340 10.5 0 23.1; 341 10.5 0 18.9; 342 10.5 0 14.7; 343 8 0 10.5; 344 8 0 23.1
 94. 345 8 0 18.9; 346 8 0 14.7; 347 0 0 10.5; 348 0 0 23.1; 349 0 0 18.9
 95. 350 0 0 14.7; 351 20.9 0 10.5; 352 20.1758 0 10.5; 353 19.75 0 10.5
 96. 354 18.6721 0 10.5; 355 18.1779 0 10.5; 356 17.3 0 10.5; 357 16.1779 0 10.5

STAAD SPACE

-- PAGE NO. 3

97. 358 15.1 0 10.5; 359 14.1779 0 10.5; 360 12.65 0 10.5; 361 12.2 0 10.5
 98. 362 11.5 0 10.5; 363 29.9 0 0; 364 26.9 0 0; 365 29.9 0 0.88; 366 26.9 0 0.88
 99. 367 29.9 0 2.2; 368 26.9 0 2.2; 369 29.9 0 2.98; 370 26.9 0 2.98
 100. 371 29.9 0 4.2; 372 26.9 0 4.2; 373 29.9 0 4.54; 374 26.9 0 4.54
 101. 375 29.9 0 6.39; 376 26.9 0 6.39; 377 29.9 0 8.4; 378 26.9 0 8.4
 102. 379 29.9 0 10.5; 380 26.9 0 10.5; 381 29.9 0 12.6; 382 26.9 0 12.6
 103. 383 29.9 0 14.7; 384 26.9 0 14.7; 385 29.9 0 16.8; 386 26.9 0 16.8
 104. 387 29.9 0 18.9; 388 26.9 0 18.9; 389 29.9 0 21; 390 26.9 0 21
 105. 391 29.9 0 23.1; 392 26.9 0 23.1; 393 29.9 0 25.2; 394 26.9 0 25.2
 106. 395 29.9 0 29.4; 396 26.9 0 29.4; 397 29.9 0 27.3; 398 26.9 0 27.3
 107. 399 29.9 0 33.6; 400 26.9 0 33.6; 401 29.9 0 30.4; 402 26.9 0 30.4
 108. 403 29.9 0 32.7; 404 26.9 0 32.7; 405 5.5 0 0; 406 2.5 0 0; 407 5.5 0 0.88
 109. 408 2.5 0 0.88; 409 5.5 0 2.2; 410 2.5 0 2.2; 411 5.5 0 2.98; 412 2.5 0 2.98
 110. 413 5.5 0 4.2; 414 2.5 0 4.2; 415 5.5 0 4.54; 416 2.5 0 4.54; 417 5.5 0 6.39
 111. 418 2.5 0 6.39; 419 5.5 0 8.4; 420 2.5 0 8.4; 421 5.5 0 10.5; 422 2.5 0 10.5
 112. 423 5.5 0 14.7; 424 2.5 0 14.7; 425 5.5 0 16.8; 426 2.5 0 16.8; 427 5.5 0 18.9
 113. 428 2.5 0 18.9; 429 5.5 0 21; 430 2.5 0 21; 431 5.5 0 23.1; 432 2.5 0 23.1
 114. 433 5.5 0 25.2; 434 2.5 0 25.2; 435 5.5 0 27.3; 436 2.5 0 27.3; 437 5.5 0 29.4
 115. 438 2.5 0 29.4; 439 5.5 0 30.4; 440 2.5 0 30.4; 441 5.5 0 32.7; 442 2.5 0 32.7
 116. 443 5.5 0 33.6; 444 2.5 0 33.6; 445 5.5 0 12.6; 446 2.5 0 12.6; 447 8 -4.5 0
 117. 448 12.2 -2.25 6.39; 449 10.5 -2.25 6.39; 450 10.8 -2.25 6.39
 118. 451 11.5 -2.25 6.39; 452 20.2 -2.25 6.39; 453 21.9 -2.25 6.39
 119. 454 21.6 -2.25 6.39; 455 20.9 -2.25 6.39; 456 10.5 -2.25 4.54
 120. 457 12.2 -2.25 4.54; 458 21.9 -2.25 4.54; 459 20.2 -2.25 4.54; 460 0 4 33.6
 121. 461 0 4 29.4; 462 0 4 25.2; 463 0 4 21; 464 0 4 16.8; 465 0 4 12.6
 122. 466 0 4 8.4; 467 0 4 4.2; 468 8 4 0; 469 8 4 4.2; 470 8 4 8.4; 471 8 4 12.6
 123. 472 8 4 16.8; 473 8 4 25.2; 474 8 4 21; 475 8 4 29.4; 476 8 4 33.6
 124. 477 24.4 4 33.6; 478 24.4 4 29.4; 479 24.4 4 25.2; 480 24.4 4 21
 125. 481 24.4 4 16.8; 482 24.4 4 12.6; 483 24.4 4 8.4; 484 24.4 4 4.2; 485 24.4 4 0
 126. 486 32.4 4 0; 487 32.4 4 4.2; 488 32.4 4 8.4; 489 32.4 4 12.6; 490 32.4 4 16.8
 127. 491 32.4 4 25.2; 492 32.4 4 21; 493 32.4 4 29.4; 494 32.4 4 33.6
 128. 495 10.8 4 12.6; 496 10.8 4 16.8; 497 10.8 4 25.2; 498 10.8 4 21
 129. 499 21.6 4 25.2; 500 21.6 4 21; 501 21.6 4 16.8; 502 21.6 4 12.6
 130. 503 20.9 4 25.2; 504 11.5 4 25.2; 505 12.2 4 4.2; 506 12.2 4 8.4
 131. 507 20.2 4 8.4; 508 20.2 4 4.2; 509 12.2 4 2.2; 510 20.2 4 2.2
 132. 511 12.1779 4 12.6; 512 20.1758 4 12.6; 513 8 4 0.88; 514 15.1 4 2.98
 133. 515 15.1 4 4.2; 516 24.4 4 0.88; 517 17.3 4 4.2; 518 17.3 4 2.98
 134. 519 14.1779 4 12.6; 520 12.2 4 4.54; 521 20.2 4 4.54; 522 12.2 4 6.39
 135. 523 20.2 4 6.39; 524 10.5 4 4.54; 525 21.9 4 4.54; 526 18.22 4 29.4
 136. 527 12.65 4 12.6; 528 19.75 4 12.6; 529 13.8 4 29.4; 530 18.1779 4 12.6
 137. 531 18.22 4 30.4; 532 13.8 4 30.4; 533 15.76 4 29.4; 534 13.82 4 33.6
 138. 535 18.22 4 33.6; 536 18.31 4 32.7; 537 13.73 4 32.7; 538 17.54 4 33.69
 139. 539 14.5 4 33.69; 540 8 4 30.4; 541 8 4 32.7; 542 0 4 30.4; 543 0 4 32.7
 140. 544 24.4 4 30.4; 545 24.4 4 32.7; 546 32.4 4 30.4; 547 32.4 4 32.7
 141. 548 21.6 4 29.4; 549 20.9 4 29.4; 550 18.22 4 25.2; 551 13.8 4 25.2
 142. 552 15.76 4 25.2; 553 10.8 4 29.4; 554 11.5 4 29.4; 555 21.6 4 33.6
 143. 556 20.9 4 33.6; 557 10.8 4 33.6; 558 11.5 4 33.6; 559 10.8 4 8.4
 144. 560 21.6 4 8.4; 561 20.9 4 8.4; 562 11.5 4 8.4; 563 14.1779 4 8.4
 145. 564 16.1779 4 8.4; 565 12.65 4 8.4; 566 19.75 4 8.4; 567 18.1779 4 8.4
 146. 568 10.5 4 8.4; 569 21.9 4 8.4; 570 10.5 4 12.6; 571 21.9 4 12.6
 147. 572 10.5 4 16.8; 573 21.9 4 16.8; 574 10.5 4 21; 575 21.9 4 21
 148. 576 10.5 4 25.2; 577 21.9 4 25.2; 578 10.5 4 29.4; 579 21.9 4 29.4
 149. 580 10.5 4 33.6; 581 21.9 4 33.6; 582 8 4 6.39; 583 24.4 4 6.39
 150. 584 24.4 4 4.54; 585 32.4 4 4.54; 586 32.4 4 6.39; 587 21.9 4 4.2
 151. 588 24.4 4 2.2; 589 32.4 4 2.2; 590 8 4 4.54; 591 0 4 4.54; 592 0 4 6.39
 152. 593 32.4 4 0.88; 594 14.1779 4 6.39; 595 16.1779 4 6.39; 596 12.65 4 6.39

STAAD SPACE

-- PAGE NO. 4

153. 597 19.75 4 6.39; 598 18.1779 4 6.39; 599 14.1779 4 4.2; 600 16.1779 4 4.2
 154. 601 12.65 4 4.2; 602 19.75 4 4.2; 603 18.1779 4 4.2; 604 18.6721 4 6.39
 155. 605 18.6721 4 4.2; 606 21.9 4 0.88; 607 10.5 4 0.88; 608 12.2 4 0.88
 156. 609 20.2 4 0.88; 610 8 4 2.2; 611 0 4 2.2; 612 0 4 0.88; 613 18.6721 4 8.4
 157. 614 18.6721 4 12.6; 615 14.1779 4 1.98; 616 18.1779 4 2.98; 617 14.1779 4 2.2
 158. 618 12.65 4 2.2; 619 12.65 4 0.88; 620 12.2 4 2.98; 621 8 4 2.98; 622 0 4 2.98
 159. 623 15.1 4 6.39; 624 15.1 4 8.4; 625 18.1779 4 2.2; 626 20.2 4 2.98
 160. 627 24.4 4 2.98; 628 32.4 4 2.98; 629 19.75 4 2.2; 630 19.75 4 0.88
 161. 631 18.6721 4 2.2; 632 17.3 4 6.39; 633 17.3 4 8.4; 634 21.6 4 23.1
 162. 635 21.6 4 18.9; 636 21.6 4 14.7; 637 24.4 4 23.1; 638 24.4 4 18.9
 163. 639 24.4 4 14.7; 640 24.4 4 10.5; 641 24.4 4 27.3; 642 32.4 4 23.1
 164. 643 32.4 4 18.9; 644 32.4 4 14.7; 645 32.4 4 10.5; 646 32.4 4 27.3
 165. 647 8 4 27.3; 648 0 4 27.3; 649 10.8 4 23.1; 650 10.8 4 18.9; 651 10.8 4 14.7
 166. 652 8 4 10.5; 653 8 4 23.1; 654 8 4 18.9; 655 8 4 14.7; 656 0 4 10.5
 167. 657 0 4 23.1; 658 0 4 18.9; 659 0 4 14.7; 660 29.9 4 0; 661 26.9 4 0
 168. 662 29.9 4 4.2; 663 26.9 4 4.2; 664 29.9 4 8.4; 665 26.9 4 8.4
 169. 666 29.9 4 12.6; 667 26.9 4 12.6; 668 29.9 4 16.8; 669 26.9 4 16.8
 170. 670 29.9 4 21; 671 26.9 4 21; 672 29.9 4 25.2; 673 26.9 4 25.2
 171. 674 29.9 4 29.4; 675 26.9 4 29.4; 676 29.9 4 33.6; 677 26.9 4 33.6
 172. 678 5.5 4 0; 679 2.5 4 0; 680 5.5 4 4.2; 681 2.5 4 4.2; 682 5.5 4 8.4
 173. 683 2.5 4 8.4; 684 5.5 4 16.8; 685 2.5 4 16.8; 686 5.5 4 21; 687 2.5 4 21
 174. 688 5.5 4 25.2; 689 2.5 4 25.2; 690 5.5 4 29.4; 691 2.5 4 29.4; 692 5.5 4 33.6
 175. 693 2.5 4 33.6; 694 5.5 4 12.6; 695 2.5 4 12.6; 696 12.2 1.75 6.39
 176. 697 12.2 1.75 4.54; 698 16.1779 4 12.6; 699 16.1779 2 15.5; 700 18.1779 2 15.5
 177. 701 17.4279 2 16.5664; 702 16.1779 2 17.25; 703 14.1779 2 15.5
 178. 704 14.9279 2 16.5664; 705 15.1 4 12.6; 706 15.1 2 15.5; 707 17.3 4 12.6
 179. 708 20.9 4 12.6; 709 11.5 4 12.6; 710 21.9 4 6.39; 711 21.6 4 6.39
 180. 712 20.9 4 6.39; 713 20.2 1.75 6.39; 714 21.9 1.75 6.39; 715 21.6 1.75 6.39
 181. 716 20.9 1.75 6.39; 717 21.9 1.75 4.54; 718 20.2 1.75 4.54; 719 10.5 1.75 6.39
 182. 720 10.8 1.75 6.39; 721 11.5 1.75 6.39; 722 10.5 1.75 4.54; 723 10.5 4 6.39
 183. 724 10.8 4 6.39; 725 11.5 4 6.39; 726 13.82 2 33.6; 727 18.22 2 33.6
 184. 728 18.31 2 32.7; 729 13.73 2 32.7; 730 17.54 2 33.69; 731 14.5 2 33.69
 185. 732 16.27 2 31.85; 733 15.77 2 31.85; 734 15.77 2 33.6; 735 16.27 2 33.6
 186. 736 18.22 2 31.85; 737 13.82 2 31.85; 738 16.27 0 29.4; 739 16.27 0 27.3
 187. 740 12.2 -4.5 4.2; 741 0 8 33.6; 742 0 8 29.4; 743 0 8 25.2; 744 0 8 21
 188. 745 0 8 16.8; 746 0 8 12.6; 747 0 8 8.4; 748 0 8 4.2; 749 8 8 0; 750 8 8 4.2
 189. 751 8 8 8.4; 752 8 8 12.6; 753 8 8 16.8; 754 8 8 25.2; 755 8 8 21
 190. 756 8 8 29.4; 757 8 8 33.6; 758 24.4 8 33.6; 759 24.4 8 29.4; 760 24.4 8 25.2
 191. 761 24.4 8 21; 762 24.4 8 16.8; 763 24.4 8 12.6; 764 24.4 8 8.4
 192. 765 24.4 8 4.2; 766 24.4 8 0; 767 32.4 8 0; 768 32.4 8 4.2; 769 32.4 8 8.4
 193. 770 32.4 8 12.6; 771 32.4 8 16.8; 772 32.4 8 25.2; 773 32.4 8 21
 194. 774 32.4 8 29.4; 775 32.4 8 33.6; 776 10.8 8 12.6; 777 10.8 8 16.8
 195. 778 10.8 8 25.2; 779 10.8 8 21; 780 21.6 8 25.2; 781 21.6 8 21
 196. 782 21.6 8 16.8; 783 21.6 8 12.6; 784 20.9 8 25.2; 785 11.5 8 25.2
 197. 786 12.2 8 4.2; 787 12.2 8 8.4; 788 20.2 8 8.4; 789 20.2 8 4.2; 790 12.2 8 2.2
 198. 791 20.2 8 2.2; 792 12.1779 8 12.6; 793 20.1758 8 12.6; 794 8 8 0.88
 199. 795 15.1 8 2.98; 796 15.1 8 4.2; 797 24.4 8 0.88; 798 17.3 8 4.2
 200. 799 17.3 8 2.98; 800 14.1779 8 12.6; 801 12.2 8 4.54; 802 20.2 8 4.54
 201. 803 12.2 8 6.39; 804 20.2 8 6.39; 805 10.5 8 4.54; 806 21.9 8 4.54
 202. 807 18.22 8 29.4; 808 12.65 8 12.6; 809 19.75 8 12.6; 810 13.8 8 29.4
 203. 811 18.1779 8 12.6; 812 18.22 8 30.4; 813 13.8 8 30.4; 814 15.76 8 29.4
 204. 815 13.82 8 33.6; 816 18.22 8 33.6; 817 18.31 8 32.7; 818 13.73 8 32.7
 205. 819 17.54 8 33.69; 820 14.5 8 33.69; 821 8 8 30.4; 822 8 8 32.7; 823 0 8 30.4
 206. 824 0 8 32.7; 825 24.4 8 30.4; 826 24.4 8 32.7; 827 32.4 8 30.4
 207. 828 32.4 8 32.7; 829 21.6 8 29.4; 830 20.9 8 29.4; 831 18.22 8 25.2
 208. 832 13.8 8 25.2; 833 15.76 8 25.2; 834 10.8 8 29.4; 835 11.5 8 29.4

STAAD SPACE

-- PAGE NO. 5

209. 836 21.6 8 33.6; 837 20.9 8 33.6; 838 10.8 8 33.6; 839 11.5 8 33.6
210. 840 10.8 8 8.4; 841 21.6 8 8.4; 842 20.9 8 8.4; 843 11.5 8 8.4
211. 844 14.1779 8 8.4; 845 16.1779 8 8.4; 846 12.65 8 8.4; 847 19.75 8 8.4
212. 848 18.1779 8 8.4; 849 10.5 8 8.4; 850 21.9 8 8.4; 851 10.5 8 12.6
213. 852 21.9 8 12.6; 853 10.5 8 16.8; 854 21.9 8 16.8; 855 10.5 8 21
214. 856 21.9 8 21; 857 10.5 8 25.2; 858 21.9 8 25.2; 859 10.5 8 29.4
215. 860 21.9 8 29.4; 861 10.5 8 33.6; 862 21.9 8 33.6; 863 8 8 6.39
216. 864 24.4 8 6.39; 865 24.4 8 4.54; 866 32.4 8 4.54; 867 32.4 8 6.39
217. 868 24.4 8 2.2; 869 32.4 8 2.2; 870 8 8 1.54; 871 0 8 4.54; 872 0 8 6.39
218. 873 32.4 8 0.88; 874 14.1779 8 6.39; 875 16.1779 8 6.39; 876 12.65 8 6.39
219. 877 19.75 8 6.39; 878 18.1779 8 6.39; 879 14.1779 8 4.2; 880 16.1779 8 4.2
220. 881 12.65 8 4.2; 882 19.75 8 4.2; 883 18.1779 8 4.2; 884 18.6721 8 6.39
221. 885 18.6721 8 4.2; 886 21.9 8 0.88; 887 10.5 8 0.88; 888 12.2 8 0.88
222. 889 20.2 8 0.88; 890 8 8 2.2; 891 0 8 2.2; 892 0 8 0.88; 893 18.6721 8 8.4
223. 894 18.6721 8 12.6; 895 14.1779 8 2.98; 896 18.1779 8 2.98; 897 14.1779 8 2.2
224. 898 12.65 8 2.2; 899 12.65 8 0.88; 900 12.2 8 2.98; 901 8 8 2.98; 902 0 8 2.98
225. 903 15.1 8 6.39; 904 15.1 8 8.4; 905 18.1779 8 2.2; 906 20.2 8 2.98
226. 907 24.4 8 2.98; 908 32.4 8 2.98; 909 19.75 8 2.2; 910 19.75 8 0.88
227. 911 18.6721 8 2.2; 912 17.3 8 6.39; 913 17.3 8 8.4; 914 21.6 8 23.1
228. 915 21.6 8 18.9; 916 21.6 8 14.7; 917 24.4 8 23.1; 918 24.4 8 18.9
229. 919 24.4 8 14.7; 920 24.4 8 10.5; 921 24.4 8 27.3; 922 32.4 8 23.1
230. 923 32.4 8 18.9; 924 32.4 8 14.7; 925 32.4 8 10.5; 926 32.4 8 27.3
231. 927 8 8 27.3; 928 0 8 27.3; 929 10.8 8 23.1; 930 10.8 8 18.9; 931 10.8 8 14.7
232. 932 8 8 10.5; 933 8 8 23.1; 934 8 8 18.9; 935 8 8 14.7; 936 0 8 10.5
233. 937 0 8 23.1; 938 0 8 18.9; 939 0 8 14.7; 940 29.9 8 0; 941 26.9 8 0
234. 942 29.9 8 4.2; 943 26.9 8 4.2; 944 29.9 8 8.4; 945 26.9 8 8.4
235. 946 29.9 8 12.6; 947 26.9 8 12.6; 948 29.9 8 16.8; 949 26.9 8 16.8
236. 950 29.9 8 21; 951 26.9 8 21; 952 29.9 8 25.2; 953 26.9 8 25.2
237. 954 29.9 8 29.4; 955 26.9 8 29.4; 956 29.9 8 33.6; 957 26.9 8 33.6
238. 958 5.5 8 0; 959 2.5 8 0; 960 5.5 8 4.2; 961 2.5 8 4.2; 962 5.5 8 8.4
239. 963 2.5 8 8.4; 964 5.5 8 16.8; 965 2.5 8 16.8; 966 5.5 8 21; 967 2.5 8 21
240. 968 5.5 8 25.2; 969 2.5 8 25.2; 970 5.5 8 29.4; 971 2.5 8 29.4; 972 5.5 8 33.6
241. 973 2.5 8 33.6; 974 5.5 8 12.6; 975 2.5 8 12.6; 976 12.2 5.75 6.39
242. 977 12.2 5.75 4.54; 978 11.5 8 12.6; 979 20.2 5.75 6.39; 980 0 12 33.6
243. 981 0 12 29.4; 982 0 12 25.2; 983 0 12 21; 984 0 12 16.8; 985 0 12 12.6
244. 986 0 12 8.4; 987 0 12 4.2; 988 8 12 0; 989 8 12 4.2; 990 8 12 8.4
245. 991 8 12 12.6; 992 8 12 16.8; 993 8 12 25.2; 994 8 12 21; 995 8 12 29.4
246. 996 8 12 33.6; 997 24.4 12 33.6; 998 24.4 12 29.4; 999 24.4 12 25.2
247. 1000 24.4 12 21; 1001 24.4 12 16.8; 1002 24.4 12 12.6; 1003 24.4 12 8.4
248. 1004 24.4 12 4.2; 1005 24.4 12 0; 1006 32.4 12 0; 1007 32.4 12 4.2
249. 1008 32.4 12 8.4; 1009 32.4 12 12.6; 1010 32.4 12 16.8; 1011 32.4 12 25.2
250. 1012 32.4 12 21; 1013 32.4 12 29.4; 1014 32.4 12 33.6; 1015 10.8 12 12.6
251. 1016 10.8 12 16.8; 1017 10.8 12 25.2; 1018 10.8 12 21; 1019 21.6 12 25.2
252. 1020 21.6 12 21; 1021 21.6 12 16.8; 1022 21.6 12 12.6; 1023 20.9 12 25.2
253. 1024 11.5 12 25.2; 1025 12.2 12 4.2; 1026 12.2 12 8.4; 1027 20.2 12 8.4
254. 1028 20.2 12 4.2; 1029 12.2 12 2.2; 1030 20.2 12 2.2; 1031 12.1779 12 12.6
255. 1032 20.1758 12 12.6; 1033 8 12 0.88; 1034 15.1 12 2.98; 1035 15.1 12 4.2
256. 1036 24.4 12 0.88; 1037 17.3 12 4.2; 1038 17.3 12 2.98; 1039 14.1779 12 12.6
257. 1040 12.2 12 4.54; 1041 20.2 12 4.54; 1042 12.2 12 6.39; 1043 20.2 12 6.39
258. 1044 10.5 12 4.54; 1045 21.9 12 4.54; 1046 18.22 12 29.4; 1047 12.65 12 12.6
259. 1048 19.75 12 12.6; 1049 13.8 12 29.4; 1050 18.1779 12 12.6
260. 1051 18.22 12 30.4; 1052 13.8 12 30.4; 1053 15.76 12 29.4; 1054 13.82 12 33.6
261. 1055 18.22 12 33.6; 1056 18.31 12 12.7; 1057 13.73 12 32.7
262. 1058 17.54 12 33.69; 1059 14.5 12 33.69; 1060 8 12 30.4; 1061 8 12 32.7
263. 1062 0 12 30.4; 1063 0 12 32.7; 1064 24.4 12 30.4; 1065 24.4 12 32.7
264. 1066 32.4 12 30.4; 1067 32.4 12 32.7; 1068 21.6 12 29.4; 1069 20.9 12 29.4

STAAD SPACE

-- PAGE NO. 6

265. 1070 18.22 12 25.2; 1071 13.8 12 25.2; 1072 15.76 12 25.2; 1073 10.8 12 29.4
266. 1074 11.5 12 29.4; 1075 21.6 12 33.6; 1076 20.9 12 33.6; 1077 10.8 12 33.6
267. 1078 11.5 12 33.6; 1079 10.8 12 8.4; 1080 21.6 12 8.4; 1081 20.9 12 8.4
268. 1082 11.5 12 8.4; 1083 14.1779 12 8.4; 1084 16.1779 12 8.4; 1085 12.65 12 8.4
269. 1086 19.75 12 8.4; 1087 18.1779 12 8.4; 1088 10.5 12 8.4; 1089 21.9 12 8.4
270. 1090 10.5 12 12.6; 1091 21.9 12 12.6; 1092 10.5 12 16.8; 1093 21.9 12 16.8
271. 1094 10.5 12 21; 1095 21.9 12 21; 1096 10.5 12 25.2; 1097 21.9 12 25.2
272. 1098 10.5 12 29.4; 1099 21.9 12 29.4; 1100 10.5 12 33.6; 1101 21.9 12 33.6
273. 1102 8 12 6.39; 1103 24.4 12 6.39; 1104 24.4 12 4.54; 1105 32.4 12 4.54
274. 1106 32.4 12 6.39; 1107 21.9 12 4.2; 1108 24.4 12 2.2; 1109 32.4 12 2.2
275. 1110 8 12 4.54; 1111 0 12 4.54; 1112 0 12 6.39; 1113 32.4 12 0.88
276. 1114 14.1779 12 6.39; 1115 16.1779 12 6.39; 1116 12.65 12 6.39
277. 1117 19.75 12 6.39; 1118 18.1779 12 6.39; 1119 14.1779 12 4.2
278. 1120 16.1779 12 4.2; 1121 12.65 12 4.2; 1122 19.75 12 4.2; 1123 18.1779 12 4.2
279. 1124 18.6721 12 6.39; 1125 18.6721 12 4.2; 1126 21.9 12 0.88
280. 1127 10.5 12 0.88; 1128 12.2 12 0.88; 1129 20.2 12 0.88; 1130 8 12 2.2
281. 1131 0 12 2.2; 1132 0 12 0.88; 1133 18.6721 12 8.4; 1134 18.6721 12 12.6
282. 1135 14.1779 12 2.98; 1136 18.1779 12 2.98; 1137 14.1779 12 2.2
283. 1138 12.65 12 2.2; 1139 12.65 12 0.88; 1140 12.2 12 2.98; 1141 8 12 2.98
284. 1142 0 12 2.98; 1143 15.1 12 6.39; 1144 15.1 12 8.4; 1145 18.1779 12 2.2
285. 1146 20.2 12 2.98; 1147 24.4 12 2.98; 1148 32.4 12 2.98; 1149 19.75 12 2.2
286. 1150 19.75 12 0.88; 1151 18.6721 12 2.2; 1152 17.3 12 6.39; 1153 17.3 12 8.4
287. 1154 21.6 12 23.1; 1155 21.6 12 18.9; 1156 21.6 12 14.7; 1157 24.4 12 23.1
288. 1158 24.4 12 18.9; 1159 24.4 12 14.7; 1160 24.4 12 10.5; 1161 24.4 12 27.3
289. 1162 32.4 12 23.1; 1163 32.4 12 18.9; 1164 32.4 12 14.7; 1165 32.4 12 10.5
290. 1166 32.4 12 27.3; 1167 8 12 27.3; 1168 0 12 27.3; 1169 10.8 12 23.1
291. 1170 10.8 12 18.9; 1171 10.8 12 14.7; 1172 8 12 10.5; 1173 8 12 23.1
292. 1174 8 12 18.9; 1175 8 12 14.7; 1176 0 12 10.5; 1177 0 12 23.1; 1178 0 12 18.9
293. 1179 0 12 14.7; 1180 29.9 12 0; 1181 26.9 12 0; 1182 29.9 12 4.2
294. 1183 26.9 12 4.2; 1184 29.9 12 8.4; 1185 26.9 12 8.4; 1186 29.9 12 12.6
295. 1187 26.9 12 12.6; 1188 29.9 12 16.8; 1189 26.9 12 16.8; 1190 29.9 12 21
296. 1191 26.9 12 21; 1192 29.9 12 25.2; 1193 26.9 12 25.2; 1194 29.9 12 29.4
297. 1195 26.9 12 29.4; 1196 29.9 12 33.6; 1197 26.9 12 33.6; 1198 5.5 12 0
298. 1199 2.5 12 0; 1200 5.5 12 4.2; 1201 2.5 12 4.2; 1202 5.5 12 8.4
299. 1203 2.5 12 8.4; 1204 5.5 12 16.8; 1205 2.5 12 16.8; 1206 5.5 12 21
300. 1207 2.5 12 21; 1208 5.5 12 25.2; 1209 2.5 12 25.2; 1210 5.5 12 29.4
301. 1211 2.5 12 29.4; 1212 5.5 12 33.6; 1213 2.5 12 33.6; 1214 5.5 12 12.6
302. 1215 2.5 12 12.6; 1216 12.2 9.75 6.39; 1217 12.2 9.75 4.54; 1218 11.5 12 12.6
303. 1219 20.2 9.75 6.39; 1220 13.82 6 33.6; 1221 18.22 6 33.6; 1222 18.31 6 32.7
304. 1223 13.73 6 32.7; 1224 17.54 6 33.6; 1225 14.5 6 33.6; 1226 16.27 6 31.85
305. 1227 15.77 6 31.85; 1228 15.77 6 33.6; 1229 16.27 6 33.6; 1230 18.22 6 31.85
306. 1231 13.82 6 31.85; 1232 16.27 4 29.4; 1233 13.82 10 33.6; 1234 18.22 10 33.6
307. 1235 18.31 10 32.7; 1236 13.73 10 32.7; 1237 17.54 10 33.6
308. 1238 14.5 10 33.6; 1239 16.27 10 31.85; 1240 15.77 10 31.85
309. 1241 15.77 10 33.6; 1242 16.27 10 33.6; 1243 18.22 10 31.85
310. 1244 13.82 10 31.85; 1245 16.27 8 29.4; 1246 16.27 12 29.4; 1247 21.9 8 6.39
311. 1248 21.6 8 6.39; 1249 20.9 8 6.39; 1250 21.9 5.75 6.39; 1251 21.6 5.75 6.39
312. 1252 20.9 5.75 6.39; 1253 21.9 5.75 4.54; 1254 20.2 5.75 4.54
313. 1255 10.5 5.75 6.39; 1256 10.8 5.75 6.39; 1257 11.5 5.75 6.39
314. 1258 10.5 5.75 4.54; 1259 10.5 8 6.39; 1260 10.8 8 6.39; 1261 11.5 8 6.39
315. 1262 21.9 12 6.39; 1263 21.6 12 6.39; 1264 20.9 12 6.39; 1265 21.9 9.75 6.39
316. 1266 21.6 9.75 6.39; 1267 20.9 9.75 6.39; 1268 21.9 9.75 4.54
317. 1269 20.2 9.75 4.54; 1270 10.5 9.75 6.39; 1271 10.8 9.75 6.39
318. 1272 11.5 9.75 6.39; 1273 10.5 9.75 4.54; 1274 10.5 12 6.39; 1275 10.8 12 6.39
319. 1276 11.5 12 6.39; 1277 16.1779 8 12.6; 1278 16.1779 6 15.5
320. 1279 18.1779 6 15.5; 1280 17.4279 6 16.5664; 1281 16.1779 6 17.25

STAAD SPACE

-- PAGE NO. 7

321. 1282 14.1779 6 15.5; 1283 14.9279 6 16.5664; 1284 15.1 8 12.6
 322. 1285 15.1 6 15.5; 1286 16.1779 12 12.6; 1287 16.1779 10 15.5
 323. 1288 18.1779 10 15.5; 1289 17.4279 10 16.5664; 1290 16.1779 10 17.25
 324. 1291 14.1779 10 15.5; 1292 14.9279 10 16.5664; 1293 15.1 12 12.6
 325. 1294 15.1 10 15.5; 1295 18.1779 -4.5 12.6; 1296 16.1779 0 15.5
 326. 1297 16.1779 4 15.5; 1298 16.1779 8 15.5; 1299 16.1779 12 15.5
 327. 1300 17.3 2 15.5; 1301 17.3 6 15.5; 1302 17.3 10 15.5; 1303 17.3 8 12.6
 328. 1304 16.27 0 25.2; 1305 16.27 4 25.2; 1306 16.27 8 25.2; 1307 16.27 12 25.2
 329. 1308 13.7767 0 31.1667; 1309 13.0178 0 31.1667; 1310 13.0333 0 30.4
 330. 1311 13.7533 0 31.9333; 1312 13.0022 0 31.9333; 1313 12.9867 0 32.7
 331. 1314 12.2589 0 31.1667; 1315 12.2667 0 30.4; 1316 12.2511 0 31.9333
 332. 1317 12.2433 0 32.7; 1318 11.5 0 31.1667; 1319 11.5 0 31.9333
 333. 1320 20.9 0 31.1667; 1321 20.0167 0 31.1667; 1322 20.0067 0 30.4
 334. 1323 20.9 0 31.9333; 1324 20.0267 0 31.9333; 1325 20.0367 0 32.7
 335. 1326 19.1333 0 31.1667; 1327 19.1133 0 30.4; 1328 19.1533 0 31.9333
 336. 1329 19.1733 0 32.7; 1330 18.25 0 31.1667; 1331 18.28 0 31.9333
 337. 1332 9.66667 0 32.7; 1333 9.66667 0 31.9333; 1334 10.5 0 31.9333
 338. 1335 8.83333 0 32.7; 1336 8.83333 0 31.9333; 1337 8 0 31.9333
 339. 1338 9.66667 0 31.1667; 1339 10.5 0 31.1667; 1340 8.83333 0 31.1667
 340. 1341 8 0 31.1667; 1342 9.66667 0 30.4; 1343 8.83333 0 30.4
 341. 1344 24.4 0 31.1667; 1345 23.5667 0 31.1667; 1346 23.5667 0 30.4
 342. 1347 24.4 0 31.9333; 1348 23.5667 0 31.9333; 1349 23.5667 0 32.7
 343. 1350 22.7333 0 31.1667; 1351 22.7333 0 30.4; 1352 22.7333 0 31.9333
 344. 1353 22.7333 0 32.7; 1354 21.9 0 31.1667; 1355 21.9 0 31.9333
 345. 1356 9.66667 0 8.4; 1357 9.66667 0 7.73; 1358 10.5 0 7.73; 1359 8.83333 0 8.4
 346. 1360 8.83333 0 7.73; 1361 8 0 7.73; 1362 9.66667 0 7.06; 1363 10.5 0 7.06
 347. 1364 8.83333 0 7.06; 1365 8 0 7.06; 1366 9.66667 0 6.39; 1367 8.83333 0 6.39
 348. 1368 23.5667 0 8.4; 1369 23.5667 0 7.73; 1370 24.4 0 7.73; 1371 22.7333 0 8.4
 349. 1372 22.7333 0 7.73; 1373 21.9 0 7.73; 1374 23.5667 0 7.06; 1375 24.4 0 7.06
 350. 1376 22.7333 0 7.06; 1377 21.9 0 7.06; 1378 23.5667 0 6.39
 351. 1379 22.7333 0 6.39; 1380 24.4 0 5.15667; 1381 23.5667 0 5.15667
 352. 1382 23.5667 0 4.54; 1383 24.4 0 5.77333; 1384 23.5667 0 5.77333
 353. 1385 22.7333 0 5.15667; 1386 22.7333 0 4.54; 1387 22.7333 0 5.77333
 354. 1388 21.9 0 5.15667; 1389 21.9 0 5.77333; 1390 10.5 0 5.15667
 355. 1391 9.66667 0 5.15667; 1392 9.66667 0 4.54; 1393 10.5 0 5.77333
 356. 1394 9.66667 0 5.77333; 1395 8.83333 0 5.15667; 1396 8.83333 0 4.54
 357. 1397 8.83333 0 5.77333; 1398 8 0 5.15667; 1399 8 0 5.77333; 1400 22.7333 0 9.1
 358. 1401 21.9 0 9.1; 1402 23.5667 0 9.1; 1403 24.4 0 9.1; 1404 22.7333 0 9.8
 359. 1405 21.9 0 9.8; 1406 23.5667 0 9.8; 1407 24.4 0 9.8; 1408 22.7333 0 10.5
 360. 1409 23.5667 0 10.5; 1410 23.5667 0 11.2; 1411 24.4 0 11.2
 361. 1412 22.7333 0 11.2; 1413 21.9 0 11.2; 1414 23.5667 0 11.9; 1415 24.4 0 11.9
 362. 1416 22.7333 0 11.9; 1417 21.9 0 11.9; 1418 23.5667 0 12.6
 363. 1419 22.7333 0 12.6; 1420 23.5667 0 13.3; 1421 24.4 0 13.3
 364. 1422 22.7333 0 13.3; 1423 21.9 0 13.3; 1424 23.5667 0 14; 1425 24.4 0 14
 365. 1426 22.7333 0 14; 1427 21.9 0 14; 1428 23.5667 0 14.7; 1429 22.7333 0 14.7
 366. 1430 23.5667 0 15.4; 1431 24.4 0 15.4; 1432 22.7333 0 15.4; 1433 21.9 0 15.4
 367. 1434 23.5667 0 16.1; 1435 24.4 0 16.1; 1436 22.7333 0 16.1; 1437 21.9 0 16.1
 368. 1438 23.5667 0 16.8; 1439 22.7333 0 16.8; 1440 24.4 0 17.5
 369. 1441 23.5667 0 17.5; 1442 24.4 0 18.2; 1443 23.5667 0 18.2
 370. 1444 23.5667 0 18.9; 1445 22.7333 0 17.5; 1446 22.7333 0 18.2
 371. 1447 22.7333 0 18.9; 1448 21.9 0 17.5; 1449 21.9 0 18.2; 1450 23.5667 0 19.6
 372. 1451 24.4 0 19.6; 1452 22.7333 0 19.6; 1453 21.9 0 19.6; 1454 23.5667 0 20.3
 373. 1455 24.4 0 20.3; 1456 22.7333 0 20.3; 1457 21.9 0 20.3; 1458 23.5667 0 21
 374. 1459 22.7333 0 21; 1460 24.4 0 21.7; 1461 23.5667 0 21.7; 1462 24.4 0 22.4
 375. 1463 23.5667 0 22.4; 1464 23.5667 0 23.1; 1465 22.7333 0 21.7
 376. 1466 22.7333 0 22.4; 1467 22.7333 0 23.1; 1468 21.9 0 21.7; 1469 21.9 0 22.4

STAAD SPACE

-- PAGE NO. 8

377. 1470 23.5667 0 23.8; 1471 24.4 0 23.8; 1472 22.7333 0 23.8; 1473 21.9 0 23.8
378. 1474 23.5667 0 24.5; 1475 24.4 0 24.5; 1476 22.7333 0 24.5; 1477 21.9 0 24.5
379. 1478 23.5667 0 25.2; 1479 22.7333 0 25.2; 1480 23.5667 0 25.9
380. 1481 24.4 0 25.9; 1482 22.7333 0 25.9; 1483 21.9 0 25.9; 1484 23.5667 0 26.6
381. 1485 24.4 0 26.6; 1486 22.7333 0 26.6; 1487 21.9 0 26.6; 1488 23.5667 0 27.3
382. 1489 22.7333 0 27.3; 1490 21.9 0 28; 1491 22.7333 0 28; 1492 21.9 0 28.7
383. 1493 22.7333 0 28.7; 1494 22.7333 0 29.4; 1495 23.5667 0 28
384. 1496 23.5667 0 28.7; 1497 23.5667 0 29.4; 1498 24.4 0 28; 1499 24.4 0 28.7
385. 1500 20.0067 0 25.2; 1501 20.0067 0 25.9; 1502 20.9 0 25.9
386. 1503 19.1133 0 25.2; 1504 19.1133 0 25.9; 1505 18.22 0 25.9
387. 1506 20.0067 0 26.6; 1507 20.9 0 26.6; 1508 19.1133 0 26.6; 1509 18.22 0 26.6
388. 1510 20.0067 0 27.3; 1511 19.1133 0 27.3; 1512 20.0067 0 28; 1513 20.9 0 28
389. 1514 19.1133 0 28; 1515 18.22 0 28; 1516 20.0067 0 28.7; 1517 20.9 0 28.7
390. 1518 19.1133 0 28.7; 1519 18.22 0 28.7; 1520 20.0067 0 29.4
391. 1521 19.1133 0 29.4; 1522 15.1067 0 25.2; 1523 15.1067 0 25.9
392. 1524 15.76 0 25.9; 1525 14.4533 0 25.2; 1526 14.4533 0 25.9; 1527 13.8 0 25.9
393. 1528 15.1067 0 26.6; 1529 15.76 0 26.6; 1530 14.4533 0 26.6; 1531 13.8 0 26.6
394. 1532 15.1067 0 27.3; 1533 14.4533 0 27.3; 1534 15.1067 0 28; 1535 15.76 0 28
395. 1536 14.4533 0 28; 1537 13.8 0 28; 1538 15.1067 0 28.7; 1539 15.76 0 28.7
396. 1540 14.4533 0 28.7; 1541 13.8 0 28.7; 1542 15.1067 0 29.4
397. 1543 14.4533 0 29.4; 1544 13.0333 0 25.2; 1545 13.0333 0 25.9
398. 1546 12.2667 0 25.2; 1547 12.2667 0 25.9; 1548 11.5 0 25.9
399. 1549 13.0333 0 26.6; 1550 12.2667 0 26.6; 1551 11.5 0 26.6
400. 1552 13.0333 0 27.3; 1553 12.2667 0 27.3; 1554 13.0333 0 28; 1555 12.2667 0 28
401. 1556 11.5 0 28; 1557 13.0333 0 28.7; 1558 12.2667 0 28.7; 1559 11.5 0 28.7
402. 1560 13.0333 0 29.4; 1561 12.2667 0 29.4; 1562 9.66667 0 25.2
403. 1563 9.66667 0 25.9; 1564 10.5 0 25.9; 1565 8.83333 0 25.2
404. 1566 8.83333 0 25.9; 1567 8 0 25.9; 1568 9.66667 0 26.6; 1569 10.5 0 26.6
405. 1570 8.83333 0 26.6; 1571 8 0 26.6; 1572 9.66667 0 27.3; 1573 8.83333 0 27.3
406. 1574 10.5 0 28; 1575 9.66667 0 28; 1576 10.5 0 28.7; 1577 9.66667 0 28.7
407. 1578 9.66667 0 29.4; 1579 8.83333 0 28; 1580 8.83333 0 28.7
408. 1581 8.83333 0 29.4; 1582 8 0 28; 1583 8 0 28.7; 1584 9.66667 0 21
409. 1585 9.66667 0 21.7; 1586 10.5 0 21.7; 1587 8.83333 0 21; 1588 8.83333 0 21.7
410. 1589 8 0 21.7; 1590 9.66667 0 22.4; 1591 10.5 0 22.4; 1592 8.83333 0 22.4
411. 1593 8 0 22.4; 1594 9.66667 0 23.1; 1595 8.83333 0 23.1; 1596 9.66667 0 23.8
412. 1597 10.5 0 23.8; 1598 8.83333 0 23.8; 1599 8 0 23.8; 1600 9.66667 0 24.5
413. 1601 10.5 0 24.5; 1602 8.83333 0 24.5; 1603 8 0 24.5; 1604 9.66667 0 16.8
414. 1605 9.66667 0 17.5; 1606 10.5 0 17.5; 1607 8.83333 0 16.8
415. 1608 8.83333 0 17.5; 1609 8 0 17.5; 1610 9.66667 0 18.2; 1611 10.5 0 18.2
416. 1612 8.83333 0 18.2; 1613 8 0 18.2; 1614 9.66667 0 18.9; 1615 8.83333 0 18.9
417. 1616 9.66667 0 19.6; 1617 10.5 0 19.6; 1618 8.83333 0 19.6; 1619 8 0 19.6
418. 1620 9.66667 0 20.3; 1621 10.5 0 20.3; 1622 8.83333 0 20.3; 1623 8 0 20.3
419. 1624 9.66667 0 14.7; 1625 9.66667 0 15.4; 1626 10.5 0 15.4
420. 1627 8.83333 0 14.7; 1628 8.83333 0 15.4; 1629 8 0 15.4; 1630 9.66667 0 16.1
421. 1631 10.5 0 16.1; 1632 8.83333 0 16.1; 1633 8 0 16.1; 1634 9.66667 0 9.1
422. 1635 10.5 0 9.1; 1636 8.83333 0 9.1; 1637 8 0 9.1; 1638 9.66667 0 9.8
423. 1639 10.5 0 9.8; 1640 8.83333 0 9.8; 1641 8 0 9.8; 1642 9.66667 0 10.5
424. 1643 8.83333 0 10.5; 1644 9.66667 0 11.2; 1645 10.5 0 11.2
425. 1646 8.83333 0 11.2; 1647 8 0 11.2; 1648 9.66667 0 11.9; 1649 10.5 0 11.9
426. 1650 8.83333 0 11.9; 1651 8 0 11.9; 1652 9.66667 0 12.6; 1653 8.83333 0 12.6
427. 1654 32.4 0 5.15667; 1655 31.5667 0 5.15667; 1656 31.5667 0 4.54
428. 1657 32.4 0 5.77333; 1658 31.5667 0 5.77333; 1659 31.5667 0 6.39
429. 1660 30.7333 0 5.15667; 1661 30.7333 0 4.54; 1662 30.7333 0 5.77333
430. 1663 30.7333 0 6.39; 1664 29.9 0 5.15667; 1665 29.9 0 5.77333
431. 1666 26.9 0 5.15667; 1667 26.0667 0 5.15667; 1668 26.0667 0 4.54
432. 1669 26.9 0 5.77333; 1670 26.0667 0 5.77333; 1671 26.0667 0 6.39

433. 1672 25.2333 0 5.15667; 1673 25.2333 0 4.54; 1674 25.2333 0 5.77333
434. 1675 25.2333 0 6.39; 1676 32.4 0 7.06; 1677 31.5667 0 7.06; 1678 32.4 0 7.73
435. 1679 31.5667 0 7.73; 1680 31.5667 0 8.4; 1681 30.7333 0 7.06
436. 1682 30.7333 0 7.73; 1683 30.7333 0 8.4; 1684 29.9 0 7.06; 1685 29.9 0 7.73
437. 1686 28.9 0 7.06; 1687 28.9 0 6.39; 1688 28.9 0 7.73; 1689 28.9 0 8.4
438. 1690 27.9 0 7.06; 1691 27.9 0 6.39; 1692 27.9 0 7.73; 1693 27.9 0 8.4
439. 1694 26.9 0 7.06; 1695 26.9 0 7.73; 1696 26.0667 0 7.06; 1697 26.0667 0 7.73
440. 1698 26.0667 0 8.4; 1699 25.2333 0 7.06; 1700 25.2333 0 7.73
441. 1701 25.2333 0 8.4; 1702 32.4 0 9.1; 1703 31.5667 0 9.1; 1704 32.4 0 9.8
442. 1705 31.5667 0 9.8; 1706 31.5667 0 10.5; 1707 30.7333 0 9.1
443. 1708 30.7333 0 9.8; 1709 30.7333 0 10.5; 1710 29.9 0 9.1; 1711 29.9 0 9.8
444. 1712 28.9 0 9.1; 1713 28.9 0 9.8; 1714 28.9 0 10.5; 1715 27.9 0 9.1
445. 1716 27.9 0 9.8; 1717 27.9 0 10.5; 1718 26.9 0 9.1; 1719 26.9 0 9.8
446. 1720 26.0667 0 9.1; 1721 26.0667 0 9.8; 1722 26.0667 0 10.5
447. 1723 25.2333 0 9.1; 1724 25.2333 0 9.8; 1725 25.2333 0 10.5; 1726 32.4 0 11.2
448. 1727 31.5667 0 11.2; 1728 32.4 0 11.9; 1729 31.5667 0 11.9
449. 1730 31.5667 0 12.6; 1731 30.7333 0 11.2; 1732 30.7333 0 11.9
450. 1733 30.7333 0 12.6; 1734 29.9 0 11.2; 1735 29.9 0 11.9; 1736 28.9 0 11.2
451. 1737 28.9 0 11.9; 1738 28.9 0 12.6; 1739 27.9 0 11.2; 1740 27.9 0 11.9
452. 1741 27.9 0 12.6; 1742 26.9 0 11.2; 1743 26.9 0 11.9; 1744 26.0667 0 11.2
453. 1745 26.0667 0 11.9; 1746 26.0667 0 12.6; 1747 25.2333 0 11.2
454. 1748 25.2333 0 11.9; 1749 25.2333 0 12.6; 1750 32.4 0 13.3
455. 1751 31.5667 0 13.3; 1752 32.4 0 14; 1753 31.5667 0 14; 1754 31.5667 0 14.7
456. 1755 30.7333 0 13.3; 1756 30.7333 0 14; 1757 30.7333 0 14.7; 1758 29.9 0 13.3
457. 1759 29.9 0 14; 1760 28.9 0 13.3; 1761 28.9 0 14; 1762 28.9 0 14.7
458. 1763 27.9 0 13.3; 1764 27.9 0 14; 1765 27.9 0 14.7; 1766 26.9 0 13.3
459. 1767 26.9 0 14; 1768 26.0667 0 13.3; 1769 26.0667 0 14; 1770 26.0667 0 14.7
460. 1771 25.2333 0 13.3; 1772 25.2333 0 14; 1773 25.2333 0 14.7
461. 1774 31.5667 0 15.4; 1775 32.4 0 15.4; 1776 30.7333 0 15.4; 1777 29.9 0 15.4
462. 1778 31.5667 0 16.1; 1779 32.4 0 16.1; 1780 30.7333 0 16.1; 1781 29.9 0 16.1
463. 1782 31.5667 0 16.8; 1783 30.7333 0 16.8; 1784 28.9 0 15.4; 1785 27.9 0 15.4
464. 1786 26.9 0 15.4; 1787 28.9 0 16.1; 1788 27.9 0 16.1; 1789 26.9 0 16.1
465. 1790 28.9 0 16.8; 1791 27.9 0 16.8; 1792 26.0667 0 15.4; 1793 25.2333 0 15.4
466. 1794 26.0667 0 16.1; 1795 25.2333 0 16.1; 1796 26.0667 0 16.8
467. 1797 25.2333 0 16.8; 1798 31.5667 0 17.5; 1799 32.4 0 17.5
468. 1800 30.7333 0 17.5; 1801 29.9 0 17.5; 1802 31.5667 0 18.2; 1803 32.4 0 18.2
469. 1804 30.7333 0 18.2; 1805 29.9 0 18.2; 1806 31.5667 0 18.9
470. 1807 30.7333 0 18.9; 1808 28.9 0 17.5; 1809 27.9 0 17.5; 1810 26.9 0 17.5
471. 1811 28.9 0 18.2; 1812 27.9 0 18.2; 1813 26.9 0 18.2; 1814 28.9 0 18.9
472. 1815 27.9 0 18.9; 1816 26.0667 0 17.5; 1817 25.2333 0 17.5
473. 1818 26.0667 0 18.2; 1819 25.2333 0 18.2; 1820 26.0667 0 18.9
474. 1821 25.2333 0 18.9; 1822 31.5667 0 19.6; 1823 32.4 0 19.6
475. 1824 30.7333 0 19.6; 1825 29.9 0 19.6; 1826 31.5667 0 20.3; 1827 32.4 0 20.3
476. 1828 30.7333 0 20.3; 1829 29.9 0 20.3; 1830 31.5667 0 21; 1831 30.7333 0 21
477. 1832 28.9 0 19.6; 1833 27.9 0 19.6; 1834 26.9 0 19.6; 1835 28.9 0 20.3
478. 1836 27.9 0 20.3; 1837 26.9 0 20.3; 1838 28.9 0 21; 1839 27.9 0 21
479. 1840 26.0667 0 19.6; 1841 25.2333 0 19.6; 1842 26.0667 0 20.3
480. 1843 25.2333 0 20.3; 1844 26.0667 0 21; 1845 25.2333 0 21; 1846 32.4 0 21.7
481. 1847 31.5667 0 21.7; 1848 32.4 0 22.4; 1849 31.5667 0 22.4
482. 1850 31.5667 0 23.1; 1851 30.7333 0 21.7; 1852 30.7333 0 22.4
483. 1853 30.7333 0 23.1; 1854 29.9 0 21.7; 1855 29.9 0 22.4; 1856 28.9 0 21.7
484. 1857 28.9 0 22.4; 1858 28.9 0 23.1; 1859 27.9 0 21.7; 1860 27.9 0 22.4
485. 1861 27.9 0 23.1; 1862 26.9 0 21.7; 1863 26.9 0 22.4; 1864 26.0667 0 21.7
486. 1865 26.0667 0 22.4; 1866 26.0667 0 23.1; 1867 25.2333 0 21.7
487. 1868 25.2333 0 22.4; 1869 25.2333 0 23.1; 1870 31.5667 0 23.8
488. 1871 32.4 0 23.8; 1872 30.7333 0 23.8; 1873 29.9 0 23.8; 1874 31.5667 0 24.5

STAAD SPACE

-- PAGE NO. 10

489. 1875 32.4 0 24.5; 1876 30.7333 0 24.5; 1877 29.9 0 24.5; 1878 31.5667 0 25.2
490. 1879 30.7333 0 25.2; 1880 28.9 0 23.8; 1881 27.9 0 23.8; 1882 26.9 0 23.8
491. 1883 28.9 0 24.5; 1884 27.9 0 24.5; 1885 26.9 0 24.5; 1886 28.9 0 25.2
492. 1887 27.9 0 25.2; 1888 26.0667 0 23.8; 1889 25.2333 0 23.8
4.3. 1890 26.0667 0 24.5; 1891 25.2333 0 24.5; 1892 26.0667 0 25.2
494. 1893 25.2333 0 25.2; 1894 31.5667 0 25.9; 1895 32.4 0 25.9
495. 1896 30.7333 0 25.9; 1897 29.9 0 25.9; 1898 31.5667 0 26.6; 1899 32.4 0 26.6
496. 1900 30.7333 0 26.6; 1901 29.9 0 26.6; 1902 31.5667 0 27.3
497. 1903 30.7333 0 27.3; 1904 28.9 0 25.9; 1905 27.9 0 25.9; 1906 26.9 0 25.9
498. 1907 28.9 0 26.6; 1908 27.9 0 26.6; 1909 26.9 0 26.6; 1910 28.9 0 27.3
499. 1911 27.9 0 27.3; 1912 26.0667 0 25.9; 1913 25.2333 0 25.9
500. 1914 26.0667 0 26.6; 1915 25.2333 0 26.6; 1916 26.0667 0 27.3
501. 1917 25.2333 0 27.3; 1918 31.5667 0 28; 1919 32.4 0 28; 1920 30.7333 0 28
502. 1921 29.9 0 28; 1922 31.5667 0 28.7; 1923 32.4 0 28.7; 1924 30.7333 0 28.7
503. 1925 29.9 0 28.7; 1926 31.5667 0 29.4; 1927 30.7333 0 29.4; 1928 28.9 0 28
504. 1929 27.9 0 28; 1930 26.9 0 28; 1931 28.9 0 28.7; 1932 27.9 0 28.7
505. 1933 26.9 0 28.7; 1934 28.9 0 29.4; 1935 27.9 0 29.4; 1936 26.0667 0 28
506. 1937 26.0667 0 28.7; 1938 26.0667 0 29.4; 1939 25.2333 0 28
507. 1940 25.2333 0 28.7; 1941 25.2333 0 29.4; 1942 32.4 0 31.1667
508. 1943 31.5667 0 31.1667; 1944 31.5667 0 30.4; 1945 32.4 0 31.9333
509. 1946 31.5667 0 31.9333; 1947 31.5667 0 32.7; 1948 30.7333 0 31.1667
510. 1949 30.7333 0 30.4; 1950 30.7333 0 31.9333; 1951 30.7333 0 32.7
511. 1952 29.9 0 31.1667; 1953 29.9 0 31.9333; 1954 28.9 0 30.4
512. 1955 28.9 0 31.1667; 1956 27.9 0 30.4; 1957 27.9 0 31.1667
513. 1958 26.9 0 31.1667; 1959 28.9 0 31.9333; 1960 27.9 0 31.9333
514. 1961 26.9 0 31.9333; 1962 28.9 0 32.7; 1963 27.9 0 32.7; 1964 26.0667 0 30.4
515. 1965 26.0667 0 31.1667; 1966 25.2333 0 30.4; 1967 25.2333 0 31.1667
516. 1968 26.0667 0 31.9333; 1969 25.2333 0 31.9333; 1970 26.0667 0 32.7
517. 1971 25.2333 0 32.7; 1972 28.9 0 5.15667; 1973 28.9 0 4.54
518. 1974 28.9 0 5.77333; 1975 27.9 0 5.15667; 1976 27.9 0 4.54
519. 1977 27.9 0 5.77333; 1978 7.16667 0 5.15667; 1979 7.16667 0 4.54
520. 1980 7.16667 0 5.77333; 1981 7.16667 0 6.39; 1982 6.33333 0 5.15667
521. 1983 6.33333 0 4.54; 1984 6.33333 0 5.77333; 1985 6.33333 0 6.39
522. 1986 5.5 0 5.15667; 1987 5.5 0 5.77333; 1988 4.5 0 5.15667; 1989 4.5 0 4.54
523. 1990 4.5 0 5.77333; 1991 4.5 0 6.39; 1992 3.5 0 5.15667; 1993 3.5 0 4.54
524. 1994 3.5 0 5.77333; 1995 3.5 0 6.39; 1996 2.5 0 5.15667; 1997 2.5 0 5.77333
525. 1998 1.66667 0 5.15667; 1999 1.66667 0 4.54; 2000 1.66667 0 5.77333
526. 2001 1.66667 0 6.39; 2002 0.833333 0 5.15667; 2003 0.833333 0 4.54
527. 2004 0.833333 0 5.77333; 2005 0.833333 0 6.39; 2006 0 0 5.15667
528. 2007 0 0 5.77333; 2008 7.16667 0 7.06; 2009 7.16667 0 7.73; 2010 7.16667 0 8.4
529. 2011 6.33333 0 7.06; 2012 6.33333 0 7.73; 2013 6.33333 0 8.4; 2014 5.5 0 7.06
530. 2015 5.5 0 7.73; 2016 4.5 0 7.06; 2017 4.5 0 7.73; 2018 4.5 0 8.4
531. 2019 3.5 0 7.06; 2020 3.5 0 7.73; 2021 3.5 0 8.4; 2022 2.5 0 7.06
532. 2023 2.5 0 7.73; 2024 1.66667 0 7.06; 2025 1.66667 0 7.73; 2026 1.66667 0 8.4
533. 2027 0.833333 0 7.06; 2028 0.833333 0 7.73; 2029 0.833333 0 8.4; 2030 0 0 7.06
534. 2031 0 0 7.73; 2032 7.16667 0 9.1; 2033 7.16667 0 9.8; 2034 7.16667 0 10.5
535. 2035 6.33333 0 9.1; 2036 6.33333 0 9.8; 2037 6.33333 0 10.5; 2038 5.5 0 9.1
536. 2039 5.5 0 9.8; 2040 4.5 0 9.1; 2041 4.5 0 9.8; 2042 4.5 0 10.5
537. 2043 3.5 0 9.1; 2044 3.5 0 9.8; 2045 3.5 0 10.5; 2046 2.5 0 9.1
538. 2047 2.5 0 9.8; 2048 1.66667 0 9.1; 2049 1.66667 0 9.8; 2050 1.66667 0 10.5
539. 2051 0.833333 0 9.1; 2052 0.833333 0 9.8; 2053 0.833333 0 10.5; 2054 0 0 9.1
540. 2055 0 0 9.8; 2056 7.16667 0 11.2; 2057 6.33333 0 11.2; 2058 5.5 0 11.2
541. 2059 7.16667 0 11.9; 2060 6.33333 0 11.9; 2061 5.5 0 11.9; 2062 7.16667 0 12.6
542. 2063 6.33333 0 12.6; 2064 3.5 0 11.2; 2065 2.5 0 11.2; 2066 4.5 0 11.2
543. 2067 3.5 0 11.9; 2068 2.5 0 11.9; 2069 4.5 0 11.9; 2070 3.5 0 12.6
544. 2071 4.5 0 12.6; 2072 1.66667 0 11.2; 2073 0.833333 0 11.2; 2074 0 0 11.2

STAAD SPACE

-- PAGE NO. 11

545. 2075 1.66667 0 11.9; 2076 0.833333 0 11.9; 2077 0 0 11.9; 2078 1.66667 0 12.6
546. 2079 0.833333 0 12.6; 2080 7.16667 0 13.3; 2081 8 0 13.3; 2082 6.33333 0 13.3
547. 2083 5.5 0 13.3; 2084 7.16667 0 14; 2085 8 0 14; 2086 6.33333 0 14
548. 2087 5.5 0 14; 2088 7.16667 0 14.7; 2089 6.33333 0 14.7; 2090 4.5 0 13.3
549. 2091 3.5 0 13.3; 2092 2.5 0 13.3; 2093 4.5 0 14; 2094 3.5 0 14; 2095 2.5 0 14
550. 2096 4.5 0 14.7; 2097 3.5 0 14.7; 2098 1.66667 0 13.3; 2099 0.833333 0 13.3
551. 2100 0 0 13.3; 2101 1.66667 0 14; 2102 0.833333 0 14; 2103 0 0 14
552. 2104 1.66667 0 14.7; 2105 0.833333 0 14.7; 2106 7.16667 0 15.4
553. 2107 7.16667 0 16.1; 2108 7.16667 0 16.8; 2109 6.33333 0 15.4
554. 2110 6.33333 0 16.1; 2111 6.33333 0 16.8; 2112 5.5 0 15.4; 2113 5.5 0 16.1
555. 2114 4.5 0 15.4; 2115 4.5 0 16.1; 2116 4.5 0 16.8; 2117 3.5 0 15.4
556. 2118 3.5 0 16.1; 2119 3.5 0 16.8; 2120 2.5 0 15.4; 2121 2.5 0 16.1
557. 2122 1.66667 0 15.4; 2123 1.66667 0 16.1; 2124 1.66667 0 16.8
558. 2125 0.833333 0 15.4; 2126 0.833333 0 16.1; 2127 0.833333 0 16.8
559. 2128 0 0 15.4; 2129 0 0 16.1; 2130 7.16667 0 17.5; 2131 7.16667 0 18.2
560. 2132 7.16667 0 18.9; 2133 6.33333 0 17.5; 2134 6.33333 0 18.2
561. 2135 6.33333 0 18.9; 2136 5.5 0 17.5; 2137 5.5 0 18.2; 2138 4.5 0 17.5
562. 2139 4.5 0 18.2; 2140 4.5 0 18.9; 2141 3.5 0 17.5; 2142 3.5 0 18.2
563. 2143 3.5 0 18.9; 2144 2.5 0 17.5; 2145 2.5 0 18.2; 2146 1.66667 0 17.5
564. 2147 0.833333 0 17.5; 2148 0 0 17.5; 2149 1.66667 0 18.2; 2150 0.833333 0 18.2
565. 2151 0 0 18.2; 2152 1.66667 0 18.9; 2153 0.833333 0 18.9; 2154 7.16667 0 19.6
566. 2155 6.33333 0 19.6; 2156 5.5 0 19.6; 2157 7.16667 0 20.3; 2158 6.33333 0 20.3
567. 2159 5.5 0 20.3; 2160 7.16667 0 21; 2161 6.33333 0 21; 2162 4.5 0 21
568. 2163 4.5 0 20.3; 2164 3.5 0 21; 2165 3.5 0 20.3; 2166 2.5 0 20.3
569. 2167 4.5 0 19.6; 2168 3.5 0 19.6; 2169 2.5 0 19.6; 2170 1.66667 0 19.6
570. 2171 1.66667 0 20.3; 2172 1.66667 0 21; 2173 0.833333 0 19.6
571. 2174 0.833333 0 20.3; 2175 0.833333 0 21; 2176 0 0 19.6; 2177 0 0 20.3
572. 2178 7.16667 0 21.7; 2179 7.16667 0 22.4; 2180 7.16667 0 23.1
573. 2181 6.33333 0 21.7; 2182 6.33333 0 22.4; 2183 6.33333 0 23.1; 2184 5.5 0 21.7
574. 2185 5.5 0 22.4; 2186 4.5 0 21.7; 2187 4.5 0 22.4; 2188 4.5 0 23.1
575. 2189 3.5 0 21.7; 2190 3.5 0 22.4; 2191 3.5 0 23.1; 2192 2.5 0 21.7
576. 2193 2.5 0 22.4; 2194 1.66667 0 21.7; 2195 1.66667 0 22.4; 2196 1.66667 0 23.1
577. 2197 0.833333 0 21.7; 2198 0.833333 0 22.4; 2199 0.833333 0 23.1
578. 2200 0 0 21.7; 2201 0 0 22.4; 2202 7.16667 0 23.8; 2203 6.33333 0 23.8
579. 2204 5.5 0 23.8; 2205 7.16667 0 24.5; 2206 6.33333 0 24.5; 2207 5.5 0 24.5
580. 2208 7.16667 0 25.2; 2209 6.33333 0 25.2; 2210 4.5 0 23.8; 2211 3.5 0 23.8
581. 2212 2.5 0 23.8; 2213 4.5 0 24.5; 2214 3.5 0 24.5; 2215 2.5 0 24.5
582. 2216 4.5 0 25.2; 2217 3.5 0 25.2; 2218 1.66667 0 23.8; 2219 0.833333 0 23.8
583. 2220 0 0 23.8; 2221 1.66667 0 24.5; 2222 0.833333 0 24.5; 2223 0 0 24.5
584. 2224 1.66667 0 25.2; 2225 0.833333 0 25.2; 2226 7.16667 0 25.9
585. 2227 7.16667 0 26.6; 2228 7.16667 0 27.3; 2229 6.33333 0 25.9
586. 2230 6.33333 0 26.6; 2231 6.33333 0 27.3; 2232 5.5 0 25.9; 2233 5.5 0 26.6
587. 2234 4.5 0 25.9; 2235 3.5 0 25.9; 2236 2.5 0 25.9; 2237 4.5 0 26.6
588. 2238 3.5 0 26.6; 2239 2.5 0 26.6; 2240 4.5 0 27.3; 2241 3.5 0 27.3
589. 2242 1.66667 0 25.9; 2243 0.833333 0 25.9; 2244 0 0 25.9; 2245 1.66667 0 26.6
590. 2246 0.833333 0 26.6; 2247 0 0 26.6; 2248 1.66667 0 27.3; 2249 0.833333 0 27.3
591. 2250 7.16667 0 28; 2251 7.16667 0 28.7; 2252 7.16667 0 29.4; 2253 6.33333 0 28
592. 2254 6.33333 0 28.7; 2255 6.33333 0 29.4; 2256 5.5 0 28; 2257 5.5 0 28.7
593. 2258 4.5 0 28; 2259 3.5 0 28; 2260 2.5 0 28; 2261 4.5 0 28.7; 2262 3.5 0 28.7
594. 2263 2.5 0 28.7; 2264 4.5 0 29.4; 2265 3.5 0 29.4; 2266 1.66667 0 28.7
595. 2267 1.66667 0 29.4; 2268 1.66667 0 28; 2269 0.833333 0 28.7
596. 2270 0.833333 0 29.4; 2271 0.833333 0 28; 2272 0 0 28.7; 2273 0 0 28
597. 2274 7.16667 0 31.1667; 2275 7.16667 0 30.4; 2276 7.16667 0 31.9333
598. 2277 7.16667 0 32.7; 2278 6.33333 0 31.1667; 2279 6.33333 0 30.4
599. 2280 6.33333 0 31.9333; 2281 6.33333 0 32.7; 2282 5.5 0 31.1667
600. 2283 5.5 0 31.9333; 2284 4.5 0 30.4; 2285 4.5 0 31.1667; 2286 3.5 0 30.4

STAAD SPACE

-- PAGE NO. 12

601. 2287 3.5 0 31.1667; 2288 2.5 0 31.1667; 2289 4.5 0 31.9333; 2290 3.5 0 31.9333
602. 2291 2.5 0 31.9333; 2292 4.5 0 32.7; 2293 3.5 0 32.7; 2294 1.66667 0 30.4
603. 2295 1.66667 0 31.1667; 2296 0.833333 0 30.4; 2297 0.833333 0 31.1667
604. 2298 0 0 31.1667; 2299 1.66667 0 31.9333; 2300 0.833333 0 31.9333
605. 2301 0 0 31.9333; 2302 1.66667 0 32.7; 2303 0.833333 0 32.7; 2304 16.92 0 29.4
606. 2305 16.92 0 28.7; 2306 16.27 0 28.7; 2307 17.57 0 29.4; 2308 17.57 0 28.7
607. 2309 16.92 0 28; 2310 16.27 0 28; 2311 17.57 0 28; 2312 16.92 0 27.3
608. 2313 17.57 0 27.3; 2314 17.57 0 25.2; 2315 17.57 0 25.9; 2316 16.92 0 25.2
609. 2317 16.92 0 25.9; 2318 16.27 0 25.9; 2319 17.57 0 26.6; 2320 16.92 0 26.6
610. 2321 16.27 0 26.6; 2322 10.5 0 13.3; 2323 9.66667 0 13.3; 2324 10.5 0 14
611. 2325 9.66667 0 14; 2326 8.83333 0 13.3; 2327 8.83333 0 14; 2328 1.66667 0 4.2
612. 2329 0.833333 0 4.2; 2330 9.66667 0 4.2; 2331 9.66667 0 3.59; 2332 10.5 0 3.59
613. 2333 8.83333 0 4.2; 2334 8.83333 0 3.59; 2335 8 0 3.59; 2336 9.66667 0 2.98
614. 2337 8.83333 0 2.98; 2338 7.16667 0 3.59; 2339 7.16667 0 2.98
615. 2340 7.16667 0 4.2; 2341 6.33333 0 3.59; 2342 6.33333 0 2.98
616. 2343 6.33333 0 4.2; 2344 5.5 0 3.59; 2345 4.5 0 3.59; 2346 4.5 0 2.98
617. 2347 4.5 0 4.2; 2348 3.5 0 3.59; 2349 3.5 0 2.98; 2350 3.5 0 4.2
618. 2351 2.5 0 3.59; 2352 1.66667 0 3.59; 2353 1.66667 0 2.98
619. 2354 0.833333 0 3.59; 2355 0.833333 0 2.98; 2356 0 0 3.59; 2357 9.66667 0 2.59
620. 2358 10.5 0 2.59; 2359 8.83333 0 2.59; 2360 8 0 2.59; 2361 9.66667 0 2.2
621. 2362 8.83333 0 2.2; 2363 7.16667 0 2.59; 2364 7.16667 0 2.2
622. 2365 6.33333 0 2.59; 2366 6.33333 0 2.2; 2367 5.5 0 2.59; 2368 4.5 0 2.59
623. 2369 4.5 0 2.2; 2370 3.5 0 2.59; 2371 3.5 0 2.2; 2372 2.5 0 2.59
624. 2373 1.66667 0 2.59; 2374 1.66667 0 2.2; 2375 0.833333 0 2.59
625. 2376 0.833333 0 2.2; 2377 0 0 2.59; 2378 9.66667 0 1.54; 2379 10.5 0 1.54
626. 2380 8.83333 0 1.54; 2381 8 0 1.54; 2382 9.66667 0 0.88; 2383 8.83333 0 0.88
627. 2384 7.16667 0 0.88; 2385 7.16667 0 1.54; 2386 6.33333 0 0.88
628. 2387 6.33333 0 1.54; 2388 5.5 0 1.54; 2389 4.5 0 0.88; 2390 4.5 0 1.54
629. 2391 3.5 0 0.88; 2392 3.5 0 1.54; 2393 2.5 0 1.54; 2394 1.66667 0 0.88
630. 2395 1.66667 0 1.54; 2396 0.833333 0 0.88; 2397 0.833333 0 1.54; 2398 0 0 1.54
631. 2399 7.16667 0 0; 2400 7.16667 0 0.44; 2401 8 0 0.44; 2402 6.33333 0 0
632. 2403 6.33333 0 0.44; 2404 5.5 0 0.44; 2405 4.5 0 0; 2406 4.5 0 0.44
633. 2407 3.5 0 0; 2408 3.5 0 0.44; 2409 2.5 0 0.44; 2410 1.66667 0 0
634. 2411 1.66667 0 0.44; 2412 0.833333 0 0; 2413 0.833333 0 0.44; 2414 0 0 0.44
635. 2415 11.0667 0 1.54; 2416 11.0667 0 2.2; 2417 11.0667 0 0.88
636. 2418 11.6333 0 1.54; 2419 11.6333 0 2.2; 2420 11.6333 0 0.88; 2421 12.2 0 1.54
637. 2422 11.6333 0 2.98; 2423 11.6333 0 3.59; 2424 12.2 0 3.59
638. 2425 11.0667 0 2.98; 2426 11.0667 0 3.59; 2427 11.6333 0 4.2
639. 2428 11.0667 0 4.2; 2429 11.6333 0 2.59; 2430 12.2 0 2.59; 2431 11.0667 0 2.59
640. 2432 11.6333 0 4.54; 2433 11.0667 0 4.54; 2434 11.85 0 6.39; 2435 11.85 0 7.06
641. 2436 12.2 0 7.06; 2437 11.5 0 7.06; 2438 11.85 0 7.73; 2439 12.2 0 7.73
642. 2440 11.5 0 7.73; 2441 11.85 0 8.4; 2442 11.15 0 8.4; 2443 11.15 0 7.73
643. 2444 10.8 0 7.73; 2445 11.15 0 7.06; 2446 10.8 0 7.06; 2447 11.15 0 6.39
644. 2448 11.85 0 9.1; 2449 12.2 0 9.1; 2450 11.5 0 9.1; 2451 11.85 0 9.8
645. 2452 12.2 0 9.8; 2453 11.5 0 9.8; 2454 11.85 0 10.5; 2455 11.8463 0 11.2
646. 2456 12.1926 0 11.2; 2457 11.5 0 11.2; 2458 11.8426 0 11.9
647. 2459 12.1853 0 11.9; 2460 11.5 0 11.9; 2461 11.839 0 12.6; 2462 11.15 0 9.1
648. 2463 10.8 0 9.1; 2464 11.15 0 9.8; 2465 10.8 0 9.8; 2466 11.15 0 10.5
649. 2467 11.15 0 11.2; 2468 10.8 0 11.2; 2469 11.15 0 11.9; 2470 10.8 0 11.9
650. 2471 11.15 0 12.6; 2472 10.8 0 21.7; 2473 10.8 0 22.4; 2474 10.8 0 23.8
651. 2475 10.8 0 24.5; 2476 10.8 0 19.6; 2477 10.8 0 20.3; 2478 10.8 0 17.5
652. 2479 10.8 0 18.2; 2480 10.8 0 15.4; 2481 10.8 0 16.1; 2482 10.8 0 13.3
653. 2483 10.8 0 14; 2484 10.8 0 25.9; 2485 10.8 0 26.6; 2486 10.8 0 28
654. 2487 10.8 0 28.7; 2488 10.8 0 31.1667; 2489 10.8 0 31.9333
655. 2490 9.66667 0 33.6; 2491 8.83333 0 33.6; 2492 7.16667 0 33.6
656. 2493 6.33333 0 33.6; 2494 4.5 0 33.6; 2495 3.5 0 33.6; 2496 1.66667 0 33.6

657. 2497 0.833333 0 33.6; 2498 13.0467 0 33.6; 2499 12.2733 0 33.6
658. 2500 14.1779 0 5.77333; 2501 12.65 0 5.77333; 2502 14.1779 0 5.15667
659. 2503 12.65 0 5.15667; 2504 12.65 0 9.1; 2505 14.1779 0 9.1; 2506 12.65 0 9.8
660. 2507 14.1779 0 9.8; 2508 12.65 0 11.2; 2509 14.1779 0 11.2; 2510 12.65 0 11.9
661. 2511 14.1779 0 11.9; 2512 13.4139 0 4.54; 2513 13.4139 0 4.2
662. 2514 13.4139 0 6.39; 2515 13.4139 0 5.77333; 2516 13.4139 0 5.15667
663. 2517 13.4139 0 8.4; 2518 13.4139 0 9.1; 2519 13.4139 0 9.8
664. 2520 13.4139 0 10.5; 2521 13.4139 0 11.2; 2522 13.4139 0 11.9
665. 2523 13.4139 0 12.6; 2524 12.65 0 7.73; 2525 12.65 0 7.06; 2526 12.2 0 5.77333
666. 2527 12.2 0 5.15667; 2528 13.4139 0 7.73; 2529 13.4139 0 7.06
667. 2530 14.1779 0 7.73; 2531 14.1779 0 7.06; 2532 12.65 0 3.59; 2533 12.65 0 1.54
668. 2534 12.65 0 2.59; 2535 14.639 0 2.98; 2536 14.639 0 3.59; 2537 15.1 0 3.59
669. 2538 14.1779 0 3.59; 2539 14.639 0 4.2; 2540 13.4139 0 3.59
670. 2541 13.4139 0 2.98; 2542 13.4139 0 2.59; 2543 14.1779 0 2.59
671. 2544 13.4139 0 2.2; 2545 19.2111 0 8.4; 2546 19.2111 0 7.73; 2547 19.75 0 7.73
672. 2548 18.6721 0 7.73; 2549 19.2111 0 7.06; 2550 19.75 0 7.06
673. 2551 18.6721 0 7.06; 2552 19.2111 0 6.39; 2553 19.2111 0 4.54
674. 2554 19.2111 0 5.15667; 2555 19.75 0 5.15667; 2556 18.6721 0 5.15667
675. 2557 19.2111 0 5.77333; 2558 19.75 0 5.77333; 2559 18.6721 0 5.77333
676. 2560 14.639 0 6.39; 2561 14.639 0 7.06; 2562 15.1 0 7.06; 2563 14.639 0 7.73
677. 2564 15.1 0 7.73; 2565 14.639 0 8.4; 2566 15.639 0 8.4; 2567 15.639 0 7.73
678. 2568 16.1779 0 7.73; 2569 15.639 0 7.06; 2570 16.1779 0 7.06
679. 2571 15.639 0 6.39; 2572 17.7389 0 6.39; 2573 17.7389 0 5.77333
680. 2574 18.1779 0 5.77333; 2575 17.3 0 5.77333; 2576 17.7389 0 5.15667
681. 2577 18.1779 0 5.15667; 2578 17.3 0 5.15667; 2579 17.7389 0 4.54
682. 2580 16.7389 0 6.39; 2581 16.7389 0 5.77333; 2582 16.1779 0 5.77333
683. 2583 16.7389 0 5.15667; 2584 16.1779 0 5.15667; 2585 16.7389 0 4.54
684. 2586 17.7389 0 8.4; 2587 17.7389 0 7.73; 2588 18.1779 0 7.73; 2589 17.3 0 7.73
685. 2590 17.7389 0 7.06; 2591 18.1779 0 7.06; 2592 17.3 0 7.06; 2593 16.7389 0 8.4
686. 2594 16.7389 0 7.73; 2595 16.7389 0 7.06; 2596 19.2111 0 9.1; 2597 19.75 0 9.1
687. 2598 18.6721 0 9.1; 2599 19.2111 0 9.8; 2600 19.75 0 9.8; 2601 18.6721 0 9.8
688. 2602 19.2111 0 10.5; 2603 17.7389 0 9.1; 2604 18.1779 0 9.1; 2605 17.3 0 9.1
689. 2606 17.7389 0 9.8; 2607 18.1779 0 9.8; 2608 17.3 0 9.8; 2609 17.7389 0 10.5
690. 2610 17.7389 0 11.2; 2611 18.1779 0 11.2; 2612 17.3 0 11.2
691. 2613 17.7389 0 11.9; 2614 18.1779 0 11.9; 2615 17.3 0 11.9
692. 2616 17.7389 0 12.6; 2617 16.7389 0 9.1; 2618 16.1779 0 9.1
693. 2619 16.7389 0 9.8; 2620 16.1779 0 9.8; 2621 16.7389 0 10.5
694. 2622 16.7389 0 11.2; 2623 16.1779 0 11.2; 2624 16.7389 0 11.9
695. 2625 16.1779 0 11.9; 2626 16.7389 0 12.6; 2627 15.639 0 9.1; 2628 15.1 0 9.1
696. 2629 15.639 0 9.8; 2630 15.1 0 9.8; 2631 15.639 0 10.5; 2632 15.639 0 11.2
697. 2633 15.1 0 11.2; 2634 15.639 0 11.9; 2635 15.1 0 11.9; 2636 15.639 0 12.6
698. 2637 14.639 0 9.1; 2638 14.639 0 9.8; 2639 14.639 0 10.5; 2640 14.639 0 11.2
699. 2641 14.639 0 11.9; 2642 14.639 0 12.6; 2643 19.2111 0 11.2; 2644 19.75 0 11.2
700. 2645 18.6721 0 11.2; 2646 19.2111 0 11.9; 2647 19.75 0 11.9
701. 2648 18.6721 0 11.9; 2649 19.2111 0 12.6; 2650 14.639 0 4.54
702. 2651 15.639 0 5.15667; 2652 15.639 0 4.54; 2653 15.639 0 5.77333
703. 2654 15.1 0 5.15667; 2655 15.1 0 5.77333; 2656 14.639 0 5.15667
704. 2657 14.639 0 5.77333; 2658 15.639 0 4.2; 2659 17.7389 0 4.2
705. 2660 16.7389 0 4.2; 2661 19.2111 0 4.2; 2662 20.1919 0 9.1; 2663 20.1839 0 9.8
706. 2664 20.1758 0 11.2; 2665 20.1758 0 11.9; 2666 20.2 0 7.73; 2667 20.2 0 7.06
707. 2668 20.2 0 5.77333; 2669 20.2 0 5.15667; 2670 21.25 0 6.39; 2671 21.25 0 7.06
708. 2672 21.6 0 7.06; 2673 20.9 0 7.06; 2674 21.25 0 7.73; 2675 21.6 0 7.73
709. 2676 20.9 0 7.73; 2677 21.25 0 8.4; 2678 21.25 0 9.1; 2679 21.6 0 9.1
710. 2680 20.9 0 9.1; 2681 21.25 0 9.8; 2682 21.6 0 9.8; 2683 20.9 0 9.8
711. 2684 21.25 0 10.5; 2685 21.25 0 11.2; 2686 21.6 0 11.2; 2687 20.9 0 11.2
712. 2688 21.25 0 11.9; 2689 21.6 0 11.9; 2690 20.9 0 11.9; 2691 21.25 0 12.6

STAAD SPACE

-- PAGE NO. 14

713. 2692 20.55 0 8.4; 2693 20.546 0 9.1; 2694 20.5419 0 9.8; 2695 20.5379 0 10.5
 714. 2696 20.55 0 7.73; 2697 20.55 0 7.06; 2698 20.55 0 6.39; 2699 20.5379 0 11.2
 715. 2700 20.5379 0 11.9; 2701 20.5379 0 12.6; 2702 20.0067 0 33.6
 716. 2703 19.1133 0 33.6; 2704 23.5667 0 33.6; 2705 22.7333 0 33.6
 717. 2706 31.5667 0 33.6; 2707 30.7333 0 33.6; 2708 28.9 0 33.6; 2709 27.9 0 33.6
 718. 2710 26.0667 0 33.6; 2711 25.2333 0 33.6; 2712 21.6 0 25.9; 2713 21.6 0 26.6
 719. 2714 21.6 0 28; 2715 21.6 0 28.7; 2716 21.6 0 31.1667; 2717 21.6 0 31.9333
 720. 2718 21.6 0 13.3; 2719 21.6 0 14; 2720 21.6 0 15.4; 2721 21.6 0 16.1
 721. 2722 21.6 0 17.5; 2723 21.6 0 18.2; 2724 21.6 0 19.6; 2725 21.6 0 20.3
 722. 2726 21.6 0 21.7; 2727 21.6 0 22.4; 2728 21.6 0 23.8; 2729 21.6 0 24.5
 723. 2730 24.4 0 1.54; 2731 23.5667 0 1.54; 2732 23.5667 0 2.2; 2733 23.5667 0 0.88
 724. 2734 22.7333 0 1.54; 2735 22.7333 0 2.2; 2736 22.7333 0 0.88; 2737 21.9 0 1.54
 725. 2738 24.4 0 3.59; 2739 23.5667 0 3.59; 2740 23.5667 0 2.98; 2741 23.5667 0 4.2
 726. 2742 22.7333 0 3.59; 2743 22.7333 0 2.98; 2744 22.7333 0 4.2; 2745 21.9 0 3.59
 727. 2746 29.9 0 1.54; 2747 28.9 0 1.54; 2748 28.9 0 0.88; 2749 28.9 0 2.2
 728. 2750 27.9 0 1.54; 2751 27.9 0 0.88; 2752 27.9 0 2.2; 2753 26.9 0 1.54
 729. 2754 32.4 0 2.59; 2755 31.5667 0 2.59; 2756 31.5667 0 2.2; 2757 31.5667 0 2.98
 730. 2758 30.7333 0 2.59; 2759 30.7333 0 2.2; 2760 30.7333 0 2.98; 2761 29.9 0 2.59
 731. 2762 32.4 0 3.59; 2763 31.5667 0 3.59; 2764 31.5667 0 4.2; 2765 30.7333 0 3.59
 732. 2766 30.7333 0 4.2; 2767 29.9 0 3.59; 2768 28.9 0 3.59; 2769 28.9 0 2.98
 733. 2770 28.9 0 4.2; 2771 27.9 0 3.59; 2772 27.9 0 2.98; 2773 27.9 0 4.2
 734. 2774 26.9 0 3.59; 2775 26.0667 0 3.59; 2776 26.0667 0 2.98; 2777 26.0667 0 4.2
 735. 2778 25.2333 0 3.59; 2779 25.2333 0 2.98; 2780 25.2333 0 4.2
 736. 2781 21.3333 0 4.54; 2782 21.3333 0 4.2; 2783 20.7667 0 4.54
 737. 2784 20.7667 0 4.2; 2785 21.3333 0 3.59; 2786 21.3333 0 2.98
 738. 2787 20.7667 0 3.59; 2788 20.7667 0 2.98; 2789 20.2 0 3.59; 2790 19.75 0 3.59
 739. 2791 18.1779 0 3.59; 2792 18.6721 0 3.59; 2793 17.7389 0 3.59
 740. 2794 17.3 0 3.59; 2795 17.7389 0 2.98; 2796 19.2111 0 2.2; 2797 19.2111 0 2.59
 741. 2798 19.75 0 2.59; 2799 18.6721 0 2.59; 2800 19.2111 0 2.98
 742. 2801 19.2111 0 3.59; 2802 20.2 0 2.59; 2803 18.1779 0 2.59
 743. 2804 23.5667 0 2.59; 2805 24.4 0 2.59; 2806 22.7333 0 2.59; 2807 21.9 0 2.59
 744. 2808 21.3333 0 2.59; 2809 20.7667 0 2.59; 2810 21.3333 0 2.2
 745. 2811 20.7667 0 2.2; 2812 31.5667 0 0; 2813 31.5667 0 0.44; 2814 32.4 0 0.44
 746. 2815 30.7333 0 0; 2816 30.7333 0 0.44; 2817 29.9 0 0.44; 2818 31.5667 0 0.88
 747. 2819 30.7333 0 0.88; 2820 28.9 0 0; 2821 28.9 0 0.44; 2822 27.9 0 0
 748. 2823 27.9 0 0.44; 2824 26.9 0 0.44; 2825 26.0667 0 0; 2826 26.0667 0 0.44
 749. 2827 25.2333 0 0; 2828 25.2333 0 0.44; 2829 24.4 0 0.44; 2830 26.0667 0 0.88
 750. 2831 25.2333 0 0.88; 2832 25.2333 0 1.54; 2833 26.0667 0 1.54
 751. 2834 25.2333 0 2.2; 2835 26.0667 0 2.2; 2836 31.5667 0 1.54; 2837 32.4 0 1.54
 752. 2838 30.7333 0 1.54; 2839 28.9 0 2.59; 2840 27.9 0 2.59; 2841 26.9 0 2.59
 753. 2842 21.3333 0 0.88; 2843 21.3333 0 1.54; 2844 20.7667 0 0.88
 754. 2845 20.7667 0 1.54; 2846 20.2 0 1.54; 2847 26.0667 0 2.59
 755. 2848 25.2333 0 2.59; 2849 19.75 0 1.54; 2850 0 4 0; 2851 0 8 0; 2852 0 12 0
 756. 2853 21.6 4 30.4; 2854 20.9 4 30.4; 2855 10.8 4 30.4; 2856 11.5 4 30.4
 757. 2857 21.6 4 32.7; 2858 20.9 4 32.7; 2859 10.8 4 32.7; 2860 11.5 4 32.7
 758. 2861 10.5 4 30.4; 2862 21.9 4 30.4; 2863 10.5 4 32.7; 2864 21.9 4 32.7
 759. 2865 10.5 4 4.2; 2866 18.6721 4 4.54; 2867 14.1779 4 4.54; 2868 16.1779 4 4.54
 760. 2869 12.65 4 4.54; 2870 19.75 4 4.54; 2871 18.1779 4 4.54; 2872 21.9 4 2.2
 761. 2873 10.5 4 2.2; 2874 12.65 4 2.98; 2875 10.5 4 2.98; 2876 15.1 4 4.54
 762. 2877 18.6721 4 2.98; 2878 19.75 4 2.98; 2879 21.9 4 2.98; 2880 17.3 4 4.54
 763. 2881 21.6 4 10.5; 2882 21.6 4 27.3; 2883 21.9 4 23.1; 2884 21.9 4 18.9
 764. 2885 21.9 4 14.7; 2886 21.9 4 10.5; 2887 21.9 4 27.3; 2888 20.9 4 27.3
 765. 2889 18.22 4 27.3; 2890 15.76 4 27.3; 2891 13.8 4 27.3; 2892 11.5 4 27.3
 766. 2893 10.8 4 27.3; 2894 10.5 4 27.3; 2895 10.8 4 10.5; 2896 10.5 4 10.5
 767. 2897 10.5 4 23.1; 2898 10.5 4 18.9; 2899 10.5 4 14.7; 2900 20.9 4 10.5
 768. 2901 20.1758 4 10.5; 2902 19.75 4 10.5; 2903 18.6721 4 10.5

769. 2904 18.1779 4 10.5; 2905 17.3 4 10.5; 2906 16.1779 4 10.5; 2907 15.1 4 10.5
 770. 2908 14.1779 4 10.5; 2909 12.65 4 10.5; 2910 12.2 4 10.5; 2911 11.5 4 10.5
 771. 2912 29.9 4 0.88; 2913 26.9 4 0.88; 2914 29.9 4 2.2; 2915 26.9 4 2.2
 772. 2916 29.9 4 2.98; 2917 26.9 4 2.98; 2918 29.9 4 4.54; 2919 26.9 4 4.54
 773. 2920 29.9 4 6.39; 2921 26.9 4 6.39; 2922 29.9 4 10.5; 2923 26.9 4 10.5
 774. 2924 29.9 4 14.7; 2925 26.9 4 14.7; 2926 29.9 4 18.9; 2927 26.9 4 18.9
 775. 2928 29.9 4 23.1; 2929 26.9 4 23.1; 2930 29.9 4 27.3; 2931 26.9 4 27.3
 776. 2932 29.9 4 30.4; 2933 26.9 4 30.4; 2934 29.9 4 32.7; 2935 26.9 4 32.7
 777. 2936 5.5 4 0.88; 2937 2.5 4 0.88; 2938 5.5 4 2.2; 2939 2.5 4 2.2
 778. 2940 5.5 4 2.98; 2941 2.5 4 2.98; 2942 5.5 4 4.54; 2943 2.5 4 4.54
 779. 2944 5.5 4 6.39; 2945 2.5 4 6.39; 2946 5.5 4 10.5; 2947 2.5 4 10.5
 780. 2948 5.5 4 14.7; 2949 2.5 4 14.7; 2950 5.5 4 18.9; 2951 2.5 4 18.9
 781. 2952 5.5 4 23.1; 2953 2.5 4 23.1; 2954 5.5 4 27.3; 2955 2.5 4 27.3
 782. 2956 5.5 4 30.4; 2957 2.5 4 30.4; 2958 5.5 4 32.7; 2959 2.5 4 32.7
 783. 2960 16.27 4 27.3; 2961 13.7767 4 31.1667; 2962 13.0178 4 31.1667
 784. 2963 13.0333 4 30.4; 2964 13.7533 4 31.9333; 2965 13.0022 4 31.9333
 785. 2966 12.9867 4 32.7; 2967 12.2589 4 31.1667; 2968 12.2667 4 30.4
 786. 2969 12.2511 4 31.9333; 2970 12.2433 4 32.7; 2971 11.5 4 31.1667
 787. 2972 11.5 4 31.9333; 2973 20.9 4 31.1667; 2974 20.0167 4 31.1667
 788. 2975 20.0067 4 30.4; 2976 20.9 4 31.9333; 2977 20.0267 4 31.9333
 789. 2978 20.0367 4 32.7; 2979 19.1333 4 31.1667; 2980 19.1133 4 30.4
 790. 2981 19.1533 4 31.9333; 2982 19.1733 4 32.7; 2983 18.25 4 31.1667
 791. 2984 18.28 4 31.9333; 2985 9.66667 4 32.7; 2986 9.66667 4 31.9333
 792. 2987 10.5 4 31.9333; 2988 8.83333 4 32.7; 2989 8.83333 4 31.9333
 793. 2990 8 4 31.9333; 2991 9.66667 4 31.1667; 2992 10.5 4 31.1667
 794. 2993 8.83333 4 31.1667; 2994 8 4 31.1667; 2995 9.66667 4 30.4
 795. 2996 8.83333 4 30.4; 2997 24.4 4 31.1667; 2998 23.5667 4 31.1667
 796. 2999 23.5667 4 30.4; 3000 24.4 4 31.9333; 3001 23.5667 4 31.9333
 797. 3002 23.5667 4 32.7; 3003 22.7333 4 31.1667; 3004 22.7333 4 30.4
 798. 3005 22.7333 4 31.9333; 3006 22.7333 4 32.7; 3007 21.9 4 31.1667
 799. 3008 21.9 4 31.9333; 3009 9.66667 4 8.4; 3010 9.66667 4 7.73; 3011 10.5 4 7.73
 800. 3012 8.83333 4 8.4; 3013 8.83333 4 7.73; 3014 8 4 7.73; 3015 9.66667 4 7.06
 801. 3016 10.5 4 7.06; 3017 8.83333 4 7.06; 3018 8 4 7.06; 3019 9.66667 4 6.39
 802. 3020 8.83333 4 6.39; 3021 23.5667 4 8.4; 3022 23.5667 4 7.73; 3023 24.4 4 7.73
 803. 3024 22.7333 4 8.4; 3025 22.7333 4 7.73; 3026 21.9 4 7.73; 3027 23.5667 4 7.06
 804. 3028 24.4 4 7.06; 3029 22.7333 4 7.06; 3030 21.9 4 7.06; 3031 23.5667 4 6.39
 805. 3032 22.7333 4 6.39; 3033 24.4 4 5.15667; 3034 23.5667 4 5.15667
 806. 3035 23.5667 4 4.54; 3036 24.4 4 5.77333; 3037 23.5667 4 5.77333
 807. 3038 22.7333 4 5.15667; 3039 22.7333 4 4.54; 3040 22.7333 4 5.77333
 808. 3041 21.9 4 5.15667; 3042 21.9 4 5.77333; 3043 10.5 4 5.15667
 809. 3044 9.66667 4 5.15667; 3045 9.66667 4 4.54; 3046 10.5 4 5.77333
 810. 3047 9.66667 4 5.77333; 3048 8.83333 4 5.15667; 3049 8.83333 4 4.54
 811. 3050 8.83333 4 5.77333; 3051 8 4 5.15667; 3052 8 4 5.77333; 3053 22.7333 4 9.1
 812. 3054 21.9 4 9.1; 3055 23.5667 4 9.1; 3056 24.4 4 9.1; 3057 22.7333 4 9.8
 813. 3058 21.9 4 9.8; 3059 23.5667 4 9.8; 3060 24.4 4 9.8; 3061 22.7333 4 10.5
 814. 3062 23.5667 4 10.5; 3063 23.5667 4 11.2; 3064 24.4 4 11.2
 815. 3065 22.7333 4 11.2; 3066 21.9 4 11.2; 3067 23.5667 4 11.9; 3068 24.4 4 11.9
 816. 3069 22.7333 4 11.9; 3070 21.9 4 11.9; 3071 23.5667 4 12.6
 817. 3072 22.7333 4 12.6; 3073 23.5667 4 13.3; 3074 24.4 4 13.3
 818. 3075 22.7333 4 13.3; 3076 21.9 4 13.3; 3077 23.5667 4 14; 3078 24.4 4 14
 819. 3079 22.7333 4 14; 3080 21.9 4 14; 3081 23.5667 4 14.7; 3082 22.7333 4 14.7
 820. 3083 23.5667 4 15.4; 3084 24.4 4 15.4; 3085 22.7333 4 15.4; 3086 21.9 4 15.4
 821. 3087 23.5667 4 16.1; 3088 24.4 4 16.1; 3089 22.7333 4 16.1; 3090 21.9 4 16.1
 822. 3091 23.5667 4 16.8; 3092 22.7333 4 16.8; 3093 24.4 4 17.5
 823. 3094 23.5667 4 17.5; 3095 24.4 4 18.2; 3096 23.5667 4 18.2
 824. 3097 23.5667 4 18.9; 3098 22.7333 4 17.5; 3099 22.7333 4 18.2

825. 3100 22.7333 4 18.9; 3101 21.9 4 17.5; 3102 21.9 4 18.2; 3103 23.5667 4 19.6
826. 3104 24.4 4 19.6; 3105 22.7333 4 19.6; 3106 21.9 4 19.6; 3107 23.5667 4 20.3
827. 3108 24.4 4 20.3; 3109 22.7333 4 20.3; 3110 21.9 4 20.3; 3111 23.5667 4 21
828. 3112 22.7333 4 21; 3113 24.4 4 21.7; 3114 23.5667 4 21.7; 3115 24.4 4 22.4
829. 3116 23.5667 4 22.4; 3117 23.5667 4 23.1; 3118 22.7333 4 21.7
830. 3119 22.7333 4 22.4; 3120 22.7333 4 23.1; 3121 21.9 4 21.7; 3122 21.9 4 22.4
831. 3123 23.5667 4 23.8; 3124 24.4 4 23.8; 3125 22.7333 4 23.8; 3126 21.9 4 23.8
832. 3127 23.5667 4 24.5; 3128 24.4 4 24.5; 3129 22.7333 4 24.5; 3130 21.9 4 24.5
833. 3131 23.5667 4 25.2; 3132 22.7333 4 25.2; 3133 23.5667 4 25.9
834. 3134 24.4 4 25.9; 3135 22.7333 4 25.9; 3136 21.9 4 25.9; 3137 23.5667 4 26.6
835. 3138 24.4 4 26.6; 3139 22.7333 4 26.6; 3140 21.9 4 26.6; 3141 23.5667 4 27.3
836. 3142 22.7333 4 27.3; 3143 21.9 4 28; 3144 22.7333 4 28; 3145 21.9 4 28.7
837. 3146 22.7333 4 28.7; 3147 22.7333 4 29.4; 3148 23.5667 4 28
838. 3149 23.5667 4 28.7; 3150 23.5667 4 29.4; 3151 24.4 4 28; 3152 24.4 4 28.7
839. 3153 20.0067 4 25.2; 3154 20.0067 4 25.9; 3155 20.9 4 25.9
840. 3156 19.1133 4 25.2; 3157 19.1133 4 25.9; 3158 18.22 4 25.9
841. 3159 20.0067 4 26.6; 3160 20.9 4 26.6; 3161 19.1133 4 26.6; 3162 18.22 4 26.6
842. 3163 20.0067 4 27.3; 3164 19.1133 4 27.3; 3165 20.0067 4 28; 3166 20.9 4 28
843. 3167 19.1133 4 28; 3168 18.22 4 28; 3169 20.0067 4 28.7; 3170 20.9 4 28.7
844. 3171 19.1133 4 28.7; 3172 18.22 4 28.7; 3173 20.0067 4 29.4
845. 3174 19.1133 4 29.4; 3175 15.1067 4 25.2; 3176 15.1067 4 25.9
846. 3177 15.76 4 25.9; 3178 14.4533 4 25.2; 3179 14.4533 4 25.9; 3180 13.8 4 25.9
847. 3181 15.1067 4 26.6; 3182 15.76 4 26.6; 3183 14.4533 4 26.6; 3184 13.8 4 26.6
848. 3185 15.1067 4 27.3; 3186 14.4533 4 27.3; 3187 15.1067 4 28; 3188 15.76 4 28
849. 3189 14.4533 4 28; 3190 13.8 4 28; 3191 15.1067 4 28.7; 3192 15.76 4 28.7
850. 3193 14.4533 4 28.7; 3194 13.8 4 28.7; 3195 15.1067 4 29.4
851. 3196 14.4533 4 29.4; 3197 13.0333 4 25.2; 3198 13.0333 4 25.9
852. 3199 12.2667 4 25.2; 3200 12.2667 4 25.9; 3201 11.5 4 25.9
853. 3202 13.0333 4 26.6; 3203 12.2667 4 26.6; 3204 11.5 4 26.6
854. 3205 13.0333 4 27.3; 3206 12.2667 4 27.3; 3207 13.0333 4 28; 3208 12.2667 4 28
855. 3209 11.5 4 28; 3210 13.0333 4 28.7; 3211 12.2667 4 28.7; 3212 11.5 4 28.7
856. 3213 13.0333 4 29.4; 3214 12.2667 4 29.4; 3215 9.66667 4 25.2
857. 3216 9.66667 4 25.9; 3217 10.5 4 25.9; 3218 8.83333 4 25.2
858. 3219 8.83333 4 25.9; 3220 8 4 25.9; 3221 9.66667 4 26.6; 3222 10.5 4 26.6
859. 3223 8.83333 4 26.6; 3224 8 4 26.6; 3225 9.66667 4 27.3; 3226 8.83333 4 27.3
860. 3227 10.5 4 28; 3228 9.66667 4 28; 3229 10.5 4 28.7; 3230 9.66667 4 28.7
861. 3231 9.66667 4 29.4; 3232 8.83333 4 28; 3233 8.83333 4 28.7
862. 3234 8.83333 4 29.4; 3235 8 4 28; 3236 8 4 28.7; 3237 9.66667 4 21
863. 3238 9.66667 4 21.7; 3239 10.5 4 21.7; 3240 8.83333 4 21; 3241 8.83333 4 21.7
864. 3242 8 4 21.7; 3243 9.66667 4 22.4; 3244 10.5 4 22.4; 3245 8.83333 4 22.4
865. 3246 8 4 22.4; 3247 9.66667 4 23.1; 3248 8.83333 4 23.1; 3249 9.66667 4 23.8
866. 3250 10.5 4 23.8; 3251 8.83333 4 23.8; 3252 8 4 23.8; 3253 9.66667 4 24.5
867. 3254 10.5 4 24.5; 3255 8.83333 4 24.5; 3256 8 4 24.5; 3257 9.66667 4 16.8
868. 3258 9.66667 4 17.5; 3259 10.5 4 17.5; 3260 8.83333 4 16.8
869. 3261 8.83333 4 17.5; 3262 8 4 17.5; 3263 9.66667 4 18.2; 3264 10.5 4 18.2
870. 3265 8.83333 4 18.2; 3266 8 4 18.2; 3267 9.66667 4 18.9; 3268 8.83333 4 18.9
871. 3269 9.66667 4 19.6; 3270 10.5 4 19.6; 3271 8.83333 4 19.6; 3272 8 4 19.6
872. 3273 9.66667 4 20.3; 3274 10.5 4 20.3; 3275 8.83333 4 20.3; 3276 8 4 20.3
873. 3277 9.66667 4 14.7; 3278 9.66667 4 15.4; 3279 10.5 4 15.4
874. 3280 8.83333 4 14.7; 3281 8.83333 4 15.4; 3282 8 4 15.4; 3283 9.66667 4 16.1
875. 3284 10.5 4 16.1; 3285 8.83333 4 16.1; 3286 8 4 16.1; 3287 9.66667 4 9.1
876. 3288 10.5 4 9.1; 3289 8.83333 4 9.1; 3290 8 4 9.1; 3291 9.66667 4 9.8
877. 3292 10.5 4 9.8; 3293 8.83333 4 9.8; 3294 8 4 9.8; 3295 9.66667 4 10.5
878. 3296 8.83333 4 10.5; 3297 9.66667 4 11.2; 3298 10.5 4 11.2
879. 3299 8.83333 4 11.2; 3300 8 4 11.2; 3301 9.66667 4 11.9; 3302 10.5 4 11.9
880. 3303 8.83333 4 11.9; 3304 8 4 11.9; 3305 9.66667 4 12.6; 3306 8.83333 4 12.6

881. 3307 32.4 4 5.15667; 3308 31.5667 4 5.15667; 3309 31.5667 4 4.54
882. 3310 32.4 4 5.77333; 3311 31.5667 4 5.77333; 3312 31.5667 4 6.39
883. 3313 30.7333 4 5.15667; 3314 30.7333 4 4.54; 3315 30.7333 4 5.77333
884. 3316 30.7333 4 6.39; 3317 29.9 4 5.15667; 3318 29.9 4 5.77333
885. 3319 26.9 4 5.15667; 3320 26.0667 4 5.15667; 3321 26.0667 4 4.54
886. 3322 26.9 4 5.77333; 3323 26.0667 4 5.77333; 3324 26.0667 4 6.39
887. 3325 25.2333 4 5.15667; 3326 25.2333 4 4.54; 3327 25.2333 4 5.77333
888. 3328 25.2333 4 6.39; 3329 32.4 4 7.06; 3330 31.5667 4 7.06; 3331 32.4 4 7.73
889. 3332 31.5667 4 7.73; 3333 31.5667 4 8.4; 3334 30.7333 4 7.06
890. 3335 30.7333 4 7.73; 3336 30.7333 4 8.4; 3337 29.9 4 7.06; 3338 29.9 4 7.73
891. 3339 28.9 4 7.06; 3340 28.9 4 6.39; 3341 28.9 4 7.73; 3342 28.9 4 8.4
892. 3343 27.9 4 7.06; 3344 27.9 4 6.39; 3345 27.9 4 7.73; 3346 27.9 4 8.4
893. 3347 26.9 4 7.06; 3348 26.9 4 7.73; 3349 26.0667 4 7.06; 3350 26.0667 4 7.73
894. 3351 26.0667 4 8.4; 3352 25.2333 4 7.06; 3353 25.2333 4 7.73
895. 3354 25.2333 4 8.4; 3355 32.4 4 9.1; 3356 31.5667 4 9.1; 3357 32.4 4 9.8
896. 3358 31.5667 4 9.8; 3359 31.5667 4 10.5; 3360 30.7333 4 9.1
897. 3361 30.7333 4 9.8; 3362 30.7333 4 10.5; 3363 29.9 4 9.1; 3364 29.9 4 9.8
898. 3365 28.9 4 9.1; 3366 28.9 4 9.8; 3367 28.9 4 10.5; 3368 27.9 4 9.1
899. 3369 27.9 4 9.8; 3370 27.9 4 10.5; 3371 26.9 4 9.1; 3372 26.9 4 9.8
900. 3373 26.0667 4 9.1; 3374 26.0667 4 9.8; 3375 26.0667 4 10.5
901. 3376 25.2333 4 9.1; 3377 25.2333 4 9.8; 3378 25.2333 4 10.5; 3379 32.4 4 11.2
902. 3380 31.5667 4 11.2; 3381 32.4 4 11.9; 3382 31.5667 4 11.9
903. 3383 31.5667 4 12.6; 3384 30.7333 4 11.2; 3385 30.7333 4 11.9
904. 3386 30.7333 4 12.6; 3387 29.9 4 11.2; 3388 29.9 4 11.9; 3389 28.9 4 11.2
905. 3390 28.9 4 11.9; 3391 28.9 4 12.6; 3392 27.9 4 11.2; 3393 27.9 4 11.9
906. 3394 27.9 4 12.6; 3395 26.9 4 11.2; 3396 26.9 4 11.9; 3397 26.0667 4 11.2
907. 3398 26.0667 4 11.9; 3399 26.0667 4 12.6; 3400 25.2333 4 11.2
908. 3401 25.2333 4 11.9; 3402 25.2333 4 12.6; 3403 32.4 4 13.3
909. 3404 31.5667 4 13.3; 3405 32.4 4 14; 3406 31.5667 4 14; 3407 31.5667 4 14.7
910. 3408 30.7333 4 13.3; 3409 30.7333 4 14; 3410 30.7333 4 14.7; 3411 29.9 4 13.3
911. 3412 29.9 4 14; 3413 28.9 4 13.3; 3414 28.9 4 14; 3415 28.9 4 14.7
912. 3416 27.9 4 13.3; 3417 27.9 4 14; 3418 27.9 4 14.7; 3419 26.9 4 13.3
913. 3420 26.9 4 14; 3421 26.0667 4 13.3; 3422 26.0667 4 14; 3423 26.0667 4 14.7
914. 3424 25.2333 4 13.3; 3425 25.2333 4 14; 3426 25.2333 4 14.7
915. 3427 31.5667 4 15.4; 3428 32.4 4 15.4; 3429 30.7333 4 15.4; 3430 29.9 4 15.4
916. 3431 31.5667 4 16.1; 3432 32.4 4 16.1; 3433 30.7333 4 16.1; 3434 29.9 4 16.1
917. 3435 31.5667 4 16.8; 3436 30.7333 4 16.8; 3437 28.9 4 15.4; 3438 27.9 4 15.4
918. 3439 26.9 4 15.4; 3440 28.9 4 16.1; 3441 27.9 4 16.1; 3442 26.9 4 16.1
919. 3443 28.9 4 16.8; 3444 27.9 4 16.8; 3445 26.0667 4 15.4; 3446 25.2333 4 15.4
920. 3447 26.0667 4 16.1; 3448 25.2333 4 16.1; 3449 26.0667 4 16.8
921. 3450 25.2333 4 16.8; 3451 31.5667 4 17.5; 3452 32.4 4 17.5
922. 3453 30.7333 4 17.5; 3454 29.9 4 17.5; 3455 31.5667 4 18.2; 3456 32.4 4 18.2
923. 3457 30.7333 4 18.2; 3458 29.9 4 18.2; 3459 31.5667 4 18.9
924. 3460 30.7333 4 18.9; 3461 28.9 4 17.5; 3462 27.9 4 17.5; 3463 26.9 4 17.5
925. 3464 28.9 4 18.2; 3465 27.9 4 18.2; 3466 26.9 4 18.2; 3467 28.9 4 18.9
926. 3468 27.9 4 18.9; 3469 26.0667 4 17.5; 3470 25.2333 4 17.5
927. 3471 26.0667 4 18.2; 3472 25.2333 4 18.2; 3473 26.0667 4 18.9
928. 3474 25.2333 4 18.9; 3475 31.5667 4 19.6; 3476 32.4 4 19.6
929. 3477 30.7333 4 19.6; 3478 29.9 4 19.6; 3479 31.5667 4 20.3; 3480 32.4 4 20.3
930. 3481 30.7333 4 20.3; 3482 29.9 4 20.3; 3483 31.5667 4 21; 3484 30.7333 4 21
931. 3485 28.9 4 19.6; 3486 27.9 4 19.6; 3487 26.9 4 19.6; 3488 28.9 4 20.3
932. 3489 27.9 4 20.3; 3490 26.9 4 20.3; 3491 28.9 4 21; 3492 27.9 4 21
933. 3493 26.0667 4 19.6; 3494 25.2333 4 19.6; 3495 26.0667 4 20.3
934. 3496 25.2333 4 20.3; 3497 26.0667 4 21; 3498 25.2333 4 21; 3499 32.4 4 21.7
935. 3500 31.5667 4 21.7; 3501 32.4 4 22.4; 3502 31.5667 4 22.4
936. 3503 31.5667 4 23.1; 3504 30.7333 4 21.7; 3505 30.7333 4 22.4

937. 3506 30.7333 4 23.1; 3507 29.9 4 21.7; 3508 29.9 4 22.4; 3509 28.9 4 21.7
938. 3510 28.9 4 22.4; 3511 28.9 4 23.1; 3512 27.9 4 21.7; 3513 27.9 4 22.4
939. 3514 27.9 4 23.1; 3515 26.9 4 21.7; 3516 26.9 4 22.4; 3517 26.0667 4 21.7
940. 3518 26.0667 4 22.4; 3519 26.0667 4 23.1; 3520 25.2333 4 21.7
941. 3521 25.2333 4 22.4; 3522 25.2333 4 23.1; 3523 31.5667 4 23.8
942. 3524 32.4 4 23.8; 3525 30.7333 4 23.8; 3526 29.9 4 23.8; 3527 31.5667 4 24.5
943. 3528 32.4 4 24.5; 3529 30.7333 4 24.5; 3530 29.9 4 24.5; 3531 31.5667 4 25.2
944. 3532 30.7333 4 25.2; 3533 28.9 4 23.8; 3534 27.9 4 23.8; 3535 26.9 4 23.8
945. 3536 28.9 4 24.5; 3537 27.9 4 24.5; 3538 26.9 4 24.5; 3539 28.9 4 25.2
946. 3540 27.9 4 25.2; 3541 26.0667 4 23.8; 3542 25.2333 4 23.8
947. 3543 26.0667 4 24.5; 3544 25.2333 4 24.5; 3545 26.0667 4 25.2
948. 3546 25.2333 4 25.2; 3547 31.5667 4 25.9; 3548 32.4 4 25.9
949. 3549 30.7333 4 25.9; 3550 29.9 4 25.9; 3551 31.5667 4 26.6; 3552 32.4 4 26.6
950. 3553 30.7333 4 26.6; 3554 29.9 4 26.6; 3555 31.5667 4 27.3
951. 3556 30.7333 4 27.3; 3557 28.9 4 25.9; 3558 27.9 4 25.9; 3559 26.9 4 25.9
952. 3560 28.9 4 26.6; 3561 27.9 4 26.6; 3562 26.9 4 26.6; 3563 28.9 4 27.3
953. 3564 27.9 4 27.3; 3565 26.0667 4 25.9; 3566 25.2333 4 25.9
954. 3567 26.0667 4 26.6; 3568 25.2333 4 26.6; 3569 26.0667 4 27.3
955. 3570 25.2333 4 27.3; 3571 31.5667 4 28; 3572 32.4 4 28; 3573 30.7333 4 28
956. 3574 29.9 4 28; 3575 31.5667 4 28.7; 3576 32.4 4 28.7; 3577 30.7333 4 28.7
957. 3578 29.9 4 28.7; 3579 31.5667 4 29.4; 3580 30.7333 4 29.4; 3581 28.9 4 28
958. 3582 27.9 4 28; 3583 26.9 4 28; 3584 28.9 4 28.7; 3585 27.9 4 28.7
959. 3586 26.9 4 28.7; 3587 28.9 4 29.4; 3588 27.9 4 29.4; 3589 26.0667 4 28
960. 3590 26.0667 4 28.7; 3591 26.0667 4 29.4; 3592 25.2333 4 28
961. 3593 25.2333 4 28.7; 3594 25.2333 4 29.4; 3595 32.4 4 31.1667
962. 3596 31.5667 4 31.1667; 3597 31.5667 4 30.4; 3598 32.4 4 31.9333
963. 3599 31.5667 4 31.9333; 3600 31.5667 4 32.7; 3601 30.7333 4 31.1667
964. 3602 30.7333 4 30.4; 3603 30.7333 4 31.9333; 3604 30.7333 4 32.7
965. 3605 29.9 4 31.1667; 3606 29.9 4 31.9333; 3607 28.9 4 30.4
966. 3608 28.9 4 31.1667; 3609 27.9 4 30.4; 3610 27.9 4 31.1667
967. 3611 26.9 4 31.1667; 3612 28.9 4 31.9333; 3613 27.9 4 31.9333
968. 3614 26.9 4 31.9333; 3615 28.9 4 32.7; 3616 27.9 4 32.7; 3617 26.0667 4 30.4
969. 3618 26.0667 4 31.1667; 3619 25.2333 4 30.4; 3620 25.2333 4 31.1667
970. 3621 26.0667 4 31.9333; 3622 25.2333 4 31.9333; 3623 26.0667 4 32.7
971. 3624 25.2333 4 32.7; 3625 28.9 4 5.15667; 3626 28.9 4 4.54
972. 3627 28.9 4 5.77333; 3628 27.9 4 5.15667; 3629 27.9 4 4.54
973. 3630 27.9 4 5.77333; 3631 7.16667 4 5.15667; 3632 7.16667 4 4.54
974. 3633 7.16667 4 5.77333; 3634 7.16667 4 6.39; 3635 6.33333 4 5.15667
975. 3636 6.33333 4 4.54; 3637 6.33333 4 5.77333; 3638 6.33333 4 6.39
976. 3639 5.5 4 5.15667; 3640 5.5 4 5.77333; 3641 4.5 4 5.15667; 3642 4.5 4 4.54
977. 3643 4.5 4 5.77333; 3644 4.5 4 6.39; 3645 3.5 4 5.15667; 3646 3.5 4 4.54
978. 3647 3.5 4 5.77333; 3648 3.5 4 6.39; 3649 2.5 4 5.15667; 3650 2.5 4 5.77333
979. 3651 1.66667 4 5.15667; 3652 1.66667 4 4.54; 3653 1.66667 4 5.77333
980. 3654 1.66667 4 6.39; 3655 0.833333 4 5.15667; 3656 0.833333 4 4.54
981. 3657 0.833333 4 5.77333; 3658 0.833333 4 6.39; 3659 0 4 5.15667
982. 3660 0 4 5.77333; 3661 7.16667 4 7.06; 3662 7.16667 4 7.73; 3663 7.16667 4 8.4
983. 3664 6.33333 4 7.06; 3665 6.33333 4 7.73; 3666 6.33333 4 8.4; 3667 5.5 4 7.06
984. 3668 5.5 4 7.73; 3669 4.5 4 7.06; 3670 4.5 4 7.73; 3671 4.5 4 8.4
985. 3672 3.5 4 7.06; 3673 3.5 4 7.73; 3674 3.5 4 8.4; 3675 2.5 4 7.06
986. 3676 2.5 4 7.73; 3677 1.66667 4 7.06; 3678 1.66667 4 7.73; 3679 1.66667 4 8.4
987. 3680 0.833333 4 7.06; 3681 0.833333 4 7.73; 3682 0.833333 4 8.4; 3683 0 4 7.06
988. 3684 0 4 7.73; 3685 7.16667 4 9.1; 3686 7.16667 4 9.8; 3687 7.16667 4 10.5
989. 3688 6.33333 4 9.1; 3689 6.33333 4 9.8; 3690 6.33333 4 10.5; 3691 5.5 4 9.1
990. 3692 5.5 4 9.8; 3693 4.5 4 9.1; 3694 4.5 4 9.8; 3695 4.5 4 10.5
991. 3696 3.5 4 9.1; 3697 3.5 4 9.8; 3698 3.5 4 10.5; 3699 2.5 4 9.1
992. 3700 2.5 4 9.8; 3701 1.66667 4 9.1; 3702 1.66667 4 9.8; 3703 1.66667 4 10.5

STAAD SPACE

-- PAGE NO. 19

993. 3704 0.833333 4 9.1; 3705 0.833333 4 9.8; 3706 0.833333 4 10.5; 3707 0 4 9.1
994. 3708 0 4 9.8; 3709 7.16667 4 11.2; 3710 6.33333 4 11.2; 3711 5.5 4 11.2
995. 3712 7.16667 4 11.9; 3713 6.33333 4 11.9; 3714 5.5 4 11.9; 3715 7.16667 4 12.6
996. 3716 6.33333 4 12.6; 3717 3.5 4 11.2; 3718 2.5 4 11.2; 3719 4.5 4 11.2
997. 3720 3.5 4 11.9; 3721 2.5 4 11.9; 3722 4.5 4 11.9; 3723 3.5 4 12.6
998. 3724 4.5 4 12.6; 3725 1.66667 4 11.2; 3726 0.833333 4 11.2; 3727 0 4 11.2
999. 3728 1.66667 4 11.9; 3729 0.833333 4 11.9; 3730 0 4 11.9; 3731 1.66667 4 12.6
1000. 3732 0.833333 4 12.6; 3733 7.16667 4 13.3; 3734 8 4 13.3; 3735 6.33333 4 13.3
1001. 3736 5.5 4 13.3; 3737 7.16667 4 14; 3738 8 4 14; 3739 6.33333 4 14
1002. 3740 5.5 4 14; 3741 7.16667 4 14.7; 3742 6.33333 4 14.7; 3743 4.5 4 13.3
1003. 3744 3.5 4 13.3; 3745 2.5 4 13.3; 3746 4.5 4 14; 3747 3.5 4 14; 3748 2.5 4 14
1004. 3749 4.5 4 14.7; 3750 3.5 4 14.7; 3751 1.66667 4 13.3; 3752 0.833333 4 13.3
1005. 3753 0 4 13.3; 3754 1.66667 4 14; 3755 0.833333 4 14; 3756 0 4 14
1006. 3757 1.66667 4 14.7; 3758 0.833333 4 14.7; 3759 7.16667 4 15.4
1007. 3760 7.16667 4 16.1; 3761 7.16667 4 16.8; 3762 6.33333 4 15.4
1008. 3763 6.33333 4 16.1; 3764 6.33333 4 16.8; 3765 5.5 4 15.4; 3766 5.5 4 16.1
1009. 3767 4.5 4 15.4; 3768 4.5 4 16.1; 3769 4.5 4 16.8; 3770 3.5 4 15.4
1010. 3771 3.5 4 16.1; 3772 3.5 4 16.8; 3773 2.5 4 15.4; 3774 2.5 4 16.1
1011. 3775 1.66667 4 15.4; 3776 1.66667 4 16.1; 3777 1.66667 4 16.8
1012. 3778 0.833333 4 15.4; 3779 0.833333 4 16.1; 3780 0.833333 4 16.8
1013. 3781 0 4 15.4; 3782 0 4 16.1; 3783 7.16667 4 17.5; 3784 7.16667 4 18.2
1014. 3785 7.16667 4 18.9; 3786 6.33333 4 17.5; 3787 6.33333 4 18.2
1015. 3788 6.33333 4 18.9; 3789 5.5 4 17.5; 3790 5.5 4 18.2; 3791 4.5 4 17.5
1016. 3792 4.5 4 18.2; 3793 4.5 4 18.9; 3794 3.5 4 17.5; 3795 3.5 4 18.2
1017. 3796 3.5 4 18.9; 3797 2.5 4 17.5; 3798 2.5 4 18.2; 3799 1.66667 4 17.5
1018. 3800 0.833333 4 17.5; 3801 0 4 17.5; 3802 1.66667 4 18.2; 3803 0.833333 4 18.2
1019. 3804 0 4 18.2; 3805 1.66667 4 18.9; 3806 0.833333 4 18.9; 3807 7.16667 4 19.6
1020. 3808 6.33333 4 19.6; 3809 5.5 4 19.6; 3810 7.16667 4 20.3; 3811 6.33333 4 20.3
1021. 3812 5.5 4 20.3; 3813 7.16667 4 21; 3814 6.33333 4 21; 3815 4.5 4 21
1022. 3816 4.5 4 20.3; 3817 3.5 4 21; 3818 3.5 4 20.3; 3819 2.5 4 20.3
1023. 3820 4.5 4 19.6; 3821 3.5 4 19.6; 3822 2.5 4 19.6; 3823 1.66667 4 19.6
1024. 3824 1.66667 4 20.3; 3825 1.66667 4 21; 3826 0.833333 4 19.6
1025. 3827 0.833333 4 20.3; 3828 0.833333 4 21; 3829 0 4 19.6; 3830 0 4 20.3
1026. 3831 7.16667 4 21.7; 3832 7.16667 4 22.4; 3833 7.16667 4 23.1
1027. 3834 6.33333 4 21.7; 3835 6.33333 4 22.4; 3836 6.33333 4 23.1; 3837 5.5 4 21.7
1028. 3838 5.5 4 22.4; 3839 4.5 4 21.7; 3840 4.5 4 22.4; 3841 4.5 4 23.1
1029. 3842 3.5 4 21.7; 3843 3.5 4 22.4; 3844 3.5 4 23.1; 3845 2.5 4 21.7
1030. 3846 2.5 4 22.4; 3847 1.66667 4 21.7; 3848 1.66667 4 22.4; 3849 1.66667 4 23.1
1031. 3850 0.833333 4 21.7; 3851 0.833333 4 22.4; 3852 0.833333 4 23.1
1032. 3853 0 4 21.7; 3854 0 4 22.4; 3855 7.16667 4 23.8; 3856 6.33333 4 23.8
1033. 3857 5.5 4 23.8; 3858 7.16667 4 24.5; 3859 6.33333 4 24.5; 3860 5.5 4 24.5
1034. 3861 7.16667 4 25.2; 3862 6.33333 4 25.2; 3863 4.5 4 23.8; 3864 3.5 4 23.8
1035. 3865 2.5 4 23.8; 3866 4.5 4 24.5; 3867 3.5 4 24.5; 3868 2.5 4 24.5
1036. 3869 4.5 4 25.2; 3870 3.5 4 25.2; 3871 1.66667 4 23.8; 3872 0.833333 4 23.8
1037. 3873 0 4 23.8; 3874 1.66667 4 24.5; 3875 0.833333 4 24.5; 3876 0 4 24.5
1038. 3877 1.66667 4 25.2; 3878 0.833333 4 25.2; 3879 7.16667 4 25.9
1039. 3880 7.16667 4 26.6; 3881 7.16667 4 27.3; 3882 6.33333 4 25.9
1040. 3883 6.33333 4 26.6; 3884 6.33333 4 27.3; 3885 5.5 4 25.9; 3886 5.5 4 26.6
1041. 3887 4.5 4 25.9; 3888 3.5 4 25.9; 3889 2.5 4 25.9; 3890 4.5 4 26.6
1042. 3891 3.5 4 26.6; 3892 2.5 4 26.6; 3893 4.5 4 27.3; 3894 3.5 4 27.3
1043. 3895 1.66667 4 25.9; 3896 0.833333 4 25.9; 3897 0 4 25.9; 3898 1.66667 4 26.6
1044. 3899 0.833333 4 26.6; 3900 0 4 26.6; 3901 1.66667 4 27.3; 3902 0.833333 4 27.3
1045. 3903 7.16667 4 28; 3904 7.16667 4 28.7; 3905 7.16667 4 29.4; 3906 6.33333 4 28
1046. 3907 6.33333 4 28.7; 3908 6.33333 4 29.4; 3909 5.5 4 28; 3910 5.5 4 28.7
1047. 3911 4.5 4 28; 3912 3.5 4 28; 3913 2.5 4 28; 3914 4.5 4 28.7; 3915 3.5 4 28.7
1048. 3916 2.5 4 28.7; 3917 4.5 4 29.4; 3918 3.5 4 29.4; 3919 1.66667 4 28.7

STAAD SPACE

-- PAGE NO. 20

1049. 3920 1.66667 4 29.4; 3921 1.66667 4 28; 3922 0.833333 4 28.7
1050. 3923 0.833333 4 29.4; 3924 0.833333 4 28; 3925 0 4 28.7; 3926 0 4 28
1051. 3927 7.16667 4 31.1667; 3928 7.16667 4 30.4; 3929 7.16667 4 31.9333
1052. 3930 7.16667 4 32.7; 3931 6.33333 4 31.1667; 3932 6.33333 4 30.4
1053. 3933 6.33333 4 31.9333; 3934 6.33333 4 32.7; 3935 5.5 4 31.1667
1054. 3936 5.5 4 31.9333; 3937 4.5 4 30.4; 3938 4.5 4 31.1667; 3939 3.5 4 30.4
1055. 3940 3.5 4 31.1667; 3941 2.5 4 31.1667; 3942 4.5 4 31.9333; 3943 3.5 4 31.9333
1056. 3944 2.5 4 31.9333; 3945 4.5 4 32.7; 3946 3.5 4 32.7; 3947 1.66667 4 30.4
1057. 3948 1.66667 4 31.1667; 3949 0.833333 4 30.4; 3950 0.833333 4 31.1667
1058. 3951 0 4 31.1667; 3952 1.66667 4 31.9333; 3953 0.833333 4 31.9333
1059. 3954 0 4 31.9333; 3955 1.66667 4 32.7; 3956 0.833333 4 32.7; 3957 16.92 4 29.4
1060. 3958 16.92 4 28.7; 3959 16.27 4 28.7; 3960 17.57 4 29.4; 3961 17.57 4 28.7
1061. 3962 16.92 4 28; 3963 16.27 4 28; 3964 17.57 4 28; 3965 16.92 4 27.3
1062. 3966 17.57 4 27.3; 3967 17.57 4 25.2; 3968 17.57 4 25.9; 3969 16.92 4 25.2
1063. 3970 16.92 4 25.9; 3971 16.27 4 25.9; 3972 17.57 4 26.6; 3973 16.92 4 26.6
1064. 3974 16.27 4 26.6; 3975 10.5 4 13.3; 3976 9.66667 4 13.3; 3977 10.5 4 14
1065. 3978 9.66667 4 14; 3979 8.83333 4 13.3; 3980 8.83333 4 14; 3981 1.66667 4 4.2
1066. 3982 0.833333 4 4.2; 3983 9.66667 4 4.2; 3984 9.66667 4 3.59; 3985 10.5 4 3.59
1067. 3986 8.83333 4 4.2; 3987 8.83333 4 3.59; 3988 8 4 3.59; 3989 9.66667 4 2.98
1068. 3990 8.83333 4 2.98; 3991 7.16667 4 3.59; 3992 7.16667 4 2.98
1069. 3993 7.16667 4 4.2; 3994 6.33333 4 3.59; 3995 6.33333 4 2.98
1070. 3996 6.33333 4 4.2; 3997 5.5 4 3.59; 3998 4.5 4 3.59; 3999 4.5 4 2.98
1071. 4000 4.5 4 4.2; 4001 3.5 4 3.59; 4002 3.5 4 2.98; 4003 3.5 4 4.2
1072. 4004 2.5 4 3.59; 4005 1.66667 4 3.59; 4006 1.66667 4 2.98
1073. 4007 0.833333 4 3.59; 4008 0.833333 4 2.98; 4009 0 4 3.59; 4010 9.66667 4 2.59
1074. 4011 10.5 4 2.59; 4012 8.83333 4 2.59; 4013 8 4 2.59; 4014 9.66667 4 2.2
1075. 4015 8.83333 4 2.2; 4016 7.16667 4 2.59; 4017 7.16667 4 2.2
1076. 4018 6.33333 4 2.59; 4019 6.33333 4 2.2; 4020 5.5 4 2.59; 4021 4.5 4 2.59
1077. 4022 4.5 4 2.2; 4023 3.5 4 2.59; 4024 3.5 4 2.2; 4025 2.5 4 2.59
1078. 4026 1.66667 4 2.59; 4027 1.66667 4 2.2; 4028 0.833333 4 2.59
1079. 4029 0.833333 4 2.2; 4030 0 4 2.59; 4031 9.66667 4 1.54; 4032 10.5 4 1.54
1080. 4033 8.83333 4 1.54; 4034 8 4 1.54; 4035 9.66667 4 0.88; 4036 8.83333 4 0.88
1081. 4037 7.16667 4 0.88; 4038 7.16667 4 1.54; 4039 6.33333 4 0.88
1082. 4040 6.33333 4 1.54; 4041 5.5 4 1.54; 4042 4.5 4 0.88; 4043 4.5 4 1.54
1083. 4044 3.5 4 0.88; 4045 3.5 4 1.54; 4046 2.5 4 1.54; 4047 1.66667 4 0.88
1084. 4048 1.66667 4 1.54; 4049 0.833333 4 0.88; 4050 0.833333 4 1.54; 4051 0 4 1.54
1085. 4052 7.16667 4 0; 4053 7.16667 4 0.44; 4054 8 4 0.44; 4055 6.33333 4 0
1086. 4056 6.33333 4 0.44; 4057 5.5 4 0.44; 4058 4.5 4 0; 4059 4.5 4 0.44
1087. 4060 3.5 4 0; 4061 3.5 4 0.44; 4062 2.5 4 0.44; 4063 1.66667 4 0
1088. 4064 1.66667 4 0.44; 4065 0.833333 4 0; 4066 0.833333 4 0.44; 4067 0 4 0.44
1089. 4068 11.0667 4 1.54; 4069 11.0667 4 2.2; 4070 11.0667 4 0.88
1090. 4071 11.6333 4 1.54; 4072 11.6333 4 2.2; 4073 11.6333 4 0.88; 4074 12.2 4 1.54
1091. 4075 11.6333 4 2.98; 4076 11.6333 4 3.59; 4077 12.2 4 3.59
1092. 4078 11.0667 4 2.98; 4079 11.0667 4 3.59; 4080 11.6333 4 4.2
1093. 4081 11.0667 4 4.2; 4082 11.6333 4 2.59; 4083 12.2 4 2.59; 4084 11.0667 4 2.59
1094. 4085 11.6333 4 4.54; 4086 11.0667 4 4.54; 4087 11.85 4 6.39; 4088 11.85 4 7.06
1095. 4089 12.2 4 7.06; 4090 11.5 4 7.06; 4091 11.85 4 7.73; 4092 12.2 4 7.73
1096. 4093 11.5 4 7.73; 4094 11.85 4 8.4; 4095 11.15 4 8.4; 4096 11.15 4 7.73
1097. 4097 10.8 4 7.73; 4098 11.15 4 7.06; 4099 10.8 4 7.06; 4100 11.15 4 6.39
1098. 4101 11.85 4 9.1; 4102 12.2 4 9.1; 4103 11.5 4 9.1; 4104 11.85 4 9.8
1099. 4105 12.2 4 9.8; 4106 11.5 4 9.8; 4107 11.85 4 10.5; 4108 11.8463 4 11.2
1100. 4109 12.1926 4 11.2; 4110 11.5 4 11.2; 4111 11.8426 4 11.9
1101. 4112 12.1853 4 11.9; 4113 11.5 4 11.9; 4114 11.839 4 12.6; 4115 11.15 4 9.1
1102. 4116 10.8 4 9.1; 4117 11.15 4 9.8; 4118 10.8 4 9.8; 4119 11.15 4 10.5
1103. 4120 11.15 4 11.2; 4121 10.8 4 11.2; 4122 11.15 4 11.9; 4123 10.8 4 11.9
1104. 4124 11.15 4 12.6; 4125 10.8 4 21.7; 4126 10.8 4 22.4; 4127 10.8 4 23.8

الفصل الأول الخصائص



Software licensed to Hewlett-Packard

Job No	Sheet No 1	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:36	

Job Title bluiding department

Client university of technology

Job Information

	Engineer	Checked	Approved
Name:	yasir w.j.	Dr alaa k.	
Date:	05-Dec-10		

Structure Type SPACE FRAME

Number of Nodes	9202	Highest Node	9202
Number of Elements	2879	Highest Beam	11518
Number of Plates	8639	Highest Plate	11494

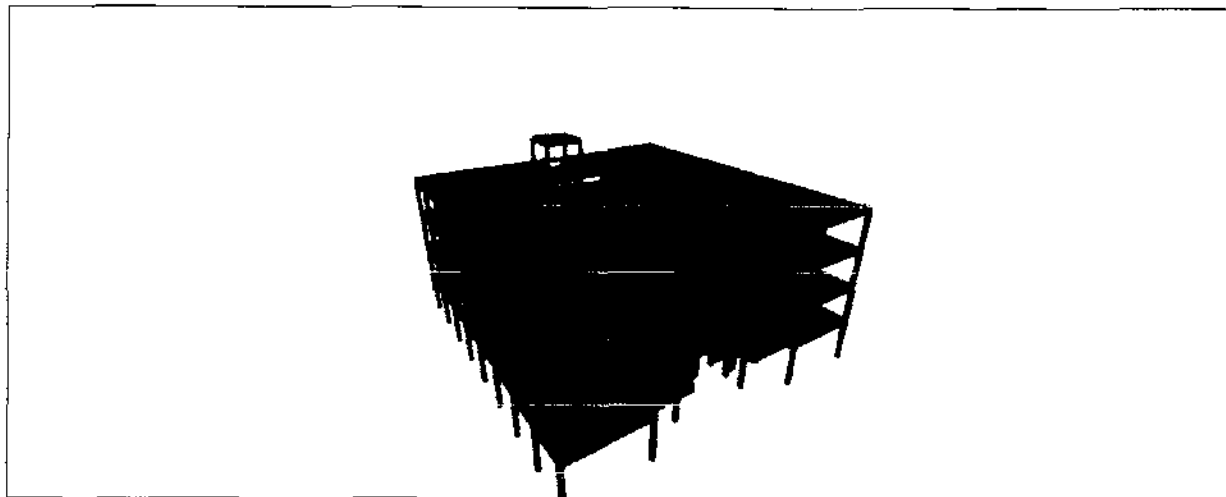
Number of Basic Load Cases	3
Number of Combination Load Cases	3

Included in this printout are data for:


All	The Whole Structure
-----	---------------------

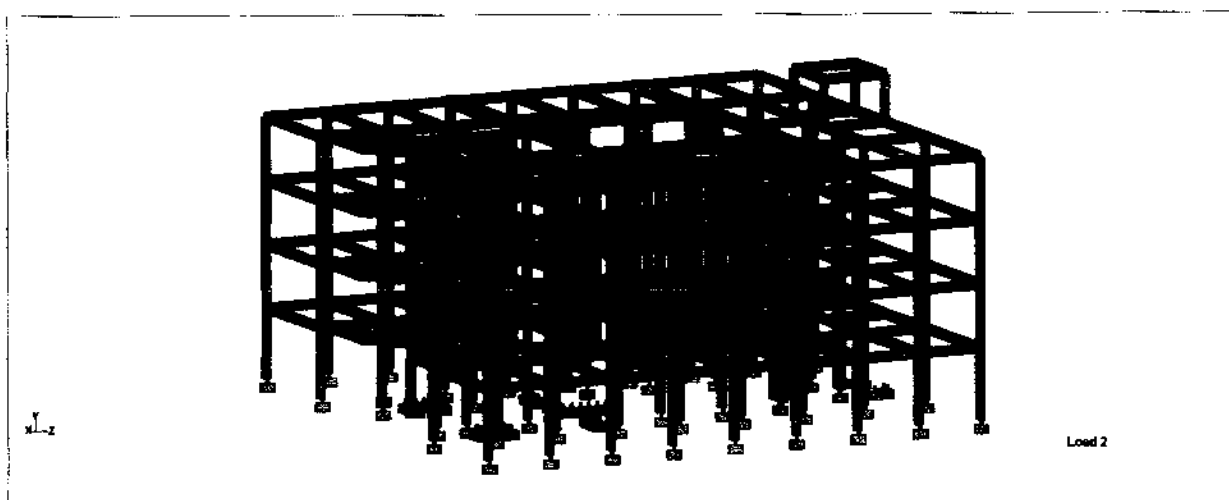
Included in this printout are results for load cases:

Type	L/C	Name
Primary	1	DEAD
Primary	2	SELF
Primary	3	LIVE
Combination	4	COMBINATION LOAD CASE 4
Combination	5	COMBINATION LOAD CASE 5
Combination	6	COMBINATION LOAD CASE 6



3D Rendered View

 Software licensed to Hewlett-Packard	Job No	Sheet No 2	Rev
	Part		
Job Title building department	Ref		
	By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.std	Date/Time 10-May-2011 09:36	



Whole Structure

Section Properties

Prop	Section	Area (cm ²)	I _{yy} (cm ⁴)	I _{zz} (cm ⁴)	J (cm ⁴)	Material
7	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
8	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
9	Rect 0.80x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
10	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
11	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
12	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
13	Rect 0.80x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
14	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
15	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
16	Rect 0.80x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
17	Rect 0.80x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
18	Rect 0.60x0.30	1.8E+3	135E+3	540E+3	371E+3	CONCRETE
19	Rect 0.45x0.45	2.02E+3	342E+3	342E+3	577E+3	CONCRETE
20	Rect 0.80x0.50	4E+3	833E+3	2.13E+6	2.04E+6	CONCRETE
21	Rect 0.80x0.50	4E+3	833E+3	2.13E+6	2.04E+6	CONCRETE
22	Rect 1.00x0.45	4.5E+3	759E+3	3.75E+6	2.18E+6	CONCRETE
23	Rect 1.85x0.45	8.32E+3	1.4E+6	23.7E+6	4.76E+6	CONCRETE



Software licensed to Hewlett-Packard

Job No	Sheet No 3	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:36	

Job Title building department

Client university of technology

Plate Thickness

Prop	Node A (cm)	Node B (cm)	Node C (cm)	Node D (cm)	Material
1	24.000	24.000	24.000	24.000	CONCRETE
2	45.000	45.000	45.000	45.000	CONCRETE
3	16.000	16.000	16.000	16.000	CONCRETE
4	16.000	16.000	16.000	16.000	CONCRETE
5	16.000	16.000	16.000	16.000	CONCRETE
6	16.000	16.000	16.000	16.000	CONCRETE

Materials

Mat	Name	E (kN/mm ²)	v	Density (kg/m ³)	α (1/K)
1	STEEL	205.000	0.300	7.83E+3	12E -6
2	STAINLESSSTEEL	197.930	0.300	7.83E+3	18E -6
3	ALUMINUM	68.948	0.330	2.71E+3	23E -6
4	CONCRETE	21.718	0.170	2.4E+3	10E -6

Supports

Node	X (kN/mm)	Y (kN/mm)	Z (kN/mm)	rX (kN/m/deg)	rY (kN/m/deg)	rZ (kN/m/deg)
73	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
74	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
75	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
76	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
77	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
78	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
79	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
80	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
81	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
82	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
83	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
84	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
85	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
86	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
87	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
88	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
89	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
90	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
91	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
92	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
93	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
94	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
95	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
96	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed



Rev


Ref

Ref

Chd Dr alaa k.

Date/Time	10-May-2011 09:38
-----------	-------------------

Node	X (kN/mm)	Y (kN/mm)	Z (kN/mm)	rX (kN°/m/deg)	rY (kN°/m/deg)	rZ (kN°/m/deg)
97	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
98	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
99	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
100	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
101	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
102	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
103	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
104	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
105	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
106	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
107	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
108	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
109	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
110	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
111	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
112	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
113	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
114	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
115	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
116	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
117	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
118	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
119	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
120	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
121	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
122	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
123	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
124	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
125	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
129	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
130	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
131	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
132	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
133	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
140	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
143	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
150	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
164	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
165	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
166	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
167	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
168	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
169	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
176	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
243	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

 Software licensed to Hewlett-Packard	Job No	Sheet No 5	Rev
	Part		
	Ref		
	By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.std	Date/Time 10-May-2011 09:36	

Supports Cont...

Node	X (kN/mm)	Y (kN/mm)	Z (kN/mm)	rX (kN/m/deg)	rY (kN/m/deg)	rZ (kN/m/deg)
244	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
245	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
246	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
447	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
740	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
1295	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
6558	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
6565	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
6697	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
6698	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
6787	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
6801	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7073	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7074	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7081	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7085	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7106	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7107	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7315	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7320	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7321	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7322	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7422	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7423	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7595	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7599	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7724	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7737	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7748	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7755	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7756	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7922	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
9200	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
9201	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
9202	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

Basic Load Cases

Number	Name
2	SELF
3	LIVE
1	DEAD



Software licensed to Hewlett-Packard

Job No	Sheet No 6	Rev
Part	Ref	
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.std	Date/Time 10-May-2011 09:36

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
4	COMBINATION LOAD CASE 4	2	SELF	1.00
		3	LIVE	1.00
		1	DEAD	1.00
5	COMBINATION LOAD CASE 5	2	SELF	1.20
		1	DEAD	1.20
		3	LIVE	1.60
6	COMBINATION LOAD CASE 6	2	SELF	1.40
		1	DEAD	1.40

Node Displacement Summary

	Node	L/C	X (mm)	Y (mm)	Z (mm)	Resultant (mm)	rX (rad)	rY (rad)	rZ (rad)
Max X	1281	5:COMBINATK	5.888	-2.498	-0.385	6.390	0.001	0.001	0.000
Min X	137	5:COMBINATK	-0.725	-2.306	0.196	2.425	0.001	-0.000	0.000
Max Y	73	1:DEAD	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Min Y	6059	6:COMBINATK	-0.147	-14.837	-1.168	14.883	0.000	-0.000	-0.001
Max Z	1282	5:COMBINATK	4.418	-3.783	1.209	5.940	-0.001	0.001	0.001
Min Z	7898	5:COMBINATK	-0.139	-4.313	-3.312	5.440	-0.000	-0.000	-0.000
Max rX	8911	5:COMBINATK	-0.259	-4.574	-0.680	4.831	0.003	-0.000	-0.001
Min rX	6310	5:COMBINATK	-0.229	-4.369	-1.121	4.517	-0.004	0.000	-0.000
Max rY	7383	5:COMBINATK	3.834	-1.333	-0.483	4.087	-0.000	0.001	0.001
Min rY	7211	5:COMBINATK	0.645	-5.954	-0.306	5.996	-0.001	-0.001	0.002
Max rZ	6438	6:COMBINATK	-0.295	-7.341	-1.166	7.438	0.000	0.000	0.004
Min rZ	6064	6:COMBINATK	-0.137	-7.371	-1.171	7.465	0.000	-0.000	-0.004
Max Rst	6059	6:COMBINATK	-0.147	-14.837	-1.168	14.883	0.000	-0.000	-0.001

Beam Displacement Detail Summary

Displacements shown in *italic* indicate the presence of an offset

	Beam	L/C	d (m)	X (mm)	Y (mm)	Z (mm)	Resultant (mm)
Max X	8320	5:COMBINATK	1.350	1.219	-1.172	-0.062	1.693
Min X	104	6:COMBINATK	1.200	-1.484	-3.880	-1.063	4.281
Max Y	21	1:DEAD	4.500	0.000	0.000	0.000	0.000
Min Y	427	6:COMBINATK	0.600	-0.154	-13.948	-1.168	13.998
Max Z	2160	5:COMBINATK	1.350	-0.039	-0.772	0.451	0.895
Min Z	2168	5:COMBINATK	0.105	-0.139	-4.304	-3.312	5.433
Max Rst	427	6:COMBINATK	0.600	-0.154	-13.948	-1.168	13.998

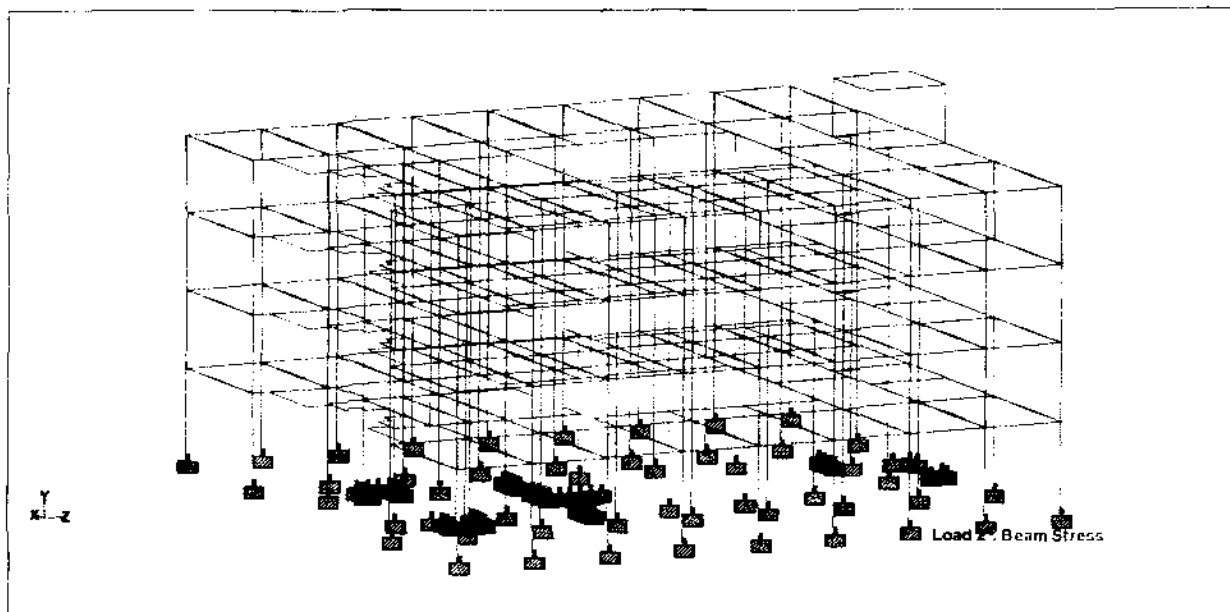


Software licensed to Hewlett-Packard

Job No	Sheet No 7	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:36	

Job Title bluiding department

Client university of technology



Whole Structure Beam Stress 5e+007mm:m 2 SELF

Beam End Force Summary

The signs of the forces at end B of each beam have been reversed. For example: this means that the Min Fx entry gives the largest tension value for an beam.

				Axial	Shear		Torsion	Bending	
	Beam	Node	L/C	Fx (kN)	Fy (kN)	Fz (kN)	Mx (kNm)	My (kNm)	Mz (kNm)
Max Fx	2675	108	5:COMBINATIC	2.83E+3	27.725	-12.030	-0.508	-20.379	8.481
Min Fx	2537	56	5:COMBINATIC	-120.060	-442.560	-19.905	-21.938	7.868	34.094
Max Fy	1688	6159	8:COMBINATIC	-31.703	491.203	-1.257	54.086	-0.060	293.304
Min Fy	2537	128	5:COMBINATIC	-120.060	-456.184	-19.905	-21.938	-0.808	225.436
Max Fz	2166	1052	5:COMBINATIC	499.085	24.863	79.847	-0.660	-169.088	56.722
Min Fz	2839	788	5:COMBINATIC	575.865	22.478	-49.524	0.025	99.855	44.093
Max Mx	1681	6089	8:COMBINATIC	24.559	207.848	-5.479	157.185	0.333	-37.714
Min Mx	3028	1036	8:COMBINATIC	24.623	-191.822	4.801	-158.144	-1.780	-125.104
Max My	2418	812	5:COMBINATIC	483.358	-27.257	79.733	0.084	153.823	42.283
Min My	2166	1052	5:COMBINATIC	499.085	24.863	79.847	-0.660	-169.088	56.722
Max Mz	1930	504	5:COMBINATIC	38.078	312.178	-0.014	-88.269	-1.407	508.231
Min Mz	8148	5428	5:COMBINATIC	35.528	1.353	-0.002	-1.913	-0.009	-407.885



Software licensed to Hewlett-Packard

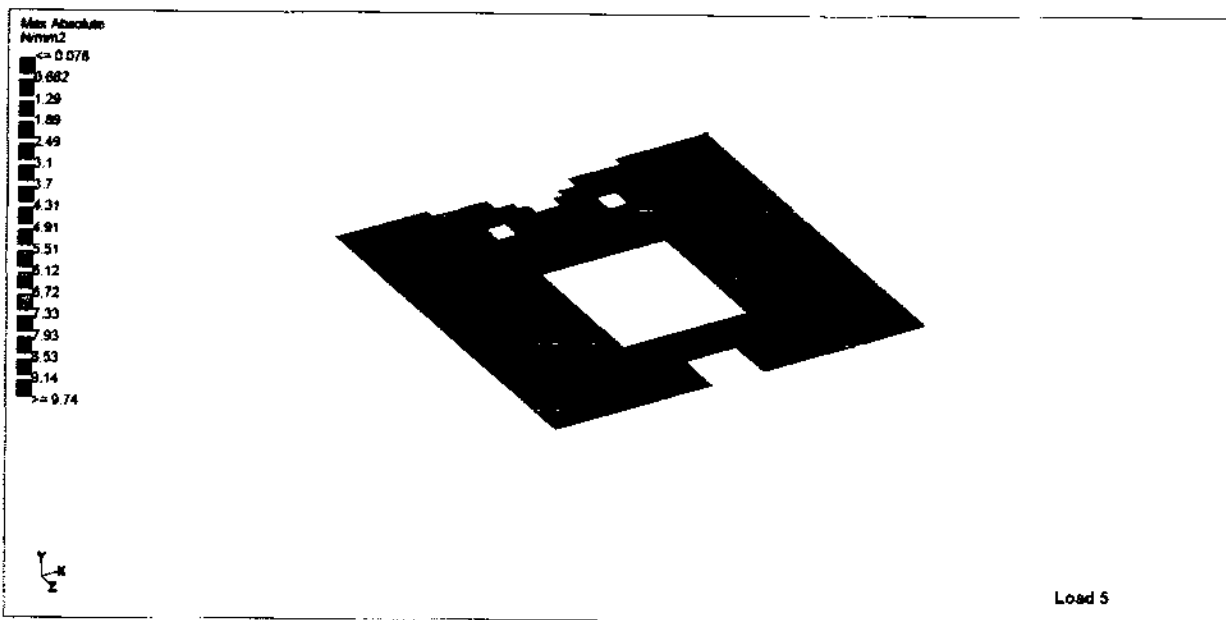
Job No	Sheet No 8	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:38	


Job Title building department

Client university of technology

Plate Centre Stress Summary

	Plate	LC	Shear		Membrane			Bending		
			Qx (N/mm ²)	Qy (N/mm ²)	Sx (N/mm ²)	Sy (N/mm ²)	Sxy (N/mm ²)	Mx (kNm/m)	My (kNm/m)	Mxy (kNm/m)
Max Qx	11137	5:COMBINATK	0.750	0.734	-0.454	-1.307	0.101	31.689	35.890	0.095
Min Qx	11148	5:COMBINATK	-0.739	0.778	0.513	1.174	0.190	32.835	35.836	-0.233
Max Qy	11148	5:COMBINATK	-0.799	0.776	0.513	1.174	0.190	32.835	35.836	-0.233
Min Qy	11485	5:COMBINATK	-0.245	-0.743	-0.014	-0.122	0.024	15.518	6.691	3.808
Max Sx	8844	5:COMBINATK	-0.573	-0.146	2.118	0.405	0.433	25.072	9.368	14.408
Min Sx	9000	5:COMBINATK	0.038	-0.002	-4.715	-0.801	0.462	3.167	0.538	0.284
Max Sy	5548	5:COMBINATK	-0.688	0.697	0.495	1.616	-0.134	28.961	34.489	-0.815
Min Sy	7892	8:COMBINATK	-0.073	0.052	-1.287	-4.929	1.153	-1.058	-6.369	2.843
Max Sxy	8910	5:COMBINATK	-0.044	-0.022	-1.906	-1.011	2.009	-7.640	-4.421	-0.188
Min Sxy	8902	5:COMBINATK	-0.016	-0.017	-2.555	-1.505	-1.909	2.990	0.842	1.597
Max Mx	8248	5:COMBINATK	-0.737	0.494	-0.001	-0.695	0.074	75.473	33.318	5.873
Min Mx	8839	5:COMBINATK	0.748	-0.480	-0.062	0.450	-0.046	-79.013	-32.893	-7.258
Max My	9544	5:COMBINATK	0.025	-0.140	-0.743	-2.677	1.582	11.039	77.480	-14.097
Min My	9539	5:COMBINATK	-0.022	0.138	-0.358	-1.394	0.777	-10.104	-76.297	12.858
Max Mxy	9510	5:COMBINATK	-0.080	0.138	-0.173	0.112	-0.138	-13.962	-55.445	25.028
Min Mxy	9520	5:COMBINATK	0.069	-0.148	-0.455	0.548	-0.263	17.354	55.523	-28.063



 Software licensed to Hewlett-Packard	Job No	Sheet No 9	Rev
	Part		
Job Title building department	Ref		
Client university of technology	By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
	File design2.std	Date/Time 10-May-2011 09:36	

Reaction Summary

	Node	L/C	Horizontal FX (kN)	Vertical FY (kN)	Horizontal FZ (kN)	Moment		
						MX (kNm)	MY (kNm)	MZ (kNm)
Max FX	184	6:COMBINATK	112.074	884.328	-73.121	52.509	-1.396	18.671
Min FX	165	6:COMBINATK	-107.818	832.626	-79.660	50.084	1.470	-18.006
Max FY	108	5:COMBINATK	-27.725	2.83E+3	12.030	20.379	-0.508	-8.481
Min FY	166	3:LIVE	1.818	-9.788	-9.530	-4.201	0.180	-0.856
Max FZ	7599	5:COMBINATK	-2.121	87.078	93.938	-19.155	7.115	-3.834
Min FZ	185	5:COMBINATK	-97.884	811.395	-81.026	48.331	1.606	-15.527
Max MX	184	6:COMBINATK	112.074	884.328	-73.121	52.509	-1.396	18.671
Min MX	186	6:COMBINATK	1.999	325.347	29.845	-56.244	1.975	-6.771
Max MY	7599	5:COMBINATK	-2.121	87.078	93.938	-19.155	7.115	-3.834
Min MY	114	5:COMBINATK	-0.240	256.216	65.677	-23.893	-5.059	5.317
Max MZ	100	5:COMBINATK	-40.290	1.65E+3	0.480	1.428	-0.012	59.582
Min MZ	111	5:COMBINATK	55.320	2.8E+3	10.646	17.266	1.159	-112.481

Reactions

Node	L/C	Horizontal FX (kN)	Vertical FY (kN)	Horizontal FZ (kN)	Moment		
					MX (kNm)	MY (kNm)	MZ (kNm)
73	1:DEAD	10.475	653.985	1.038	2.074	0.024	-15.871
	2:SELF	9.919	485.592	-0.040	0.040	0.015	-14.967
	3:LIVE	3.960	119.679	0.008	0.008	0.013	-6.014
	4:COMBINATK	24.354	1.24E+3	1.005	2.122	0.051	-36.852
	5:COMBINATK	30.806	1.53E+3	1.209	2.550	0.067	-46.628
	6:COMBINATK	28.552	1.57E+3	1.396	2.960	0.054	-43.173
74	1:DEAD	8.847	704.897	-0.155	0.291	0.008	-13.407
	2:SELF	9.660	538.882	0.065	0.185	0.008	-14.541
	3:LIVE	3.378	127.447	-0.020	-0.042	0.007	-5.121
	4:COMBINATK	21.884	1.37E+3	-0.111	0.435	0.023	-33.070
	5:COMBINATK	27.612	1.7E+3	-0.141	0.505	0.030	-41.732
	6:COMBINATK	25.909	1.74E+3	-0.127	0.667	0.023	-39.128
75	1:DEAD	16.762	752.941	0.314	0.977	0.000	-25.145
	2:SELF	10.233	468.736	0.097	0.224	-0.001	-15.395
	3:LIVE	4.189	121.996	-0.066	-0.148	-0.000	-6.292
	4:COMBINATK	31.185	1.34E+3	0.325	1.054	-0.001	-46.832
	5:COMBINATK	39.065	1.66E+3	0.355	1.205	-0.001	-58.715
	6:COMBINATK	37.793	1.71E+3	0.576	1.682	-0.001	-56.756
76	1:DEAD	11.210	895.325	1.007	2.011	0.004	-16.918
	2:SELF	10.337	467.396	0.009	0.095	-0.003	-15.558
	3:LIVE	4.229	121.185	0.023	0.013	-0.003	-6.387
	4:COMBINATK	25.775	1.28E+3	1.040	2.118	-0.002	-38.862
	5:COMBINATK	32.622	1.59E+3	1.257	2.548	-0.004	-49.189
	6:COMBINATK	30.165	1.63E+3	1.423	2.947	0.001	-45.464
77	1:DEAD	9.220	706.107	-0.080	0.416	0.009	-13.961



Software licensed to Hewlett-Packard


Job No	Sheet No 10	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:36	

Job Title building department

Client university of technology

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	2:SELF	10.231	530.644	0.061	0.183	0.001	-15.402
	3:LIVE	3.696	122.833	-0.034	-0.067	-0.002	-5.604
	4:COMBINATK	23.147	1.36E+3	-0.053	0.531	0.008	-34.967
	5:COMBINATK	29.254	1.68E+3	-0.077	0.611	0.008	-44.201
	6:COMBINATK	27.231	1.73E+3	-0.027	0.837	0.013	-41.108
78	1:DEAD	17.761	746.827	0.384	1.113	0.010	-26.569
	2:SELF	10.340	469.295	0.117	0.276	0.003	-15.562
	3:LIVE	4.241	121.357	-0.074	-0.121	-0.001	-6.417
	4:COMBINATK	32.341	1.34E+3	0.427	1.268	0.012	-48.547
	5:COMBINATK	40.506	1.65E+3	0.483	1.474	0.014	-60.623
	6:COMBINATK	39.341	1.7E+3	0.702	1.945	0.019	-58.983
79	1:DEAD	11.501	740.701	0.495	1.282	0.009	-17.307
	2:SELF	10.578	465.397	0.125	0.293	0.003	-15.908
	3:LIVE	4.421	124.448	-0.006	-0.016	-0.001	-6.687
	4:COMBINATK	26.500	1.33E+3	0.614	1.560	0.011	-39.902
	5:COMBINATK	33.568	1.65E+3	0.735	1.866	0.013	-50.557
	6:COMBINATK	30.910	1.69E+3	0.666	2.206	0.017	-46.500
80	1:DEAD	13.687	569.377	3.961	6.417	-0.032	-20.531
	2:SELF	6.772	303.517	2.251	3.444	-0.013	-10.271
	3:LIVE	2.411	60.636	0.833	1.228	-0.006	-3.716
	4:COMBINATK	22.671	933.729	7.045	11.089	-0.050	-34.518
	5:COMBINATK	28.408	1.14E+3	8.786	13.798	-0.063	-42.908
	6:COMBINATK	28.643	1.22E+3	8.697	13.806	-0.062	-43.122
81	1:DEAD	-8.268	815.811	0.044	0.567	0.009	12.044
	2:SELF	-7.410	567.287	-0.141	-0.105	-0.001	10.764
	3:LIVE	-2.975	164.150	-0.032	-0.039	-0.004	4.280
	4:COMBINATK	-18.654	1.55E+3	-0.129	0.424	0.004	27.089
	5:COMBINATK	-23.575	1.92E+3	-0.168	0.494	0.004	34.218
	6:COMBINATK	-21.950	1.94E+3	-0.136	0.648	0.012	31.931
82	1:DEAD	-10.523	927.928	0.957	1.914	0.014	15.345
	2:SELF	-6.184	630.519	0.646	1.055	0.003	6.941
	3:LIVE	-1.983	222.054	0.732	1.088	-0.002	2.810
	4:COMBINATK	-18.689	1.76E+3	2.335	4.057	0.015	27.096
	5:COMBINATK	-23.220	2.23E+3	3.095	5.303	0.017	33.639
	6:COMBINATK	-23.389	2.18E+3	2.244	4.157	0.024	34.000
83	1:DEAD	-6.466	922.289	-0.018	0.470	0.009	9.271
	2:SELF	-6.412	763.792	-0.005	0.083	-0.000	9.240
	3:LIVE	-1.950	281.765	-0.208	-0.314	-0.003	2.751
	4:COMBINATK	-14.828	1.99E+3	-0.230	0.239	0.006	21.262
	5:COMBINATK	-18.573	2.5E+3	-0.359	0.161	0.006	26.615
	6:COMBINATK	-18.029	2.39E+3	-0.032	0.774	0.013	25.916
84	1:DEAD	-6.862	607.282	0.762	1.611	-0.001	9.870
	2:SELF	-6.267	618.936	-0.203	-0.226	-0.004	9.053
	3:LIVE	-2.051	232.176	-0.038	-0.078	-0.003	2.921

 Software licensed to Hewlett-Packard	Job No	Sheet No 11	Rev
	Part		
Job Title building department	Ref		
Client university of technology	By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
	File design2.std	Date/Time 10-May-2011 09:36	

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	4:COMBINATK	-15.179	1.66E+3	0.521	1.307	-0.008	21.844
	5:COMBINATK	-19.036	2.08E+3	0.610	1.537	-0.011	27.381
	6:COMBINATK	-18.380	1.99E+3	0.783	1.938	-0.007	26.492
85	1:DEAD	-5.538	763.850	0.239	0.811	0.013	7.925
	2:SELF	-5.650	680.838	0.321	0.515	0.011	6.157
	3:LIVE	-1.548	231.058	0.318	0.418	0.009	2.184
	4:COMBINATK	-12.736	1.66E+3	0.879	1.745	0.033	18.267
	5:COMBINATK	-15.902	2.1E+3	1.182	2.261	0.044	22.794
	6:COMBINATK	-15.663	2.02E+3	0.785	1.858	0.033	22.516
86	1:DEAD	-10.804	850.452	0.109	0.634	0.002	15.721
	2:SELF	-6.284	601.795	0.013	0.077	-0.000	9.096
	3:LIVE	-2.065	224.980	-0.186	-0.311	0.001	2.953
	4:COMBINATK	-19.153	1.68E+3	-0.084	0.400	0.002	27.770
	5:COMBINATK	-23.810	2.1E+3	-0.151	0.355	0.003	34.505
	6:COMBINATK	-23.923	2.03E+3	0.171	0.996	0.002	34.744
87	1:DEAD	-1.042	993.379	1.596	2.609	0.024	1.230
	2:SELF	-3.598	712.806	-0.000	0.027	0.023	5.090
	3:LIVE	-0.133	268.404	-0.860	-1.041	0.018	0.068
	4:COMBINATK	-4.771	1.97E+3	0.936	1.795	0.066	6.387
	5:COMBINATK	-5.778	2.48E+3	0.859	1.738	0.088	7.692
	6:COMBINATK	-6.493	2.39E+3	2.234	3.971	0.066	8.847
88	1:DEAD	-5.202	874.162	-4.628	-6.413	0.015	7.308
	2:SELF	-2.550	456.287	-3.425	-5.049	0.021	3.457
	3:LIVE	-0.776	110.307	-1.559	-2.375	0.020	0.954
	4:COMBINATK	-8.528	1.44E+3	-9.612	-13.837	0.056	11.720
	5:COMBINATK	-10.544	1.77E+3	-12.158	-17.555	0.076	14.446
	6:COMBINATK	-10.652	1.88E+3	-11.275	-16.047	0.051	15.072
89	1:DEAD	5.052	895.071	-4.769	-6.666	0.006	-7.659
	2:SELF	2.736	485.176	-3.448	-5.033	0.003	-4.214
	3:LIVE	0.965	113.395	-1.557	-2.327	-0.003	-1.514
	4:COMBINATK	8.753	1.47E+3	-9.773	-14.026	0.006	-13.387
	5:COMBINATK	10.889	1.81E+3	-12.350	-17.762	0.006	-16.670
	6:COMBINATK	10.903	1.9E+3	-11.502	-16.378	0.013	-16.623
90	1:DEAD	0.672	1.02E+3	1.856	2.857	-0.000	-1.180
	2:SELF	3.555	724.360	0.122	0.280	0.001	-5.420
	3:LIVE	0.062	274.934	-0.579	-0.872	-0.002	-0.176
	4:COMBINATK	4.289	2.02E+3	1.200	2.245	-0.001	-6.775
	5:COMBINATK	5.171	2.53E+3	1.208	2.345	-0.001	-8.201
	6:COMBINATK	5.917	2.44E+3	2.489	4.363	0.001	-9.240
91	1:DEAD	6.097	781.710	0.242	0.778	0.008	-9.195
	2:SELF	6.105	677.446	0.407	0.696	0.007	-9.184
	3:LIVE	1.795	229.806	0.389	0.572	0.001	-2.741
	4:COMBINATK	13.997	1.87E+3	1.038	2.045	0.016	-21.119
	5:COMBINATK	17.514	2.09E+3	1.401	2.683	0.020	-26.440



Software licensed to Hewlett-Packard

Job No	Sheet No 12	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.std	Date/Time 10-May-2011 09:36

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
92	8:COMBINATK	17.083	2.01E+3	0.908	2.063	0.022	-25.730
	1:DEAD	11.185	848.552	0.064	0.530	0.020	-16.837
	2:SELF	6.580	599.773	0.063	0.198	0.013	-9.848
	3:LIVE	2.242	224.185	-0.141	-0.203	0.004	-3.391
	4:COMBINATK	19.987	1.87E+3	-0.014	0.525	0.037	-29.878
	5:COMBINATK	24.881	2.1E+3	-0.073	0.549	0.046	-37.207
93	6:COMBINATK	24.843	2.03E+3	0.177	1.020	0.046	-37.079
	1:DEAD	7.138	806.956	0.734	1.532	0.022	-10.600
	2:SELF	6.521	615.976	-0.159	-0.122	0.014	-9.711
	3:LIVE	2.225	232.191	-0.004	0.008	0.004	-3.351
	4:COMBINATK	15.884	1.66E+3	0.571	1.418	0.040	-23.662
	5:COMBINATK	19.951	2.08E+3	0.684	1.701	0.050	-29.735
94	6:COMBINATK	19.122	1.99E+3	0.806	1.974	0.050	-28.435
	1:DEAD	6.830	921.894	-0.044	0.392	0.008	-10.068
	2:SELF	6.824	787.384	0.045	0.188	0.004	-10.106
	3:LIVE	2.253	286.088	-0.168	-0.228	0.001	-3.373
	4:COMBINATK	15.907	2E+3	-0.167	0.352	0.012	-23.548
	5:COMBINATK	19.990	2.51E+3	-0.288	0.331	0.015	-29.607
95	6:COMBINATK	19.118	2.39E+3	0.001	0.813	0.016	-28.244
	1:DEAD	10.691	928.516	0.907	1.801	-0.006	-15.835
	2:SELF	6.432	830.746	0.688	1.143	-0.006	-9.576
	3:LIVE	2.196	222.391	0.771	1.168	-0.003	-3.319
	4:COMBINATK	19.318	1.78E+3	2.366	4.110	-0.015	-28.730
	5:COMBINATK	24.061	2.23E+3	3.148	5.399	-0.019	-35.803
96	6:COMBINATK	23.971	2.18E+3	2.234	4.122	-0.016	-35.575
	1:DEAD	8.484	824.993	-0.033	0.408	0.003	-12.589
	2:SELF	7.647	587.906	-0.127	-0.063	-0.000	-11.392
	3:LIVE	3.180	182.995	-0.012	0.008	0.000	-4.786
	4:COMBINATK	19.310	1.58E+3	-0.173	0.354	0.002	-28.767
	5:COMBINATK	24.445	1.93E+3	-0.213	0.428	0.003	-36.435
97	6:COMBINATK	22.583	1.95E+3	-0.225	0.484	0.003	-33.573
	1:DEAD	7.545	790.055	5.618	9.081	-0.008	-11.192
	2:SELF	3.322	459.005	3.850	5.534	0.003	-4.991
	3:LIVE	1.538	89.014	1.408	2.110	-0.000	-2.357
	4:COMBINATK	12.405	1.34E+3	10.874	16.724	-0.006	-18.540
	5:COMBINATK	15.501	1.84E+3	13.811	20.913	-0.007	-23.191
98	6:COMBINATK	15.214	1.75E+3	13.255	20.461	-0.008	-22.656
	1:DEAD	-13.703	587.487	3.850	6.153	0.040	20.355
	2:SELF	-8.700	302.973	2.283	3.516	0.010	9.881
	3:LIVE	-2.285	60.706	0.878	1.333	0.002	3.315
	4:COMBINATK	-22.888	831.168	7.011	11.002	0.051	33.552
	5:COMBINATK	-28.139	1.14E+3	8.785	13.738	0.062	41.588
99	6:COMBINATK	-28.584	1.22E+3	8.586	13.537	0.089	42.331
	1:DEAD	-11.528	729.058	0.389	1.024	0.001	17.121



Software licensed to Hewlett-Packard

Job No

Sheet No

13

Rev

Part

Job Title building department

Ref

By yasir w.j.

Date 05-Dec-10

Chd Dr alaa k.

Client university of technology

File design2.std

Date/Time 10-May-2011 09:36

Reactions Cont...

Node	LC	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	2:SELF	-10.518	484.711	0.156	0.364	-0.006	15.542
	3:LIVE	-4.307	124.198	0.043	0.095	-0.003	6.317
	4:COMBINATK	-26.351	1.32E+3	0.588	1.483	-0.008	38.979
	5:COMBINATK	-33.344	1.63E+3	0.723	1.817	-0.011	49.302
	6:COMBINATK	-30.882	1.87E+3	0.763	1.944	-0.007	45.728
100	1:DEAD	-17.748	744.590	0.294	0.874	-0.001	26.304
	2:SELF	-10.294	488.854	0.141	0.332	-0.005	15.225
	3:LIVE	-4.150	121.208	-0.027	-0.013	-0.003	6.093
	4:COMBINATK	-32.191	1.33E+3	0.409	1.193	-0.008	47.621
	5:COMBINATK	-40.290	1.65E+3	0.480	1.426	-0.012	59.582
	6:COMBINATK	-39.258	1.7E+3	0.610	1.689	-0.008	58.140
101	1:DEAD	-11.089	694.701	0.855	1.655	0.016	16.415
	2:SELF	-10.242	486.807	-0.005	0.070	0.011	15.134
	3:LIVE	-4.144	121.034	0.052	0.081	0.003	6.089
	4:COMBINATK	-25.476	1.28E+3	0.903	1.806	0.030	37.638
	5:COMBINATK	-32.229	1.58E+3	1.104	2.200	0.037	47.602
	6:COMBINATK	-29.864	1.63E+3	1.191	2.415	0.038	44.168
102	1:DEAD	-8.439	703.580	-0.330	-0.113	0.014	12.361
	2:SELF	-9.348	537.833	0.023	0.094	0.008	13.728
	3:LIVE	-3.202	127.080	-0.016	-0.031	0.002	4.668
	4:COMBINATK	-20.988	1.37E+3	-0.323	-0.049	0.024	30.755
	5:COMBINATK	-28.488	1.69E+3	-0.395	-0.071	0.030	38.773
	6:COMBINATK	-24.901	1.74E+3	-0.430	-0.025	0.031	36.522
103	1:DEAD	-16.549	752.326	0.150	0.594	0.021	24.449
	2:SELF	-10.074	468.107	0.068	0.164	0.013	14.845
	3:LIVE	-4.064	121.778	-0.088	-0.105	0.004	5.958
	4:COMBINATK	-30.887	1.34E+3	0.150	0.654	0.039	45.252
	5:COMBINATK	-38.450	1.66E+3	0.152	0.742	0.048	56.685
	6:COMBINATK	-37.273	1.71E+3	0.305	1.062	0.048	55.012
104	1:DEAD	-10.030	652.221	0.862	1.667	-0.001	14.710
	2:SELF	-9.607	484.398	-0.069	-0.070	0.005	14.100
	3:LIVE	-3.779	119.183	0.003	-0.003	0.000	5.523
	4:COMBINATK	-23.416	1.24E+3	0.776	1.593	0.004	34.334
	5:COMBINATK	-29.810	1.53E+3	0.933	1.910	0.005	43.410
	6:COMBINATK	-27.491	1.56E+3	1.082	2.235	0.005	40.334
105	1:DEAD	-13.474	549.540	-3.317	-4.514	-0.046	19.841
	2:SELF	-6.485	297.211	-2.188	-3.178	-0.013	9.443
	3:LIVE	-2.195	59.310	-0.851	-1.268	-0.005	3.178
	4:COMBINATK	-22.134	906.061	-8.358	-8.961	-0.065	32.461
	5:COMBINATK	-27.438	1.11E+3	-7.968	-11.261	-0.080	40.225
	6:COMBINATK	-27.915	1.19E+3	-7.708	-10.769	-0.084	40.996
106	1:DEAD	-0.488	364.886	0.151	0.690	-0.003	0.458
	2:SELF	-0.891	243.127	-0.097	-0.088	-0.004	1.117
	3:LIVE	-0.816	85.649	-0.212	-0.354	-0.001	1.105



Software licensed to Hewlett-Packard

Job No	Sheet No 14	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.std	Date/Time 10-May-2011 09:36

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	4:COMBINATK	-2.194	893.842	-0.159	0.247	-0.008	2.681
	5:COMBINATK	-2.860	866.830	-0.276	0.155	-0.010	3.660
	6:COMBINATK	-1.930	851.190	0.075	0.842	-0.009	2.206
107	1:DEAD	0.775	369.998	0.120	0.645	0.025	-1.265
	2:SELF	1.123	244.686	-0.040	0.067	0.016	-1.777
	3:LIVE	0.961	86.161	-0.171	-0.243	0.005	-1.498
	4:COMBINATK	2.859	700.825	-0.092	0.469	0.046	-4.540
	5:COMBINATK	3.815	875.454	-0.179	0.466	0.057	-6.047
	6:COMBINATK	2.858	860.530	0.111	0.997	0.057	-4.259
108	1:DEAD	-11.744	987.001	2.672	5.699	-0.172	0.107
	2:SELF	-6.331	944.713	2.513	4.136	-0.130	-4.424
	3:LIVE	-3.772	321.175	3.630	5.361	-0.091	-2.063
	4:COMBINATK	-21.847	2.25E+3	8.815	15.196	-0.393	-6.379
	5:COMBINATK	-27.725	2.83E+3	12.030	20.379	-0.508	-8.481
	6:COMBINATK	-25.304	2.7E+3	7.258	13.770	-0.423	-6.043
109	1:DEAD	2.007	89.749	-0.157	-0.347	0.013	0.080
	2:SELF	0.135	83.680	-0.815	-1.334	0.002	0.041
	3:LIVE	-2.775	27.895	-1.069	-1.645	-0.005	-0.182
	4:COMBINATK	-0.632	201.303	-2.041	-3.327	0.010	-0.071
	5:COMBINATK	-1.869	252.722	-2.877	-4.650	0.009	-0.161
	6:COMBINATK	3.000	242.772	-1.381	-2.354	0.021	0.170
110	1:DEAD	-4.756	83.041	-0.175	-0.409	-0.018	-0.784
	2:SELF	-2.757	80.246	-0.882	-1.447	-0.006	-0.703
	3:LIVE	0.623	26.477	-1.090	-1.675	-0.002	-0.205
	4:COMBINATK	-6.890	189.784	-2.147	-3.531	-0.028	-1.701
	5:COMBINATK	-8.019	238.307	-3.012	-4.908	-0.034	-2.124
	6:COMBINATK	-10.518	228.602	-1.480	-2.598	-0.036	-2.096
111	1:DEAD	21.834	973.524	2.416	5.291	0.313	-42.633
	2:SELF	13.555	938.944	2.054	3.043	0.314	-29.122
	3:LIVE	8.033	318.618	3.302	4.541	0.254	-16.485
	4:COMBINATK	43.422	2.23E+3	7.771	12.875	0.881	-88.239
	5:COMBINATK	55.320	2.8E+3	10.646	17.266	1.159	-112.481
	6:COMBINATK	49.544	2.68E+3	6.257	11.668	0.878	-100.456
112	1:DEAD	3.937	492.694	1.935	3.341	0.010	-6.007
	2:SELF	3.865	416.840	1.545	2.395	0.001	-5.899
	3:LIVE	2.617	202.568	1.607	2.406	-0.003	-3.989
	4:COMBINATK	10.419	1.11E+3	5.087	8.143	0.007	-15.895
	5:COMBINATK	13.549	1.42E+3	6.747	10.734	0.006	-20.869
	6:COMBINATK	10.923	1.27E+3	4.872	8.031	0.015	-16.868
113	1:DEAD	-6.925	309.015	-1.636	-1.972	0.033	10.180
	2:SELF	-4.543	260.536	-0.853	-1.147	0.019	6.616
	3:LIVE	-0.831	41.069	-0.051	-0.046	0.002	1.139
	4:COMBINATK	-12.299	611.520	-2.541	-3.165	0.055	17.935
	5:COMBINATK	-15.091	750.612	-3.070	-3.817	0.067	21.977



Software licensed to Hewlett-Packard

Job No	Sheet No 15	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:36	

Job Title building department

Client university of tecnologia

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
114	6:COMBINATK	-18.055	797.371	-3.486	-4.367	0.073	23.514
	1:DEAD	0.759	72.291	18.439	-8.484	-1.330	1.279
	2:SELF	0.283	83.841	22.989	-7.514	-1.816	1.706
	3:LIVE	-0.931	42.961	9.977	-4.435	-0.952	1.084
	4:COMBINATK	0.111	199.193	51.405	-18.433	-3.899	4.070
	5:COMBINATK	-0.240	256.218	65.677	-23.893	-5.059	5.317
115	6:COMBINATK	1.459	218.724	58.000	-19.596	-4.125	4.180
	1:DEAD	0.241	83.708	-19.315	6.288	-0.035	-0.154
	2:SELF	0.989	114.124	-25.293	8.823	-0.126	-0.499
	3:LIVE	0.814	74.351	-18.714	5.606	-0.090	-0.326
	4:COMBINATK	2.044	272.182	-61.322	20.497	-0.251	-0.980
	5:COMBINATK	2.778	356.359	-80.272	26.838	-0.337	-1.306
116	6:COMBINATK	1.722	276.964	-62.451	20.847	-0.226	-0.915
	1:DEAD	12.935	86.881	-0.275	-0.016	0.013	7.094
	2:SELF	11.528	77.619	-0.181	-0.015	0.008	6.297
	3:LIVE	2.416	14.621	-0.049	-0.011	0.004	1.149
	4:COMBINATK	28.878	179.121	-0.505	-0.042	0.024	14.539
	5:COMBINATK	33.218	220.793	-0.625	-0.055	0.030	17.907
117	6:COMBINATK	34.245	230.299	-0.639	-0.044	0.028	18.747
	1:DEAD	-8.623	201.447	1.583	2.251	-0.472	-1.556
	2:SELF	-10.665	215.058	0.873	0.960	-0.346	-1.113
	3:LIVE	-0.141	29.244	0.849	0.779	-0.164	-0.711
	4:COMBINATK	-19.428	445.749	3.105	3.990	-0.983	-3.379
	5:COMBINATK	-23.371	548.596	3.985	5.099	-1.245	-4.340
118	6:COMBINATK	-27.002	583.107	3.439	4.495	-1.146	-3.736
	1:DEAD	8.277	169.031	14.950	-7.295	-0.073	6.501
	2:SELF	8.127	151.187	12.885	-6.682	-0.044	5.685
	3:LIVE	1.665	27.128	2.666	-1.191	-0.005	0.931
	4:COMBINATK	18.070	347.346	30.502	-15.169	-0.122	13.117
	5:COMBINATK	22.350	427.966	37.669	-18.679	-0.148	16.113
119	6:COMBINATK	22.966	448.305	38.970	-19.568	-0.164	17.060
	1:DEAD	14.104	123.781	-12.953	6.895	-0.181	0.482
	2:SELF	13.587	126.286	-13.652	6.873	-0.157	0.808
	3:LIVE	3.337	24.447	-1.972	1.338	-0.049	0.028
	4:COMBINATK	31.028	274.493	-28.578	15.106	-0.387	1.118
	5:COMBINATK	38.568	339.171	-35.083	18.663	-0.484	1.353
120	6:COMBINATK	38.767	350.066	-37.248	19.275	-0.473	1.527
	1:DEAD	13.966	551.301	-3.169	-4.146	0.067	-21.132
	2:SELF	6.820	296.301	-2.143	-3.070	0.032	-10.429
	3:LIVE	2.391	59.732	-0.848	-1.257	0.017	-3.729
	4:COMBINATK	23.177	909.335	-6.160	-8.473	0.117	-35.289
	5:COMBINATK	28.769	1.12E+3	-7.731	-10.871	0.147	-43.839
121	6:COMBINATK	29.101	1.19E+3	-7.436	-10.102	0.139	-44.185
	1:DEAD	-18.509	185.517	17.031	-7.699	-0.021	-6.470




Software licensed to Hewlett-Packard

Job No	Sheet No 16	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of tecnology	File design2.std	Date/Time 10-May-2011 09:36

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	2:SELF	-14.636	164.121	15.112	-8.919	-0.023	-5.678
	3:LIVE	-1.751	24.751	2.816	-1.017	0.009	-0.917
	4:COMBINATK	-32.896	374.389	34.959	-15.636	-0.035	-13.064
	5:COMBINATK	-40.176	459.187	43.078	-19.170	-0.038	-16.044
	6:COMBINATK	-43.604	489.493	45.000	-20.486	-0.061	-17.006
122	1:DEAD	5.583	41.555	0.137	0.043	-0.012	2.101
	2:SELF	6.535	44.317	0.091	-0.003	-0.001	2.171
	3:LIVE	1.045	7.951	0.043	0.014	-0.004	0.397
	4:COMBINATK	13.162	93.823	0.271	0.054	-0.017	4.668
	5:COMBINATK	16.212	115.768	0.342	0.071	-0.021	5.761
	6:COMBINATK	18.984	120.221	0.319	0.056	-0.017	5.981
123	1:DEAD	-16.718	133.971	-11.372	7.523	0.226	-0.486
	2:SELF	-15.922	132.759	-11.543	7.320	0.202	-0.564
	3:LIVE	-2.959	21.116	-1.349	1.180	0.042	-0.068
	4:COMBINATK	-35.597	287.846	-24.284	16.023	0.470	-1.098
	5:COMBINATK	-43.900	353.861	-29.657	19.899	0.581	-1.344
	6:COMBINATK	-45.893	373.422	-32.081	20.780	0.600	-1.442
124	1:DEAD	7.901	609.645	-2.356	-3.035	-0.012	-11.873
	2:SELF	4.845	431.427	-1.527	-2.166	-0.015	-7.365
	3:LIVE	0.409	47.993	0.143	0.232	-0.005	-0.725
	4:COMBINATK	13.156	1.09E+3	-3.741	-4.969	-0.031	-19.963
	5:COMBINATK	15.951	1.33E+3	-4.432	-5.869	-0.040	-24.245
	6:COMBINATK	17.845	1.48E+3	-5.437	-7.281	-0.037	-26.933
125	1:DEAD	-7.951	617.252	-2.353	-3.039	0.020	11.733
	2:SELF	-4.769	435.208	-1.477	-2.073	0.010	6.970
	3:LIVE	-0.256	49.142	0.185	0.272	0.001	0.292
	4:COMBINATK	-12.976	1.1E+3	-3.665	-4.841	0.031	18.994
	5:COMBINATK	-15.674	1.34E+3	-4.333	-5.700	0.037	22.910
	6:COMBINATK	-17.808	1.47E+3	-5.362	-7.157	0.042	26.183
129	1:DEAD	-5.739	44.868	1.266	0.229	0.063	-1.882
	2:SELF	-7.752	44.539	0.766	-0.327	-0.104	-1.583
	3:LIVE	-5.475	19.495	0.344	-0.574	-0.176	-0.421
	4:COMBINATK	-18.985	108.702	2.376	-0.872	-0.217	-3.886
	5:COMBINATK	-24.948	138.241	2.989	-1.036	-0.331	-4.831
	6:COMBINATK	-18.867	124.890	2.846	-0.137	-0.057	-4.851
130	1:DEAD	-13.193	107.848	-3.369	-2.108	0.209	3.181
	2:SELF	-10.581	99.134	-3.124	-2.776	0.132	2.870
	3:LIVE	-3.312	27.721	-2.539	-2.818	0.080	1.162
	4:COMBINATK	-27.086	234.501	-9.051	-7.502	0.422	7.213
	5:COMBINATK	-33.827	292.489	-11.877	-10.050	0.538	9.121
	6:COMBINATK	-33.283	289.482	-9.117	-8.636	0.478	8.471
131	1:DEAD	12.890	111.117	-3.302	-1.989	-0.160	-3.059
	2:SELF	9.983	99.716	-3.069	-2.806	-0.094	-2.691
	3:LIVE	2.505	28.614	-2.550	-2.527	-0.047	-1.511

 Software licensed to Hewlett-Packard	Job No	Sheet No 17	Rev
	Part		
Job Title bluiding department.	Ref		
	By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.std	Date/Time 10-May-2011 09:36	

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	4:COMBINATK	25.378	238.447	-8.940	-7.122	-0.302	-7.261
	5:COMBINATK	31.455	298.782	-11.748	-8.557	-0.381	-9.317
	6:COMBINATK	32.022	295.166	-8.947	-6.433	-0.356	-8.050
132	1:DEAD	-23.089	80.350	-2.487	-1.314	-0.388	-3.352
	2:SELF	-19.394	71.096	-2.028	-1.661	-0.461	-3.055
	3:LIVE	-4.522	17.467	-1.527	-1.545	-0.421	-0.686
	4:COMBINATK	-46.985	168.913	-6.042	-4.520	-1.271	-7.093
	5:COMBINATK	-58.191	209.682	-7.861	-6.042	-1.693	-8.786
	6:COMBINATK	-59.448	212.024	-8.321	-4.166	-1.189	-8.969
133	1:DEAD	20.861	74.175	-2.271	-1.148	0.343	2.358
	2:SELF	16.967	64.099	-1.913	-1.453	0.417	2.134
	3:LIVE	2.961	14.338	-1.468	-1.393	0.394	0.355
	4:COMBINATK	40.788	152.813	-5.651	-3.991	1.153	4.846
	5:COMBINATK	50.130	188.871	-7.369	-5.347	1.541	5.957
	6:COMBINATK	52.958	193.585	-5.857	-3.638	1.063	6.288
140	1:DEAD	-5.493	5.768	9.169	-0.690	0.264	-0.312
	2:SELF	-5.291	9.600	10.386	-2.369	0.300	-1.065
	3:LIVE	-3.649	7.853	7.570	-2.354	0.160	-0.983
	4:COMBINATK	-14.434	23.220	27.126	-5.414	0.724	-2.360
	5:COMBINATK	-18.780	31.005	35.579	-7.439	0.933	-3.225
	6:COMBINATK	-15.096	21.515	27.377	-4.283	0.789	-1.928
143	1:DEAD	1.423	11.684	13.968	-1.762	-0.924	1.375
	2:SELF	2.756	14.835	15.922	-3.051	-0.749	1.750
	3:LIVE	2.364	11.708	11.544	-2.870	-0.419	1.457
	4:COMBINATK	6.543	38.226	41.434	-7.682	-2.092	4.582
	5:COMBINATK	8.797	50.554	54.338	-10.367	-2.678	6.081
	6:COMBINATK	5.851	37.126	41.846	-6.738	-2.342	4.375
150	1:DEAD	-2.118	850.087	-8.619	-13.596	0.155	-0.103
	2:SELF	-0.781	733.985	-7.659	-11.660	0.215	-1.250
	3:LIVE	-0.445	326.814	-7.180	-11.091	0.174	-0.655
	4:COMBINATK	-3.324	1.91E+3	-24.457	-36.347	0.544	-2.008
	5:COMBINATK	-4.167	2.42E+3	-32.221	-48.052	0.722	-2.672
	6:COMBINATK	-4.032	2.22E+3	-24.189	-35.358	0.518	-1.894
164	1:DEAD	52.493	370.109	-29.950	22.716	-0.630	7.286
	2:SELF	27.580	281.554	-22.279	14.790	-0.367	6.071
	3:LIVE	8.675	75.248	-6.048	3.933	-0.206	1.852
	4:COMBINATK	88.727	706.911	-56.277	41.440	-1.203	15.189
	5:COMBINATK	106.742	878.392	-72.351	51.301	-1.528	18.967
	6:COMBINATK	112.074	884.328	-73.121	52.509	-1.396	18.671
165	1:DEAD	-52.840	352.158	-32.093	21.582	0.671	-6.312
	2:SELF	-24.072	242.575	-24.807	14.192	0.379	-5.120
	3:LIVE	-3.418	81.073	-7.966	3.378	0.216	-1.130
	4:COMBINATK	-80.431	655.805	-64.866	39.150	1.288	-12.562
	5:COMBINATK	-97.884	811.395	-81.025	48.331	1.606	-15.527



Software licensed to Hewlett-Packard

Job No	Sheet No 18	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:36	

Job Title building department

Client university of technology

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	6:COMBINATK	-107.818	832.626	-79.660	50.084	1.470	-16.006
166	1:DEAD	0.895	148.505	15.924	-24.389	1.033	-2.997
	2:SELF	0.533	82.685	5.393	-15.785	0.378	-1.840
	3:LIVE	1.618	-9.788	-9.530	-4.201	0.180	-0.656
	4:COMBINATK	3.046	222.602	11.788	-44.375	1.591	-5.492
	5:COMBINATK	4.303	263.208	10.334	-54.931	1.982	-6.852
	6:COMBINATK	1.999	325.347	29.845	-56.244	1.975	-6.771
167	1:DEAD	0.517	148.593	13.202	-24.411	-0.380	1.643
	2:SELF	1.337	88.844	7.768	-15.182	0.184	0.341
	3:LIVE	-0.275	-5.394	-7.608	-3.718	0.198	-0.416
	4:COMBINATK	1.579	230.044	13.362	-43.312	0.001	1.568
	5:COMBINATK	1.785	273.895	12.992	-53.461	0.081	1.715
	6:COMBINATK	2.596	329.812	29.358	-55.431	-0.275	2.778
168	1:DEAD	48.830	131.496	-10.782	-2.767	0.887	10.955
	2:SELF	23.948	90.843	-7.162	-2.560	0.928	7.701
	3:LIVE	1.828	13.608	-2.722	-1.958	0.583	2.309
	4:COMBINATK	74.606	235.947	-20.666	-7.285	2.409	20.966
	5:COMBINATK	90.258	288.579	-25.887	-9.525	3.124	26.082
	6:COMBINATK	101.889	311.275	-25.122	-7.457	2.556	26.119
169	1:DEAD	-40.819	106.248	-10.778	-3.460	-1.277	-10.808
	2:SELF	-18.187	68.033	-6.848	-2.655	-1.178	-7.842
	3:LIVE	1.512	-1.297	-2.622	-2.020	-0.773	-2.455
	4:COMBINATK	-57.294	172.982	-20.245	-8.135	-3.228	-21.105
	5:COMBINATK	-68.148	207.060	-25.343	-10.569	-4.183	-26.308
	6:COMBINATK	-82.328	243.990	-24.673	-8.560	-3.437	-26.110
176	1:DEAD	4.764	876.771	-10.450	-14.735	-0.047	-9.131
	2:SELF	2.316	740.590	-7.611	-11.152	0.061	-5.129
	3:LIVE	1.317	324.083	-6.987	-10.440	0.048	-2.799
	4:COMBINATK	8.396	1.94E+3	-25.049	-36.327	0.062	-17.059
	5:COMBINATK	10.602	2.46E+3	-32.854	-47.768	0.093	-21.590
	6:COMBINATK	9.911	2.26E+3	-25.286	-36.242	0.019	-19.964
243	1:DEAD	6.366	75.198	-2.204	-0.514	-0.095	0.433
	2:SELF	5.497	78.073	-2.225	-0.586	-0.103	0.460
	3:LIVE	1.886	14.548	-0.364	-0.083	-0.010	0.058
	4:COMBINATK	13.749	187.819	-4.794	-1.183	-0.208	0.951
	5:COMBINATK	17.253	207.203	-5.699	-1.453	-0.254	1.165
	6:COMBINATK	16.608	214.579	-6.202	-1.539	-0.276	1.250
244	1:DEAD	-8.234	83.311	-1.896	-0.447	0.082	-0.579
	2:SELF	-7.435	84.073	-1.864	-0.490	0.083	-0.589
	3:LIVE	-1.831	13.780	-0.260	-0.059	0.008	-0.116
	4:COMBINATK	-17.300	181.184	-4.023	-0.996	0.173	-1.285
	5:COMBINATK	-21.412	222.809	-4.931	-1.219	0.211	-1.588
	6:COMBINATK	-21.936	234.337	-5.287	-1.312	0.232	-1.636
245	1:DEAD	-3.486	82.531	-0.177	-0.047	0.002	-0.061




Software licensed to Hewlett-Packard

Job No	Sheet No 19	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.std	Date/Time 10-May-2011 09:36

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	2:SELF	-2.529	84.734	-0.192	-0.115	0.003	-0.062
	3:LIVE	-0.751	14.854	-0.035	-0.004	0.000	-0.042
	4:COMBINATK	-6.766	182.119	-0.404	-0.166	0.005	-0.165
	5:COMBINATK	-8.419	224.485	-0.499	-0.200	0.006	-0.215
	6:COMBINATK	-8.421	234.171	-0.517	-0.227	0.007	-0.172
248	1:DEAD	3.682	72.583	-0.183	0.019	0.009	-0.061
	2:SELF	2.525	75.989	-0.184	-0.080	0.005	-0.058
	3:LIVE	1.510	12.532	-0.042	0.019	0.004	-0.036
	4:COMBINATK	7.717	161.104	-0.409	-0.042	0.017	-0.155
	5:COMBINATK	9.664	196.337	-0.508	-0.043	0.022	-0.200
	6:COMBINATK	8.699	208.000	-0.514	-0.086	0.019	-0.167
447	1:DEAD	-7.487	788.780	5.794	9.089	0.016	10.908
	2:SELF	-3.153	458.787	3.611	5.456	-0.007	4.458
	3:LIVE	-1.350	89.010	1.394	2.075	-0.005	1.865
	4:COMBINATK	-11.990	1.34E+3	10.799	16.620	0.005	17.231
	5:COMBINATK	-14.928	1.64E+3	13.516	20.774	0.003	21.424
	6:COMBINATK	-14.896	1.75E+3	13.187	20.363	0.014	21.512
740	1:DEAD	6.830	286.009	-2.116	-2.676	-0.021	-10.264
	2:SELF	4.522	239.755	-1.347	-1.897	-0.023	-6.860
	3:LIVE	0.928	35.199	-0.208	-0.286	-0.007	-1.484
	4:COMBINATK	12.280	560.964	-3.671	-4.858	-0.050	-18.608
	5:COMBINATK	15.107	687.236	-4.489	-5.944	-0.063	-22.923
	6:COMBINATK	15.892	736.070	-4.848	-6.401	-0.061	-23.974
1295	1:DEAD	-2.975	7.144	5.513	-1.062	0.259	-0.653
	2:SELF	-4.367	11.295	5.914	-2.534	0.065	-1.120
	3:LIVE	-4.276	12.594	6.049	-2.244	0.280	-1.195
	4:COMBINATK	-11.617	31.033	19.475	-5.839	0.604	-2.969
	5:COMBINATK	-15.651	42.277	26.590	-7.904	0.836	-4.041
	6:COMBINATK	-10.278	25.815	15.997	-5.034	0.454	-2.483
8558	1:DEAD	1.315	70.152	0.092	0.168	0.001	-0.041
	2:SELF	0.310	73.918	0.012	0.034	0.003	-0.023
	3:LIVE	0.986	11.233	0.047	0.063	-0.001	-0.040
	4:COMBINATK	2.611	155.303	0.151	0.265	0.003	-0.104
	5:COMBINATK	3.528	190.857	0.200	0.343	0.003	-0.141
	6:COMBINATK	2.275	201.696	0.145	0.282	0.006	-0.090
8585	1:DEAD	5.728	75.855	-0.881	-0.178	-0.023	-0.113
	2:SELF	4.584	78.916	-0.846	-0.257	-0.028	-0.112
	3:LIVE	1.896	13.889	-0.137	-0.026	-0.002	-0.045
	4:COMBINATK	12.208	168.440	-1.445	-0.461	-0.053	-0.270
	5:COMBINATK	15.406	207.676	-1.788	-0.563	-0.064	-0.343
	6:COMBINATK	14.437	216.400	-1.830	-0.608	-0.071	-0.315
8897	1:DEAD	0.996	157.281	3.616	0.697	-0.103	-0.489
	2:SELF	0.931	148.757	2.451	0.229	-0.106	-0.464
	3:LIVE	0.247	26.439	1.118	0.044	-0.021	-0.161

 Software licensed to Hewlett-Packard	Job No	Sheet No 20	Rev
	Part		
Job Title building department	Ref		
	By yasir w.j. Date 05-Dec-10 Chd Dr alaa k.		
Client university of tecnologia	File design2.std	Date/Time 10-May-2011 09:36	

Reactions Cont...

Node	LC	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	4:COMBINATK	2.175	330.477	7.188	0.970	-0.230	-1.114
	5:COMBINATK	2.709	407.148	9.070	1.182	-0.284	-1.401
	6:COMBINATK	2.700	425.653	8.495	1.296	-0.293	-1.334
6698	1:DEAD	2.323	150.616	-3.120	0.155	0.302	-0.939
	2:SELF	2.151	148.214	-3.947	-0.292	0.290	-0.857
	3:LIVE	0.558	27.430	0.382	-0.099	0.071	-0.267
	4:COMBINATK	5.030	328.259	-8.705	-0.237	0.662	-2.063
	5:COMBINATK	6.259	402.483	-7.901	-0.323	0.823	-2.583
	6:COMBINATK	8.263	418.362	-9.894	-0.193	0.828	-2.515
6787	1:DEAD	-7.006	85.316	-0.603	-0.188	0.030	-0.016
	2:SELF	-6.001	86.827	-0.591	-0.241	0.031	-0.013
	3:LIVE	-1.417	14.727	-0.105	-0.028	0.004	-0.031
	4:COMBINATK	-14.424	186.889	-1.299	-0.456	0.064	-0.061
	5:COMBINATK	-17.875	230.133	-1.601	-0.559	0.079	-0.085
	6:COMBINATK	-18.210	240.999	-1.671	-0.600	0.085	-0.041
6801	1:DEAD	1.329	78.917	0.084	0.049	0.007	0.024
	2:SELF	2.077	82.225	0.018	-0.037	0.008	-0.002
	3:LIVE	0.180	14.787	0.032	0.019	0.002	-0.028
	4:COMBINATK	3.587	175.939	0.134	0.030	0.017	-0.007
	5:COMBINATK	4.377	217.045	0.174	0.044	0.022	-0.019
	6:COMBINATK	4.789	225.599	0.142	0.016	0.022	0.030
7073	1:DEAD	-2.081	187.240	5.768	0.829	0.282	0.939
	2:SELF	-1.791	153.488	5.235	0.378	0.248	0.812
	3:LIVE	-0.236	23.282	1.722	0.043	0.029	0.096
	4:COMBINATK	-4.088	344.008	12.728	1.251	0.560	1.848
	5:COMBINATK	-5.000	422.123	15.960	1.518	0.683	2.256
	6:COMBINATK	-5.383	449.017	15.405	1.690	0.742	2.452
7074	1:DEAD	-2.507	160.733	0.817	0.014	-0.360	1.121
	2:SELF	-2.325	154.585	0.422	-0.365	-0.342	1.005
	3:LIVE	-0.439	24.016	0.953	-0.067	-0.065	0.171
	4:COMBINATK	-5.271	339.334	2.192	-0.418	-0.768	2.297
	5:COMBINATK	-6.501	416.808	3.011	-0.528	-0.947	2.824
	6:COMBINATK	-6.765	441.448	1.734	-0.492	-0.984	2.976
7081	1:DEAD	3.818	158.583	-0.061	0.128	-0.040	-0.038
	2:SELF	3.028	141.351	-0.025	0.089	-0.030	-0.107
	3:LIVE	1.068	24.597	-0.032	0.003	-0.005	-0.125
	4:COMBINATK	7.711	324.532	-0.116	0.220	-0.076	-0.270
	5:COMBINATK	9.680	399.277	-0.154	0.266	-0.093	-0.374
	6:COMBINATK	9.303	419.909	-0.121	0.304	-0.098	-0.203
7085	1:DEAD	-4.187	180.886	1.998	0.706	-0.271	0.338
	2:SELF	-3.889	142.403	1.727	0.572	-0.237	0.235
	3:LIVE	0.100	22.754	0.305	0.101	-0.046	-0.049
	4:COMBINATK	-7.958	328.143	4.030	1.379	-0.554	0.522
	5:COMBINATK	-9.507	400.474	4.958	1.695	-0.683	0.607



Software licensed to Hewlett-Packard

Job No	Sheet No 21	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
File design2.std	Date/Time 10-May-2011 09:36	

Job Title building department

Client university of tecnologia

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	6:COMBINATK	-11.278	424.745	5.215	1.789	-0.711	0.799
7106	1:DEAD	16.048	187.524	-0.806	-0.182	0.061	-5.183
	2:SELF	14.551	183.828	-0.562	-0.169	0.040	-4.546
	3:LIVE	2.066	22.944	-0.154	-0.052	0.010	-0.726
	4:COMBINATK	32.665	374.293	-1.522	-0.402	0.111	-10.456
	5:COMBINATK	40.024	458.329	-1.888	-0.504	0.137	-12.837
	6:COMBINATK	42.838	491.889	-1.915	-0.491	0.141	-13.621
7107	1:DEAD	-3.988	184.216	1.506	0.424	0.284	-0.003
	2:SELF	-2.347	144.895	1.272	0.309	0.237	-0.041
	3:LIVE	-0.187	23.010	0.250	0.059	0.050	-0.140
	4:COMBINATK	-8.503	332.121	3.028	0.792	0.571	-0.184
	5:COMBINATK	-7.879	407.749	3.734	0.974	0.705	-0.277
	6:COMBINATK	-8.842	432.755	3.890	1.026	0.729	-0.062
7315	1:DEAD	0.249	132.863	-17.808	-1.270	0.028	-0.263
	2:SELF	1.302	180.187	-20.160	-1.714	0.080	-0.929
	3:LIVE	0.985	113.674	-13.349	-1.170	0.062	-0.586
	4:COMBINATK	2.537	428.523	-51.318	-4.154	0.170	-1.778
	5:COMBINATK	3.438	557.297	-66.921	-5.452	0.229	-2.367
	6:COMBINATK	2.172	437.989	-53.156	-4.177	0.151	-1.668
7320	1:DEAD	0.108	124.442	-16.028	-0.769	0.020	-0.185
	2:SELF	1.320	183.211	-16.973	-1.162	0.056	-0.638
	3:LIVE	0.995	99.679	-11.780	-0.837	0.045	-0.340
	4:COMBINATK	2.423	387.331	-44.782	-2.768	0.121	-1.143
	5:COMBINATK	3.305	504.669	-58.450	-3.657	0.163	-1.507
	6:COMBINATK	1.999	402.714	-46.202	-2.703	0.106	-1.124
7321	1:DEAD	-0.097	119.442	-14.542	-1.503	-0.016	-0.091
	2:SELF	0.829	150.094	-14.773	-1.923	0.118	-0.400
	3:LIVE	0.619	88.300	-10.600	-1.290	0.087	-0.131
	4:COMBINATK	1.351	357.835	-39.915	-4.716	0.189	-0.622
	5:COMBINATK	1.868	484.723	-52.137	-6.175	0.262	-0.798
	6:COMBINATK	1.025	377.349	-41.041	-4.796	0.143	-0.687
7322	1:DEAD	-0.448	120.034	-2.621	-0.743	-0.037	-0.111
	2:SELF	0.621	142.745	-0.913	-1.066	0.087	-0.039
	3:LIVE	0.235	80.319	-1.869	-0.804	0.064	0.180
	4:COMBINATK	0.410	343.096	-5.403	-2.634	0.113	0.030
	5:COMBINATK	0.586	443.846	-7.231	-3.482	0.162	0.108
	6:COMBINATK	0.245	367.891	-4.948	-2.561	0.069	-0.210
7422	1:DEAD	-4.328	21.654	20.855	-1.578	0.179	-0.831
	2:SELF	-8.286	27.879	25.940	-2.594	0.241	-0.785
	3:LIVE	-4.734	17.889	16.291	-1.936	-0.096	-0.257
	4:COMBINATK	-15.346	67.423	63.066	-6.107	0.324	-1.673
	5:COMBINATK	-20.308	88.083	82.220	-8.103	0.350	-2.111
	6:COMBINATK	-14.855	69.347	65.514	-5.840	0.587	-1.982
7423	1:DEAD	-3.745	14.236	13.267	-1.709	0.236	-0.095



Software licensed to Hewlett-Packard

Job No

Sheet No

22

Rev

Part

Ref

By yasir w.j.

Date 05-Dec-10

Chd Dr alaa k.

Job Title building department

Client university of technology

File design2.std

Date/Time 10-May-2011 09:36

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	2:SELF	-5.552	20.371	15.389	-3.881	0.389	-0.085
	3:LIVE	-4.355	18.528	14.071	-3.345	0.001	0.223
	4:COMBINATK	-13.652	53.133	42.727	-8.915	0.627	0.043
	5:COMBINATK	-18.125	71.171	56.901	-12.036	0.752	0.141
	6:COMBINATK	-13.018	48.450	40.118	-7.798	0.875	-0.252
7595	1:DEAD	-5.050	11.737	18.383	-1.809	1.427	-0.564
	2:SELF	-4.303	18.602	19.214	-4.821	1.412	-0.629
	3:LIVE	-2.881	15.309	14.187	-4.836	0.934	-0.400
	4:COMBINATK	-12.234	45.847	49.764	-11.586	3.772	-1.593
	5:COMBINATK	-15.833	60.901	65.383	-15.813	4.900	-2.072
	6:COMBINATK	-13.094	42.474	49.836	-8.422	3.974	-1.671
7599	1:DEAD	-1.023	19.878	24.499	-3.034	2.120	-1.091
	2:SELF	-0.543	25.690	27.463	-5.692	2.006	-1.113
	3:LIVE	-0.151	20.248	19.740	-5.428	1.352	-0.743
	4:COMBINATK	-1.717	65.816	71.701	-14.154	5.478	-2.947
	5:COMBINATK	-2.121	87.078	93.938	-19.155	7.115	-3.834
	6:COMBINATK	-2.182	63.795	72.746	-12.217	5.776	-3.086
7724	1:DEAD	-10.565	84.360	-1.084	-1.035	-0.035	0.166
	2:SELF	-7.823	79.881	-1.524	-1.875	-0.024	0.167
	3:LIVE	-1.743	24.504	-1.524	-1.949	-0.015	0.256
	4:COMBINATK	-20.131	188.745	-4.112	-4.858	-0.074	0.589
	5:COMBINATK	-24.854	236.298	-5.544	-6.810	-0.094	0.809
	6:COMBINATK	-25.743	229.938	-3.823	-4.074	-0.082	0.466
7737	1:DEAD	8.735	95.258	-1.096	-1.035	0.027	-0.901
	2:SELF	5.869	87.398	-1.528	-1.863	0.021	-0.821
	3:LIVE	0.008	27.293	-1.564	-2.014	0.015	-0.761
	4:COMBINATK	14.612	209.948	-4.188	-4.911	0.063	-2.483
	5:COMBINATK	17.538	262.855	-5.651	-6.699	0.082	-3.284
	6:COMBINATK	20.446	255.717	-3.674	-4.056	0.067	-2.410
7748	1:DEAD	-10.245	83.590	1.857	0.386	-0.113	1.197
	2:SELF	-10.145	79.759	0.740	-0.686	-0.119	1.111
	3:LIVE	-6.143	29.288	0.048	-1.165	-0.102	0.433
	4:COMBINATK	-26.533	192.616	2.448	-1.486	-0.333	2.741
	5:COMBINATK	-34.297	242.847	2.954	-2.225	-0.441	3.463
	6:COMBINATK	-28.548	228.688	3.356	-0.421	-0.324	3.232
7755	1:DEAD	2.233	40.120	1.282	0.182	-0.052	2.088
	2:SELF	4.959	42.252	0.691	-0.418	0.130	1.840
	3:LIVE	3.268	17.290	0.278	-0.630	0.193	0.588
	4:COMBINATK	10.458	99.661	2.229	-0.856	0.271	4.514
	5:COMBINATK	13.855	126.509	2.785	-1.279	0.402	5.652
	6:COMBINATK	10.068	115.320	2.734	-0.316	0.110	5.496
7756	1:DEAD	6.553	79.778	1.832	0.313	0.117	-1.125
	2:SELF	6.904	79.366	0.590	-0.865	0.121	-1.080
	3:LIVE	3.697	28.823	-0.089	-1.273	0.100	-0.453



Software licensed to Hewlett-Packard

Job No	Sheet No 23	Rev
Part		
Ref		
By yasir w.j.	Date 05-Dec-10	Chd Dr alaa k.
Client university of technology	File design2.sld	Date/Time 10-May-2011 09:36

Reactions Cont...

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
	4:COMBINATIC	17.154	187.785	2.154	-1.828	0.337	-2.658
	5:COMBINATIC	22.084	236.787	2.557	-2.700	0.444	-3.370
	6:COMBINATIC	18.840	222.799	3.111	-0.774	0.332	-3.086
7922	1:DEAD	-9.086	707.031	-0.212	0.102	0.006	13.490
	2:SELF	-10.116	529.869	0.068	0.202	0.002	14.964
	3:LIVE	-3.598	122.673	0.008	0.028	-0.001	5.282
	4:COMBINATK	-22.800	1.38E+3	-0.138	0.331	0.008	33.738
	5:COMBINATK	-28.799	1.68E+3	-0.163	0.407	0.009	42.596
	6:COMBINATK	-26.882	1.73E+3	-0.202	0.427	0.012	39.836
9200	1:DEAD	-3.828	509.043	1.314	2.410	0.005	5.805
	2:SELF	-3.991	433.326	1.017	1.630	0.000	5.818
	3:LIVE	-2.591	206.929	1.456	2.188	0.001	3.754
	4:COMBINATK	-10.410	1.15E+3	3.786	6.228	0.006	15.177
	5:COMBINATK	-13.528	1.48E+3	5.126	8.346	0.008	19.714
	6:COMBINATK	-10.946	1.32E+3	3.263	5.656	0.007	15.992
9201	1:DEAD	-0.860	416.865	0.800	1.861	-0.004	0.993
	2:SELF	-0.864	272.562	0.362	0.613	-0.006	1.060
	3:LIVE	-0.788	101.749	0.195	0.271	-0.004	1.053
	4:COMBINATK	-2.512	791.177	1.358	2.545	-0.014	3.106
	5:COMBINATK	-3.329	990.112	1.707	3.162	-0.019	4.148
	6:COMBINATK	-2.414	965.198	1.628	3.184	-0.014	2.873
9202	1:DEAD	1.063	424.129	0.906	1.817	0.025	-1.614
	2:SELF	1.052	275.413	0.523	0.907	0.015	-1.621
	3:LIVE	0.929	102.534	0.297	0.457	0.004	-1.435
	4:COMBINATK	3.044	802.075	1.726	3.182	0.045	-4.671
	5:COMBINATK	4.025	1E+3	2.190	4.001	0.056	-6.179
	6:COMBINATK	2.961	979.358	2.000	3.614	0.057	-4.530



		00000	00000	00000	00000
		5#12	5#12	5#12	5#12
5#12	5#12	5#12	5#12		
00000	00000	00000	00000		

LEVEL	HEIGHT	BAR INFO	FROM	TO	ANCHOR
	(MM)		(MM)	(MM)	STA END

1	57.	5 - 12MM	547.	3828.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2881.	4200.	NO	YES

AT END SUPPORT - $V_u = 42.08$ KNS $V_c = 193.56$ KNS $V_s = 0.00$ KNS
 $T_u = 0.10$ KN-MET $T_c = 6.0$ KN-MET $T_s = 0.0$ KN-MET LOAD 1
 STIRRUPS ARE NOT REQUIRED.

STAAD SPACE

-- PAGE NO. 104

```

42J          4199X 300X 600          43J
=====
5No12 H 543. 0.TO 1144          5No12 H 543.2881.TO 4200
7*12c/c272
5No12 H 57. 547.TO 3828
=====

```

00000	00000			00000	00000
5#12	5#12			5#12	5#12
	5#12	5#12	5#12	5#12	
	00000	00000	00000	00000	

BEAM NO. 121 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	END
1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2531.	4200.	NO	YES

BEAM NO. 121 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 65.66 KNS Vc= 153.69 KNS Vs= 0.00 KNS
 Tu= 0.19 KN-MET Tc= 6.0 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

AT END SUPPORT - Vu= 63.68 KNS Vc= 156.84 KNS Vs= 0.00 KNS
 Tu= 0.19 KN-MET Tc= 6.0 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

STAAD SPACE

-- PAGE NO. 105

43J	4200X 300X 600	44J
=====		
5No12 H 543. 0.TO 1144	5No12 H 543.2531.TO 4200	
7*12c/c272	7*12c/c272	
5No12 H 57. 547.TO 3478		
=====		
ooooo	ooooo	ooooo
5#12	5#12	5#12
	5#12	5#12
	ooooo	ooooo

BEAM NO. 122 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	57.	5 - 12MM	547.	3478.	NO NO
2	543.	5 - 12MM	0.	1144.	YES NO
3	543.	5 - 12MM	2881.	4200.	NO YES

BEAM NO. 122 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 62.20 KNS Vc= 141.48 KNS Vs= 0.00 KNS
 Tu= 3.17 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

AT END SUPPORT - Vu= 58.52 KNS Vc= 141.48 KNS Vs= 0.00 KNS
 Tu= 3.17 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

STAAD SPACE

-- PAGE NO. 106

21J	4199X 300X 600	22J
=====		
5No12 H 543. 0.TO 1144	5No12 H 543.2881.TO 4200	
7*12c/c272	7*12c/c272	
5No12 H 57. 547.TO 3478		
=====		
00000	00000	00000
5#12	5#12	5#12
	5#12	5#12
	00000	00000
	00000	00000
	00000	00000
	00000	00000

BEAM NO. 123 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2881.	4200.	NO	YES

BEAM NO. 123 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 60.12 KNS Vc= 141.94 KNS Vs= 0.00 KNS
 Tu= 2.32 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

AT END SUPPORT - Vu= 60.60 KNS Vc= 141.94 KNS Vs= 0.00 KNS
 Tu= 2.32 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

STAAD SPACE

-- PAGE NO. 107

32J 4199X 300X 600 23J

```

=====
5No12 H 543. 0.TO 1144      5No12 H 543.2881.TO 4200
7*12c/c272      7*12c/c272
5No12 H 57. 547.TO 3478
=====

```

ooooo	ooooo			ooooo	ooooo
5#12	5#12			5#12	5#12
	5#12	5#12	5#12	5#12	
	ooooo	ooooo	ooooo	ooooo	

BEAM NO. 124 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2881.	4200.	NO	YES

BEAM NO. 124 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 63.16 KNS Vc= 141.92 KNS Vs= 0.00 KNS
 Tu= 0.07 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

AT END SUPPORT - Vu= 57.55 KNS Vc= 141.92 KNS Vs= 0.00 KNS
 Tu= 0.07 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

STAAD SPACE

-- PAGE NO. 108

```

23J          4200X 300X 600          24J
=====
5No12 H 543. 0.TO 1144          5No12 H 543.2881.TO 4200
7*12c/c272          7*12c/c272
5No12 H 57. 547.TO 3478
=====

```

00000	00000			00000	00000
5#12	5#12			5#12	5#12
	5#12	5#12	5#12	5#12	
	00000	00000	00000	00000	

BEAM NO. 125 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2531.	4200.	NO	YES

BEAM NO. 125 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 58.90 KNS Vc= 141.80 KNS Vs= 0.00 KNS
 Tu= 2.66 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

AT END SUPPORT - Vu= 64.93 KNS Vc= 141.80 KNS Vs= 0.00 KNS
 Tu= 2.66 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 1
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

STAAD SPACE

-- PAGE NO. 109

20J	4200X 300X 600	21J
=====		
5No12 H 543. 0.TO 1144	5No12 H 543.2531.TO 4200	
7*12c/c272	7*12c/c272	
5No12 H 57. 547.TO 3478		
=====		
00000	00000	00000
5#12	5#12	5#12
	5#12	5#12
	00000	00000
	00000	00000
	00000	00000

BEAM NO. 126 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	57.	5 - 12MM	547.	3478.	NO NO
2	543.	5 - 12MM	0.	1144.	YES NO
3	543.	5 - 12MM	2881.	4200.	NO YES

BEAM NO. 126 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 67.96 KNS Vc= 140.48 KNS Vs= 0.00 KNS
 Tu= 6.98 KN-MET Tc= 5.8 KN-MET Ts= 9.3 KN-MET LOAD 2
 STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1563. MM
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.77 SQ.CM.

AT END SUPPORT - Vu= 66.64 KNS Vc= 140.48 KNS Vs= 0.00 KNS
 Tu= 6.98 KN-MET Tc= 5.8 KN-MET Ts= 9.3 KN-MET LOAD 2
 STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1563. MM
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.77 SQ.CM.

STAAD SPACE

-- PAGE NO. 110

33J	4199X 300X 600	34J
=====		
5No12 H 543. 0. TO 1144	5No12 H 543.2881. TO 4200	
10*12c/c181	10*12c/c181	
5No12 H 57. 547. TO 3478		
=====		
=====		
00000	00000	00000
5#12	5#12	5#12
	5#12	5#12
	00000	00000
	00000	00000
	00000	00000
	00000	00000

BEAM NO. 127 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2881.	4200.	NO	YES

BEAM NO. 127 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 67.85 KNS Vc= 140.63 KNS Vs= 0.00 KNS
 Tu= 4.23 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

AT END SUPPORT - Vu= 65.86 KNS Vc= 140.63 KNS Vs= 0.00 KNS
 Tu= 4.23 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

STAAD SPACE

-- PAGE NO. 111

32J

4199X 300X 600

34J

```

=====
5No12 H 543. 0.TO 1144          5No12 H 543.2881.TO 4200
7*12c/c272 | | 7*12c/c272
5No12 H 57. 547.TO 3478
=====

```

00000	00000			00000	00000
5#12	5#12			5#12	5#12
	5#12	5#12	5#12	5#12	
	00000	00000	00000	00000	

BEAM NO. 128 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
-------	----------------	----------	--------------	------------	-------------------

1	57.	5 - 12MM	547.	3478.	NO NO
2	543.	5 - 12MM	0.	1144.	YES NO
3	543.	5 - 12MM	2881.	4200.	NO YES

BEAM NO. 128 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 69.10 KNS Vc= 161.39 KNS Vs= 0.00 KNS
 Tu= 1.30 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.13.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

AT END SUPPORT - Vu= 43.03 KNS Vc= 255.68 KNS Vs= 0.00 KNS
 Tu= 0.93 KN-MET Tc= 6.2 KN-MET Ts= 0.0 KN-MET LOAD 1
 STIRRUPS ARE NOT REQUIRED.

STAAD SPACE

-- PAGE NO. 112

40J

4199X 300X 600

39J

5No12 H 543. 0.TO 1144

5No12 H 543.2881.TO 4200

7*12c/c272

5No12 H 57. 547.TO 3478

00000

00000

00000

00000

5#12

5#12

5#12

5#12

5#12

5#12

5#12

5#12

00000

00000

00000

00000

BEAM NO. 129 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2881.	4200.	NO	YES

BEAM NO. 129 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 44.10 KNS Vc= 257.91 KNS Vs= 0.00 KNS

Tu= 0.39 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 1

STIRRUPS ARE NOT REQUIRED.

AT END SUPPORT - Vu= 67.60 KNS Vc= 170.74 KNS Vs= 0.00 KNS

Tu= 0.55 KN-MET Tc= 6.5 KN-MET Ts= 0.0 KN-MET LOAD 2

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1563. MM

STAAD SPACE

-- PAGE NO. 113

38J

4199X 300X 600

40J

5No12 H 543. 0.TO 1144

5No12 H 543.2881.TO 4200

7*12c/c272

5No12 H 57. 547.TO 3478

00000

00000

00000

00000

5#12

5#12

5#12

5#12

5#12

5#12

5#12

5#12

00000

00000

00000

00000

BEAM NO. 130 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR	
					STA	END

1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2881.	4200.	NO	YES

BEAM NO. 130 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 67.21 KNS Vc= 140.58 KNS Vs= 0.00 KNS

Tu= 7.94 KN-MET Tc= 5.8 KN-MET Ts= 10.6 KN-MET LOAD 2

STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1563. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.01 SQ.CM.

AT END SUPPORT - Vu= 66.49 KNS Vc= 140.58 KNS Vs= 0.00 KNS

Tu= 7.94 KN-MET Tc= 5.8 KN-MET Ts= 10.6 KN-MET LOAD 2

STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1563. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.01 SQ.CM.

STAAD SPACE

-- PAGE NO. 114

6J 4199X 300X 600 7J

```

=====
5No12 H 543.1 0.TO 1144          5No12 H 543.2881.TO 4200
10*12c/c181 ;                  10*12c/c181
5No12 H 57. 547.TO 3478
=====

```

00000	00000			00000	00000
5#12	5#12			5#12	5#12
	5#12	5#12	5#12	5#12	
	00000	00000	00000	00000	

BEAM NO. 131 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 4200. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	57.	5 - 12MM	547.	3478.	NO	NO
2	543.	5 - 12MM	0.	1144.	YES	NO
3	543.	5 - 12MM	2881.	4200.	NO	YES

BEAM NO. 131 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 68.03 KNS Vc= 140.44 KNS Vs= 0.00 KNS
 Tu= 2.35 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

AT END SUPPORT - Vu= 65.67 KNS Vc= 140.44 KNS Vs= 0.00 KNS
 Tu= 2.35 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1564. MM

STAAD SPACE

-- PAGE NO. 115

5J

4200X 300X 600

6J

```

=====
5No12 H 543. 0.TO 1144          5No12 H 543.2881.TO 4200
7*12c/c272          |          7*12c/c272
5No12 H 57. 547.TO 3478
=====

```

00000	00000			00000	00000
5#12	5#12			5#12	5#12
	5#12	5#12	5#12	5#12	
	00000	00000	00000	00000	

BEAM NO. 132 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 8000. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	63.	3 - 25MM	731.	6936.	NO	NO
2	533.	3 - 32MM	0.	4458.	YES	NO
3	537.	4 - 25MM	4427.	8000.	NO	YES

BEAM NO. 132 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 242.51 KNS Vc= 129.67 KNS Vs= 193.68 KNS
 Tu= 0.02 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 260. MM C/C FOR 3464. MM

AT END SUPPORT - Vu= 230.94 KNS Vc= 129.67 KNS Vs= 178.25 KNS
 Tu= 0.02 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 269. MM C/C FOR 3464. MM

STAAD SPACE

-- PAGE NO. 116

22J 8000X 300X 600 34J

```

=====
3No32 H 533. | 0.TO 4458 | | | | | 4No25 H | 537.4427 | TO | 8000
15*12c/c260 | | | | | | | | | | | 14*12c/c269
3No25 H, 63. 731 | TO | 6936 | | | | | | | | |
=====

```

000	000	000	0000	0000	0000
3#32	3#32	3#32	4#25	4#25	4#25
	3#25	3#25	3#25	3#25	
	000	000	000	000	

BEAM NO. 133 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 8000. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	61.	3 - 20MM	1128.	6539.	NO	NO
2	533.	2 - 32MM	0.	2896.	YES	NO
3	539.	4 - 20MM	5113.	8000.	NO	YES

BEAM NO. 133 DESIGN RESULTS - SHEAR

AT START SUPPORT - $V_u = 173.19$ KNS $V_c = 134.83$ KNS $V_s = 96.08$ KNS
 $T_u = 0.32$ KN-MET $T_c = 5.6$ KN-MET $T_s = 0.0$ KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 3464. MM

AT END SUPPORT - $V_u = 156.96$ KNS $V_c = 134.83$ KNS $V_s = 74.45$ KNS
 $T_u = 0.32$ KN-MET $T_c = 5.6$ KN-MET $T_s = 0.0$ KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 3464. MM

STAAD SPACE

-- PAGE NO. 117

20J		8000X 300X 600		35J	
=====					
2No32 H 533. 0.TO 2896		4No20 H 539.5113.TO 8000			
14*12c/c270		14*12c/c270			
3No20 H 61.1128.TO 6539					
=====					

00	00			0000	0000
2#32	2#32			4#20	4#20
	3#20	3#20	3#20	3#20	
	000	000	000	000	

BEAM NO. 134 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 8000. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	61.	3 - 20MM	1155.	6511.	NO	NO
2	539.	4 - 20MM	0.	2554.	YES	NO
3	537.	3 - 25MM	4999.	8000.	NO	YES

BEAM NO. 134 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 157.32 KNS Vc= 133.55 KNS Vs= 76.20 KNS
 Tu= 0.58 KN-MET Tc= 5.6 KN-MET Ts= 0.0 KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 3464. MM

AT END SUPPORT - Vu= 168.69 KNS Vc= 133.55 KNS Vs= 91.37 KNS
 Tu= 0.58 KN-MET Tc= 5.6 KN-MET Ts= 0.0 KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 3464. MM

STAAD SPACE

-- PAGE NO. 118

36J	8000X 300X 600	19J
=====		
4No20 H 539.1 0.TO 2554	3No25 H 537.4999.TO 8000	
14*12c/c270	14*12c/c270	
3No20 H 61.1155.TO 6511		
=====		
=====		
0000	0000	000
4#20	4#20	3#25
	3#20	3#20
	000	000
	3#20	3#20
	000	000

BEAM NO. 135 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 8000. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	63.	2 - 25MM	954.	6713.	NO NO
2	539.	4 - 20MM	0.	2554.	YES NO
3	537.	3 - 25MM	4999.	8000.	NO YES

BEAM NO. 135 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 163.44 KNS Vc= 129.46 KNS Vs= 88.47 KNS
 Tu= 0.94 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 269. MM C/C FOR 3464. MM

AT END SUPPORT - Vu= 166.71 KNS Vc= 129.46 KNS Vs= 92.82 KNS
 Tu= 0.94 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 5
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT IS REQUIRED FOR SHEAR.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 269 MM C/C FOR 3464. MM

STAAD SPACE

-- PAGE NO. 119

8J	8000X 300X 600	11J
4No20 H 539.1	0.TO 2554	3No25 H 537.4999.TO 8000
14*12c/c269		14*12c/c269
2No25 H 63.954	TO 6713	
0000	0000	000
4#20	4#20	3#25
	2#25	2#25
	00	00
	2#25	2#25
	00	00

BEAM NO. 136 DESIGN RESULTS - FLEXURE PER CODE ACI 318-05

LEN - 8000. MM FY - 414. FC - 28. MPA, SIZE - 500. X 800. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	END
1	57.	11 - 12MM	663.	7007.	NO	NO
2	743.	11 - 12MM	0.	1111.	YES	NO
3	743.	11 - 12MM	6556.	8000.	NO	YES

BEAM NO. 136 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 148.01 KNS Vc= 318.78 KNS Vs= 0.00 KNS
 Tu= 0.37 KN-MET Tc= 19.8 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 372. MM C/C FOR 3264. MM

AT END SUPPORT - Vu= 166.53 KNS Vc= 318.78 KNS Vs= 0.00 KNS
 Tu= 0.37 KN-MET Tc= 19.8 KN-MET Ts= 0.0 KN-MET LOAD 2
 NO STIRRUPS ARE REQUIRED FOR TORSION.
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 372. MM C/C FOR 3264. MM

000000000					000000000
	000000000	000000000	000000000	000000000	

LEN - 8000. MM FY - 414. FC - 28. MPA, SIZE - 300. X 600. MMS

1	61.	3 - 20MM	1:51.	6515.	NO	NO
2	537.	3 - 25MM	0.	266B.	YES	NO
3	539.	4 - 20MM	5113.	8000.	NO	YES

AT START SUPPORT - Vu= 168.77 KNS vc= 134.22 KNS Vs= 90.81 KNS
Tu= 0.58 KN-MET Tc= 5.6 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT IS REQUIRED FOR SHEAR.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 3464. MM

E:\Pro2007\Plugins\ma.aol



STAAD SPACE

-- PAGE NO. 2704

COLUMN NO. 682 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 AREA OF STEEL REQUIRED = 2592.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	5	STA	0.650
{PROVIDE EQUAL NUMBER OF BARS ON EACH FACE}				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 683 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
{PROVIDE EQUAL NUMBER OF BARS ON EACH FACE}				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 684 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
{PROVIDE EQUAL NUMBER OF BARS ON EACH FACE}				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2705

COLUMN NO. 685 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

COLUMN NO. 686 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

COLUMN NO. 687 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

STAAD SPACE

-- PAGE NO. 2706

COLUMN NO. 688 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 689 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 695 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2707

COLUMN NO. 1809 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BAPS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1816 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1823 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2708

COLUMN NO. 1830 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1901 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1917 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, RECT SIZE - 450.0 X1850.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 8325.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 32 MM	1.159	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2708

COLUMN NO. 1830 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1901 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1917 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, RECT SIZE - 450.0 X 1850.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 8325.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 32 MM	1.159	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2709

COLUMN NO. 1918 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, RECT SIZE - 450.0 X1850.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 8325.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 32 MM	1.159	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

COLUMN NO. 1919 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, RECT SIZE - 450.0 X1850.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 8325.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 32 MM	1.159	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

COLUMN NO. 1920 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, RECT SIZE - 450.0 X1850.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 8325.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 32 MM	1.159	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

STAAD SPACE

-- PAGE NO. 2710

COLUMN NO. 1963 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1964 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1965 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2711

COLUMN NO. 1966 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1971 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1972 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2712

COLUMN NO. 1973 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1974 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1975 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2713

COLUMN NO. 1976 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1981 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1982 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2714

COLUMN NO. 1983 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

COLUMN NO. 1984 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

COLUMN NO. 1985 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
 TIE BAR NUMBER 12 SPACING 450.00 MM

STAAD SPACE

-- PAGE NO. 2715

COLUMN NO. 1990 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 AREA OF STEEL REQUIRED = 2166.8 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	5	STA	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1991 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 AREA OF STEEL REQUIRED = 2733.7 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	5	STA	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1992 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2716

COLUMN NO. 1993 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIPED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 1994 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 2011 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2717

COLUMN NO. 2012 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 2013 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 2014 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2718

=====

COLUMN NO. 2015 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

=====

COLUMN NO. 2016 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, : SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

=====

COLUMN NO. 2017 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2719

=====

COLUMN NO. 2018 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

=====

COLUMN NO. 2019 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

=====

COLUMN NO. 2020 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

STAAD SPACE

-- PAGE NO. 2720

COLUMN NO. 2021 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 2022 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

COLUMN NO. 2023 DESIGN PER ACI 318-05 - AXIAL + BENDING

FY - 413.7 FC - 27.6 MPA, SQRE SIZE - 450.0 X 450.0 MMS, TIED
 ONLY MINIMUM STEEL IS REQUIRED.
 AREA OF STEEL REQUIRED = 2025.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 32 MM	1.589	2	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 450.00 MM				

2000

STAAD SPACE

-- PAGE NO. 2771

ELEMENT DESIGN SUMMARY

ELEMENT	LONG. REINF (SQ.MM/MM)	MOM-X /LOAD (KN-MM/MM)	TRANS. REINF (SQ.MM/MM)	MOM-Y /LOAD (KN-MM/MM)
FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM				
327 TOP : Longitudinal direction	- Only minimum steel required.			
327 BOT: Longitudinal direction	- Only minimum steel required.			
327 TOP : Transverse direction	- Only minimum steel required.			
327 BOT: Transverse direction	- Only minimum steel required.			
327 TOP :	0.432	1.22 / 5	0.432	0.64 / 5
BOTT:	0.432	0.00 / 0	0.432	0.03 / 1
FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM				
328 TOP : Longitudinal direction	- Only minimum steel required.			
328 BOT: Longitudinal direction	- Only minimum steel required.			
328 TOP : Transverse direction	- Only minimum steel required.			
328 BOT: Transverse direction	- Only minimum steel required.			
328 TOP :	0.432	0.20 / 6	0.432	0.43 / 6
BOTT:	0.432	0.11 / 3	0.432	0.00 / 1
FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM				
329 TOP : Longitudinal direction	- Only minimum steel required.			
329 BOT: Longitudinal direction	- Only minimum steel required.			
329 TOP : Transverse direction	- Only minimum steel required.			
329 BOT: Transverse direction	- Only minimum steel required.			
329 TOP :	0.432	0.72 / 5	0.432	0.76 / 5
BOTT:	0.432	0.00 / 3	0.432	0.08 / 1
FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM				
330 TOP : Longitudinal direction	- Only minimum steel required.			
330 BOT: Longitudinal direction	- Only minimum steel required.			
330 TOP : Transverse direction	- Only minimum steel required.			
330 BOT: Transverse direction	- Only minimum steel required.			
330 TOP :	0.432	0.00 / 5	0.432	0.04 / 3
BOTT:	0.432	0.71 / 5	0.432	0.44 / 6
FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM				
331 TOP : Longitudinal direction	- Only minimum steel required.			
331 BOT: Longitudinal direction	- Only minimum steel required.			
331 TOP : Transverse direction	- Only minimum steel required.			
331 BOT: Transverse direction	- Only minimum steel required.			
331 TOP :	0.432	0.33 / 6	0.432	2.81 / 6
BOTT:	0.432	0.03 / 5	0.432	0.00 / 6
FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM				
332 TOP : Longitudinal direction	- Only minimum steel required.			
332 BOT: Longitudinal direction	- Only minimum steel required.			
332 TOP : Transverse direction	- Only minimum steel required.			
332 BOT: Transverse direction	- Only minimum steel required.			
332 TOP :	0.432	0.00 / 6	0.432	0.16 / 5
BOTT:	0.432	0.41 / 6	0.432	0.05 / 1
FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM				
333 TOP : Longitudinal direction	- Only minimum steel required.			

STAAD SPACE

-- PAGE NO. 2772

333 BOTTL: Longitudinal direction - Only minimum steel required.

333 TOP : Transverse direction - Only minimum steel required.

333 BOTTL: Transverse direction - Only minimum steel required.

333 TOP : 0.432 0.00 / 6 0.432 0.00 / 5

BOTTL: 0.432 0.72 / 5 0.432 3.49 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

334 TOP : Longitudinal direction - Only minimum steel required.

334 BOTTL: Longitudinal direction - Only minimum steel required.

334 TOP : Transverse direction - Only minimum steel required.

334 BOTTL: Transverse direction - Only minimum steel required.

334 TOP : 0.432 0.00 / 6 0.432 0.03 / 3

BOTTL: 0.432 0.65 / 6 0.432 0.35 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

335 TOP : Longitudinal direction - Only minimum steel required.

335 BOTTL: Longitudinal direction - Only minimum steel required.

335 TOP : Transverse direction - Only minimum steel required.

335 BOTTL: Transverse direction - Only minimum steel required.

335 TOP : 0.288 0.00 / 6 0.288 4.97 / 5

BOTTL: 0.288 5.64 / 5 0.288 0.00 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

385 TOP : Longitudinal direction - Only minimum steel required.

385 BOTTL: Longitudinal direction - Only minimum steel required.

385 TOP : Transverse direction - Only minimum steel required.

385 BOTTL: Transverse direction - Only minimum steel required.

385 TOP : 0.288 1.26 / 5 0.288 0.00 / 5

BOTTL: 0.288 0.00 / 5 0.288 4.29 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

387 TOP : Longitudinal direction - Only minimum steel required.

387 BOTTL: Longitudinal direction - Only minimum steel required.

387 TOP : Transverse direction - Only minimum steel required.

387 BOTTL: Transverse direction - Only minimum steel required.

387 TOP : 0.288 0.00 / 5 0.288 4.24 / 5

BOTTL: 0.288 6.68 / 5 0.288 0.00 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

394 TOP : Longitudinal direction - Only minimum steel required.

394 BOTTL: Longitudinal direction - Only minimum steel required.

394 TOP : Transverse direction - Only minimum steel required.

394 BOTTL: Transverse direction - Only minimum steel required.

394 TOP : 0.288 0.00 / 5 0.288 4.99 / 6

BOTTL: 0.288 1.37 / 5 0.288 0.00 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

397 TOP : Longitudinal direction - Only minimum steel required.

397 BOTTL: Longitudinal direction - Only minimum steel required.

397 TOP : Transverse direction - Only minimum steel required.

397 BOTTL: Transverse direction - Only minimum steel required.

397 TOP : 0.288 5.41 / 5 0.288 0.00 / 6

BOTTL: 0.288 0.00 / 5 0.288 4.75 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

451 TOP : Longitudinal direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2773

451 BOTTL: Longitudinal direction - Only minimum steel required.

451 TOP : Transverse direction - Only minimum steel required.

451 BOTTL: Transverse direction - Only minimum steel required.

451 TOP : 0.288 4.21 / 6 0.288 0.00 / 6

BOTTL: 0.288 0.00 / 5 0.288 1.36 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

453 TOP : Longitudinal direction - Only minimum steel required.

453 BOTTL: Longitudinal direction - Only minimum steel required.

453 TOP : Transverse direction - Only minimum steel required.

453 BOTTL: Transverse direction - Only minimum steel required.

453 TOP : 0.288 0.00 / 6 0.288 1.39 / 5

BOTTL: 0.288 4.69 / 6 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

468 BOTTL: Longitudinal direction - Only minimum steel required.

468 TOP : Transverse direction - Only minimum steel required.

468 BOTTL: Transverse direction - Only minimum steel required.

468 TOP : 0.293 14.41 / 6 0.288 3.38 / 6

BOTTL: 0.288 0.00 / 6 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

536 TOP : Longitudinal direction - Only minimum steel required.

536 BOTTL: Longitudinal direction - Only minimum steel required.

536 TOP : Transverse direction - Only minimum steel required.

536 TOP : 0.288 0.00 / 6 0.288 0.00 / 6

BOTTL: 0.288 2.51 / 6 0.328 14.55 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

537 TOP : Longitudinal direction - Only minimum steel required.

537 BOTTL: Longitudinal direction - Only minimum steel required.

537 TOP : Transverse direction - Only minimum steel required.

537 BOTTL: Transverse direction - Only minimum steel required.

537 TOP : 0.288 0.39 / 6 0.288 3.73 / 6

BOTTL: 0.288 0.54 / 5 0.288 0.00 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

542 TOP : Longitudinal direction - Only minimum steel required.

542 BOTTL: Longitudinal direction - Only minimum steel required.

542 TOP : Transverse direction - Only minimum steel required.

542 BOTTL: Transverse direction - Only minimum steel required.

542 TOP : 0.288 0.00 / 1 0.288 4.10 / 5

BOTTL: 0.288 6.09 / 5 0.288 0.00 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

707 TOP : Longitudinal direction - Only minimum steel required.

707 BOTTL: Longitudinal direction - Only minimum steel required.

707 TOP : Transverse direction - Only minimum steel required.

707 BOTTL: Transverse direction - Only minimum steel required.

707 TOP : 0.432 0.22 / 5 0.432 0.00 / 5

BOTTL: 0.432 0.05 / 1 0.432 1.69 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

708 TOP : Longitudinal direction - Only minimum steel required.

708 BOTTL: Longitudinal direction - Only minimum steel required.

708 TOP : Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2774

708 BOTTL: Transverse direction - Only minimum steel required.

708 TOP :	0.432	0.00 /	5	0.432	0.00 /	5
BOTT:	0.432	1.70 /	6	0.432	0.82 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

709 TOP : Longitudinal direction - Only minimum steel required.

709 BOTTL: Longitudinal direction - Only minimum steel required.

709 TOP : Transverse direction - Only minimum steel required.

709 BOTTL: Transverse direction - Only minimum steel required.

709 TOP :	0.432	0.01 /	3	0.432	0.00 /	5
BOTT:	0.432	0.65 /	6	0.432	4.55 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

710 TOP : Longitudinal direction - Only minimum steel required.

710 BOTTL: Longitudinal direction - Only minimum steel required.

710 TOP : Transverse direction - Only minimum steel required.

710 BOTTL: Transverse direction - Only minimum steel required.

710 TOP :	0.432	0.00 /	3	0.432	0.00 /	5
BOTT:	0.432	3.94 /	6	0.432	0.81 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

711 TOP : Longitudinal direction - Only minimum steel required.

711 BOTTL: Longitudinal direction - Only minimum steel required.

711 TOP : Transverse direction - Only minimum steel required.

711 BOTTL: Transverse direction - Only minimum steel required.

711 TOP :	0.432	0.77 /	5	0.432	2.22 /	6
BOTT:	0.432	0.00 /	6	0.432	0.00 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

712 TOP : Longitudinal direction - Only minimum steel required.

712 BOTTL: Longitudinal direction - Only minimum steel required.

712 TOP : Transverse direction - Only minimum steel required.

712 BOTTL: Transverse direction - Only minimum steel required.

712 TOP :	0.432	0.08 /	3	0.432	0.01 /	3
BOTT:	0.432	1.61 /	6	0.432	0.36 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

713 TOP : Longitudinal direction - Only minimum steel required.

713 BOTTL: Longitudinal direction - Only minimum steel required.

713 TOP : Transverse direction - Only minimum steel required.

713 BOTTL: Transverse direction - Only minimum steel required.

713 TOP :	0.432	0.00 /	3	0.432	0.00 /	3
BOTT:	0.432	1.08 /	5	0.432	5.61 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

714 TOP : Longitudinal direction - Only minimum steel required.

714 BOTTL: Longitudinal direction - Only minimum steel required.

714 TOP : Transverse direction - Only minimum steel required.

714 BOTTL: Transverse direction - Only minimum steel required.

714 TOP :	0.432	0.01 /	3	0.432	0.00 /	3
BOTT:	0.432	0.57 /	6	0.432	4.57 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

715 TOP : Longitudinal direction - Only minimum steel required.

715 BOTTL: Longitudinal direction - Only minimum steel required.

715 TOP : Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2775

715 BOTT: Transverse direction - Only minimum steel required.

715 TOP :	0.432	0.14 /	5	0.432	0.08 /	3
BOTT:	0.432	0.09 /	1	0.432	1.88 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

716 TOP : Longitudinal direction - Only minimum steel required.

716 BOTT: Longitudinal direction - Only minimum steel required.

716 TOP : Transverse direction - Only minimum steel required.

716 BOTT: Transverse direction - Only minimum steel required.

716 TOP :	0.432	0.00 /	5	0.432	0.00 /	3
BOTT:	0.432	2.21 /	6	0.432	0.90 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

717 TOP : Longitudinal direction - Only minimum steel required.

717 BOTT: Longitudinal direction - Only minimum steel required.

717 TOP : Transverse direction - Only minimum steel required.

717 BOTT: Transverse direction - Only minimum steel required.

717 TOP :	0.432	0.00 /	3	0.432	0.00 /	3
BOTT:	0.432	0.73 /	6	0.432	5.01 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

718 TOP : Longitudinal direction - Only minimum steel required.

718 BOTT: Longitudinal direction - Only minimum steel required.

718 TOP : Transverse direction - Only minimum steel required.

718 BOTT: Transverse direction - Only minimum steel required.

718 TOP :	0.432	0.00 /	3	0.432	0.00 /	3
BOTT:	0.432	4.96 /	6	0.432	0.88 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

719 TOP : Longitudinal direction - Only minimum steel required.

719 BOTT: Longitudinal direction - Only minimum steel required.

719 TOP : Transverse direction - Only minimum steel required.

719 BOTT: Transverse direction - Only minimum steel required.

719 TOP :	0.432	0.73 /	5	0.432	2.41 /	6
BOTT:	0.432	0.00 /	6	0.432	0.00 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

720 TOP : Longitudinal direction - Only minimum steel required.

720 BOTT: Longitudinal direction - Only minimum steel required.

720 TOP : Transverse direction - Only minimum steel required.

720 BOTT: Transverse direction - Only minimum steel required.

720 TOP :	0.432	0.00 /	5	0.432	0.08 /	3
BOTT:	0.432	2.50 /	6	0.432	0.18 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

721 TOP : Longitudinal direction - Only minimum steel required.

721 BOTT: Longitudinal direction - Only minimum steel required.

721 TOP : Transverse direction - Only minimum steel required.

721 BOTT: Transverse direction - Only minimum steel required.

721 TOP :	0.432	0.00 /	5	0.432	0.00 /	3
BOTT:	0.432	1.21 /	5	0.432	5.96 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

722 TOP : Longitudinal direction - Only minimum steel required.

722 BOTT: Longitudinal direction - Only minimum steel required.

722 TOP : Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2776

722 BOTTL: Transverse direction - Only minimum steel required.

722 TOP :	0.432	0.01 /	3	0.432	0.00 /	3
BOTT:	0.432	0.72 /	6	0.432	5.59 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

723 TOP : Longitudinal direction - Only minimum steel required.

723 BOTTL: Longitudinal direction - Only minimum steel required.

723 TOP : Transverse direction - Only minimum steel required.

723 BOTTL: Transverse direction - Only minimum steel required.

723 TOP :	0.432	0.03 /	2	0.432	0.16 /	3
BOTT:	0.432	0.18 /	6	0.432	2.29 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

724 TOP : Longitudinal direction - Only minimum steel required.

724 BOTTL: Longitudinal direction - Only minimum steel required.

724 TOP : Transverse direction - Only minimum steel required.

724 BOTTL: Transverse direction - Only minimum steel required.

724 TOP :	0.432	0.04 /	3	0.432	0.00 /	3
BOTT:	0.432	2.76 /	6	0.432	0.86 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

725 TOP : Longitudinal direction - Only minimum steel required.

725 BOTTL: Longitudinal direction - Only minimum steel required.

725 TOP : Transverse direction - Only minimum steel required.

725 BOTTL: Transverse direction - Only minimum steel required.

725 TOP :	0.432	0.03 /	3	0.432	0.00 /	3
BOTT:	0.432	0.77 /	6	0.432	7.09 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

726 TOP : Longitudinal direction - Only minimum steel required.

726 BOTTL: Longitudinal direction - Only minimum steel required.

726 TOP : Transverse direction - Only minimum steel required.

726 BOTTL: Transverse direction - Only minimum steel required.

726 TOP :	0.432	0.00 /	3	0.432	0.00 /	3
BOTT:	0.432	5.83 /	6	0.432	1.01 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

727 TOP : Longitudinal direction - Only minimum steel required.

727 BOTTL: Longitudinal direction - Only minimum steel required.

727 TOP : Transverse direction - Only minimum steel required.

727 BOTTL: Transverse direction - Only minimum steel required.

727 TOP :	0.432	0.59 /	5	0.432	3.30 /	6
BOTT:	0.432	0.00 /	6	0.432	0.00 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

728 TOP : Longitudinal direction - Only minimum steel required.

728 BOTTL: Longitudinal direction - Only minimum steel required.

728 TOP : Transverse direction - Only minimum steel required.

728 BOTTL: Transverse direction - Only minimum steel required.

728 TOP :	0.432	0.00 /	5	0.432	0.14 /	3
BOTT:	0.432	2.98 /	6	0.432	0.31 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

729 TOP : Longitudinal direction - Only minimum steel required.

729 BOTTL: Longitudinal direction - Only minimum steel required.

729 TOP : Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2777

729 BOTT: Transverse direction - Only minimum steel required.

729 TOP :	0.432	0.00 /	5	0.432	0.00 /	3
BOTT:	0.432	1.18 /	6	0.432	8.91 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 240.000 MM

730 TOP : Longitudinal direction - Only minimum steel required.

730 BOTT: Longitudinal direction - Only minimum steel required.

730 TOP : Transverse direction - Only minimum steel required.

730 BOTT: Transverse direction - Only minimum steel required.

730 TOP :	0.432	0.00 /	5	0.432	0.00 /	3
BOTT:	0.432	0.93 /	6	0.432	6.46 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

731 TOP : Longitudinal direction - Only minimum steel required.

731 BOTT: Longitudinal direction - Only minimum steel required.

731 TOP : Transverse direction - Only minimum steel required.

731 TOP :	0.288	0.00 /	5	0.288	0.00 /	3
BOTT:	0.288	8.24 /	5	0.332	14.69 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

732 TOP : Longitudinal direction - Only minimum steel required.

732 BOTT: Longitudinal direction - Only minimum steel required.

732 TOP : Transverse direction - Only minimum steel required.

732 BOTT: Transverse direction - Only minimum steel required.

732 TOP :	0.288	0.00 /	5	0.288	0.00 /	3
BOTT:	0.288	2.32 /	5	0.288	11.05 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

733 TOP : Longitudinal direction - Only minimum steel required.

733 BOTT: Longitudinal direction - Only minimum steel required.

733 TOP : Transverse direction - Only minimum steel required.

733 BOTT: Transverse direction - Only minimum steel required.

733 TOP :	0.288	0.00 /	5	0.288	0.00 /	3
BOTT:	0.288	1.45 /	5	0.288	9.83 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

734 TOP : Longitudinal direction - Only minimum steel required.

734 BOTT: Longitudinal direction - Only minimum steel required.

734 TOP : Transverse direction - Only minimum steel required.

734 BOTT: Transverse direction - Only minimum steel required.

734 TOP :	0.288	0.00 /	5	0.288	0.99 /	5
BOTT:	0.288	4.19 /	5	0.288	0.00 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

735 TOP : Longitudinal direction - Only minimum steel required.

735 BOTT: Longitudinal direction - Only minimum steel required.

735 TOP : Transverse direction - Only minimum steel required.

735 BOTT: Transverse direction - Only minimum steel required.

735 TOP :	0.288	1.23 /	6	0.288	0.64 /	5
BOTT:	0.288	0.00 /	5	0.288	0.00 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

736 TOP : Longitudinal direction - Only minimum steel required.

736 BOTT: Longitudinal direction - Only minimum steel required.

736 TOP : Transverse direction - Only minimum steel required.

736 BOTT: Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2778

736 TOP : 0.288 1.64 / 5 0.288 0.83 / 5
 BOTT: 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

737 TOP : Longitudinal direction - Only minimum steel required.

737 BOTT: Longitudinal direction - Only minimum steel required.

737 TOP : Transverse direction - Only minimum steel required.

737 BOTT: Transverse direction - Only minimum steel required.

737 TOP : 0.288 1.50 / 6 0.288 6.61 / 5

BOTT: 0.288 0.18 / 3 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

738 TOP : Longitudinal direction - Only minimum steel required.

738 BOTT: Longitudinal direction - Only minimum steel required.

738 TOP : Transverse direction - Only minimum steel required.

738 BOTT: Transverse direction - Only minimum steel required.

738 TOP : 0.288 3.81 / 5 0.288 6.68 / 5

BOTT: 0.288 0.00 / 3 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

739 TOP : Longitudinal direction - Only minimum steel required.

739 BOTT: Longitudinal direction - Only minimum steel required.

739 TOP : Transverse direction - Only minimum steel required.

739 BOTT: Transverse direction - Only minimum steel required.

739 TOP : 0.288 3.98 / 5 0.288 5.58 / 5

BOTT: 0.288 0.00 / 3 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

740 TOP : Longitudinal direction - Only minimum steel required.

740 BOTT: Longitudinal direction - Only minimum steel required.

740 TOP : Transverse direction - Only minimum steel required.

740 BOTT: Transverse direction - Only minimum steel required.

740 TOP : 0.288 2.68 / 6 0.288 7.93 / 5

BOTT: 0.288 0.01 / 3 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

741 TOP : Longitudinal direction - Only minimum steel required.

741 BOTT: Longitudinal direction - Only minimum steel required.

741 TOP : Transverse direction - Only minimum steel required.

741 BOTT: Transverse direction - Only minimum steel required.

741 TOP : 0.288 4.76 / 5 0.288 7.98 / 5

BOTT: 0.288 0.00 / 3 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

742 TOP : Longitudinal direction - Only minimum steel required.

742 BOTT: Longitudinal direction - Only minimum steel required.

742 TOP : Transverse direction - Only minimum steel required.

742 BOTT: Transverse direction - Only minimum steel required.

742 TOP : 0.288 4.59 / 5 0.288 6.70 / 5

BOTT: 0.288 0.00 / 3 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

743 TOP : Longitudinal direction - Only minimum steel required.

743 BOTT: Longitudinal direction - Only minimum steel required.

743 TOP : Transverse direction - Only minimum steel required.

743 BOTT: Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2779

743 TOP : 0.288 0.00 / 5 0.288 2.22 / 5
 BOT : 0.288 3.53 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

744 TOP : Longitudinal direction - Only minimum steel required.

744 BOT : Longitudinal direction - Only minimum steel required.

744 TOP : Transverse direction - Only minimum steel required.

744 BOT : Transverse direction - Only minimum steel required.

744 TOP : 0.288 1.64 / 6 0.288 1.98 / 5
 BOT : 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

745 TOP : Longitudinal direction - Only minimum steel required.

745 BOT : Longitudinal direction - Only minimum steel required.

745 TOP : Transverse direction - Only minimum steel required.

745 BOT : Transverse direction - Only minimum steel required.

745 TOP : 0.288 2.10 / 5 0.288 1.76 / 5
 BOT : 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

746 TOP : Longitudinal direction - Only minimum steel required.

746 BOT : Longitudinal direction - Only minimum steel required.

746 TOP : Transverse direction - Only minimum steel required.

746 TOP : 0.288 0.00 / 5 0.288 0.00 / 5
 BOT : 0.288 8.72 / 5 0.348 15.38 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

747 TOP : Longitudinal direction - Only minimum steel required.

747 BOT : Longitudinal direction - Only minimum steel required.

747 TOP : Transverse direction - Only minimum steel required.

747 BOT : Transverse direction - Only minimum steel required.

747 TOP : 0.288 0.00 / 5 0.288 0.00 / 5
 BOT : 0.288 2.47 / 5 0.288 11.86 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

748 TOP : Longitudinal direction - Only minimum steel required.

748 BOT : Longitudinal direction - Only minimum steel required.

748 TOP : Transverse direction - Only minimum steel required.

748 BOT : Transverse direction - Only minimum steel required.

748 TOP : 0.288 0.00 / 5 0.288 0.00 / 5
 BOT : 0.288 1.27 / 5 0.288 10.50 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

749 TOP : Longitudinal direction - Only minimum steel required.

749 BOT : Longitudinal direction - Only minimum steel required.

749 TOP : Transverse direction - Only minimum steel required.

749 BOT : Transverse direction - Only minimum steel required.

749 TOP : 0.288 5.23 / 5 0.288 5.42 / 5
 BOT : 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

750 TOP : Longitudinal direction - Only minimum steel required.

750 BOT : Longitudinal direction - Only minimum steel required.

750 TOP : Transverse direction - Only minimum steel required.

750 BOT : Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2780

750 TOP : 0.288 0.29 / 5 0.288 4.09 / 5
 BOT : 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

751 TOP : Longitudinal direction - Only minimum steel required.

751 BOT : Longitudinal direction - Only minimum steel required.

751 TOP : Transverse direction - Only minimum steel required.

751 BOT : Transverse direction - Only minimum steel required.

751 TOP : 0.288 0.00 / 5 0.288 1.77 / 6
 BOT : 0.288 10.37 / 5 0.288 3.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

752 TOP : Longitudinal direction - Only minimum steel required.

752 BOT : Longitudinal direction - Only minimum steel required.

752 TOP : Transverse direction - Only minimum steel required.

752 BOT : Transverse direction - Only minimum steel required.

752 TOP : 0.288 6.10 / 5 0.288 6.52 / 5
 BOT : 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

753 TOP : Longitudinal direction - Only minimum steel required.

753 BOT : Longitudinal direction - Only minimum steel required.

753 TOP : Transverse direction - Only minimum steel required.

753 BOT : Transverse direction - Only minimum steel required.

753 TOP : 0.288 0.40 / 5 0.288 5.20 / 5
 BOT : 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

754 TOP : Longitudinal direction - Only minimum steel required.

754 BOT : Longitudinal direction - Only minimum steel required.

754 TOP : Transverse direction - Only minimum steel required.

754 BOT : Transverse direction - Only minimum steel required.

754 TOP : 0.288 0.00 / 5 0.288 2.79 / 6
 BOT : 0.288 10.93 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

755 TOP : Longitudinal direction - Only minimum steel required.

755 BOT : Longitudinal direction - Only minimum steel required.

755 TOP : Transverse direction - Only minimum steel required.

755 BOT : Transverse direction - Only minimum steel required.

755 TOP : 0.288 5.66 / 5 0.288 4.22 / 6
 BOT : 0.288 0.00 / 5 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

756 TOP : Longitudinal direction - Only minimum steel required.

756 BOT : Longitudinal direction - Only minimum steel required.

756 TOP : Transverse direction - Only minimum steel required.

756 BOT : Transverse direction - Only minimum steel required.

756 TOP : 0.288 0.14 / 1 0.288 3.22 / 6
 BOT : 0.288 0.16 / 2 0.288 0.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

757 TOP : Longitudinal direction - Only minimum steel required.

757 BOT : Longitudinal direction - Only minimum steel required.

757 TOP : Transverse direction - Only minimum steel required.

757 BOT : Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2781

757 TOP : 0.288 0.00 / 1 0.288 1.15 / 6
 BOTT: 0.288 11.11 / 5 0.288 0.01 / 3

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

758 TOP : Longitudinal direction - Only minimum steel required.

758 BOTT: Longitudinal direction - Only minimum steel required.

758 TOP : Transverse direction - Only minimum steel required.

758 BOTT: Transverse direction - Only minimum steel required.

758 TOP : 0.288 1.14 / 6 0.288 0.00 / 6
 BOTT: 0.288 0.01 / 3 0.288 11.95 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

759 TOP : Longitudinal direction - Only minimum steel required.

759 BOTT: Longitudinal direction - Only minimum steel required.

759 TOP : Transverse direction - Only minimum steel required.

759 BOTT: Transverse direction - Only minimum steel required.

759 TOP : 0.288 2.79 / 6 0.288 0.00 / 6
 BOTT: 0.288 0.00 / 3 0.288 11.67 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

760 TOP : Longitudinal direction - Only minimum steel required.

760 BOTT: Longitudinal direction - Only minimum steel required.

760 TOP : Transverse direction - Only minimum steel required.

760 BOTT: Transverse direction - Only minimum steel required.

760 TOP : 0.288 1.74 / 6 0.288 0.00 / 6
 BOTT: 0.288 0.00 / 3 0.288 11.00 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

761 TOP : Longitudinal direction - Only minimum steel required.

761 BOTT: Longitudinal direction - Only minimum steel required.

761 TOP : Transverse direction - Only minimum steel required.

761 BOTT: Transverse direction - Only minimum steel required.

761 TOP : 0.288 3.43 / 6 0.288 0.02 / 1
 BOTT: 0.288 0.00 / 3 0.288 0.33 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

762 TOP : Longitudinal direction - Only minimum steel required.

762 BOTT: Longitudinal direction - Only minimum steel required.

762 TOP : Transverse direction - Only minimum steel required.

762 BOTT: Transverse direction - Only minimum steel required.

762 TOP : 0.288 5.42 / 5 0.288 0.17 / 5
 BOTT: 0.288 0.00 / 3 0.288 0.03 / 2

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

763 TOP : Longitudinal direction - Only minimum steel required.

763 BOTT: Longitudinal direction - Only minimum steel required.

763 TOP : Transverse direction - Only minimum steel required.

763 BOTT: Transverse direction - Only minimum steel required.

763 TOP : 0.288 4.22 / 5 0.288 0.13 / 5
 BOTT: 0.288 0.00 / 3 0.288 0.03 / 1

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

764 TOP : Longitudinal direction - Only minimum steel required.

764 BOTT: Longitudinal direction - Only minimum steel required.

764 TOP : Transverse direction - Only minimum steel required.

764 BOTT: Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2782

764 TOP :	0.288	4.71 /	6	0.288	5.94 /	5
BOTT:	0.288	0.00 /	3	0.288	0.00 /	1

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

765 TOP : Longitudinal direction - Only minimum steel required.

765 BOTT: Longitudinal direction - Only minimum steel required.

765 TOP : Transverse direction - Only minimum steel required.

765 BOTT: Transverse direction - Only minimum steel required.

765 TOP :	0.288	7.02 /	5	0.288	6.34 /	5
BOTT:	0.288	0.00 /	3	0.288	0.00 /	1

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

766 TOP : Longitudinal direction - Only minimum steel required.

766 BOTT: Longitudinal direction - Only minimum steel required.

766 TOP : Transverse direction - Only minimum steel required.

766 BOTT: Transverse direction - Only minimum steel required.

766 TOP :	0.288	5.74 /	5	0.288	5.48 /	5
BOTT:	0.288	0.00 /	3	0.288	0.00 /	1

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

767 TOP : Longitudinal direction - Only minimum steel required.

767 BOTT: Longitudinal direction - Only minimum steel required.

767 TOP : Transverse direction - Only minimum steel required.

767 BOTT: Transverse direction - Only minimum steel required.

767 TOP :	0.288	0.00 /	5	0.288	0.00 /	5
BOTT:	0.288	1.38 /	5	0.288	2.90 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

768 TOP : Longitudinal direction - Only minimum steel required.

768 BOTT: Longitudinal direction - Only minimum steel required.

768 TOP : Transverse direction - Only minimum steel required.

768 BOTT: Transverse direction - Only minimum steel required.

768 TOP :	0.288	0.00 /	5	0.288	0.00 /	5
BOTT:	0.288	2.63 /	5	0.288	3.78 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

769 TOP : Longitudinal direction - Only minimum steel required.

769 BOTT: Longitudinal direction - Only minimum steel required.

769 TOP : Transverse direction - Only minimum steel required.

769 BOTT: Transverse direction - Only minimum steel required.

769 TOP :	0.288	0.00 /	5	0.288	0.00 /	5
BOTT:	0.288	7.56 /	5	0.288	4.65 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

770 TOP : Longitudinal direction - Only minimum steel required.

770 BOTT: Longitudinal direction - Only minimum steel required.

770 TOP : Transverse direction - Only minimum steel required.

770 BOTT: Transverse direction - Only minimum steel required.

770 TOP :	0.288	0.00 /	5	0.288	0.08 /	6
BOTT:	0.288	2.20 /	5	0.288	0.45 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

771 TOP : Longitudinal direction - Only minimum steel required.

771 BOTT: Longitudinal direction - Only minimum steel required.

771 TOP : Transverse direction - Only minimum steel required.

771 BOTT: Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2783

771 TOP :	0.288	0.00 /	5	0.288	0.00 /	6
BOTT:	0.288	1.63 /	5	0.288	0.51 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

772 TOP : Longitudinal direction - Only minimum steel required.

772 BOTT: Longitudinal direction - Only minimum steel required.

772 TOP : Transverse direction - Only minimum steel required.

772 BOTT: Transverse direction - Only minimum steel required.

772 TOP :	0.288	0.00 /	5	0.288	0.00 /	6
BOTT:	0.288	7.24 /	5	0.288	1.17 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

773 TOP : Longitudinal direction - Only minimum steel required.

773 BOTT: Longitudinal direction - Only minimum steel required.

773 TOP : Transverse direction - Only minimum steel required.

773 BOTT: Transverse direction - Only minimum steel required.

773 TOP :	0.288	0.00 /	5	0.288	0.00 /	6
BOTT:	0.288	5.02 /	5	0.288	3.82 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

774 TOP : Longitudinal direction - Only minimum steel required.

774 BOTT: Longitudinal direction - Only minimum steel required.

774 TOP : Transverse direction - Only minimum steel required.

774 BOTT: Transverse direction - Only minimum steel required.

774 TOP :	0.288	0.00 /	5	0.288	0.00 /	6
BOTT:	0.288	1.33 /	6	0.288	0.30 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

775 TOP : Longitudinal direction - Only minimum steel required.

775 BOTT: Longitudinal direction - Only minimum steel required.

775 TOP : Transverse direction - Only minimum steel required.

775 BOTT: Transverse direction - Only minimum steel required.

775 TOP :	0.288	0.00 /	5	0.288	0.71 /	6
BOTT:	0.288	6.22 /	5	0.288	0.06 /	3

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

776 TOP : Longitudinal direction - Only minimum steel required.

776 BOTT: Longitudinal direction - Only minimum steel required.

776 TOP : Transverse direction - Only minimum steel required.

776 BOTT: Transverse direction - Only minimum steel required.

776 TOP :	0.288	0.00 /	5	0.288	0.00 /	6
BOTT:	0.288	7.42 /	5	0.288	4.55 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

777 TOP : Longitudinal direction - Only minimum steel required.

777 BOTT: Longitudinal direction - Only minimum steel required.

777 TOP : Transverse direction - Only minimum steel required.

777 BOTT: Transverse direction - Only minimum steel required.

777 TOP :	0.288	0.00 /	5	0.288	0.00 /	6
BOTT:	0.288	2.61 /	5	0.288	3.58 /	5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

778 TOP : Longitudinal direction - Only minimum steel required.

778 BOTT: Longitudinal direction - Only minimum steel required.

778 TOP : Transverse direction - Only minimum steel required.

778 BOTT: Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2784

778 TOP : 0.288 0.00 / 5 0.288 0.00 / 6
 BOTT: 0.288 1.49 / 5 0.288 2.72 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.003 MM

779 TOP : Longitudinal direction - Only minimum steel required.

779 BOTT: Longitudinal direction - Only minimum steel required.

779 TOP : Transverse direction - Only minimum steel required.

779 BOTT: Transverse direction - Only minimum steel required.

779 TOP : 0.288 0.00 / 5 0.288 0.00 / 6

BOTT: 0.288 7.16 / 5 0.288 1.16 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

780 TOP : Longitudinal direction - Only minimum steel required.

780 BOTT: Longitudinal direction - Only minimum steel required.

780 TOP : Transverse direction - Only minimum steel required.

780 BOTT: Transverse direction - Only minimum steel required.

780 TOP : 0.288 0.00 / 5 0.288 0.00 / 6

BOTT: 0.288 1.70 / 5 0.288 0.45 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

781 TOP : Longitudinal direction - Only minimum steel required.

781 BOTT: Longitudinal direction - Only minimum steel required.

781 TOP : Transverse direction - Only minimum steel required.

781 BOTT: Transverse direction - Only minimum steel required.

781 TOP : 0.288 0.00 / 5 0.288 0.15 / 6

BOTT: 0.288 2.48 / 5 0.288 0.37 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

782 TOP : Longitudinal direction - Only minimum steel required.

782 BOTT: Longitudinal direction - Only minimum steel required.

782 TOP : Transverse direction - Only minimum steel required.

782 BOTT: Transverse direction - Only minimum steel required.

782 TOP : 0.288 0.00 / 5 0.288 0.69 / 6

BOTT: 0.288 6.14 / 5 0.288 0.06 / 3

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

783 TOP : Longitudinal direction - Only minimum steel required.

783 BOTT: Longitudinal direction - Only minimum steel required.

783 TOP : Transverse direction - Only minimum steel required.

783 BOTT: Transverse direction - Only minimum steel required.

783 TOP : 0.288 0.00 / 5 0.288 0.00 / 6

BOTT: 0.288 1.47 / 5 0.288 0.37 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

784 TOP : Longitudinal direction - Only minimum steel required.

784 BOTT: Longitudinal direction - Only minimum steel required.

784 TOP : Transverse direction - Only minimum steel required.

784 BOTT: Transverse direction - Only minimum steel required.

784 TOP : 0.288 0.00 / 5 0.288 0.00 / 6

BOTT: 0.288 5.60 / 5 0.288 3.91 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM

785 TOP : Longitudinal direction - Only minimum steel required.

785 BOTT: Longitudinal direction - Only minimum steel required.

785 TOP : Transverse direction - Only minimum steel required.

785 BOTT: Transverse direction - Only minimum steel required.

STAAD SPACE

-- PAGE NO. 2785

785 TOP : 0.288 0.00 / 5 0.288 0.00 / 6
 BOT : 0.288 2.46 / 5 0.288 3.94 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM
 786 TOP : Longitudinal direction - Only minimum steel required.
 786 BOT : Longitudinal direction - Only minimum steel required.
 786 TOP : Transverse direction - Only minimum steel required.
 786 BOT : Transverse direction - Only minimum steel required.
 786 TOP : 0.288 0.00 / 5 0.288 0.00 / 6
 BOT : 0.288 0.39 / 5 0.288 4.92 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM
 787 TOP : Longitudinal direction - Only minimum steel required.
 787 BOT : Longitudinal direction - Only minimum steel required.
 787 TOP : Transverse direction - Only minimum steel required.
 787 BOT : Transverse direction - Only minimum steel required.
 787 TOP : 0.288 0.80 / 6 0.288 0.00 / 6
 BOT : 0.288 0.02 / 3 0.288 5.41 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM
 788 TOP : Longitudinal direction - Only minimum steel required.
 788 BOT : Longitudinal direction - Only minimum steel required.
 788 TOP : Transverse direction - Only minimum steel required.
 788 BOT : Transverse direction - Only minimum steel required.
 788 TOP : 0.288 0.00 / 6 0.288 0.00 / 6
 BOT : 0.288 1.93 / 5 0.288 1.93 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM
 789 TOP : Longitudinal direction - Only minimum steel required.
 789 BOT : Longitudinal direction - Only minimum steel required.
 789 TOP : Transverse direction - Only minimum steel required.
 789 BOT : Transverse direction - Only minimum steel required.
 789 TOP : 0.288 0.00 / 6 0.288 0.00 / 6
 BOT : 0.288 0.60 / 6 0.288 1.49 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM
 790 TOP : Longitudinal direction - Only minimum steel required.
 790 BOT : Longitudinal direction - Only minimum steel required.
 790 TOP : Transverse direction - Only minimum steel required.
 790 BOT : Transverse direction - Only minimum steel required.
 790 TOP : 0.288 0.00 / 6 0.288 0.00 / 6
 BOT : 0.288 0.71 / 6 0.288 1.53 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM
 791 TOP : Longitudinal direction - Only minimum steel required.
 791 BOT : Longitudinal direction - Only minimum steel required.
 791 TOP : Transverse direction - Only minimum steel required.
 791 BOT : Transverse direction - Only minimum steel required.
 791 TOP : 0.288 0.00 / 6 0.288 0.00 / 6
 BOT : 0.288 2.07 / 5 0.288 4.49 / 5

FY: 413.682 MPA FC: 27.579 MPA COVER: 19.050 MM TH: 160.000 MM
 792 TOP : Longitudinal direction - Only minimum steel required.
 792 BOT : Longitudinal direction - Only minimum steel required.
 792 TOP : Transverse direction - Only minimum steel required.
 792 BOT : Transverse direction - Only minimum steel required.

الفصل الخامس

الخلاصة :-

ان التصميم الانشائي للمباني هو من صميم عمل المهندس المدني والذي يعكس فيه كل امكانياته وخبراته في التصميم الانشائي للوصول الى الشكل الامثل من خلال استخدام المواد مع توفير الدقة والجمالية بموجب المواصفات المطلوبة مع التوازن الامثل بين الوقت والكلفة والامان .

تم اعتماد برنامج STAAD pro.v8i في تنفيذ المشروع لانشاء بناية ٤ طوابق لقسم دراسي لاحد الجامعات وكانت النتائج جيدة ومطابقة للمواصفات القياسية مما يدل على دقة البرامج واهميتها في مجال الهندسة المدنية.

ان الاعتماد فقط على البرامج الجاهزة في التصميم الانشائي بالرغم من الدقة والسرعة العاليتين في التنفيذ التي تمتلكها تلك البرامج تكون غير كافية وجازمة من دون ان يكون لدى المهندس الخبرة الكافية و الحس الهندسي اللازم للتأكد من صحة تلك النتائج وملائمتها للواقع لان التحليل والتصميم باستخدام البرامج قد يصاحبه بعض الاخطاء نيجة لسهولة في الادخال او سوء تقدير للنتائج وقد صادفتني مثل تلك المشكلة اثناء ادخال الاحمال حيث قمت بادخال الحمل مرتين لاحد الطوابق سهوا ونتيجة لذلك كانت كمية حديد التسليح كبيرة ولولا نصيحة الدكتور المشرف لما استطعت معرفة الخطا الحاصل في التصميم وهذا يدل على ان من اهم عناصر التصميم السريع والدقيق هما الخبرة العملية والدقة في استخدام البرامج اي ان احدهما يكمل الاخر ، نحن في هذه المرحلة اخذنا فكرة عن استخدام البرامج في التحليل و التصميم و لكن الخبرة لايمكن اكتسابها الا بالعمل الميداني ومواكبة التطور العلمي في هذا المجال .

