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**ESCUELA DE POSGRADO**

# ANÁLISIS COMPARATIVO DEL MÉTODO DE HILLERBORG Y LOS MÉTODOS DE DISEÑO DE LOSAS EN BIDIRECCIONALES CONTENIDAS EN ACI 318.

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## RESUMEN

La presente tesis, titulada "Análisis comparativo del método de Hillerborg y los métodos de diseño de losas bidireccionales contenidos en ACI 318", evalúa la eficacia y robustez de ambos enfoques para el diseño estructural de losas bidireccionales. Se compararon las disposiciones normativas y técnicas del método de Hillerborg y del ACI 318-14, utilizando el Método de Elementos Finitos (FEM) como referencia para casos prácticos. Los resultados muestran que el ACI 318-14 destaca por su robustez, al integrar de manera efectiva aspectos críticos como cortante, torsión y punzonamiento, garantizando la seguridad en configuraciones complejas y bajo cargas elevadas. Por su parte, el método de Hillerborg, basado en un enfoque plástico, resulta eficiente en el uso de materiales, aunque presenta limitaciones en la consideración de efectos críticos.

Palabras clave: Diseño estructural; Losa bidireccional; Método de Hillerborg; ACI 318-14 y Método de Elementos Finitos (FEM).

## ABSTRACT

The present thesis, titled "Comparative Analysis of the Hillerborg Method and the Design Methods for Two-Way Slabs Contained in ACI 318," evaluates the effectiveness and robustness of both approaches for the structural design of two-way slabs. The normative and technical provisions of the Hillerborg method and ACI 318-14 were compared, using the Finite Element Method (FEM) as a reference for practical cases. The results show that ACI 318-14 stands out for its robustness, effectively integrating critical aspects such as shear, torsion, and punching, ensuring safety in complex configurations and under high loads. In contrast, the Hillerborg method, based on a plastic approach, is efficient in material usage but presents limitations in considering critical effects.


Keywords: Structural design; Two-way slab; Hillerborg Method; ACI 318-14; Finite Element Method (FEM)

# INTRODUCCIÓN

Desde la antigüedad, las técnicas de construcción han experimentado una evolución significativa. Inicialmente, los materiales utilizados, como barro, madera y piedra, ofrecían soluciones limitadas frente a los desafíos climáticos y naturales (Steeven et al., 2019). La búsqueda de estructuras más duraderas llevó al desarrollo del concreto, una mezcla de cemento, arena, grava y agua que revolucionó la arquitectura y la ingeniería. Este material ha permitido la creación de edificaciones robustas y versátiles, capaces de resistir condiciones adversas y cargas significativas (Arana, 2016).

Con el avance de la construcción, surgió la necesidad de soluciones más sofisticadas para soportar cargas de manera eficiente. El concreto se consolidó como un material clave en el diseño de elementos estructurales, especialmente en las losas bidireccionales. Estas losas son fundamentales en la construcción moderna, ya que permiten una distribución eficaz de las cargas en dos direcciones perpendiculares, lo cual es esencial para garantizar la estabilidad y la integridad estructural en edificaciones que soportan cargas significativas (Solano Reyes, 2017).

Para el diseño de losas bidireccionales, los ingenieros han desarrollado diversos métodos, entre los cuales destacan el Método de Hillerborg y el ACI 318. El Método de Hillerborg se caracteriza por su análisis del comportamiento estructural, lo que resulta ventajoso en escenarios que requieren una evaluación exhaustiva. Sin embargo, su aplicación puede ser más compleja y menos accesible (Cheung y Tham, 2020). En contraste, el ACI 318, desarrollado por el American Concrete Institute, es conocido por su enfoque directo y accesible, aunque presenta limitaciones en cuanto a la precisión al evaluar el comportamiento del concreto frente a fisuras y cargas extremas (Kondalraj y Rao, 2021). Elegir entre el Método de Hillerborg y el ACI 318 implica encontrar un balance entre simplicidad y exactitud. El ACI 318 facilita una implementación rápida y sencilla, mientras que el Método de Hillerborg proporciona un análisis más profundo, adecuado para proyectos que requieren una evaluación detallada. La decisión dependerá de la necesidad de equilibrar eficiencia con precisión y los recursos disponibles para el diseño y la ejecución (Patil y Niranjan, 2013).

El presente estudio titulado "Análisis Comparativo del Método de Hillerborg y los Métodos de Diseño de Losas Bidireccionales Contenidos en ACI 318" se enfoca evaluar la eficacia y robustez de los métodos de diseño de losas bidireccionales según el método de Hillerborg y las disposiciones del ACI 318-14, determinando cuál de ellos ofrece mayores ventajas en términos de eficiencia estructural y aplicabilidad práctica.

Para realizar esta investigación, se aplicará una metodología comparativa que incluirá modelado y simulaciones estructurales. Se utilizarán herramientas de software especializadas para obtener datos sobre el comportamiento de las losas bajo cargas específicas, permitiendo una evaluación precisa de ambos métodos. Los resultados teóricos serán contrastados con las normativas vigentes para asegurar su validez y aplicabilidad en escenarios reales.

La estructura de la tesis está organizada en las siguientes secciones: Introducción, que contextualiza el estudio y presenta los objetivos y la justificación; Revisión de la Literatura, que ofrece un análisis de los conceptos fundamentales y las características de los métodos de diseño; Metodología, que describe el enfoque utilizado para la comparación, incluyendo las herramientas y parámetros empleados; Análisis y Resultados, donde se presentan y comparan los datos obtenidos; y finalmente, Conclusiones y Recomendaciones, seguidas de la Bibliografía, que incluye las referencias consultadas.

Esta estructura permitirá una presentación clara y detallada de los métodos de diseño para losas bidireccionales, facilitando una comparación rigurosa y proporcionando recomendaciones prácticas que optimicen el diseño estructural, reduzcan costos y mejoren la seguridad de las edificaciones.

# CAPÍTULO I: GENERALIDADES

## 1.1 PLANTEAMIENTO DEL PROBLEMA

En el ámbito de la ingeniería civil, el concreto se erige como el material de construcción predominante, debido a su combinación de alta resistencia a la compresión, durabilidad prolongada y flexibilidad en la ejecución (Galvis y Larrañaga, 2022). Estas propiedades mecánicas lo han posicionado como un elemento indispensable en la edificación de infraestructuras críticas, tales como edificaciones residenciales y comerciales, puentes y pavimentos (Estupiñan et al., 2020). La capacidad del concreto para adaptarse a diversas formas y cargas estructurales lo convierte en un pilar fundamental para asegurar la integridad estructural y la longevidad de las construcciones.

Dentro de las soluciones estructurales en el uso del concreto, las losas bidireccionales juegan un papel destacado. Estas losas están diseñadas para soportar y distribuir cargas en dos direcciones ortogonales, a diferencia de las losas unidireccionales que solo resisten cargas en una dirección principal (Solano Reyes, 2017). El diseño bidireccional permite una distribución más uniforme de las cargas sobre el sistema estructural, mejorando así la eficiencia del uso del material y reduciendo la cantidad de refuerzo necesario. Esta capacidad de distribuir las cargas en ambas direcciones optimiza la resistencia de la losa y proporciona una mayor estabilidad y durabilidad a la estructura en la que se incorpora (Matias Soto y Campos Mallqui, 2023).

La importancia del diseño estructural en la ingeniería civil es fundamental para garantizar la integridad y eficiencia de las construcciones. Como señala Salinas-Guayacundo (2018), un diseño estructural preciso no solo asegura que la estructura soporte adecuadamente las cargas operativas y ambientales, sino que también optimiza el uso de los recursos materiales y minimiza los costos de construcción. En el caso de las losas bidireccionales, es esencial realizar un análisis exhaustivo que contemple capacidad de carga, momentos flectores, fuerzas cortantes y deformaciones permisibles, además de considerar la interacción entre el concreto y el refuerzo de acero (Machaca Quispe, 2018).

Para el diseño de losas bidireccionales, se emplean dos métodos prominentes: el Método del ACI 318 y el Método de Hillerborg. El ACI 318 es valorado por su simplicidad y facilidad de aplicación, utilizando coeficientes de momento en lugar de cálculos complejos (Nilsson y Levin, 2013). Sin embargo, esta simplificación puede no reflejar con precisión el comportamiento real del concreto, especialmente en condiciones de fisuración, lo que puede llevar a una subestimación de momentos y cargas (Pungaña, 2015). En contraste, el Método de Hillerborg, basado en la teoría del equilibrio y el teorema del límite inferior, ofrece una evaluación más detallada del comportamiento estructural y una estimación más precisa de la capacidad de la losa bajo cargas extremas (Saraiva Filho, 2019). Aunque el método de Hillerborg no aborda directamente aspectos como la deflexión y los estados de servicio, es beneficioso en contextos con cargas complejas o no uniformes.

Una selección inadecuada entre estos dos métodos para el diseño de losas bidireccionales puede acarrear consecuencias significativas. Un método inapropiado podría comprometer la seguridad estructural al no representar adecuadamente el comportamiento real del concreto, lo que podría llevar a fallos estructurales (Pungaña, 2015; Tirado, 2021). Además, la elección de un método menos adecuado puede generar costos innecesarios debido a diseños ineficientes, incluyendo el desperdicio de materiales o el sobredimensionamiento de la estructura.

En este contexto, la pregunta crítica es: ¿Cuál método, el de Hillerborg o los establecidos en el ACI 318, ofrece un diseño más seguro y eficiente para losas bidireccionales de concreto? Mientras que el ACI 318 es valorado por su simplicidad y aplicabilidad práctica, es crucial evaluar su rendimiento en comparación con el Método de Hillerborg, que se fundamenta en la teoría del equilibrio y el teorema del límite inferior. Cabe aclarar que el alcance de esta investigación se limita al análisis comparativo del comportamiento estructural bajo cargas estáticas, sin considerar los efectos derivados de acciones sísmicas. Por tanto, la investigación busca establecer si el método de Hillerborg, que no está incluido en el ACI, proporciona una solución técnica y económica viable para el diseño de losas bidireccionales.

## 1.2 JUSTIFICACIÓN

El diseño estructural es esencial en la ingeniería civil para garantizar la seguridad y estabilidad de las construcciones, especialmente en losas bidireccionales. La precisión en el diseño es crucial para asegurar que las estructuras soporten adecuadamente las cargas operativas y ambientales, incluyendo las demandas sísmicas específicas de cada región (Razo Carrasco y García Domínguez, 2020). La correcta implementación de normas y códigos de diseño previene fallos estructurales que podrían comprometer la integridad del edificio y la seguridad de sus ocupantes, minimizando el riesgo de colapso y asegurando la estabilidad estructural frente a eventos adversos (Salinas-Guayacundo, 2018).

Un diseño ineficiente puede generar problemas económicos significativos, como el uso excesivo de materiales y altos costos en reparaciones futuras. Optimizar el diseño es crucial para reducir el desperdicio de recursos y evitar gastos innecesarios durante la construcción y el mantenimiento (Castillo y A.C., 2019). Para lograr una construcción eficiente y económica, es crucial adoptar métodos de diseño que sean tanto actualizados como precisos.

En este contexto, el ACI 318-14 constituye una referencia fundamental para el diseño de elementos de concreto armado, al establecer criterios técnicos para el análisis y dimensionamiento de losas bidireccionales. Esta versión sistematizó los métodos de Diseño Directo y Marco Equivalente, definiendo parámetros de espesor, refuerzo y control de deflexión que aseguran la resistencia y durabilidad estructural bajo cargas convencionales (American Concrete Institute, 2014).

Aunque el código ACI 318-19, la última revisión para el diseño de concreto estructural, ofrece directrices exhaustivas, presenta ciertas limitaciones en el contexto actual. Su enfoque conservador en la modelización de fisuras del concreto puede llevar a una sobreestimación de la capacidad estructural efectiva (Ramírez-Sepúlveda et al., 2022). Esta simplificación puede no capturar adecuadamente las interacciones complejas entre cargas y tensiones, especialmente en condiciones extremas, resultando en una utilización subóptima de materiales y un aumento de los costos de construcción.

En contraste, el enfoque propuesto por Hillerborg ofrece una solución avanzada para superar estas limitaciones. Hillerborg presenta un modelo que considera la formación y propagación de fisuras en el concreto de manera más precisa. Integrar estos aspectos en el análisis estructural permite una evaluación más realista del comportamiento del material bajo carga. La adopción del método de Hillerborg podría resultar en diseños que se ajusten mejor a las condiciones operativas reales, optimizando el uso del concreto y reduciendo costos sin comprometer la seguridad estructural (Ephraim y Orumu, 2014; Cheung y Tham, 2020). Además, el método de Hillerborg facilita la adaptación a las variaciones en la calidad del material y las condiciones de carga, contribuyendo a la construcción de estructuras más robustas y duraderas (Aguilar Cruz et al., 2023).

Con base en lo expuesto anteriormente, la presente investigación se enfoca en evaluar si el método de Hillerborg, no contemplado en el ACI 318, ofrece una solución técnica y económica más eficiente para el diseño de losas bidireccionales. Este análisis comparativo permitirá determinar si el enfoque de Hillerborg proporciona ventajas significativas en términos de precisión, seguridad y eficiencia económica. A pesar de que el método de Hillerborg puede estar menos difundido, su investigación es esencial para explorar su aplicabilidad en el contexto de los avances tecnológicos actuales.

En coherencia con los objetivos de la investigación, se establece que el estudio se desarrollará bajo condiciones estáticas de carga, sin incluir el análisis de efectos sísmicos. Esta delimitación busca centrar el alcance en la comparación técnica y económica de los métodos de diseño de losas bidireccionales, garantizando un enfoque preciso y acorde con el propósito del estudio.

Desde una perspectiva científica, esta investigación aborda un vacío en la literatura al comparar el método de Hillerborg con los métodos tradicionales del ACI 318. El enfoque conservador del ACI 318 en la modelización de fisuras puede no capturar las complejas interacciones entre cargas y tensiones en condiciones extremas. Mientras que el método de Hillerborg, con su modelado de fisuración, podría justificar una actualización de las normas existentes para abordar de manera más efectiva las condiciones operativas reales (Lazzari y Batista, 2021).

Finalmente, en términos prácticos, la implementación del método de Hillerborg podría resultar en un diseño más robusto y eficiente, influyendo positivamente en la normativa y reduciendo costos asociados con materiales y mantenimiento. Esto beneficiará a ingenieros y constructores al promover un uso más racional de los recursos y contribuir a la sostenibilidad en la construcción, potencialmente influyendo en la industria para adoptar prácticas más eficientes y sostenibles.

## OBJETIVOS DE LA INVESTIGACIÓN

### *1.3.1 OBJETIVO GENERAL*

Evaluar la eficacia y robustez de los métodos de diseño de losas bidireccionales según el método de Hillerborg y las disposiciones del ACI 318-14, determinando cuál de ellos ofrece mayores ventajas en términos de eficiencia estructural y aplicabilidad práctica.

### *1.3.2 OBJETIVOS ESPECÍFICOS*

- Comparar las características normativas y técnicas de los métodos de diseño de losas bidireccionales según Hillerborg, las especificaciones del ACI 318-14 y el Método de Elementos Finitos como referencia, identificando similitudes, diferencias y sus implicaciones en el diseño estructural.
- Aplicar el método de Hillerborg, el ACI 318-14 y el Método de Elementos Finitos en casos prácticos de losas bidireccionales, evaluando su desempeño y precisión en la resolución de las demandas estructurales.
- Desarrollar un análisis crítico y proponer recomendaciones basadas en los resultados obtenidos de los casos de estudio, determinando cuál de los métodos es más robusto y eficiente en el diseño de losas bidireccionales.

# CAPÍTULO II: MARCO REFERENCIAL

## 2.1 ANTECEDENTES

El diseño de losas es un tema de gran importancia dentro de la ingeniería estructural, dado su papel fundamental en la distribución de cargas en edificaciones. Sin embargo, la cantidad de estudios enfocados específicamente en el diseño de losas, en contraposición a otros elementos de concreto reforzado como vigas o columnas, es relativamente escasa. La mayoría de las investigaciones tiende a centrarse en estructuras convencionales, dejando un vacío en el análisis profundo y comparativo de métodos modernos y tradicionales aplicados a losas. Por tanto, este trabajo busca contribuir al conocimiento en esta área, presentando estudios relevantes que, aunque limitados, han abordado el diseño de losas desde diferentes perspectivas metodológicas. A continuación, se presentarán estudios relevantes que han explorado diferentes enfoques, destacando la limitada pero valiosa contribución de estos trabajos a la mejora en el diseño de losas.

### *2.1.1 Antecedentes internacionales*

A nivel internacional, el estudio del diseño de losas ha recibido menos atención en comparación con otros elementos estructurales, aunque algunos trabajos recientes han comenzado a analizar metodologías modernas, como el método de franjas de Hillerborg y su comparación con normativas tradicionales como el ACI 318. A continuación, se presentan algunos de los estudios más destacados a nivel internacional que han abordado parcialmente esta temática.

Uno de los artículos más relevantes es "Experimental study on shear strengthening of RC beams with basalt FRP strips using different wrapping methods" fue escrito por Ali Saribiyik, Bassel Abodan y Muhammed Talha Balci, y publicado en Sakarya, Turquía (Saribiyik et al., 2021). La investigación se enfocó en el fortalecimiento a cortante de vigas de concreto reforzado (RC) mediante el uso de polímeros reforzados con fibra de basalto (BFRP) aplicados en diversas configuraciones de envoltura. El estudio analizó la capacidad de los BFRP para mejorar la resistencia a cortante, comparando los resultados experimentales con métodos de cálculo existentes, como ACI 318 y el modelo de Hillerborg. La metodología

incluyó la producción de 18 vigas RC, de las cuales 15 fueron reforzadas con BFRP en diferentes configuraciones y sometidas a pruebas de flexión bajo carga monotónica.

Los resultados experimentales mostraron que el uso de BFRP incrementó la capacidad de corte de las vigas entre un 43% y un 100%, siendo los métodos de envoltura completa y de tiras los más efectivos. El strip method (método de tiras) se destacó por su capacidad para distribuir la carga de manera más eficiente, especialmente cuando las tiras se aplicaron en direcciones perpendiculares a las grietas de corte. Se observó que los modelos analíticos basados en ACI 440 proporcionaban predicciones conservadoras, subestimando la contribución de BFRP en comparación con los resultados experimentales. En cambio, los enfoques derivados del modelo de Hillerborg mostraron una mayor correspondencia con los valores experimentales, debido a su capacidad para representar de forma más realista la formación y propagación de fisuras en el concreto. Esta diferencia evidencia que el enfoque prescriptivo del ACI 318-14 tiende a sobreestimar la rigidez y resistencia efectiva, mientras que el método de Hillerborg, al considerar explícitamente la fisuración del concreto, ofrece predicciones más realistas y un aprovechamiento estructural más eficiente.

Aunque los estudios que comparan directamente el método de Hillerborg con las disposiciones del ACI 318 son escasos, existen investigaciones que analizan el comportamiento estructural de losas bidireccionales bajo distintos métodos de cálculo, aportando evidencia útil para contrastar resultados y tendencias de diseño.

Otro estudio relevante es *"Comparación de Solicitudes en Losas de Entrepisos de Hormigón Armado según Métodos de Cálculo Tradicionales y Modernos"* fue escrito por Rafael Héctor Blanca, José María Valoy, y Federico José Coletti. Publicado en Argentina (Blanca et al., 2014). Este trabajo analiza los momentos flectores en losas bidireccionales apoyadas sobre vigas de diferentes rigideces, utilizando métodos tradicionales y modernos. El enfoque principal consiste en comparar los resultados obtenidos mediante métodos clásicos, como el uso de coeficientes tabulados que asumen bordes indeformables, frente a los resultados del Método de Hillerborg, el reglamento CIRSOC 201-2005 y el Método de los Elementos Finitos (MEF). La metodología se basa en el análisis de losas en un sistema de tres vanos de 6 metros de luz en cada dirección.

Los autores concluyen que los momentos flectores calculados con los métodos tradicionales tienden a ser menores que los reales, especialmente en vigas esbeltas o “vigas chatas”. En contraste, el Método de Hillerborg y el reglamento CIRSOC 201-2005 ofrecen mejores aproximaciones a los resultados experimentales, mientras que el MEF se considera la alternativa más precisa. Asimismo, se destaca que el Método de Diseño Directo del CIRSOC 201-2005 arroja valores más consistentes en vigas rígidas, recomendándose el uso de métodos simplificados o software especializado para optimizar el diseño estructural.

Finalmente en la investigación titulada "*Comparación del análisis y diseño de losas aligeradas bidireccionales y losas macizas en edificaciones de 5 pisos - Distrito de Chilca*", realizada por Solano Reyes, Perú (Solano Reyes, 2017), se evaluó la comparación estructural y económica entre ambos tipos de losas. La metodología incluyó el análisis y diseño en concreto armado y el modelamiento estructural mediante software especializado (SAFE2016 y ETABS). Los resultados evidenciaron que las losas macizas presentan mayor resistencia a flexión y corte (6720.84 kg·m frente a 2332.71 kg·m, y 3581.40 kg frente a 942.21 kg, respectivamente), mientras que las losas aligeradas resultan más económicas, con un costo por m² 32.95 % menor. El análisis, basado en los métodos de franjas y los criterios de la norma ACI 318, permitió evaluar deformaciones y desempeño ante cargas sísmicas. Se observó que las losas aligeradas en dos direcciones presentan mayores deformaciones bajo cargas de servicio, aunque dentro de los límites de deflexión admisibles establecidos por el ACI, confirmando su viabilidad estructural y económica.

### *2.1.2 Antecedentes nacionales*

En el ámbito nacional, el diseño de losas de concreto reforzado ha sido explorado en menor medida en comparación con otros componentes estructurales. Si bien algunos estudios han comenzado a aplicar normativas como el ACI 318 y han utilizado software especializado para mejorar el diseño, la investigación específica sobre losas sigue siendo escasa. A continuación, se expondrán los principales trabajos nacionales que han abordado, aunque de manera limitada, el diseño de losas de concreto reforzado en el país.

Uno de los estudios destacados es el artículo titulado "Diseño de Elementos Estructurales en Edificios de Concreto Reforzado" fue escrito por Luis Adolfo Alvarado

Chorro, Santos Gilberto Pineda Alvarado y Joaquín Alexis Ventura Ramírez en la universidad del Salvador (Chorro et al., 2004) . La investigación se llevó a cabo con el objetivo de introducir a docentes y estudiantes en los requisitos del código de diseño "Building Code Requirements for Structural Concrete (ACI 318-02)", aplicados al diseño de elementos estructurales en edificaciones. Se utilizó una metodología general que incluye el desarrollo de programas de computadora en Visual Basic 6.0, como herramientas complementarias para el diseño, abarcando procesos de estructuración, análisis y dimensionamiento.

En el artículo, se realiza un análisis del método de las franjas de Hillerborg y su aplicación en el diseño de losas, contrastándolo con el enfoque ACI 318-02. Se discuten los principios básicos del diseño estructural, incluyendo la resistencia requerida, combinaciones de carga y factores de reducción. Los resultados relevantes muestran que el método de las franjas proporciona una distribución segura y económica del refuerzo, optimizando el diseño en diversas aplicaciones. Además, se presenta la utilidad de los programas desarrollados para calcular dimensiones y cantidades de refuerzo, aunque se destaca la importancia de un conocimiento sólido de la metodología para garantizar precisión en el diseño estructural.

Otro trabajo relevante es la “Revisión de los Procedimientos de Diseño Estructural para Fundaciones de Concreto Reforzado y su Aplicación Según el Código ACI 318 – 05” es un artículo escrito por Juan Alberto Arias Mejía, Susana Arely Meléndez Molina y Digna Esther Molina Paiz, publicado por la Universidad de El Salvador (Arias Mejia et al., 2009). Este estudio se enfoca en la aplicación del código ACI 318-05 en el diseño de fundaciones, destacando que, aunque el código proporciona directrices para el diseño de zapatas, carece de especificaciones para zapatas corridas y losas de cimentación. La investigación compara los procedimientos manuales con el uso del software SAFE, analizando cómo cada método aborda la resistencia a cortante, el cortante por punzonamiento y la consideración del coeficiente de balasto.

Los resultados revelan diferencias significativas en los cálculos de refuerzo entre ambos métodos. El SAFE, al considerar elementos como flexibles, proporciona un análisis más preciso de la deformación y el cortante, mientras que los métodos manuales tienden a

ser más conservadores. Además, el SAFE tiende a requerir peraltes mayores y un diseño de refuerzo más optimizado, lo que a menudo resulta en menor acero necesario en comparación con los cálculos manuales. El artículo concluye que el uso de software de diseño, como SAFE, permite obtener resultados más ajustados a la realidad estructural y se recomienda su implementación para mejorar la eficiencia en el diseño de fundaciones conforme a ACI 318-05.

# CAPÍTULO III: MARCO TEÓRICO

## 3.1 Análisis y diseño estructural

El análisis estructural es una disciplina esencial dentro de la ingeniería civil, dedicada a evaluar el comportamiento de las estructuras ante diversas condiciones de carga y solicitaciones. Este proceso se desarrolla en tres niveles complementarios: global, seccional y local, cada uno de los cuales aporta información crítica para garantizar la integridad y funcionalidad de la estructura.

En el nivel global, el análisis se centra en obtener resultados que incluyen las reacciones en los soportes y los desplazamientos generales de la estructura. Estos resultados son fundamentales para evaluar la estabilidad de la estructura en su conjunto, asegurando que se cumplan las condiciones de servicio bajo las solicitaciones aplicadas (Celigüeta, 2022).

El nivel seccional permite un examen más detallado, en el que se evalúan los esfuerzos internos, curvaturas y elongaciones de los distintos elementos estructurales. Esta información es crucial para determinar las capacidades de carga y las características de deformación de cada componente, lo que a su vez influye en el diseño y la seguridad de la estructura (Kassimali et al., 2015).

Finalmente, el análisis local es esencial para comprender el comportamiento en zonas críticas donde las hipótesis clásicas de resistencia de materiales pueden no ser aplicables. Estas áreas incluyen las proximidades a cargas concentradas, donde las fuerzas se distribuyen de manera no uniforme; los nudos y conexiones, donde se unen elementos de diferentes direcciones y propiedades; y los cambios bruscos de sección, que pueden inducir concentraciones de tensión (Solano Reyes, 2017).

Para llevar a cabo un análisis efectivo, es esencial emplear modelos y hipótesis que reflejen con precisión el comportamiento real de la estructura. Esto implica utilizar principios de análisis estático y dinámico para garantizar que no se superen los estados límites establecidos, lo que a su vez asegura la seguridad y durabilidad de la construcción.

El diseño estructural, en contraste, es un proceso complementario al análisis estructural, cuyo objetivo es optimizar la funcionalidad de una estructura garantizando su

seguridad y economía. Este proceso implica equilibrar las propiedades mecánicas de los materiales utilizados, sus características intrínsecas y los costos asociados a su implementación (Celigüeta, 2022). Un diseño adecuado no solo debe cumplir con los requisitos técnicos y de seguridad, sino que también debe integrar aspectos arquitectónicos para maximizar el rendimiento de la edificación.

En este contexto, el diseño se fundamenta en un conocimiento profundo de los materiales y en la aplicación de principios de ingeniería que aseguran que la estructura pueda resistir las solicitaciones a las que estará expuesta durante su vida útil. Esto incluye el cálculo de dimensiones, la selección de materiales adecuados y la consideración de factores de seguridad para enfrentar la incertidumbre inherente en cualquier proyecto de construcción (Reboredo, 2021).

### *3.1.1 Fundamentos del diseño estructural*

El análisis estructural es un pilar fundamental en la ingeniería civil, dedicado a entender y predecir el comportamiento de las estructuras frente a diversas condiciones de carga y solicitaciones. Este proceso no solo se centra en evaluar la resistencia y estabilidad de las estructuras, sino que también garantiza su funcionalidad a lo largo de su ciclo de vida. En este contexto, el diseño estructural busca optimizar la respuesta de las edificaciones, integrando aspectos técnicos y arquitectónicos. A continuación, en la **Tabla *1*** se presentan los Fundamentos del Análisis Estructural.

**Tabla 1**
*Fundamentos del Diseño estructural.*

| Fundamentos | Descripción |
|---|---|
| ***Proyecto de Estructura*** | El diseño estructural es parte esencial de la ingeniería civil, centrado en utilizar las propiedades mecánicas de los materiales para resistir fuerzas externas y asegurar la estabilidad de la estructura. |
| ***Objetivos del Diseño Estructural*** | Equilibrar las fuerzas aplicadas y resistir las solicitaciones sin colapso ni deformaciones excesivas, integrando aspectos arquitectónicos para optimizar el rendimiento de la edificación. |

| Fundamentos | Descripción |
|---|---|
| ***Elementos del Diseño Estructural*** | A. Estructuración: Propuesta preliminar de ubicación y dimensiones de los elementos estructurales.<br>B. Análisis: Uso de programas computacionales para determinar desplazamientos y esfuerzos.<br>C. Diseño: Proporcionar dimensiones y armados basados en el análisis.<br>D. Dibujo: Elaboración de planos estructurales.<br>E. Memoria de Cálculo: Documentación de cargas y diseño. |
| ***Métodos de Diseño Estructural*** | A. Diseño por Modelos: Para elementos estructurales complejos.<br>B. Métodos de Resistencia: Análisis elástico-lineal para determinar secciones según el grado de seguridad.<br>C. Métodos al Límite: Evaluación de resistencia al colapso mediante análisis plástico.<br>D. Métodos Probabilísticos: Consideración de la naturaleza aleatoria de solicitaciones y resistencias |
| ***Principios del Diseño Estructural*** | Seguridad, funcionalidad y economía. Se diseña para evitar fallos, que pueden ser de servicio (deformaciones excesivas) o por colapso (rotura o inestabilidad). |
| ***Formas de Falla*** | A. Por Sobrecarga: Resistencia insuficiente del material.<br>B. Por Deformación Excesiva: Rigidez insuficiente que provoca grandes deformaciones o vibraciones |
| ***Tipos de Esfuerzo*** | A. Esfuerzo Normal (Axial): Esfuerzos paralelos al eje del elemento (compresión o tracción).<br>B. Esfuerzo Tangencial (Cortante): Esfuerzos perpendiculares al eje, que desplazan partes del elemento. |
| ***Factores de Incertidumbre*** | Relacionados con el margen de error en el diseño. El factor de seguridad (FS) se utiliza para definir esfuerzos permisibles y cargas de trabajo, ajustando el diseño a la incertidumbre inherente. |
| ***Tipos de Análisis*** | Análisis de momentos y fuerzas inducidas por cargas. Se consideran:<br>A. Material Elástico-Lineal: Respuesta elástica de materiales.<br>B. Material Elástico-Plástico Perfecto: Respuesta a cargas extremas.<br>C. Material No Lineal: Comportamiento bajo condiciones complejas. |

*Nota*. Tomado de Kassimali et al., (2015) y Reboredo (2021).

## 3.2 Generalidades de las losas

Las losas son componentes esenciales en la construcción, proporcionando superficies planas y horizontales que sostienen cargas en edificios y otras estructuras. Estas placas se caracterizan por su forma amplia y su capacidad para distribuir cargas de manera eficiente. Su diseño y colocación son cruciales para garantizar la estabilidad y resistencia de la edificación (Solano Reyes, 2017).

Una losa actúa como un elemento estructural que puede estar apoyada en diferentes configuraciones, lo que influye en su comportamiento bajo carga. Este elemento puede ser parte de un sistema más amplio, donde su función principal es servir de soporte y transferencia de cargas a las vigas o columnas que las sostienen (Kassimali et al., 2015). La relación entre las dimensiones de la losa y su apoyo determina cómo se distribuyen las fuerzas que actúan sobre ella, lo que impacta directamente en su rendimiento.

El análisis y diseño de losas requieren una comprensión detallada de sus características físicas y mecánicas. Esto incluye la consideración del material con el que están construidas, que puede ser concreto, acero o una combinación de ambos, así como la forma y el tamaño que deben adoptar para cumplir con los requerimientos estructurales (Monsalve et al., 2020). Además, el proceso de diseño implica evaluar las cargas que la losa debe soportar, incluyendo cargas muertas (como el peso propio de la losa) y cargas vivas (como personas, muebles y equipos) (Schinca et al., 2007).

En la práctica, las losas no solo sirven como elementos estructurales, sino que también influyen en aspectos estéticos y funcionales de los espacios interiores. Su disposición y acabado pueden afectar la iluminación, la acústica y el confort térmico de un ambiente, convirtiéndolas en elementos clave en el diseño arquitectónico (Kassimali et al., 2015). Por lo tanto, su correcta conceptualización y ejecución son fundamentales para el éxito de cualquier proyecto de construcción.

### *3.2.1 Tipos de losas*

La elección del tipo de losa en la construcción es fundamental para garantizar la estabilidad, resistencia y funcionalidad de las estructuras. Las losas se clasifican en diversas

categorías según diferentes criterios, como su forma, función y modo de carga. Esta clasificación permite a los ingenieros y arquitectos seleccionar la opción más adecuada para cada proyecto, optimizando tanto los costos como el rendimiento estructural. A continuación, en la **Tabla *2*** se detalla los diferentes tipos de losas y sus características relevantes.

**Tabla 2**
*Tipos de losas.*

| Criterio | Tipo de Losa | Descripción | Características | Aplicaciones | Desventajas |
|---|---|---|---|---|---|
| **Por su Forma** | Losa Maciza | Losa sólida y continua de concreto. | Alta resistencia y rigidez; se usa para soportar cargas pesadas. | Edificios, pavimentos, estructuras de gran envergadura. | Alto peso propio y costo de materiales; requiere encofrado y mano de obra intensiva; baja eficiencia térmica y acústica. |
| | Losa Aligerada | Utiliza elementos como bovedillas para reducir peso. | Menor peso y consumo de material; optimiza la carga. | Entrepisos, azoteas donde se busca minimizar la carga estructural. | Menor resistencia a cargas puntuales; limitaciones en claros grandes; riesgo de fisuras y defectos por mala ejecución. |
| | Losa Prefabricada | Elementos de concreto fabricados en fábrica y ensamblados en el sitio. | Alta calidad, rapidez de montaje, y menos mano de obra. | Construcción rápida de edificios, naves industriales. | Costo de transporte y montaje; limitaciones de diseño; posibles problemas en juntas y tolerancias. |
| **Por su Función** | Losa de Cimentación | Base que distribuye las cargas de la estructura al suelo. | Gruesa y reforzada, diseñada para cargas pesadas. | Fundaciones, sótanos, estructuras en suelos blandos. | Elevado costo y complejidad constructiva; difícil acceso para reparaciones; susceptible a fisuras por retracción. |
| | Losa de Aislamiento | Diseñada para proporcionar aislamiento | Utiliza materiales especiales para reducir la | Techos y azoteas en climas extremos. | Menor resistencia estructural; costo adicional por materiales aislantes; |

| Criterio | Tipo de Losa | Descripción | Características | Aplicaciones | Desventajas |
|---|---|---|---|---|---|
| | | térmico o acústico. | transferencia térmica. | | mantenimiento especializado. |
| **Por su Modo de Carga** | Losa Unidireccional | Soporta cargas en una sola dirección, apoyada en dos lados. | Menor cantidad de refuerzo, uso de viguetas. | Entrepisos donde las cargas son mayores en una dirección. | Ineficiente ante cargas bidireccionales; mayor deflexión; depende de vigas intermedias. |
| | Losa Bidireccional | Distribuye cargas en dos direcciones, apoyada en todos sus bordes. | Mayor capacidad de carga, refuerzo en ambas direcciones. | Edificios comerciales y estructuras con carga distribuida. | Diseño y armado más complejos; mayor consumo de acero; riesgo de punzonamiento en apoyos. |

*Nota.* Tomado de Gómez y Centeno (2019); Park y Gamble (1999); Schinca et al., (2007); Vera y Benítez (2024).

### *3.2.2 Losas según su modo de carga*

- **Losas Unidireccionales**

Las losas unidireccionales son aquellas en las que la relación entre la luz larga (L) y la luz corta (S) es mayor que 2 (L/S>2). En este caso, el armado de la losa se realiza predominantemente en una sola dirección, ya que la mayor parte de la carga se transfiere en la dirección corta (Casco Guardado y Majano Sandoval, 2019).

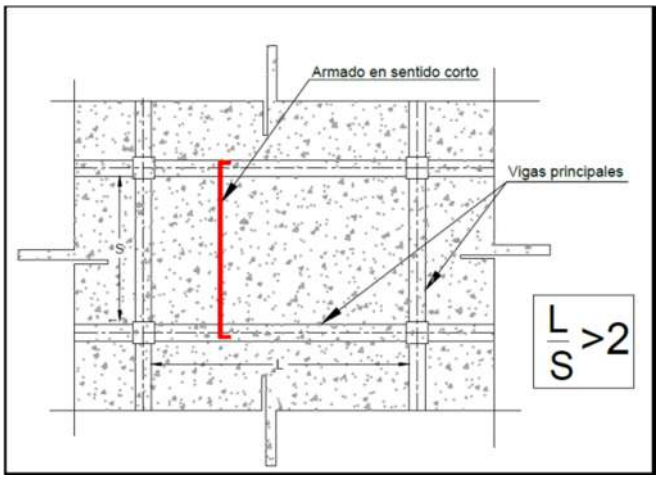



**Figura 1**.*Losa Unidireccional.*

*Nota.* Tomado de Casco Guardado y Majano Sandoval (2019).

El momento flector máximo se puede calcular usando la fórmula:

$$M_{max} = \frac{wL^2}{8} \tag{1}$$

donde $w$ es la carga uniforme distribuida y L es la luz de la losa. La deflexión máxima, que es crucial para evaluar el comportamiento estructural, se puede estimar con la siguiente ecuación:

$$d_{max} = \frac{5}{384} \times \frac{wL^4}{E_c I_c} \tag{2}$$

Donde $E_c$ es el módulo de elasticidad del concreto (kN/m²) y $I_c$ es el momento de inercia de la sección transversal (m⁴). Para losas unidireccionales, el refuerzo se coloca principalmente en la dirección de la carga, mientras que se requiere un refuerzo mínimo en la dirección ortogonal para gestionar los momentos negativos que se producen cerca de los apoyos. Esto se traduce en una configuración de armado que sigue las recomendaciones de las normas de diseño, como el ACI 318, que especifica una cuantía mínima de refuerzo en ambas direcciones (Astudillo y Bacuilima, 2015; Hoffman et al., 1998).

En términos de diseño práctico, las losas unidireccionales son preferidas en edificaciones donde las luces no superan los 5 metros. La simplicidad en el cálculo y la facilidad de ejecución, junto con un costo relativamente bajo, hacen que este tipo de losa sea común en construcciones residenciales y comerciales. El uso de elementos de aligeramiento también puede ser considerado para reducir el peso propio de la losa y mejorar su comportamiento estructural.

- **Losas Bidireccionales**

Las losas unidireccionales son aquellas en las que la relación entre la luz larga (L) y la luz corta (S) es menor o igual que 2 ($L/S \leq 2$). En este caso, la carga se distribuye y transfiere en ambas direcciones. Este tipo de losa es especialmente útil en edificaciones donde la relación de dimensiones es más equilibrada, permitiendo que el material se utilice de manera más eficiente (Casco Guardado y Majano Sandoval, 2019).

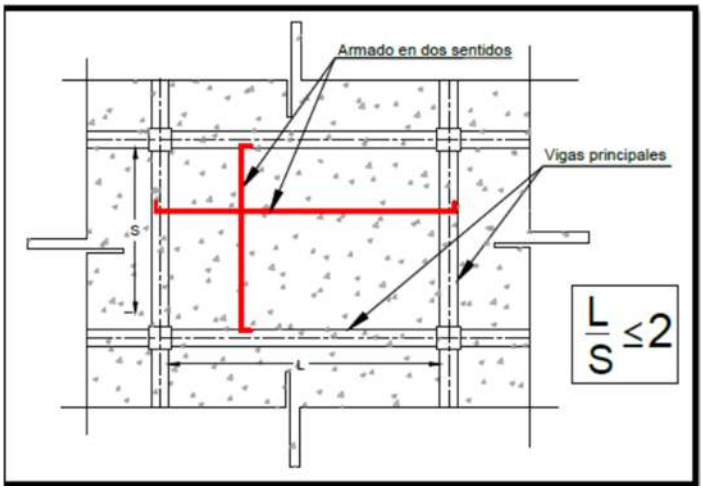



**Figura 2**.*Losa Bidireccional.*

*Nota*. Tomado de Casco Guardado y Majano Sandoval (2019).

La teoría de la flexión de placas se aplica a estas losas, y su comportamiento se describe mediante la Ecuación de Lagrange:

$$\frac{\partial^2 w}{\partial x^2} + \frac{\partial^2 w}{\partial y^2} = -\frac{q(x,y)}{D} \tag{3}$$

donde $w$ es el desplazamiento vertical, q(x,y) es la carga aplicada sobre la superficie y $D$ es la rigidez de la placa, definida como:

$$D = \frac{E_c h^3}{12(1 - v^2)} \tag{4}$$

con $h$ como el espesor de la losa y ν como el coeficiente de Poisson del material. Este modelo permite comprender cómo las deformaciones en una dirección influyen en la otra, un fenómeno que debe ser considerado en el diseño.

Las deflexiones en losas bidireccionales son reguladas por normativas que establecen límites máximos dependiendo del uso de la losa, normalmente expresados como Ln/ 180 a Ln/480 (Celigüeta, 2022). El diseño de estas losas requiere un refuerzo adecuado en ambas direcciones, y se pueden emplear métodos de cálculo más avanzados, como el Método de Elementos Finitos (FEM) para analizar geometrías complejas y condiciones de carga (Eldib et al., 2009).

La cuantía de refuerzo se calcula de acuerdo con las condiciones de apoyo y las cargas aplicadas, y ACI 318 proporciona tablas y ecuaciones para determinar la altura mínima de la losa y el armado necesario. Por ejemplo, se establece que la altura mínima $h$ debe ser:

$$h \geq \frac{L_n}{36} \ (ver\ tabla\ 5) \tag{5}$$

donde $L_n$ es la luz en metros. Esta consideración asegura que la losa tenga suficiente capacidad para resistir deflexiones y momentos flectores, lo que es esencial para la seguridad y funcionalidad de la estructura. Las losas bidireccionales son ideales para aplicaciones en edificios comerciales y residenciales, proporcionando una solución eficiente en términos de materiales y desempeño estructural (Chang y Hwang, 1996).

### 3.3 Métodos de diseños de losas

El diseño de losas unidireccionales es esencial en la ingeniería civil, ya que se enfoca en estructuras donde las cargas se aplican predominantemente en una sola dirección. Estos métodos están diseñados para optimizar la resistencia y la rigidez de las losas, asegurando que puedan soportar las cargas aplicadas y distribuirlas eficientemente a los apoyos. En esta sección, se presentan diversos enfoques de diseño, que varían desde métodos simplificados hasta otros basados en la teoría de la elasticidad. Cada método ofrece ventajas y limitaciones específicas, permitiendo a los ingenieros seleccionar la opción más adecuada según las características del proyecto y las condiciones de carga. A continuación, en la **Tabla *3*** se detallan los métodos más comunes utilizados en el diseño de losas unidireccionales, junto con sus respectivas descripciones y aplicaciones.

**Tabla 3**
*Métodos de diseño de losas Unidireccionales.*

| Método de Diseño | Descripción General | Ventajas y Limitaciones | Aplicabilidad |
|---|---|---|---|
| Método de Tiras | Divide la losa en tiras paralelas en una dirección principal para distribuir la carga hacia los apoyos, con un análisis de esfuerzos predominantemente unidireccional. | Simple y rápido para estructuras con una dirección de carga predominante.<br>Limitado a diseños unidireccionales. | Losas unidireccionales simples (pisos comerciales). |
| Método de Clark-Main | Método basado en la elasticidad para losas unidireccionales, que permite obtener los momentos máximos en la dirección de la luz mayor de la losa. | Eficiente para estructuras unidireccionales.<br>Puede no ser aplicable en condiciones de carga complejas. | Estructuras unidireccionales con luz mayor definida. |
| Método del Momento Máximo Positivo y Negativo (ACI) | Utiliza los momentos máximos positivos y negativos tabulados para calcular la armadura necesaria en losas apoyadas en dos bordes opuestos. | Sencillo y basado en tablas para un diseño rápido.<br>Limitado a condiciones | Losas apoyadas en bordes opuestos (edificios y estructuras ligeras). |

| Método de Diseño | Descripción General | Ventajas y Limitaciones | Aplicabilidad |
|---|---|---|---|
| | | específicas de apoyo y carga. | |
| Método de Coeficientes Simplificados | Simplifica el cálculo de momentos utilizando tablas que permiten obtener momentos de diseño en función de las dimensiones y cargas. | Rápido y fácil de usar para diseños simples.<br>No es adecuado para geometrías complejas. | Estructuras simples y estándares (edificios de varias plantas). |

*Nota.* Tomado de Clarke y Cope (1984), Garber (2006), Cheung y Tham (2020).

En el ámbito de la ingeniería estructural, el diseño de losas bidireccionales es crucial para garantizar la estabilidad y el rendimiento de estructuras que soportan cargas en múltiples direcciones. Estos métodos consideran la interacción entre las diferentes direcciones de carga, permitiendo un análisis más complejo y preciso de los momentos y fuerzas involucrados. A través de diversos enfoques, desde métodos prescriptivos hasta técnicas avanzadas como el método de elementos finitos, se busca optimizar el diseño y la utilización de materiales. La **Tabla *4*** aborda los principales métodos de diseño de losas bidireccionales, resaltando sus características, ventajas, limitaciones y aplicaciones típicas en proyectos de construcción. La elección del método adecuado dependerá de las condiciones específicas de cada estructura y los requisitos de diseño.

**Tabla 4**
*Métodos de diseño de losas Bidireccionales.*

| Método de Diseño | Descripción General | Ventajas y Limitaciones | Aplicación común |
|---|---|---|---|
| *Método de Diseño Directo (ACI 318)* | Método prescriptivo para losas bidireccionales continuas con coeficientes predefinidos que distribuyen momentos flexionantes. | Sencillo de aplicar, basado en tablas de coeficientes del ACI 318.<br>Limitado a losas con un mínimo de tres vanos continuos y relaciones de luces específicas. | Estructuras regulares con múltiples vanos y apoyos continuos (edificios residenciales, oficinas). |

| Método de Diseño | Descripción General | Ventajas y Limitaciones | Aplicación común |
|---|---|---|---|
| Método del Coeficiente (ACI) | Utiliza coeficientes tabulados para calcular momentos en las direcciones principales, simplificando el diseño sin necesidad de un análisis detallado de esfuerzos. | Método simplificado para diseño eficiente.<br>Puede ser menos preciso en casos complejos. | Estructuras regulares con vanos continuos |
| Método Crítico de Franjas (Hilleborg) | Método plástico que divide la losa en franjas paralelas en ambas direcciones para calcular resistencias últimas y distribuciones de cargas. | Permite un análisis realista de la redistribución de momentos.<br>Requiere experiencia en diseño plástico. | Estructuras donde se busca optimizar la redistribución de cargas. |
| Método de Elementos Finitos (MEF) | Divide la losa en pequeños elementos para un análisis de tensiones y deformaciones bajo cargas. Utilizado con software especializado. | Alta precisión y flexibilidad para geometrías y cargas complejas.<br>Requiere software avanzado y experiencia técnica; alto coste computacional. | Grandes estructuras, losas con geometría irregular o cargas complejas (puentes, infraestructuras pesadas). |
| Método de la Banda Ancha | Divide la losa en bandas anchas que llevan carga en ambas direcciones, ideal para losas con apoyos irregulares o no simétricos. | Versatilidad en la distribución de cargas.<br>Puede complicar el diseño en geometrías muy irregulares. | Estructuras con apoyos no simétricos. |
| Método de Diseño Elástico | Basado en la teoría de la elasticidad, asume que las deformaciones son pequeñas y proporcionales a las cargas. | Adecuado para diseños preliminares y proyectos simples.<br>No considera el comportamiento plástico de los materiales; no se recomienda para estructuras sometidas a cargas elevadas. | Losas ligeras y estructuras no sometidas a grandes esfuerzos (edificios pequeños, estructuras temporales). |
| Método Plástico | Considera el comportamiento post-elástico del material, permitiendo la | Optimiza el uso de materiales, soporta | Grandes estructuras o proyectos donde se busca optimizar el material y reducir |

| Método de Diseño | Descripción General | Ventajas y Limitaciones | Aplicación común |
|---|---|---|---|
| | redistribución de momentos hasta el límite plástico. | mayores cargas antes de fallar.<br>Cálculos más complejos, requiere experiencia avanzada. | costos (industria pesada, rascacielos). |

*Nota.* Tomado de Rombach (2011); Hassoun y Al-Manaseer (2020) y Garber (2006).

### 3.4 Normativa ACI 318

La normativa ACI 318, desarrollada por el American Concrete Institute (ACI), es una referencia fundamental para el diseño y la construcción de estructuras de concreto en diversas aplicaciones. Su objetivo principal es garantizar la seguridad, durabilidad y funcionalidad de las edificaciones, ofreciendo directrices técnicas claras que ingenieros y arquitectos deben seguir a lo largo del proceso de diseño (Akopova, 2016). Esta normativa se aplica a una amplia gama de estructuras, incluyendo edificaciones residenciales, comerciales e infraestructuras críticas, asegurando que cada proyecto cumpla con los estándares necesarios.

En términos de aspectos técnicos, ACI 318 abarca una serie de especificaciones que son esenciales para un diseño efectivo. Entre ellas se incluyen directrices sobre el cálculo de cargas de diseño, resistencia del concreto y comportamiento del acero de refuerzo. La normativa proporciona pautas detalladas sobre cómo calcular cargas muertas y vivas, así como las fuerzas sísmicas y de viento, permitiendo a los diseñadores optimizar el uso de materiales y garantizar la integridad estructural (American Concrete Institute, 2019). Este enfoque sistemático no solo mejora la seguridad, sino que también facilita el proceso de diseño al ofrecer un marco estructurado para los cálculos necesarios.

Con el paso de los años, el código ACI 318 ha experimentado diversas actualizaciones que reflejan los avances en la comprensión del comportamiento estructural del concreto. En la **Tabla *5*** se presenta una comparación técnica resumida entre las ediciones ACI 318-14 y ACI 318-19, con el propósito de mostrar la evolución de los principales criterios aplicables al diseño de losas bidireccionales, control de deflexión y refuerzo estructural.

**Tabla 5**
*Comparativa ACI 318-14 vs ACI 318-19*

| Criterio | ACI 318-14 | ACI 318-19 | Cambios relevantes |
|---|---|---|---|
| Capítulos aplicables | Cap. 8 (One-way slabs), Cap. 13 (Two-way slabs), Cap. 9 (Serviceability). | Cap. 8 (Two-way slabs), Cap. 9 (One-way slabs), Cap. 24 (Deflection control). | En ACI 318-19 se reorganizan secciones; los temas de servicio y deflexión se agrupan en Cap. 24. |
| Espesor mínimo (hmin) – losas unidireccionales | §9.5.2.1<br>• Simplemente apoyada: $h \geq L_n/20$<br>• Un extremo empotrado: $h \geq L_n/24$<br>• Ambos empotrados: $h \geq L_n/28$ | §9.3.1.1<br>• Simplemente apoyada: $h \geq L_n/20$<br>• Un extremo empotrado: $h \geq L_n/24$<br>• Ambos empotrados: $h \geq L_n/28$ | Misma fórmula, pero nueva numeración y definición más clara de "span length" $L_n$(distancia entre caras de apoyo). |
| Espesor mínimo (hmin) – losas bidireccionales (sin vigas) | §13.6.1: $h \geq L_n/36$(sin vigas) o $L_n/33$(con vigas perimetrales). | §8.3.1.2: mantiene $L_n/36$y $L_n/33$, pero agrega nota para análisis de deflexión detallado según §24.2.2. | Se permite usar menor espesor si se comprueba cumplimiento de deflexión por análisis. |
| Refuerzo mínimo (As,min) | §7.6.1.1: $A_{s,min} = 0.0018bh$(fy = 420 MPa). | §7.6.1.1: $A_{s,min} = 0.0018bh$(fy = 420 MPa) o ajustado por $(fy/420)$para aceros >420 MPa. | Se extiende el uso de aceros de alta resistencia (Grado 100) y se ajusta As,min proporcionalmente. |
| Control de deflexión (límites de servicio) | §9.5.2.2 y Tabla 9.5(b):<br>• L/240 (sin acabados frágiles)<br>• L/480 (con acabados frágiles) | §24.2.2 y Tabla 24.2.2: Se mantienen límites, pero se amplía el control por análisis directo de deflexiones (instantáneas y diferidas). | ACI 318-19 separa claramente deflexión inmediata y diferida y permite modelos más precisos. |
| Cálculo de deflexiones (Δ) | Método simplificado con factores de rigidez efectiva. | Cap. 24.2.4 y 24.2.5: rigidez efectiva $I_e$actualizada y factor β_d para fluencia y retracción. | Se introducen fórmulas actualizadas de Branson modificada y parámetros de fluencia. |
| Punzonamiento (two-way shear) | §13.6.3 y §11.11: $V_c = 4\sqrt{f_c'}b_0d.$ | §8.4 y §22.6.5: adopta modelo más general basado en falla por cortante biaxial, con límites revisados. | Se ajusta el perímetro crítico y se permite considerar refuerzo a corte por punzonamiento. |
| Refuerzo por punzonamiento (shear reinforcement) | Uso limitado y formulación empírica. | Se detallan tipos aceptados: pernos, estribos dobles o sistemas prefabricados (stud rails). | Se alinean con ACI 421.1R, aumentando precisión en diseño de losas planas. |

| Criterio | ACI 318-14 | ACI 318-19 | Cambios relevantes |
|---|---|---|---|
| Verificación de deflexión por análisis | Opción, pero sin metodología específica. | §24.2.4.1: permite usar métodos de análisis no lineal o software siempre que cumplan con límites de servicio. | Se moderniza para análisis computacional (BIM o FEM). |
| Criterios de durabilidad (fisuración y recubrimiento) | Cap. 4 y Cap. 7: según exposición. | Cap. 19: actualizados valores de relación agua/cemento y recubrimiento para losas expuestas a cloruros. | Mayor exigencia en losas de estacionamientos, cubiertas y marinas. |

Los cambios identificados en la edición ACI 318-19 se orientan a la simplificación de las combinaciones de carga y la ampliación de criterios de durabilidad, lo que evidencia una transición hacia modelos más analíticos y sostenibles del diseño estructural (Basantes Cueva, 2022; Ramírez-Sepúlveda et al., 2022). También se refuerza el control de calidad y la documentación en obra, mediante lineamientos más precisos para la inspección de materiales y la verificación del proceso constructivo (Akopova, 2016).

En contraste, la edición ACI 318-14 representa una etapa de consolidación normativa previa, en la cual se estructuraron de manera más clara los procedimientos prescriptivos para losas bidireccionales, incluyendo los métodos de Diseño Directo (Direct Design Method) y Marco Equivalente (Equivalent Frame Method) (American Concrete Institute, 2014). Esta versión fortaleció los criterios relacionados con espesores mínimos, cuantías de refuerzo y limitaciones de servicio, manteniendo un enfoque predominantemente empírico y basado en la experiencia acumulada del diseño convencional. Además, ACI 318-14 sirvió como base para la reorganización posterior del código, ya que introdujo una estructura más coherente en la disposición de capítulos y numerales, facilitando su comprensión y aplicación práctica en el diseño de elementos de concreto armado (Ghosh, 2016).

## 3.5 Método de Hillerborg

El método de franjas, introducido por Hillerborg y posteriormente desarrollado por Wood y Armer, se basa en la premisa de que las losas de concreto reforzado exhiben un comportamiento plástico. Su propósito es determinar un conjunto de momentos que se

mantengan en equilibrio con las cargas aplicadas a la estructura, sin exceder la capacidad de momento plástico de la losa en ningún punto (Hillerborg, Strip method of design , 1974).

Sin embargo, el método de Hillerborg tiene ciertas limitaciones. En particular, no cumple con la compatibilidad de deflexión, lo que implica que, aunque los momentos permanezcan dentro de límites seguros, no se verifica que las deformaciones de la losa sean compatibles (Ihtesham et al., 2021). Adicionalmente, el Método de Hillerborg no incorpora los efectos sísmicos en su formulación; hasta el momento, su desarrollo se circunscribe únicamente al análisis bajo cargas estáticas. A pesar de estas limitaciones, el teorema de límite inferior asegura que el factor de carga de colapso correspondiente a cualquier conjunto de momentos estáticamente admisibles será menor o igual al verdadero factor de carga de colapso.

La condición que debe satisfacerse para que un elemento esté en equilibrio vertical se expresa mediante la siguiente ecuación:

$$\frac{\partial^2 m_x}{\partial x^2} + \frac{\partial^2 m_y}{\partial y^2} - 2\frac{\partial^2 m_{xy}}{\partial x \partial y} = w \tag{6}$$

Aquí, $m_x$ y $m_y$ representan los momentos por unidad de longitud en las direcciones x e y, respectivamente, mientras que $m_{xy}$ es el momento torsional por unidad de longitud. Hillerborg propuso ignorar el término torsional y seleccionar, $m_x$ y $m_y$ en consecuencia (Ihtesham et al., 2021). Al establecer el término torsional en cero, la ecuación se simplifica a:

$$\frac{\partial^2 m_x}{\partial x^2} + \frac{\partial^2 m_y}{\partial y^2} = w \tag{7}$$

Esta ecuación puede reescribirse en función de un factor a, que refleja el grado de distribución de carga entre las dos direcciones ortogonales:

$$\frac{\partial^2 m_x}{\partial x^2} = aw \;\; y \;\; \frac{\partial^2 m_y}{\partial y^2} = (1-a)\, w \tag{8}$$

El valor de a no está limitado a estar entre 0 y 1, aunque en la práctica, los valores de a para cada sección de la losa suelen establecerse en 0, 0.5 o 1, dependiendo de las condiciones de carga y soporte.

El método de Hillerborg distribuye la carga entre áreas desarrolladas en la losa, mediante dos losas unidimensionales hipotéticas que se extienden en las direcciones de refuerzo, típicamente ortogonales. Una vez que se asigna la carga entre estas losas, cada una se divide en franjas, que se analizan como vigas independientes (Hillerborg, 2012). La franja con el menor factor de carga de colapso determina la carga total de colapso. Por ejemplo, en un escenario simétrico, se podría distribuir la carga equitativamente entre las dos direcciones ortogonales de la losa, resultando en $a = 1/2$ (Ubah, 2023).

Un aspecto crucial del método de franjas de Hillerborg es la transferencia de carga al borde de soporte más cercano mediante flexión en el plano perpendicular, lo cual es fundamental para entender la distribución de momentos y fuerzas en la losa, asegurando así la seguridad del diseño (Ihtesham et al., 2021). A pesar de sus limitaciones, como la falta de compatibilidad de deflexión y la no consideración de acciones sísmicas, su enfoque simplificado y su capacidad para proporcionar un límite inferior en las cargas de colapso lo convierten en una herramienta valiosa para ingenieros estructurales, facilitando diseños más económicos y seguros en diversas configuraciones de carga y condiciones de soporte.

# CÁPITULO IV: MARCO METODOLÓGICO

## 4.1 Tipo de investigación

La presente investigación se clasifica como un estudio comparativo, analítico y exploratorio, con un enfoque cuantitativo. Se centra en evaluar la eficacia de los métodos de diseño de losas bidireccionales especificados en el ACI 318, el Método de Hillerborg y el análisis mediante Elementos Finitos. A través de la recopilación de datos técnicos y su análisis comparativo, se busca establecer diferencias significativas en términos de distribución de esfuerzos, seguridad estructural, eficiencia en el uso de materiales y desempeño frente a las condiciones de diseño. La incorporación del análisis por Elementos Finitos permite ofrecer un punto de referencia robusto para validar y contrastar los resultados obtenidos por los métodos tradicionales, enriqueciendo la comprensión de las ventajas y limitaciones de cada enfoque y generando conclusiones prácticas aplicables al diseño estructural en ingeniería civil.

Cabe señalar que el estudio se limita al análisis de cargas gravitacionales (muertas y vivas), sin considerar los efectos sísmicos, por lo que los resultados se interpretan dentro de un contexto estático.

## 4.2 Enfoque de la investigación

Para abordar los objetivos se abordará un enfoque predominantemente cuantitativo, orientado al análisis comparativo y analítico de los métodos de diseño de losas bidireccionales especificados en el ACI 318, el Método de Hillerborg y el análisis mediante Elementos Finitos, para evaluar la capacidad de carga y el comportamiento de las losas bidireccionales bajo diferentes condiciones de carga. Se generarán gráficos, tablas y modelos tridimensionales que faciliten la visualización de los resultados y la comparación entre los métodos. Aunque el énfasis estará en el análisis cuantitativo, también se considerarán aspectos cualitativos al interpretar las implicaciones prácticas y las limitaciones de cada método en aplicaciones reales de diseño estructural, logrando así una perspectiva integral y robusta.

## 4.3 Etapas de la investigación

La investigación se estructurará en tres fases clave, cada una centrada en aspectos fundamentales del análisis comparativo entre el Método de Hillerborg, el ACI 318 y Elementos Finitos en el diseño de losas bidireccionales. A lo largo del proceso, se realizará una revisión normativa y técnica de los métodos seleccionados, se aplicarán a ejemplos representativos y se compararán los resultados obtenidos con el fin de identificar patrones, ventajas y limitaciones de cada enfoque. Esto permitirá una evaluación detallada y fundamentada de su eficacia y aplicabilidad en el contexto del diseño de losas bidireccionales.

***Fase 1: Análisis Normativo e identificación de tres casos representativos para el análisis de losas bidireccionales mediante los Métodos ACI 318, Elementos Finitos y Hillerborg.***

- Realizar una revisión técnica de las normativas aplicables a ACI 318-14 (Direct Design Method y Equivalent Frame Method), Método de Hillerborg y análisis mediante Elementos Finitos, enfocándose en las especificaciones relacionadas con losas bidireccionales.
- Identificar tres casos representativos de losas bidireccionales con configuraciones geométricas y condiciones de carga realistas, basados en ejemplos prácticos previamente documentados, para asegurar escenarios diversos y relevantes que faciliten la comparación de los métodos.

***Fase 2: Definición de parámetros y Aplicación de métodos de diseño a ejemplos representativos en Losas Bidireccionales***

- Definir y establecer los parámetros de diseño estructural relevantes para las losas bidireccionales, tales como dimensiones, tipos de materiales, la resistencia del concreto (f'c), la resistencia del acero (Fy), el espesor mínimo, las cargas vivas y las cargas muertas adicionales (super dead), asegurando su uniformidad para facilitar la comparación entre métodos.

- Aplicar los métodos ACI 318-14 (Direct Design Method y Equivalent Frame Method), Método de Hillerborg y análisis mediante Elementos Finitos (FEM) a los tres ejemplos seleccionados, utilizando los parámetros previamente establecidos. Además, se realizarán diagramas del comportamiento estructural de tensiones, deformaciones y momentos flectores en las losas.

Cabe destacar que se empleó la versión ACI 318-14 como referencia normativa para los ejemplos de aplicación, dado que los casos base analizados y el software especializado SPSlab v5.5 están estructurados conforme a dicha edición del código.

***Fase 3: Comparación y análisis de los resultados obtenidos de los diferentes métodos de diseño.***

- Evaluar y comparar los datos extraídos en la fase anterior (momentos negativos y positivos, centros de franja, valores de acero de refuerzo) en función de criterios clave como distribución de esfuerzos, deformaciones, eficiencia en el uso de materiales (espesor y refuerzo) y cumplimiento normativo en cada ejemplo.
- Identificar patrones y diferencias relevantes entre los métodos en términos de precisión, robustez y aplicabilidad práctica, destacando las ventajas y limitaciones de cada enfoque, para proporcionar una perspectiva integral sobre su desempeño en el diseño de losas bidireccionales.

## 4.4 Plan De Análisis De Los Resultados

El plan de análisis de los resultados se llevará a cabo siguiendo tres fases fundamentales, en las que se evaluarán y compararán los resultados obtenidos de los tres métodos de diseño: ACI 318-14 (Direct Design Method y Equivalent Frame Method), Método de Hillerborg y análisis mediante Elementos Finitos (FEM). En la fase inicial, se realizará un análisis normativo y se establecerán los parámetros técnicos para las losas bidireccionales, lo cual incluirá la revisión de las normativas aplicables y la definición de criterios como dimensiones, tipos de materiales, resistencia del concreto (f’c), resistencia del acero (Fy), espesor mínimo, cargas vivas y cargas muertas adicionales, asegurando que estos parámetros sean uniformes para facilitar la comparación entre los métodos.

En la segunda fase, se aplicarán los métodos de diseño a tres ejemplos representativos de losas bidireccionales, utilizando las configuraciones geométricas y condiciones de carga definidas en la fase anterior. Se documentarán los resultados de los diagramas estructurales de tensiones, deformaciones y momentos flectores. Finalmente, en la fase de comparación y análisis, se evaluarán los datos extraídos en función de criterios clave como la distribución de esfuerzos, las deformaciones, la eficiencia en el uso de materiales y el cumplimiento normativo, y se identificarán patrones y diferencias entre los métodos en términos de precisión, robustez y aplicabilidad práctica, destacando las ventajas y limitaciones de cada uno. Este enfoque permitirá una evaluación exhaustiva y comparativa de los métodos de diseño para el análisis de losas bidireccionales.

# CAPÍTULO V: DESARROLLO DE RESULTADOS

## 5.1 Fase 1: Análisis Normativo e identificación de tres casos representativos para el análisis de losas bidireccionales.

El presente apartado se enfoca en revisar las normativas aplicables y seleccionar tres casos representativos de losas bidireccionales para evaluar diferentes métodos de diseño. Estos casos, con diversas geometrías y condiciones de carga, permiten un análisis comparativo entre los métodos ACI 318-14, Hillerborg y Elementos Finitos.

### *5.1.1 Revisión técnica de las normativas aplicables a losas bidireccionales.*

El análisis técnico de las normativas aplicables es fundamental para establecer un marco coherente en el diseño de losas bidireccionales, permitiendo una evaluación adecuada y comparativa entre diferentes métodos de diseño. En este contexto, la **Tabla *6*** presenta las especificaciones técnicas correspondientes a tres enfoques populares para el diseño de losas bidireccionales: el método ACI 318-14, el Método de Hillerborg y el análisis mediante Elementos Finitos.

Cada uno de estos métodos tiene fundamentos teóricos y procedimientos de diseño distintos, adaptados a diferentes geometrías, condiciones de carga y requisitos estructurales. A través de esta tabla, se ilustran las principales características de cada enfoque, incluyendo la aplicabilidad, los procedimientos de diseño, el análisis de cargas, la distribución del refuerzo, el control de deformaciones y fisuración, así como el cumplimiento normativo

**Tabla 6**

*Especificaciones Técnicas para el Diseño de Losas Bidireccionales según ACI 318S-14, Método de Hillerborg y Elementos Finitos.*

| Especificación | ACI 318-14 | Método de Hillerborg | Elementos Finitos |
|---|---|---|---|
| **Fundamento teórico** | Basado en principios de diseño por resistencia, considerando factores de carga y resistencia para garantizar la seguridad estructural. | Se basa en la teoría del diseño plástico, permitiendo redistribuciones de momentos y aprovechando la capacidad plástica del material para optimizar el diseño. | Utiliza la discretización de la estructura en elementos finitos para analizar su comportamiento bajo cargas, proporcionando una solución numérica aproximada de las ecuaciones de equilibrio, compatibilidad y constitutivas del material. |
| **Aplicabilidad** | Aplicable a losas macizas y aligeradas en dos direcciones, con relaciones de claro largo a claro corto menores o iguales a 2, y condiciones de apoyo en los cuatro bordes. | Adecuado para losas continuas y sistemas de losas con múltiples vanos, permitiendo una distribución más uniforme de momentos y esfuerzos. | Aplicable a cualquier geometría y condición de carga, incluyendo losas con formas irregulares, diferentes condiciones de apoyo y cargas complejas. |
| **Procedimiento de Diseño** | Incluye métodos como el Método de Diseño Directo y el Método del Pórtico Equivalente para distribuir momentos negativos y positivos, con especificaciones detalladas en cuanto a la distribución de cargas y momentos en las franjas de columna y de medio vano. | Consiste en encontrar una distribución de momentos que satisfaga las ecuaciones de equilibrio y las condiciones de borde, asegurando que la losa pueda soportar dichos momentos, considerando la capacidad plástica del material. | Implica la creación de un modelo discreto de la losa, asignando propiedades de material y condiciones de contorno, y aplicando las cargas para obtener resultados como distribuciones de esfuerzos, deformaciones y reacciones en los apoyos. |
| **Análisis de cargas** | Especifica factores de mayoración para cargas muertas y vivas, y proporciona directrices para la consideración de cargas adicionales como las cargas muertas superpuestas (super dead). | Permite la consideración de cargas de servicio y de diseño, enfocándose en la capacidad última de la losa y permitiendo ciertas redistribuciones de momentos bajo cargas extremas. | Permite la aplicación de cualquier tipo de carga, incluyendo cargas estáticas, dinámicas, térmicas, entre otras, y puede considerar la secuencia de aplicación de las cargas para evaluar su efecto en la respuesta estructural. |

| Especificación | ACI 318-14 | Método de Hillerborg | Elementos Finitos |
|---|---|---|---|
| **Distribución de refuerzo** | Proporciona fórmulas y tablas para calcular la cantidad y distribución del refuerzo en las direcciones principal y secundaria, considerando factores como la resistencia del concreto (f'c), la resistencia del acero (Fy) y el espesor de la losa. | El diseño se orienta a asegurar que la losa tenga la capacidad plástica necesaria para soportar las cargas aplicadas, determinando el refuerzo en función de los momentos plásticos calculados. | El análisis proporciona distribuciones de esfuerzos que permiten determinar las zonas de mayor demanda de refuerzo, facilitando un diseño optimizado y adaptado a las condiciones específicas de carga y geometría. |
| **Control de deformaciones y fisuración** | Establece límites para las deflexiones permisibles en las losas, asegurando el confort y la funcionalidad de la estructura, y proporciona criterios para el control de fisuración bajo cargas de servicio. | Considera la ductilidad de la losa y su capacidad para redistribuir esfuerzos, permitiendo ciertas deformaciones plásticas siempre que no comprometan la integridad estructural. | Permite evaluar las deformaciones bajo diferentes estados de carga, incluyendo efectos a largo plazo como la fluencia y la retracción, proporcionando una estimación detallada del comportamiento en servicio de la losa. |
| **Cumplimiento Normativo** | Requiere el cumplimiento de las especificaciones del código ACI 318S-14, incluyendo aspectos como la separación máxima de barras de refuerzo, recubrimientos mínimos y requisitos de anclaje y desarrollo del refuerzo. | Aunque no está directamente vinculado a un código específico, debe complementarse con las normativas locales aplicables para asegurar el cumplimiento de requisitos de seguridad y servicio. | Debe realizarse conforme a las normativas y estándares aplicables, como el ACI 318S-14, asegurando que los modelos y resultados del análisis cumplan con los requisitos de diseño y construcción establecidos. |

*Nota*. Tomado de America Concrete Institute (2014) ; Hillerborg (2012) y Gosz (2017).

### *5.1.2 Casos representativos de losas bidireccionales.*

Para llevar a cabo el análisis comparativo entre los tres métodos de diseño, se seleccionaron tres casos representativos de losas bidireccionales, diseñados previamente bajo la normativa Building Code Requirements for Structural Concrete ACI 318-14 and Commentary ACI 318R-14 (America Concrete Institute, 2014). Además, se complementaron con las normativas Minimum Design Loads for Buildings and Other Structures ASCE/SEI 7-10 (ASCE, 2010) y el International Building Code (IBC, 2012), seleccionadas por corresponder al marco normativo vigente al momento del desarrollo de los casos base y por su compatibilidad con el ACI 318-14. Los diseños se realizaron empleando el software especializado SPSlab v5.5 de StructurePoint, reconocido por su capacidad para analizar sistemas de losas bidireccionales y generar resultados precisos. Cabe mencionar que los datos se manejaron en el sistema inglés de unidades, ya que los modelos base corresponden a configuraciones prediseñadas por la empresa norteamericana desarrolladora del software. Aunque los sistemas de losas seleccionados no son los más comunes en el contexto constructivo de El Salvador, fueron elegidos por su carácter representativo y por reflejar diferentes configuraciones bidireccionales presentes en la práctica estructural. Esta selección permite analizar diversas condiciones geométricas y de carga, garantizando una evaluación aplicable y comparativa de los métodos de diseño considerados. A continuación, se describen los tres casos:

**Caso 1: Losa plana sin vigas ni ábacos**

Una losa plana sin vigas ni ábacos es un sistema estructural sencillo, compuesto únicamente por una losa de concreto apoyada directamente sobre columnas, como se observa en la Figura 3. Este tipo de losa es comúnmente utilizado en edificaciones con cargas moderadas y vanos relativamente cortos, como edificios residenciales, oficinas y hoteles. Su principal ventaja radica en su facilidad constructiva y en la eliminación de elementos voluminosos como vigas, lo que resulta en espacios más despejados y flexibles (Structurepoint , 2017)

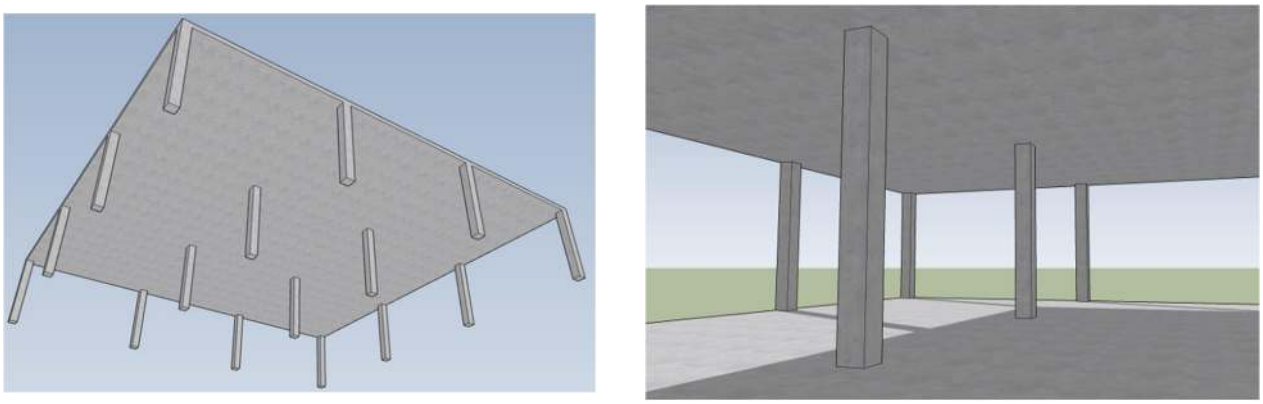


**Figura 3**. *Análisis y diseño de sistemas de suelos de hormigón de placa plana bidireccional.*

*Nota*. Tomado de Structurepoint (2017).

En este caso, el diseño se llevó a cabo para un piso intermedio, considerando una carga de partición de 20 psf y una carga viva no factorizada de 40 psf. Las cargas laterales son asumidas por muros de corte independientes. El diseño estructural empleó los métodos establecidos en el ACI 318-14, como el Método de Diseño Directo (DDM) y el Método del Pórtico Equivalente (EFM), asegurando que se cumplieran los requisitos de seguridad y servicio. Este sistema es especialmente adecuado para configuraciones arquitectónicas con altos requerimientos de estética y funcionalidad.

**Caso 2: Losa plana sin vigas con ábacos**

Una losa plana con ábacos incorpora paneles de caída o ábacos, que son secciones engrosadas alrededor de las columnas, como se observa en la Figura 4. Este diseño incrementa la resistencia al corte en las áreas críticas y reduce la posibilidad de fallos locales, permitiendo soportar cargas mayores y vanos más largos en comparación con una losa plana sin vigas ni ábacos (Structurepoint, 2018).

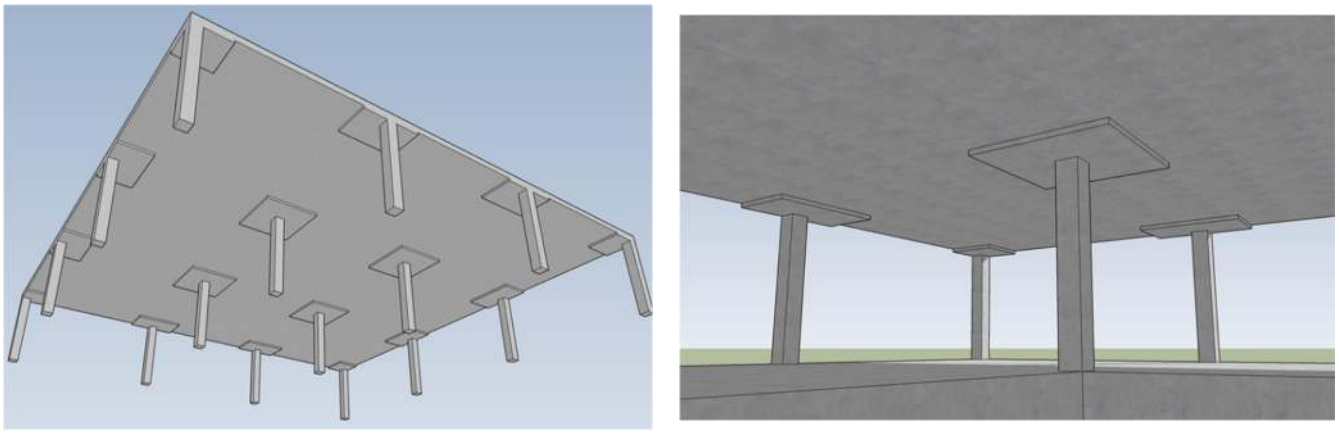


**Figura 4.** *Análisis y diseño del sistema de losa plana bidireccional (suelo de hormigón con paneles desmontables).*

*Nota*. Tomado de Structurepoint (2018).

En este caso, el diseño corresponde a un piso intermedio con una carga de partición de 20 psf y una carga viva no factorizada de 60 psf. Los abacos se integraron como refuerzos en las zonas de conexión entre las columnas y la losa, mejorando significativamente el desempeño estructural. Similar al caso anterior, las cargas laterales fueron resistidas por muros de corte, y el diseño estructural se realizó utilizando el Método del Pórtico Equivalente (EFM) bajo los parámetros del ACI 318-14. Este sistema es ideal para edificios de oficinas, hospitales y centros comerciales que requieren mayor capacidad de carga y estabilidad estructural.

**Caso 3: Losa plana con vigas**

Este sistema combina una losa plana con un entramado de vigas, donde las vigas perimetrales e interiores refuerzan la estructura al soportar mayores cargas y aumentar la rigidez del sistema, se puede observar en la Figura 5. Este diseño es adecuado para edificaciones con cargas significativas y vanos largos, como instalaciones industriales o comerciales (Structurepoint, 2024).

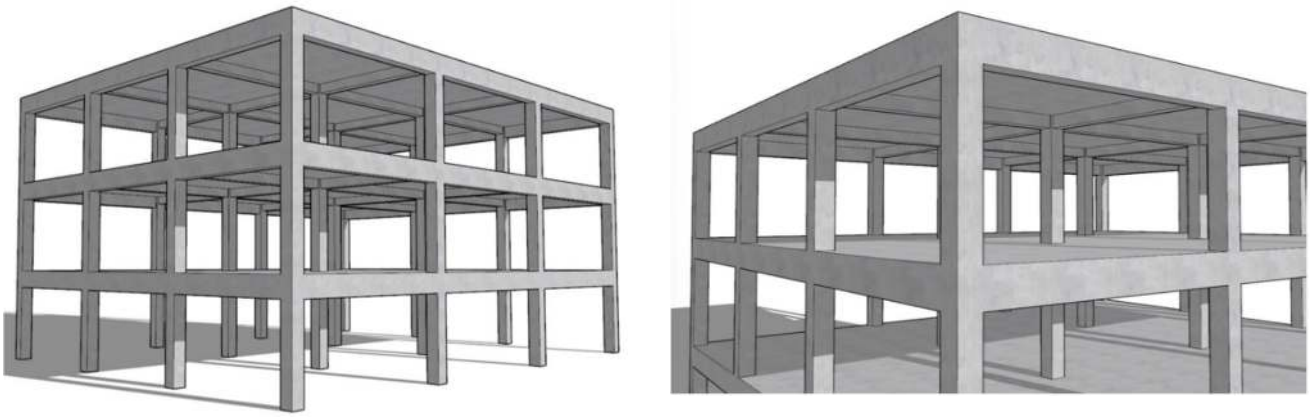


**Figura 5.** *Análisis y diseño de losas de hormigón bidireccionales con vigas (ACI 318-14)*

*Nota.* Tomado de Structurepoint (2024).

El diseño en este caso consideró una altura de planta de 12 pies, columnas de 18 in. × 18 in., vigas perimetrales de 14 in. × 27 in. y vigas interiores de 14 in. × 20 in. La carga viva no factorizada fue de 100 psf, mientras que las cargas laterales se resolvieron mediante muros de corte. Se empleó el Método del Marco Equivalente (EFM) conforme a los lineamientos del ACI 318-14. Este sistema ofrece una alta capacidad de carga, mayor resistencia a la deformación y un comportamiento estructural eficiente para edificios de gran envergadura y uso intensivo.

## 5.2 Fase 2: Definición de parámetros y Aplicación de métodos de diseño a ejemplos representativos en Losas Bidireccionales

En este apartado se establecen los parámetros clave que sirven como base común para los análisis de los tres casos seleccionados: losa plana sin vigas ni ábacos, losa plana sin vigas con ábacos, y losa plana con vigas. Posteriormente, se aplican tres enfoques de diseño (ACI 318-14, Método de Hillerborg y Análisis por Elementos Finitos) para evaluar el comportamiento estructural de cada caso.

### *5.2.1 Parámetros de diseño estructural relevantes para las losas bidireccionales.*

Para llevar a cabo un análisis comparativo entre los diferentes métodos de diseño estructural, es fundamental establecer una base común de parámetros que permitan una

evaluación uniforme. En este contexto, se definieron una serie de parámetros técnicos clave que se replicaron para cada uno de los métodos considerados en el estudio, con el fin de garantizar la comparabilidad de los resultados obtenidos. Estos parámetros incluyen las dimensiones de la losa, el tipo y la resistencia del concreto (F'c), la resistencia del acero de refuerzo (Fy), el espesor mínimo de la losa, así como las cargas vivas y muertas adicionales (super dead), y las relaciones de deformación.

Todos estos aspectos fueron tomados de Building Code Requirements for Structural Concrete ACI 318-14 and Commentary ACI 318R-14 (America Concrete Institute, 2014), que establece los lineamientos y requisitos para el diseño de losas bidireccionales, y de casos de estudio representativos en los que se emplean estas especificaciones. La **Tabla** ***7*** a continuación resume estos parámetros para tres tipos de losas, los cuales se aplicarán de manera consistente en todos los métodos de diseño analizados, asegurando así que las comparaciones entre ellos se realicen sobre una base homogénea.

**Tabla 7**
*Parámetros de Diseño Estructural para Losas Bidireccionales según ACI 318-14*

| Casos | F´c (PSI) | Fy (PSI) | Minimum Thickness | Live Load | Super dead |
|---|---|---|---|---|---|
| ***1****: Losa plana sin vigas ni ábacos* | 4000 | 60,000 | 7 in | 40 psf | 20 psf |
| ***2:*** *Losa plana sin vigas con ábacos* | 5000 | 60,000 | 10 in (4.5 in para el drop) total = 14.5 in | 60 psf | 20 psf |
| ***3:*** *Losa plana con vigas* | 4000 | 60,000 | 10 in (4.5 in para el drop) total = 14.5 in | 100 psf | 20 psf |

*Nota.* Tomado de Structurepoint (2017; 2018; 2024).

La Tabla 7 presenta los parámetros estructurales fundamentales empleados en el diseño de losas bidireccionales, conforme al ACI 318-14, para tres casos representativos. Incluye la resistencia del concreto (F'c: 4000-5000 psi), la resistencia del acero de refuerzo (Fy: 60,000 psi), y el espesor mínimo de las losas, que varía entre 7 in para losas sin vigas ni ábacos y 14.5 in para sistemas con ábacos o vigas. Además, se consideran las cargas vivas, que oscilan de 40 psf a 100 psf según el caso, y una carga muerta adicional constante de 20

psf. Estas especificaciones reflejan las diferencias en diseño y desempeño de cada sistema estructural.

### *5.2.2 Aplicación de los métodos ACI 318-14, Método de Hillerborg y análisis mediante Elementos Finitos (FEM) a los tres casos seleccionados.*

En este apartado se presenta la evaluación comparativa de tres escenarios estructurales mediante la aplicación de los métodos ACI 318-14, el Método de Hillerborg y el análisis por Elementos Finitos (FEM). Los casos seleccionados corresponden a configuraciones de losas planas bajo distintas condiciones estructurales: sin vigas ni ábacos, sin vigas pero con ábacos, y con vigas.

De acuerdo con el ACI 318-14, los análisis se realizaron sobre la franja representativa señalada en cada figura correspondiente a los tres casos de losas, la cual delimita la zona crítica de diseño en losas bidireccionales. Las figuras derivadas de los ejemplos del ACI 318-14 fueron generadas en Tekla Structural Designer, empleando la licencia académica del maestrante.

En el análisis por Elementos Finitos, las losas se idealizaron mediante elementos tipo Thin Shell, empleando el software CSi SAFE (versión de prueba) de Computers and Structures Inc., mientras que para la aplicación del Método de Hillerborg se utilizó el programa Graitec Advance Design (versión de prueba). Cada caso es analizado desde diferentes perspectivas, incluyendo distribución de esfuerzos, deformaciones y diseño de refuerzo.

#### *5.2.2.1 Caso 1: Losa plana sin vigas ni ábacos*

El análisis estructural del Caso 1 se centra en una losa plana diseñada sin vigas ni ábacos, apoyada directamente sobre columnas. A continuación, se examinan los resultados obtenidos mediante diferentes métodos de análisis, como el método de elementos finitos (FEM) y el método de Hillerborg, lo que permite evaluar el comportamiento de la losa bajo las cargas consideradas, para observar en detalle los resultados numéricos consultar **Anexo A.** Losa plana sin vigas ni ábacos., disponible en el archivo PDF adjunto.

**ACI 318-14**

La Figura 6 representa el diseño ya documentado del caso 1 correspondiente a la losa plana sin vigas ni ábacos apoyada directamente sobre columnas con vanos de 18'-0" por 14'-0" y un espesor de 7 pulgadas, conforme al ACI 318-14. El modelo estructural corresponde a una edificación de un solo nivel, concebida así por el proveedor del diseño original de las losas. En dicha figura se señala la franja de diseño (Design Strip), utilizada para el análisis de la distribución de momentos y esfuerzos en las direcciones principales de la losa. El modelo considera cargas de 20 psf de partición y 40 psf de carga viva, de acuerdo con los criterios establecidos para este tipo de sistemas estructurales.

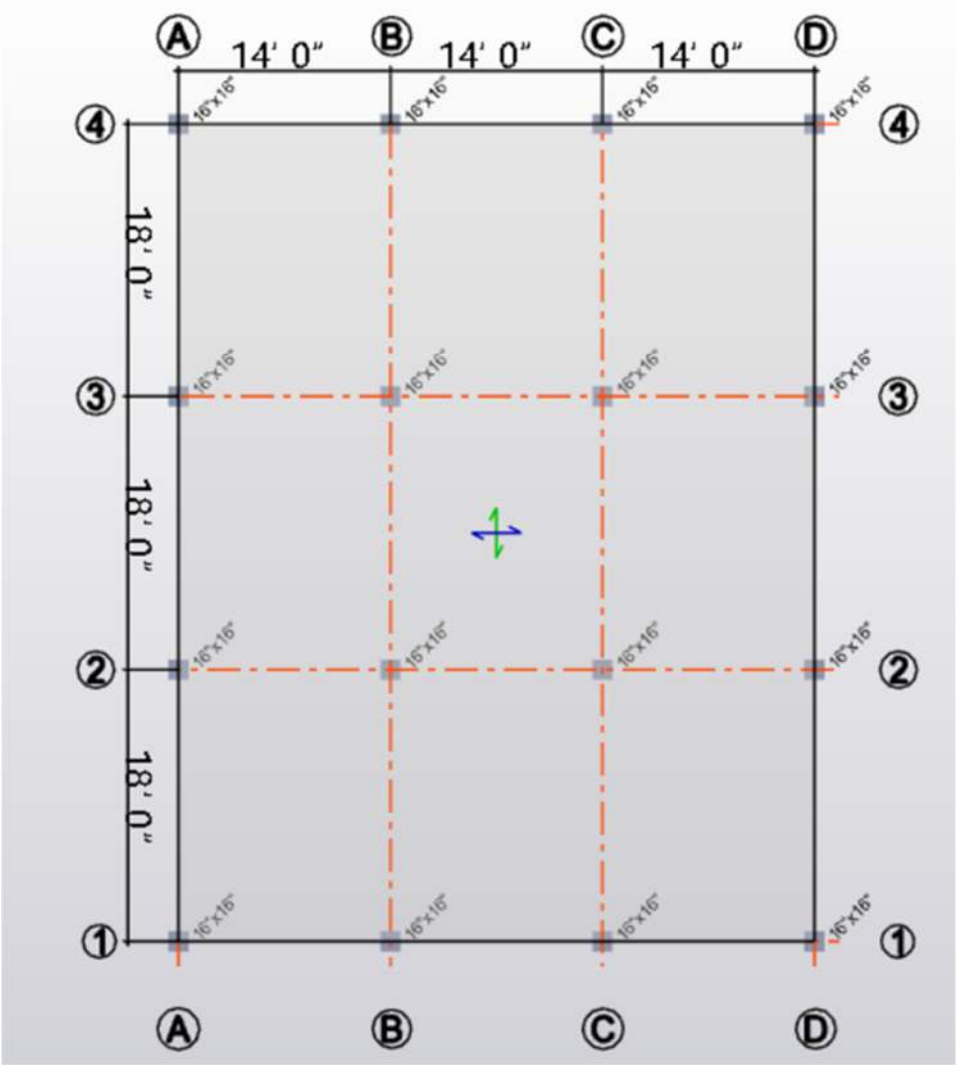



**Figura 6.***Caso1: Losa plana sin vigas ni ábacos, ACI 318-14.*

**ELEMENTOS FINITOS (FEM)**

La Figura 7 muestra el modelo estructural desarrollado mediante el método de elementos finitos (FEM), con una malla uniforme de elementos bidimensionales que conectan los puntos de soporte en las columnas.

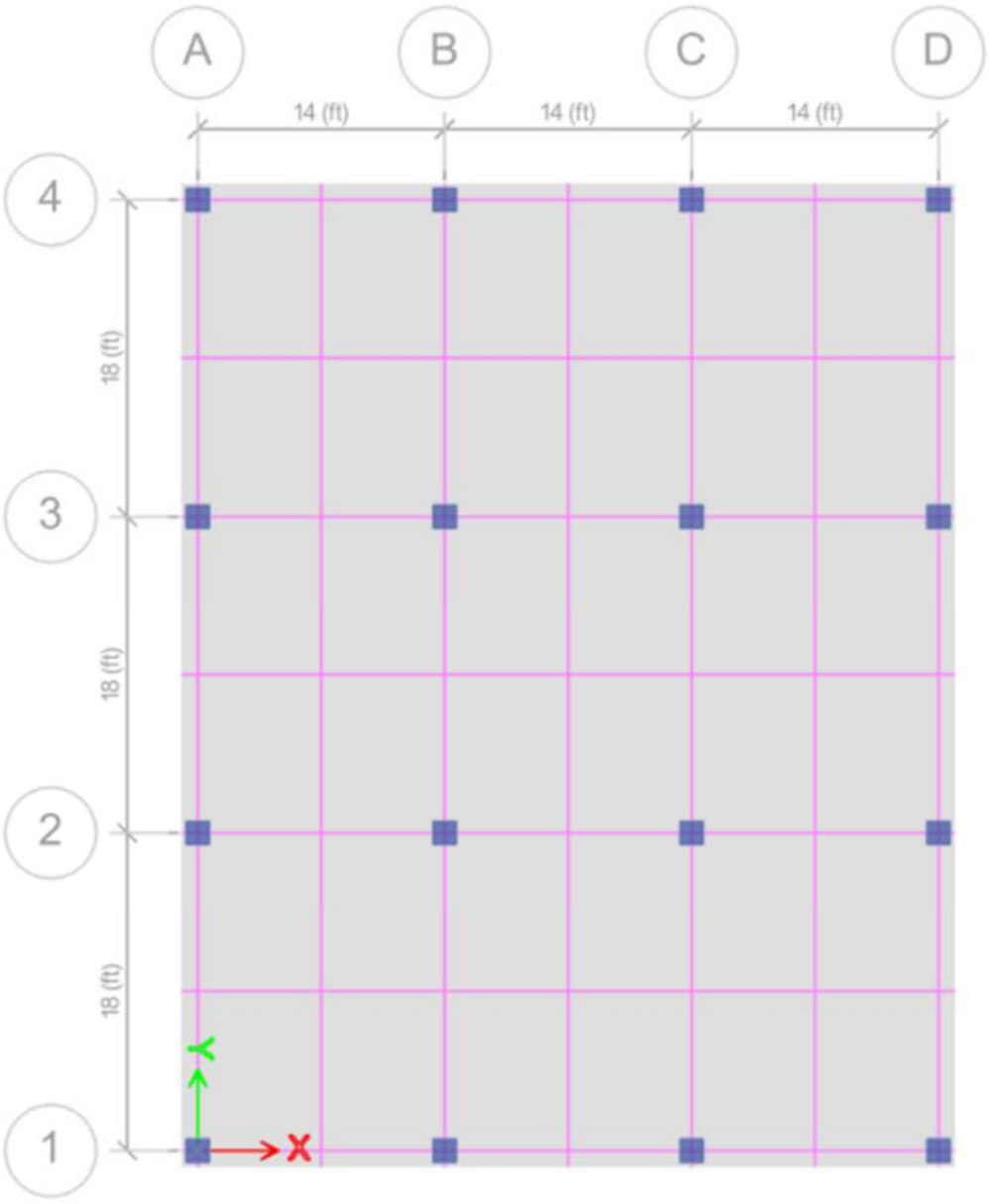



**Figura 7.***Caso1: Losa plana sin vigas ni ábacos método FEM.*

La Figura 8 exhibe la deformación de la losa bajo las cargas aplicadas, analizada mediante FEM. Una escala de colores identifica desplazamientos críticos: los tonos rojos indican deformaciones máximas en áreas vulnerables, mientras que los azules muestran desplazamientos mínimos. Se evidencia la distribución heterogénea de los desplazamientos debido a la ausencia de elementos estructurales como vigas o ábacos, destacando el papel de los apoyos en el control de la deformación.

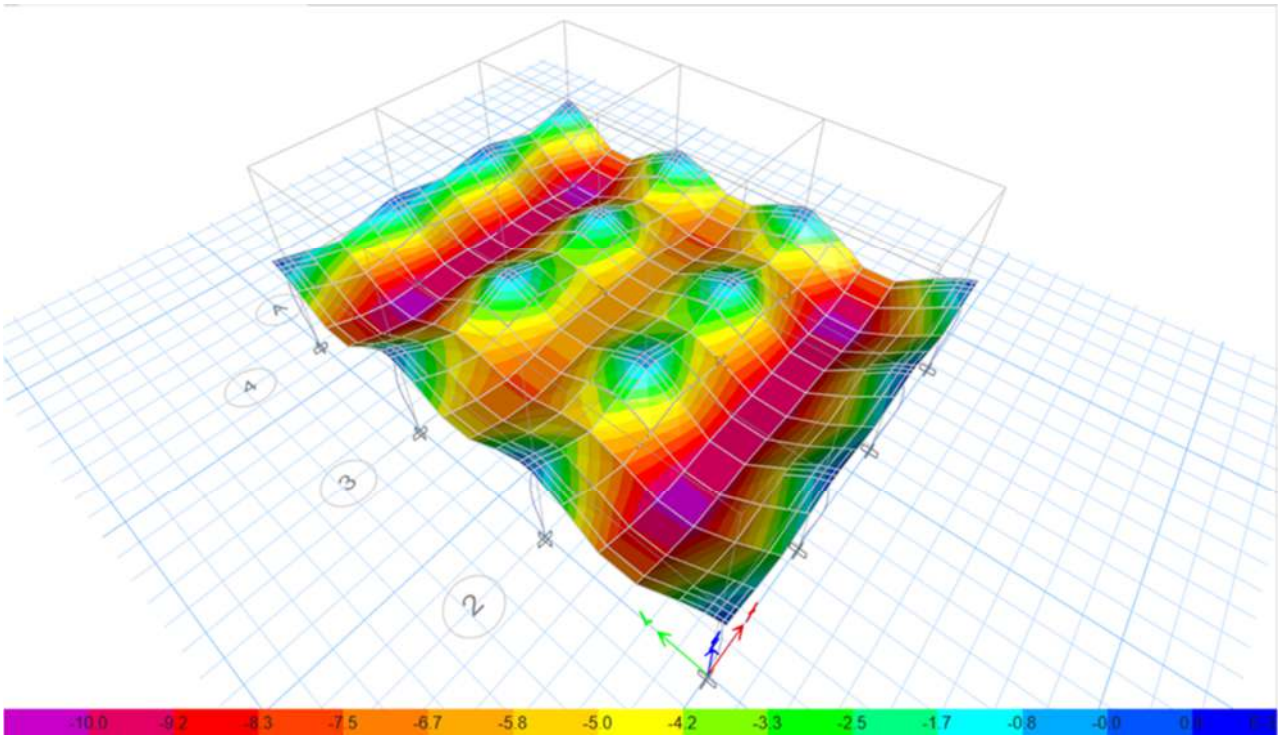



***Figura 8.*** *Deformación de la losa plana sin vigas ni ábacos FEM (Caso 1).*

*Nota.* Escala de deformaciones marcada en colores con unidades en ft (pies).

En la Figura 9 se detalla la cantidad y disposición del acero de refuerzo en la losa plana sin vigas ni ábacos, obtenido mediante análisis FEM. Las capas de refuerzo (#4 y #5) están distribuidas longitudinal y transversalmente, reforzando las zonas de la franja intermedia y de columnas.

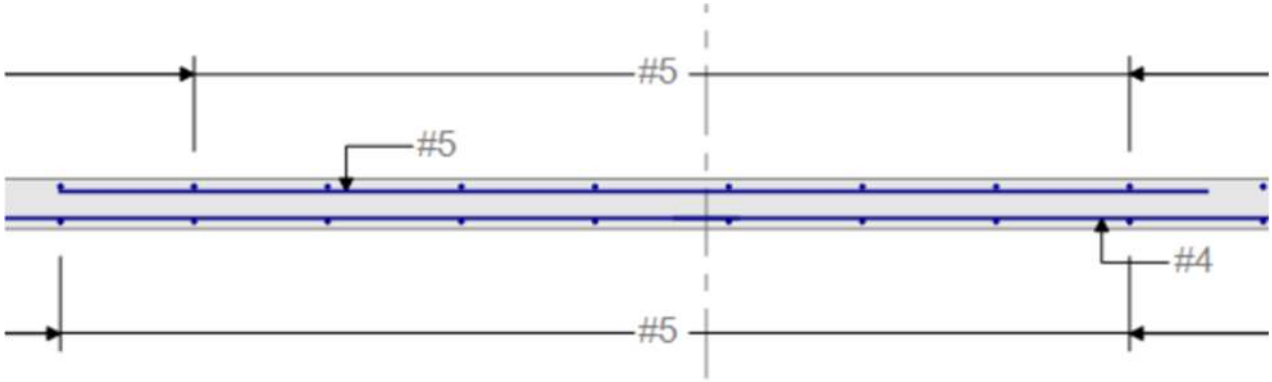



**Figura 9**.*Diseño de acero mediante FEM (Caso1).*

La **Figura *10*** muestra el diagrama de momentos flectores obtenido mediante el análisis por elementos finitos (FEM). En este diagrama se observan los momentos máximos negativos sobre las columnas, debido a las tracciones generadas en la parte superior de la losa, y los momentos positivos en los claros, donde las tracciones ocurren en la parte inferior. Este comportamiento es característico de los sistemas de losas planas, en los que las cargas se transfieren directamente a las columnas.

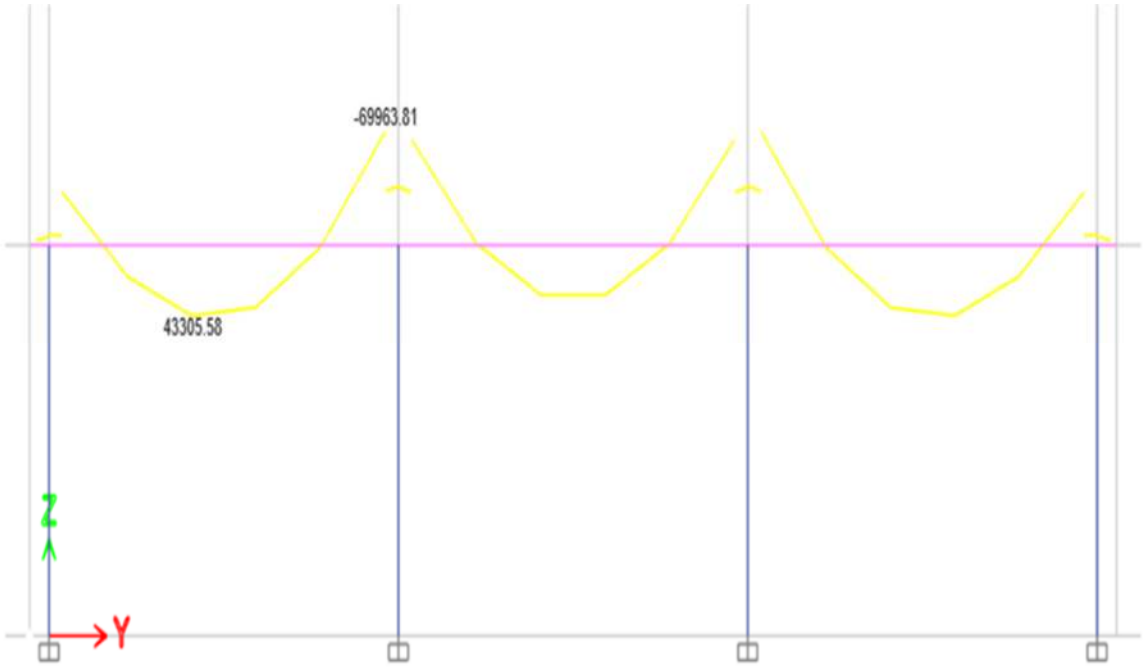



**Figura 10.** *Diagrama de momentos en línea de columnas por el método FEM (Caso 1)*

La **Figura *11*** presenta el diagrama de fuerzas cortantes obtenido por el método FEM. Los cortantes máximos se concentran cerca de las columnas debido a las reacciones de apoyo, mientras que los valores disminuyen gradualmente en los claros. Este comportamiento refleja la distribución de las cargas en ausencia de vigas.

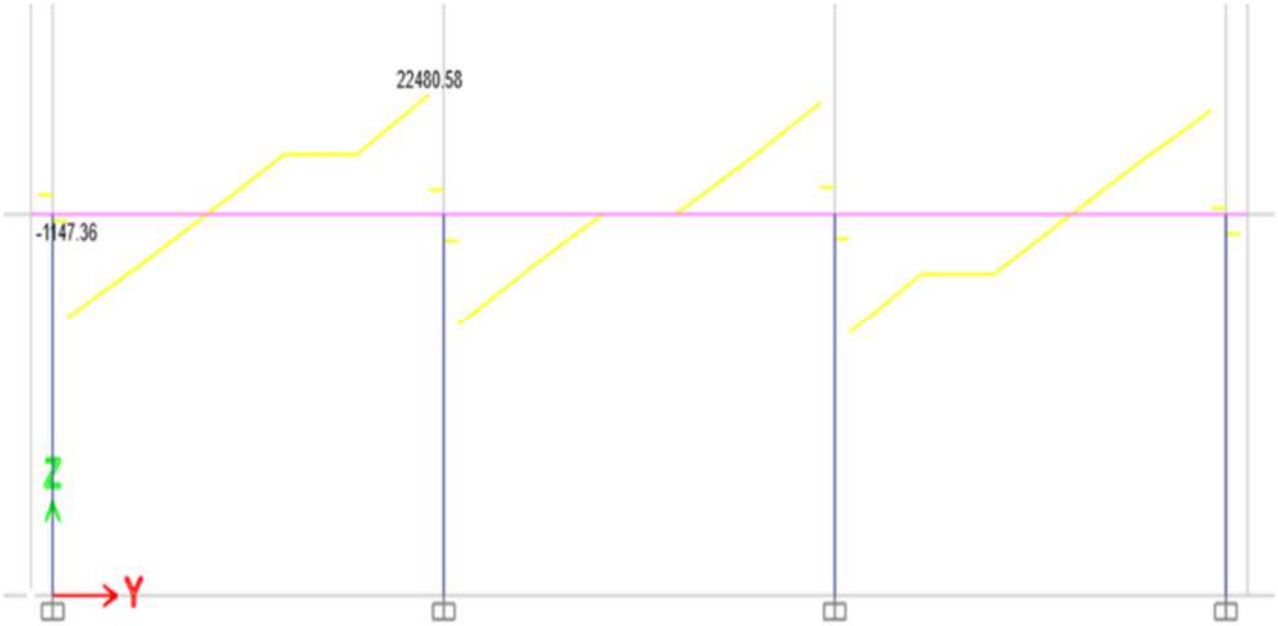



**Figura 11.** *Diagrama de cortante en la losa por el método FEM (Caso 1)*

**HILLERBORG**

El diagrama presentado en la Figura 12 corresponde al análisis del momento flector en la línea de columnas, evaluado mediante el método de Hillerborg para el caso 1, corresponde al eje estructural indicado en el ejemplo del caso 1. El análisis muestra los valores máximos positivos (12929.46 lb-ft) y negativos (-11458.39 lb-ft) destacando concentraciones significativas en los puntos de soporte, evidenciando zonas críticas que requieren refuerzo adecuado.

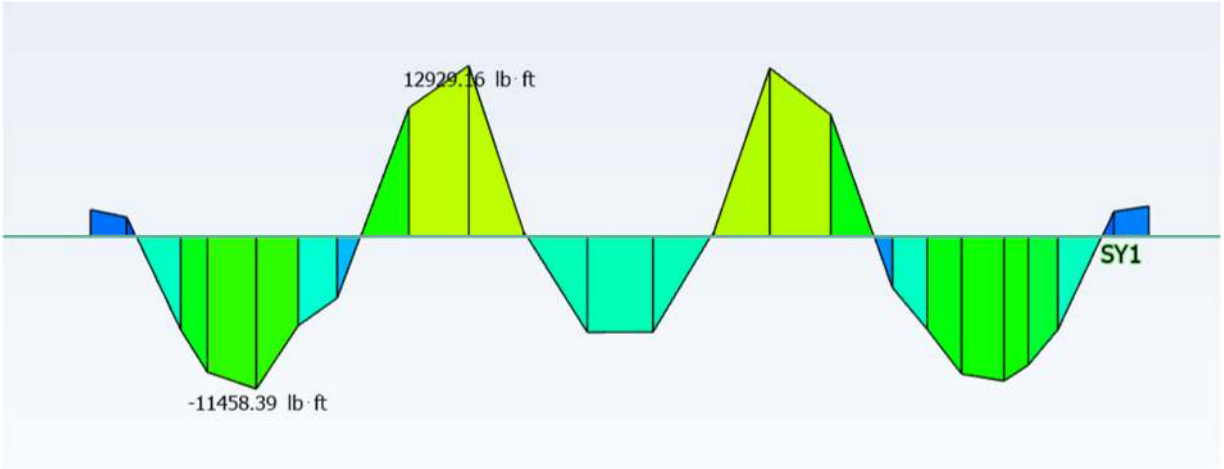



**Figura 12**.*Diagrama de momentos en línea de columnas por Hillerborg (Caso 1).*

La Figura 13 muestra el análisis del momento flector en el centro de la franja. En este caso, los momentos máximos alcanzan un valor positivo de 4546.60 lb-ft y un valor negativo de -5711.31 lb-ft, lo que refleja la distribución de los esfuerzos flexionantes en la sección central de la losa.

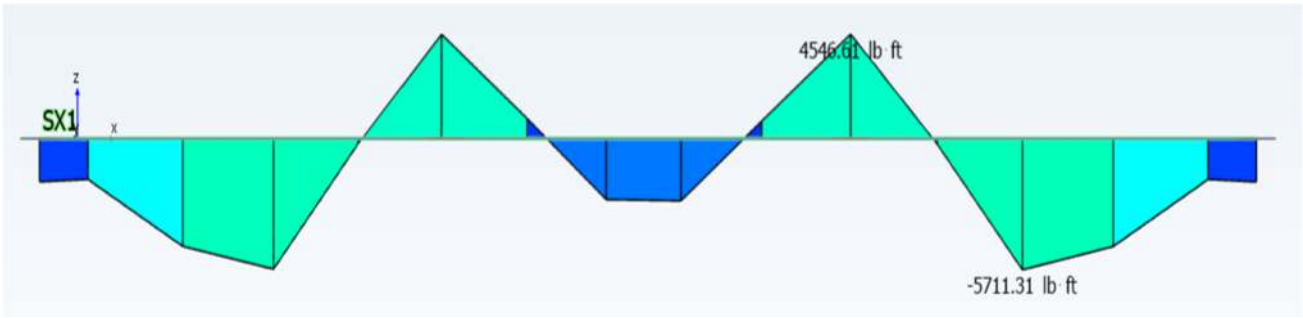



**Figura 13.** *Diagrama de momentos en el centro de la franja Hillerborg (Caso1)*

La Figura 14 corresponde al análisis del esfuerzo cortante en la línea de columnas En este caso, el valor máximo del esfuerzo cortante negativo alcanza -994.74 lb, reflejando la distribución de las fuerzas de corte a lo largo de la línea de soporte. La ausencia de vigas y ábacos implica que las columnas deben absorber directamente estas fuerzas, lo que genera una distribución más uniforme pero con concentraciones en puntos críticos.

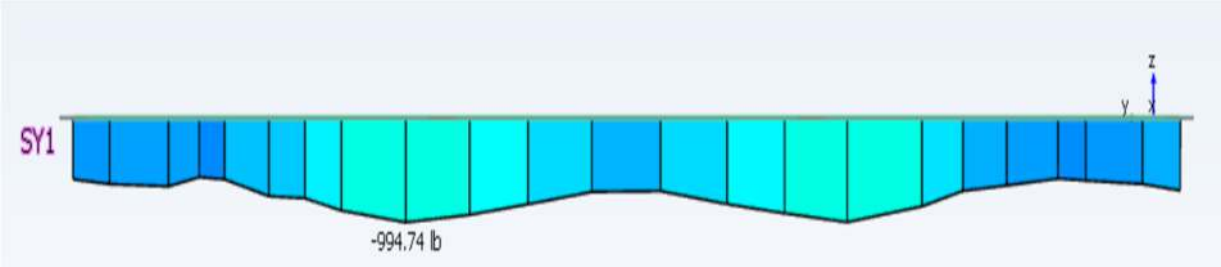



**Figura 14.** *Diagrama de cortante en línea de columnas Hillerborg (Caso 1).*

La **Figura 15** presenta el detallado del acero de refuerzo, representando su configuración tal como se ejecutaría en obra conforme a las especificaciones del diseño estructural.

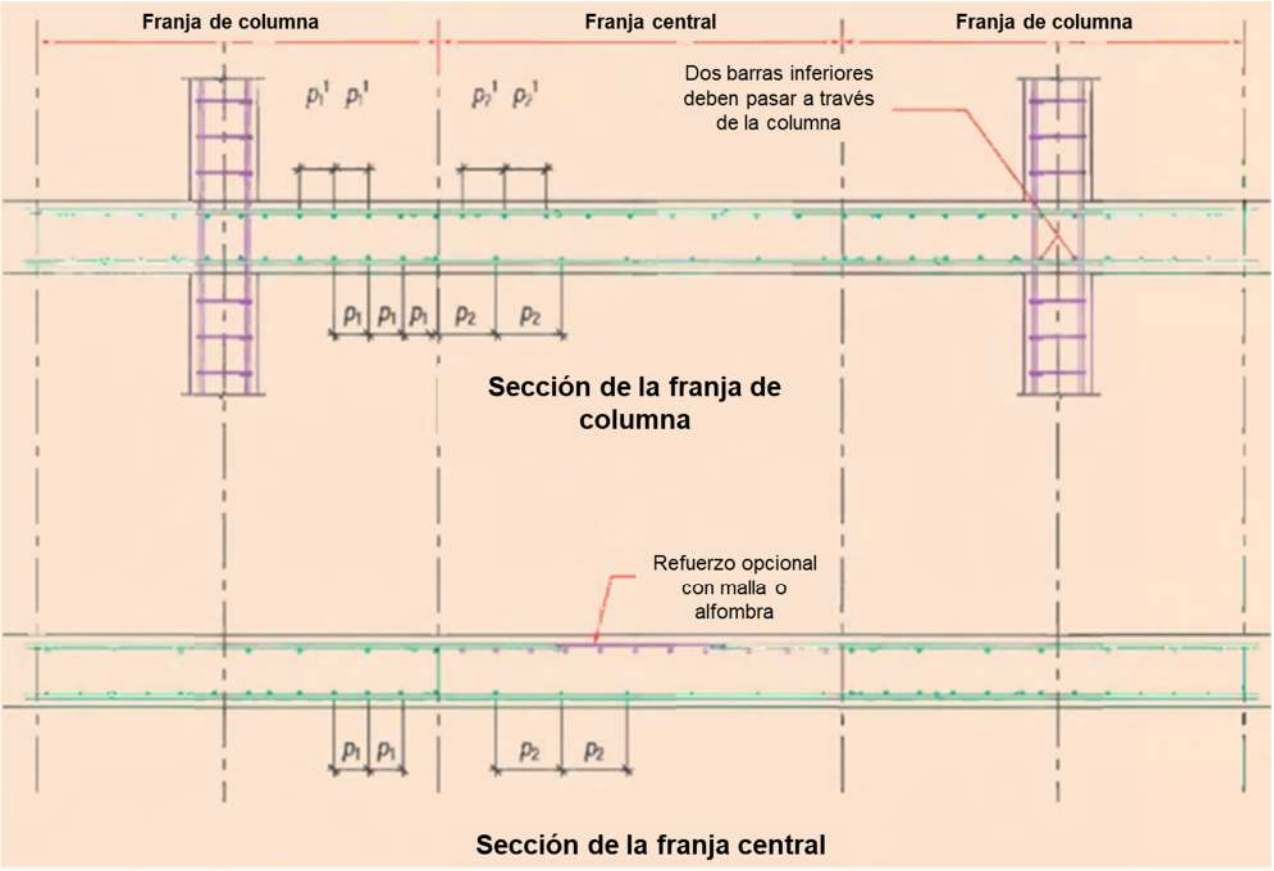



***Figura 15.*** *Detallado de la losa de concreto sin vigas ni ábacos según The Institution of Structural Engineers (2021).*

*5.2.2.2 Caso 2: Losa plana sin vigas con ábacos*

El análisis estructural del Caso 2 se centra en una losa plana diseñada sin vigas con ábacos. A continuación, se examinan los resultados obtenidos mediante los diferentes métodos de análisis. Para observar en detalle los resultados numéricos consultar **Anexo B**. Losa plana sin vigas con ábacos., disponible en el archivo PDF adjunto.

**ACI 318-14**

El diseño estructural mostrado en la Figura 16 corresponde a una losa plana sin vigas pero con ábacos, conforme al ACI 318-14. La retícula consta de un sistema regular de vanos de 30’-0” en ambas direcciones, apoyada sobre columnas de 20” x 20” reforzadas con ábacos para mejorar la distribución de esfuerzos.

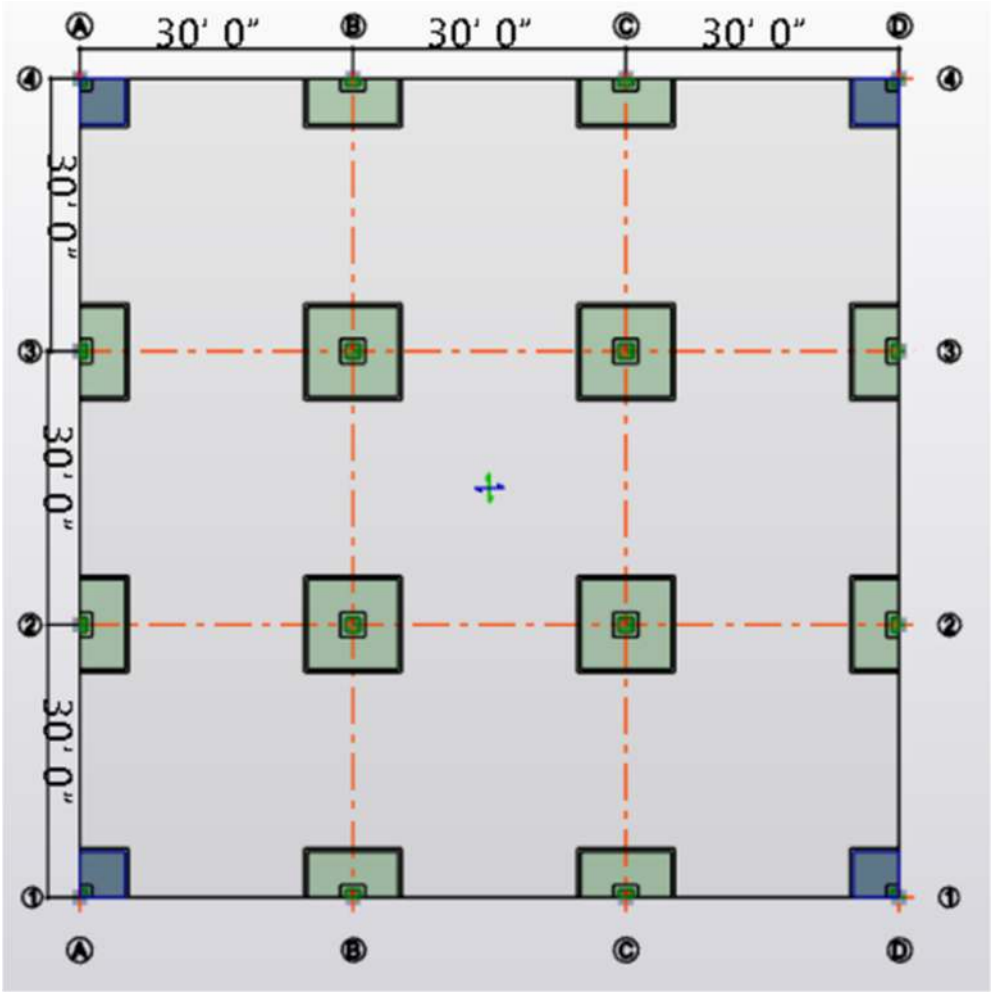



**Figura 16**. *Caso 2: Losa plana sin vigas con ábacos, ACI 318-14.*

## ELEMENTOS FINITOS (FEM)

La Figura 17 muestra el modelo estructural desarrollado mediante el método de elementos finitos (FEM), con los parámetros geométricos correspondiente a la Losa plana sin vigas con ábacos.

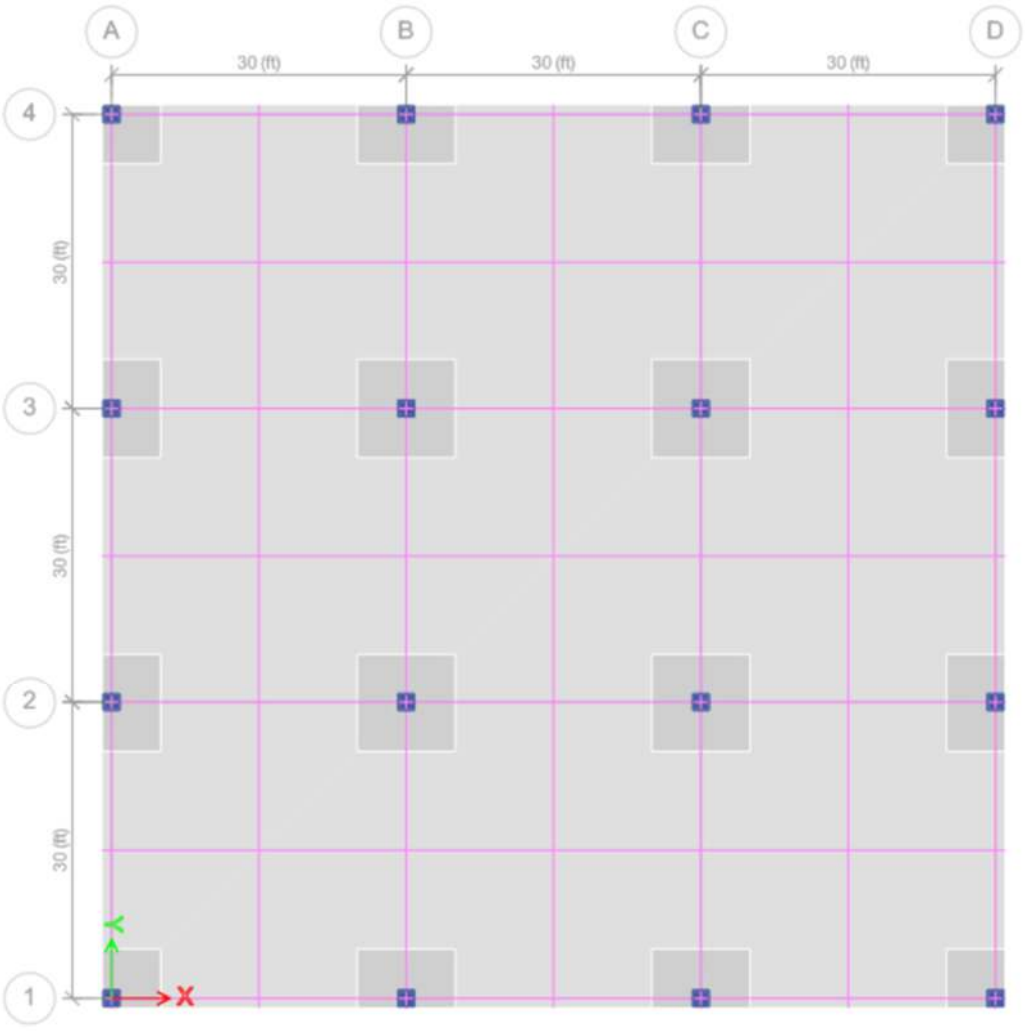



**Figura 17**. *Caso 2: Losa plana sin vigas con ábacos, FEM.*

La Figura 18 representa la deformada de una losa plana sin vigas con ábacos, obtenida mediante un análisis de elementos finitos (FEM). En este caso, la deformación muestra una hendidura predominante en el centro de la losa, lo cual indica una mayor flexión en esa región debido a la concentración de cargas y la ausencia de vigas que redistribuyan los esfuerzos. Los ábacos contribuyen a mejorar la transferencia de cargas en las conexiones con las

columnas, pero la losa experimenta desplazamientos verticales hacia el centro debido a la distribución uniforme de las cargas aplicadas y la geometría del sistema.

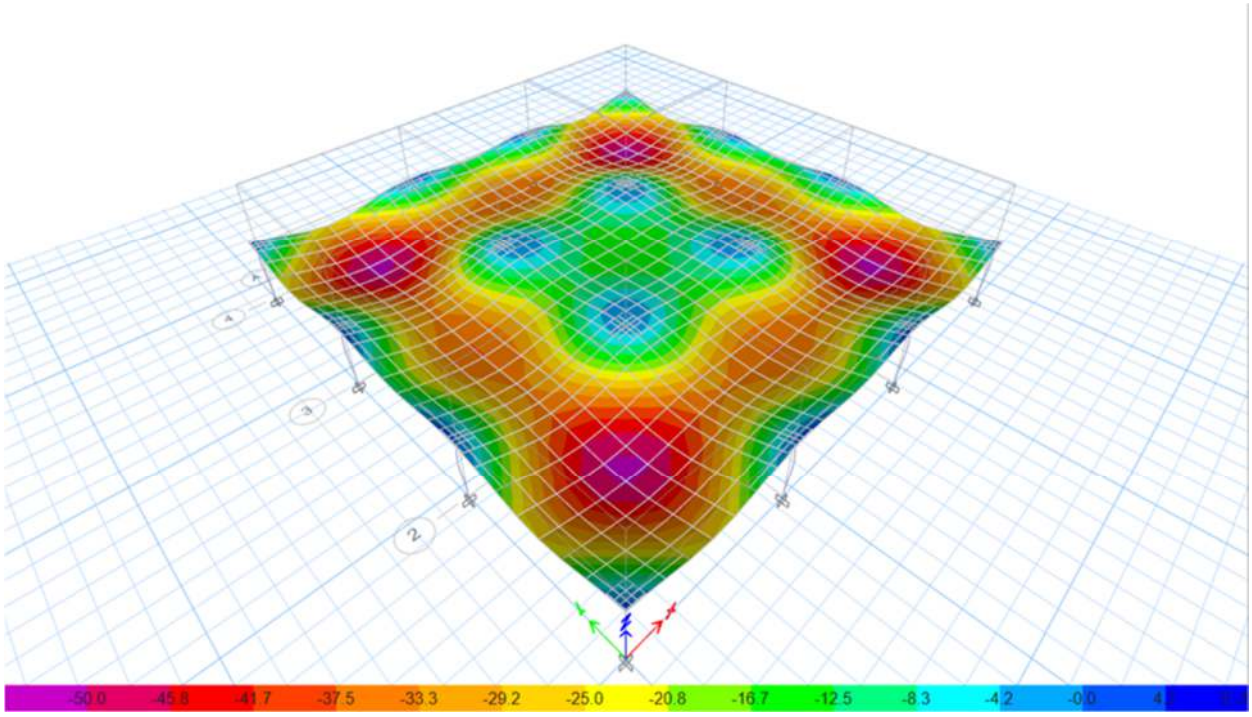



**Figura 18.** *Deformación de la Losa plana sin vigas con ábacos, FEM (Caso2).*

*Nota*. Escala de deformaciones marcada en colores con unidades en ft (pies)

La Figura 19 muestra el diseño del refuerzo de acero para una losa plana sin vigas con ábacos, modelada mediante el método de elementos finitos (FEM). El refuerzo está distribuido de manera estratégica para resistir los momentos flectores y garantizar la estabilidad estructural frente a las cargas aplicadas. Se observa que el acero está dispuesto en diferentes capas, con mayor densidad en las regiones donde se prevén mayores esfuerzos, como las cercanías a las columnas, donde los ábacos ayudan a reducir las concentraciones de esfuerzo.

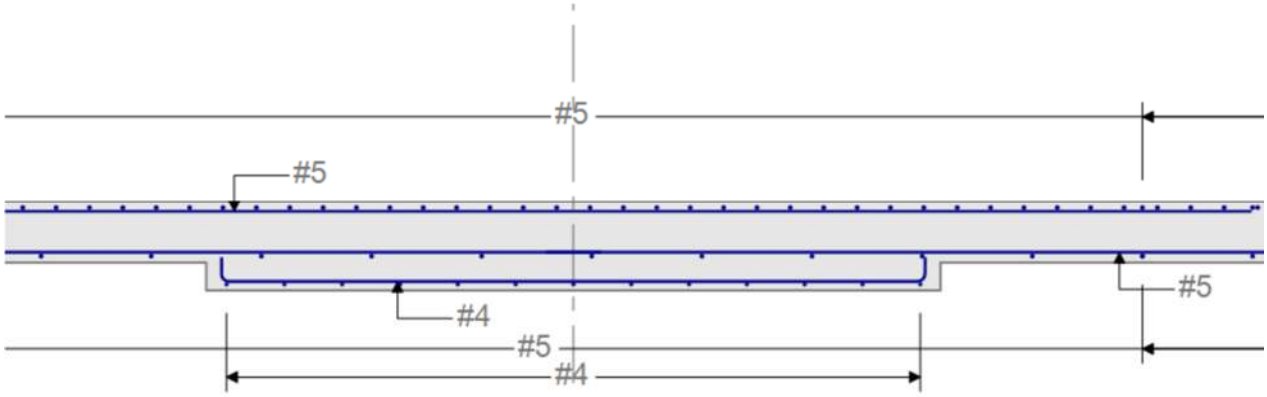



**Figura 19.** *Diseño de acero mediante FEM (Caso2).*

La Figura 20 presenta los valores de momento flector a lo largo de la línea de columnas en el eje correspondiente. En este caso, el momento máximo negativo alcanza un valor de -727.9373 kNm en la sección central del tramo, mientras que el momento positivo máximo es de 386.6922 kNm en las proximidades de los apoyos. Estos valores reflejan cómo las cargas aplicadas generan flexión en la losa, siendo mayores en las zonas centrales debido a la ausencia de vigas que redistribuyan los esfuerzos, y cómo los ábacos contribuyen a reducir concentraciones de esfuerzos en las zonas críticas.

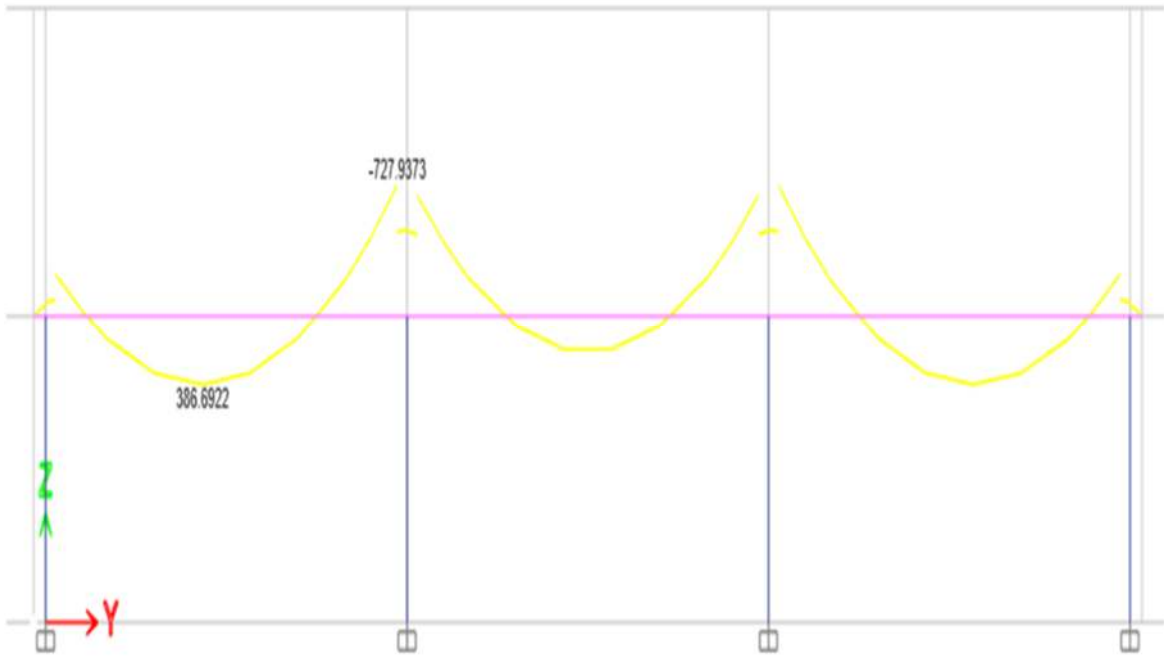



**Figura 20.** *Diagrama de momentos en línea de columnas por el método FEM (Caso 2).*

La Figura 21 muestra la distribución de los esfuerzos cortantes en el eje analizado. Los valores máximos de cortante se encuentran en los extremos cercanos a los apoyos, alcanzando un pico de 142.217 kN. En contraste, los valores mínimos están cerca del tramo intermedio, disminuyendo hasta aproximadamente 15.617 kN.

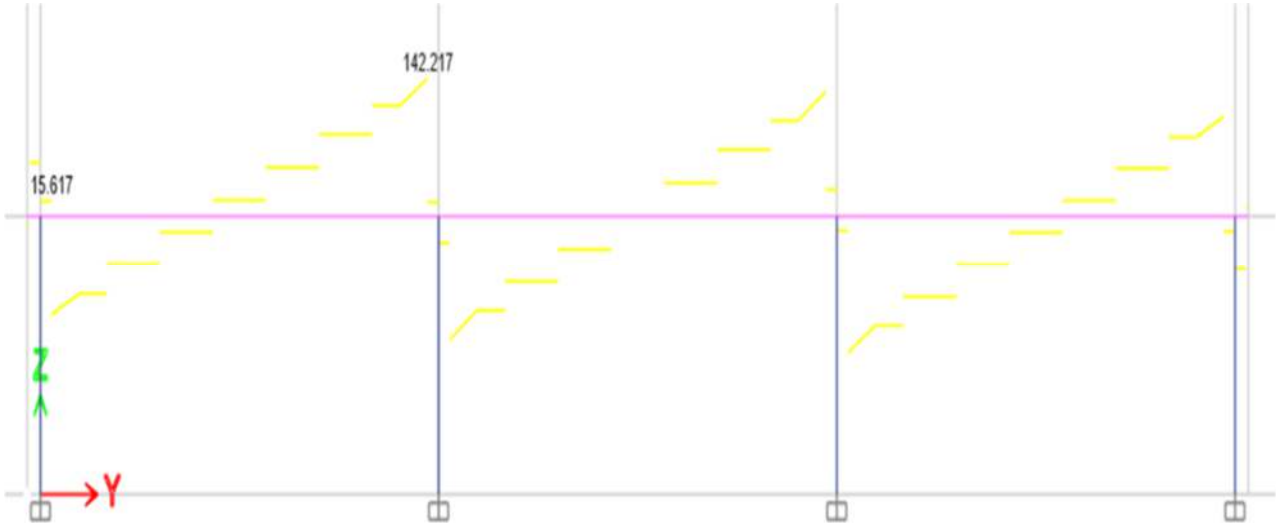



**Figura 21.** *Diagrama de cortante en la losa por el método FEM (Caso 2).*

**HILLERBORG**

La Figura 22 muestra la distribución de momentos flectores en una losa sin vigas pero con ábacos, destacando momentos negativos máximos sobre las columnas (-45370.94 lb·ft) y momentos positivos en los claros (+27308.48 lb·ft). Corresponde al eje estructural indicado en el ejemplo del caso 2. La presencia de ábacos reduce las concentraciones excesivas en las zonas críticas, mejorando la transición entre momentos positivos y negativos.

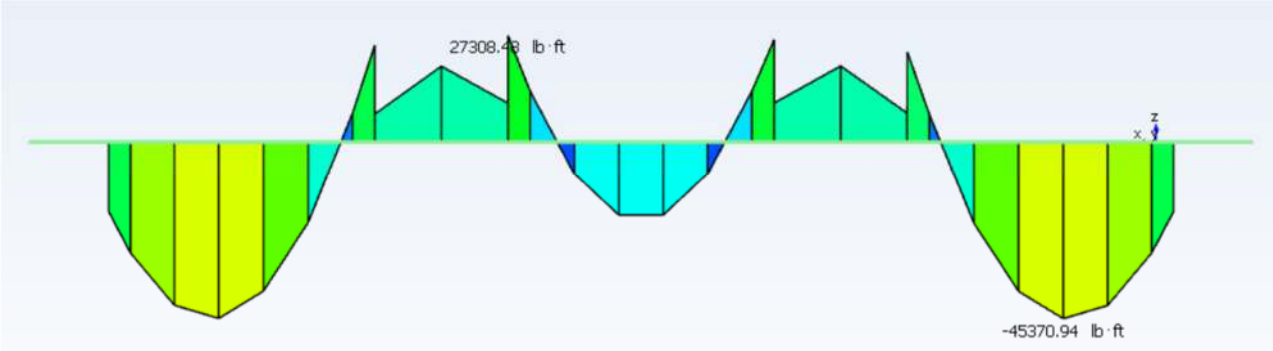



**Figura 22.** *Diagrama de momentos en línea de columnas por Hillerborg (Caso 2).*

El diagrama presentado en la Figura 23, representa la distribución de fuerzas cortantes en la losa, con máximos concentrados cerca de las columnas (-2098.49 lb) debido a las reacciones de apoyo. Entre las columnas, el cortante disminuye gradualmente gracias a la influencia de los ábacos, que redistribuyen los esfuerzos.

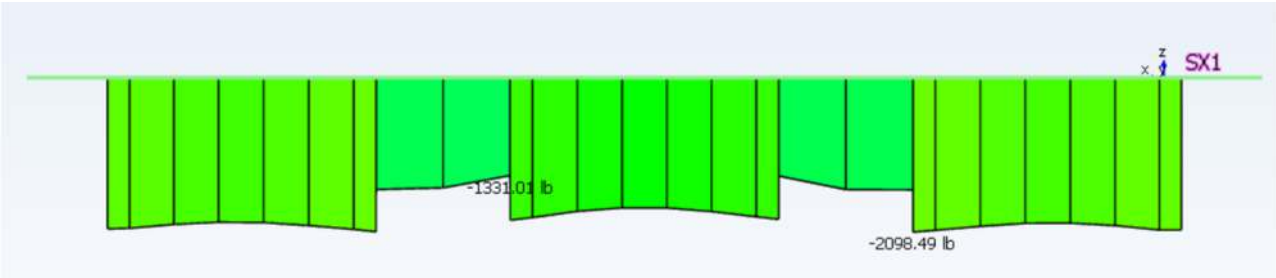



**Figura 23.** *Diagrama de cortante en línea de columnas Hillerborg (Caso 2).*

La **Figura 24** presenta el detallado del acero de refuerzo, representando su configuración tal como se ejecutaría en obra conforme a las especificaciones del diseño estructural.

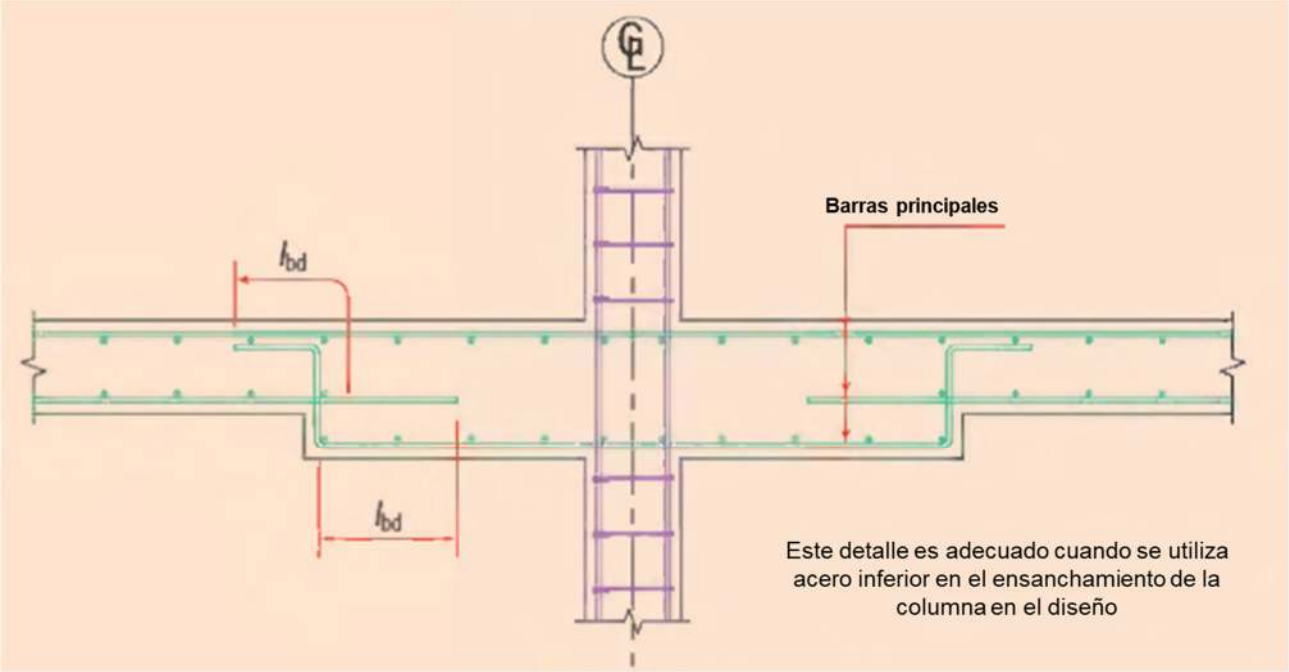



***Figura 24.*** *Detallado de losa sin vigas con ábacos en columnas según The Institution of Structural Engineers (2021).*

*5.2.2.3 Caso 3: Losa plana con vigas*

El análisis estructural del Caso 3 se centra en una losa plana diseñada con vigas. A continuación, se examinan los resultados obtenidos mediante los diferentes métodos de análisis. Para observar en detalle los resultados numéricos consultar **Anexo C.** Losa plana con vigas, disponible en el archivo PDF adjunto.7

**ACI 318-14**

La Figura 25 muestra la definición de las franjas de diseño según el método del ACI 318-14 para el caso de losas planas con vigas. La losa se divide en módulos de 22'-0" en sentido horizontal y 17'-6" en sentido vertical, definidos por las líneas de apoyo de las columnas.

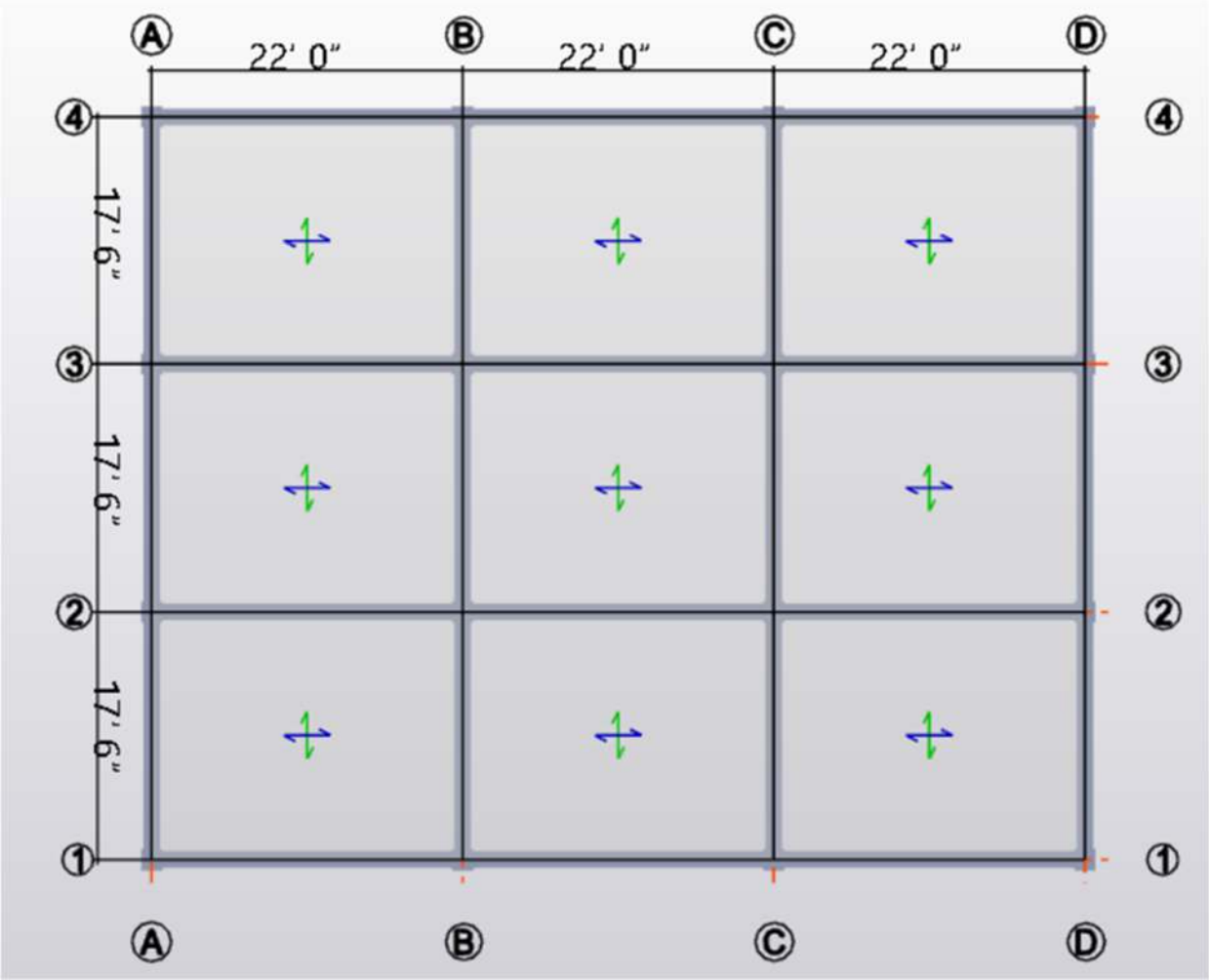



**Figura 25.** *Caso 3: Losa plana con vigas, ACI 318-14.*

## ELEMENTOS FINITOS (FEM)

La Figura 26 muestra el modelo estructural desarrollado mediante el método de elementos finitos (FEM), con los parámetros geométricos correspondiente a la Losa plana con vigas.

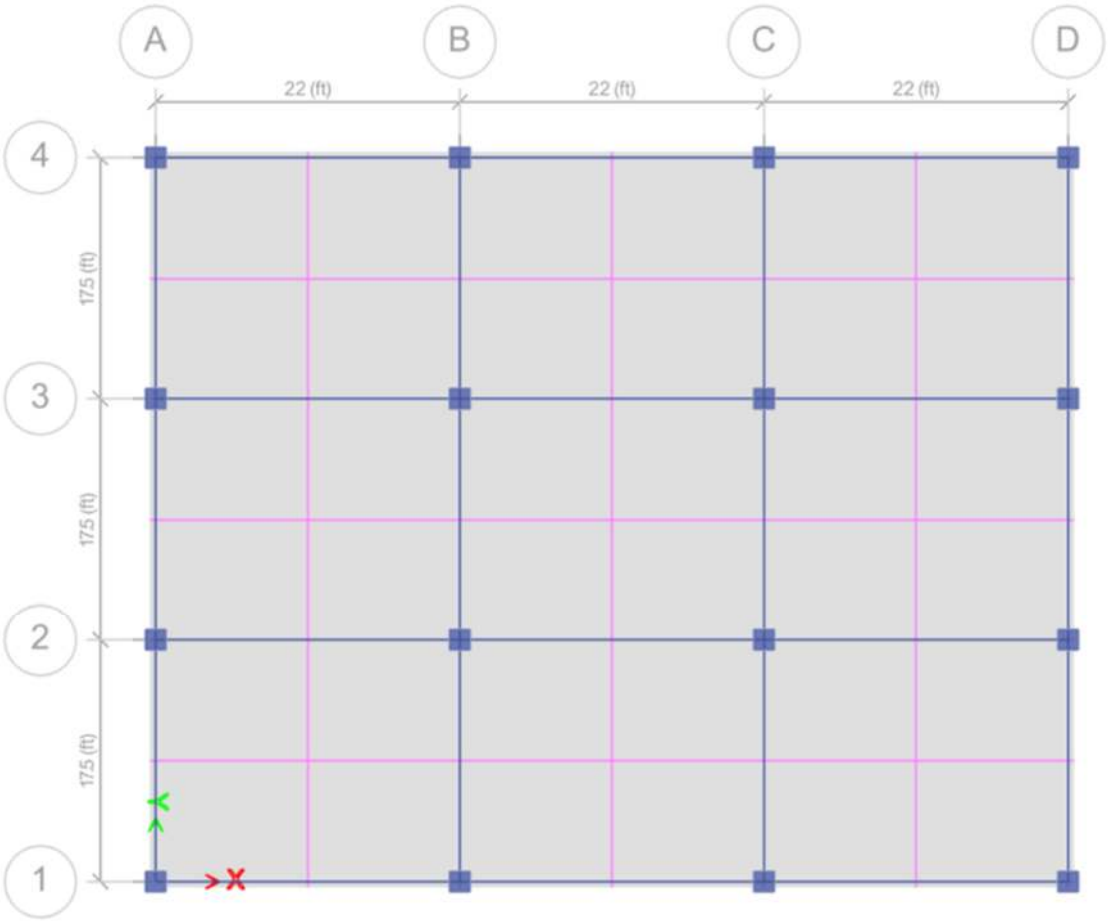



**Figura 26.** *Caso 3: Losa plana con vigas, FEM.*

La Figura 27 presentada la deformada de la losa plana con vigas analizada mediante el método de elementos finitos. Se observa que la incorporación de vigas reduce de manera significativa los desplazamientos en la losa, concentrando las deformaciones más bajas en las proximidades de estos elementos estructurales. Se evidencia la efectividad de las vigas para incrementar la rigidez del sistema y optimizar la distribución de cargas hacia los apoyos.

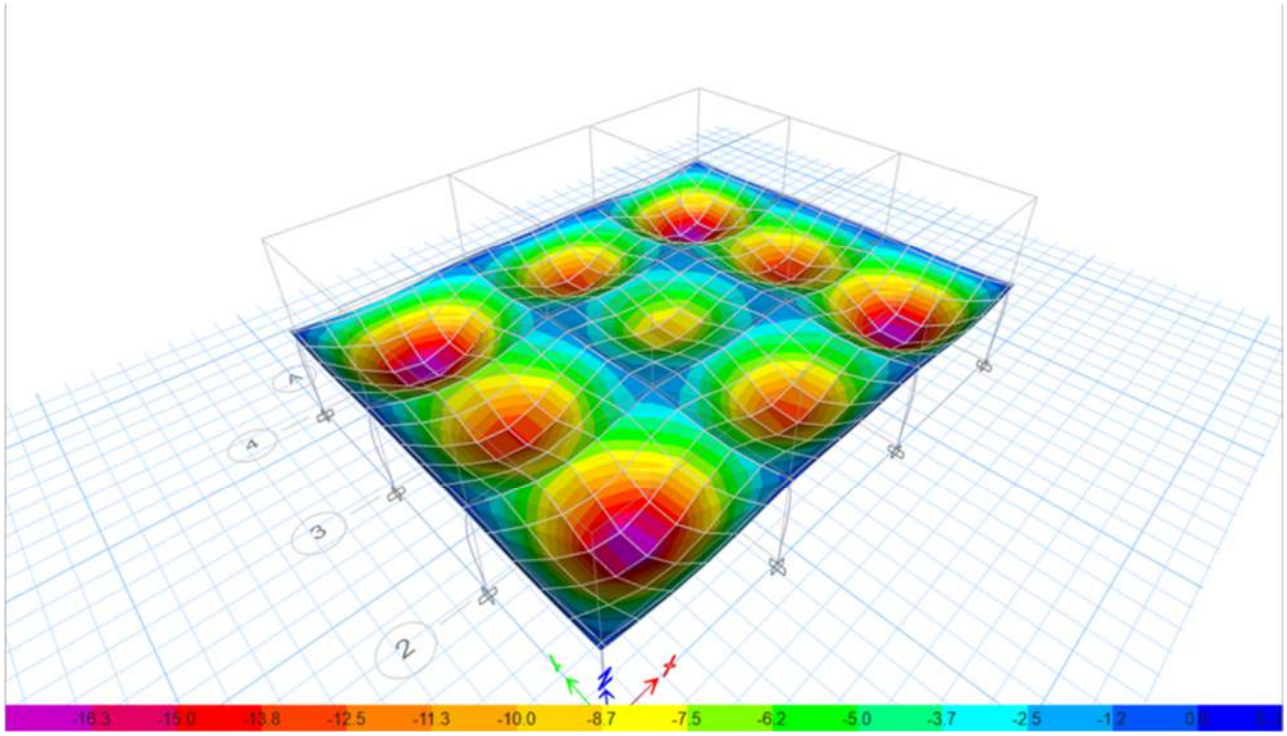



**Figura 27.** *Deformación de la Losa plana con vigas, FEM (Caso 3).*

*Nota.* Escala de deformaciones marcada en colores con unidades en ft (pies)

La Figura 28 presenta el diseño del refuerzo de acero. En el centro del esquema, las barras de refuerzo #4 se distribuyen longitudinalmente en la parte inferior de los claros, asegurando el soporte frente a momentos positivos. Sobre los apoyos, se destacan las barras #5 colocadas en la parte superior, diseñadas para resistir momentos negativos, especialmente en la conexión entre la losa y las vigas.

El esquema también muestra la clara segmentación de los tramos de la losa, delimitados por las vigas, lo que refleja un diseño que responde a las cargas internas y momentos calculados en el análisis estructural.

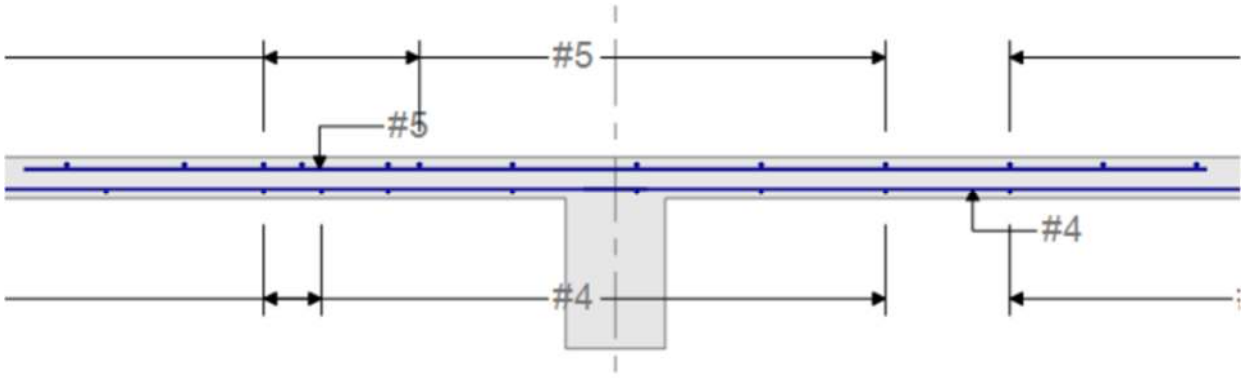



**Figura 28.** *Diseño de acero mediante FEM (Caso3).*

La Figura 29 muestra el diagrama de momentos flectores obtenido para el Caso 3, correspondiente a una losa plana con vigas. Los valores máximos de momento negativo alcanzan -28.93 kN·m, concentrándose sobre las columnas, mientras que los valores máximos de momento positivo son de 9.20 kN·m, localizados en los claros entre columnas. Este comportamiento refleja cómo las vigas contribuyen significativamente a la distribución de los esfuerzos, disminuyendo los momentos positivos y negativos en comparación con losas sin vigas.

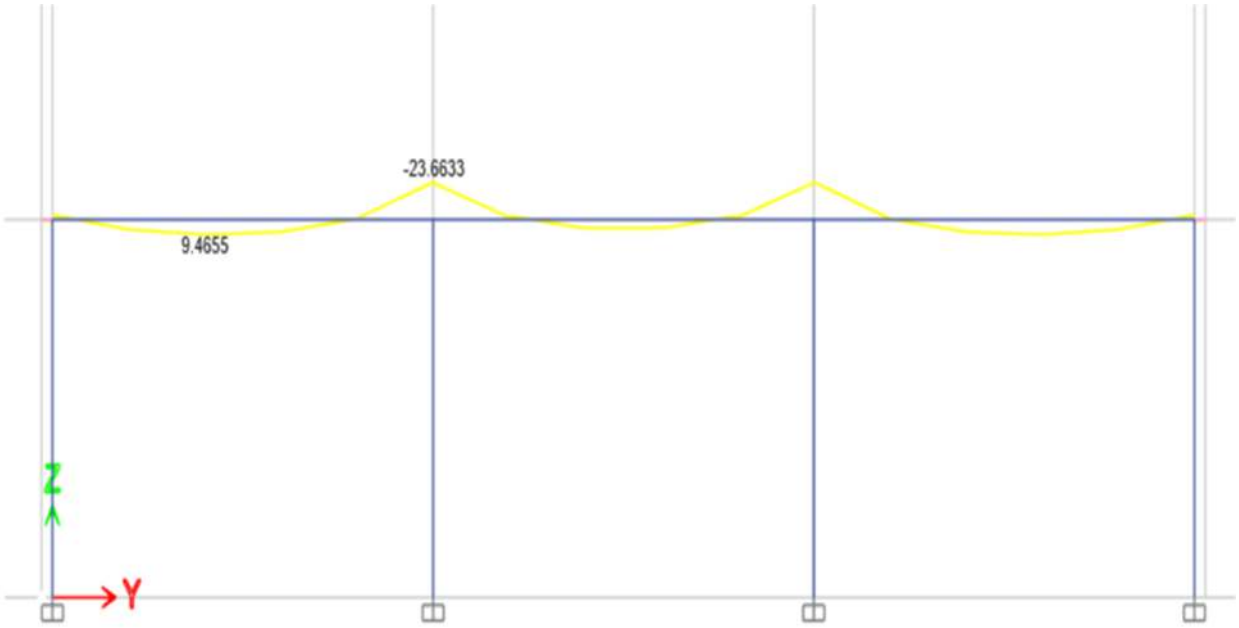



**Figura 29.** *Diagrama de momentos en línea de columnas por el método FEM (Caso 3).*

La Figura 30 presenta el diagrama de fuerzas cortantes para el Caso 3. Los valores máximos de cortante se concentran cerca de las columnas, alcanzando un pico de 4.76 kN, mientras que entre apoyos los valores disminuyen gradualmente hasta un mínimo de 4.42 kN. La inclusión de vigas reduce la concentración de esfuerzos cortantes en las cercanías de los apoyos, mostrando una distribución más uniforme de las cargas y contribuyendo a la estabilidad del sistema estructural.

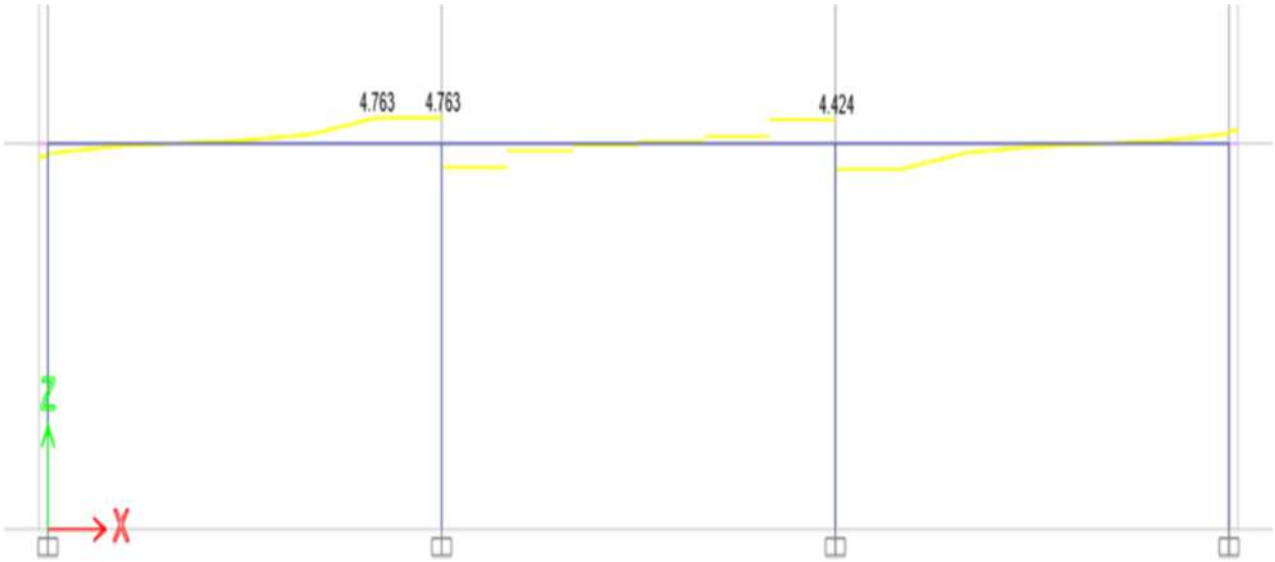



**Figura 30.** *Diagrama de cortante en la losa por el método FEM (Caso 3).*

## HILLERBORG

La Figura 31 representa el diagrama de momentos Hillerborg para el caso 3 de losa plana con vigas, corresponde al eje estructural indicado en el ejemplo del caso 3. Los valores extremos de momento positivo y negativo están indicados, alcanzando un máximo de 5577.96 lb·ft y un mínimo de -6490.84 lb·ft. El comportamiento del momento refleja la interacción entre las vigas y la losa, con máximos momentos negativos localizados sobre los apoyos, lo que evidencia la transferencia de carga hacia estos elementos estructurales. Los momentos positivos se encuentran en los tramos entre apoyos, indicando las zonas donde la losa experimenta esfuerzos de flexión en dirección opuesta.

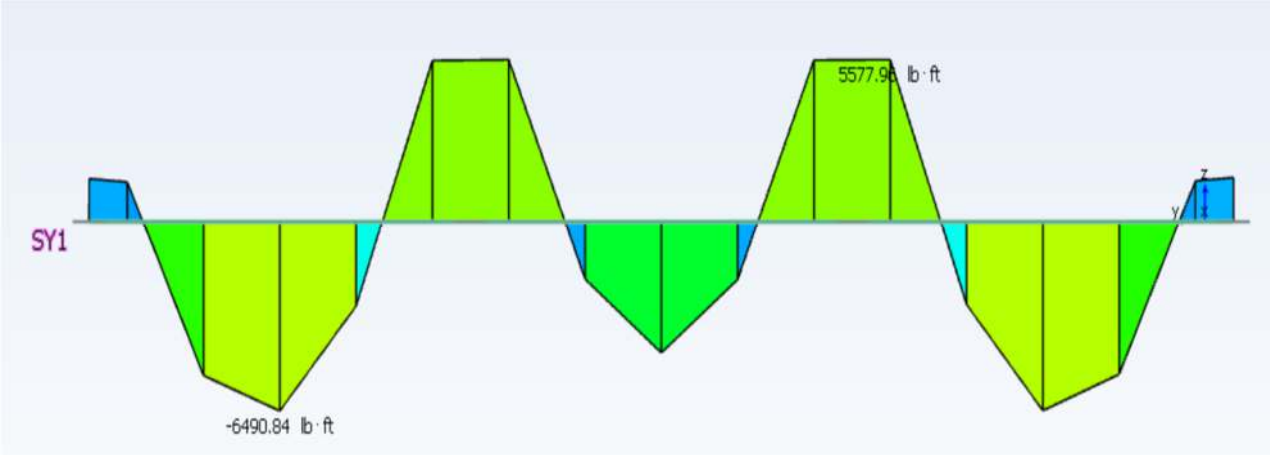



**Figura 31**. *Diagrama de momentos en línea de columnas por Hillerborg (Caso 3).*

La Figura 32 muestra el diagrama de fuerzas cortantes Los valores de cortante varían a lo largo del elemento, con un valor mínimo de -1103.12 lb. Este diagrama ilustra cómo se distribuyen las fuerzas transversales generadas por las cargas aplicadas, destacando los puntos críticos cercanos a los apoyos, donde las magnitudes de cortante son más altas.

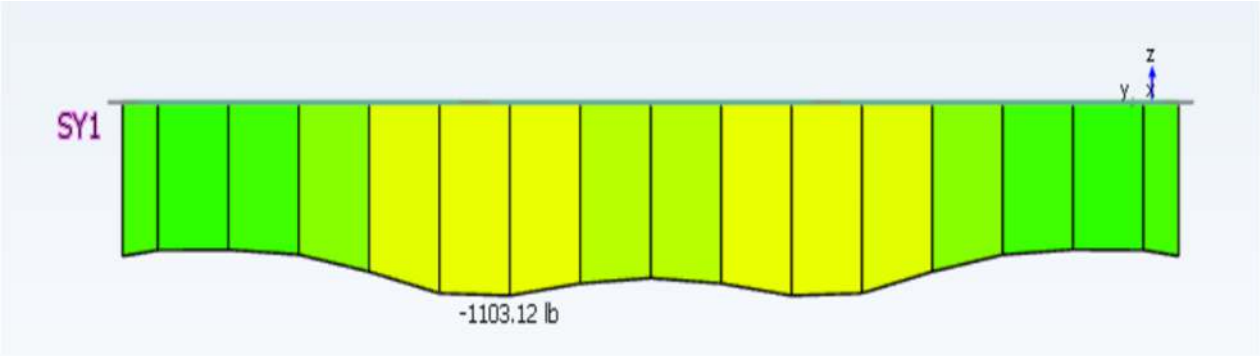



**Figura 32.** *Diagrama de cortante en línea de columnas Hillerborg (Caso 3).*

La ***Figura* 33** presenta el detallado del acero de refuerzo, representando su configuración tal como se ejecutaría en obra conforme a las especificaciones del diseño estructural.

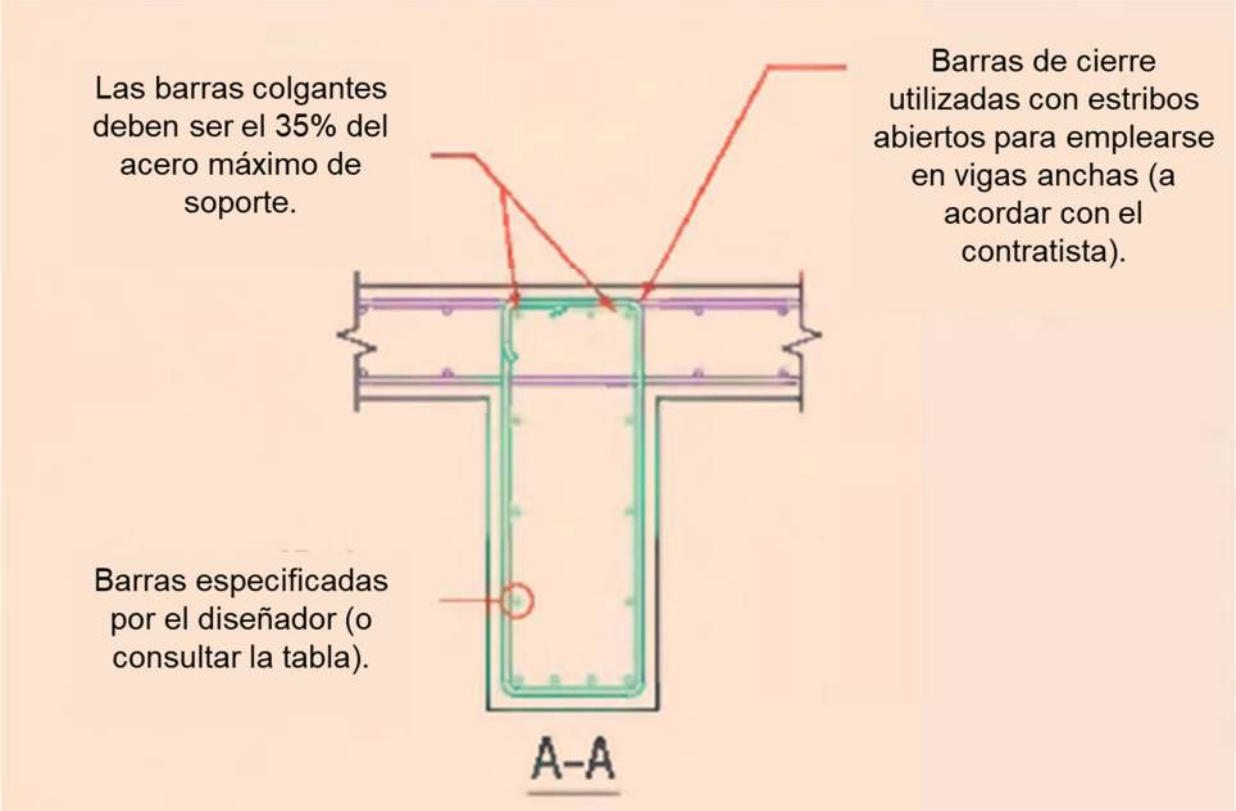



***Figura 33.*** *Detallado de losa con vigas según The Institution of Structural Engineers (2021).*

## 5.3 Fase 3: Comparación y análisis de los resultados obtenidos de los diferentes métodos de diseño.

En este último apartado, se comparan y analizan los resultados obtenidos a partir de los diferentes métodos de diseño estructural aplicados a losas planas. Para esto se evalúan las diferencias en los esfuerzos, deformaciones, eficiencia en el uso de materiales y aplicabilidad en cada uno de estos.

### *5.3.1 Comparación de resultados: esfuerzos, deformaciones, eficiencia de materiales y cumplimiento normativo*

*5.3.1.1 Caso 1: Losa plana sin vigas sin ábacos*

La **Tabla *8*** muestra los esfuerzos obtenidos para la losa plana sin vigas ni ábacos, utilizando diferentes métodos de diseño según las normativas ACI 318-14, el análisis de

elementos finitos (EFM), el método FEM y el método Hillerborg. Los valores reportados incluyen los momentos negativos y positivos en las columnas, así como los valores correspondientes en el centro de franja negativo y positivo.

Para el momento negativo en las columnas, el método FEM presentó el valor más alto (69.96 kip-ft), seguido por el método DDM ACI 318-14 con 49.6 kip-ft, mientras que el método Hillerborg mostró el menor valor con 12.93 kip-ft. En cuanto al momento positivo en las columnas, el método FEM también presentó el valor más alto (43.30 kip-ft), mientras que el método Hillerborg mostró el menor momento positivo (11.46 kip-ft).

Los valores de centro de franja negativo y positivo variaron entre los diferentes métodos de diseño, siendo el EFM ACI 318-14 el que tuvo valores más cercanos entre las franjas, especialmente en el centro de franja positivo. Los resultados y cálculos detallados correspondientes a este Caso 1 se encuentran documentos en Structurepoint (2017) y **Anexo A.** Losa plana sin vigas ni ábacos.

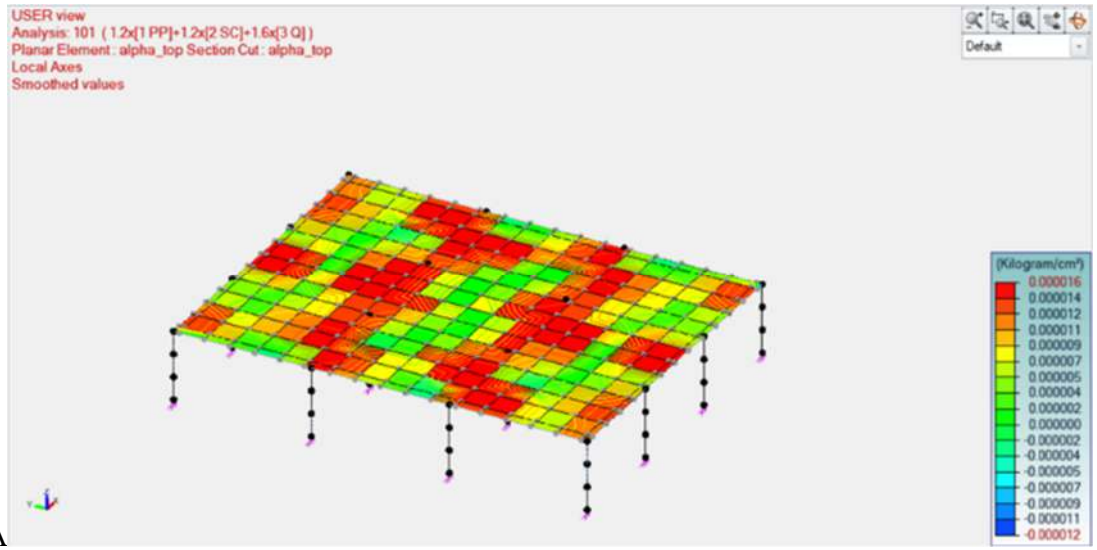
**Tabla 8**

*Esfuerzos de momento en columnas y centros de franja para losa plana sin vigas ni ábacos.*

| Método de diseño | Columna Momento negativo (kip-ft) | Columna momento positivo (kip-ft) | Centro de franja negativo | Centro de franja positivo |
|---|---|---|---|---|
| DDM ACI 318-14 | 49.6 | 19.7 | 15.9 | 19.7 |
| EFM ACI 318-14 | 45.60 | 19.90 | 15.20 | 15.16 |
| FEM | 69.96 | 43.30 | 21.74 | 20.55 |
| HILLERBORG | 12.93 | 11.46 | 4.55 | 5.71 |

Con el fin de brindar una mejor ilustración del comportamiento estructural de la losa de la tabla anterior se presentan los esfuerzos obtenidos en sus tres principales fibras: superior, media e inferior.

A




B

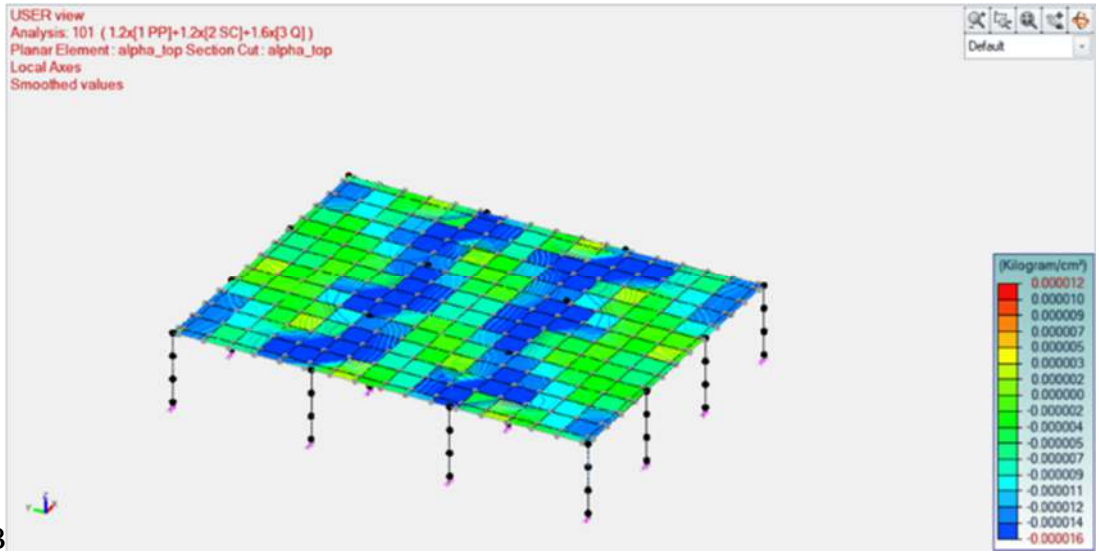
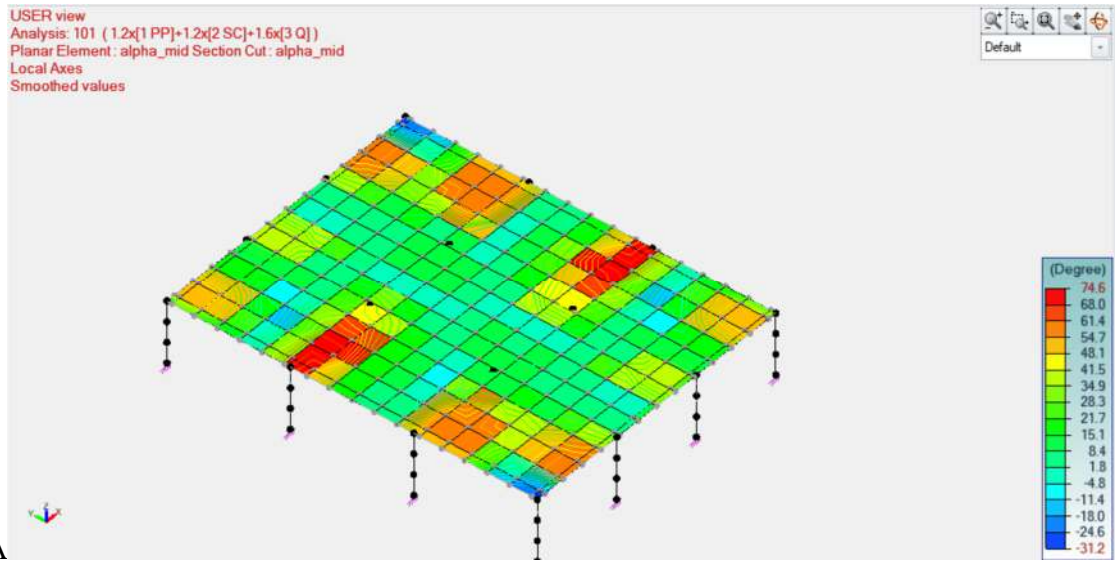



**Figura 34.** *Esfuerzos en la fibra superior de la losa*

En la Figura 34 se muestran los esfuerzos correspondientes a la fibra superior de la losa. La imagen A muestra los esfuerzos máximos, con zonas de alta solicitación en rojo y naranja, mientras que la imagen B presenta los esfuerzos mínimos, destacando áreas de baja exigencia estructural en tonos azules y verdes.

A




B

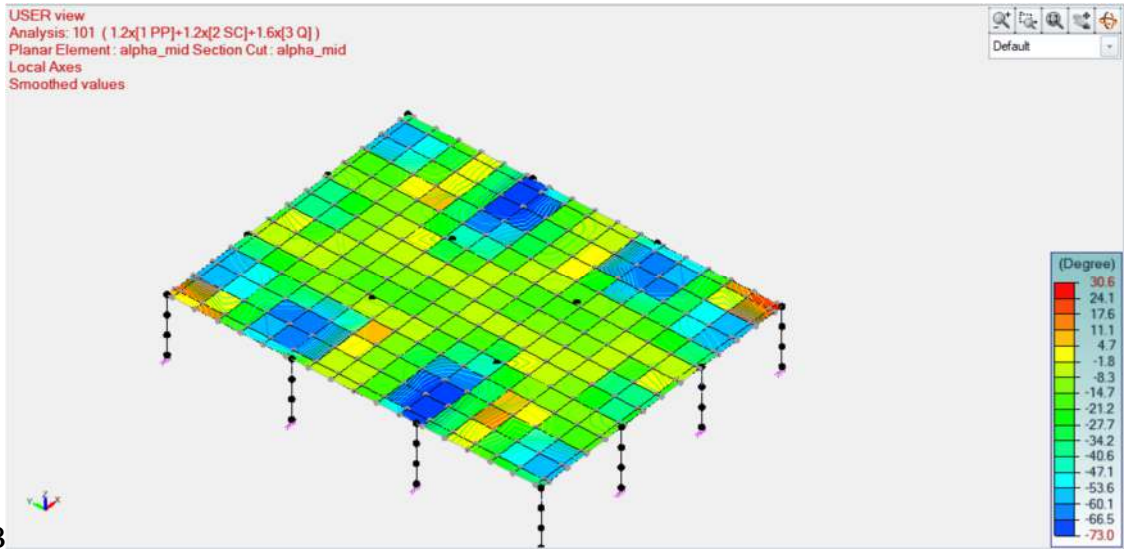
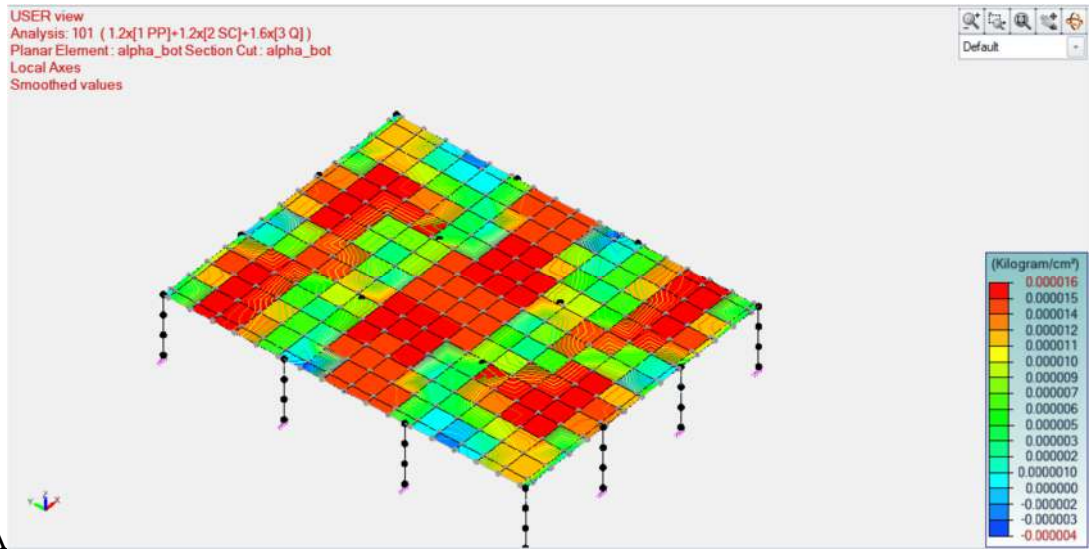



**Figura 35.** *Variación en la fibra media de la losa*

En la Figura 35 se visualizan los esfuerzos correspondientes a la fibra media de la losa. En la imagen A se observan mayores concentraciones en los bordes laterales y esquinas, que indican zonas de mayor deformación angular. En contraste, los esfuerzos de la imagen B están principalmente ubicados en el centro de la losa y áreas internas, lo que sugiere menor rotación o distorsión estructural en esas regiones.

A




B

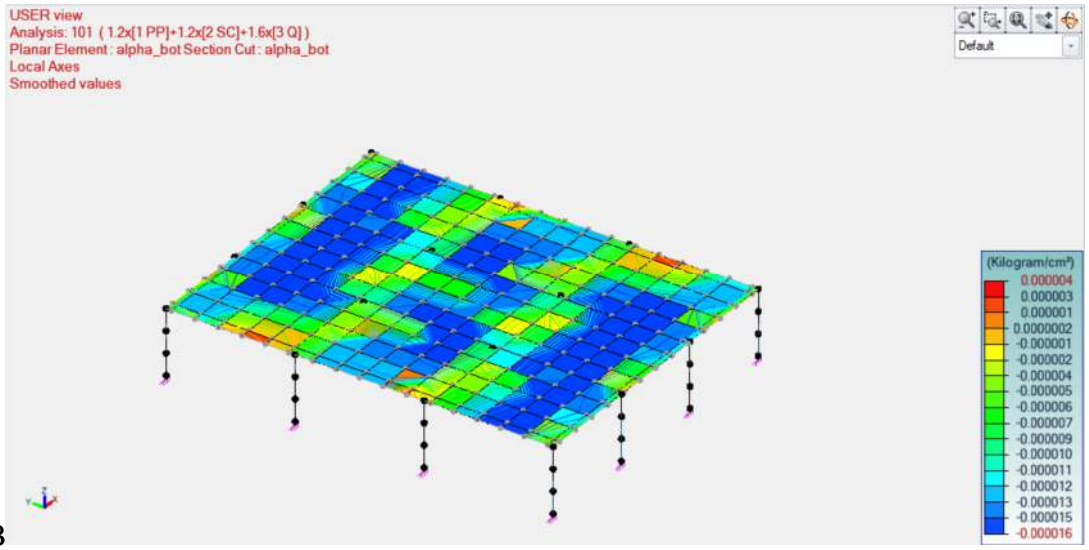



**Figura 36.** *Esfuerzos en la fibra inferior de la losa*

Al igual que en la figura anterior, en la Figura 36 se observan los esfuerzos máximos hacia los extremos laterales (A); y los esfuerzos mínimos en las zonas internas de la losa (B).

Por otro lado, la **Tabla 9** proporciona los detalles sobre el diseño del acero en la losa plana, mostrando la cantidad y tipo de varillas necesarias para los esfuerzos negativos y positivos en las columnas y en el centro de franja. El diseño de acero negativo y positivo en las columnas y en el centro de franja varió significativamente entre los métodos utilizados.

El método FEM requirió un diseño de acero más robusto, especialmente en la columna negativa (10 #5) y positiva (10 #4), comparado con el método Hillerborg, que presentó cantidades menores de acero, como en la columna negativa (9 #4). En los centros de franja, los métodos mostraron un diseño relativamente constante, con el EFM ACI 318-14 utilizando 6 #4 tanto para el centro de franja negativo como positivo, mientras que Hillerborg y FEM variaron en la cantidad y tipo de varillas.

**Tabla 9**

*Diseño de acero para losa plana sin vigas ni ábacos.*

| Método de diseño | Columna negativo | Columna positiva | Centro de franja negativo | Centro de franja positivo |
|---|---|---|---|---|
| DDM ACI 318-14 | 10 #4 | 6 #4 | 6 #4 | 6 #4 |
| EFM ACI 318-14 | 11 #4 | 6 #4 | 6 #4 | 6 #6 |
| FEM | 10 #5 | 10 #4 | 10 #5 | 10 #4 |
| HILLERBORG | 9#4 | 7#4 | 12#4 | 13#4 |

La distribución del acero de refuerzo es común para todos los métodos de diseño analizados. Lo que varía entre métodos es la cantidad y el tipo de barras (**Tabla *9***).

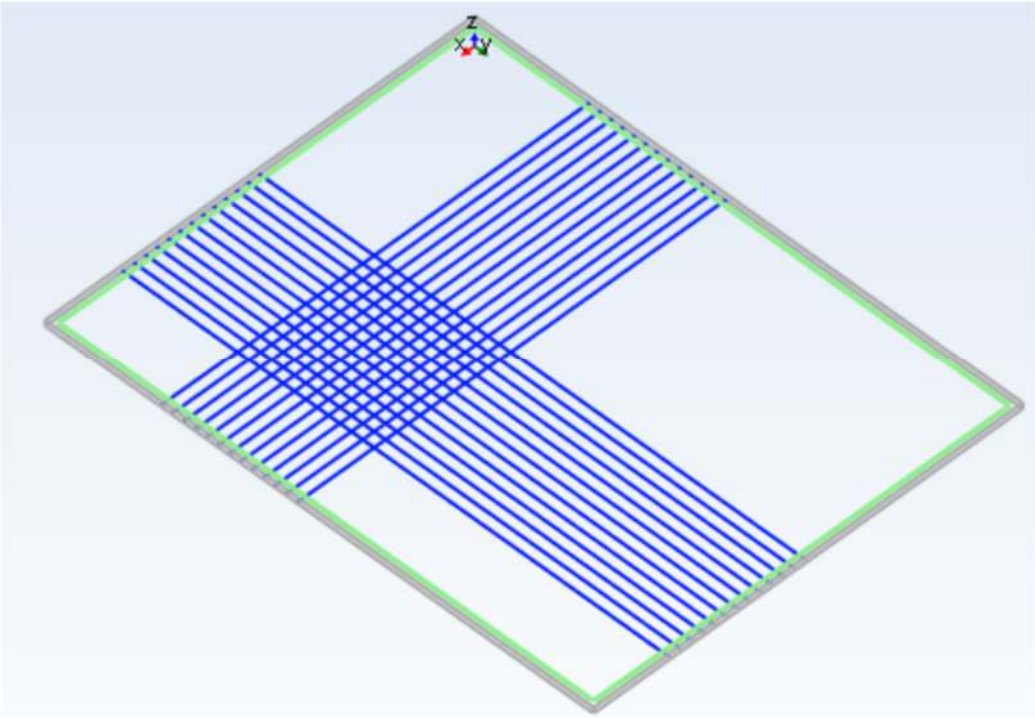



**Figura 37.** *Distribución de acero Caso 1*

En la **Figura *37*** se muestra la disposición general del acero para el Caso 1. Se observa una configuración que concentra mayor cantidad de acero en las zonas centrales del vano, especialmente en los dos sentidos principales, lo cual es coherente con las zonas de mayor momento flector.

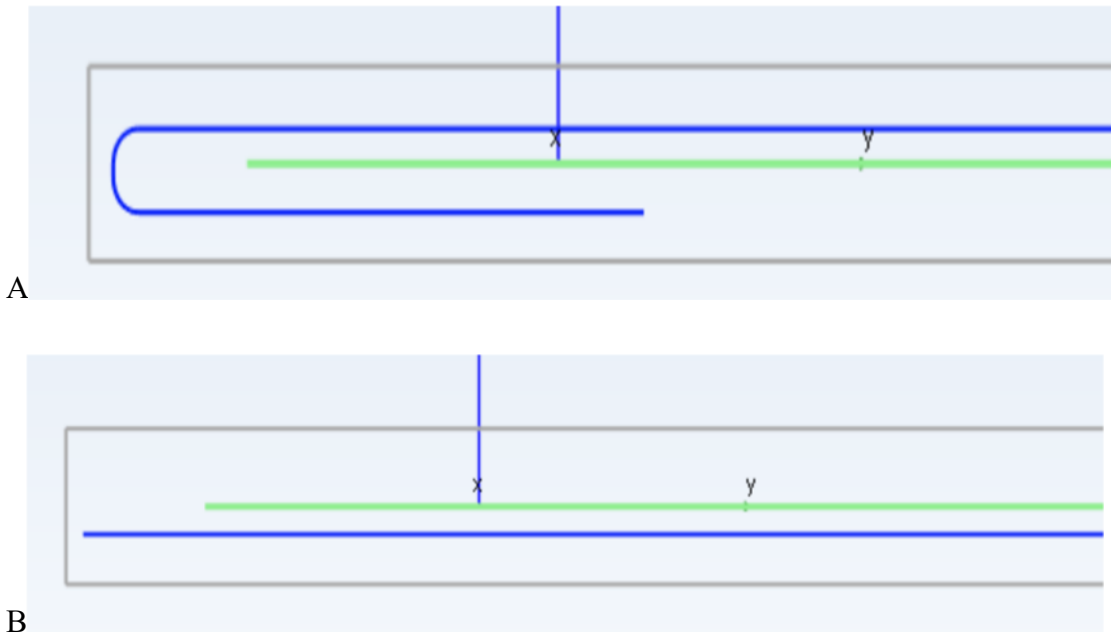



**Figura 38.** *Barras en el lecho superior (A) e inferior (B).*

En la Figura 38 se muestran detalles del refuerzo en los lechos superior e inferior de la losa: (A) corresponde al lecho superior, donde se colocan las barras destinadas a resistir los momentos negativos, especialmente sobre los apoyos (zonas de columna) y (B) representa el lecho inferior, encargado de resistir los momentos positivos.

*5.3.1.2 Caso 2: Losa plana sin vigas con ábacos*

La **Tabla *10*** presenta los esfuerzos obtenidos para la losa plana con ábacos, utilizando diferentes métodos de diseño. Es importante señalar que, para este caso, el Método Directo (DDM ACI 318-14) no aplica, ya que según las especificaciones del ejercicio, este método es adecuado solo para paneles rectangulares con una relación lado mayor/lado menor inferior

a 2. En los ejemplos tomados como referencia, el creador no incluyó el desarrollo del Método Directo para este caso, por lo que no se muestran datos correspondientes a dicho procedimiento.

En cuanto a los otros métodos de diseño, se observan variaciones significativas en los momentos negativos y positivos en las columnas, así como en los centros de franja. El EFM ACI 318-14 presentó los momentos más altos en ambas columnas, con un momento negativo de 804 kip-ft y un momento positivo de 718 kip-ft. En cuanto al centro de franja, los valores fueron de 332 kip-ft para el negativo y 366 kip-ft para el positivo. Por otro lado, el FEM presentó valores ligeramente inferiores, con momentos negativos de 727.93 kip-ft y momentos positivos de 671 kip-ft. Los valores en el centro de franja fueron de 221.64 kip-ft en el lado negativo y 386.69 kip-ft en el positivo. Finalmente, el método Hillerborg mostró los valores más bajos, con un momento negativo de 154.51 kip-ft y un momento positivo de 18.56 kip-ft en las columnas, y valores más reducidos también en los centros de franja. Los resultados y cálculos detallados correspondientes a este Caso 2 se encuentran documentos en Structurepoint (2018) y **Anexo B**. Losa plana sin vigas con ábacos.

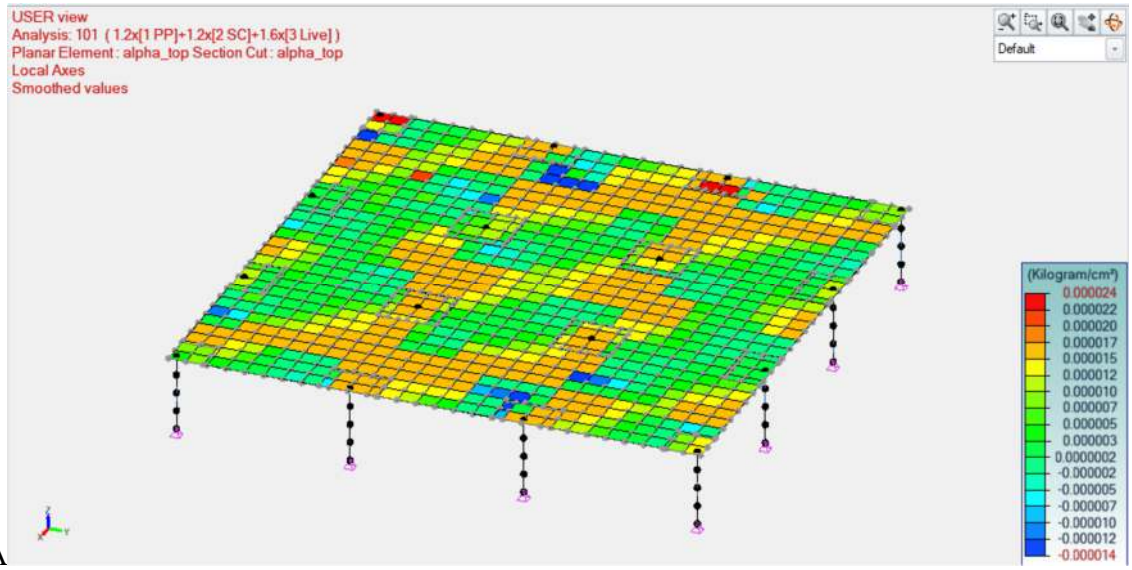
**Tabla 10**
*Esfuerzos de momento en columnas y centros de franja para losa plana sin vigas con ábacos.*

| Método de diseño | Columna Momento negativo (kip-ft) | Columna Momento Positivo (kip-ft) | Centro de franja negativo | Centro de franja positivo |
|---|---|---|---|---|
| DDM ACI 318-14 | -- | -- | -- | -- |
| EFM ACI 318-14 | 804 | 718 | 332 | 366 |
| FEM | 727.93 | 671 | 221.64 | 386.69 |
| HILLERBORG | 154.51 | 18.56 | 27.31 | 45.37 |

La **Figura *39*** A muestra los esfuerzos máximos en la fibra superior de una losa plana sin vigas con ábacos, donde se observan valores elevados principalmente en las esquinas superiores y en algunas zonas centrales, indicando áreas críticas de compresión. En cambio, la **Figura *39*** B representa los esfuerzos mínimos, con concentraciones más bajas distribuidas

de forma más uniforme, aunque se destacan algunos puntos críticos en los bordes laterales y cercanías de los apoyos.

A




B

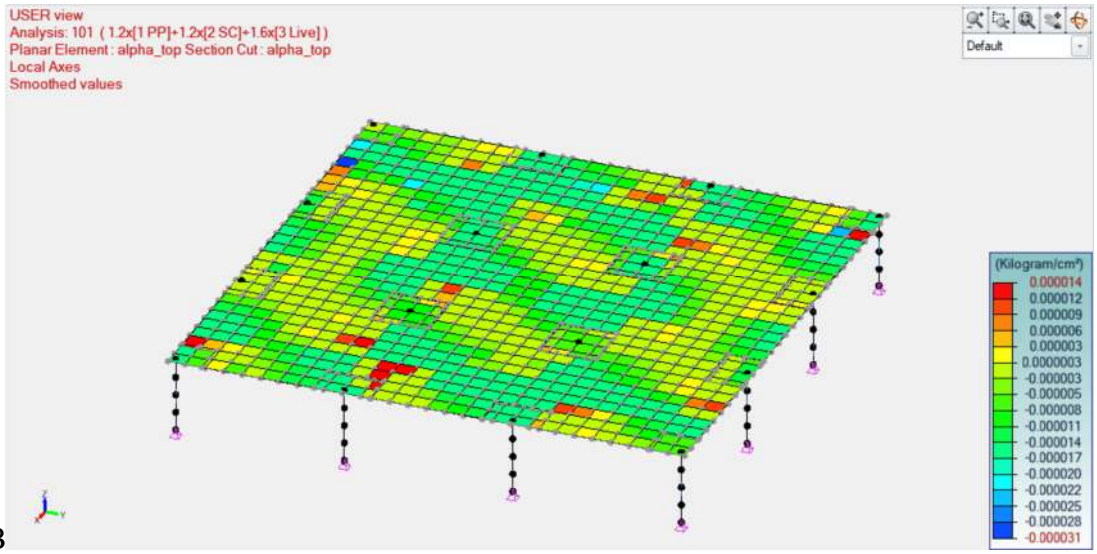
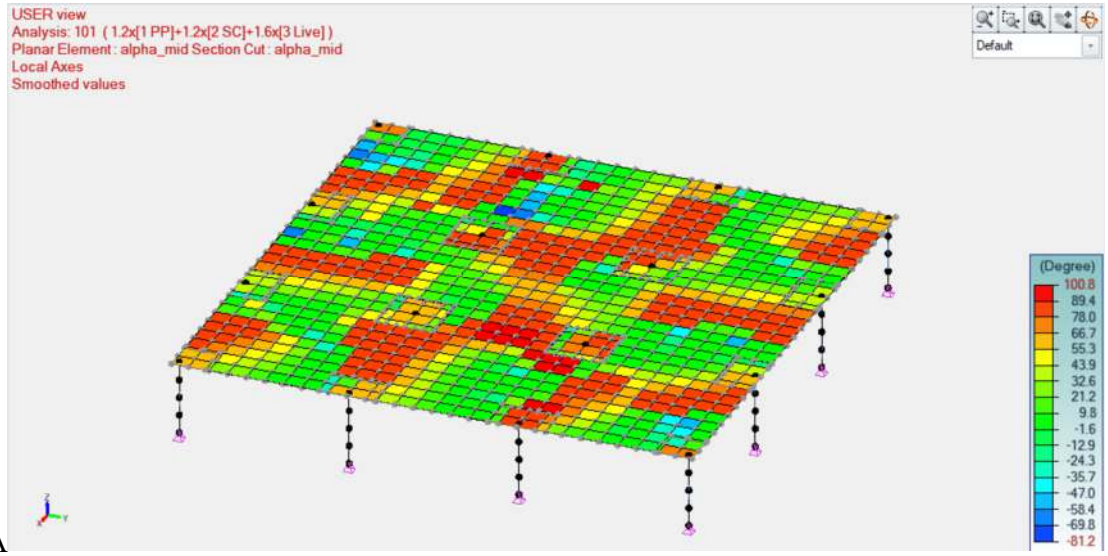



**Figura 39.** *Esfuerzos en la fibra superior de la losa*

Ambas figuras evidencian cómo los ábacos ayudan a distribuir los esfuerzos, reduciendo las concentraciones en los apoyos.

A




B

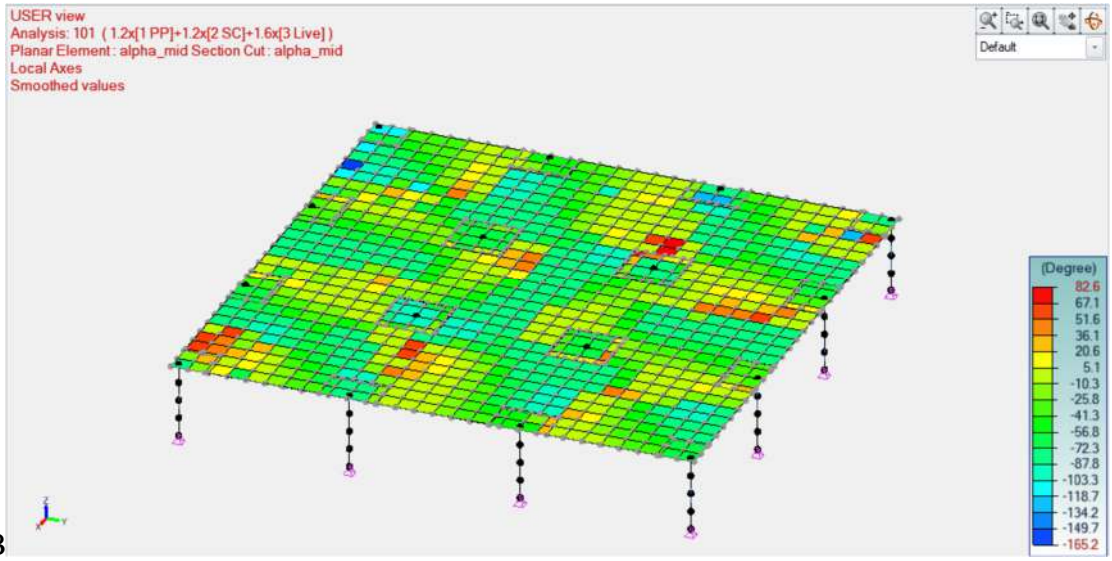
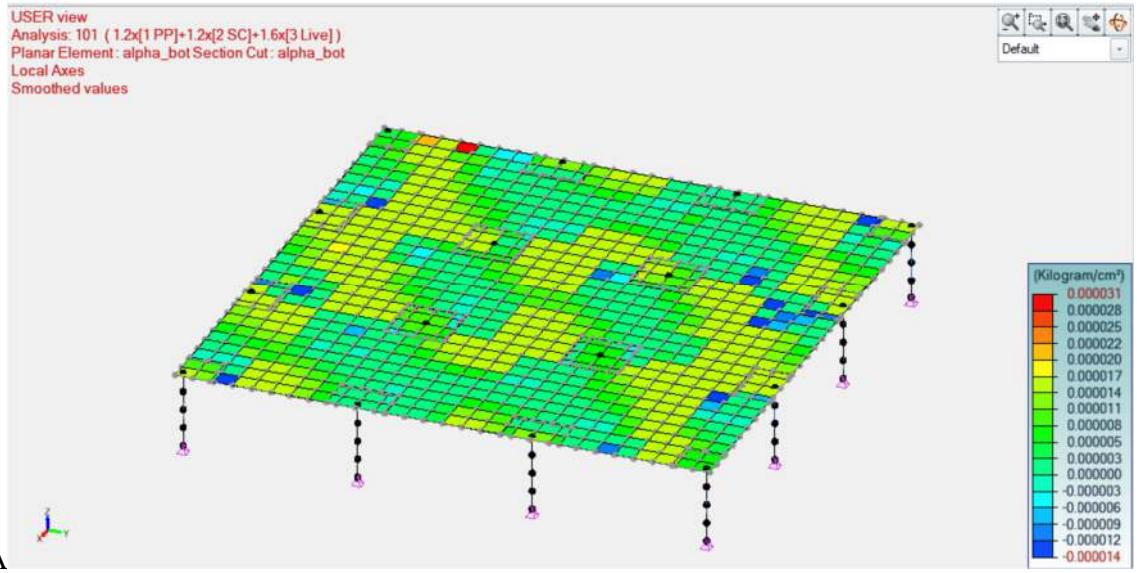



**Figura 40.***Esfuerzos en la fibra media de la losa*

La **Figura *40*** A muestra los esfuerzos máximos en la fibra media de la losa plana sin vigas con ábacos, destacándose zonas críticas en el centro y a lo largo de las líneas entre apoyos. En contraste, la **Figura *40*** B representa los esfuerzos mínimos en la fibra media, observándose áreas con menores valores principalmente hacia las esquinas y bordes laterales de la losa.

A




B

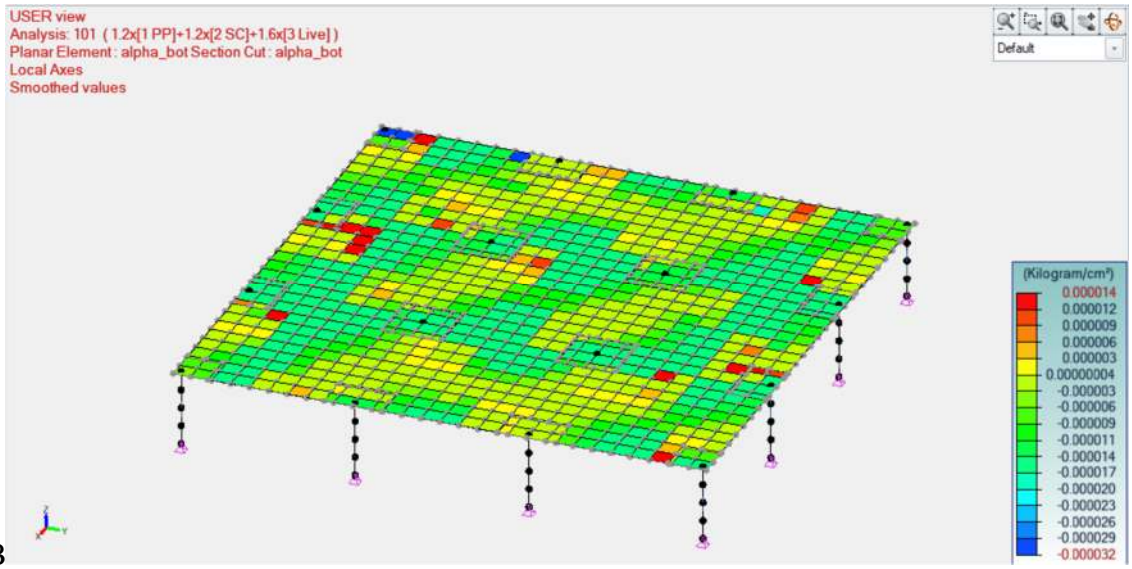



**Figura 41**. *Esfuerzos en la fibra inferior de la losa*

La **Figura *41***, que representa los esfuerzos en la fibra inferior; en A se observan concentraciones de esfuerzo, especialmente en la parte superior izquierda. Por otro lado, en B, se identifican zonas con menores esfuerzos distribuidas de manera más uniforme en el centro de la losa, reflejando una menor solicitación en esas regiones bajo la carga viva analizada.

En la **Tabla *11***, se presentan los detalles sobre el diseño del acero para cada método. Al igual que en la Tabla 1, no se incluyen datos para el método DDM ACI 318-14, ya que este método no es aplicable en este ejercicio. Para el EFM ACI 318-14, el diseño de acero negativo en las columnas requería 21 varillas #6 en la columna negativa y 18 varillas #6 en la columna positiva. En los centros de franja, se utilizaban 11 varillas #6 en el centro negativo y 10 varillas #6 en el centro positivo.

En comparación, el FEM demandó un diseño más robusto, con 30 varillas #6 en las columnas negativas y positivas, y 30 varillas #5 en los centros de franja. Finalmente, el método Hillerborg utilizó un diseño más modesto, con 17 varillas #6 en la columna negativa, 16 varillas #6 en la columna positiva, y 12 varillas #6 en los centros de franja negativos y positivos.

**Tabla 11**
*Diseño de acero para losa plana sin vigas con ábacos.*

| Método de diseño | Columna acero negativo | Columna positivo | Centro de franja negativo | Centro de franja positivo |
|---|---|---|---|---|
| DDM ACI 318-14 | -- | -- | -- | -- |
| EFM ACI 318-14 | 21 #6 | 18 #6 | 11 #6 | 10 #6 |
| FEM | 30 #6 | 30 #6 | 30 #5 | 30 #5 |
| HILLERBORG | 17#6 | 16#6 | 12#6 | 12#6 |

Al igual que en el Caso 1, la distribución del acero es la misma para todos los métodos de diseño considerados, manteniéndose constante tanto en la zona central como en los bordes de la losa.

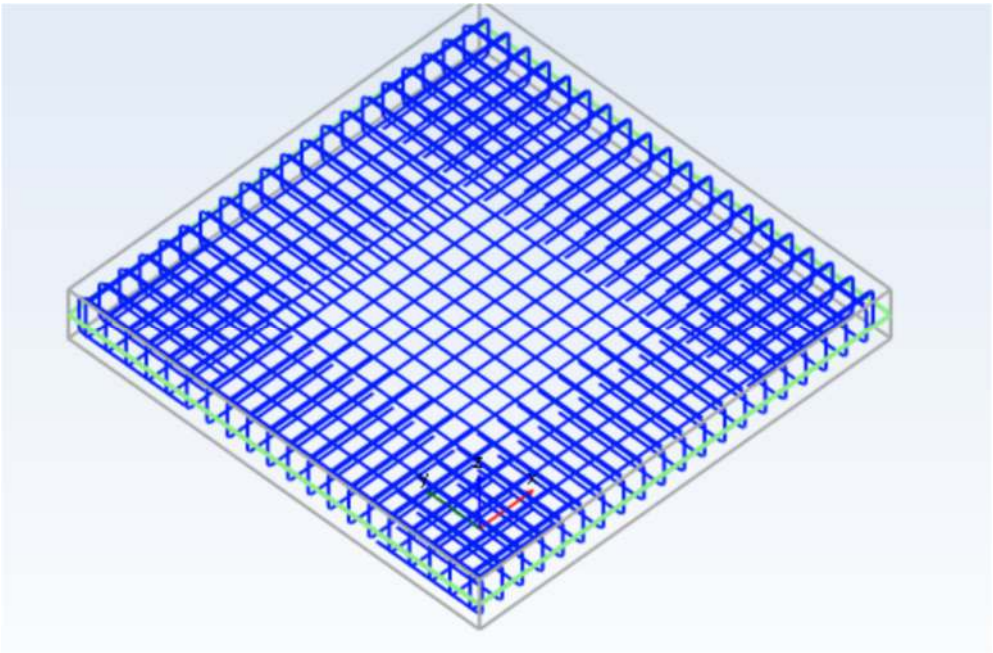
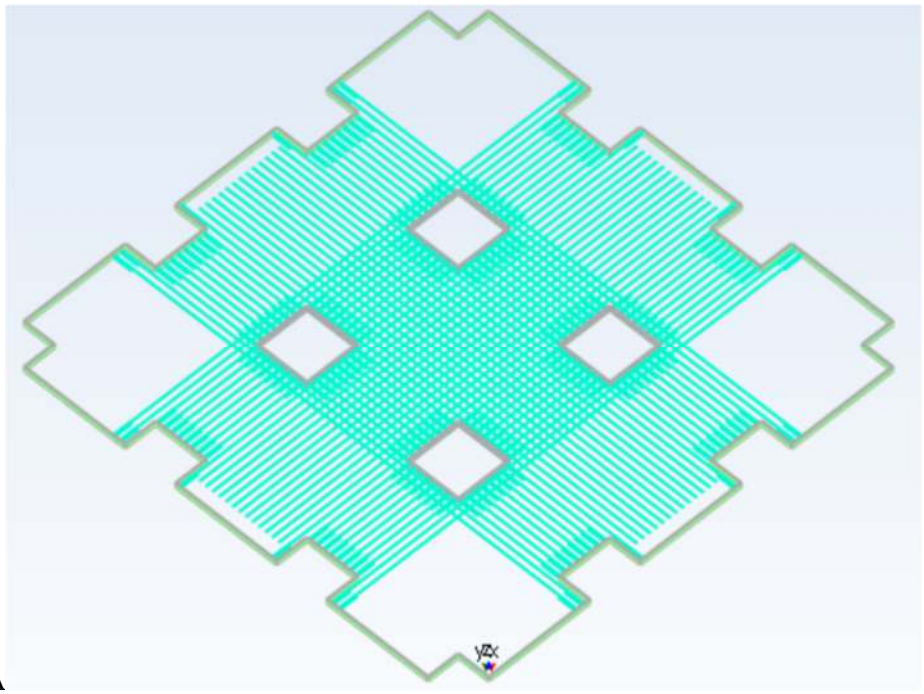


**Figura 42.** *Distribución de acero Caso 2*

En la **Figura *42*** se muestra la disposición general del refuerzo en toda la losa, abarcando las direcciones longitudinal y transversal, mientras que la **Figura *43*** complementa esta información al detallar el armado superior e inferior en la zona del capitel, evidenciando cómo se integra con el refuerzo general mostrado previamente.

A



B

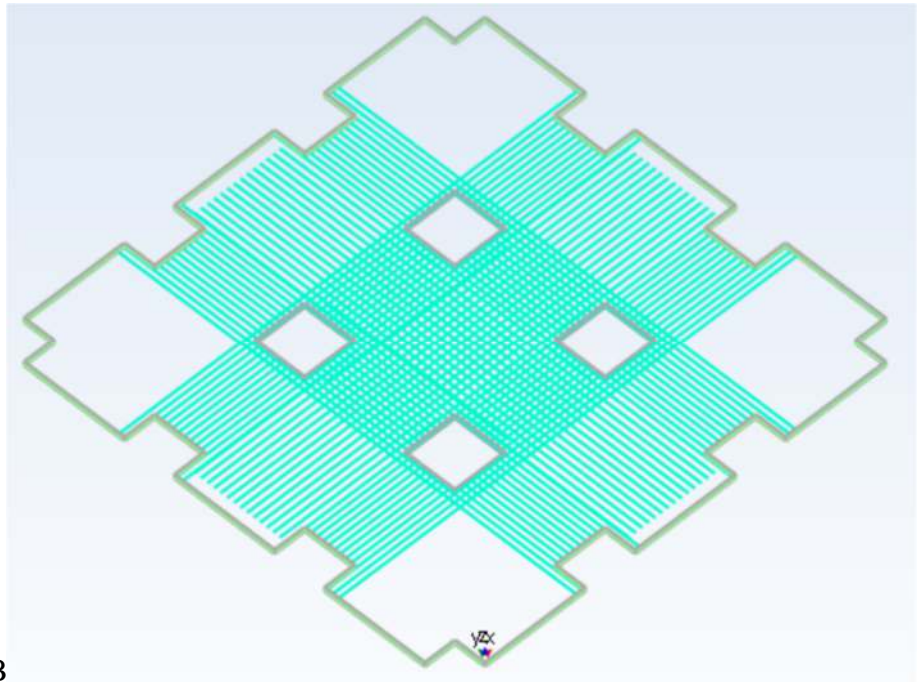


**Figura 43.** *Armado superior (A) e inferior de la losa (B)*

*5.3.1.3 Caso 3: Losa plana con vigas*

La **Tabla *12*** muestra los esfuerzos calculados para la losa plana con vigas utilizando diferentes métodos de diseño. Es importante mencionar que aunque en la sección 5.1.2 Casos representativos de losas bidireccionales. se muestra una estructura con tres claros en cada dirección, el diseño por carga gravitacional se realiza únicamente sobre la franja o panel representativo; por ello, en los ejemplos solo se modela la zona específica a diseñar. En este escenario, el Método Directo (DDM ACI 318-14) no se aplicó porque el modelo no incluye el tercer panel requerido por dicho procedimiento.

Por otro lado, los métodos EFM ACI 318-14, FEM y Hillerborg ofrecen resultados que evidencian diferencias notables en los momentos negativos y positivos, tanto en las columnas como en los centros de franja. En el caso del EFM, los momentos calculados en las columnas fueron moderados, con 14.23 kip-ft para el momento negativo y 8.50 kip-ft para el positivo, mientras que en los centros de franja los esfuerzos aumentaron significativamente, alcanzando 41.84 kip-ft en el negativo y 20.96 kip-ft en el positivo.

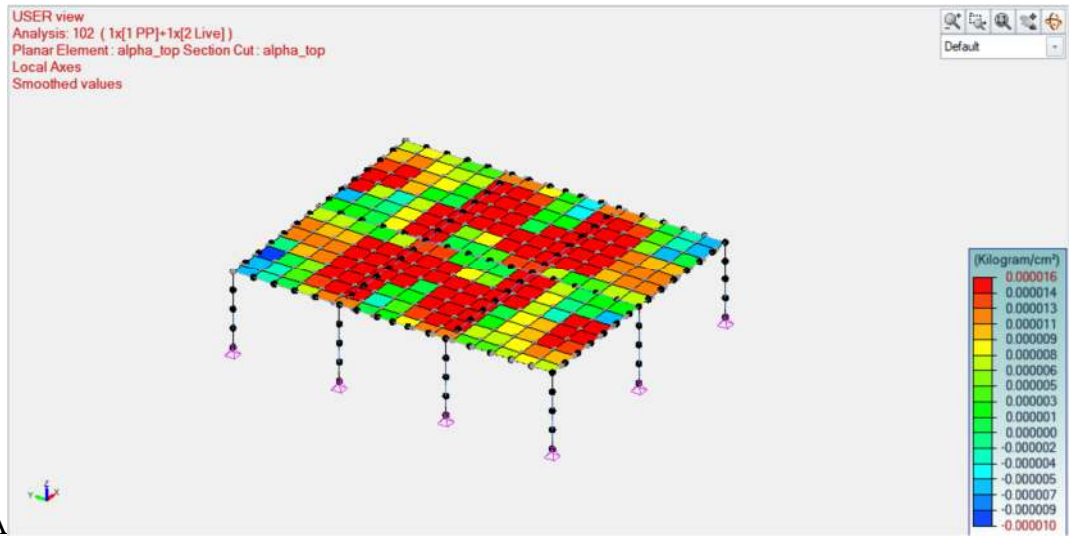
Por su parte, el método FEM presentó los valores más elevados entre todos los métodos, alcanzando 77 kip-ft en el momento negativo y 30 kip-ft en el positivo en las columnas, además de 60 kip-ft y 87 kip-ft en los momentos negativos y positivos, respectivamente, en los centros de franja. Esto sugiere mayores exigencias estructurales bajo este enfoque. En contraste, el método Hillerborg mostró los valores más bajos, con momentos negativos de 5.58 kip-ft y positivos de 3 kip-ft en las columnas, mientras que en los centros de franja los momentos fueron de 2.55 kip-ft y 6.49 kip-ft para los valores negativos y positivos, respectivamente. Estos resultados reflejan un diseño más conservador con menores esfuerzos. Los resultados y cálculos detallados correspondientes a este Caso 3 se encuentran documentos en Structurepoint (2024) y **Anexo C.** Losa plana con vigas.

**Tabla 12**
*Esfuerzos de momento en columnas y centros de franja para losa plana con vigas.*

| Método de diseño | Columna Momento negativo (Kip-ft) | Columna Momento positivo (kip-ft) | Centro de franja negativo | Centro de franja positivo |
|---|---|---|---|---|
| DDM ACI 318-14 | -- | -- | -- | -- |
| EFM ACI 318-14 | 14.23 | 8.50 | 41.84 | 20.96 |
| FEM | 77 | 30 | 60 | 87 |
| HILLERBORG | 5.58 | 3 | 2.55 | 6.49 |

En la figura **Figura *44***, se presenta los esfuerzos en la fibra superior de la losa; el esfuerzo máximo (A) se concentra en la zona central y bordes laterales de la losa, mientras que los valores menores se ubican en esquinas y apoyos perimetrales. El esfuerzo mínimo (B) predomina en la franja central longitudinal, especialmente entre columnas, con menores valores en esquinas y bordes, reflejando la distribución típica de momentos negativos en la fibra superior.

A



B

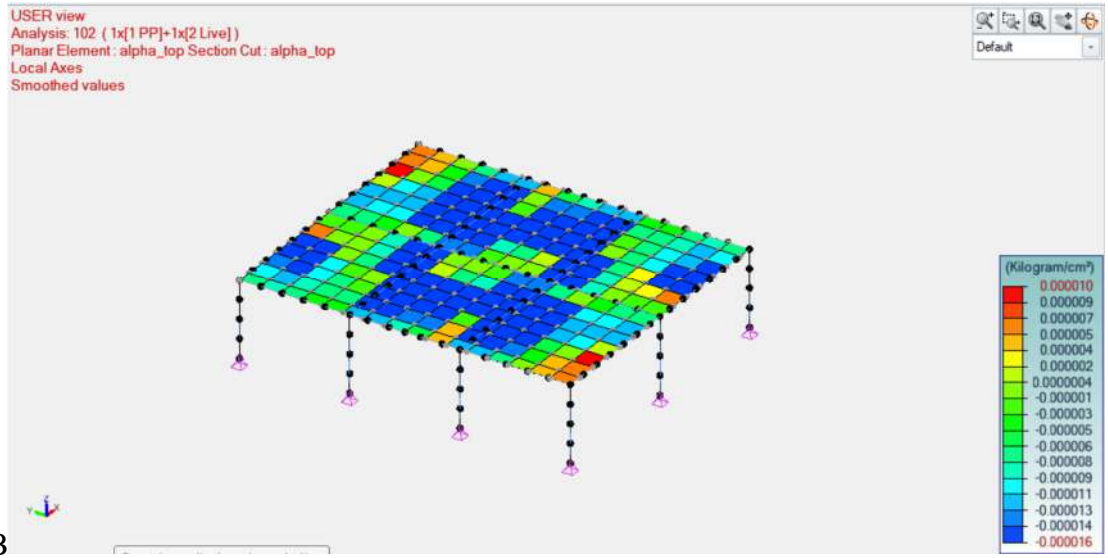
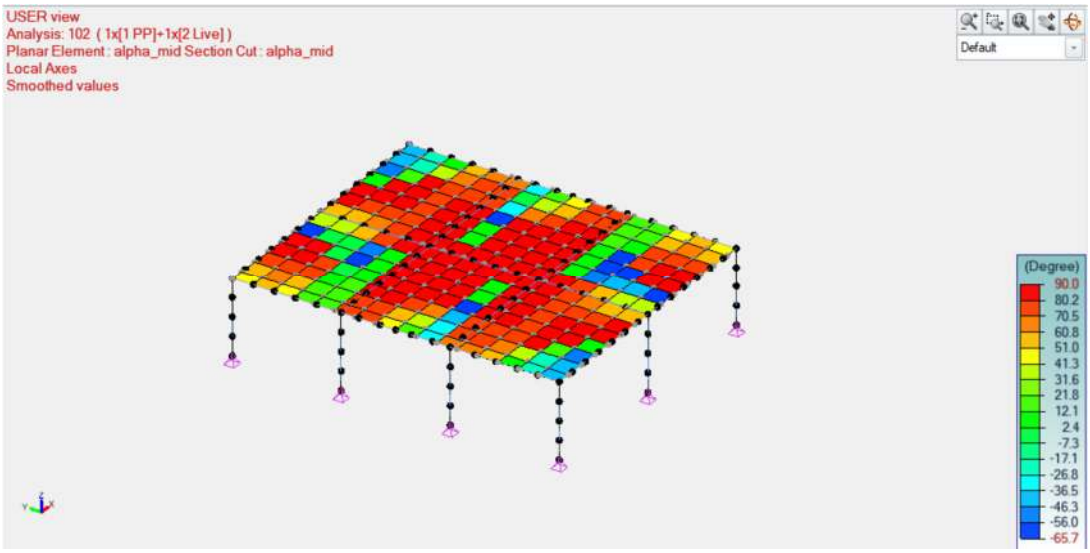



**Figura 44.** *Esfuerzos en la fibra superior*

En la fibra media de la losa, el comportamiento de los esfuerzos A y B es similar al de la fibra superior, ya que los mayores valores se concentran en la zona central y entre columnas, mientras que los menores aparecen en los bordes y esquinas. Sin embargo, en la fibra media los esfuerzos son menos intensos y más distribuidos, al representar una zona de transición entre las tensiones de tracción y compresión.

A



B

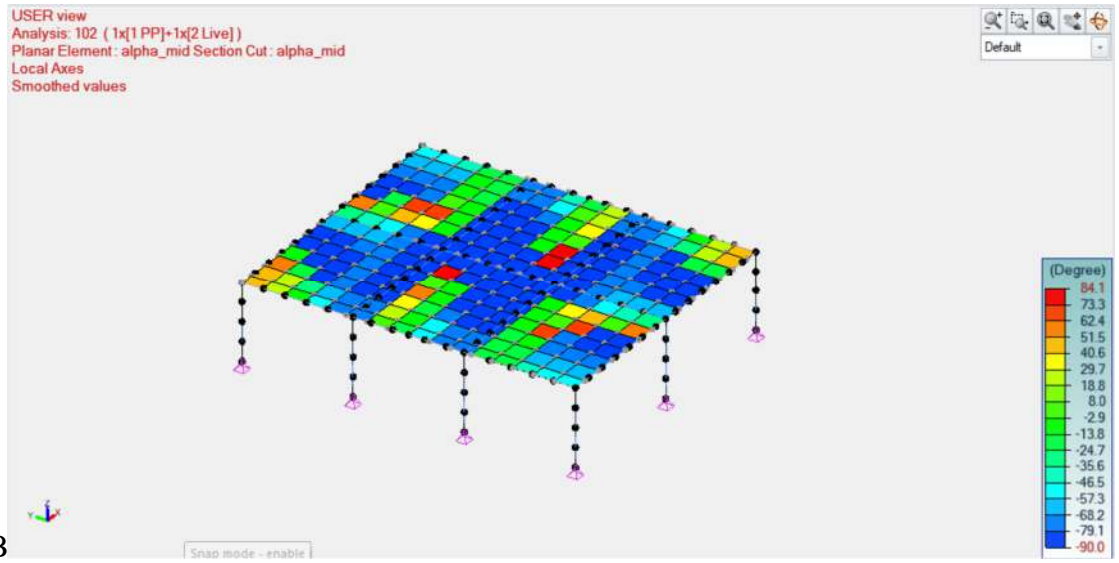
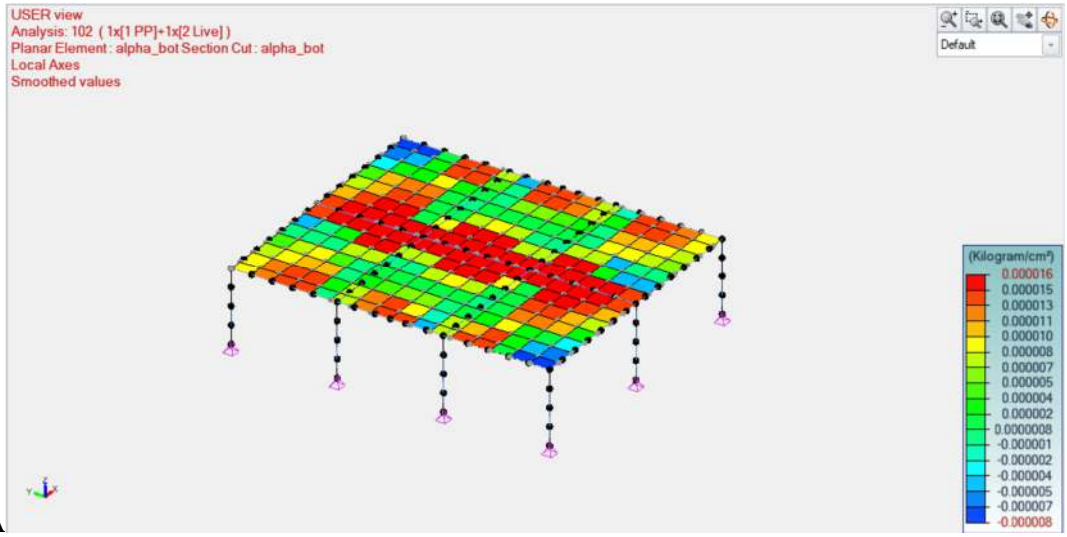



**Figura 45.** *Esfuerzos en la fibra media*

A diferencia de la fibra superior (dominada por compresión) y la media (transición), en la fibra inferior predominan esfuerzos de tracción, especialmente visibles en A con valores máximos en el centro y bordes laterales. En B las mayores tracciones también se localizan en la franja central transversal, mostrando el efecto de los momentos positivos, típicos en la parte inferior de la losa (**Figura *46***). Esto refleja el comportamiento flexional esperable: tracción en la fibra inferior, compresión en la superior y esfuerzos intermedios en la media.

A



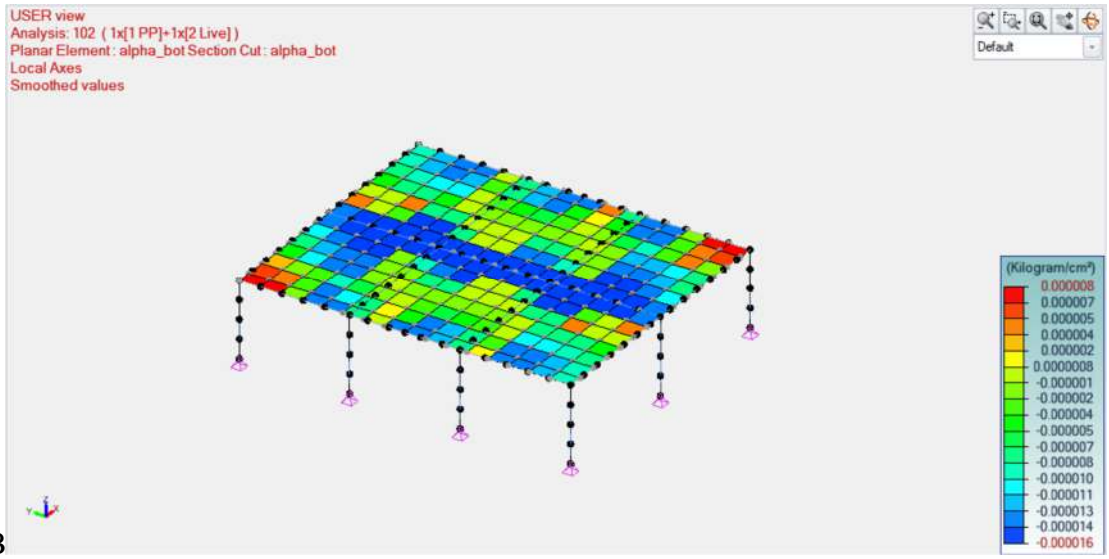
B 


**Figura 46**. *Esfuerzos en la fibra inferior*

La **Tabla *13*** muestra el diseño del acero para la losa plana con vigas; al igual que en los casos anteriores, el Método Directo (DDM ACI 318-14) no tiene datos disponibles, ya que este método no es aplicable para este tipo de estructura en este caso específico.

En cuanto a los otros métodos de diseño, los resultados para el EFM ACI 318-14 muestran que el acero necesario para las columnas y los centros de franja es relativamente moderado, con 8 varillas #4 tanto para la columna negativa como para la columna positiva, y 14 varillas #4 para ambos centros de franja negativo y positivo.

El método FEM requiere un diseño más robusto, especialmente en las columnas, donde se utilizan 15 varillas #4 en la columna negativa y 16 varillas #5 en la columna positiva. En los centros de franja, se utilizan 16 varillas #5 en el centro negativo y 15 varillas #4 en el centro positivo, lo que refleja un mayor refuerzo en la zona negativa. Por último, el método Hillerborg presenta un diseño uniforme, utilizando 16 varillas #4 tanto en las columnas negativas y positivas como en los centros de franja negativos y positivos, lo que indica un enfoque más constante y menos variable en la distribución del acero de refuerzo.

**Tabla 13**
*Diseño de acero para losa plana con vigas.*

| Método de diseño | Columna acero negativo | Columna positivo | Centro de franja negativo | Centro de franja positivo |
|---|---|---|---|---|
| DDM ACI 318-14 | -- | -- | -- | -- |
| EFM ACI 318-14 | 8 #4 | 8 #4 | 14 #4 | 14 #4 |
| FEM | 15 #4 | 16 #5 | 16 #5 | 15 #4 |
| HILLERBORG | 16#4 | 16#4 | 16#4 | 16#4 |

En el caso 3, la distribución de acero de refuerzo muestra una configuración uniforme a lo largo del eje corto, como se observa en la **Figura *47***, siendo esta común para todos los métodos de diseño evaluados.

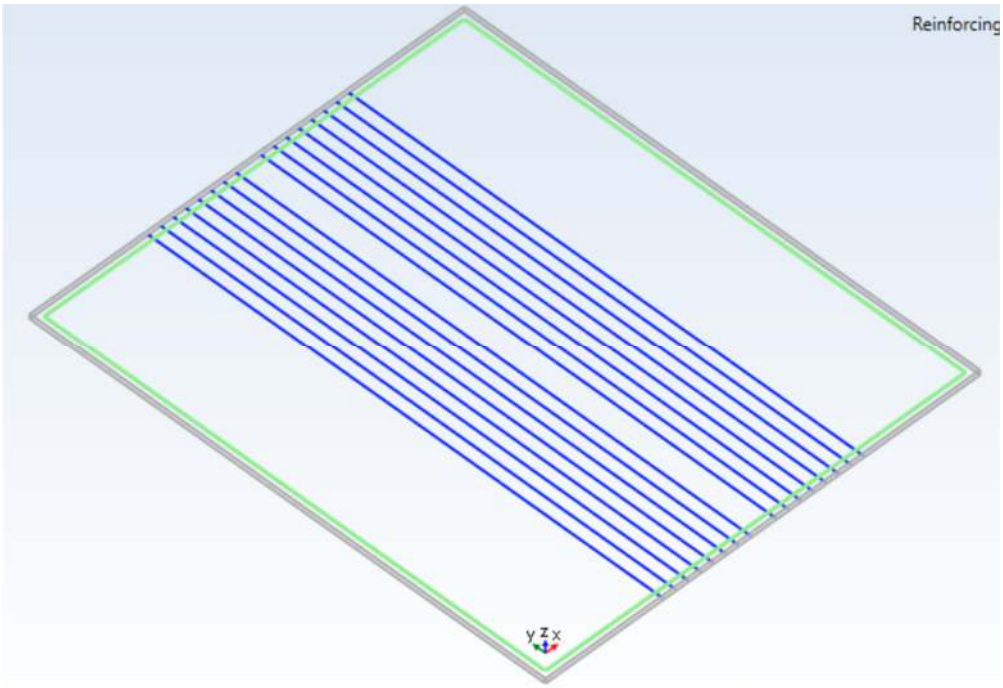



**Figura 47.** *Distribución de acero Caso 3*

En la **Figura *48*** se evidencia que las barras del lecho superior (A) están concentradas principalmente sobre los apoyos, reflejando los máximos esfuerzos negativos detectados en la fibra superior. Por otro lado, las barras del lecho inferior (B) están ubicadas en el centro

de los vanos, en correspondencia con los esfuerzos positivos observados en la fibra inferior.

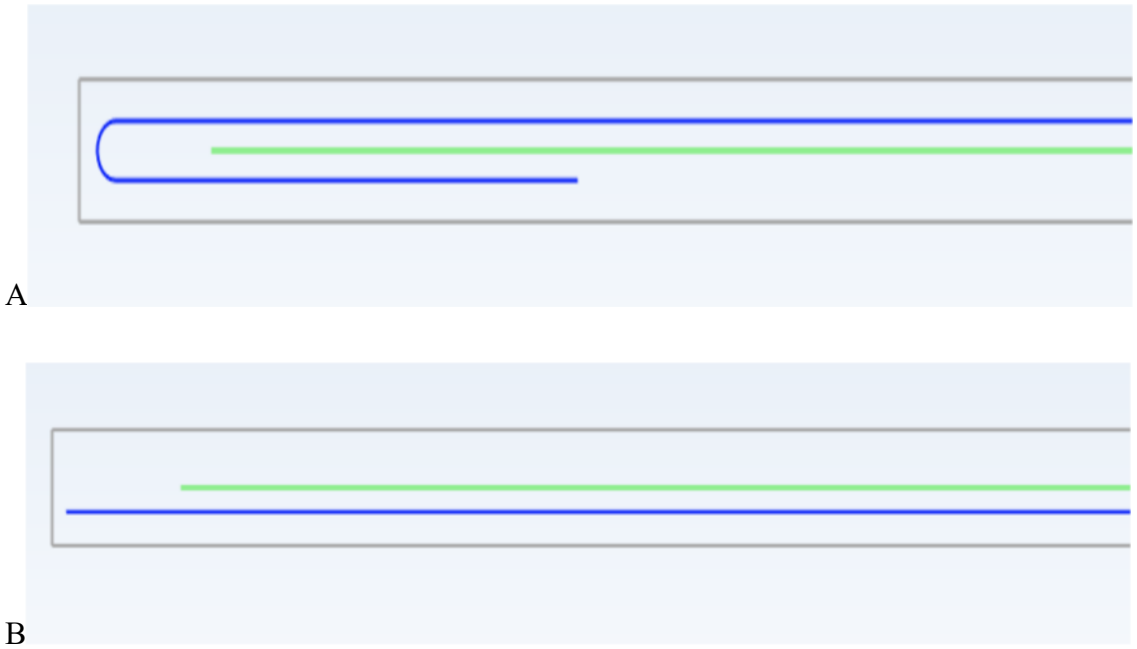



**Figura 48**. *Barras de refuerzo superior e inferior*

### *5.3.2 Patrones y diferencias relevantes entre los métodos destacando las ventajas y limitaciones.*

*5.3.2.1 Precisión de los métodos*

La evaluación de la precisión de los métodos se centró en su capacidad para predecir los momentos máximos en las columnas y las franjas centrales. El análisis se realizó tomando como referencia el Método de Elementos Finitos (FEM), que mostró consistentemente los valores más altos en todas las configuraciones estudiadas. Esto se debe a su capacidad para modelar efectos tridimensionales y distribuir cargas de manera más precisa (Galeano et al., 2016). En comparación, el ACI 318-14 presentó resultados cercanos a los obtenidos con el FEM, con diferencias menores en la mayoría de los casos, lo que respalda su confiabilidad normativa. Por ejemplo, los momentos negativos en las columnas alcanzaron hasta 718 kip-ft, mientras que los momentos positivos en las franjas centrales llegaron a 366 kip-ft.

Por otro lado, el Método de Hillerborg, aunque simplificado y basado en un enfoque plástico que se centra en la flexión (Hillerborg, 2012), mostró una subestimación de los momentos máximos debido a la omisión de efectos adicionales como el cortante y la torsión. En los casos de losas sin ábacos, los momentos negativos fueron tan bajos como 12.93 kip-ft, lo que refleja una aproximación conservadora pero menos precisa en configuraciones más complejas. A pesar de esta limitación, es importante destacar que el Método de Hillerborg puede generar resultados válidos para momentos flexionantes bajo condiciones controladas.

*5.3.2.2 Robustez y capacidad de diseño*

El Método de Elementos Finitos (FEM) destaca como el más robusto, ya que integra de manera efectiva los efectos de cortante, punzonamiento y redistribución de esfuerzos. Sin embargo, su complejidad y la necesidad de herramientas avanzadas lo hacen más adecuado para aplicaciones de alto nivel, limitando su uso en proyectos de menor escala debido a los recursos necesarios (Kim et al., 2018) . El ACI 318-14, aunque menos detallado que el FEM, sobresale por su robustez al incluir procedimientos específicos para verificar aspectos críticos como el punzonamiento, la torsión y el cortante (Hassoun y Al-Manaseer, 2020). Esto lo convierte en una opción ideal para configuraciones más complejas, como losas con ábacos o vigas, donde su desempeño es seguro y consistente, alcanzando momentos negativos de hasta 718 kip-ft en columnas.

En contraste, el Método de Hillerborg, aunque útil para obtener estimaciones iniciales, presenta limitaciones significativas en términos de robustez. Este método no incluye explícitamente el diseño por cortante ni el análisis de punzonamiento, lo que obliga a establecer espesores mínimos desde el inicio para garantizar la seguridad estructural (Wood et al., 1968). Sus hipótesis plásticas dependen en gran medida de principios elásticos, lo que puede dar lugar a diseños más conservadores y, en ocasiones, menos eficientes desde el punto de vista económico. En el caso de losas sin ábacos, se recomienda un mayor peralte inicial para controlar el agrietamiento y las deformaciones, tal como lo estipulan el ACI.

*5.3.2.3 Eficiencia en el uso de materiales*

La eficiencia en el uso de materiales varía considerablemente entre los tres métodos. El FEM, aunque ofrece la mayor precisión, tiende a requerir mayores cantidades de refuerzo

debido a su enfoque conservador, lo que se traduce en un uso menos eficiente de los materiales. Por ejemplo, en losas sin vigas ni ábacos, el FEM recomendó hasta 10 varillas #5 en las columnas negativas. En comparación, el ACI 318-14 logra un equilibrio óptimo entre seguridad y economía. Para configuraciones con vigas, este método recomendó 8 varillas #4, lo que reduce el costo sin comprometer la seguridad estructural.

El Método de Hillerborg, por su parte, tiende a ser más económico en cuanto a la cantidad de acero requerido. En losas sin ábacos, propuso el uso de 9 varillas #4, lo que parece indicar una mayor eficiencia en términos de materiales. Sin embargo, ya que el método no contempla análisis críticos como el cortante o el punzonamiento, podría comprometer la seguridad estructural en ciertas condiciones de carga.

*5.3.2.4 Aplicabilidad*

El ACI 318-14 es el método más aplicable para proyectos de mediana y alta complejidad, gracias a su precisión, robustez y amplia aceptación normativa en la industria. Su capacidad para manejar configuraciones complejas, como las losas con ábacos y vigas, lo convierte en una opción preferida para proyectos que deben cumplir con estándares internacionales. Además, su capacidad para verificar los efectos de cortante, torsión y punzonamiento lo hace especialmente adecuado para estructuras más exigentes desde el punto de vista técnico y normativo (America Concrete Institute, 2014). En contraste, el Método de Hillerborg es una herramienta útil principalmente para diseños manuales preliminares. Aunque ofrece un enfoque simplificado y eficiente para la estimación de momentos en configuraciones básicas, su aplicabilidad en proyectos más complejos es limitada debido a la falta de verificaciones explícitas para el cortante, punzonamiento y torsión (Hillerborg, 2012). Por último, el FEM, siendo el método más preciso, es ideal para aplicaciones de alto nivel, donde la modelación detallada y el presupuesto lo permitan. Sin embargo, su complejidad y la necesidad de herramientas avanzadas lo limitan en su aplicabilidad a proyectos de mayor escala y con mayores recursos disponibles (Zhu, 2018).

# CAPÍTULO VI: CONCLUSIONES Y RECOMENDACIONES

La evaluación de los métodos para diseñar losas bidireccionales, en especial el método de Hillerborg y las guías del ACI 318-14, muestra que aunque el método de elementos finitos (FEM) es muy preciso y se usa mucho en la industria para ciertos análisis, el ACI 318-14 tiene importantes ventajas en cuanto a su capacidad y facilidad de uso en la práctica. Este código es perfecto para proyectos que necesitan un análisis detallado de factores importantes como cortante, torsión y punzonamiento, que son esenciales para asegurar la seguridad de la estructura. Su habilidad para manejar situaciones complejas y su cumplimiento de las reglas lo hacen una buena opción para proyectos que necesitan seguir estándares internacionales.

El método de Hillerborg, que usa un enfoque plástico, es mejor en el uso de materiales, pero tiene algunas limitaciones. No considera ciertos efectos importantes, como el cortante y el punzonamiento, lo que hace que no sea tan útil para estructuras complejas o que soportan mucha carga. Aunque es bueno para hacer estimaciones iniciales y diseños sencillos, su falta de análisis detallados puede comprometer la seguridad de la estructura en situaciones de carga extrema.

En cuanto a las recomendaciones, se sugiere que el método ACI 318-14 sea la opción preferida en proyectos de mediana y alta complejidad que requieran una integración precisa de cargas y efectos críticos, como el cortante, la torsión y el punzonamiento. Este código ofrece un enfoque robusto y validado para el diseño de losas bidireccionales, y su amplia aceptación en la industria facilita su implementación en proyectos tanto nacionales como internacionales.

En cambio, el método de Hillerborg, debido a su simplicidad y eficiencia en el uso de materiales, es más adecuado para aplicaciones de menor complejidad o para etapas preliminares de diseño. Sin embargo, es fundamental complementar sus resultados con verificaciones adicionales de seguridad, especialmente en lo que respecta al análisis de cortante y punzonamiento, para evitar posibles fallas estructurales en condiciones de carga elevadas.

Se recomienda usar el método ACI 318-14 para proyectos de mediana y alta complejidad que necesiten una integración precisa de cargas y efectos importantes, como el corte, la torsión y el punzonamiento. Este código proporciona un método sólido y comprobado para diseñar losas bidireccionales. Su gran aceptación en la industria hace que sea fácil de usar en proyectos, ya sean nacionales o internacionales. El método de Hillerborg es más simple y eficiente en el uso de materiales. Por eso, es mejor para proyectos menos complejos o para las primeras etapas de diseño. Es importante agregar más verificaciones de seguridad a los resultados, especialmente en el análisis de cortante y punzonamiento. Esto ayudará a prevenir fallas en la estructura cuando hay cargas altas.

Finalmente, se recomienda que en investigaciones futuras se incorpore el análisis sísmico, ya que en contextos con alta amenaza sísmica, como El Salvador, este factor resulta determinante para el desempeño estructural. Su inclusión permitiría evaluar la respuesta dinámica de las losas bidireccionales y ampliar el alcance del estudio hacia una evaluación integral de su comportamiento bajo cargas gravitacionales y laterales.

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# ANEXOS

***Anexo A.*** *Losa plana sin vigas ni ábacos.*

Este anexo se encuentra disponible en el archivo independiente "Anexo A – Losa plana sin vigas ni ábacos.pdf", entregado como documento complementario junto a esta tesis.

***Anexo B****. Losa plana sin vigas con ábacos.*

Este anexo se encuentra disponible en el archivo independiente "Anexo B– Losa plana sin vigas con ábacos.pdf", entregado como documento complementario junto a esta tesis.

***Anexo C.*** *Losa plana con vigas*

Este anexo se encuentra disponible en el archivo independiente "Anexo C– Losa plana con vigas.pdf", entregado como documento complementario junto a esta tesis.

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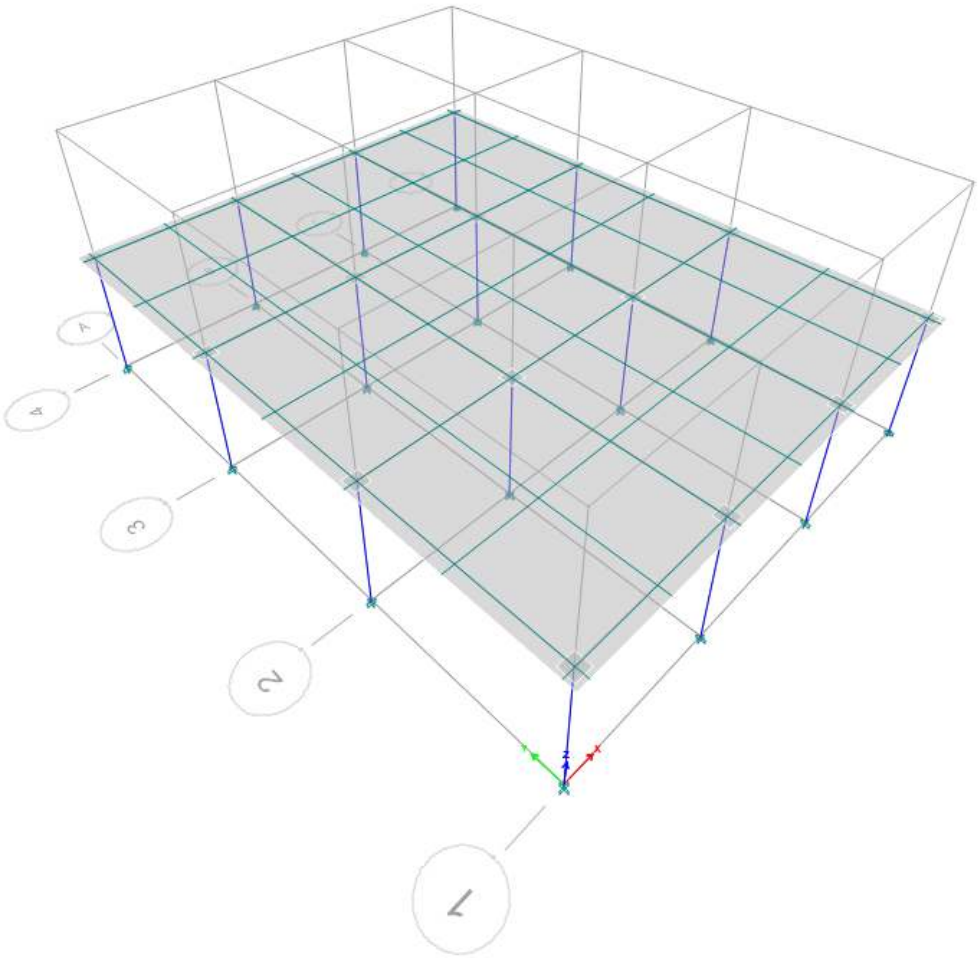


# User Report 2

Model File: Flat slab modelo 1, Revision 0
28/09/2025

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# 1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

## 1.1 Grid Data

**Table 1.1 - Grid Definitions - General**

| Name | Type | Ux ft | Uy ft | Rz deg | Datum Name | Story Name Above | Story Name Below | Model Datum ft | Story Height Above ft | Story Height Below ft | Bubble Size ft | Color |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GLOBAL | Cartesian | 0 | 0 | 0 | Story1 | Story2 | Base | 12 | 12 | 12 | 5 | Gray6 |

**Table 1.2 - Grid Definitions - Grid Lines**

| Name | Grid Line Type | ID | Ordinate ft | Bubble Location | Visible |
|---|---|---|---|---|---|
| GLOBAL | X (Cartesian) | A | 0 | End | Yes |
| GLOBAL | X (Cartesian) | B | 14 | End | Yes |
| GLOBAL | X (Cartesian) | C | 28 | End | Yes |
| GLOBAL | X (Cartesian) | D | 42 | End | Yes |
| GLOBAL | Y (Cartesian) | 1 | 0 | Start | Yes |
| GLOBAL | Y (Cartesian) | 2 | 18 | Start | Yes |
| GLOBAL | Y (Cartesian) | 3 | 36 | Start | Yes |
| GLOBAL | Y (Cartesian) | 4 | 54 | Start | Yes |

## 1.2 Line Connectivity

**Table 1.3 - Column Object Connectivity**

| Unique Name | UniquePtI | UniquePtJ | Length ft |
|---|---|---|---|
| 1 | 1 | 2 | 12 |
| 2 | 3 | 4 | 12 |
| 3 | 5 | 6 | 12 |
| 4 | 7 | 8 | 12 |
| 5 | 9 | 10 | 12 |
| 6 | 11 | 12 | 12 |
| 7 | 13 | 14 | 12 |
| 8 | 15 | 16 | 12 |
| 9 | 17 | 18 | 12 |
| 10 | 19 | 20 | 12 |
| 11 | 21 | 22 | 12 |
| 12 | 23 | 24 | 12 |
| 13 | 25 | 26 | 12 |
| 14 | 27 | 28 | 12 |
| 15 | 29 | 30 | 12 |
| 16 | 31 | 32 | 12 |

## 1.3 Area Connectivity

**Table 1.4 - Floor Object Connectivity**

| Unique Name | UniquePt1 | UniquePt2 | UniquePt3 | UniquePt4 | Perimeter ft | Area ft2 |
|---|---|---|---|---|---|---|
| 1 | 33 | 34 | 35 | 36 | 200 | 2464 |
| 2 | 37 | 38 | 39 | 40 | 5.3333 | 1.78 |
| 3 | 41 | 42 | 57 | 58 | 5.3333 | 1.78 |
| 4 | 59 | 60 | 61 | 62 | 5.3333 | 1.78 |
| 5 | 77 | 78 | 79 | 80 | 5.3333 | 1.78 |
| 6 | 81 | 82 | 83 | 84 | 5.3333 | 1.78 |
| 7 | 85 | 86 | 87 | 88 | 5.3333 | 1.78 |
| 8 | 89 | 90 | 91 | 92 | 5.3333 | 1.78 |
| 9 | 93 | 94 | 95 | 96 | 5.3333 | 1.78 |
| 10 | 97 | 98 | 99 | 100 | 5.3333 | 1.78 |
| 11 | 101 | 102 | 103 | 104 | 5.3333 | 1.78 |
| 12 | 105 | 106 | 107 | 108 | 5.3333 | 1.78 |
| 13 | 109 | 110 | 111 | 112 | 5.3333 | 1.78 |
| 14 | 113 | 114 | 115 | 116 | 5.3333 | 1.78 |
| 15 | 117 | 118 | 119 | 120 | 5.3333 | 1.78 |
| 16 | 121 | 122 | 123 | 124 | 5.3333 | 1.78 |
| 17 | 125 | 126 | 127 | 128 | 5.3333 | 1.78 |

## 1.4 Strip Connectivity

**Table 1.5 - Strip Object Connectivity**

| Name | Number Segments | Strip Start Point | Segment End Point | Start Width Left ft | Start Width Right ft | End Width Left ft | End Width Right ft | Auto Widen | Layer |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | 1 | 43 | 44 | 4.5 | 1 | 4.5 | 1 | No | A |
| CSA2 | 1 | 47 | 48 | 4.5 | 4.5 | 4.5 | 4.5 | No | A |
| CSA3 | 1 | 51 | 52 | 9 | 9 | 9 | 9 | No | A |
| CSA4 | 1 | 55 | 56 | 1 | 4.5 | 1 | 4.5 | No | A |
| CSB1 | 1 | 63 | 64 | 1 | 3.5 | 1 | 3.5 | No | B |
| CSB2 | 1 | 67 | 68 | 3.5 | 3.5 | 3.5 | 3.5 | No | B |
| CSB3 | 1 | 71 | 72 | 7 | 7 | 7 | 7 | No | B |
| CSB4 | 1 | 75 | 76 | 3.5 | 1 | 3.5 | 1 | No | B |
| MSA1 | 1 | 45 | 46 | 4.5 | 4.5 | 4.5 | 4.5 | No | A |
| MSA2 | 1 | 49 | 50 | 4.5 | 4.5 | 4.5 | 4.5 | No | A |
| MSA3 | 1 | 53 | 54 | 4.5 | 4.5 | 4.5 | 4.5 | No | A |
| MSB1 | 1 | 65 | 66 | 3.5 | 3.5 | 3.5 | 3.5 | No | B |
| MSB2 | 1 | 69 | 70 | 3.5 | 3.5 | 3.5 | 3.5 | No | B |
| MSB3 | 1 | 73 | 74 | 3.5 | 3.5 | 3.5 | 3.5 | No | B |

## 1.5 Mass

**Table 1.6 - Mass Source Definition**

| Name | Is Default | Include Lateral Mass? | Include Vertical Mass? | Lump Mass? | Source Self Mass? | Source Added Mass? | Source Load Patterns? | Move Mass Centroid? |
|---|---|---|---|---|---|---|---|---|
| MsSrc1 | Yes | No | Yes | Yes | Yes | Yes | No | No |

**Table 1.7 - Mass Summary by Group**

| Group | Self Mass kip-s2/ft | Self Weight kip | Mass X kip-s2/ft | Mass Y kip-s2/ft | Mass Z kip-s2/ft |
|---|---|---|---|---|---|
| All | 8.21504 | 0 | 8.21504 | 8.21504 | 8.21504 |

# 2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

## 2.1 Materials

**Table 2.1 - Material Properties - General**

| Material | Type | SymType | Grade | Color | Notes |
|---|---|---|---|---|---|
| 4000Psi | Concrete | Isotropic | f'c 4000 psi | Gray8Dark | |
| A416Gr270 | Tendon | Uniaxial | Grade 270 | Red | |
| A615Gr60 | Rebar | Uniaxial | Grade 60 | Green | |

## 2.2 Frame Sections

**Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 3)**

| Name | Material | Shape | Color | Area ft2 | J ft4 | I33 ft4 | I22 ft4 | I23 ft4 | As2 ft2 | As3 ft2 |
|---|---|---|---|---|---|---|---|---|---|---|
| ConcCol1 | 4000Psi | Concrete Rectangular | Green | 1.7778 | 0.445267 | 0.263374 | 0.263374 | 0 | 1.4815 | 1.4815 |

**Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 3)**

| Name | S33Pos ft3 | S33Neg ft3 | S22Pos ft3 | S22Neg ft3 | Z33 ft3 | Z22 ft3 | R33 ft | R22 ft | Cw ft6 | CG Offset 3 ft | CG Offset 2 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ConcCol1 | 0.395062 | 0.395062 | 0.395062 | 0.395062 | 0.592593 | 0.592593 | 0.3849 | 0.3849 | | 0 | 0 |

**Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 3)**

| Name | PNA Offset 2 ft | Area Modifier | As2 Modifier | As3 Modifier | J Modifier | I33 Modifier | I22 Modifier | Mass Modifier | Weight Modifier |
|---|---|---|---|---|---|---|---|---|---|
| ConcCol1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

## 2.3 Shell Sections

**Table 2.3 - Area Section Property Definitions - Summary**

| Name | Type | Element Type | Material | Total Thickness ft | Deck Material | Deck Depth ft |
|---|---|---|---|---|---|---|
| Slab2 | Slab | Shell-Thin | 4000Psi | 0.58333 | | |
| Stiff1 | Slab | Shell-Thin | 4000Psi | 1.25 | | |

## 2.4 Reinforcement Sizes

**Table 2.4 - Reinforcing Bar Sizes**

| Name | Diameter ft | Area ft2 |
|---|---|---|
| #4 | 0.04167 | 0.0014 |
| #6 | 0.0625 | 0.0031 |
| #9 | 0.094 | 0.0069 |

# 3 Assignments

This chapter provides a listing of the assignments applied to the model.

## 3.1 Joint Assignments

**Table 3.1 - Joint Assignments - Summary**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 2 | From Area | |
| 4 | From Area | |
| 6 | From Area | |
| 8 | From Area | |
| 10 | From Area | |
| 12 | From Area | |
| 14 | From Area | |
| 16 | From Area | |
| 18 | From Area | |
| 20 | From Area | |
| 22 | From Area | |
| 24 | From Area | |
| 26 | From Area | |
| 28 | From Area | |
| 30 | From Area | |
| 32 | From Area | |
| 33 | From Area | |
| 34 | From Area | |
| 35 | From Area | |
| 36 | From Area | |
| 43 | From Area | |
| 44 | From Area | |
| 45 | From Area | |
| 46 | From Area | |
| 47 | From Area | |
| 48 | From Area | |
| 49 | From Area | |
| 50 | From Area | |
| 51 | From Area | |
| 52 | From Area | |
| 53 | From Area | |
| 54 | From Area | |
| 55 | From Area | |
| 56 | From Area | |
| 63 | From Area | |
| 64 | From Area | |
| 65 | From Area | |
| 66 | From Area | |
| 67 | From Area | |
| 68 | From Area | |
| 69 | From Area | |
| 70 | From Area | |
| 71 | From Area | |
| 72 | From Area | |
| 73 | From Area | |

**Table 3.1 - Joint Assignments - Summary (continued)**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 74 | From Area | |
| 75 | From Area | |
| 76 | From Area | |
| 37 | From Area | |
| 38 | From Area | |
| 39 | From Area | |
| 40 | From Area | |
| 41 | From Area | |
| 42 | From Area | |
| 57 | From Area | |
| 58 | From Area | |
| 59 | From Area | |
| 60 | From Area | |
| 61 | From Area | |
| 62 | From Area | |
| 77 | From Area | |
| 78 | From Area | |
| 79 | From Area | |
| 80 | From Area | |
| 81 | From Area | |
| 82 | From Area | |
| 83 | From Area | |
| 84 | From Area | |
| 85 | From Area | |
| 86 | From Area | |
| 87 | From Area | |
| 88 | From Area | |
| 89 | From Area | |
| 90 | From Area | |
| 91 | From Area | |
| 92 | From Area | |
| 93 | From Area | |
| 94 | From Area | |
| 95 | From Area | |
| 96 | From Area | |
| 97 | From Area | |
| 98 | From Area | |
| 99 | From Area | |
| 100 | From Area | |
| 101 | From Area | |
| 102 | From Area | |
| 103 | From Area | |
| 104 | From Area | |
| 105 | From Area | |
| 106 | From Area | |
| 107 | From Area | |
| 108 | From Area | |
| 109 | From Area | |
| 110 | From Area | |
| 111 | From Area | |

**Table 3.1 - Joint Assignments - Summary (continued)**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 112 | From Area | |
| 113 | From Area | |
| 114 | From Area | |
| 115 | From Area | |
| 116 | From Area | |
| 117 | From Area | |
| 118 | From Area | |
| 119 | From Area | |
| 120 | From Area | |
| 121 | From Area | |
| 122 | From Area | |
| 123 | From Area | |
| 124 | From Area | |
| 125 | From Area | |
| 126 | From Area | |
| 127 | From Area | |
| 128 | From Area | |
| 1 | From Area | UX; UY; UZ; RX; RY; RZ |
| 3 | From Area | UX; UY; UZ; RX; RY; RZ |
| 5 | From Area | UX; UY; UZ; RX; RY; RZ |
| 7 | From Area | UX; UY; UZ; RX; RY; RZ |
| 9 | From Area | UX; UY; UZ; RX; RY; RZ |
| 11 | From Area | UX; UY; UZ; RX; RY; RZ |
| 13 | From Area | UX; UY; UZ; RX; RY; RZ |
| 15 | From Area | UX; UY; UZ; RX; RY; RZ |
| 17 | From Area | UX; UY; UZ; RX; RY; RZ |
| 19 | From Area | UX; UY; UZ; RX; RY; RZ |
| 21 | From Area | UX; UY; UZ; RX; RY; RZ |
| 23 | From Area | UX; UY; UZ; RX; RY; RZ |
| 25 | From Area | UX; UY; UZ; RX; RY; RZ |
| 27 | From Area | UX; UY; UZ; RX; RY; RZ |
| 29 | From Area | UX; UY; UZ; RX; RY; RZ |
| 31 | From Area | UX; UY; UZ; RX; RY; RZ |

## 3.2 Frame Assignments

**Table 3.2 - Frame Assignments - Summary**

| UniqueName | Design Type | Length ft | Analysis Section | Design Section | Min Number Stations |
|---|---|---|---|---|---|
| 1 | Column | 12 | ConcCol1 | N/A | 3 |
| 2 | Column | 12 | ConcCol1 | N/A | 3 |
| 3 | Column | 12 | ConcCol1 | N/A | 3 |
| 4 | Column | 12 | ConcCol1 | N/A | 3 |
| 5 | Column | 12 | ConcCol1 | N/A | 3 |
| 6 | Column | 12 | ConcCol1 | N/A | 3 |
| 7 | Column | 12 | ConcCol1 | N/A | 3 |
| 8 | Column | 12 | ConcCol1 | N/A | 3 |
| 9 | Column | 12 | ConcCol1 | N/A | 3 |
| 10 | Column | 12 | ConcCol1 | N/A | 3 |
| 11 | Column | 12 | ConcCol1 | N/A | 3 |

**Table 3.2 - Frame Assignments - Summary (continued)**

| UniqueName | Design Type | Length ft | Analysis Section | Design Section | Min Number Stations |
|---|---|---|---|---|---|
| 12 | Column | 12 | ConcCol1 | N/A | 3 |
| 13 | Column | 12 | ConcCol1 | N/A | 3 |
| 14 | Column | 12 | ConcCol1 | N/A | 3 |
| 15 | Column | 12 | ConcCol1 | N/A | 3 |
| 16 | Column | 12 | ConcCol1 | N/A | 3 |

## 3.3 Shell Assignments

**Table 3.3 - Area Assignments - Summary**

| UniqueName | Section Property | Property Type |
|---|---|---|
| 1 | Slab2 | Slab |

**Table 3.4 - Area Assignments - Section Properties**

| UniqueName | Section Property | Property Type |
|---|---|---|
| 1 | Slab2 | Slab |
| 2 | Stiff1 | Slab |
| 3 | Stiff1 | Slab |
| 4 | Stiff1 | Slab |
| 5 | Stiff1 | Slab |
| 6 | Stiff1 | Slab |
| 7 | Stiff1 | Slab |
| 8 | Stiff1 | Slab |
| 9 | Stiff1 | Slab |
| 10 | Stiff1 | Slab |
| 11 | Stiff1 | Slab |
| 12 | Stiff1 | Slab |
| 13 | Stiff1 | Slab |
| 14 | Stiff1 | Slab |
| 15 | Stiff1 | Slab |
| 16 | Stiff1 | Slab |
| 17 | Stiff1 | Slab |

# 4 Loads

This chapter provides loading information as applied to the model.

## 4.1 Load Patterns

**Table 4.1 - Load Pattern Definitions**

| Name | Is Auto Load | Type | Self Weight Multiplier |
|---|---|---|---|
| ~LLRF | No | Other | 0 |
| Dead | No | Dead | 1 |
| Live | No | Live | 0 |
| SC | No | Super Dead | 0 |

## 4.2 Applied Loads

### 4.2.1 Area Loads

**Table 4.2 - Area Load Assignments - Uniform**

| UniqueName | Load Pattern | Direction | Load kip/ft2 |
|---|---|---|---|
| 1 | Live | Gravity | 0.04 |
| 1 | SC | Gravity | 0.02 |

## 4.3 Load Cases

**Table 4.3 - Load Case Definitions - Summary**

| Name | Type |
|---|---|
| Dead | Linear Static |
| Live | Linear Static |
| SC | Linear Static |

## 4.4 Load Combinations

**Table 4.4 - Load Combination Definitions**

| Name | Type | Is Auto | Load Name | SF | Notes |
|---|---|---|---|---|---|
| Comb1 | Linear Add | No | Dead | 1.2 | |
| Comb1 | | | SC | 1.2 | |
| Comb1 | | | Live | 1.6 | |
| DConS1 | Linear Add | Yes | Dead | 1.4 | Dead [Strength] |
| DConS1 | | | SC | 1.4 | |
| DConS2 | Linear Add | Yes | Dead | 1.2 | Dead + Live [Strength] |
| DConS2 | | | Live | 1.6 | |
| DConS2 | | | SC | 1.2 | |

# 5 Analysis Results

This chapter provides analysis results.

## 5.1 Structure Results

**Table 5.1 - Base Reactions**

| Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft | X ft | Y ft | Z ft |
|---|---|---|---|---|---|---|---|---|---|---|
| Dead | LinStatic | 0 | 0 | 264.311 | 7136.4 | -5550.5333 | 0 | 0 | 0 | 0 |
| Live | LinStatic | 0 | 0 | 98.56 | 2661.12 | -2069.76 | 0 | 0 | 0 | 0 |
| SC | LinStatic | 0 | 0 | 49.28 | 1330.56 | -1034.88 | 0 | 0 | 0 | 0 |
| Comb1 | Combination | 0 | 0 | 534.005 | 14418.144 | -11214.112 | 0 | 0 | 0 | 0 |

## 5.2 Point Results

**Table 5.2 - Joint Reactions**

| Unique Name | Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft |
|---|---|---|---|---|---|---|---|---|
| 1 | Dead | LinStatic | 0.99 | 1.539 | 9.279 | -6.0081 | 3.8758 | 0.0036 |
| 1 | Live | LinStatic | 0.452 | 0.703 | 2.85 | -2.7466 | 1.7718 | 0.0016 |
| 1 | SC | LinStatic | 0.226 | 0.352 | 1.425 | -1.3733 | 0.8859 | 0.0008 |
| 1 | Comb1 | Combination | 2.183 | 3.394 | 17.406 | -13.2522 | 8.5488 | 0.0079 |
| 3 | Dead | LinStatic | 1.706 | -0.217 | 15.011 | 0.8603 | 6.6843 | -0.0006 |
| 3 | Live | LinStatic | 0.78 | -0.099 | 5.471 | 0.3933 | 3.0557 | -0.0003 |
| 3 | SC | LinStatic | 0.39 | -0.05 | 2.735 | 0.1966 | 1.5278 | -0.0001 |
| 3 | Comb1 | Combination | 3.764 | -0.479 | 30.049 | 1.8976 | 14.7437 | -0.0013 |
| 5 | Dead | LinStatic | 1.706 | 0.217 | 15.011 | -0.8603 | 6.6843 | 0.0006 |
| 5 | Live | LinStatic | 0.78 | 0.099 | 5.471 | -0.3933 | 3.0557 | 0.0003 |
| 5 | SC | LinStatic | 0.39 | 0.05 | 2.735 | -0.1966 | 1.5278 | 0.0001 |
| 5 | Comb1 | Combination | 3.764 | 0.479 | 30.049 | -1.8976 | 14.7437 | 0.0013 |
| 7 | Dead | LinStatic | 0.99 | -1.539 | 9.279 | 6.0081 | 3.8758 | -0.0036 |
| 7 | Live | LinStatic | 0.452 | -0.703 | 2.85 | 2.7466 | 1.7718 | -0.0016 |
| 7 | SC | LinStatic | 0.226 | -0.352 | 1.425 | 1.3733 | 0.8859 | -0.0008 |
| 7 | Comb1 | Combination | 2.183 | -3.394 | 17.406 | 13.2522 | 8.5488 | -0.0079 |
| 9 | Dead | LinStatic | -0.106 | 2.397 | 14.683 | -9.3784 | -0.4181 | 0.0006 |
| 9 | Live | LinStatic | -0.048 | 1.096 | 5.321 | -4.2873 | -0.1911 | 0.0003 |
| 9 | SC | LinStatic | -0.024 | 0.548 | 2.66 | -2.1436 | -0.0956 | 0.0001 |
| 9 | Comb1 | Combination | -0.234 | 5.287 | 29.326 | -20.6861 | -0.9221 | 0.0013 |
| 11 | Dead | LinStatic | -0.202 | -0.349 | 27.103 | 1.3774 | -0.7956 | 1.447E-05 |
| 11 | Live | LinStatic | -0.092 | -0.16 | 10.998 | 0.6297 | -0.3637 | 6.616E-06 |
| 11 | SC | LinStatic | -0.046 | -0.08 | 5.499 | 0.3148 | -0.1818 | 3.308E-06 |
| 11 | Comb1 | Combination | -0.446 | -0.77 | 56.721 | 3.0381 | -1.7548 | 3.192E-05 |
| 13 | Dead | LinStatic | -0.202 | 0.349 | 27.103 | -1.3774 | -0.7956 | -1.447E-05 |
| 13 | Live | LinStatic | -0.092 | 0.16 | 10.998 | -0.6297 | -0.3637 | -6.616E-06 |
| 13 | SC | LinStatic | -0.046 | 0.08 | 5.499 | -0.3148 | -0.1818 | -3.308E-06 |
| 13 | Comb1 | Combination | -0.446 | 0.77 | 56.721 | -3.0381 | -1.7548 | -3.192E-05 |
| 15 | Dead | LinStatic | -0.106 | -2.397 | 14.683 | 9.3784 | -0.4181 | -0.0006 |
| 15 | Live | LinStatic | -0.048 | -1.096 | 5.321 | 4.2873 | -0.1911 | -0.0003 |
| 15 | SC | LinStatic | -0.024 | -0.548 | 2.66 | 2.1436 | -0.0956 | -0.0001 |
| 15 | Comb1 | Combination | -0.234 | -5.287 | 29.326 | 20.6861 | -0.9221 | -0.0013 |
| 17 | Dead | LinStatic | 0.106 | 2.397 | 14.683 | -9.3784 | 0.4181 | -0.0006 |
| 17 | Live | LinStatic | 0.048 | 1.096 | 5.321 | -4.2873 | 0.1911 | -0.0003 |
| 17 | SC | LinStatic | 0.024 | 0.548 | 2.66 | -2.1436 | 0.0956 | -0.0001 |

**Table 5.2 - Joint Reactions (continued)**

| Unique Name | Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft |
|---|---|---|---|---|---|---|---|---|
| 17 | Comb1 | Combination | 0.234 | 5.287 | 29.326 | -20.6861 | 0.9221 | -0.0013 |
| 19 | Dead | LinStatic | 0.202 | -0.349 | 27.103 | 1.3774 | 0.7956 | -1.447E-05 |
| 19 | Live | LinStatic | 0.092 | -0.16 | 10.998 | 0.6297 | 0.3637 | -6.616E-06 |
| 19 | SC | LinStatic | 0.046 | -0.08 | 5.499 | 0.3148 | 0.1818 | -3.308E-06 |
| 19 | Comb1 | Combination | 0.446 | -0.77 | 56.721 | 3.0381 | 1.7548 | -3.192E-05 |
| 21 | Dead | LinStatic | 0.202 | 0.349 | 27.103 | -1.3774 | 0.7956 | 1.447E-05 |
| 21 | Live | LinStatic | 0.092 | 0.16 | 10.998 | -0.6297 | 0.3637 | 6.616E-06 |
| 21 | SC | LinStatic | 0.046 | 0.08 | 5.499 | -0.3148 | 0.1818 | 3.308E-06 |
| 21 | Comb1 | Combination | 0.446 | 0.77 | 56.721 | -3.0381 | 1.7548 | 3.192E-05 |
| 23 | Dead | LinStatic | 0.106 | -2.397 | 14.683 | 9.3784 | 0.4181 | 0.0006 |
| 23 | Live | LinStatic | 0.048 | -1.096 | 5.321 | 4.2873 | 0.1911 | 0.0003 |
| 23 | SC | LinStatic | 0.024 | -0.548 | 2.66 | 2.1436 | 0.0956 | 0.0001 |
| 23 | Comb1 | Combination | 0.234 | -5.287 | 29.326 | 20.6861 | 0.9221 | 0.0013 |
| 25 | Dead | LinStatic | -0.99 | 1.539 | 9.279 | -6.0081 | -3.8758 | -0.0036 |
| 25 | Live | LinStatic | -0.452 | 0.703 | 2.85 | -2.7466 | -1.7718 | -0.0016 |
| 25 | SC | LinStatic | -0.226 | 0.352 | 1.425 | -1.3733 | -0.8859 | -0.0008 |
| 25 | Comb1 | Combination | -2.183 | 3.394 | 17.406 | -13.2522 | -8.5488 | -0.0079 |
| 27 | Dead | LinStatic | -1.706 | -0.217 | 15.011 | 0.8603 | -6.6843 | 0.0006 |
| 27 | Live | LinStatic | -0.78 | -0.099 | 5.471 | 0.3933 | -3.0557 | 0.0003 |
| 27 | SC | LinStatic | -0.39 | -0.05 | 2.735 | 0.1966 | -1.5278 | 0.0001 |
| 27 | Comb1 | Combination | -3.764 | -0.479 | 30.049 | 1.8976 | -14.7437 | 0.0013 |
| 29 | Dead | LinStatic | -1.706 | 0.217 | 15.011 | -0.8603 | -6.6843 | -0.0006 |
| 29 | Live | LinStatic | -0.78 | 0.099 | 5.471 | -0.3933 | -3.0557 | -0.0003 |
| 29 | SC | LinStatic | -0.39 | 0.05 | 2.735 | -0.1966 | -1.5278 | -0.0001 |
| 29 | Comb1 | Combination | -3.764 | 0.479 | 30.049 | -1.8976 | -14.7437 | -0.0013 |
| 31 | Dead | LinStatic | -0.99 | -1.539 | 9.279 | 6.0081 | -3.8758 | 0.0036 |
| 31 | Live | LinStatic | -0.452 | -0.703 | 2.85 | 2.7466 | -1.7718 | 0.0016 |
| 31 | SC | LinStatic | -0.226 | -0.352 | 1.425 | 1.3733 | -0.8859 | 0.0008 |
| 31 | Comb1 | Combination | -2.183 | -3.394 | 17.406 | 13.2522 | -8.5488 | 0.0079 |

## 5.3 Strip Results

**Table 5.3 - Strip Forces Summary**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | Start | Dead | LinStatic | -0.877 | -3.931 | -0.7311 | -1.7013 | -5.9558 |
| CSA1 | Span 1 | Start | Live | LinStatic | -0.401 | -1.797 | -0.3342 | -0.7778 | -2.7227 |
| CSA1 | Span 1 | Start | SC | LinStatic | -0.2 | -0.899 | -0.1671 | -0.3889 | -1.3613 |
| CSA1 | Span 1 | Start | Comb1 | Combination | -1.934 | -8.671 | -1.6127 | -3.7527 | -13.1368 |
| CSA1 | Span 1 | Middle | Dead | LinStatic | -0.583 | -1.328 | -0.8278 | 5.4714 | 2.3576 |
| CSA1 | Span 1 | Middle | Live | LinStatic | -0.267 | -0.607 | -0.3784 | 2.5012 | 1.0778 |
| CSA1 | Span 1 | Middle | SC | LinStatic | -0.133 | -0.303 | -0.1892 | 1.2506 | 0.5389 |
| CSA1 | Span 1 | Middle | Comb1 | Combination | -1.286 | -2.929 | -1.8258 | 12.0684 | 5.2002 |
| CSA1 | Span 1 | End | Dead | LinStatic | -0.711 | 3.993 | 0.1384 | -3.539 | -9.1492 |
| CSA1 | Span 1 | End | Live | LinStatic | -0.325 | 1.826 | 0.0632 | -1.6178 | -4.1825 |
| CSA1 | Span 1 | End | SC | LinStatic | -0.163 | 0.913 | 0.0316 | -0.8089 | -2.0912 |
| CSA1 | Span 1 | End | Comb1 | Combination | -1.568 | 8.808 | 0.3052 | -7.8061 | -20.1804 |
| CSA1 | Span 2 | Start | Dead | LinStatic | -0.591 | -3.837 | -0.1435 | -3.3623 | -8.5045 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 2 | Start | Live | LinStatic | -0.27 | -1.754 | -0.0656 | -1.5371 | -3.8878 |
| CSA1 | Span 2 | Start | SC | LinStatic | -0.135 | -0.877 | -0.0328 | -0.7685 | -1.9439 |
| CSA1 | Span 2 | Start | Comb1 | Combination | -1.304 | -8.463 | -0.3165 | -7.4163 | -18.7585 |
| CSA1 | Span 2 | Middle | Dead | LinStatic | -0.312 | -1.041 | 0.4953 | 4.82 | 1.7737 |
| CSA1 | Span 2 | Middle | Live | LinStatic | -0.142 | -0.476 | 0.2264 | 2.2034 | 0.8108 |
| CSA1 | Span 2 | Middle | SC | LinStatic | -0.071 | -0.238 | 0.1132 | 1.1017 | 0.4054 |
| CSA1 | Span 2 | Middle | Comb1 | Combination | -0.687 | -2.297 | 1.0926 | 10.6316 | 3.9122 |
| CSA1 | Span 2 | End | Dead | LinStatic | -0.591 | 3.837 | 0.1435 | -3.3623 | -8.5045 |
| CSA1 | Span 2 | End | Live | LinStatic | -0.27 | 1.754 | 0.0656 | -1.5371 | -3.8878 |
| CSA1 | Span 2 | End | SC | LinStatic | -0.135 | 0.877 | 0.0328 | -0.7685 | -1.9439 |
| CSA1 | Span 2 | End | Comb1 | Combination | -1.304 | 8.463 | 0.3165 | -7.4163 | -18.7585 |
| CSA1 | Span 3 | Start | Dead | LinStatic | -0.711 | -3.993 | -0.1384 | -3.539 | -9.1492 |
| CSA1 | Span 3 | Start | Live | LinStatic | -0.325 | -1.826 | -0.0632 | -1.6178 | -4.1825 |
| CSA1 | Span 3 | Start | SC | LinStatic | -0.163 | -0.913 | -0.0316 | -0.8089 | -2.0912 |
| CSA1 | Span 3 | Start | Comb1 | Combination | -1.568 | -8.808 | -0.3052 | -7.8061 | -20.1804 |
| CSA1 | Span 3 | Middle | Dead | LinStatic | -0.583 | 1.328 | 0.8278 | 5.4714 | 2.3576 |
| CSA1 | Span 3 | Middle | Live | LinStatic | -0.267 | 0.607 | 0.3784 | 2.5012 | 1.0778 |
| CSA1 | Span 3 | Middle | SC | LinStatic | -0.133 | 0.303 | 0.1892 | 1.2506 | 0.5389 |
| CSA1 | Span 3 | Middle | Comb1 | Combination | -1.286 | 2.929 | 1.8258 | 12.0684 | 5.2002 |
| CSA1 | Span 3 | End | Dead | LinStatic | -0.877 | 3.931 | 0.7311 | -1.7013 | -5.9558 |
| CSA1 | Span 3 | End | Live | LinStatic | -0.401 | 1.797 | 0.3342 | -0.7778 | -2.7227 |
| CSA1 | Span 3 | End | SC | LinStatic | -0.2 | 0.899 | 0.1671 | -0.3889 | -1.3613 |
| CSA1 | Span 3 | End | Comb1 | Combination | -1.934 | 8.671 | 1.6127 | -3.7527 | -13.1368 |
| MSA1 | Span 1 | Start | Dead | LinStatic | -0.63 | -1.061 | -0.4814 | 4.9771 | 0.7294 |
| MSA1 | Span 1 | Start | Live | LinStatic | -0.288 | -0.485 | -0.2201 | 2.2752 | 0.3335 |
| MSA1 | Span 1 | Start | SC | LinStatic | -0.144 | -0.243 | -0.11 | 1.1376 | 0.1667 |
| MSA1 | Span 1 | Start | Comb1 | Combination | -1.39 | -2.34 | -1.0619 | 10.9781 | 1.6089 |
| MSA1 | Span 1 | Middle | Dead | LinStatic | -0.826 | 1.175 | 0.3767 | 7.0177 | 2.6678 |
| MSA1 | Span 1 | Middle | Live | LinStatic | -0.378 | 0.537 | 0.1722 | 3.2081 | 1.2195 |
| MSA1 | Span 1 | Middle | SC | LinStatic | -0.189 | 0.269 | 0.0861 | 1.604 | 0.6098 |
| MSA1 | Span 1 | Middle | Comb1 | Combination | -1.822 | 2.592 | 0.8309 | 15.479 | 5.8843 |
| MSA1 | Span 1 | End | Dead | LinStatic | -0.759 | 1.175 | 0.3755 | 2.6183 | -2.5228 |
| MSA1 | Span 1 | End | Live | LinStatic | -0.347 | 0.537 | 0.1716 | 1.1969 | -1.1533 |
| MSA1 | Span 1 | End | SC | LinStatic | -0.173 | 0.269 | 0.0858 | 0.5985 | -0.5766 |
| MSA1 | Span 1 | End | Comb1 | Combination | -1.673 | 2.592 | 0.8282 | 5.7753 | -5.5645 |
| MSA1 | Span 2 | Start | Dead | LinStatic | -0.784 | -0.914 | -0.1448 | 1.6961 | -2.4925 |
| MSA1 | Span 2 | Start | Live | LinStatic | -0.358 | -0.418 | -0.0662 | 0.7754 | -1.1394 |
| MSA1 | Span 2 | Start | SC | LinStatic | -0.179 | -0.209 | -0.0331 | 0.3877 | -0.5697 |
| MSA1 | Span 2 | Start | Comb1 | Combination | -1.728 | -2.015 | -0.3195 | 3.7412 | -5.4977 |
| MSA1 | Span 2 | Middle | Dead | LinStatic | -0.968 | -0.792 | -0.1503 | 5.2258 | 1.9173 |
| MSA1 | Span 2 | Middle | Live | LinStatic | -0.443 | -0.362 | 0.0687 | 2.3889 | 0.8765 |
| MSA1 | Span 2 | Middle | SC | LinStatic | -0.221 | -0.181 | 0.0343 | 1.1945 | 0.4382 |
| MSA1 | Span 2 | Middle | Comb1 | Combination | -2.135 | -1.747 | -0.3314 | 11.5265 | 4.229 |
| MSA1 | Span 2 | End | Dead | LinStatic | -0.784 | 0.914 | 0.1448 | 1.6961 | -2.4925 |
| MSA1 | Span 2 | End | Live | LinStatic | -0.358 | 0.418 | 0.0662 | 0.7754 | -1.1394 |
| MSA1 | Span 2 | End | SC | LinStatic | -0.179 | 0.209 | 0.0331 | 0.3877 | -0.5697 |
| MSA1 | Span 2 | End | Comb1 | Combination | -1.728 | 2.015 | 0.3195 | 3.7412 | -5.4977 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA1 | Span 3 | Start | Dead | LinStatic | -0.759 | -1.175 | -0.3755 | 2.6183 | -2.5228 |
| MSA1 | Span 3 | Start | Live | LinStatic | -0.347 | -0.537 | -0.1716 | 1.1969 | -1.1533 |
| MSA1 | Span 3 | Start | SC | LinStatic | -0.173 | -0.269 | -0.0858 | 0.5985 | -0.5766 |
| MSA1 | Span 3 | Start | Comb1 | Combination | -1.673 | -2.592 | -0.8282 | 5.7753 | -5.5645 |
| MSA1 | Span 3 | Middle | Dead | LinStatic | -0.826 | -1.175 | -0.3767 | 7.0177 | 2.6678 |
| MSA1 | Span 3 | Middle | Live | LinStatic | -0.378 | -0.537 | -0.1722 | 3.2081 | 1.2195 |
| MSA1 | Span 3 | Middle | SC | LinStatic | -0.189 | -0.269 | -0.0861 | 1.604 | 0.6098 |
| MSA1 | Span 3 | Middle | Comb1 | Combination | -1.822 | -2.592 | -0.8309 | 15.479 | 5.8843 |
| MSA1 | Span 3 | End | Dead | LinStatic | -0.63 | 1.061 | 0.4814 | 4.9771 | 0.7294 |
| MSA1 | Span 3 | End | Live | LinStatic | -0.288 | 0.485 | 0.2201 | 2.2752 | 0.3335 |
| MSA1 | Span 3 | End | SC | LinStatic | -0.144 | 0.243 | 0.11 | 1.1376 | 0.1667 |
| MSA1 | Span 3 | End | Comb1 | Combination | -1.39 | 2.34 | 1.0619 | 10.9781 | 1.6089 |
| CSA2 | Span 1 | Start | Dead | LinStatic | -1.665 | -7.142 | 0.1479 | -2.8131 | -10.8742 |
| CSA2 | Span 1 | Start | Live | LinStatic | -0.761 | -3.265 | 0.0676 | -1.286 | -4.971 |
| CSA2 | Span 1 | Start | SC | LinStatic | -0.381 | -1.632 | 0.0338 | -0.643 | -2.4855 |
| CSA2 | Span 1 | Start | Comb1 | Combination | -3.673 | -15.753 | 0.3262 | -6.205 | -23.9853 |
| CSA2 | Span 1 | Middle | Dead | LinStatic | -1.368 | 2.221 | 0.187 | 9.5168 | 3.1043 |
| CSA2 | Span 1 | Middle | Live | LinStatic | -0.625 | 1.015 | 0.0855 | 4.3505 | 1.4191 |
| CSA2 | Span 1 | Middle | SC | LinStatic | -0.313 | 0.508 | 0.0427 | 2.1753 | 0.7096 |
| CSA2 | Span 1 | Middle | Comb1 | Combination | -3.017 | 4.898 | 0.4125 | 20.9913 | 6.8472 |
| CSA2 | Span 1 | End | Dead | LinStatic | -0.99 | 8.229 | 0.0748 | -7.7295 | -20.6723 |
| CSA2 | Span 1 | End | Live | LinStatic | -0.453 | 3.762 | 0.0342 | -3.5335 | -9.4502 |
| CSA2 | Span 1 | End | SC | LinStatic | -0.226 | 1.881 | 0.0171 | -1.7668 | -4.7251 |
| CSA2 | Span 1 | End | Comb1 | Combination | -2.184 | 18.15 | 0.165 | -17.0492 | -45.5971 |
| CSA2 | Span 2 | Start | Dead | LinStatic | -0.76 | -7.835 | 0.1633 | -7.5359 | -19.496 |
| CSA2 | Span 2 | Start | Live | LinStatic | -0.348 | -3.582 | 0.0746 | -3.445 | -8.9124 |
| CSA2 | Span 2 | Start | SC | LinStatic | -0.174 | -1.791 | 0.0373 | -1.7225 | -4.4562 |
| CSA2 | Span 2 | Start | Comb1 | Combination | -1.677 | -17.281 | 0.3601 | -16.622 | -43.0026 |
| CSA2 | Span 2 | Middle | Dead | LinStatic | -0.776 | -2.097 | -0.1299 | 7.7226 | 1.7022 |
| CSA2 | Span 2 | Middle | Live | LinStatic | -0.355 | -0.959 | -0.0594 | 3.5303 | 0.7782 |
| CSA2 | Span 2 | Middle | SC | LinStatic | -0.177 | -0.479 | -0.0297 | 1.7652 | 0.3891 |
| CSA2 | Span 2 | Middle | Comb1 | Combination | -1.711 | -4.626 | 0.2865 | 17.0338 | 3.7547 |
| CSA2 | Span 2 | End | Dead | LinStatic | -0.76 | 7.835 | -0.1633 | -7.5359 | -19.496 |
| CSA2 | Span 2 | End | Live | LinStatic | -0.348 | 3.582 | -0.0746 | -3.445 | -8.9124 |
| CSA2 | Span 2 | End | SC | LinStatic | -0.174 | 1.791 | -0.0373 | -1.7225 | -4.4562 |
| CSA2 | Span 2 | End | Comb1 | Combination | -1.677 | 17.281 | -0.3601 | -16.622 | -43.0025 |
| CSA2 | Span 3 | Start | Dead | LinStatic | -0.99 | -8.229 | -0.0748 | -7.7295 | -20.6723 |
| CSA2 | Span 3 | Start | Live | LinStatic | -0.453 | -3.762 | -0.0342 | -3.5335 | -9.4502 |
| CSA2 | Span 3 | Start | SC | LinStatic | -0.226 | -1.881 | -0.0171 | -1.7668 | -4.7251 |
| CSA2 | Span 3 | Start | Comb1 | Combination | -2.184 | -18.15 | -0.165 | -17.0492 | -45.5971 |
| CSA2 | Span 3 | Middle | Dead | LinStatic | -1.368 | -2.221 | -0.187 | 9.5168 | 3.1043 |
| CSA2 | Span 3 | Middle | Live | LinStatic | -0.625 | -1.015 | -0.0855 | 4.3505 | 1.4191 |
| CSA2 | Span 3 | Middle | SC | LinStatic | -0.313 | -0.508 | -0.0427 | 2.1753 | 0.7096 |
| CSA2 | Span 3 | Middle | Comb1 | Combination | -3.017 | -4.898 | -0.4125 | 20.9913 | 6.8472 |
| CSA2 | Span 3 | End | Dead | LinStatic | -1.665 | 7.142 | -0.1479 | -2.8131 | -10.8742 |
| CSA2 | Span 3 | End | Live | LinStatic | -0.761 | 3.265 | -0.0676 | -1.286 | -4.971 |
| CSA2 | Span 3 | End | SC | LinStatic | -0.381 | 1.632 | -0.0338 | -0.643 | -2.4855 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA2 | Span 3 | End | Comb1 | Combination | -3.673 | 15.753 | -0.3262 | -6.205 | -23.9853 |
| MSA2 | Span 1 | Start | Dead | LinStatic | -0.321 | -1.029 | 0 | 5.0024 | 0.8206 |
| MSA2 | Span 1 | Start | Live | LinStatic | -0.147 | -0.47 | 0 | 2.2868 | 0.3751 |
| MSA2 | Span 1 | Start | SC | LinStatic | -0.073 | -0.235 | 0 | 1.1434 | 0.1876 |
| MSA2 | Span 1 | Start | Comb1 | Combination | -0.707 | -2.269 | 0 | 11.034 | 1.8101 |
| MSA2 | Span 1 | Middle | Dead | LinStatic | -0.785 | 1.227 | 0 | 6.6114 | 1.8991 |
| MSA2 | Span 1 | Middle | Live | LinStatic | -0.359 | 0.561 | 0 | 3.0223 | 0.8682 |
| MSA2 | Span 1 | Middle | SC | LinStatic | -0.179 | 0.28 | 0 | 1.5112 | 0.4341 |
| MSA2 | Span 1 | Middle | Comb1 | Combination | -1.731 | 2.706 | 0 | 14.5828 | 4.1889 |
| MSA2 | Span 1 | End | Dead | LinStatic | -0.784 | 1.227 | 0 | 1.8479 | -3.4751 |
| MSA2 | Span 1 | End | Live | LinStatic | -0.359 | 0.561 | 0 | 0.8448 | -1.5886 |
| MSA2 | Span 1 | End | SC | LinStatic | -0.179 | 0.28 | 0 | 0.4224 | -0.7943 |
| MSA2 | Span 1 | End | Comb1 | Combination | -1.73 | 2.706 | 0 | 4.076 | -7.6652 |
| MSA2 | Span 2 | Start | Dead | LinStatic | -0.818 | -0.86 | 0 | 0.6938 | -3.4253 |
| MSA2 | Span 2 | Start | Live | LinStatic | -0.374 | -0.393 | 0 | 0.3172 | -1.5658 |
| MSA2 | Span 2 | Start | SC | LinStatic | -0.187 | -0.197 | 0 | 0.1586 | -0.7829 |
| MSA2 | Span 2 | Start | Comb1 | Combination | -1.804 | -1.897 | 0 | 1.5304 | -7.5552 |
| MSA2 | Span 2 | Middle | Dead | LinStatic | -0.791 | -0.748 | 0 | 4.1597 | 0.9012 |
| MSA2 | Span 2 | Middle | Live | LinStatic | -0.362 | -0.342 | 0 | 1.9016 | 0.412 |
| MSA2 | Span 2 | Middle | SC | LinStatic | -0.181 | -0.171 | 0 | 0.9508 | 0.206 |
| MSA2 | Span 2 | Middle | Comb1 | Combination | -1.745 | -1.649 | 0 | 9.175 | 1.9878 |
| MSA2 | Span 2 | End | Dead | LinStatic | -0.818 | 0.86 | 0 | 0.6938 | -3.4253 |
| MSA2 | Span 2 | End | Live | LinStatic | -0.374 | 0.393 | 0 | 0.3172 | -1.5658 |
| MSA2 | Span 2 | End | SC | LinStatic | -0.187 | 0.197 | 0 | 0.1586 | -0.7829 |
| MSA2 | Span 2 | End | Comb1 | Combination | -1.804 | 1.897 | 0 | 1.5304 | -7.5552 |
| MSA2 | Span 3 | Start | Dead | LinStatic | -0.784 | -1.227 | 0 | 1.8479 | -3.4751 |
| MSA2 | Span 3 | Start | Live | LinStatic | -0.359 | -0.561 | 0 | 0.8448 | -1.5886 |
| MSA2 | Span 3 | Start | SC | LinStatic | -0.179 | -0.28 | 0 | 0.4224 | -0.7943 |
| MSA2 | Span 3 | Start | Comb1 | Combination | -1.73 | -2.706 | 0 | 4.076 | -7.6652 |
| MSA2 | Span 3 | Middle | Dead | LinStatic | -0.785 | -1.227 | 0 | 6.6114 | 1.8991 |
| MSA2 | Span 3 | Middle | Live | LinStatic | -0.359 | -0.561 | 0 | 3.0223 | 0.8682 |
| MSA2 | Span 3 | Middle | SC | LinStatic | -0.179 | -0.28 | 0 | 1.5112 | 0.4341 |
| MSA2 | Span 3 | Middle | Comb1 | Combination | -1.731 | -2.706 | 0 | 14.5828 | 4.1889 |
| MSA2 | Span 3 | End | Dead | LinStatic | -0.321 | 1.029 | 0 | 5.0024 | 0.8206 |
| MSA2 | Span 3 | End | Live | LinStatic | -0.147 | 0.47 | 0 | 2.2868 | 0.3751 |
| MSA2 | Span 3 | End | SC | LinStatic | -0.073 | 0.235 | 0 | 1.1434 | 0.1876 |
| MSA2 | Span 3 | End | Comb1 | Combination | -0.707 | 2.269 | 0 | 11.034 | 1.8101 |
| CSA3 | Span 1 | Start | Dead | LinStatic | -1.711 | -8.196 | -0.0081 | -1.2472 | -9.2643 |
| CSA3 | Span 1 | Start | Live | LinStatic | -0.782 | -3.747 | -0.0037 | -0.5701 | -4.2351 |
| CSA3 | Span 1 | Start | SC | LinStatic | -0.391 | -1.873 | -0.0019 | -0.2851 | -2.1176 |
| CSA3 | Span 1 | Start | Comb1 | Combination | -3.775 | -18.078 | -0.0179 | -2.7509 | -20.4344 |
| CSA3 | Span 1 | Middle | Dead | LinStatic | -1.808 | 3.265 | -0.2835 | 16.3433 | 5.9546 |
| CSA3 | Span 1 | Middle | Live | LinStatic | -0.827 | 1.492 | -0.1296 | 7.4712 | 2.7221 |
| CSA3 | Span 1 | Middle | SC | LinStatic | -0.413 | 0.746 | -0.0648 | 3.7356 | 1.361 |
| CSA3 | Span 1 | Middle | Comb1 | Combination | -3.988 | 7.201 | -0.6254 | 36.0487 | 13.1341 |
| CSA3 | Span 1 | End | Dead | LinStatic | -1.784 | 9.475 | -0.243 | -10.0971 | -22.9872 |
| CSA3 | Span 1 | End | Live | LinStatic | -0.815 | 4.331 | -0.1111 | -4.6158 | -10.5084 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA3 | Span 1 | End | SC | LinStatic | -0.408 | 2.166 | -0.0555 | -2.3079 | -5.2542 |
| CSA3 | Span 1 | End | Comb1 | Combination | -3.934 | 20.899 | -0.536 | -22.2712 | -50.7032 |
| CSA3 | Span 2 | Start | Dead | LinStatic | -1.581 | -8.751 | -0.1795 | -10.0468 | -21.9649 |
| CSA3 | Span 2 | Start | Live | LinStatic | -0.723 | -4.001 | -0.0821 | -4.5928 | -10.0411 |
| CSA3 | Span 2 | Start | SC | LinStatic | -0.361 | -2 | -0.041 | -2.2964 | -5.0206 |
| CSA3 | Span 2 | Start | Comb1 | Combination | -3.487 | -19.302 | -0.3959 | -22.1603 | -48.4483 |
| CSA3 | Span 2 | Middle | Dead | LinStatic | -1.605 | 2.872 | -0.0799 | 12.3649 | 3.2853 |
| CSA3 | Span 2 | Middle | Live | LinStatic | -0.734 | -1.313 | -0.0365 | 5.6525 | 1.5018 |
| CSA3 | Span 2 | Middle | SC | LinStatic | -0.367 | -0.656 | -0.0183 | 2.8263 | 0.7509 |
| CSA3 | Span 2 | Middle | Comb1 | Combination | -3.539 | -6.334 | -0.1763 | 27.2735 | 7.2464 |
| CSA3 | Span 2 | End | Dead | LinStatic | -1.581 | 8.751 | 0.1795 | -10.0468 | -21.9649 |
| CSA3 | Span 2 | End | Live | LinStatic | -0.723 | 4.001 | 0.0821 | -4.5928 | -10.0411 |
| CSA3 | Span 2 | End | SC | LinStatic | -0.361 | 2 | 0.041 | -2.2964 | -5.0206 |
| CSA3 | Span 2 | End | Comb1 | Combination | -3.487 | 19.302 | 0.3959 | -22.1603 | -48.4483 |
| CSA3 | Span 3 | Start | Dead | LinStatic | -1.784 | -9.475 | 0.243 | -10.0971 | -22.9872 |
| CSA3 | Span 3 | Start | Live | LinStatic | -0.815 | -4.331 | 0.1111 | -4.6158 | -10.5084 |
| CSA3 | Span 3 | Start | SC | LinStatic | -0.408 | -2.166 | 0.0555 | -2.3079 | -5.2542 |
| CSA3 | Span 3 | Start | Comb1 | Combination | -3.934 | -20.899 | 0.536 | -22.2712 | -50.7032 |
| CSA3 | Span 3 | Middle | Dead | LinStatic | -1.808 | -3.265 | 0.2835 | 16.3433 | 5.9546 |
| CSA3 | Span 3 | Middle | Live | LinStatic | -0.827 | -1.492 | 0.1296 | 7.4712 | 2.7221 |
| CSA3 | Span 3 | Middle | SC | LinStatic | -0.413 | -0.746 | 0.0648 | 3.7356 | 1.361 |
| CSA3 | Span 3 | Middle | Comb1 | Combination | -3.988 | -7.201 | 0.6254 | 36.0487 | 13.1341 |
| CSA3 | Span 3 | End | Dead | LinStatic | -1.711 | 8.196 | 0.0081 | -1.2472 | -9.2643 |
| CSA3 | Span 3 | End | Live | LinStatic | -0.782 | 3.747 | 0.0037 | -0.5701 | -4.2351 |
| CSA3 | Span 3 | End | SC | LinStatic | -0.391 | 1.873 | 0.0019 | -0.2851 | -2.1176 |
| CSA3 | Span 3 | End | Comb1 | Combination | -3.775 | 18.078 | 0.0179 | -2.7509 | -20.4344 |
| MSA3 | Span 1 | Start | Dead | LinStatic | -0.63 | -1.061 | 0.4814 | 4.9771 | 0.7294 |
| MSA3 | Span 1 | Start | Live | LinStatic | -0.288 | -0.485 | 0.2201 | 2.2752 | 0.3335 |
| MSA3 | Span 1 | Start | SC | LinStatic | -0.144 | -0.243 | 0.11 | 1.1376 | 0.1667 |
| MSA3 | Span 1 | Start | Comb1 | Combination | -1.39 | -2.34 | 1.0619 | 10.9781 | 1.6089 |
| MSA3 | Span 1 | Middle | Dead | LinStatic | -0.826 | 1.175 | -0.3767 | 7.0177 | 2.6678 |
| MSA3 | Span 1 | Middle | Live | LinStatic | -0.378 | 0.537 | -0.1722 | 3.2081 | 1.2195 |
| MSA3 | Span 1 | Middle | SC | LinStatic | -0.189 | 0.269 | -0.0861 | 1.604 | 0.6098 |
| MSA3 | Span 1 | Middle | Comb1 | Combination | -1.822 | 2.592 | -0.8309 | 15.479 | 5.8843 |
| MSA3 | Span 1 | End | Dead | LinStatic | -0.759 | 1.175 | -0.3755 | 2.6183 | -2.5228 |
| MSA3 | Span 1 | End | Live | LinStatic | -0.347 | 0.537 | -0.1716 | 1.1969 | -1.1533 |
| MSA3 | Span 1 | End | SC | LinStatic | -0.173 | 0.269 | -0.0858 | 0.5985 | -0.5766 |
| MSA3 | Span 1 | End | Comb1 | Combination | -1.673 | 2.592 | -0.8282 | 5.7753 | -5.5645 |
| MSA3 | Span 2 | Start | Dead | LinStatic | -0.784 | -0.914 | 0.1448 | 1.6961 | -2.4925 |
| MSA3 | Span 2 | Start | Live | LinStatic | -0.358 | -0.418 | 0.0662 | 0.7754 | -1.1394 |
| MSA3 | Span 2 | Start | SC | LinStatic | -0.179 | -0.209 | 0.0331 | 0.3877 | -0.5697 |
| MSA3 | Span 2 | Start | Comb1 | Combination | -1.728 | -2.015 | 0.3195 | 3.7412 | -5.4977 |
| MSA3 | Span 2 | Middle | Dead | LinStatic | -0.968 | -0.792 | 0.1503 | 5.2258 | 1.9173 |
| MSA3 | Span 2 | Middle | Live | LinStatic | -0.443 | -0.362 | -0.0687 | 2.3889 | 0.8765 |
| MSA3 | Span 2 | Middle | SC | LinStatic | -0.221 | -0.181 | -0.0343 | 1.1945 | 0.4382 |
| MSA3 | Span 2 | Middle | Comb1 | Combination | -2.135 | -1.747 | -0.3314 | 11.5265 | 4.229 |
| MSA3 | Span 2 | End | Dead | LinStatic | -0.784 | 0.914 | -0.1448 | 1.6961 | -2.4925 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA3 | Span 2 | End | Live | LinStatic | -0.358 | 0.418 | -0.0662 | 0.7754 | -1.1394 |
| MSA3 | Span 2 | End | SC | LinStatic | -0.179 | 0.209 | -0.0331 | 0.3877 | -0.5697 |
| MSA3 | Span 2 | End | Comb1 | Combination | -1.728 | 2.015 | -0.3195 | 3.7412 | -5.4977 |
| MSA3 | Span 3 | Start | Dead | LinStatic | -0.759 | -1.175 | 0.3755 | 2.6183 | -2.5228 |
| MSA3 | Span 3 | Start | Live | LinStatic | -0.347 | -0.537 | 0.1716 | 1.1969 | -1.1533 |
| MSA3 | Span 3 | Start | SC | LinStatic | -0.173 | -0.269 | 0.0858 | 0.5985 | -0.5766 |
| MSA3 | Span 3 | Start | Comb1 | Combination | -1.673 | -2.592 | 0.8282 | 5.7753 | -5.5645 |
| MSA3 | Span 3 | Middle | Dead | LinStatic | -0.826 | -1.175 | 0.3767 | 7.0177 | 2.6678 |
| MSA3 | Span 3 | Middle | Live | LinStatic | -0.378 | -0.537 | 0.1722 | 3.2081 | 1.2195 |
| MSA3 | Span 3 | Middle | SC | LinStatic | -0.189 | -0.269 | 0.0861 | 1.604 | 0.6098 |
| MSA3 | Span 3 | Middle | Comb1 | Combination | -1.822 | -2.592 | 0.8309 | 15.479 | 5.8843 |
| MSA3 | Span 3 | End | Dead | LinStatic | -0.63 | 1.061 | -0.4814 | 4.9771 | 0.7294 |
| MSA3 | Span 3 | End | Live | LinStatic | -0.288 | 0.485 | -0.2201 | 2.2752 | 0.3335 |
| MSA3 | Span 3 | End | SC | LinStatic | -0.144 | 0.243 | -0.11 | 1.1376 | 0.1667 |
| MSA3 | Span 3 | End | Comb1 | Combination | -1.39 | 2.34 | -1.0619 | 10.9781 | 1.6089 |
| CSA4 | Span 1 | Start | Dead | LinStatic | -0.877 | -3.931 | 0.7311 | -1.7013 | -5.9558 |
| CSA4 | Span 1 | Start | Live | LinStatic | -0.401 | -1.797 | 0.3342 | -0.7778 | -2.7227 |
| CSA4 | Span 1 | Start | SC | LinStatic | -0.2 | -0.899 | 0.1671 | -0.3889 | -1.3613 |
| CSA4 | Span 1 | Start | Comb1 | Combination | -1.934 | -8.671 | 1.6127 | -3.7527 | -13.1368 |
| CSA4 | Span 1 | Middle | Dead | LinStatic | -0.583 | -1.328 | 0.8278 | 5.4714 | 2.3576 |
| CSA4 | Span 1 | Middle | Live | LinStatic | -0.267 | -0.607 | 0.3784 | 2.5012 | 1.0778 |
| CSA4 | Span 1 | Middle | SC | LinStatic | -0.133 | -0.303 | 0.1892 | 1.2506 | 0.5389 |
| CSA4 | Span 1 | Middle | Comb1 | Combination | -1.286 | -2.929 | 1.8258 | 12.0684 | 5.2002 |
| CSA4 | Span 1 | End | Dead | LinStatic | -0.711 | 3.993 | -0.1384 | -3.539 | -9.1492 |
| CSA4 | Span 1 | End | Live | LinStatic | -0.325 | 1.826 | -0.0632 | -1.6178 | -4.1825 |
| CSA4 | Span 1 | End | SC | LinStatic | -0.163 | 0.913 | -0.0316 | -0.8089 | -2.0912 |
| CSA4 | Span 1 | End | Comb1 | Combination | -1.568 | 8.808 | -0.3052 | -7.8061 | -20.1804 |
| CSA4 | Span 2 | Start | Dead | LinStatic | -0.591 | -3.837 | 0.1435 | -3.3623 | -8.5045 |
| CSA4 | Span 2 | Start | Live | LinStatic | -0.27 | -1.754 | 0.0656 | -1.5371 | -3.8878 |
| CSA4 | Span 2 | Start | SC | LinStatic | -0.135 | -0.877 | 0.0328 | -0.7685 | -1.9439 |
| CSA4 | Span 2 | Start | Comb1 | Combination | -1.304 | -8.463 | 0.3165 | -7.4163 | -18.7585 |
| CSA4 | Span 2 | Middle | Dead | LinStatic | -0.312 | -1.041 | -0.4953 | 4.82 | 1.7737 |
| CSA4 | Span 2 | Middle | Live | LinStatic | -0.142 | -0.476 | -0.2264 | 2.2034 | 0.8108 |
| CSA4 | Span 2 | Middle | SC | LinStatic | -0.071 | -0.238 | -0.1132 | 1.1017 | 0.4054 |
| CSA4 | Span 2 | Middle | Comb1 | Combination | -0.687 | -2.297 | -1.0926 | 10.6316 | 3.9122 |
| CSA4 | Span 2 | End | Dead | LinStatic | -0.591 | 3.837 | -0.1435 | -3.3623 | -8.5045 |
| CSA4 | Span 2 | End | Live | LinStatic | -0.27 | 1.754 | -0.0656 | -1.5371 | -3.8878 |
| CSA4 | Span 2 | End | SC | LinStatic | -0.135 | 0.877 | -0.0328 | -0.7685 | -1.9439 |
| CSA4 | Span 2 | End | Comb1 | Combination | -1.304 | 8.463 | -0.3165 | -7.4163 | -18.7585 |
| CSA4 | Span 3 | Start | Dead | LinStatic | -0.711 | -3.993 | 0.1384 | -3.539 | -9.1492 |
| CSA4 | Span 3 | Start | Live | LinStatic | -0.325 | -1.826 | 0.0632 | -1.6178 | -4.1825 |
| CSA4 | Span 3 | Start | SC | LinStatic | -0.163 | -0.913 | 0.0316 | -0.8089 | -2.0912 |
| CSA4 | Span 3 | Start | Comb1 | Combination | -1.568 | -8.808 | 0.3052 | -7.8061 | -20.1804 |
| CSA4 | Span 3 | Middle | Dead | LinStatic | -0.583 | 1.328 | -0.8278 | 5.4714 | 2.3576 |
| CSA4 | Span 3 | Middle | Live | LinStatic | -0.267 | 0.607 | -0.3784 | 2.5012 | 1.0778 |
| CSA4 | Span 3 | Middle | SC | LinStatic | -0.133 | 0.303 | -0.1892 | 1.2506 | 0.5389 |
| CSA4 | Span 3 | Middle | Comb1 | Combination | -1.286 | 2.929 | -1.8258 | 12.0684 | 5.2002 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA4 | Span 3 | End | Dead | LinStatic | -0.877 | 3.931 | -0.7311 | -1.7013 | -5.9558 |
| CSA4 | Span 3 | End | Live | LinStatic | -0.401 | 1.797 | -0.3342 | -0.7778 | -2.7227 |
| CSA4 | Span 3 | End | SC | LinStatic | -0.2 | 0.899 | -0.1671 | -0.3889 | -1.3613 |
| CSA4 | Span 3 | End | Comb1 | Combination | -1.934 | 8.671 | -1.6127 | -3.7527 | -13.1368 |
| CSB1 | Span 1 | Start | Dead | LinStatic | -1.399 | -4.374 | 1.3599 | 1.9043 | -9.029 |
| CSB1 | Span 1 | Start | Live | LinStatic | -0.639 | -1.999 | 0.6217 | 0.8705 | -4.1276 |
| CSB1 | Span 1 | Start | SC | LinStatic | -0.32 | -1 | 0.3108 | 0.4353 | -2.0638 |
| CSB1 | Span 1 | Start | Comb1 | Combination | -3.085 | -9.647 | 2.9996 | 4.2003 | -19.9155 |
| CSB1 | Span 1 | Middle | Dead | LinStatic | -0.792 | 1.541 | 0.8824 | 6.2465 | 5.6877 |
| CSB1 | Span 1 | Middle | Live | LinStatic | -0.362 | 0.704 | 0.4034 | 2.8556 | 2.6001 |
| CSB1 | Span 1 | Middle | SC | LinStatic | -0.181 | 0.352 | 0.2017 | 1.4278 | 1.3 |
| CSB1 | Span 1 | Middle | Comb1 | Combination | -1.747 | 3.398 | 1.9463 | 13.7781 | 12.5453 |
| CSB1 | Span 1 | End | Dead | LinStatic | -1.063 | 4.156 | 1.1203 | 0.5042 | -12.1747 |
| CSB1 | Span 1 | End | Live | LinStatic | -0.486 | 1.9 | 0.5121 | 0.2305 | -5.5656 |
| CSB1 | Span 1 | End | SC | LinStatic | -0.243 | 0.95 | 0.2561 | 0.1152 | -2.7828 |
| CSB1 | Span 1 | End | Comb1 | Combination | -2.346 | 9.168 | 2.471 | 1.112 | -26.8539 |
| CSB1 | Span 2 | Start | Dead | LinStatic | -0.857 | -3.824 | -1.0517 | 0.289 | -10.8329 |
| CSB1 | Span 2 | Start | Live | LinStatic | -0.392 | -1.748 | -0.4808 | 0.1321 | -4.9522 |
| CSB1 | Span 2 | Start | SC | LinStatic | -0.196 | -0.874 | -0.2404 | 0.0661 | -2.4761 |
| CSB1 | Span 2 | Start | Comb1 | Combination | -1.89 | -8.435 | -2.3198 | 0.6374 | -23.8943 |
| CSB1 | Span 2 | Middle | Dead | LinStatic | -0.513 | 0 | 0.2334 | 4.8184 | 4.8184 |
| CSB1 | Span 2 | Middle | Live | LinStatic | -0.234 | 0 | 0.1067 | 2.2027 | 2.2027 |
| CSB1 | Span 2 | Middle | SC | LinStatic | -0.117 | 0 | 0.0533 | 1.1014 | 1.1014 |
| CSB1 | Span 2 | Middle | Comb1 | Combination | -1.131 | 0 | 0.5147 | 10.628 | 10.628 |
| CSB1 | Span 2 | End | Dead | LinStatic | -0.857 | 3.824 | 1.0517 | 0.289 | -10.8329 |
| CSB1 | Span 2 | End | Live | LinStatic | -0.392 | 1.748 | 0.4808 | 0.1321 | -4.9522 |
| CSB1 | Span 2 | End | SC | LinStatic | -0.196 | 0.874 | 0.2404 | 0.0661 | -2.4761 |
| CSB1 | Span 2 | End | Comb1 | Combination | -1.89 | 8.435 | 2.3198 | 0.6374 | -23.8943 |
| CSB1 | Span 3 | Start | Dead | LinStatic | -1.063 | -4.156 | -1.1203 | 0.5042 | -12.1747 |
| CSB1 | Span 3 | Start | Live | LinStatic | -0.486 | -1.9 | -0.5121 | 0.2305 | -5.5656 |
| CSB1 | Span 3 | Start | SC | LinStatic | -0.243 | -0.95 | -0.2561 | 0.1152 | -2.7828 |
| CSB1 | Span 3 | Start | Comb1 | Combination | -2.346 | -9.168 | -2.471 | 1.112 | -26.8539 |
| CSB1 | Span 3 | Middle | Dead | LinStatic | -0.792 | -1.541 | -0.8824 | 6.2465 | 5.6877 |
| CSB1 | Span 3 | Middle | Live | LinStatic | -0.362 | -0.704 | -0.4034 | 2.8556 | 2.6001 |
| CSB1 | Span 3 | Middle | SC | LinStatic | -0.181 | -0.352 | -0.2017 | 1.4278 | 1.3 |
| CSB1 | Span 3 | Middle | Comb1 | Combination | -1.747 | -3.398 | -1.9463 | 13.7781 | 12.5453 |
| CSB1 | Span 3 | End | Dead | LinStatic | -1.399 | 4.374 | -1.3599 | 1.9043 | -9.029 |
| CSB1 | Span 3 | End | Live | LinStatic | -0.639 | 1.999 | -0.6217 | 0.8705 | -4.1276 |
| CSB1 | Span 3 | End | SC | LinStatic | -0.32 | 1 | -0.3108 | 0.4353 | -2.0638 |
| CSB1 | Span 3 | End | Comb1 | Combination | -3.085 | 9.647 | -2.9996 | 4.2003 | -19.9155 |
| MSB1 | Span 1 | Start | Dead | LinStatic | -0.858 | -1.533 | 0.6509 | 3.694 | -0.9178 |
| MSB1 | Span 1 | Start | Live | LinStatic | -0.392 | -0.701 | 0.2976 | 1.6887 | -0.4196 |
| MSB1 | Span 1 | Start | SC | LinStatic | -0.196 | -0.35 | 0.1488 | 0.8444 | -0.2098 |
| MSB1 | Span 1 | Start | Comb1 | Combination | -1.893 | -3.382 | 1.4357 | 8.148 | -2.0245 |
| MSB1 | Span 1 | Middle | Dead | LinStatic | -1.283 | 2.085 | -0.4482 | 8.9373 | 7.6239 |
| MSB1 | Span 1 | Middle | Live | LinStatic | -0.586 | 0.953 | -0.2049 | 4.0856 | 3.4852 |
| MSB1 | Span 1 | Middle | SC | LinStatic | -0.293 | 0.477 | -0.1024 | 2.0428 | 1.7426 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB1 | Span 1 | Middle | Comb1 | Combination | -2.829 | 4.599 | -0.9886 | 19.7132 | 16.8162 |
| MSB1 | Span 1 | End | Dead | LinStatic | -1.134 | 1.897 | -0.5292 | -0.8974 | -8.7289 |
| MSB1 | Span 1 | End | Live | LinStatic | -0.519 | 0.867 | -0.2419 | -0.4102 | -3.9904 |
| MSB1 | Span 1 | End | SC | LinStatic | -0.259 | 0.434 | -0.121 | -0.2051 | -1.9952 |
| MSB1 | Span 1 | End | Comb1 | Combination | -2.502 | 4.185 | -1.1674 | -1.9793 | -19.2535 |
| MSB1 | Span 2 | Start | Dead | LinStatic | -1.221 | -1.834 | 0.3359 | -0.9858 | -8.5962 |
| MSB1 | Span 2 | Start | Live | LinStatic | -0.558 | -0.839 | 0.1536 | -0.4507 | -3.9297 |
| MSB1 | Span 2 | Start | SC | LinStatic | -0.279 | -0.419 | 0.0768 | -0.2253 | -1.9648 |
| MSB1 | Span 2 | Start | Comb1 | Combination | -2.694 | -4.046 | 0.7409 | -2.1744 | -18.9608 |
| MSB1 | Span 2 | Middle | Dead | LinStatic | -1.236 | 1.834 | -0.2824 | 6.4038 | 6.3821 |
| MSB1 | Span 2 | Middle | Live | LinStatic | -0.565 | -0.839 | -0.1291 | 2.9274 | 2.9175 |
| MSB1 | Span 2 | Middle | SC | LinStatic | -0.282 | -0.419 | -0.0645 | 1.4637 | 1.4588 |
| MSB1 | Span 2 | Middle | Comb1 | Combination | -2.726 | 4.046 | -0.6228 | 14.1249 | 14.077 |
| MSB1 | Span 2 | End | Dead | LinStatic | -1.221 | 1.834 | -0.3359 | -0.9858 | -8.5962 |
| MSB1 | Span 2 | End | Live | LinStatic | -0.558 | 0.839 | -0.1536 | -0.4507 | -3.9297 |
| MSB1 | Span 2 | End | SC | LinStatic | -0.279 | 0.419 | -0.0768 | -0.2253 | -1.9648 |
| MSB1 | Span 2 | End | Comb1 | Combination | -2.694 | 4.046 | -0.7409 | -2.1744 | -18.9608 |
| MSB1 | Span 3 | Start | Dead | LinStatic | -1.134 | -1.897 | 0.5292 | -0.8974 | -8.7289 |
| MSB1 | Span 3 | Start | Live | LinStatic | -0.519 | -0.867 | 0.2419 | -0.4102 | -3.9904 |
| MSB1 | Span 3 | Start | SC | LinStatic | -0.259 | -0.434 | 0.121 | -0.2051 | -1.9952 |
| MSB1 | Span 3 | Start | Comb1 | Combination | -2.502 | -4.185 | 1.1674 | -1.9793 | -19.2535 |
| MSB1 | Span 3 | Middle | Dead | LinStatic | -1.283 | -2.085 | 0.4482 | 8.9373 | 7.6239 |
| MSB1 | Span 3 | Middle | Live | LinStatic | -0.586 | -0.953 | 0.2049 | 4.0856 | 3.4852 |
| MSB1 | Span 3 | Middle | SC | LinStatic | -0.293 | -0.477 | 0.1024 | 2.0428 | 1.7426 |
| MSB1 | Span 3 | Middle | Comb1 | Combination | -2.829 | -4.599 | 0.9886 | 19.7132 | 16.8162 |
| MSB1 | Span 3 | End | Dead | LinStatic | -0.858 | 1.533 | -0.6509 | 3.694 | -0.9178 |
| MSB1 | Span 3 | End | Live | LinStatic | -0.392 | 0.701 | -0.2976 | 1.6887 | -0.4196 |
| MSB1 | Span 3 | End | SC | LinStatic | -0.196 | 0.35 | -0.1488 | 0.8444 | -0.2098 |
| MSB1 | Span 3 | End | Comb1 | Combination | -1.893 | 3.382 | -1.4357 | 8.148 | -2.0245 |
| CSB2 | Span 1 | Start | Dead | LinStatic | -2.289 | -7.763 | 0.17 | 4.0286 | -14.7671 |
| CSB2 | Span 1 | Start | Live | LinStatic | -1.046 | -3.549 | 0.0777 | 1.8416 | -6.7507 |
| CSB2 | Span 1 | Start | SC | LinStatic | -0.523 | -1.774 | 0.0388 | 0.9208 | -3.3753 |
| CSB2 | Span 1 | Start | Comb1 | Combination | -5.048 | -17.123 | 0.3749 | 8.8859 | -32.572 |
| CSB2 | Span 1 | Middle | Dead | LinStatic | -1.32 | 2.853 | -0.1317 | 10.4179 | 9.1273 |
| CSB2 | Span 1 | Middle | Live | LinStatic | -0.604 | 1.304 | -0.0602 | 4.7625 | 4.1725 |
| CSB2 | Span 1 | Middle | SC | LinStatic | -0.302 | 0.652 | -0.0301 | 2.3812 | 2.0862 |
| CSB2 | Span 1 | Middle | Comb1 | Combination | -2.912 | 6.293 | -0.2904 | 22.979 | 20.1323 |
| CSB2 | Span 1 | End | Dead | LinStatic | -1.283 | 8.147 | -0.1407 | 0.6952 | -23.6094 |
| CSB2 | Span 1 | End | Live | LinStatic | -0.586 | 3.724 | -0.0643 | 0.3178 | -10.7929 |
| CSB2 | Span 1 | End | SC | LinStatic | -0.293 | 1.862 | -0.0322 | 0.1589 | -5.3964 |
| CSB2 | Span 1 | End | Comb1 | Combination | -2.83 | 17.97 | -0.3104 | 1.5334 | -52.0756 |
| CSB2 | Span 2 | Start | Dead | LinStatic | -1.078 | -7.566 | -0.0922 | 0.0461 | -21.4241 |
| CSB2 | Span 2 | Start | Live | LinStatic | -0.493 | -3.459 | -0.0422 | 0.0211 | -9.7939 |
| CSB2 | Span 2 | Start | SC | LinStatic | -0.246 | -1.729 | -0.0211 | 0.0105 | -4.8969 |
| CSB2 | Span 2 | Start | Comb1 | Combination | -2.379 | -16.689 | -0.2034 | 0.1016 | -47.2555 |
| CSB2 | Span 2 | Middle | Dead | LinStatic | -1.099 | 0 | 0.0022 | 7.479 | 7.479 |
| CSB2 | Span 2 | Middle | Live | LinStatic | -0.502 | 0 | 0.001 | 3.419 | 3.419 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB2 | Span 2 | Middle | SC | LinStatic | -0.251 | 0 | 0.0005 | 1.7095 | 1.7095 |
| CSB2 | Span 2 | Middle | Comb1 | Combination | -2.424 | 0 | -0.0048 | 16.4965 | 16.4965 |
| CSB2 | Span 2 | End | Dead | LinStatic | -1.078 | 7.566 | 0.0922 | 0.0461 | -21.4241 |
| CSB2 | Span 2 | End | Live | LinStatic | -0.493 | 3.459 | 0.0422 | 0.0211 | -9.7939 |
| CSB2 | Span 2 | End | SC | LinStatic | -0.246 | 1.729 | 0.0211 | 0.0105 | -4.8969 |
| CSB2 | Span 2 | End | Comb1 | Combination | -2.379 | 16.689 | 0.2034 | 0.1016 | -47.2555 |
| CSB2 | Span 3 | Start | Dead | LinStatic | -1.283 | -8.147 | 0.1407 | 0.6952 | -23.6094 |
| CSB2 | Span 3 | Start | Live | LinStatic | -0.586 | -3.724 | 0.0643 | 0.3178 | -10.7929 |
| CSB2 | Span 3 | Start | SC | LinStatic | -0.293 | -1.862 | 0.0322 | 0.1589 | -5.3964 |
| CSB2 | Span 3 | Start | Comb1 | Combination | -2.83 | -17.97 | 0.3104 | 1.5334 | -52.0756 |
| CSB2 | Span 3 | Middle | Dead | LinStatic | -1.32 | -2.853 | 0.1317 | 10.4179 | 9.1273 |
| CSB2 | Span 3 | Middle | Live | LinStatic | -0.604 | -1.304 | 0.0602 | 4.7625 | 4.1725 |
| CSB2 | Span 3 | Middle | SC | LinStatic | -0.302 | -0.652 | 0.0301 | 2.3812 | 2.0862 |
| CSB2 | Span 3 | Middle | Comb1 | Combination | -2.912 | -6.293 | 0.2904 | 22.979 | 20.1323 |
| CSB2 | Span 3 | End | Dead | LinStatic | -2.289 | 7.763 | -0.17 | 4.0286 | -14.7671 |
| CSB2 | Span 3 | End | Live | LinStatic | -1.046 | 3.549 | -0.0777 | 1.8416 | -6.7507 |
| CSB2 | Span 3 | End | SC | LinStatic | -0.523 | 1.774 | -0.0388 | 0.9208 | -3.3753 |
| CSB2 | Span 3 | End | Comb1 | Combination | -5.048 | 17.123 | -0.3749 | 8.8859 | -32.572 |
| MSB2 | Span 1 | Start | Dead | LinStatic | -0.739 | -1.5 | 0 | 4.0228 | -0.8052 |
| MSB2 | Span 1 | Start | Live | LinStatic | -0.338 | -0.686 | 0 | 1.839 | -0.3681 |
| MSB2 | Span 1 | Start | SC | LinStatic | -0.169 | -0.343 | 0 | 0.9195 | -0.184 |
| MSB2 | Span 1 | Start | Comb1 | Combination | -1.629 | -3.308 | 0 | 8.8731 | -1.776 |
| MSB2 | Span 1 | Middle | Dead | LinStatic | -1.16 | 2.256 | 0 | 9.3241 | 7.7061 |
| MSB2 | Span 1 | Middle | Live | LinStatic | -0.53 | 1.031 | 0 | 4.2624 | 3.5228 |
| MSB2 | Span 1 | Middle | SC | LinStatic | -0.265 | 0.516 | 0 | 2.1312 | 1.7614 |
| MSB2 | Span 1 | Middle | Comb1 | Combination | -2.558 | 4.976 | 0 | 20.5662 | 16.9974 |
| MSB2 | Span 1 | End | Dead | LinStatic | -1.169 | 2 | 0 | -1.4732 | -9.8556 |
| MSB2 | Span 1 | End | Live | LinStatic | -0.534 | 0.914 | 0 | -0.6735 | -4.5054 |
| MSB2 | Span 1 | End | SC | LinStatic | -0.267 | 0.457 | 0 | -0.3367 | -2.2527 |
| MSB2 | Span 1 | End | Comb1 | Combination | -2.579 | 4.412 | 0 | -3.2494 | -21.7386 |
| MSB2 | Span 2 | Start | Dead | LinStatic | -1.146 | -1.936 | 0 | -1.7033 | -9.6971 |
| MSB2 | Span 2 | Start | Live | LinStatic | -0.524 | -0.885 | 0 | -0.7787 | -4.433 |
| MSB2 | Span 2 | Start | SC | LinStatic | -0.262 | -0.443 | 0 | -0.3893 | -2.2165 |
| MSB2 | Span 2 | Start | Comb1 | Combination | -2.527 | -4.271 | 0 | -3.7571 | -21.3891 |
| MSB2 | Span 2 | Middle | Dead | LinStatic | -1.065 | 1.936 | 0 | 6.2563 | 6.2316 |
| MSB2 | Span 2 | Middle | Live | LinStatic | -0.487 | -0.885 | 0 | 2.86 | 2.8487 |
| MSB2 | Span 2 | Middle | SC | LinStatic | -0.243 | -0.443 | 0 | 1.43 | 1.4244 |
| MSB2 | Span 2 | Middle | Comb1 | Combination | -2.349 | -4.271 | 0 | 13.7995 | 13.7452 |
| MSB2 | Span 2 | End | Dead | LinStatic | -1.146 | 1.936 | 0 | -1.7033 | -9.6971 |
| MSB2 | Span 2 | End | Live | LinStatic | -0.524 | 0.885 | 0 | -0.7787 | -4.433 |
| MSB2 | Span 2 | End | SC | LinStatic | -0.262 | 0.443 | 0 | -0.3893 | -2.2165 |
| MSB2 | Span 2 | End | Comb1 | Combination | -2.527 | 4.271 | 0 | -3.7571 | -21.3891 |
| MSB2 | Span 3 | Start | Dead | LinStatic | -1.169 | -2 | 0 | -1.4732 | -9.8556 |
| MSB2 | Span 3 | Start | Live | LinStatic | -0.534 | -0.914 | 0 | -0.6735 | -4.5054 |
| MSB2 | Span 3 | Start | SC | LinStatic | -0.267 | -0.457 | 0 | -0.3367 | -2.2527 |
| MSB2 | Span 3 | Start | Comb1 | Combination | -2.579 | -4.412 | 0 | -3.2494 | -21.7386 |
| MSB2 | Span 3 | Middle | Dead | LinStatic | -1.16 | -2.256 | 0 | 9.3241 | 7.7061 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB2 | Span 3 | Middle | Live | LinStatic | -0.53 | -1.031 | 0 | 4.2624 | 3.5228 |
| MSB2 | Span 3 | Middle | SC | LinStatic | -0.265 | -0.516 | 0 | 2.1312 | 1.7614 |
| MSB2 | Span 3 | Middle | Comb1 | Combination | -2.558 | -4.976 | 0 | 20.5662 | 16.9974 |
| MSB2 | Span 3 | End | Dead | LinStatic | -0.739 | 1.5 | 0 | 4.0228 | -0.8052 |
| MSB2 | Span 3 | End | Live | LinStatic | -0.338 | 0.686 | 0 | 1.839 | -0.3681 |
| MSB2 | Span 3 | End | SC | LinStatic | -0.169 | 0.343 | 0 | 0.9195 | -0.184 |
| MSB2 | Span 3 | End | Comb1 | Combination | -1.629 | 3.308 | 0 | 8.8731 | -1.776 |
| CSB3 | Span 1 | Start | Dead | LinStatic | -2.501 | -8.835 | -0.3545 | 8.6207 | -14.8055 |
| CSB3 | Span 1 | Start | Live | LinStatic | -1.143 | -4.039 | -0.162 | 3.9409 | -6.7682 |
| CSB3 | Span 1 | Start | SC | LinStatic | -0.572 | -2.019 | -0.081 | 1.9704 | -3.3841 |
| CSB3 | Span 1 | Start | Comb1 | Combination | -5.517 | -19.487 | -0.7818 | 19.0147 | -32.6566 |
| CSB3 | Span 1 | Middle | Dead | LinStatic | -2.522 | 5.085 | 0.3163 | 19.6334 | 17.2154 |
| CSB3 | Span 1 | Middle | Live | LinStatic | -1.153 | 2.325 | 0.1446 | 8.9753 | 7.8699 |
| CSB3 | Span 1 | Middle | SC | LinStatic | -0.576 | 1.162 | 0.0723 | 4.4876 | 3.9349 |
| CSB3 | Span 1 | Middle | Comb1 | Combination | -5.562 | 11.217 | 0.6976 | 43.3056 | 37.9723 |
| CSB3 | Span 1 | End | Dead | LinStatic | -2.491 | 10.192 | 0.3184 | 0.5443 | -31.7193 |
| CSB3 | Span 1 | End | Live | LinStatic | -1.139 | 4.659 | 0.1455 | 0.2488 | -14.5003 |
| CSB3 | Span 1 | End | SC | LinStatic | -0.569 | 2.33 | 0.0728 | 0.1244 | -7.2501 |
| CSB3 | Span 1 | End | Comb1 | Combination | -5.495 | 22.481 | 0.7022 | 1.2006 | -69.9638 |
| CSB3 | Span 2 | Start | Dead | LinStatic | -2.185 | -9.462 | 0.1353 | -0.5386 | -29.4762 |
| CSB3 | Span 2 | Start | Live | LinStatic | -0.999 | -4.325 | 0.0619 | -0.2462 | -13.4748 |
| CSB3 | Span 2 | Start | SC | LinStatic | -0.5 | -2.163 | 0.0309 | -0.1231 | -6.7374 |
| CSB3 | Span 2 | Start | Comb1 | Combination | -4.82 | -20.871 | 0.2985 | -1.1879 | -65.016 |
| CSB3 | Span 2 | Middle | Dead | LinStatic | -2.235 | 0 | -0.005 | 13.8751 | 13.8751 |
| CSB3 | Span 2 | Middle | Live | LinStatic | -1.022 | 0 | 0.0023 | 6.3429 | 6.3429 |
| CSB3 | Span 2 | Middle | SC | LinStatic | -0.511 | 0 | 0.0011 | 3.1714 | 3.1714 |
| CSB3 | Span 2 | Middle | Comb1 | Combination | -4.929 | 0 | 0.0109 | 30.6045 | 30.6045 |
| CSB3 | Span 2 | End | Dead | LinStatic | -2.185 | 9.462 | -0.1353 | -0.5386 | -29.4762 |
| CSB3 | Span 2 | End | Live | LinStatic | -0.999 | 4.325 | -0.0619 | -0.2462 | -13.4748 |
| CSB3 | Span 2 | End | SC | LinStatic | -0.5 | 2.163 | -0.0309 | -0.1231 | -6.7374 |
| CSB3 | Span 2 | End | Comb1 | Combination | -4.82 | 20.871 | -0.2985 | -1.1879 | -65.016 |
| CSB3 | Span 3 | Start | Dead | LinStatic | -2.491 | -10.192 | -0.3184 | 0.5443 | -31.7193 |
| CSB3 | Span 3 | Start | Live | LinStatic | -1.139 | -4.659 | -0.1455 | 0.2488 | -14.5003 |
| CSB3 | Span 3 | Start | SC | LinStatic | -0.569 | -2.33 | -0.0728 | 0.1244 | -7.2501 |
| CSB3 | Span 3 | Start | Comb1 | Combination | -5.495 | -22.481 | -0.7022 | 1.2006 | -69.9638 |
| CSB3 | Span 3 | Middle | Dead | LinStatic | -2.522 | -5.085 | -0.3163 | 19.6334 | 17.2154 |
| CSB3 | Span 3 | Middle | Live | LinStatic | -1.153 | -2.325 | -0.1446 | 8.9752 | 7.8699 |
| CSB3 | Span 3 | Middle | SC | LinStatic | -0.576 | -1.162 | -0.0723 | 4.4876 | 3.9349 |
| CSB3 | Span 3 | Middle | Comb1 | Combination | -5.562 | -11.217 | -0.6976 | 43.3056 | 37.9723 |
| CSB3 | Span 3 | End | Dead | LinStatic | -2.501 | 8.835 | 0.3545 | 8.6207 | -14.8055 |
| CSB3 | Span 3 | End | Live | LinStatic | -1.143 | 4.039 | 0.162 | 3.9409 | -6.7682 |
| CSB3 | Span 3 | End | SC | LinStatic | -0.572 | 2.019 | 0.081 | 1.9704 | -3.3841 |
| CSB3 | Span 3 | End | Comb1 | Combination | -5.517 | 19.487 | 0.7818 | 19.0147 | -32.6566 |
| MSB3 | Span 1 | Start | Dead | LinStatic | -0.858 | -1.533 | -0.6509 | 3.694 | -0.9178 |
| MSB3 | Span 1 | Start | Live | LinStatic | -0.392 | -0.701 | -0.2976 | 1.6887 | -0.4196 |
| MSB3 | Span 1 | Start | SC | LinStatic | -0.196 | -0.35 | -0.1488 | 0.8444 | -0.2098 |
| MSB3 | Span 1 | Start | Comb1 | Combination | -1.893 | -3.382 | -1.4357 | 8.148 | -2.0245 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB3 | Span 1 | Middle | Dead | LinStatic | -1.283 | 2.085 | 0.4482 | 8.9373 | 7.6239 |
| MSB3 | Span 1 | Middle | Live | LinStatic | -0.586 | 0.953 | 0.2049 | 4.0856 | 3.4852 |
| MSB3 | Span 1 | Middle | SC | LinStatic | -0.293 | 0.477 | 0.1024 | 2.0428 | 1.7426 |
| MSB3 | Span 1 | Middle | Comb1 | Combination | -2.829 | 4.599 | 0.9886 | 19.7132 | 16.8162 |
| MSB3 | Span 1 | End | Dead | LinStatic | -1.134 | 1.897 | 0.5292 | -0.8974 | -8.7289 |
| MSB3 | Span 1 | End | Live | LinStatic | -0.519 | 0.867 | 0.2419 | -0.4102 | -3.9904 |
| MSB3 | Span 1 | End | SC | LinStatic | -0.259 | 0.434 | 0.121 | -0.2051 | -1.9952 |
| MSB3 | Span 1 | End | Comb1 | Combination | -2.502 | 4.185 | 1.1674 | -1.9793 | -19.2535 |
| MSB3 | Span 2 | Start | Dead | LinStatic | -1.221 | -1.834 | -0.3359 | -0.9858 | -8.5962 |
| MSB3 | Span 2 | Start | Live | LinStatic | -0.558 | -0.839 | -0.1536 | -0.4507 | -3.9297 |
| MSB3 | Span 2 | Start | SC | LinStatic | -0.279 | -0.419 | -0.0768 | -0.2253 | -1.9648 |
| MSB3 | Span 2 | Start | Comb1 | Combination | -2.694 | -4.046 | -0.7409 | -2.1744 | -18.9608 |
| MSB3 | Span 2 | Middle | Dead | LinStatic | -1.236 | 1.834 | 0.2824 | 6.4038 | 6.3821 |
| MSB3 | Span 2 | Middle | Live | LinStatic | -0.565 | 0.839 | 0.1291 | 2.9274 | 2.9175 |
| MSB3 | Span 2 | Middle | SC | LinStatic | -0.282 | 0.419 | 0.0645 | 1.4637 | 1.4588 |
| MSB3 | Span 2 | Middle | Comb1 | Combination | -2.726 | -4.046 | 0.6228 | 14.1249 | 14.077 |
| MSB3 | Span 2 | End | Dead | LinStatic | -1.221 | 1.834 | 0.3359 | -0.9858 | -8.5962 |
| MSB3 | Span 2 | End | Live | LinStatic | -0.558 | 0.839 | 0.1536 | -0.4507 | -3.9297 |
| MSB3 | Span 2 | End | SC | LinStatic | -0.279 | 0.419 | 0.0768 | -0.2253 | -1.9648 |
| MSB3 | Span 2 | End | Comb1 | Combination | -2.694 | 4.046 | 0.7409 | -2.1744 | -18.9608 |
| MSB3 | Span 3 | Start | Dead | LinStatic | -1.134 | -1.897 | -0.5292 | -0.8974 | -8.7289 |
| MSB3 | Span 3 | Start | Live | LinStatic | -0.519 | -0.867 | -0.2419 | -0.4102 | -3.9904 |
| MSB3 | Span 3 | Start | SC | LinStatic | -0.259 | -0.434 | -0.121 | -0.2051 | -1.9952 |
| MSB3 | Span 3 | Start | Comb1 | Combination | -2.502 | -4.185 | -1.1674 | -1.9793 | -19.2535 |
| MSB3 | Span 3 | Middle | Dead | LinStatic | -1.283 | -2.085 | -0.4482 | 8.9373 | 7.6239 |
| MSB3 | Span 3 | Middle | Live | LinStatic | -0.586 | -0.953 | -0.2049 | 4.0856 | 3.4852 |
| MSB3 | Span 3 | Middle | SC | LinStatic | -0.293 | -0.477 | -0.1024 | 2.0428 | 1.7426 |
| MSB3 | Span 3 | Middle | Comb1 | Combination | -2.829 | -4.599 | -0.9886 | 19.7132 | 16.8162 |
| MSB3 | Span 3 | End | Dead | LinStatic | -0.858 | 1.533 | 0.6509 | 3.694 | -0.9178 |
| MSB3 | Span 3 | End | Live | LinStatic | -0.392 | 0.701 | 0.2976 | 1.6887 | -0.4196 |
| MSB3 | Span 3 | End | SC | LinStatic | -0.196 | 0.35 | 0.1488 | 0.8444 | -0.2098 |
| MSB3 | Span 3 | End | Comb1 | Combination | -1.893 | 3.382 | 1.4357 | 8.148 | -2.0245 |
| CSB4 | Span 1 | Start | Dead | LinStatic | -1.399 | -4.374 | -1.3599 | 1.9043 | -9.029 |
| CSB4 | Span 1 | Start | Live | LinStatic | -0.639 | -1.999 | -0.6217 | 0.8705 | -4.1276 |
| CSB4 | Span 1 | Start | SC | LinStatic | -0.32 | -1 | -0.3108 | 0.4353 | -2.0638 |
| CSB4 | Span 1 | Start | Comb1 | Combination | -3.085 | -9.647 | -2.9996 | 4.2003 | -19.9155 |
| CSB4 | Span 1 | Middle | Dead | LinStatic | -0.792 | 1.541 | -0.8824 | 6.2465 | 5.6877 |
| CSB4 | Span 1 | Middle | Live | LinStatic | -0.362 | 0.704 | -0.4034 | 2.8556 | 2.6001 |
| CSB4 | Span 1 | Middle | SC | LinStatic | -0.181 | 0.352 | -0.2017 | 1.4278 | 1.3 |
| CSB4 | Span 1 | Middle | Comb1 | Combination | -1.747 | 3.398 | -1.9463 | 13.7781 | 12.5453 |
| CSB4 | Span 1 | End | Dead | LinStatic | -1.063 | 4.156 | -1.1203 | 0.5042 | -12.1747 |
| CSB4 | Span 1 | End | Live | LinStatic | -0.486 | 1.9 | -0.5121 | 0.2305 | -5.5656 |
| CSB4 | Span 1 | End | SC | LinStatic | -0.243 | 0.95 | -0.2561 | 0.1152 | -2.7828 |
| CSB4 | Span 1 | End | Comb1 | Combination | -2.346 | 9.168 | -2.471 | 1.112 | -26.8539 |
| CSB4 | Span 2 | Start | Dead | LinStatic | -0.857 | -3.824 | 1.0517 | 0.289 | -10.8329 |
| CSB4 | Span 2 | Start | Live | LinStatic | -0.392 | -1.748 | 0.4808 | 0.1321 | -4.9522 |
| CSB4 | Span 2 | Start | SC | LinStatic | -0.196 | -0.874 | 0.2404 | 0.0661 | -2.4761 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB4 | Span 2 | Start | Comb1 | Combination | -1.89 | -8.435 | 2.3198 | 0.6374 | -23.8943 |
| CSB4 | Span 2 | Middle | Dead | LinStatic | -0.513 | 0 | -0.2334 | 4.8184 | 4.8184 |
| CSB4 | Span 2 | Middle | Live | LinStatic | -0.234 | 0 | -0.1067 | 2.2027 | 2.2027 |
| CSB4 | Span 2 | Middle | SC | LinStatic | -0.117 | 0 | -0.0533 | 1.1014 | 1.1014 |
| CSB4 | Span 2 | Middle | Comb1 | Combination | -1.131 | 0 | -0.5147 | 10.628 | 10.628 |
| CSB4 | Span 2 | End | Dead | LinStatic | -0.857 | 3.824 | -1.0517 | 0.289 | -10.8329 |
| CSB4 | Span 2 | End | Live | LinStatic | -0.392 | 1.748 | -0.4808 | 0.1321 | -4.9522 |
| CSB4 | Span 2 | End | SC | LinStatic | -0.196 | 0.874 | -0.2404 | 0.0661 | -2.4761 |
| CSB4 | Span 2 | End | Comb1 | Combination | -1.89 | 8.435 | -2.3198 | 0.6374 | -23.8943 |
| CSB4 | Span 3 | Start | Dead | LinStatic | -1.063 | -4.156 | 1.1203 | 0.5042 | -12.1747 |
| CSB4 | Span 3 | Start | Live | LinStatic | -0.486 | -1.9 | 0.5121 | 0.2305 | -5.5656 |
| CSB4 | Span 3 | Start | SC | LinStatic | -0.243 | -0.95 | 0.2561 | 0.1152 | -2.7828 |
| CSB4 | Span 3 | Start | Comb1 | Combination | -2.346 | -9.168 | 2.471 | 1.112 | -26.8539 |
| CSB4 | Span 3 | Middle | Dead | LinStatic | -0.792 | -1.541 | 0.8824 | 6.2465 | 5.6877 |
| CSB4 | Span 3 | Middle | Live | LinStatic | -0.362 | -0.704 | 0.4034 | 2.8556 | 2.6001 |
| CSB4 | Span 3 | Middle | SC | LinStatic | -0.181 | -0.352 | 0.2017 | 1.4278 | 1.3 |
| CSB4 | Span 3 | Middle | Comb1 | Combination | -1.747 | -3.398 | 1.9463 | 13.7781 | 12.5453 |
| CSB4 | Span 3 | End | Dead | LinStatic | -1.399 | 4.374 | 1.3599 | 1.9043 | -9.029 |
| CSB4 | Span 3 | End | Live | LinStatic | -0.639 | 1.999 | 0.6217 | 0.8705 | -4.1276 |
| CSB4 | Span 3 | End | SC | LinStatic | -0.32 | 1 | 0.3108 | 0.4353 | -2.0638 |
| CSB4 | Span 3 | End | Comb1 | Combination | -3.085 | 9.647 | 2.9996 | 4.2003 | -19.9155 |

# 6 Design Data

This chapter provides design data and results.

## 6.1 Concrete Slab Design

**Table 6.1 - Concrete Design Preferences - ACI 318-19**

| Item | Value |
|---|---|
| PhiTen | 0.9 |
| PhiComp | 0.65 |
| PhiShear | 0.75 |
| Increase Flexural Rebar? | No |
| Overwrite Shear Lambdas to One for Mats and Footings? | Yes |
| Ignore Pu? | Yes |
| Pattern Live Load Factor | 0.75 |
| CoverTop ft | 0.0625 |
| CoverBot ft | 0.0625 |
| BarSize | #6 |
| InnerLayer | Layer B |
| PTCGSTop ft | 0.08333 |
| PTCGSBotExt ft | 0.14583 |
| PTCGSBotInt ft | 0.08333 |
| SlabType | Two Way |
| Cover Beam Top ft | 0.125 |
| Cover Beam Bottom ft | 0.125 |
| Bar Size Beam Flexure | #9 |
| Bar Size Beam Shear | #4 |
| PTCGS Beam Top ft | 0.16667 |
| PTCGS Beam Bottom ft | 0.16667 |
| UserStress | No |
| InitConcRat | 0.8 |
| LLFraction | 0.5 |

**Table 6.2 - Concrete Slab Design Overwrites - Strip Based**

| Strip Name | Strip Layer | Strip Design Type | Design? | Ignote PT? | Rebar Material | Cover Specification Type | LLRF |
|---|---|---|---|---|---|---|---|
| CSA1 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA1 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA2 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA2 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA3 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA3 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA4 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB1 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB1 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB2 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB2 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB3 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB3 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB4 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |

**Table 6.3 - Concrete Slab Design Overwrites - Finite Element Based**

| Unique Name | Rebar Material | Cover Specification Type | LLRF | Design? | Ignote PT? |
|---|---|---|---|---|---|
| 1 | A615Gr60 | From Preferences | 1 | Yes | No |
| 2 | | From Preferences | 1 | Yes | No |
| 3 | | From Preferences | 1 | Yes | No |
| 4 | | From Preferences | 1 | Yes | No |
| 5 | | From Preferences | 1 | Yes | No |
| 6 | | From Preferences | 1 | Yes | No |
| 7 | | From Preferences | 1 | Yes | No |
| 8 | | From Preferences | 1 | Yes | No |
| 9 | | From Preferences | 1 | Yes | No |
| 10 | | From Preferences | 1 | Yes | No |
| 11 | | From Preferences | 1 | Yes | No |
| 12 | | From Preferences | 1 | Yes | No |
| 13 | | From Preferences | 1 | Yes | No |
| 14 | | From Preferences | 1 | Yes | No |
| 15 | | From Preferences | 1 | Yes | No |
| 16 | | From Preferences | 1 | Yes | No |
| 17 | | From Preferences | 1 | Yes | No |

**Table 6.4 - Concrete Slab Design Overwrites - Punching Shear - General**

| Unique Name | Check Punching Shear? | Location Type | Perimeter Type | Effective Depth Type | Opening Definition | Reinforcement Type |
|---|---|---|---|---|---|---|
| 2 | Program Determined | Auto | Auto | Auto | Auto | None |
| 4 | Program Determined | Auto | Auto | Auto | Auto | None |
| 6 | Program Determined | Auto | Auto | Auto | Auto | None |
| 8 | Program Determined | Auto | Auto | Auto | Auto | None |
| 10 | Program Determined | Auto | Auto | Auto | Auto | None |
| 12 | Program Determined | Auto | Auto | Auto | Auto | None |
| 14 | Program Determined | Auto | Auto | Auto | Auto | None |
| 16 | Program Determined | Auto | Auto | Auto | Auto | None |
| 18 | Program Determined | Auto | Auto | Auto | Auto | None |
| 20 | Program Determined | Auto | Auto | Auto | Auto | None |
| 22 | Program Determined | Auto | Auto | Auto | Auto | None |
| 24 | Program Determined | Auto | Auto | Auto | Auto | None |
| 26 | Program Determined | Auto | Auto | Auto | Auto | None |
| 28 | Program Determined | Auto | Auto | Auto | Auto | None |
| 30 | Program Determined | Auto | Auto | Auto | Auto | None |
| 32 | Program Determined | Auto | Auto | Auto | Auto | None |
| 1 | Program Determined | Auto | Auto | Auto | Auto | None |
| 3 | Program Determined | Auto | Auto | Auto | Auto | None |
| 5 | Program Determined | Auto | Auto | Auto | Auto | None |
| 7 | Program Determined | Auto | Auto | Auto | Auto | None |
| 9 | Program Determined | Auto | Auto | Auto | Auto | None |
| 11 | Program Determined | Auto | Auto | Auto | Auto | None |
| 13 | Program Determined | Auto | Auto | Auto | Auto | None |
| 15 | Program Determined | Auto | Auto | Auto | Auto | None |
| 17 | Program Determined | Auto | Auto | Auto | Auto | None |
| 19 | Program Determined | Auto | Auto | Auto | Auto | None |

**Table 6.4 - Concrete Slab Design Overwrites - Punching Shear - General (continued)**

| Unique Name | Check Punching Shear? | Location Type | Perimeter Type | Effective Depth Type | Opening Definition | Reinforcement Type |
|---|---|---|---|---|---|---|
| 21 | Program Determined | Auto | Auto | Auto | Auto | None |
| 23 | Program Determined | Auto | Auto | Auto | Auto | None |
| 25 | Program Determined | Auto | Auto | Auto | Auto | None |
| 27 | Program Determined | Auto | Auto | Auto | Auto | None |
| 29 | Program Determined | Auto | Auto | Auto | Auto | None |
| 31 | Program Determined | Auto | Auto | Auto | Auto | None |

**Table 6.5 - Concrete Slab Design Summary - Span Definition Data**

| StripObject | SpanID | SpanLength ft | StartDist ft | EndDist ft | GlobalX1 ft | GlobalY1 ft | GlobalX2 ft | GlobalY2 ft |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | 14 | 1 | 29 | 0 | 0 | 14 | 0 |
| CSA1 | Span 2 | 14 | 15 | 15 | 14 | 0 | 28 | 0 |
| CSA1 | Span 3 | 14 | 29 | 1 | 28 | 0 | 42 | 0 |
| MSA1 | Span 1 | 14 | 1 | 29 | 0 | 9 | 14 | 9 |
| MSA1 | Span 2 | 14 | 15 | 15 | 14 | 9 | 28 | 9 |
| MSA1 | Span 3 | 14 | 29 | 1 | 28 | 9 | 42 | 9 |
| CSA2 | Span 1 | 14 | 1 | 29 | 0 | 18 | 14 | 18 |
| CSA2 | Span 2 | 14 | 15 | 15 | 14 | 18 | 28 | 18 |
| CSA2 | Span 3 | 14 | 29 | 1 | 28 | 18 | 42 | 18 |
| MSA2 | Span 1 | 14 | 1 | 29 | 0 | 27 | 14 | 27 |
| MSA2 | Span 2 | 14 | 15 | 15 | 14 | 27 | 28 | 27 |
| MSA2 | Span 3 | 14 | 29 | 1 | 28 | 27 | 42 | 27 |
| CSA3 | Span 1 | 14 | 1 | 29 | 0 | 36 | 14 | 36 |
| CSA3 | Span 2 | 14 | 15 | 15 | 14 | 36 | 28 | 36 |
| CSA3 | Span 3 | 14 | 29 | 1 | 28 | 36 | 42 | 36 |
| MSA3 | Span 1 | 14 | 1 | 29 | 0 | 45 | 14 | 45 |
| MSA3 | Span 2 | 14 | 15 | 15 | 14 | 45 | 28 | 45 |
| MSA3 | Span 3 | 14 | 29 | 1 | 28 | 45 | 42 | 45 |
| CSA4 | Span 1 | 14 | 1 | 29 | 0 | 54 | 14 | 54 |
| CSA4 | Span 2 | 14 | 15 | 15 | 14 | 54 | 28 | 54 |
| CSA4 | Span 3 | 14 | 29 | 1 | 28 | 54 | 42 | 54 |
| CSB1 | Span 1 | 18 | 1 | 37 | 0 | 0 | 0 | 18 |
| CSB1 | Span 2 | 18 | 19 | 19 | 0 | 18 | 0 | 36 |
| CSB1 | Span 3 | 18 | 37 | 1 | 0 | 36 | 0 | 54 |
| MSB1 | Span 1 | 18 | 1 | 37 | 7 | 0 | 7 | 18 |
| MSB1 | Span 2 | 18 | 19 | 19 | 7 | 18 | 7 | 36 |
| MSB1 | Span 3 | 18 | 37 | 1 | 7 | 36 | 7 | 54 |
| CSB2 | Span 1 | 18 | 1 | 37 | 14 | 0 | 14 | 18 |
| CSB2 | Span 2 | 18 | 19 | 19 | 14 | 18 | 14 | 36 |
| CSB2 | Span 3 | 18 | 37 | 1 | 14 | 36 | 14 | 54 |
| MSB2 | Span 1 | 18 | 1 | 37 | 21 | 0 | 21 | 18 |
| MSB2 | Span 2 | 18 | 19 | 19 | 21 | 18 | 21 | 36 |
| MSB2 | Span 3 | 18 | 37 | 1 | 21 | 36 | 21 | 54 |
| CSB3 | Span 1 | 18 | 1 | 37 | 28 | 0 | 28 | 18 |
| CSB3 | Span 2 | 18 | 19 | 19 | 28 | 18 | 28 | 36 |
| CSB3 | Span 3 | 18 | 37 | 1 | 28 | 36 | 28 | 54 |
| MSB3 | Span 1 | 18 | 1 | 37 | 35 | 0 | 35 | 18 |
| MSB3 | Span 2 | 18 | 19 | 19 | 35 | 18 | 35 | 36 |

**Table 6.5 - Concrete Slab Design Summary - Span Definition Data (continued)**

| StripObject | SpanID | SpanLength ft | StartDist ft | EndDist ft | GlobalX1 ft | GlobalY1 ft | GlobalX2 ft | GlobalY2 ft |
|---|---|---|---|---|---|---|---|---|
| MSB3 | Span 3 | 18 | 37 | 1 | 35 | 36 | 35 | 54 |
| CSB4 | Span 1 | 18 | 1 | 37 | 42 | 0 | 42 | 18 |
| CSB4 | Span 2 | 18 | 19 | 19 | 42 | 18 | 42 | 36 |
| CSB4 | Span 3 | 18 | 37 | 1 | 42 | 36 | 42 | 54 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -16.2105 | 0.004341 | 0.005775 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.4749 | 0.000125 | 0 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -22.509 | 0.006037 | 0.005775 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -21.3423 | 0.005742 | 0.005775 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.2222 | 5.8E-05 | 0 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -21.3423 | 0.005742 | 0.005775 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -22.509 | 0.006037 | 0.005775 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.4749 | 0.000125 | 0 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -16.2105 | 0.004341 | 0.005775 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -2.3423 | 0.000646 | 0 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.9107 | 0.000239 | 0 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -6.6162 | 0.001744 | 0.00945 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -6.6162 | 0.001744 | 0.00945 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.998 | 0.000262 | 0 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -6.6162 | 0.001744 | 0.00945 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -6.6162 | 0.001744 | 0.00945 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.9107 | 0.000239 | 0 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -2.3423 | 0.000646 | 0 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -27.7725 | 0.007405 | 0.00945 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.8425 | 0.000221 | 0 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -49.3963 | 0.013331 | 0.00945 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -47.0896 | 0.012692 | 0.00945 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -2.5815 | 0.000679 | 0 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -47.0896 | 0.012692 | 0.00945 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -49.3963 | 0.013331 | 0.00945 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.8425 | 0.000221 | 0 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -27.7725 | 0.007405 | 0.00945 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -2.3259 | 0.000656 | 0 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.2111 | 0.000318 | 0 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -8.7006 | 0.002296 | 0.00945 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -8.7006 | 0.002296 | 0.00945 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -1.4113 | 0.000371 | 0 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -8.7006 | 0.002296 | 0.00945 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -8.7006 | 0.002296 | 0.00945 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.2111 | 0.000318 | 0 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -2.3259 | 0.000656 | 0 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -29.7232 | 0.00787 | 0.0189 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.0657 | 0.00028 | 0 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -56.6672 | 0.015114 | 0.0189 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -54.2598 | 0.014462 | 0.0189 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -3.4908 | 0.000918 | 0 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -54.2598 | 0.014462 | 0.0189 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -56.6672 | 0.015114 | 0.0189 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.0657 | 0.00028 | 0 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -29.7232 | 0.00787 | 0.0189 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -2.3423 | 0.000646 | 0 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.9107 | 0.000239 | 0 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -6.6162 | 0.001744 | 0.00945 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -6.6162 | 0.001744 | 0.00945 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.998 | 0.000262 | 0 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -6.6162 | 0.001744 | 0.00945 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -6.6162 | 0.001744 | 0.00945 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.9107 | 0.000239 | 0 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -2.3423 | 0.000646 | 0 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -16.2105 | 0.004341 | 0.005775 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.4749 | 0.000125 | 0 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | End | -22.509 | 0.006037 | 0.005775 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -21.3423 | 0.005742 | 0.005775 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.2222 | 5.8E-05 | 0 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | End | -21.3423 | 0.005742 | 0.005775 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -22.509 | 0.006037 | 0.005775 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.4749 | 0.000125 | 0 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | End | -16.2105 | 0.004341 | 0.005775 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -21.7294 | 0.006752 | 0.004725 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.1372 | 4.1E-05 | 0 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -27.9506 | 0.008769 | 0.004725 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -24.9919 | 0.007805 | 0.004725 |
| CSB1 | Span 2 |  | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -24.9919 | 0.007805 | 0.004725 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -27.9506 | 0.008769 | 0.004725 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.1372 | 4.1E-05 | 0 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -21.7294 | 0.006752 | 0.004725 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -3.8047 | 0.001175 | 0.00735 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.2934 | 8.8E-05 | 0 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -19.9905 | 0.00613 | 0.00735 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -19.9905 | 0.00613 | 0.00735 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.0194 | 0 | 0 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -19.9905 | 0.00613 | 0.00735 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -19.9905 | 0.00613 | 0.00735 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.2934 | 8.8E-05 | 0 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -3.8047 | 0.001175 | 0.00735 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -34.5677 | 0.01075 | 0.00735 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.3392 | 0.000102 | 0 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -53.6643 | 0.017013 | 0.00735 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -49.0822 | 0.015487 | 0.00735 |
| CSB2 | Span 2 |  | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -49.0822 | 0.015487 | 0.00735 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -53.6643 | 0.017013 | 0.00735 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.3392 | 0.000102 | 0 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -34.5677 | 0.01075 | 0.00735 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -3.0655 | 0.000964 | 0.00735 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.4656 | 0.00014 | 0 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -23.2382 | 0.007148 | 0.00735 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -23.2382 | 0.007148 | 0.00735 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.0285 | 0 | 0 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -23.2382 | 0.007148 | 0.00735 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -23.2382 | 0.007148 | 0.00735 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.4656 | 0.00014 | 0 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -3.0655 | 0.000964 | 0.00735 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -36.9391 | 0.011312 | 0.0147 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.6574 | 0.000198 | 0 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -73.0647 | 0.022766 | 0.0147 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -68.5542 | 0.021313 | 0.0147 |
| CSB3 | Span 2 |  | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -68.5542 | 0.021313 | 0.0147 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -73.0647 | 0.022766 | 0.0147 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.6574 | 0.000198 | 0 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -36.9391 | 0.011312 | 0.0147 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -3.8047 | 0.001175 | 0.00735 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.2934 | 8.8E-05 | 0 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -19.9905 | 0.00613 | 0.00735 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -19.9905 | 0.00613 | 0.00735 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.0194 | 0 | 0 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -19.9905 | 0.00613 | 0.00735 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -19.9905 | 0.00613 | 0.00735 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.2934 | 8.8E-05 | 0 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -3.8047 | 0.001175 | 0.00735 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -21.7294 | 0.006752 | 0.004725 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.1372 | 4.1E-05 | 0 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | End | -27.9506 | 0.008769 | 0.004725 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -24.9919 | 0.007805 | 0.004725 |
| CSB4 | Span 2 |  | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | End | -24.9919 | 0.007805 | 0.004725 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -27.9506 | 0.008769 | 0.004725 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.1372 | 4.1E-05 | 0 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | End | -21.7294 | 0.006752 | 0.004725 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | 1.929 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 2.929 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | 8.808 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | 0.718 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 11.3338 | 0.003007 | 0.005775 | 2.297 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | 8.463 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | 0.883 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 2.228 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | 8.671 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip |
|---|---|---|---|---|---|---|---|---|
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 1.851 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 1.564 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 2.592 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 2.592 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 12.8765 | 0.003406 | 0.00945 | 2.015 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 1.747 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 2.015 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 2.592 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 1.564 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 2.9663 | 0.00078 | 0 | 1.991 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 22.891 | 0.006087 | 0.00945 | 4.889 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 0.4706 | 0.000124 | 0 | 18.15 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 0.3533 | 9.3E-05 | 0 | 1.78 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 18.2431 | 0.004839 | 0.00945 | 4.626 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 0.3533 | 9.3E-05 | 0 | 17.281 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 0.4706 | 0.000124 | 0 | 2.02 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 22.891 | 0.006087 | 0.00945 | 4.898 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 2.9663 | 0.00078 | 0 | 15.753 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 13.4317 | 0.003553 | 0.00945 | 1.972 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 16.2295 | 0.0043 | 0.00945 | 1.183 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 8.2019 | 0.002164 | 0.00945 | 2.706 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 5.262 | 0.001386 | 0.00945 | 2.706 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 10.3472 | 0.002733 | 0.00945 | 1.897 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 5.262 | 0.001386 | 0.00945 | 1.649 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 8.2019 | 0.002164 | 0.00945 | 1.897 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 16.2295 | 0.0043 | 0.00945 | 2.706 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 13.4317 | 0.003553 | 0.00945 | 1.183 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 9.7214 | 0.00256 | 0 | 0.061 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 39.9052 | 0.010594 | 0.0189 | 6.189 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 2.6748 | 0.000703 | 0 | 20.899 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 1.7725 | 0.000466 | 0 | 4.529 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 29.7933 | 0.007888 | 0.0189 | 6.334 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 1.7725 | 0.000466 | 0 | 19.302 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 2.6748 | 0.000703 | 0 | 4.041 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 39.9052 | 0.010594 | 0.0189 | 7.201 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 9.7214 | 0.00256 | 0 | 18.078 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 1.851 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 1.564 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 2.592 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 2.592 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 12.8765 | 0.003406 | 0.00945 | 2.015 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 1.747 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 2.015 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 2.592 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 1.564 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | 1.929 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 2.929 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | 8.808 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | 0.718 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip |
|---|---|---|---|---|---|---|---|---|
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | 11.3338 | 0.003007 | 0.005775 | 2.297 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | 8.463 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | 0.883 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 2.228 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | 8.671 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 2.241 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 0.053 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 3.398 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 1.33 |
| CSB1 | Span 2 |  | DConS2 | DConS2 | 11.1784 | 0.00342 | 0.004725 | 0 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 3.108 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 0.863 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 3.398 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 3.849 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 0.422 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 0.244 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 4.185 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 4.004 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 15.9904 | 0.004885 | 0.00735 | 4.046 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 4.046 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 3.742 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 4.599 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 3.382 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 11.74 | 0.003573 | 0.00735 | 3.193 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 23.9492 | 0.007372 | 0.00735 | 0.368 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 4.7825 | 0.001446 | 0.00735 | 6.293 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 3.0784 | 0.000929 | 0 | 0.255 |
| CSB2 | Span 2 |  | DConS2 | DConS2 | 17.0295 | 0.005208 | 0.00735 | 0 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 3.0784 | 0.000929 | 0 | 5.761 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 4.7825 | 0.001446 | 0.00735 | 1.013 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 23.9492 | 0.007372 | 0.00735 | 6.293 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 11.74 | 0.003573 | 0.00735 | 6.244 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 11.3202 | 0.003444 | 0.00735 | 0.157 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 21.4646 | 0.006592 | 0.00735 | 0.451 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 1.3264 | 0.0004 | 0 | 4.412 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 0.8454 | 0.000255 | 0 | 4.412 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 15.8285 | 0.004835 | 0.00735 | 4.271 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 0.8454 | 0.000255 | 0 | 4.271 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 1.3264 | 0.0004 | 0 | 4.026 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 21.4646 | 0.006592 | 0.00735 | 4.976 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 11.3202 | 0.003444 | 0.00735 | 3.308 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 24.5654 | 0.00748 | 0.0147 | 3.664 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 45.0889 | 0.01386 | 0.0147 | 0.734 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 7.9738 | 0.00241 | 0 | 11.217 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3009 | 0.0016 | 0 | 4.584 |
| CSB3 | Span 2 |  | DConS2 | DConS2 | 31.8406 | 0.009727 | 0.0147 | 0 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3009 | 0.0016 | 0 | 10.039 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 7.9738 | 0.00241 | 0 | 5.038 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 45.0889 | 0.01386 | 0.0147 | 11.217 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip |
|---|---|---|---|---|---|---|---|---|
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 24.5654 | 0.00748 | 0.0147 | 9.664 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 0.422 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 0.244 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 4.185 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 4.004 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 15.9904 | 0.004885 | 0.00735 | 4.046 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 4.046 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 3.742 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 4.599 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 3.382 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 2.241 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 0.053 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 3.398 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 1.33 |
| CSB4 | Span 2 |  | DConS2 | DConS2 | 11.1784 | 0.00342 | 0.004725 | 0 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 3.108 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 0.863 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 3.398 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 3.849 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Status | Layer |
|---|---|---|---|---|---|---|
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Status | Layer |
|---|---|---|---|---|---|---|
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | OK | A |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB1 | Span 2 |  | DConS2 | DConS2 | OK | B |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Status | Layer |
|---|---|---|---|---|---|---|
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 2 | | DConS2 | DConS2 | OK | B |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 2 | | DConS2 | DConS2 | OK | B |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 2 | | DConS2 | DConS2 | OK | B |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | OK | B |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 1 of 4)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | ConcWidth ft | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA1 | 0 | DConS2 | DConS2 | DConS2 | 0 | -1.6914 | 0.000511 | 0.005775 |
| CSA1 | 0.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -3.0226 | 0.000835 | 0.004375 |
| CSA1 | 1 | DConS2 | DConS2 | DConS2 | 4.16667 | -6.1812 | 0.00164 | 0.004375 |
| CSA1 | 1.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -16.2105 | 0.004341 | 0.005775 |
| CSA1 | 4.83333 | DConS2 | DConS2 | DConS2 | 5.5 | -0.4749 | 0.000125 | 0 |
| CSA1 | 8 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA1 | 11.16667 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA1 | 14.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -22.509 | 0.006037 | 0.005775 |
| CSA1 | 15 | DConS2 | DConS2 | DConS2 | 4.16667 | -9.2696 | 0.002461 | 0.004375 |
| CSA1 | 15.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -21.3423 | 0.005742 | 0.005775 |
| CSA1 | 18.83333 | DConS2 | DConS2 | DConS2 | 5.5 | -0.2222 | 5.8E-05 | 0 |
| CSA1 | 22 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA1 | 25.16667 | DConS2 | DConS2 | DConS2 | 5.5 | -0.2222 | 5.8E-05 | 0 |
| CSA1 | 28.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -21.3423 | 0.005742 | 0.005775 |
| CSA1 | 29 | DConS2 | DConS2 | DConS2 | 4.16667 | -9.2696 | 0.002461 | 0.004375 |
| CSA1 | 29.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -22.509 | 0.006037 | 0.005775 |
| CSA1 | 32.83333 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA1 | 36 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA1 | 39.16667 | DConS2 | DConS2 | DConS2 | 5.5 | -0.4749 | 0.000125 | 0 |
| CSA1 | 42.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -16.2105 | 0.004341 | 0.005775 |
| CSA1 | 43 | DConS2 | DConS2 | DConS2 | 4.16667 | -6.1812 | 0.00164 | 0.004375 |
| CSA1 | 43.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -3.0226 | 0.000835 | 0.004375 |
| CSA1 | 44 | DConS2 | DConS2 | DConS2 | 0 | -1.6914 | 0.000511 | 0.005775 |
| MSA1 | 0 | DConS2 | DConS2 | DConS2 | 0 | -0.813 | 0.000251 | 0 |
| MSA1 | 1 | DConS2 | DConS2 | DConS2 | 9 | -2.3423 | 0.000646 | 0 |
| MSA1 | 4.5 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA1 | 8 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA1 | 11.5 | DConS2 | DConS2 | DConS2 | 9 | -0.9107 | 0.000239 | 0 |
| MSA1 | 15 | DConS2 | DConS2 | DConS2 | 9 | -6.6162 | 0.001744 | 0.00945 |
| MSA1 | 18.5 | DConS2 | DConS2 | DConS2 | 9 | -0.998 | 0.000262 | 0 |
| MSA1 | 22 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA1 | 25.5 | DConS2 | DConS2 | DConS2 | 9 | -0.998 | 0.000262 | 0 |
| MSA1 | 29 | DConS2 | DConS2 | DConS2 | 9 | -6.6162 | 0.001744 | 0.00945 |
| MSA1 | 32.5 | DConS2 | DConS2 | DConS2 | 9 | -0.9107 | 0.000239 | 0 |
| MSA1 | 36 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA1 | 39.5 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA1 | 43 | DConS2 | DConS2 | DConS2 | 9 | -2.3423 | 0.000646 | 0 |
| MSA1 | 44 | DConS2 | DConS2 | DConS2 | 0 | -0.813 | 0.000251 | 0 |
| CSA2 | 0 | DConS2 | DConS2 | DConS2 | 0 | -4.6199 | 0.001264 | 0.00945 |
| CSA2 | 0.33333 | DConS2 | DConS2 | DConS2 | 7.66667 | -6.3407 | 0.001798 | 0.00945 |
| CSA2 | 1 | DConS2 | DConS2 | DConS2 | 7.66667 | -8.7014 | 0.002298 | 0.00805 |
| CSA2 | 1.66667 | DConS2 | DConS2 | DConS2 | 7.66667 | -27.7725 | 0.007405 | 0.00945 |
| CSA2 | 4.83333 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| CSA2 | 8 | DConS2 | DConS2 | DConS2 | 9 | -0.1182 | 0 | 0 |
| CSA2 | 11.16667 | DConS2 | DConS2 | DConS2 | 9 | -0.8425 | 0.000221 | 0 |
| CSA2 | 14.33333 | DConS2 | DConS2 | DConS2 | 7.66667 | -49.3963 | 0.013331 | 0.00945 |
| CSA2 | 15 | DConS2 | DConS2 | DConS2 | 7.66667 | -19.8718 | 0.005285 | 0.00805 |
| CSA2 | 15.66667 | DConS2 | DConS2 | DConS2 | 7.66667 | -47.0896 | 0.012692 | 0.00945 |
| CSA2 | 18.83333 | DConS2 | DConS2 | DConS2 | 9 | -2.5815 | 0.000679 | 0 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 1 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | ConcWidth ft | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA2 | 22 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| CSA2 | 25.16667 | DConS2 | DConS2 | DConS2 | 9 | -2.5815 | 0.000679 | 0 |
| CSA2 | 28.33333 | DConS2 | DConS2 | DConS2 | 7.66667 | -47.0896 | 0.012692 | 0.00945 |
| CSA2 | 29 | DConS2 | DConS2 | DConS2 | 7.66667 | -19.8718 | 0.005285 | 0.00805 |
| CSA2 | 29.66667 | DConS2 | DConS2 | DConS2 | 7.66667 | -49.3963 | 0.013331 | 0.00945 |
| CSA2 | 32.83333 | DConS2 | DConS2 | DConS2 | 9 | -0.8425 | 0.000221 | 0 |
| CSA2 | 36 | DConS2 | DConS2 | DConS2 | 9 | -0.1182 | 0 | 0 |
| CSA2 | 39.16667 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| CSA2 | 42.33333 | DConS2 | DConS2 | DConS2 | 7.66667 | -27.7725 | 0.007405 | 0.00945 |
| CSA2 | 43 | DConS2 | DConS2 | DConS2 | 7.66667 | -8.7014 | 0.002298 | 0.00805 |
| CSA2 | 43.66667 | DConS2 | DConS2 | DConS2 | 7.66667 | -6.3407 | 0.001798 | 0.00945 |
| CSA2 | 44 | DConS2 | DConS2 | DConS2 | 0 | -4.6199 | 0.001264 | 0.00945 |
| MSA2 | 0 | DConS2 | DConS2 | DConS2 | 0 | -0.9952 | 0.000293 | 0 |
| MSA2 | 1 | DConS2 | DConS2 | DConS2 | 9 | -2.3259 | 0.000656 | 0 |
| MSA2 | 4.5 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA2 | 8 | DConS2 | DConS2 | DConS2 | 9 | -0.0324 | 0 | 0 |
| MSA2 | 11.5 | DConS2 | DConS2 | DConS2 | 9 | -1.2111 | 0.000318 | 0 |
| MSA2 | 15 | DConS2 | DConS2 | DConS2 | 9 | -8.7006 | 0.002296 | 0.00945 |
| MSA2 | 18.5 | DConS2 | DConS2 | DConS2 | 9 | -1.4113 | 0.000371 | 0 |
| MSA2 | 22 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA2 | 25.5 | DConS2 | DConS2 | DConS2 | 9 | -1.4113 | 0.000371 | 0 |
| MSA2 | 29 | DConS2 | DConS2 | DConS2 | 9 | -8.7006 | 0.002296 | 0.00945 |
| MSA2 | 32.5 | DConS2 | DConS2 | DConS2 | 9 | -1.2111 | 0.000318 | 0 |
| MSA2 | 36 | DConS2 | DConS2 | DConS2 | 9 | -0.0324 | 0 | 0 |
| MSA2 | 39.5 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA2 | 43 | DConS2 | DConS2 | DConS2 | 9 | -2.3259 | 0.000656 | 0 |
| MSA2 | 44 | DConS2 | DConS2 | DConS2 | 0 | -0.9952 | 0.000293 | 0 |
| CSA3 | 0 | DConS2 | DConS2 | DConS2 | 0 | -5.7746 | 0.001603 | 0.0189 |
| CSA3 | 0.33333 | DConS2 | DConS2 | DConS2 | 16.66667 | -7.5477 | 0.002147 | 0 |
| CSA3 | 1 | DConS2 | DConS2 | DConS2 | 16.66667 | -11.2815 | 0.00299 | 0.0175 |
| CSA3 | 1.66667 | DConS2 | DConS2 | DConS2 | 16.66667 | -29.7232 | 0.00787 | 0.0189 |
| CSA3 | 4.83333 | | DConS2 | DConS2 | 18 | 0 | 0 | 0 |
| CSA3 | 8 | DConS2 | DConS2 | DConS2 | 18 | -0.1495 | 0 | 0 |
| CSA3 | 11.16667 | DConS2 | DConS2 | DConS2 | 18 | -1.0657 | 0.00028 | 0 |
| CSA3 | 14.33333 | DConS2 | DConS2 | DConS2 | 16.66667 | -56.6672 | 0.015114 | 0.0189 |
| CSA3 | 15 | DConS2 | DConS2 | DConS2 | 16.66667 | -28.5578 | 0.007563 | 0.0175 |
| CSA3 | 15.66667 | DConS2 | DConS2 | DConS2 | 16.66667 | -54.2598 | 0.014462 | 0.0189 |
| CSA3 | 18.83333 | DConS2 | DConS2 | DConS2 | 18 | -3.4908 | 0.000918 | 0 |
| CSA3 | 22 | | DConS2 | DConS2 | 18 | 0 | 0 | 0 |
| CSA3 | 25.16667 | DConS2 | DConS2 | DConS2 | 18 | -3.4908 | 0.000918 | 0 |
| CSA3 | 28.33333 | DConS2 | DConS2 | DConS2 | 16.66667 | -54.2598 | 0.014462 | 0.0189 |
| CSA3 | 29 | DConS2 | DConS2 | DConS2 | 16.66667 | -28.5578 | 0.007563 | 0.0175 |
| CSA3 | 29.66667 | DConS2 | DConS2 | DConS2 | 16.66667 | -56.6672 | 0.015114 | 0.0189 |
| CSA3 | 32.83333 | DConS2 | DConS2 | DConS2 | 18 | -1.0657 | 0.00028 | 0 |
| CSA3 | 36 | DConS2 | DConS2 | DConS2 | 18 | -0.1495 | 0 | 0 |
| CSA3 | 39.16667 | | DConS2 | DConS2 | 18 | 0 | 0 | 0 |
| CSA3 | 42.33333 | DConS2 | DConS2 | DConS2 | 16.66667 | -29.7232 | 0.00787 | 0.0189 |
| CSA3 | 43 | DConS2 | DConS2 | DConS2 | 16.66667 | -11.2815 | 0.00299 | 0.0175 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 1 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | ConcWidth ft | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA3 | 43.66667 | DConS2 | DConS2 | DConS2 | 16.66667 | -7.5477 | 0.002147 | 0 |
| CSA3 | 44 | DConS2 | DConS2 | DConS2 | 0 | -5.7746 | 0.001603 | 0.0189 |
| MSA3 | 0 | DConS2 | DConS2 | DConS2 | 0 | -0.813 | 0.000251 | 0 |
| MSA3 | 1 | DConS2 | DConS2 | DConS2 | 9 | -2.3423 | 0.000646 | 0 |
| MSA3 | 4.5 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA3 | 8 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA3 | 11.5 | DConS2 | DConS2 | DConS2 | 9 | -0.9107 | 0.000239 | 0 |
| MSA3 | 15 | DConS2 | DConS2 | DConS2 | 9 | -6.6162 | 0.001744 | 0.00945 |
| MSA3 | 18.5 | DConS2 | DConS2 | DConS2 | 9 | -0.998 | 0.000262 | 0 |
| MSA3 | 22 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA3 | 25.5 | DConS2 | DConS2 | DConS2 | 9 | -0.998 | 0.000262 | 0 |
| MSA3 | 29 | DConS2 | DConS2 | DConS2 | 9 | -6.6162 | 0.001744 | 0.00945 |
| MSA3 | 32.5 | DConS2 | DConS2 | DConS2 | 9 | -0.9107 | 0.000239 | 0 |
| MSA3 | 36 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA3 | 39.5 | | DConS2 | DConS2 | 9 | 0 | 0 | 0 |
| MSA3 | 43 | DConS2 | DConS2 | DConS2 | 9 | -2.3423 | 0.000646 | 0 |
| MSA3 | 44 | DConS2 | DConS2 | DConS2 | 0 | -0.813 | 0.000251 | 0 |
| CSA4 | 0 | DConS2 | DConS2 | DConS2 | 0 | -1.6914 | 0.000511 | 0.005775 |
| CSA4 | 0.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -3.0226 | 0.000835 | 0.004375 |
| CSA4 | 1 | DConS2 | DConS2 | DConS2 | 4.16667 | -6.1812 | 0.00164 | 0.004375 |
| CSA4 | 1.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -16.2105 | 0.004341 | 0.005775 |
| CSA4 | 4.83333 | DConS2 | DConS2 | DConS2 | 5.5 | -0.4749 | 0.000125 | 0 |
| CSA4 | 8 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA4 | 11.16667 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA4 | 14.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -22.509 | 0.006037 | 0.005775 |
| CSA4 | 15 | DConS2 | DConS2 | DConS2 | 4.16667 | -9.2696 | 0.002461 | 0.004375 |
| CSA4 | 15.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -21.3423 | 0.005742 | 0.005775 |
| CSA4 | 18.83333 | DConS2 | DConS2 | DConS2 | 5.5 | -0.2222 | 5.8E-05 | 0 |
| CSA4 | 22 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA4 | 25.16667 | DConS2 | DConS2 | DConS2 | 5.5 | -0.2222 | 5.8E-05 | 0 |
| CSA4 | 28.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -21.3423 | 0.005742 | 0.005775 |
| CSA4 | 29 | DConS2 | DConS2 | DConS2 | 4.16667 | -9.2696 | 0.002461 | 0.004375 |
| CSA4 | 29.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -22.509 | 0.006037 | 0.005775 |
| CSA4 | 32.83333 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA4 | 36 | | DConS2 | DConS2 | 5.5 | 0 | 0 | 0 |
| CSA4 | 39.16667 | DConS2 | DConS2 | DConS2 | 5.5 | -0.4749 | 0.000125 | 0 |
| CSA4 | 42.33333 | DConS2 | DConS2 | DConS2 | 4.16667 | -16.2105 | 0.004341 | 0.005775 |
| CSA4 | 43 | DConS2 | DConS2 | DConS2 | 4.16667 | -6.1812 | 0.00164 | 0.004375 |
| CSA4 | 43.66667 | DConS2 | DConS2 | DConS2 | 4.16667 | -3.0226 | 0.000835 | 0.004375 |
| CSA4 | 44 | DConS2 | DConS2 | DConS2 | 0 | -1.6914 | 0.000511 | 0.005775 |
| CSB1 | 0 | DConS2 | DConS2 | DConS2 | 0 | -2.6838 | 0.000857 | 0.004725 |
| CSB1 | 0.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -3.5167 | 0.00109 | 0.003325 |
| CSB1 | 1 | DConS2 | DConS2 | DConS2 | 3.16667 | -5.8128 | 0.001771 | 0.003325 |
| CSB1 | 1.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -21.7294 | 0.006752 | 0.004725 |
| CSB1 | 5 | DConS2 | DConS2 | DConS2 | 4.5 | -1.1968 | 0.000361 | 0 |
| CSB1 | 8.33333 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB1 | 11.66667 | DConS2 | DConS2 | DConS2 | 4.5 | -0.1372 | 4.1E-05 | 0 |
| CSB1 | 15 | DConS2 | DConS2 | DConS2 | 4.5 | -1.7514 | 0.000529 | 0 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 1 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | ConcWidth ft | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSB1 | 18.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -27.9506 | 0.008769 | 0.004725 |
| CSB1 | 19 | DConS2 | DConS2 | DConS2 | 3.16667 | -8.4631 | 0.002592 | 0.003325 |
| CSB1 | 19.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -24.9919 | 0.007805 | 0.004725 |
| CSB1 | 23 | DConS2 | DConS2 | DConS2 | 4.5 | -2.4182 | 0.000731 | 0 |
| CSB1 | 26.33333 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB1 | 29.66667 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB1 | 33 | DConS2 | DConS2 | DConS2 | 4.5 | -2.4182 | 0.000731 | 0 |
| CSB1 | 36.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -24.9919 | 0.007805 | 0.004725 |
| CSB1 | 37 | DConS2 | DConS2 | DConS2 | 3.16667 | -8.4631 | 0.002592 | 0.003325 |
| CSB1 | 37.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -27.9506 | 0.008769 | 0.004725 |
| CSB1 | 41 | DConS2 | DConS2 | DConS2 | 4.5 | -1.7514 | 0.000529 | 0 |
| CSB1 | 44.33333 | DConS2 | DConS2 | DConS2 | 4.5 | -0.1372 | 4.1E-05 | 0 |
| CSB1 | 47.66667 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB1 | 51 | DConS2 | DConS2 | DConS2 | 4.5 | -1.1968 | 0.000361 | 0 |
| CSB1 | 54.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -21.7294 | 0.006752 | 0.004725 |
| CSB1 | 55 | DConS2 | DConS2 | DConS2 | 3.16667 | -5.8128 | 0.001771 | 0.003325 |
| CSB1 | 55.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -3.5167 | 0.00109 | 0.003325 |
| CSB1 | 56 | DConS2 | DConS2 | DConS2 | 0 | -2.6838 | 0.000857 | 0.004725 |
| MSB1 | 0 | DConS2 | DConS2 | DConS2 | 0 | -1.3851 | 0.000452 | 0 |
| MSB1 | 1 | DConS2 | DConS2 | DConS2 | 7 | -3.8047 | 0.001175 | 0.00735 |
| MSB1 | 4.6 | DConS2 | DConS2 | DConS2 | 7 | -0.0658 | 0 | 0 |
| MSB1 | 8.2 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB1 | 11.8 | DConS2 | DConS2 | DConS2 | 7 | -0.2934 | 8.8E-05 | 0 |
| MSB1 | 15.4 | DConS2 | DConS2 | DConS2 | 7 | -4.6187 | 0.001397 | 0.00735 |
| MSB1 | 19 | DConS2 | DConS2 | DConS2 | 7 | -19.9905 | 0.00613 | 0.00735 |
| MSB1 | 22.6 | DConS2 | DConS2 | DConS2 | 7 | -5.2504 | 0.001588 | 0.00735 |
| MSB1 | 26.2 | DConS2 | DConS2 | DConS2 | 7 | -0.0194 | 0 | 0 |
| MSB1 | 29.8 | DConS2 | DConS2 | DConS2 | 7 | -0.0194 | 0 | 0 |
| MSB1 | 33.4 | DConS2 | DConS2 | DConS2 | 7 | -5.2504 | 0.001588 | 0.00735 |
| MSB1 | 37 | DConS2 | DConS2 | DConS2 | 7 | -19.9905 | 0.00613 | 0.00735 |
| MSB1 | 40.6 | DConS2 | DConS2 | DConS2 | 7 | -4.6187 | 0.001397 | 0.00735 |
| MSB1 | 44.2 | DConS2 | DConS2 | DConS2 | 7 | -0.2934 | 8.8E-05 | 0 |
| MSB1 | 47.8 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB1 | 51.4 | DConS2 | DConS2 | DConS2 | 7 | -0.0658 | 0 | 0 |
| MSB1 | 55 | DConS2 | DConS2 | DConS2 | 7 | -3.8047 | 0.001175 | 0.00735 |
| MSB1 | 56 | DConS2 | DConS2 | DConS2 | 0 | -1.3851 | 0.000452 | 0 |
| CSB2 | 0 | DConS2 | DConS2 | DConS2 | 0 | -3.7238 | 0.001168 | 0.00735 |
| CSB2 | 0.33333 | DConS2 | DConS2 | DConS2 | 5.66667 | -6.419 | 0.002007 | 0.00595 |
| CSB2 | 1 | DConS2 | DConS2 | DConS2 | 5.66667 | -9.0575 | 0.002755 | 0.00595 |
| CSB2 | 1.66667 | DConS2 | DConS2 | DConS2 | 5.66667 | -34.5677 | 0.01075 | 0.00735 |
| CSB2 | 5 | DConS2 | DConS2 | DConS2 | 7 | -1.5054 | 0.000454 | 0 |
| CSB2 | 8.33333 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| CSB2 | 11.66667 | DConS2 | DConS2 | DConS2 | 7 | -0.3392 | 0.000102 | 0 |
| CSB2 | 15 | DConS2 | DConS2 | DConS2 | 7 | -4.3295 | 0.001309 | 0 |
| CSB2 | 18.33333 | DConS2 | DConS2 | DConS2 | 5.66667 | -53.6643 | 0.017013 | 0.00735 |
| CSB2 | 19 | DConS2 | DConS2 | DConS2 | 5.66667 | -16.6493 | 0.005108 | 0.00595 |
| CSB2 | 19.66667 | DConS2 | DConS2 | DConS2 | 5.66667 | -49.0822 | 0.015487 | 0.00735 |
| CSB2 | 23 | DConS2 | DConS2 | DConS2 | 7 | -5.9054 | 0.001788 | 0.00735 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 1 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | ConcWidth ft | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSB2 | 26.33333 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| CSB2 | 29.66667 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| CSB2 | 33 | DConS2 | DConS2 | DConS2 | 7 | -5.9054 | 0.001788 | 0.00735 |
| CSB2 | 36.33333 | DConS2 | DConS2 | DConS2 | 5.66667 | -49.0822 | 0.015487 | 0.00735 |
| CSB2 | 37 | DConS2 | DConS2 | DConS2 | 5.66667 | -16.6493 | 0.005108 | 0.00595 |
| CSB2 | 37.66667 | DConS2 | DConS2 | DConS2 | 5.66667 | -53.6643 | 0.017013 | 0.00735 |
| CSB2 | 41 | DConS2 | DConS2 | DConS2 | 7 | -4.3295 | 0.001309 | 0 |
| CSB2 | 44.33333 | DConS2 | DConS2 | DConS2 | 7 | -0.3392 | 0.000102 | 0 |
| CSB2 | 47.66667 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| CSB2 | 51 | DConS2 | DConS2 | DConS2 | 7 | -1.5054 | 0.000454 | 0 |
| CSB2 | 54.33333 | DConS2 | DConS2 | DConS2 | 5.66667 | -34.5677 | 0.01075 | 0.00735 |
| CSB2 | 55 | DConS2 | DConS2 | DConS2 | 5.66667 | -9.0575 | 0.002755 | 0.00595 |
| CSB2 | 55.66667 | DConS2 | DConS2 | DConS2 | 5.66667 | -6.419 | 0.002007 | 0.00595 |
| CSB2 | 56 | DConS2 | DConS2 | DConS2 | 0 | -3.7238 | 0.001168 | 0.00735 |
| MSB2 | 0 | DConS2 | DConS2 | DConS2 | 0 | -1.1092 | 0.000381 | 0 |
| MSB2 | 1 | DConS2 | DConS2 | DConS2 | 7 | -3.0655 | 0.000964 | 0.00735 |
| MSB2 | 4.6 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB2 | 8.2 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB2 | 11.8 | DConS2 | DConS2 | DConS2 | 7 | -0.4656 | 0.00014 | 0 |
| MSB2 | 15.4 | DConS2 | DConS2 | DConS2 | 7 | -5.9907 | 0.001814 | 0.00735 |
| MSB2 | 19 | DConS2 | DConS2 | DConS2 | 7 | -23.2382 | 0.007148 | 0.00735 |
| MSB2 | 22.6 | DConS2 | DConS2 | DConS2 | 7 | -6.8488 | 0.002075 | 0.00735 |
| MSB2 | 26.2 | DConS2 | DConS2 | DConS2 | 7 | -0.0285 | 0 | 0 |
| MSB2 | 29.8 | DConS2 | DConS2 | DConS2 | 7 | -0.0285 | 0 | 0 |
| MSB2 | 33.4 | DConS2 | DConS2 | DConS2 | 7 | -6.8488 | 0.002075 | 0.00735 |
| MSB2 | 37 | DConS2 | DConS2 | DConS2 | 7 | -23.2382 | 0.007148 | 0.00735 |
| MSB2 | 40.6 | DConS2 | DConS2 | DConS2 | 7 | -5.9907 | 0.001814 | 0.00735 |
| MSB2 | 44.2 | DConS2 | DConS2 | DConS2 | 7 | -0.4656 | 0.00014 | 0 |
| MSB2 | 47.8 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB2 | 51.4 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB2 | 55 | DConS2 | DConS2 | DConS2 | 7 | -3.0655 | 0.000964 | 0.00735 |
| MSB2 | 56 | DConS2 | DConS2 | DConS2 | 0 | -1.1092 | 0.000381 | 0 |
| CSB3 | 0 | DConS2 | DConS2 | DConS2 | 0 | -4.6479 | 0.001491 | 0.0147 |
| CSB3 | 0.33333 | DConS2 | DConS2 | DConS2 | 12.66667 | -7.7443 | 0.002445 | 0.0133 |
| CSB3 | 1 | DConS2 | DConS2 | DConS2 | 12.66667 | -12.3995 | 0.003757 | 0.0133 |
| CSB3 | 1.66667 | DConS2 | DConS2 | DConS2 | 12.66667 | -36.9391 | 0.011312 | 0.0147 |
| CSB3 | 5 | DConS2 | DConS2 | DConS2 | 14 | -1.5625 | 0.000471 | 0 |
| CSB3 | 8.33333 | | DConS2 | DConS2 | 14 | 0 | 0 | 0 |
| CSB3 | 11.66667 | DConS2 | DConS2 | DConS2 | 14 | -0.6574 | 0.000198 | 0 |
| CSB3 | 15 | DConS2 | DConS2 | DConS2 | 14 | -8.391 | 0.002536 | 0.0147 |
| CSB3 | 18.33333 | DConS2 | DConS2 | DConS2 | 12.66667 | -73.0647 | 0.022766 | 0.0147 |
| CSB3 | 19 | DConS2 | DConS2 | DConS2 | 12.66667 | -39.2236 | 0.012048 | 0.0133 |
| CSB3 | 19.66667 | DConS2 | DConS2 | DConS2 | 12.66667 | -68.5542 | 0.021313 | 0.0147 |
| CSB3 | 23 | DConS2 | DConS2 | DConS2 | 14 | -11.1403 | 0.003371 | 0.0147 |
| CSB3 | 26.33333 | | DConS2 | DConS2 | 14 | 0 | 0 | 0 |
| CSB3 | 29.66667 | | DConS2 | DConS2 | 14 | 0 | 0 | 0 |
| CSB3 | 33 | DConS2 | DConS2 | DConS2 | 14 | -11.1403 | 0.003371 | 0.0147 |
| CSB3 | 36.33333 | DConS2 | DConS2 | DConS2 | 12.66667 | -68.5542 | 0.021313 | 0.0147 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 1 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | ConcWidth ft | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSB3 | 37 | DConS2 | DConS2 | DConS2 | 12.66667 | -39.2236 | 0.012048 | 0.0133 |
| CSB3 | 37.66667 | DConS2 | DConS2 | DConS2 | 12.66667 | -73.0647 | 0.022766 | 0.0147 |
| CSB3 | 41 | DConS2 | DConS2 | DConS2 | 14 | -8.391 | 0.002536 | 0.0147 |
| CSB3 | 44.33333 | DConS2 | DConS2 | DConS2 | 14 | -0.6574 | 0.000198 | 0 |
| CSB3 | 47.66667 | | DConS2 | DConS2 | 14 | 0 | 0 | 0 |
| CSB3 | 51 | DConS2 | DConS2 | DConS2 | 14 | -1.5625 | 0.000471 | 0 |
| CSB3 | 54.33333 | DConS2 | DConS2 | DConS2 | 12.66667 | -36.9391 | 0.011312 | 0.0147 |
| CSB3 | 55 | DConS2 | DConS2 | DConS2 | 12.66667 | -12.3995 | 0.003757 | 0.0133 |
| CSB3 | 55.66667 | DConS2 | DConS2 | DConS2 | 12.66667 | -7.7443 | 0.002445 | 0.0133 |
| CSB3 | 56 | DConS2 | DConS2 | DConS2 | 0 | -4.6479 | 0.001491 | 0.0147 |
| MSB3 | 0 | DConS2 | DConS2 | DConS2 | 0 | -1.3851 | 0.000452 | 0 |
| MSB3 | 1 | DConS2 | DConS2 | DConS2 | 7 | -3.8047 | 0.001175 | 0.00735 |
| MSB3 | 4.6 | DConS2 | DConS2 | DConS2 | 7 | -0.0658 | 0 | 0 |
| MSB3 | 8.2 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB3 | 11.8 | DConS2 | DConS2 | DConS2 | 7 | -0.2934 | 8.8E-05 | 0 |
| MSB3 | 15.4 | DConS2 | DConS2 | DConS2 | 7 | -4.6187 | 0.001397 | 0.00735 |
| MSB3 | 19 | DConS2 | DConS2 | DConS2 | 7 | -19.9905 | 0.00613 | 0.00735 |
| MSB3 | 22.6 | DConS2 | DConS2 | DConS2 | 7 | -5.2504 | 0.001588 | 0.00735 |
| MSB3 | 26.2 | DConS2 | DConS2 | DConS2 | 7 | -0.0194 | 0 | 0 |
| MSB3 | 29.8 | DConS2 | DConS2 | DConS2 | 7 | -0.0194 | 0 | 0 |
| MSB3 | 33.4 | DConS2 | DConS2 | DConS2 | 7 | -5.2504 | 0.001588 | 0.00735 |
| MSB3 | 37 | DConS2 | DConS2 | DConS2 | 7 | -19.9905 | 0.00613 | 0.00735 |
| MSB3 | 40.6 | DConS2 | DConS2 | DConS2 | 7 | -4.6187 | 0.001397 | 0.00735 |
| MSB3 | 44.2 | DConS2 | DConS2 | DConS2 | 7 | -0.2934 | 8.8E-05 | 0 |
| MSB3 | 47.8 | | DConS2 | DConS2 | 7 | 0 | 0 | 0 |
| MSB3 | 51.4 | DConS2 | DConS2 | DConS2 | 7 | -0.0658 | 0 | 0 |
| MSB3 | 55 | DConS2 | DConS2 | DConS2 | 7 | -3.8047 | 0.001175 | 0.00735 |
| MSB3 | 56 | DConS2 | DConS2 | DConS2 | 0 | -1.3851 | 0.000452 | 0 |
| CSB4 | 0 | DConS2 | DConS2 | DConS2 | 0 | -2.6838 | 0.000857 | 0.004725 |
| CSB4 | 0.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -3.5167 | 0.00109 | 0.003325 |
| CSB4 | 1 | DConS2 | DConS2 | DConS2 | 3.16667 | -5.8128 | 0.001771 | 0.003325 |
| CSB4 | 1.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -21.7294 | 0.006752 | 0.004725 |
| CSB4 | 5 | DConS2 | DConS2 | DConS2 | 4.5 | -1.1968 | 0.000361 | 0 |
| CSB4 | 8.33333 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB4 | 11.66667 | DConS2 | DConS2 | DConS2 | 4.5 | -0.1372 | 4.1E-05 | 0 |
| CSB4 | 15 | DConS2 | DConS2 | DConS2 | 4.5 | -1.7514 | 0.000529 | 0 |
| CSB4 | 18.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -27.9506 | 0.008769 | 0.004725 |
| CSB4 | 19 | DConS2 | DConS2 | DConS2 | 3.16667 | -8.4631 | 0.002592 | 0.003325 |
| CSB4 | 19.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -24.9919 | 0.007805 | 0.004725 |
| CSB4 | 23 | DConS2 | DConS2 | DConS2 | 4.5 | -2.4182 | 0.000731 | 0 |
| CSB4 | 26.33333 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB4 | 29.66667 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB4 | 33 | DConS2 | DConS2 | DConS2 | 4.5 | -2.4182 | 0.000731 | 0 |
| CSB4 | 36.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -24.9919 | 0.007805 | 0.004725 |
| CSB4 | 37 | DConS2 | DConS2 | DConS2 | 3.16667 | -8.4631 | 0.002592 | 0.003325 |
| CSB4 | 37.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -27.9506 | 0.008769 | 0.004725 |
| CSB4 | 41 | DConS2 | DConS2 | DConS2 | 4.5 | -1.7514 | 0.000529 | 0 |
| CSB4 | 44.33333 | DConS2 | DConS2 | DConS2 | 4.5 | -0.1372 | 4.1E-05 | 0 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 1 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | ConcWidth ft | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSB4 | 47.66667 | | DConS2 | DConS2 | 4.5 | 0 | 0 | 0 |
| CSB4 | 51 | DConS2 | DConS2 | DConS2 | 4.5 | -1.1968 | 0.000361 | 0 |
| CSB4 | 54.33333 | DConS2 | DConS2 | DConS2 | 3.16667 | -21.7294 | 0.006752 | 0.004725 |
| CSB4 | 55 | DConS2 | DConS2 | DConS2 | 3.16667 | -5.8128 | 0.001771 | 0.003325 |
| CSB4 | 55.66667 | DConS2 | DConS2 | DConS2 | 3.16667 | -3.5167 | 0.00109 | 0.003325 |
| CSB4 | 56 | DConS2 | DConS2 | DConS2 | 0 | -2.6838 | 0.000857 | 0.004725 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 2 of 4)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | AxialForce kip |
|---|---|---|---|---|---|---|---|---|
| CSA1 | 0 | DConS2 | DConS2 | DConS2 | 1.16 | 0.000371 | 0 | -0.867 |
| CSA1 | 0.33333 | DConS2 | DConS2 | DConS2 | 1.895 | 0.000573 | 0 | -0.969 |
| CSA1 | 1 | DConS2 | DConS2 | DConS2 | 0.3111 | 8.7E-05 | 0 | -0.068 |
| CSA1 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | -1.048 |
| CSA1 | 4.83333 | DConS2 | DConS2 | DConS2 | 7.7225 | 0.002042 | 0.005775 | 0 |
| CSA1 | 8 | | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 0 |
| CSA1 | 11.16667 | | DConS2 | DConS2 | 7.0088 | 0.001852 | 0.005775 | 0 |
| CSA1 | 14.33333 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | -0.346 |
| CSA1 | 15 | DConS2 | DConS2 | DConS2 | 0.3921 | 0.000103 | 0 | 0 |
| CSA1 | 15.66667 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | -0.407 |
| CSA1 | 18.83333 | DConS2 | DConS2 | DConS2 | 5.4636 | 0.001442 | 0.005775 | 0 |
| CSA1 | 22 | | DConS2 | DConS2 | 11.3338 | 0.003007 | 0.005775 | 0 |
| CSA1 | 25.16667 | DConS2 | DConS2 | DConS2 | 5.4636 | 0.001442 | 0.005775 | 0 |
| CSA1 | 28.33333 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | -0.407 |
| CSA1 | 29 | DConS2 | DConS2 | DConS2 | 0.3921 | 0.000103 | 0 | 0 |
| CSA1 | 29.66667 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | -0.346 |
| CSA1 | 32.83333 | | DConS2 | DConS2 | 7.0088 | 0.001852 | 0.005775 | 0 |
| CSA1 | 36 | | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 0 |
| CSA1 | 39.16667 | DConS2 | DConS2 | DConS2 | 7.7225 | 0.002042 | 0.005775 | 0 |
| CSA1 | 42.33333 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | -1.048 |
| CSA1 | 43 | DConS2 | DConS2 | DConS2 | 0.3111 | 8.7E-05 | 0 | -0.068 |
| CSA1 | 43.66667 | DConS2 | DConS2 | DConS2 | 1.895 | 0.000573 | 0 | -0.969 |
| CSA1 | 44 | DConS2 | DConS2 | DConS2 | 1.16 | 0.000371 | 0 | -0.867 |
| MSA1 | 0 | DConS2 | DConS2 | DConS2 | 2.4829 | 0.00069 | 0.00945 | -0.482 |
| MSA1 | 1 | DConS2 | DConS2 | DConS2 | 4.7234 | 0.001274 | 0.00945 | -0.393 |
| MSA1 | 4.5 | | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 0 |
| MSA1 | 8 | | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 0 |
| MSA1 | 11.5 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 0 |
| MSA1 | 15 | DConS2 | DConS2 | DConS2 | 0.9161 | 0.000241 | 0 | 0 |
| MSA1 | 18.5 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 0 |
| MSA1 | 22 | | DConS2 | DConS2 | 12.8765 | 0.003406 | 0.00945 | 0 |
| MSA1 | 25.5 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 0 |
| MSA1 | 29 | DConS2 | DConS2 | DConS2 | 0.9161 | 0.000241 | 0 | 0 |
| MSA1 | 32.5 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 0 |
| MSA1 | 36 | | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 0 |
| MSA1 | 39.5 | | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 0 |
| MSA1 | 43 | DConS2 | DConS2 | DConS2 | 4.7234 | 0.001274 | 0.00945 | -0.393 |
| MSA1 | 44 | DConS2 | DConS2 | DConS2 | 2.4829 | 0.00069 | 0.00945 | -0.482 |
| CSA2 | 0 | DConS2 | DConS2 | DConS2 | 2.3787 | 0.000673 | 0 | -0.616 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 2 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | AxialForce kip |
|---|---|---|---|---|---|---|---|---|
| CSA2 | 0.33333 | DConS2 | DConS2 | DConS2 | 4.4582 | 0.0013 | 0 | -1.657 |
| CSA2 | 1 | DConS2 | DConS2 | DConS2 | 0.3568 | 9.4E-05 | 0 | 0 |
| CSA2 | 1.66667 | DConS2 | DConS2 | DConS2 | 2.9663 | 0.00078 | 0 | 0 |
| CSA2 | 4.83333 | | DConS2 | DConS2 | 14.2503 | 0.003772 | 0.00945 | 0 |
| CSA2 | 8 | DConS2 | DConS2 | DConS2 | 22.891 | 0.006087 | 0.00945 | 0 |
| CSA2 | 11.16667 | DConS2 | DConS2 | DConS2 | 10.9958 | 0.002905 | 0.00945 | 0 |
| CSA2 | 14.33333 | DConS2 | DConS2 | DConS2 | 0.4706 | 0.000124 | 0 | 0 |
| CSA2 | 15 | DConS2 | DConS2 | DConS2 | 0.0216 | 0 | 0 | 0 |
| CSA2 | 15.66667 | DConS2 | DConS2 | DConS2 | 0.3533 | 9.3E-05 | 0 | 0 |
| CSA2 | 18.83333 | DConS2 | DConS2 | DConS2 | 7.4135 | 0.001955 | 0.00945 | 0 |
| CSA2 | 22 | | DConS2 | DConS2 | 18.2431 | 0.004839 | 0.00945 | 0 |
| CSA2 | 25.16667 | DConS2 | DConS2 | DConS2 | 7.4135 | 0.001955 | 0.00945 | 0 |
| CSA2 | 28.33333 | DConS2 | DConS2 | DConS2 | 0.3533 | 9.3E-05 | 0 | 0 |
| CSA2 | 29 | DConS2 | DConS2 | DConS2 | 0.0216 | 0 | 0 | 0 |
| CSA2 | 29.66667 | DConS2 | DConS2 | DConS2 | 0.4706 | 0.000124 | 0 | 0 |
| CSA2 | 32.83333 | DConS2 | DConS2 | DConS2 | 10.9958 | 0.002905 | 0.00945 | 0 |
| CSA2 | 36 | DConS2 | DConS2 | DConS2 | 22.891 | 0.006087 | 0.00945 | 0 |
| CSA2 | 39.16667 | | DConS2 | DConS2 | 14.2503 | 0.003772 | 0.00945 | 0 |
| CSA2 | 42.33333 | DConS2 | DConS2 | DConS2 | 2.9663 | 0.00078 | 0 | 0 |
| CSA2 | 43 | DConS2 | DConS2 | DConS2 | 0.3568 | 9.4E-05 | 0 | 0 |
| CSA2 | 43.66667 | DConS2 | DConS2 | DConS2 | 4.4582 | 0.0013 | 0 | -1.657 |
| CSA2 | 44 | DConS2 | DConS2 | DConS2 | 2.3787 | 0.000673 | 0 | -0.616 |
| MSA2 | 0 | DConS2 | DConS2 | DConS2 | 2.5662 | 0.000707 | 0.00945 | -0.415 |
| MSA2 | 1 | DConS2 | DConS2 | DConS2 | 4.725 | 0.001289 | 0.00945 | -0.581 |
| MSA2 | 4.5 | | DConS2 | DConS2 | 13.4317 | 0.003553 | 0.00945 | 0 |
| MSA2 | 8 | DConS2 | DConS2 | DConS2 | 16.2295 | 0.0043 | 0.00945 | 0 |
| MSA2 | 11.5 | DConS2 | DConS2 | DConS2 | 8.2019 | 0.002164 | 0.00945 | 0 |
| MSA2 | 15 | DConS2 | DConS2 | DConS2 | 0.0389 | 0 | 0 | 0 |
| MSA2 | 18.5 | DConS2 | DConS2 | DConS2 | 5.262 | 0.001386 | 0.00945 | 0 |
| MSA2 | 22 | | DConS2 | DConS2 | 10.3472 | 0.002733 | 0.00945 | 0 |
| MSA2 | 25.5 | DConS2 | DConS2 | DConS2 | 5.262 | 0.001386 | 0.00945 | 0 |
| MSA2 | 29 | DConS2 | DConS2 | DConS2 | 0.0389 | 0 | 0 | 0 |
| MSA2 | 32.5 | DConS2 | DConS2 | DConS2 | 8.2019 | 0.002164 | 0.00945 | 0 |
| MSA2 | 36 | DConS2 | DConS2 | DConS2 | 16.2295 | 0.0043 | 0.00945 | 0 |
| MSA2 | 39.5 | | DConS2 | DConS2 | 13.4317 | 0.003553 | 0.00945 | 0 |
| MSA2 | 43 | DConS2 | DConS2 | DConS2 | 4.725 | 0.001289 | 0.00945 | -0.581 |
| MSA2 | 44 | DConS2 | DConS2 | DConS2 | 2.5662 | 0.000707 | 0.00945 | -0.415 |
| CSA3 | 0 | DConS2 | DConS2 | DConS2 | 5.4019 | 0.001505 | 0 | -1.103 |
| CSA3 | 0.33333 | DConS2 | DConS2 | DConS2 | 8.0425 | 0.002277 | 0.0189 | -2.098 |
| CSA3 | 1 | DConS2 | DConS2 | DConS2 | 5.1878 | 0.001365 | 0 | 0 |
| CSA3 | 1.66667 | DConS2 | DConS2 | DConS2 | 9.7214 | 0.00256 | 0 | 0 |
| CSA3 | 4.83333 | | DConS2 | DConS2 | 28.2523 | 0.007477 | 0.0189 | 0 |
| CSA3 | 8 | DConS2 | DConS2 | DConS2 | 39.9052 | 0.010594 | 0.0189 | 0 |
| CSA3 | 11.16667 | DConS2 | DConS2 | DConS2 | 20.9545 | 0.005535 | 0.0189 | 0 |
| CSA3 | 14.33333 | DConS2 | DConS2 | DConS2 | 2.6748 | 0.000703 | 0 | 0 |
| CSA3 | 15 | DConS2 | DConS2 | DConS2 | 0.5702 | 0 | 0 | 0 |
| CSA3 | 15.66667 | DConS2 | DConS2 | DConS2 | 1.7725 | 0.000466 | 0 | 0 |
| CSA3 | 18.83333 | DConS2 | DConS2 | DConS2 | 14.0119 | 0.003694 | 0.0189 | 0 |
| CSA3 | 22 | | DConS2 | DConS2 | 29.7933 | 0.007888 | 0.0189 | 0 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 2 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | AxialForce kip |
|---|---|---|---|---|---|---|---|---|
| CSA3 | 25.16667 | DConS2 | DConS2 | DConS2 | 14.0119 | 0.003694 | 0.0189 | 0 |
| CSA3 | 28.33333 | DConS2 | DConS2 | DConS2 | 1.7725 | 0.000466 | 0 | 0 |
| CSA3 | 29 | DConS2 | DConS2 | DConS2 | 0.5702 | 0 | 0 | 0 |
| CSA3 | 29.66667 | DConS2 | DConS2 | DConS2 | 2.6748 | 0.000703 | 0 | 0 |
| CSA3 | 32.83333 | DConS2 | DConS2 | DConS2 | 20.9545 | 0.005535 | 0.0189 | 0 |
| CSA3 | 36 | DConS2 | DConS2 | DConS2 | 39.9052 | 0.010594 | 0.0189 | 0 |
| CSA3 | 39.16667 | | DConS2 | DConS2 | 28.2523 | 0.007477 | 0.0189 | 0 |
| CSA3 | 42.33333 | DConS2 | DConS2 | DConS2 | 9.7214 | 0.00256 | 0 | 0 |
| CSA3 | 43 | DConS2 | DConS2 | DConS2 | 5.1878 | 0.001365 | 0 | 0 |
| CSA3 | 43.66667 | DConS2 | DConS2 | DConS2 | 8.0425 | 0.002277 | 0.0189 | -2.098 |
| CSA3 | 44 | DConS2 | DConS2 | DConS2 | 5.4019 | 0.001505 | 0 | -1.103 |
| MSA3 | 0 | DConS2 | DConS2 | DConS2 | 2.4829 | 0.00069 | 0.00945 | -0.482 |
| MSA3 | 1 | DConS2 | DConS2 | DConS2 | 4.7234 | 0.001274 | 0.00945 | -0.393 |
| MSA3 | 4.5 | | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 0 |
| MSA3 | 8 | | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 0 |
| MSA3 | 11.5 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 0 |
| MSA3 | 15 | DConS2 | DConS2 | DConS2 | 0.9161 | 0.000241 | 0 | 0 |
| MSA3 | 18.5 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 0 |
| MSA3 | 22 | | DConS2 | DConS2 | 12.8765 | 0.003406 | 0.00945 | 0 |
| MSA3 | 25.5 | DConS2 | DConS2 | DConS2 | 7.3415 | 0.001936 | 0.00945 | 0 |
| MSA3 | 29 | DConS2 | DConS2 | DConS2 | 0.9161 | 0.000241 | 0 | 0 |
| MSA3 | 32.5 | DConS2 | DConS2 | DConS2 | 10.0679 | 0.002659 | 0.00945 | 0 |
| MSA3 | 36 | | DConS2 | DConS2 | 17.3237 | 0.004593 | 0.00945 | 0 |
| MSA3 | 39.5 | | DConS2 | DConS2 | 13.1941 | 0.00349 | 0.00945 | 0 |
| MSA3 | 43 | DConS2 | DConS2 | DConS2 | 4.7234 | 0.001274 | 0.00945 | -0.393 |
| MSA3 | 44 | DConS2 | DConS2 | DConS2 | 2.4829 | 0.00069 | 0.00945 | -0.482 |
| CSA4 | 0 | DConS2 | DConS2 | DConS2 | 1.16 | 0.000371 | 0 | -0.867 |
| CSA4 | 0.33333 | DConS2 | DConS2 | DConS2 | 1.895 | 0.000573 | 0 | -0.969 |
| CSA4 | 1 | DConS2 | DConS2 | DConS2 | 0.3111 | 8.7E-05 | 0 | -0.068 |
| CSA4 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | -1.048 |
| CSA4 | 4.83333 | DConS2 | DConS2 | DConS2 | 7.7225 | 0.002042 | 0.005775 | 0 |
| CSA4 | 8 | | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 0 |
| CSA4 | 11.16667 | | DConS2 | DConS2 | 7.0088 | 0.001852 | 0.005775 | 0 |
| CSA4 | 14.33333 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | -0.346 |
| CSA4 | 15 | DConS2 | DConS2 | DConS2 | 0.3921 | 0.000103 | 0 | 0 |
| CSA4 | 15.66667 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | -0.407 |
| CSA4 | 18.83333 | DConS2 | DConS2 | DConS2 | 5.4636 | 0.001442 | 0.005775 | 0 |
| CSA4 | 22 | | DConS2 | DConS2 | 11.3338 | 0.003007 | 0.005775 | 0 |
| CSA4 | 25.16667 | DConS2 | DConS2 | DConS2 | 5.4636 | 0.001442 | 0.005775 | 0 |
| CSA4 | 28.33333 | DConS2 | DConS2 | DConS2 | 0.465 | 0.000153 | 0 | -0.407 |
| CSA4 | 29 | DConS2 | DConS2 | DConS2 | 0.3921 | 0.000103 | 0 | 0 |
| CSA4 | 29.66667 | DConS2 | DConS2 | DConS2 | 0.5593 | 0.000173 | 0 | -0.346 |
| CSA4 | 32.83333 | | DConS2 | DConS2 | 7.0088 | 0.001852 | 0.005775 | 0 |
| CSA4 | 36 | | DConS2 | DConS2 | 13.5066 | 0.00359 | 0.005775 | 0 |
| CSA4 | 39.16667 | DConS2 | DConS2 | DConS2 | 7.7225 | 0.002042 | 0.005775 | 0 |
| CSA4 | 42.33333 | DConS2 | DConS2 | DConS2 | 0.6526 | 0.000252 | 0 | -1.048 |
| CSA4 | 43 | DConS2 | DConS2 | DConS2 | 0.3111 | 8.7E-05 | 0 | -0.068 |
| CSA4 | 43.66667 | DConS2 | DConS2 | DConS2 | 1.895 | 0.000573 | 0 | -0.969 |
| CSA4 | 44 | DConS2 | DConS2 | DConS2 | 1.16 | 0.000371 | 0 | -0.867 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 2 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | AxialForce kip |
|---|---|---|---|---|---|---|---|---|
| CSB1 | 0 | DConS2 | DConS2 | DConS2 | 2.5789 | 0.000825 | 0 | -0.527 |
| CSB1 | 0.33333 | DConS2 | DConS2 | DConS2 | 2.8578 | 0.000939 | 0.004725 | -0.857 |
| CSB1 | 1 | DConS2 | DConS2 | DConS2 | 0.8054 | 0.000243 | 0 | 0 |
| CSB1 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.2693 | 0.000134 | 0 | -0.605 |
| CSB1 | 5 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 0 |
| CSB1 | 8.33333 | | DConS2 | DConS2 | 14.2463 | 0.004378 | 0.004725 | 0 |
| CSB1 | 11.66667 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 0 |
| CSB1 | 15 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 0 |
| CSB1 | 18.33333 | DConS2 | DConS2 | DConS2 | 0.1979 | 6E-05 | 0 | 0 |
| CSB1 | 19 | DConS2 | DConS2 | DConS2 | 0.6708 | 0.000202 | 0 | 0 |
| CSB1 | 19.66667 | DConS2 | DConS2 | DConS2 | 0.1681 | 5.1E-05 | 0 | 0 |
| CSB1 | 23 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 0 |
| CSB1 | 26.33333 | | DConS2 | DConS2 | 11.1784 | 0.00342 | 0.004725 | 0 |
| CSB1 | 29.66667 | | DConS2 | DConS2 | 11.1784 | 0.00342 | 0.004725 | 0 |
| CSB1 | 33 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 0 |
| CSB1 | 36.33333 | DConS2 | DConS2 | DConS2 | 0.1681 | 5.1E-05 | 0 | 0 |
| CSB1 | 37 | DConS2 | DConS2 | DConS2 | 0.6708 | 0.000202 | 0 | 0 |
| CSB1 | 37.66667 | DConS2 | DConS2 | DConS2 | 0.1979 | 6E-05 | 0 | 0 |
| CSB1 | 41 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 0 |
| CSB1 | 44.33333 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 0 |
| CSB1 | 47.66667 | | DConS2 | DConS2 | 14.2463 | 0.004378 | 0.004725 | 0 |
| CSB1 | 51 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 0 |
| CSB1 | 54.33333 | DConS2 | DConS2 | DConS2 | 0.2693 | 0.000134 | 0 | -0.605 |
| CSB1 | 55 | DConS2 | DConS2 | DConS2 | 0.8054 | 0.000243 | 0 | 0 |
| CSB1 | 55.66667 | DConS2 | DConS2 | DConS2 | 2.8578 | 0.000939 | 0.004725 | -0.857 |
| CSB1 | 56 | DConS2 | DConS2 | DConS2 | 2.5789 | 0.000825 | 0 | -0.527 |
| MSB1 | 0 | DConS2 | DConS2 | DConS2 | 2.2469 | 0.000712 | 0.00735 | -0.39 |
| MSB1 | 1 | DConS2 | DConS2 | DConS2 | 2.1742 | 0.000681 | 0 | -0.29 |
| MSB1 | 4.6 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 0 |
| MSB1 | 8.2 | | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 0 |
| MSB1 | 11.8 | DConS2 | DConS2 | DConS2 | 19.1429 | 0.005866 | 0.00735 | 0 |
| MSB1 | 15.4 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 0 |
| MSB1 | 19 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| MSB1 | 22.6 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 0 |
| MSB1 | 26.2 | DConS2 | DConS2 | DConS2 | 15.9904 | 0.004885 | 0.00735 | 0 |
| MSB1 | 29.8 | DConS2 | DConS2 | DConS2 | 15.9904 | 0.004885 | 0.00735 | 0 |
| MSB1 | 33.4 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 0 |
| MSB1 | 37 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| MSB1 | 40.6 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 0 |
| MSB1 | 44.2 | DConS2 | DConS2 | DConS2 | 19.1429 | 0.005866 | 0.00735 | 0 |
| MSB1 | 47.8 | | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 0 |
| MSB1 | 51.4 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 0 |
| MSB1 | 55 | DConS2 | DConS2 | DConS2 | 2.1742 | 0.000681 | 0 | -0.29 |
| MSB1 | 56 | DConS2 | DConS2 | DConS2 | 2.2469 | 0.000712 | 0.00735 | -0.39 |
| CSB2 | 0 | DConS2 | DConS2 | DConS2 | 2.9414 | 0.000931 | 0 | -0.489 |
| CSB2 | 0.33333 | DConS2 | DConS2 | DConS2 | 3.455 | 0.001228 | 0 | -2.102 |
| CSB2 | 1 | DConS2 | DConS2 | DConS2 | 0.8717 | 0.000263 | 0 | 0 |
| CSB2 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.1792 | 0.000161 | 0 | -1.222 |
| CSB2 | 5 | DConS2 | DConS2 | DConS2 | 11.74 | 0.003573 | 0.00735 | 0 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 2 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | AxialForce kip |
|---|---|---|---|---|---|---|---|---|
| CSB2 | 8.33333 | | DConS2 | DConS2 | 23.9492 | 0.007372 | 0.00735 | 0 |
| CSB2 | 11.66667 | DConS2 | DConS2 | DConS2 | 22.6712 | 0.00697 | 0.00735 | 0 |
| CSB2 | 15 | DConS2 | DConS2 | DConS2 | 4.7825 | 0.001446 | 0.00735 | 0 |
| CSB2 | 18.33333 | DConS2 | DConS2 | DConS2 | 0.0351 | 0 | 0 | 0 |
| CSB2 | 19 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| CSB2 | 19.66667 | DConS2 | DConS2 | DConS2 | 0.0221 | 0 | 0 | 0 |
| CSB2 | 23 | DConS2 | DConS2 | DConS2 | 3.0784 | 0.000929 | 0 | 0 |
| CSB2 | 26.33333 | | DConS2 | DConS2 | 17.0295 | 0.005208 | 0.00735 | 0 |
| CSB2 | 29.66667 | | DConS2 | DConS2 | 17.0295 | 0.005208 | 0.00735 | 0 |
| CSB2 | 33 | DConS2 | DConS2 | DConS2 | 3.0784 | 0.000929 | 0 | 0 |
| CSB2 | 36.33333 | DConS2 | DConS2 | DConS2 | 0.0221 | 0 | 0 | 0 |
| CSB2 | 37 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| CSB2 | 37.66667 | DConS2 | DConS2 | DConS2 | 0.0351 | 0 | 0 | 0 |
| CSB2 | 41 | DConS2 | DConS2 | DConS2 | 4.7825 | 0.001446 | 0.00735 | 0 |
| CSB2 | 44.33333 | DConS2 | DConS2 | DConS2 | 22.6712 | 0.00697 | 0.00735 | 0 |
| CSB2 | 47.66667 | | DConS2 | DConS2 | 23.9492 | 0.007372 | 0.00735 | 0 |
| CSB2 | 51 | DConS2 | DConS2 | DConS2 | 11.74 | 0.003573 | 0.00735 | 0 |
| CSB2 | 54.33333 | DConS2 | DConS2 | DConS2 | 0.1792 | 0.000161 | 0 | -1.222 |
| CSB2 | 55 | DConS2 | DConS2 | DConS2 | 0.8717 | 0.000263 | 0 | 0 |
| CSB2 | 55.66667 | DConS2 | DConS2 | DConS2 | 3.455 | 0.001228 | 0 | -2.102 |
| CSB2 | 56 | DConS2 | DConS2 | DConS2 | 2.9414 | 0.000931 | 0 | -0.489 |
| MSB2 | 0 | DConS2 | DConS2 | DConS2 | 1.4375 | 0.00048 | 0.00735 | -0.53 |
| MSB2 | 1 | DConS2 | DConS2 | DConS2 | 1.2909 | 0.000427 | 0 | -0.437 |
| MSB2 | 4.6 | | DConS2 | DConS2 | 11.3202 | 0.003444 | 0.00735 | 0 |
| MSB2 | 8.2 | | DConS2 | DConS2 | 21.4646 | 0.006592 | 0.00735 | 0 |
| MSB2 | 11.8 | DConS2 | DConS2 | DConS2 | 19.2748 | 0.005907 | 0.00735 | 0 |
| MSB2 | 15.4 | DConS2 | DConS2 | DConS2 | 1.3264 | 0.0004 | 0 | 0 |
| MSB2 | 19 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| MSB2 | 22.6 | DConS2 | DConS2 | DConS2 | 0.8454 | 0.000255 | 0 | 0 |
| MSB2 | 26.2 | DConS2 | DConS2 | DConS2 | 15.8285 | 0.004835 | 0.00735 | 0 |
| MSB2 | 29.8 | DConS2 | DConS2 | DConS2 | 15.8285 | 0.004835 | 0.00735 | 0 |
| MSB2 | 33.4 | DConS2 | DConS2 | DConS2 | 0.8454 | 0.000255 | 0 | 0 |
| MSB2 | 37 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| MSB2 | 40.6 | DConS2 | DConS2 | DConS2 | 1.3264 | 0.0004 | 0 | 0 |
| MSB2 | 44.2 | DConS2 | DConS2 | DConS2 | 19.2748 | 0.005907 | 0.00735 | 0 |
| MSB2 | 47.8 | | DConS2 | DConS2 | 21.4646 | 0.006592 | 0.00735 | 0 |
| MSB2 | 51.4 | | DConS2 | DConS2 | 11.3202 | 0.003444 | 0.00735 | 0 |
| MSB2 | 55 | DConS2 | DConS2 | DConS2 | 1.2909 | 0.000427 | 0 | -0.437 |
| MSB2 | 56 | DConS2 | DConS2 | DConS2 | 1.4375 | 0.00048 | 0.00735 | -0.53 |
| CSB3 | 0 | DConS2 | DConS2 | DConS2 | 4.5381 | 0.001457 | 0 | -1.005 |
| CSB3 | 0.33333 | DConS2 | DConS2 | DConS2 | 4.9496 | 0.001722 | 0 | -2.6 |
| CSB3 | 1 | DConS2 | DConS2 | DConS2 | 2.0982 | 0.000632 | 0 | 0 |
| CSB3 | 1.66667 | DConS2 | DConS2 | DConS2 | 2.9337 | 0.001028 | 0 | -1.637 |
| CSB3 | 5 | DConS2 | DConS2 | DConS2 | 24.5654 | 0.00748 | 0.0147 | 0 |
| CSB3 | 8.33333 | | DConS2 | DConS2 | 45.0889 | 0.01386 | 0.0147 | 0 |
| CSB3 | 11.66667 | DConS2 | DConS2 | DConS2 | 43.1515 | 0.013253 | 0.0147 | 0 |
| CSB3 | 15 | DConS2 | DConS2 | DConS2 | 7.9738 | 0.00241 | 0 | 0 |
| CSB3 | 18.33333 | DConS2 | DConS2 | DConS2 | 0.4232 | 0.000127 | 0 | 0 |
| CSB3 | 19 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 2 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | AxialForce kip |
|---|---|---|---|---|---|---|---|---|
| CSB3 | 19.66667 | DConS2 | DConS2 | DConS2 | 0.2203 | 0 | 0 | 0 |
| CSB3 | 23 | DConS2 | DConS2 | DConS2 | 5.3009 | 0.0016 | 0 | 0 |
| CSB3 | 26.33333 | | DConS2 | DConS2 | 31.8406 | 0.009727 | 0.0147 | 0 |
| CSB3 | 29.66667 | | DConS2 | DConS2 | 31.8406 | 0.009727 | 0.0147 | 0 |
| CSB3 | 33 | DConS2 | DConS2 | DConS2 | 5.3009 | 0.0016 | 0 | 0 |
| CSB3 | 36.33333 | DConS2 | DConS2 | DConS2 | 0.2203 | 0 | 0 | 0 |
| CSB3 | 37 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| CSB3 | 37.66667 | DConS2 | DConS2 | DConS2 | 0.4232 | 0.000127 | 0 | 0 |
| CSB3 | 41 | DConS2 | DConS2 | DConS2 | 7.9738 | 0.00241 | 0 | 0 |
| CSB3 | 44.33333 | DConS2 | DConS2 | DConS2 | 43.1515 | 0.013253 | 0.0147 | 0 |
| CSB3 | 47.66667 | | DConS2 | DConS2 | 45.0889 | 0.01386 | 0.0147 | 0 |
| CSB3 | 51 | DConS2 | DConS2 | DConS2 | 24.5654 | 0.00748 | 0.0147 | 0 |
| CSB3 | 54.33333 | DConS2 | DConS2 | DConS2 | 2.9337 | 0.001028 | 0 | -1.637 |
| CSB3 | 55 | DConS2 | DConS2 | DConS2 | 2.0982 | 0.000632 | 0 | 0 |
| CSB3 | 55.66667 | DConS2 | DConS2 | DConS2 | 4.9496 | 0.001722 | 0 | -2.6 |
| CSB3 | 56 | DConS2 | DConS2 | DConS2 | 4.5381 | 0.001457 | 0 | -1.005 |
| MSB3 | 0 | DConS2 | DConS2 | DConS2 | 2.2469 | 0.000712 | 0.00735 | -0.39 |
| MSB3 | 1 | DConS2 | DConS2 | DConS2 | 2.1742 | 0.000681 | 0 | -0.29 |
| MSB3 | 4.6 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 0 |
| MSB3 | 8.2 | | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 0 |
| MSB3 | 11.8 | DConS2 | DConS2 | DConS2 | 19.1429 | 0.005866 | 0.00735 | 0 |
| MSB3 | 15.4 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 0 |
| MSB3 | 19 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| MSB3 | 22.6 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 0 |
| MSB3 | 26.2 | DConS2 | DConS2 | DConS2 | 15.9904 | 0.004885 | 0.00735 | 0 |
| MSB3 | 29.8 | DConS2 | DConS2 | DConS2 | 15.9904 | 0.004885 | 0.00735 | 0 |
| MSB3 | 33.4 | DConS2 | DConS2 | DConS2 | 1.2482 | 0.000376 | 0 | 0 |
| MSB3 | 37 | DConS2 | DConS2 | DConS2 | 0 | 0 | 0 | 0 |
| MSB3 | 40.6 | DConS2 | DConS2 | DConS2 | 2.6091 | 0.000787 | 0 | 0 |
| MSB3 | 44.2 | DConS2 | DConS2 | DConS2 | 19.1429 | 0.005866 | 0.00735 | 0 |
| MSB3 | 47.8 | | DConS2 | DConS2 | 20.4554 | 0.006276 | 0.00735 | 0 |
| MSB3 | 51.4 | DConS2 | DConS2 | DConS2 | 10.5546 | 0.003209 | 0.00735 | 0 |
| MSB3 | 55 | DConS2 | DConS2 | DConS2 | 2.1742 | 0.000681 | 0 | -0.29 |
| MSB3 | 56 | DConS2 | DConS2 | DConS2 | 2.2469 | 0.000712 | 0.00735 | -0.39 |
| CSB4 | 0 | DConS2 | DConS2 | DConS2 | 2.5789 | 0.000825 | 0 | -0.527 |
| CSB4 | 0.33333 | DConS2 | DConS2 | DConS2 | 2.8578 | 0.000939 | 0.004725 | -0.857 |
| CSB4 | 1 | DConS2 | DConS2 | DConS2 | 0.8054 | 0.000243 | 0 | 0 |
| CSB4 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.2693 | 0.000134 | 0 | -0.605 |
| CSB4 | 5 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 0 |
| CSB4 | 8.33333 | | DConS2 | DConS2 | 14.2463 | 0.004378 | 0.004725 | 0 |
| CSB4 | 11.66667 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 0 |
| CSB4 | 15 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 0 |
| CSB4 | 18.33333 | DConS2 | DConS2 | DConS2 | 0.1979 | 6E-05 | 0 | 0 |
| CSB4 | 19 | DConS2 | DConS2 | DConS2 | 0.6708 | 0.000202 | 0 | 0 |
| CSB4 | 19.66667 | DConS2 | DConS2 | DConS2 | 0.1681 | 5.1E-05 | 0 | 0 |
| CSB4 | 23 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 0 |
| CSB4 | 26.33333 | | DConS2 | DConS2 | 11.1784 | 0.00342 | 0.004725 | 0 |
| CSB4 | 29.66667 | | DConS2 | DConS2 | 11.1784 | 0.00342 | 0.004725 | 0 |
| CSB4 | 33 | DConS2 | DConS2 | DConS2 | 3.0689 | 0.000928 | 0.004725 | 0 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 2 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | AxialForce kip |
|---|---|---|---|---|---|---|---|---|
| CSB4 | 36.33333 | DConS2 | DConS2 | DConS2 | 0.1681 | 5.1E-05 | 0 | 0 |
| CSB4 | 37 | DConS2 | DConS2 | DConS2 | 0.6708 | 0.000202 | 0 | 0 |
| CSB4 | 37.66667 | DConS2 | DConS2 | DConS2 | 0.1979 | 6E-05 | 0 | 0 |
| CSB4 | 41 | DConS2 | DConS2 | DConS2 | 3.6055 | 0.001091 | 0.004725 | 0 |
| CSB4 | 44.33333 | DConS2 | DConS2 | DConS2 | 14.6038 | 0.00449 | 0.004725 | 0 |
| CSB4 | 47.66667 | | DConS2 | DConS2 | 14.2463 | 0.004378 | 0.004725 | 0 |
| CSB4 | 51 | DConS2 | DConS2 | DConS2 | 5.942 | 0.001804 | 0.004725 | 0 |
| CSB4 | 54.33333 | DConS2 | DConS2 | DConS2 | 0.2693 | 0.000134 | 0 | -0.605 |
| CSB4 | 55 | DConS2 | DConS2 | DConS2 | 0.8054 | 0.000243 | 0 | 0 |
| CSB4 | 55.66667 | DConS2 | DConS2 | DConS2 | 2.8578 | 0.000939 | 0.004725 | -0.857 |
| CSB4 | 56 | DConS2 | DConS2 | DConS2 | 2.5789 | 0.000825 | 0 | -0.527 |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 3 of 4)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | VCapacity kip | LambdaS | RohW | VArea ft2/ft | Status |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | 0 | DConS2 | DConS2 | DConS2 | 18.559 | 1 | 0 | 0 | OK |
| CSA1 | 0.33333 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA1 | 1 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA1 | 1.66667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 4.83333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 8 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 11.16667 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 14.33333 | DConS2 | DConS2 | DConS2 | 19.258 | 1 | 0 | 0 | OK |
| CSA1 | 15 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA1 | 15.66667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 18.83333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 22 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 25.16667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 28.33333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 29 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA1 | 29.66667 | DConS2 | DConS2 | DConS2 | 19.258 | 1 | 0 | 0 | OK |
| CSA1 | 32.83333 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 36 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 39.16667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 42.33333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA1 | 43 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA1 | 43.66667 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA1 | 44 | DConS2 | DConS2 | DConS2 | 18.559 | 1 | 0 | 0 | OK |
| MSA1 | 0 | DConS2 | DConS2 | DConS2 | 30.774 | 1 | 0 | 0 | OK |
| MSA1 | 1 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 4.5 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 8 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 11.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 15 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 18.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 22 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 25.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 29 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 32.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 3 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | VCapacity kip | LambdaS | RohW | VArea ft2/ft | Status |
|---|---|---|---|---|---|---|---|---|---|
| MSA1 | 36 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 39.5 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 43 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA1 | 44 | DConS2 | DConS2 | DConS2 | 30.774 | 1 | 0 | 0 | OK |
| CSA2 | 0 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 0.33333 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 1 | DConS2 | DConS2 | DConS2 | 26.45 | 1 | 0 | 0 | OK |
| CSA2 | 1.66667 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 4.83333 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 8 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 11.16667 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 14.33333 | DConS2 | DConS2 | DConS2 | 34.824 | 1 | 0 | 0 | OK |
| CSA2 | 15 | DConS2 | DConS2 | DConS2 | 26.45 | 1 | 0 | 0 | OK |
| CSA2 | 15.66667 | DConS2 | DConS2 | DConS2 | 34.258 | 1 | 0 | 0 | OK |
| CSA2 | 18.83333 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 22 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 25.16667 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 28.33333 | DConS2 | DConS2 | DConS2 | 34.258 | 1 | 0 | 0 | OK |
| CSA2 | 29 | DConS2 | DConS2 | DConS2 | 26.45 | 1 | 0 | 0 | OK |
| CSA2 | 29.66667 | DConS2 | DConS2 | DConS2 | 34.824 | 1 | 0 | 0 | OK |
| CSA2 | 32.83333 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 36 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 39.16667 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 42.33333 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 43 | DConS2 | DConS2 | DConS2 | 26.45 | 1 | 0 | 0 | OK |
| CSA2 | 43.66667 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| CSA2 | 44 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 0 | DConS2 | DConS2 | DConS2 | 30.726 | 1 | 0 | 0 | OK |
| MSA2 | 1 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 4.5 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 8 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 11.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 15 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 18.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 22 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 25.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 29 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 32.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 36 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 39.5 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 43 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA2 | 44 | DConS2 | DConS2 | DConS2 | 30.726 | 1 | 0 | 0 | OK |
| CSA3 | 0 | DConS2 | DConS2 | DConS2 | 60.406 | 1 | 0 | 0 | OK |
| CSA3 | 0.33333 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 1 | DConS2 | DConS2 | DConS2 | 57.501 | 1 | 0 | 0 | OK |
| CSA3 | 1.66667 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 4.83333 | | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 8 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 11.16667 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 3 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | VCapacity kip | LambdaS | RohW | VArea ft2/ft | Status |
|---|---|---|---|---|---|---|---|---|---|
| CSA3 | 14.33333 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 15 | DConS2 | DConS2 | DConS2 | 57.501 | 1 | 0 | 0 | OK |
| CSA3 | 15.66667 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 18.83333 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 22 | | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 25.16667 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 28.33333 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 29 | DConS2 | DConS2 | DConS2 | 57.501 | 1 | 0 | 0 | OK |
| CSA3 | 29.66667 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 32.83333 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 36 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 39.16667 | | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 42.33333 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 43 | DConS2 | DConS2 | DConS2 | 57.501 | 1 | 0 | 0 | OK |
| CSA3 | 43.66667 | DConS2 | DConS2 | DConS2 | 62.101 | 1 | 0 | 0 | OK |
| CSA3 | 44 | DConS2 | DConS2 | DConS2 | 60.406 | 1 | 0 | 0 | OK |
| MSA3 | 0 | DConS2 | DConS2 | DConS2 | 30.774 | 1 | 0 | 0 | OK |
| MSA3 | 1 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 4.5 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 8 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 11.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 15 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 18.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 22 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 25.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 29 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 32.5 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 36 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 39.5 | | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 43 | DConS2 | DConS2 | DConS2 | 31.05 | 1 | 0 | 0 | OK |
| MSA3 | 44 | DConS2 | DConS2 | DConS2 | 30.774 | 1 | 0 | 0 | OK |
| CSA4 | 0 | DConS2 | DConS2 | DConS2 | 18.559 | 1 | 0 | 0 | OK |
| CSA4 | 0.33333 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA4 | 1 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA4 | 1.66667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 4.83333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 8 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 11.16667 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 14.33333 | DConS2 | DConS2 | DConS2 | 19.258 | 1 | 0 | 0 | OK |
| CSA4 | 15 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA4 | 15.66667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 18.83333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 22 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 25.16667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 28.33333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 29 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA4 | 29.66667 | DConS2 | DConS2 | DConS2 | 19.258 | 1 | 0 | 0 | OK |
| CSA4 | 32.83333 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 36 | | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 3 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | VCapacity kip | LambdaS | RohW | VArea ft2/ft | Status |
|---|---|---|---|---|---|---|---|---|---|
| CSA4 | 39.16667 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 42.33333 | DConS2 | DConS2 | DConS2 | 18.975 | 1 | 0 | 0 | OK |
| CSA4 | 43 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA4 | 43.66667 | DConS2 | DConS2 | DConS2 | 14.375 | 1 | 0 | 0 | OK |
| CSA4 | 44 | DConS2 | DConS2 | DConS2 | 18.559 | 1 | 0 | 0 | OK |
| CSB1 | 0 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 0.33333 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB1 | 1 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB1 | 1.66667 | DConS2 | DConS2 | DConS2 | 15.965 | 1 | 0 | 0 | OK |
| CSB1 | 5 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 8.33333 |  | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 11.66667 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 15 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 18.33333 | DConS2 | DConS2 | DConS2 | 17.419 | 1 | 0 | 0 | OK |
| CSB1 | 19 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB1 | 19.66667 | DConS2 | DConS2 | DConS2 | 16.755 | 1 | 0 | 0 | OK |
| CSB1 | 23 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 26.33333 |  | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 29.66667 |  | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 33 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 36.33333 | DConS2 | DConS2 | DConS2 | 16.755 | 1 | 0 | 0 | OK |
| CSB1 | 37 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB1 | 37.66667 | DConS2 | DConS2 | DConS2 | 17.419 | 1 | 0 | 0 | OK |
| CSB1 | 41 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 44.33333 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 47.66667 |  | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 51 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB1 | 54.33333 | DConS2 | DConS2 | DConS2 | 15.965 | 1 | 0 | 0 | OK |
| CSB1 | 55 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB1 | 55.66667 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB1 | 56 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| MSB1 | 0 | DConS2 | DConS2 | DConS2 | 21.583 | 1 | 0 | 0 | OK |
| MSB1 | 1 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 4.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 8.2 |  | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 11.8 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 15.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 19 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 22.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 26.2 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 29.8 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 33.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 37 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 40.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 44.2 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 47.8 |  | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 51.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 55 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB1 | 56 | DConS2 | DConS2 | DConS2 | 21.583 | 1 | 0 | 0 | OK |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 3 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | VCapacity kip | LambdaS | RohW | VArea ft2/ft | Status |
|---|---|---|---|---|---|---|---|---|---|
| CSB2 | 0 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 0.33333 | DConS2 | DConS2 | DConS2 | 17.849 | 1 | 0 | 0 | OK |
| CSB2 | 1 | DConS2 | DConS2 | DConS2 | 17.849 | 1 | 0 | 0 | OK |
| CSB2 | 1.66667 | DConS2 | DConS2 | DConS2 | 25.028 | 1 | 0 | 0 | OK |
| CSB2 | 5 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 8.33333 | | DConS2 | DConS2 | 22.07 | 1 | 0 | 0 | OK |
| CSB2 | 11.66667 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 15 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 18.33333 | DConS2 | DConS2 | DConS2 | 29.166 | 1 | 0 | 0 | OK |
| CSB2 | 19 | DConS2 | DConS2 | DConS2 | 17.849 | 1 | 0 | 0 | OK |
| CSB2 | 19.66667 | DConS2 | DConS2 | DConS2 | 28.267 | 1 | 0 | 0 | OK |
| CSB2 | 23 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 26.33333 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 29.66667 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 33 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 36.33333 | DConS2 | DConS2 | DConS2 | 28.267 | 1 | 0 | 0 | OK |
| CSB2 | 37 | DConS2 | DConS2 | DConS2 | 17.849 | 1 | 0 | 0 | OK |
| CSB2 | 37.66667 | DConS2 | DConS2 | DConS2 | 29.166 | 1 | 0 | 0 | OK |
| CSB2 | 41 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 44.33333 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 47.66667 | | DConS2 | DConS2 | 22.065 | 1 | 0 | 0 | OK |
| CSB2 | 51 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| CSB2 | 54.33333 | DConS2 | DConS2 | DConS2 | 25.028 | 1 | 0 | 0 | OK |
| CSB2 | 55 | DConS2 | DConS2 | DConS2 | 17.849 | 1 | 0 | 0 | OK |
| CSB2 | 55.66667 | DConS2 | DConS2 | DConS2 | 17.849 | 1 | 0 | 0 | OK |
| CSB2 | 56 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 0 | DConS2 | DConS2 | DConS2 | 21.648 | 1 | 0 | 0 | OK |
| MSB2 | 1 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 4.6 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 8.2 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 11.8 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 15.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 19 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 22.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 26.2 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 29.8 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 33.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 37 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 40.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 44.2 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 47.8 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 51.4 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 55 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB2 | 56 | DConS2 | DConS2 | DConS2 | 21.648 | 1 | 0 | 0 | OK |
| CSB3 | 0 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 0.33333 | DConS2 | DConS2 | DConS2 | 39.897 | 1 | 0 | 0 | OK |
| CSB3 | 1 | DConS2 | DConS2 | DConS2 | 39.897 | 1 | 0 | 0 | OK |
| CSB3 | 1.66667 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 5 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 3 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | VCapacity kip | LambdaS | RohW | VArea ft2/ft | Status |
|---|---|---|---|---|---|---|---|---|---|
| CSB3 | 8.33333 | | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 11.66667 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 15 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 18.33333 | DConS2 | DConS2 | DConS2 | 51.019 | 1 | 0 | 0 | OK |
| CSB3 | 19 | DConS2 | DConS2 | DConS2 | 39.897 | 1 | 0 | 0 | OK |
| CSB3 | 19.66667 | DConS2 | DConS2 | DConS2 | 49.91 | 1 | 0 | 0 | OK |
| CSB3 | 23 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 26.33333 | | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 29.66667 | | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 33 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 36.33333 | DConS2 | DConS2 | DConS2 | 49.91 | 1 | 0 | 0 | OK |
| CSB3 | 37 | DConS2 | DConS2 | DConS2 | 39.897 | 1 | 0 | 0 | OK |
| CSB3 | 37.66667 | DConS2 | DConS2 | DConS2 | 51.019 | 1 | 0 | 0 | OK |
| CSB3 | 41 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 44.33333 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 47.66667 | | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 51 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 54.33333 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| CSB3 | 55 | DConS2 | DConS2 | DConS2 | 39.897 | 1 | 0 | 0 | OK |
| CSB3 | 55.66667 | DConS2 | DConS2 | DConS2 | 39.897 | 1 | 0 | 0 | OK |
| CSB3 | 56 | DConS2 | DConS2 | DConS2 | 44.097 | 1 | 0 | 0 | OK |
| MSB3 | 0 | DConS2 | DConS2 | DConS2 | 21.583 | 1 | 0 | 0 | OK |
| MSB3 | 1 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 4.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 8.2 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 11.8 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 15.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 19 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 22.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 26.2 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 29.8 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 33.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 37 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 40.6 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 44.2 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 47.8 | | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 51.4 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 55 | DConS2 | DConS2 | DConS2 | 22.049 | 1 | 0 | 0 | OK |
| MSB3 | 56 | DConS2 | DConS2 | DConS2 | 21.583 | 1 | 0 | 0 | OK |
| CSB4 | 0 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 0.33333 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB4 | 1 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB4 | 1.66667 | DConS2 | DConS2 | DConS2 | 15.965 | 1 | 0 | 0 | OK |
| CSB4 | 5 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 8.33333 | | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 11.66667 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 15 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 18.33333 | DConS2 | DConS2 | DConS2 | 17.419 | 1 | 0 | 0 | OK |
| CSB4 | 19 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 3 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | VCapacity kip | LambdaS | RohW | VArea ft2/ft | Status |
|---|---|---|---|---|---|---|---|---|---|
| CSB4 | 19.66667 | DConS2 | DConS2 | DConS2 | 16.755 | 1 | 0 | 0 | OK |
| CSB4 | 23 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 26.33333 | | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 29.66667 | | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 33 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 36.33333 | DConS2 | DConS2 | DConS2 | 16.755 | 1 | 0 | 0 | OK |
| CSB4 | 37 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB4 | 37.66667 | DConS2 | DConS2 | DConS2 | 17.419 | 1 | 0 | 0 | OK |
| CSB4 | 41 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 44.33333 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 47.66667 | | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 51 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |
| CSB4 | 54.33333 | DConS2 | DConS2 | DConS2 | 15.965 | 1 | 0 | 0 | OK |
| CSB4 | 55 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB4 | 55.66667 | DConS2 | DConS2 | DConS2 | 9.974 | 1 | 0 | 0 | OK |
| CSB4 | 56 | DConS2 | DConS2 | DConS2 | 14.174 | 1 | 0 | 0 | OK |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 4 of 4)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | GlobalY ft | Layer | CapTopM kip-ft | CapBotM kip-ft |
|---|---|---|---|---|---|---|---|---|
| CSA1 | 0 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 0.33333 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 1 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 1.66667 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 4.83333 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 8 | | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 11.16667 | | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 14.33333 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 15 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 15.66667 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 18.83333 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 22 | | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 25.16667 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 28.33333 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 29 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 29.66667 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 32.83333 | | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 36 | | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 39.16667 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 42.33333 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 43 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 43.66667 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| CSA1 | 44 | DConS2 | DConS2 | DConS2 | 0 | A | | |
| MSA1 | 0 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 1 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 4.5 | | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 8 | | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 11.5 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 15 | DConS2 | DConS2 | DConS2 | 9 | A | | |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 4 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | GlobalY ft | Layer | CapTopM kip-ft | CapBotM kip-ft |
|---|---|---|---|---|---|---|---|---|
| MSA1 | 18.5 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 22 | | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 25.5 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 29 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 32.5 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 36 | | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 39.5 | | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 43 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| MSA1 | 44 | DConS2 | DConS2 | DConS2 | 9 | A | | |
| CSA2 | 0 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 0.33333 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 1 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 1.66667 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 4.83333 | | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 8 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 11.16667 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 14.33333 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 15 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 15.66667 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 18.83333 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 22 | | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 25.16667 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 28.33333 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 29 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 29.66667 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 32.83333 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 36 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 39.16667 | | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 42.33333 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 43 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 43.66667 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| CSA2 | 44 | DConS2 | DConS2 | DConS2 | 18 | A | | |
| MSA2 | 0 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 1 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 4.5 | | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 8 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 11.5 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 15 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 18.5 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 22 | | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 25.5 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 29 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 32.5 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 36 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 39.5 | | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 43 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| MSA2 | 44 | DConS2 | DConS2 | DConS2 | 27 | A | | |
| CSA3 | 0 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 0.33333 | DConS2 | DConS2 | DConS2 | 36 | A | | |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 4 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | GlobalY ft | Layer | CapTopM kip-ft | CapBotM kip-ft |
|---|---|---|---|---|---|---|---|---|
| CSA3 | 1 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 1.66667 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 4.83333 | | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 8 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 11.16667 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 14.33333 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 15 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 15.66667 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 18.83333 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 22 | | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 25.16667 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 28.33333 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 29 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 29.66667 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 32.83333 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 36 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 39.16667 | | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 42.33333 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 43 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 43.66667 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| CSA3 | 44 | DConS2 | DConS2 | DConS2 | 36 | A | | |
| MSA3 | 0 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 1 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 4.5 | | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 8 | | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 11.5 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 15 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 18.5 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 22 | | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 25.5 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 29 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 32.5 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 36 | | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 39.5 | | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 43 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| MSA3 | 44 | DConS2 | DConS2 | DConS2 | 45 | A | | |
| CSA4 | 0 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 0.33333 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 1 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 1.66667 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 4.83333 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 8 | | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 11.16667 | | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 14.33333 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 15 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 15.66667 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 18.83333 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 22 | | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 25.16667 | DConS2 | DConS2 | DConS2 | 54 | A | | |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 4 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | GlobalY ft | Layer | CapTopM kip-ft | CapBotM kip-ft |
|---|---|---|---|---|---|---|---|---|
| CSA4 | 28.33333 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 29 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 29.66667 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 32.83333 | | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 36 | | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 39.16667 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 42.33333 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 43 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 43.66667 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSA4 | 44 | DConS2 | DConS2 | DConS2 | 54 | A | | |
| CSB1 | 0 | DConS2 | DConS2 | DConS2 | -1 | B | | |
| CSB1 | 0.33333 | DConS2 | DConS2 | DConS2 | -0.66667 | B | | |
| CSB1 | 1 | DConS2 | DConS2 | DConS2 | 0 | B | | |
| CSB1 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.66667 | B | | |
| CSB1 | 5 | DConS2 | DConS2 | DConS2 | 4 | B | | |
| CSB1 | 8.33333 | | DConS2 | DConS2 | 7.33333 | B | | |
| CSB1 | 11.66667 | DConS2 | DConS2 | DConS2 | 10.66667 | B | | |
| CSB1 | 15 | DConS2 | DConS2 | DConS2 | 14 | B | | |
| CSB1 | 18.33333 | DConS2 | DConS2 | DConS2 | 17.33333 | B | | |
| CSB1 | 19 | DConS2 | DConS2 | DConS2 | 18 | B | | |
| CSB1 | 19.66667 | DConS2 | DConS2 | DConS2 | 18.66667 | B | | |
| CSB1 | 23 | DConS2 | DConS2 | DConS2 | 22 | B | | |
| CSB1 | 26.33333 | | DConS2 | DConS2 | 25.33333 | B | | |
| CSB1 | 29.66667 | | DConS2 | DConS2 | 28.66667 | B | | |
| CSB1 | 33 | DConS2 | DConS2 | DConS2 | 32 | B | | |
| CSB1 | 36.33333 | DConS2 | DConS2 | DConS2 | 35.33333 | B | | |
| CSB1 | 37 | DConS2 | DConS2 | DConS2 | 36 | B | | |
| CSB1 | 37.66667 | DConS2 | DConS2 | DConS2 | 36.66667 | B | | |
| CSB1 | 41 | DConS2 | DConS2 | DConS2 | 40 | B | | |
| CSB1 | 44.33333 | DConS2 | DConS2 | DConS2 | 43.33333 | B | | |
| CSB1 | 47.66667 | | DConS2 | DConS2 | 46.66667 | B | | |
| CSB1 | 51 | DConS2 | DConS2 | DConS2 | 50 | B | | |
| CSB1 | 54.33333 | DConS2 | DConS2 | DConS2 | 53.33333 | B | | |
| CSB1 | 55 | DConS2 | DConS2 | DConS2 | 54 | B | | |
| CSB1 | 55.66667 | DConS2 | DConS2 | DConS2 | 54.66667 | B | | |
| CSB1 | 56 | DConS2 | DConS2 | DConS2 | 55 | B | | |
| MSB1 | 0 | DConS2 | DConS2 | DConS2 | -1 | B | | |
| MSB1 | 1 | DConS2 | DConS2 | DConS2 | 0 | B | | |
| MSB1 | 4.6 | DConS2 | DConS2 | DConS2 | 3.6 | B | | |
| MSB1 | 8.2 | | DConS2 | DConS2 | 7.2 | B | | |
| MSB1 | 11.8 | DConS2 | DConS2 | DConS2 | 10.8 | B | | |
| MSB1 | 15.4 | DConS2 | DConS2 | DConS2 | 14.4 | B | | |
| MSB1 | 19 | DConS2 | DConS2 | DConS2 | 18 | B | | |
| MSB1 | 22.6 | DConS2 | DConS2 | DConS2 | 21.6 | B | | |
| MSB1 | 26.2 | DConS2 | DConS2 | DConS2 | 25.2 | B | | |
| MSB1 | 29.8 | DConS2 | DConS2 | DConS2 | 28.8 | B | | |
| MSB1 | 33.4 | DConS2 | DConS2 | DConS2 | 32.4 | B | | |
| MSB1 | 37 | DConS2 | DConS2 | DConS2 | 36 | B | | |
| MSB1 | 40.6 | DConS2 | DConS2 | DConS2 | 39.6 | B | | |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 4 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | GlobalY ft | Layer | CapTopM kip-ft | CapBotM kip-ft |
|---|---|---|---|---|---|---|---|---|
| MSB1 | 44.2 | DConS2 | DConS2 | DConS2 | 43.2 | B | | |
| MSB1 | 47.8 | | DConS2 | DConS2 | 46.8 | B | | |
| MSB1 | 51.4 | DConS2 | DConS2 | DConS2 | 50.4 | B | | |
| MSB1 | 55 | DConS2 | DConS2 | DConS2 | 54 | B | | |
| MSB1 | 56 | DConS2 | DConS2 | DConS2 | 55 | B | | |
| CSB2 | 0 | DConS2 | DConS2 | DConS2 | -1 | B | | |
| CSB2 | 0.33333 | DConS2 | DConS2 | DConS2 | -0.66667 | B | | |
| CSB2 | 1 | DConS2 | DConS2 | DConS2 | 0 | B | | |
| CSB2 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.66667 | B | | |
| CSB2 | 5 | DConS2 | DConS2 | DConS2 | 4 | B | | |
| CSB2 | 8.33333 | | DConS2 | DConS2 | 7.33333 | B | | |
| CSB2 | 11.66667 | DConS2 | DConS2 | DConS2 | 10.66667 | B | | |
| CSB2 | 15 | DConS2 | DConS2 | DConS2 | 14 | B | | |
| CSB2 | 18.33333 | DConS2 | DConS2 | DConS2 | 17.33333 | B | | |
| CSB2 | 19 | DConS2 | DConS2 | DConS2 | 18 | B | | |
| CSB2 | 19.66667 | DConS2 | DConS2 | DConS2 | 18.66667 | B | | |
| CSB2 | 23 | DConS2 | DConS2 | DConS2 | 22 | B | | |
| CSB2 | 26.33333 | | DConS2 | DConS2 | 25.33333 | B | | |
| CSB2 | 29.66667 | | DConS2 | DConS2 | 28.66667 | B | | |
| CSB2 | 33 | DConS2 | DConS2 | DConS2 | 32 | B | | |
| CSB2 | 36.33333 | DConS2 | DConS2 | DConS2 | 35.33333 | B | | |
| CSB2 | 37 | DConS2 | DConS2 | DConS2 | 36 | B | | |
| CSB2 | 37.66667 | DConS2 | DConS2 | DConS2 | 36.66667 | B | | |
| CSB2 | 41 | DConS2 | DConS2 | DConS2 | 40 | B | | |
| CSB2 | 44.33333 | DConS2 | DConS2 | DConS2 | 43.33333 | B | | |
| CSB2 | 47.66667 | | DConS2 | DConS2 | 46.66667 | B | | |
| CSB2 | 51 | DConS2 | DConS2 | DConS2 | 50 | B | | |
| CSB2 | 54.33333 | DConS2 | DConS2 | DConS2 | 53.33333 | B | | |
| CSB2 | 55 | DConS2 | DConS2 | DConS2 | 54 | B | | |
| CSB2 | 55.66667 | DConS2 | DConS2 | DConS2 | 54.66667 | B | | |
| CSB2 | 56 | DConS2 | DConS2 | DConS2 | 55 | B | | |
| MSB2 | 0 | DConS2 | DConS2 | DConS2 | -1 | B | | |
| MSB2 | 1 | DConS2 | DConS2 | DConS2 | 0 | B | | |
| MSB2 | 4.6 | | DConS2 | DConS2 | 3.6 | B | | |
| MSB2 | 8.2 | | DConS2 | DConS2 | 7.2 | B | | |
| MSB2 | 11.8 | DConS2 | DConS2 | DConS2 | 10.8 | B | | |
| MSB2 | 15.4 | DConS2 | DConS2 | DConS2 | 14.4 | B | | |
| MSB2 | 19 | DConS2 | DConS2 | DConS2 | 18 | B | | |
| MSB2 | 22.6 | DConS2 | DConS2 | DConS2 | 21.6 | B | | |
| MSB2 | 26.2 | DConS2 | DConS2 | DConS2 | 25.2 | B | | |
| MSB2 | 29.8 | DConS2 | DConS2 | DConS2 | 28.8 | B | | |
| MSB2 | 33.4 | DConS2 | DConS2 | DConS2 | 32.4 | B | | |
| MSB2 | 37 | DConS2 | DConS2 | DConS2 | 36 | B | | |
| MSB2 | 40.6 | DConS2 | DConS2 | DConS2 | 39.6 | B | | |
| MSB2 | 44.2 | DConS2 | DConS2 | DConS2 | 43.2 | B | | |
| MSB2 | 47.8 | | DConS2 | DConS2 | 46.8 | B | | |
| MSB2 | 51.4 | | DConS2 | DConS2 | 50.4 | B | | |
| MSB2 | 55 | DConS2 | DConS2 | DConS2 | 54 | B | | |
| MSB2 | 56 | DConS2 | DConS2 | DConS2 | 55 | B | | |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 4 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | GlobalY ft | Layer | CapTopM kip-ft | CapBotM kip-ft |
|---|---|---|---|---|---|---|---|---|
| CSB3 | 0 | DConS2 | DConS2 | DConS2 | -1 | B | | |
| CSB3 | 0.33333 | DConS2 | DConS2 | DConS2 | -0.66667 | B | | |
| CSB3 | 1 | DConS2 | DConS2 | DConS2 | 0 | B | | |
| CSB3 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.66667 | B | | |
| CSB3 | 5 | DConS2 | DConS2 | DConS2 | 4 | B | | |
| CSB3 | 8.33333 | | DConS2 | DConS2 | 7.33333 | B | | |
| CSB3 | 11.66667 | DConS2 | DConS2 | DConS2 | 10.66667 | B | | |
| CSB3 | 15 | DConS2 | DConS2 | DConS2 | 14 | B | | |
| CSB3 | 18.33333 | DConS2 | DConS2 | DConS2 | 17.33333 | B | | |
| CSB3 | 19 | DConS2 | DConS2 | DConS2 | 18 | B | | |
| CSB3 | 19.66667 | DConS2 | DConS2 | DConS2 | 18.66667 | B | | |
| CSB3 | 23 | DConS2 | DConS2 | DConS2 | 22 | B | | |
| CSB3 | 26.33333 | | DConS2 | DConS2 | 25.33333 | B | | |
| CSB3 | 29.66667 | | DConS2 | DConS2 | 28.66667 | B | | |
| CSB3 | 33 | DConS2 | DConS2 | DConS2 | 32 | B | | |
| CSB3 | 36.33333 | DConS2 | DConS2 | DConS2 | 35.33333 | B | | |
| CSB3 | 37 | DConS2 | DConS2 | DConS2 | 36 | B | | |
| CSB3 | 37.66667 | DConS2 | DConS2 | DConS2 | 36.66667 | B | | |
| CSB3 | 41 | DConS2 | DConS2 | DConS2 | 40 | B | | |
| CSB3 | 44.33333 | DConS2 | DConS2 | DConS2 | 43.33333 | B | | |
| CSB3 | 47.66667 | | DConS2 | DConS2 | 46.66667 | B | | |
| CSB3 | 51 | DConS2 | DConS2 | DConS2 | 50 | B | | |
| CSB3 | 54.33333 | DConS2 | DConS2 | DConS2 | 53.33333 | B | | |
| CSB3 | 55 | DConS2 | DConS2 | DConS2 | 54 | B | | |
| CSB3 | 55.66667 | DConS2 | DConS2 | DConS2 | 54.66667 | B | | |
| CSB3 | 56 | DConS2 | DConS2 | DConS2 | 55 | B | | |
| MSB3 | 0 | DConS2 | DConS2 | DConS2 | -1 | B | | |
| MSB3 | 1 | DConS2 | DConS2 | DConS2 | 0 | B | | |
| MSB3 | 4.6 | DConS2 | DConS2 | DConS2 | 3.6 | B | | |
| MSB3 | 8.2 | | DConS2 | DConS2 | 7.2 | B | | |
| MSB3 | 11.8 | DConS2 | DConS2 | DConS2 | 10.8 | B | | |
| MSB3 | 15.4 | DConS2 | DConS2 | DConS2 | 14.4 | B | | |
| MSB3 | 19 | DConS2 | DConS2 | DConS2 | 18 | B | | |
| MSB3 | 22.6 | DConS2 | DConS2 | DConS2 | 21.6 | B | | |
| MSB3 | 26.2 | DConS2 | DConS2 | DConS2 | 25.2 | B | | |
| MSB3 | 29.8 | DConS2 | DConS2 | DConS2 | 28.8 | B | | |
| MSB3 | 33.4 | DConS2 | DConS2 | DConS2 | 32.4 | B | | |
| MSB3 | 37 | DConS2 | DConS2 | DConS2 | 36 | B | | |
| MSB3 | 40.6 | DConS2 | DConS2 | DConS2 | 39.6 | B | | |
| MSB3 | 44.2 | DConS2 | DConS2 | DConS2 | 43.2 | B | | |
| MSB3 | 47.8 | | DConS2 | DConS2 | 46.8 | B | | |
| MSB3 | 51.4 | DConS2 | DConS2 | DConS2 | 50.4 | B | | |
| MSB3 | 55 | DConS2 | DConS2 | DConS2 | 54 | B | | |
| MSB3 | 56 | DConS2 | DConS2 | DConS2 | 55 | B | | |
| CSB4 | 0 | DConS2 | DConS2 | DConS2 | -1 | B | | |
| CSB4 | 0.33333 | DConS2 | DConS2 | DConS2 | -0.66667 | B | | |
| CSB4 | 1 | DConS2 | DConS2 | DConS2 | 0 | B | | |
| CSB4 | 1.66667 | DConS2 | DConS2 | DConS2 | 0.66667 | B | | |
| CSB4 | 5 | DConS2 | DConS2 | DConS2 | 4 | B | | |

**Table 6.7 - Concrete Slab Design - Flexure and Shear Data (Part 4 of 4, continued)**

| StripObject | Station ft | FTopCombo | FBotCombo | VCombo | GlobalY ft | Layer | CapTopM kip-ft | CapBotM kip-ft |
|---|---|---|---|---|---|---|---|---|
| CSB4 | 8.33333 | | DConS2 | DConS2 | 7.33333 | B | | |
| CSB4 | 11.66667 | DConS2 | DConS2 | DConS2 | 10.66667 | B | | |
| CSB4 | 15 | DConS2 | DConS2 | DConS2 | 14 | B | | |
| CSB4 | 18.33333 | DConS2 | DConS2 | DConS2 | 17.33333 | B | | |
| CSB4 | 19 | DConS2 | DConS2 | DConS2 | 18 | B | | |
| CSB4 | 19.66667 | DConS2 | DConS2 | DConS2 | 18.66667 | B | | |
| CSB4 | 23 | DConS2 | DConS2 | DConS2 | 22 | B | | |
| CSB4 | 26.33333 | | DConS2 | DConS2 | 25.33333 | B | | |
| CSB4 | 29.66667 | | DConS2 | DConS2 | 28.66667 | B | | |
| CSB4 | 33 | DConS2 | DConS2 | DConS2 | 32 | B | | |
| CSB4 | 36.33333 | DConS2 | DConS2 | DConS2 | 35.33333 | B | | |
| CSB4 | 37 | DConS2 | DConS2 | DConS2 | 36 | B | | |
| CSB4 | 37.66667 | DConS2 | DConS2 | DConS2 | 36.66667 | B | | |
| CSB4 | 41 | DConS2 | DConS2 | DConS2 | 40 | B | | |
| CSB4 | 44.33333 | DConS2 | DConS2 | DConS2 | 43.33333 | B | | |
| CSB4 | 47.66667 | | DConS2 | DConS2 | 46.66667 | B | | |
| CSB4 | 51 | DConS2 | DConS2 | DConS2 | 50 | B | | |
| CSB4 | 54.33333 | DConS2 | DConS2 | DConS2 | 53.33333 | B | | |
| CSB4 | 55 | DConS2 | DConS2 | DConS2 | 54 | B | | |
| CSB4 | 55.66667 | DConS2 | DConS2 | DConS2 | 54.66667 | B | | |
| CSB4 | 56 | DConS2 | DConS2 | DConS2 | 55 | B | | |

**Table 6.8 - Concrete Slab Design - Punching Shear Data (Part 1 of 4)**

| Point | GlobalX ft | ReinfType | StudPerRail | Gamma$_{v3}$ | GlobalY ft | Status | Ratio | NumRails | Combo |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 0 | None | | 0.4 | 0 | OK | 0.633824 | | DConS2 |
| 4 | 0 | None | | 0.406853 | 18 | OK | 0.619904 | | DConS2 |
| 6 | 0 | None | | 0.406853 | 36 | OK | 0.619904 | | DConS2 |
| 8 | 0 | None | | 0.4 | 54 | OK | 0.633824 | | DConS2 |
| 10 | 14 | None | | 0.393186 | 0 | OK | 0.70801 | | DConS2 |
| 12 | 14 | None | | 0.4 | 18 | OK | 0.659386 | | DConS2 |
| 14 | 14 | None | | 0.4 | 36 | OK | 0.659386 | | DConS2 |
| 16 | 14 | None | | 0.393186 | 54 | OK | 0.70801 | | DConS2 |
| 18 | 28 | None | | 0.393186 | 0 | OK | 0.70801 | | DConS2 |
| 20 | 28 | None | | 0.4 | 18 | OK | 0.659386 | | DConS2 |
| 22 | 28 | None | | 0.4 | 36 | OK | 0.659386 | | DConS2 |
| 24 | 28 | None | | 0.393186 | 54 | OK | 0.70801 | | DConS2 |
| 26 | 42 | None | | 0.4 | 0 | OK | 0.633824 | | DConS2 |
| 28 | 42 | None | | 0.406853 | 18 | OK | 0.619904 | | DConS2 |
| 30 | 42 | None | | 0.406853 | 36 | OK | 0.619904 | | DConS2 |
| 32 | 42 | None | | 0.4 | 54 | OK | 0.633824 | | DConS2 |

**Table 6.8 - Concrete Slab Design - Punching Shear Data (Part 2 of 4)**

| Point | GlobalX ft | ReinfType | StudPerRail | Gamma$_{v3}$ | ShrStrMax kip/ft2 | ShrStrCap kip/ft2 | ReinfPat | ReinfFy kip/ft2 | ReinfDiam ft |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 0 | None | | 0.4 | 17.32 | 27.32 | | | |
| 4 | 0 | None | | 0.406853 | 16.94 | 27.32 | | | |
| 6 | 0 | None | | 0.406853 | 16.94 | 27.32 | | | |
| 8 | 0 | None | | 0.4 | 17.32 | 27.32 | | | |

**Table 6.8 - Concrete Slab Design - Punching Shear Data (Part 2 of 4, continued)**

| Point | GlobalX ft | ReinfType | StudPerRail | Gamma$_{v3}$ | ShrStrMax kip/ft2 | ShrStrCap kip/ft2 | ReinfPat | ReinfFy kip/ft2 | ReinfDiam ft |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 14 | None | | 0.393186 | 19.34 | 27.32 | | | |
| 12 | 14 | None | | 0.4 | 18.02 | 27.32 | | | |
| 14 | 14 | None | | 0.4 | 18.02 | 27.32 | | | |
| 16 | 14 | None | | 0.393186 | 19.34 | 27.32 | | | |
| 18 | 28 | None | | 0.393186 | 19.34 | 27.32 | | | |
| 20 | 28 | None | | 0.4 | 18.02 | 27.32 | | | |
| 22 | 28 | None | | 0.4 | 18.02 | 27.32 | | | |
| 24 | 28 | None | | 0.393186 | 19.34 | 27.32 | | | |
| 26 | 42 | None | | 0.4 | 17.32 | 27.32 | | | |
| 28 | 42 | None | | 0.406853 | 16.94 | 27.32 | | | |
| 30 | 42 | None | | 0.406853 | 16.94 | 27.32 | | | |
| 32 | 42 | None | | 0.4 | 17.32 | 27.32 | | | |

**Table 6.8 - Concrete Slab Design - Punching Shear Data (Part 3 of 4)**

| Point | GlobalX ft | ReinfType | StudPerRail | Gamma$_{v3}$ | Mu2 kip-ft | Mu3 kip-ft | Vu kip | UnbalMu2 kip-ft | UnbalMu3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 0 | None | | 0.4 | 21.9909 | -12.1617 | 13.216 | 8.7964 | -4.8647 |
| 4 | 0 | None | | 0.406853 | -3.8525 | -23.9541 | 25.967 | -1.5148 | -9.7458 |
| 6 | 0 | None | | 0.406853 | 3.8525 | -23.9541 | 25.967 | 1.5148 | -9.7458 |
| 8 | 0 | None | | 0.4 | -21.9909 | -12.1617 | 13.216 | -8.7964 | -4.8647 |
| 10 | 14 | None | | 0.393186 | 36.4748 | 1.8844 | 25.244 | 14.8399 | 0.7409 |
| 12 | 14 | None | | 0.4 | -6.1988 | 3.593 | 52.724 | -2.4795 | 1.4372 |
| 14 | 14 | None | | 0.4 | 6.1988 | 3.593 | 52.724 | 2.4795 | 1.4372 |
| 16 | 14 | None | | 0.393186 | -36.4748 | 1.8844 | 25.244 | -14.8399 | 0.7409 |
| 18 | 28 | None | | 0.393186 | 36.4748 | -1.8844 | 25.244 | 14.8399 | -0.7409 |
| 20 | 28 | None | | 0.4 | -6.1988 | -3.593 | 52.724 | -2.4795 | -1.4372 |
| 22 | 28 | None | | 0.4 | 6.1988 | -3.593 | 52.724 | 2.4795 | -1.4372 |
| 24 | 28 | None | | 0.393186 | -36.4748 | -1.8844 | 25.244 | -14.8399 | -0.7409 |
| 26 | 42 | None | | 0.4 | 21.9909 | 12.1617 | 13.216 | 8.7964 | 4.8647 |
| 28 | 42 | None | | 0.406853 | -3.8525 | 23.9541 | 25.967 | -1.5148 | 9.7458 |
| 30 | 42 | None | | 0.406853 | 3.8525 | 23.9541 | 25.967 | 1.5148 | 9.7458 |
| 32 | 42 | None | | 0.4 | -21.9909 | 12.1617 | 13.216 | -8.7964 | 4.8647 |

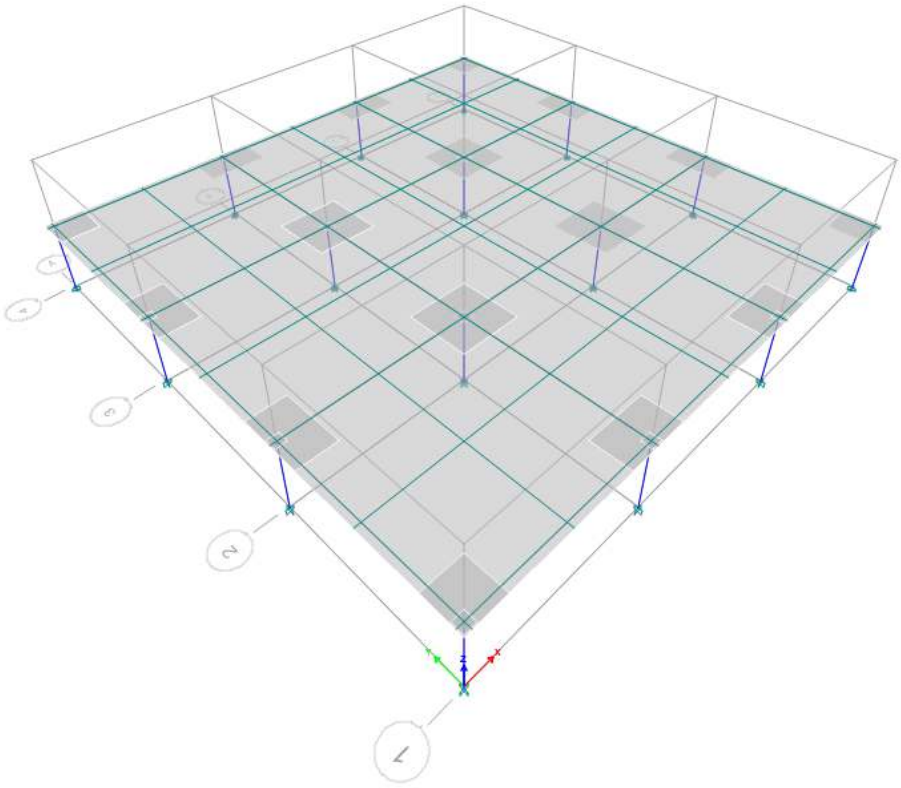
**Table 6.8 - Concrete Slab Design - Punching Shear Data (Part 4 of 4)**

| Point | GlobalX ft | ReinfType | StudPerRail | Gamma$_{v3}$ | Perimeter ft | Location |
|---|---|---|---|---|---|---|
| 2 | 0 | None | | 0.4 | 3.79333 | Corner |
| 4 | 0 | None | | 0.406853 | 5.585 | Edge |
| 6 | 0 | None | | 0.406853 | 5.585 | Edge |
| 8 | 0 | None | | 0.4 | 3.79333 | Corner |
| 10 | 14 | None | | 0.393186 | 5.585 | Edge |
| 12 | 14 | None | | 0.4 | 7.16667 | Interior |
| 14 | 14 | None | | 0.4 | 7.16667 | Interior |
| 16 | 14 | None | | 0.393186 | 5.585 | Edge |
| 18 | 28 | None | | 0.393186 | 5.585 | Edge |
| 20 | 28 | None | | 0.4 | 7.16667 | Interior |
| 22 | 28 | None | | 0.4 | 7.16667 | Interior |
| 24 | 28 | None | | 0.393186 | 5.585 | Edge |
| 26 | 42 | None | | 0.4 | 3.79333 | Corner |

**Table 6.8 - Concrete Slab Design - Punching Shear Data (Part 4 of 4, continued)**

| Point | GlobalX ft | ReinfType | StudPerRail | $Gamma_{v3}$ | Perimeter ft | Location |
|---|---|---|---|---|---|---|
| 28 | 42 | None | | 0.406853 | 5.585 | Edge |
| 30 | 42 | None | | 0.406853 | 5.585 | Edge |
| 32 | 42 | None | | 0.4 | 3.79333 | Corner |

SAFE®



# User Report 4

Model File: Flat slab with drops, Revision 0
26/10/2025

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# 1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

## 1.1 Grid Data

**Table 1.1 - Grid Definitions - General**

| Name | Type | Ux ft | Uy ft | Rz deg | Datum Name | Story Name Above | Story Name Below | Model Datum ft | Story Height Above ft | Story Height Below ft | Bubble Size ft | Color |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GLOBAL | Cartesian | 0 | 0 | 0 | Story1 | Story2 | Base | 12 | 12 | 12 | 5 | Gray6 |

**Table 1.2 - Grid Definitions - Grid Lines**

| Name | Grid Line Type | ID | Ordinate ft | Bubble Location | Visible |
|---|---|---|---|---|---|
| GLOBAL | X (Cartesian) | A | 0 | End | Yes |
| GLOBAL | X (Cartesian) | B | 30 | End | Yes |
| GLOBAL | X (Cartesian) | C | 60 | End | Yes |
| GLOBAL | X (Cartesian) | D | 90 | End | Yes |
| GLOBAL | Y (Cartesian) | 1 | 0 | Start | Yes |
| GLOBAL | Y (Cartesian) | 2 | 30 | Start | Yes |
| GLOBAL | Y (Cartesian) | 3 | 60 | Start | Yes |
| GLOBAL | Y (Cartesian) | 4 | 90 | Start | Yes |

## 1.2 Area Connectivity

**Table 1.3 - Floor Object Connectivity**

| Unique Name | UniquePt1 | UniquePt2 | UniquePt3 | UniquePt4 | Perimeter ft | Area ft2 |
|---|---|---|---|---|---|---|
| 1 | 33 | 34 | 35 | 36 | 368 | 8464 |
| 2 | 33 | 37 | 38 | 39 | 24 | 36 |
| 3 | 40 | 41 | 42 | 43 | 32 | 60 |
| 4 | 44 | 45 | 46 | 47 | 32 | 60 |
| 5 | 48 | 34 | 49 | 50 | 24 | 36 |
| 6 | 51 | 52 | 53 | 54 | 32 | 60 |
| 7 | 55 | 56 | 57 | 58 | 40 | 100 |
| 8 | 59 | 60 | 61 | 62 | 40 | 100 |
| 9 | 63 | 64 | 65 | 66 | 32 | 60 |
| 10 | 67 | 68 | 69 | 70 | 32 | 60 |
| 11 | 71 | 72 | 73 | 74 | 40 | 100 |
| 12 | 75 | 76 | 77 | 78 | 40 | 100 |
| 13 | 79 | 80 | 81 | 82 | 32 | 60 |
| 14 | 83 | 84 | 85 | 36 | 24 | 36 |
| 15 | 86 | 87 | 88 | 89 | 32 | 60 |
| 16 | 90 | 91 | 92 | 93 | 32 | 60 |
| 17 | 94 | 95 | 35 | 96 | 24 | 36 |
| 34 | 189 | 190 | 191 | 192 | 6.6667 | 2.78 |
| 35 | 193 | 194 | 195 | 196 | 6.6667 | 2.78 |

**Table 1.3 - Floor Object Connectivity (continued)**

| Unique Name | UniquePt1 | UniquePt2 | UniquePt3 | UniquePt4 | Perimeter ft | Area ft2 |
|---|---|---|---|---|---|---|
| 36 | 197 | 198 | 199 | 200 | 6.6667 | 2.78 |
| 37 | 201 | 202 | 203 | 204 | 6.6667 | 2.78 |
| 38 | 205 | 206 | 207 | 208 | 6.6667 | 2.78 |
| 39 | 209 | 210 | 211 | 212 | 6.6667 | 2.78 |
| 40 | 213 | 214 | 215 | 216 | 6.6667 | 2.78 |
| 41 | 217 | 218 | 219 | 220 | 6.6667 | 2.78 |
| 42 | 221 | 222 | 223 | 224 | 6.6667 | 2.78 |
| 43 | 225 | 226 | 227 | 228 | 6.6667 | 2.78 |
| 44 | 229 | 230 | 231 | 232 | 6.6667 | 2.78 |
| 45 | 233 | 234 | 235 | 236 | 6.6667 | 2.78 |
| 46 | 237 | 238 | 239 | 240 | 6.6667 | 2.78 |
| 47 | 241 | 242 | 243 | 244 | 6.6667 | 2.78 |
| 48 | 245 | 246 | 247 | 248 | 6.6667 | 2.78 |
| 49 | 249 | 250 | 251 | 252 | 6.6667 | 2.78 |

## 1.3 Strip Connectivity

**Table 1.4 - Strip Object Connectivity**

| Name | Number Segments | Strip Start Point | Segment End Point | Start Width Left ft | Start Width Right ft | End Width Left ft | End Width Right ft | Auto Widen | Layer |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | 1 | 103 | 104 | 7.5 | 1 | 7.5 | 1 | No | A |
| CSA2 | 1 | 107 | 108 | 15 | 15 | 15 | 15 | No | A |
| CSA3 | 1 | 111 | 112 | 15 | 15 | 15 | 15 | No | A |
| CSA4 | 1 | 115 | 116 | 1 | 7.5 | 1 | 7.5 | No | A |
| CSB1 | 1 | 123 | 124 | 1 | 7.5 | 1 | 7.5 | No | B |
| CSB2 | 1 | 127 | 128 | 15 | 15 | 15 | 15 | No | B |
| CSB3 | 1 | 131 | 132 | 15 | 15 | 15 | 15 | No | B |
| CSB4 | 1 | 135 | 136 | 7.5 | 1 | 7.5 | 1 | No | B |
| MSA1 | 1 | 105 | 106 | 7.5 | 7.5 | 7.5 | 7.5 | No | A |
| MSA2 | 1 | 109 | 110 | 7.5 | 7.5 | 7.5 | 7.5 | No | A |
| MSA3 | 1 | 113 | 114 | 7.5 | 7.5 | 7.5 | 7.5 | No | A |
| MSB1 | 1 | 125 | 126 | 7.5 | 7.5 | 7.5 | 7.5 | No | B |
| MSB2 | 1 | 129 | 130 | 7.5 | 7.5 | 7.5 | 7.5 | No | B |
| MSB3 | 1 | 133 | 134 | 7.5 | 7.5 | 7.5 | 7.5 | No | B |

## 1.4 Mass

**Table 1.5 - Mass Source Definition**

| Name | Is Default | Include Lateral Mass? | Include Vertical Mass? | Lump Mass? | Source Self Mass? | Source Added Mass? | Source Load Patterns? | Move Mass Centroid? |
|---|---|---|---|---|---|---|---|---|
| MsSrc1 | Yes | No | Yes | Yes | Yes | Yes | No | No |

**Table 1.6 - Mass Summary by Group**

| Group | Self Mass kip-s2/ft | Self Weight kip | Mass X kip-s2/ft | Mass Y kip-s2/ft | Mass Z kip-s2/ft |
|---|---|---|---|---|---|
| All | 36.91001 | 0 | 36.91001 | 36.91001 | 36.91001 |

# 2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

## 2.1 Materials

**Table 2.1 - Material Properties - General**

| Material | Type | SymType | Grade | Color | Notes |
|---|---|---|---|---|---|
| 4000Psi | Concrete | Isotropic | f'c 4000 psi | Gray8Dark | |
| 5000Psi | Concrete | Isotropic | f'c 5000 psi | Yellow | |
| A416Gr270 | Tendon | Uniaxial | Grade 270 | Red | |
| A615Gr60 | Rebar | Uniaxial | Grade 60 | Green | |

## 2.2 Shell Sections

**Table 2.2 - Area Section Property Definitions - Summary**

| Name | Type | Element Type | Material | Total Thickness ft | Deck Material | Deck Depth ft |
|---|---|---|---|---|---|---|
| Drop1 | Slab | Shell-Thin | 4000Psi | 1.20833 | | |
| Slab2 | Slab | Shell-Thin | 5000Psi | 0.83333 | | |
| Stiff1 | Slab | Shell-Thin | 4000Psi | 1.20833 | | |

## 2.3 Reinforcement Sizes

**Table 2.3 - Reinforcing Bar Sizes**

| Name | Diameter ft | Area ft2 |
|---|---|---|
| #4 | 0.04167 | 0.0014 |
| #6 | 0.0625 | 0.0031 |
| #9 | 0.094 | 0.0069 |

# 3 Assignments

This chapter provides a listing of the assignments applied to the model.

## 3.1 Joint Assignments

**Table 3.1 - Joint Assignments - Summary**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 2 | From Area | |
| 4 | From Area | |
| 6 | From Area | |
| 8 | From Area | |
| 10 | From Area | |
| 12 | From Area | |
| 14 | From Area | |
| 16 | From Area | |
| 18 | From Area | |
| 20 | From Area | |
| 22 | From Area | |
| 24 | From Area | |
| 26 | From Area | |
| 28 | From Area | |
| 30 | From Area | |
| 32 | From Area | |
| 33 | From Area | |
| 34 | From Area | |
| 35 | From Area | |
| 36 | From Area | |
| 37 | From Area | |
| 38 | From Area | |
| 39 | From Area | |
| 40 | From Area | |
| 41 | From Area | |
| 42 | From Area | |
| 43 | From Area | |
| 44 | From Area | |
| 45 | From Area | |
| 46 | From Area | |
| 47 | From Area | |
| 48 | From Area | |
| 49 | From Area | |
| 50 | From Area | |
| 51 | From Area | |
| 52 | From Area | |
| 53 | From Area | |
| 54 | From Area | |
| 55 | From Area | |
| 56 | From Area | |
| 57 | From Area | |
| 58 | From Area | |

**Table 3.1 - Joint Assignments - Summary (continued)**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 59 | From Area | |
| 60 | From Area | |
| 61 | From Area | |
| 62 | From Area | |
| 63 | From Area | |
| 64 | From Area | |
| 65 | From Area | |
| 66 | From Area | |
| 67 | From Area | |
| 68 | From Area | |
| 69 | From Area | |
| 70 | From Area | |
| 71 | From Area | |
| 72 | From Area | |
| 73 | From Area | |
| 74 | From Area | |
| 75 | From Area | |
| 76 | From Area | |
| 77 | From Area | |
| 78 | From Area | |
| 79 | From Area | |
| 80 | From Area | |
| 81 | From Area | |
| 82 | From Area | |
| 83 | From Area | |
| 84 | From Area | |
| 85 | From Area | |
| 86 | From Area | |
| 87 | From Area | |
| 88 | From Area | |
| 89 | From Area | |
| 90 | From Area | |
| 91 | From Area | |
| 92 | From Area | |
| 93 | From Area | |
| 94 | From Area | |
| 95 | From Area | |
| 96 | From Area | |
| 103 | From Area | |
| 104 | From Area | |
| 105 | From Area | |
| 106 | From Area | |
| 107 | From Area | |
| 108 | From Area | |
| 109 | From Area | |
| 110 | From Area | |

**Table 3.1 - Joint Assignments - Summary (continued)**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 111 | From Area | |
| 112 | From Area | |
| 113 | From Area | |
| 114 | From Area | |
| 115 | From Area | |
| 116 | From Area | |
| 123 | From Area | |
| 124 | From Area | |
| 125 | From Area | |
| 126 | From Area | |
| 127 | From Area | |
| 128 | From Area | |
| 129 | From Area | |
| 130 | From Area | |
| 131 | From Area | |
| 132 | From Area | |
| 133 | From Area | |
| 134 | From Area | |
| 135 | From Area | |
| 136 | From Area | |
| 189 | From Area | |
| 190 | From Area | |
| 191 | From Area | |
| 192 | From Area | |
| 193 | From Area | |
| 194 | From Area | |
| 195 | From Area | |
| 196 | From Area | |
| 197 | From Area | |
| 198 | From Area | |
| 199 | From Area | |
| 200 | From Area | |
| 201 | From Area | |
| 202 | From Area | |
| 203 | From Area | |
| 204 | From Area | |
| 205 | From Area | |
| 206 | From Area | |
| 207 | From Area | |
| 208 | From Area | |
| 209 | From Area | |
| 210 | From Area | |
| 211 | From Area | |
| 212 | From Area | |
| 213 | From Area | |
| 214 | From Area | |

**Table 3.1 - Joint Assignments - Summary (continued)**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 215 | From Area | |
| 216 | From Area | |
| 217 | From Area | |
| 218 | From Area | |
| 219 | From Area | |
| 220 | From Area | |
| 221 | From Area | |
| 222 | From Area | |
| 223 | From Area | |
| 224 | From Area | |
| 225 | From Area | |
| 226 | From Area | |
| 227 | From Area | |
| 228 | From Area | |
| 229 | From Area | |
| 230 | From Area | |
| 231 | From Area | |
| 232 | From Area | |
| 233 | From Area | |
| 234 | From Area | |
| 235 | From Area | |
| 236 | From Area | |
| 237 | From Area | |
| 238 | From Area | |
| 239 | From Area | |
| 240 | From Area | |
| 241 | From Area | |
| 242 | From Area | |
| 243 | From Area | |
| 244 | From Area | |
| 245 | From Area | |
| 246 | From Area | |
| 247 | From Area | |
| 248 | From Area | |
| 249 | From Area | |
| 250 | From Area | |
| 251 | From Area | |
| 252 | From Area | |
| 1 | From Area | UX; UY; UZ; RX; RY; RZ |
| 3 | From Area | UX; UY; UZ; RX; RY; RZ |
| 5 | From Area | UX; UY; UZ; RX; RY; RZ |
| 7 | From Area | UX; UY; UZ; RX; RY; RZ |
| 9 | From Area | UX; UY; UZ; RX; RY; RZ |
| 11 | From Area | UX; UY; UZ; RX; RY; RZ |
| 13 | From Area | UX; UY; UZ; RX; RY; RZ |
| 15 | From Area | UX; UY; UZ; RX; RY; RZ |

**Table 3.1 - Joint Assignments - Summary (continued)**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 17 | From Area | UX; UY; UZ; RX; RY; RZ |
| 19 | From Area | UX; UY; UZ; RX; RY; RZ |
| 21 | From Area | UX; UY; UZ; RX; RY; RZ |
| 23 | From Area | UX; UY; UZ; RX; RY; RZ |
| 25 | From Area | UX; UY; UZ; RX; RY; RZ |
| 27 | From Area | UX; UY; UZ; RX; RY; RZ |
| 29 | From Area | UX; UY; UZ; RX; RY; RZ |
| 31 | From Area | UX; UY; UZ; RX; RY; RZ |

## 3.2 Frame Assignments

**Table 3.2 - Frame Assignments - Summary**

| UniqueName | Design Type | Length ft | Analysis Section | Design Section | Min Number Stations |
|---|---|---|---|---|---|
| 1 | Column | 12 | ConcCol1 | N/A | 3 |
| 2 | Column | 12 | ConcCol1 | N/A | 3 |
| 3 | Column | 12 | ConcCol1 | N/A | 3 |
| 4 | Column | 12 | ConcCol1 | N/A | 3 |
| 5 | Column | 12 | ConcCol1 | N/A | 3 |
| 6 | Column | 12 | ConcCol1 | N/A | 3 |
| 7 | Column | 12 | ConcCol1 | N/A | 3 |
| 8 | Column | 12 | ConcCol1 | N/A | 3 |
| 9 | Column | 12 | ConcCol1 | N/A | 3 |
| 10 | Column | 12 | ConcCol1 | N/A | 3 |
| 11 | Column | 12 | ConcCol1 | N/A | 3 |
| 12 | Column | 12 | ConcCol1 | N/A | 3 |
| 13 | Column | 12 | ConcCol1 | N/A | 3 |
| 14 | Column | 12 | ConcCol1 | N/A | 3 |
| 15 | Column | 12 | ConcCol1 | N/A | 3 |
| 16 | Column | 12 | ConcCol1 | N/A | 3 |

## 3.3 Shell Assignments

**Table 3.3 - Area Assignments - Summary**

| UniqueName | Section Property | Property Type |
|---|---|---|
| 1 | Slab2 | Slab |
| 2 | Drop1 | Slab |
| 3 | Drop1 | Slab |
| 4 | Drop1 | Slab |
| 5 | Drop1 | Slab |
| 6 | Drop1 | Slab |
| 7 | Drop1 | Slab |
| 8 | Drop1 | Slab |
| 9 | Drop1 | Slab |
| 10 | Drop1 | Slab |

**Table 3.3 - Area Assignments - Summary (continued)**

| UniqueName | Section Property | Property Type |
|---|---|---|
| 11 | Drop1 | Slab |
| 12 | Drop1 | Slab |
| 13 | Drop1 | Slab |
| 14 | Drop1 | Slab |
| 15 | Drop1 | Slab |
| 16 | Drop1 | Slab |
| 17 | Drop1 | Slab |

# 4 Loads

This chapter provides loading information as applied to the model.

## 4.1 Load Patterns

**Table 4.1 - Load Pattern Definitions**

| Name | Is Auto Load | Type | Self Weight Multiplier |
|---|---|---|---|
| ~LLRF | No | Other | 0 |
| Dead | No | Dead | 1 |
| Live | No | Live | 0 |
| Sc | No | Super Dead | 0 |

## 4.2 Applied Loads

### 4.2.1 Area Loads

**Table 4.2 - Area Load Assignments - Uniform**

| UniqueName | Load Pattern | Direction | Load kip/ft2 |
|---|---|---|---|
| 1 | Live | Gravity | 0.06 |
| 1 | Sc | Gravity | 0.02 |

## 4.3 Load Cases

**Table 4.3 - Load Case Definitions - Summary**

| Name | Type |
|---|---|
| Dead | Linear Static |
| Live | Linear Static |
| Sc | Linear Static |

## 4.4 Load Combinations

**Table 4.4 - Load Combination Definitions**

| Name | Type | Is Auto | Load Name | SF | Notes |
|---|---|---|---|---|---|
| Comb1 | Linear Add | No | Dead | 1.2 | |
| Comb1 | | | Sc | 1.2 | |
| Comb1 | | | Live | 1.6 | |

# 5 Analysis Results

This chapter provides analysis results.

## 5.1 Structure Results

**Table 5.1 - Base Reactions**

| Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft | X ft | Y ft | Z ft |
|---|---|---|---|---|---|---|---|---|---|---|
| Dead | LinStatic | 0 | 0 | 1187.544 | 53439.5 | -53439.5 | 0 | 0 | 0 | 0 |
| Live | LinStatic | 0 | 0 | 507.84 | 22852.8 | -22852.8 | 0 | 0 | 0 | 0 |
| Sc | LinStatic | 0 | 0 | 169.28 | 7617.6 | -7617.6 | 0 | 0 | 0 | 0 |
| Comb1 | Combination | 0 | 0 | 2440.733 | 109833 | -109833 | 0 | 0 | 0 | 0 |

## 5.2 Point Results

**Table 5.2 - Joint Reactions**

| Unique Name | Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft |
|---|---|---|---|---|---|---|---|---|
| 1 | Dead | LinStatic | 11.23 | 11.23 | 33.105 | -43.3184 | 43.3184 | 0 |
| 1 | Live | LinStatic | 5.254 | 5.254 | 12.815 | -20.266 | 20.266 | 0 |
| 1 | Sc | LinStatic | 1.751 | 1.751 | 4.272 | -6.7553 | 6.7553 | 0 |
| 1 | Comb1 | Combination | 23.983 | 23.983 | 65.355 | -92.514 | 92.514 | 0 |
| 3 | Dead | LinStatic | 17.717 | -2.315 | 62.661 | 9.0306 | 68.4741 | -0.0109 |
| 3 | Live | LinStatic | 8.317 | -1.088 | 26.344 | 4.2437 | 32.1436 | -0.0051 |
| 3 | Sc | LinStatic | 2.772 | -0.363 | 8.781 | 1.4146 | 10.7145 | -0.0017 |
| 3 | Comb1 | Combination | 37.894 | -4.955 | 127.881 | 19.324 | 146.4561 | -0.0233 |
| 5 | Dead | LinStatic | 17.717 | 2.315 | 62.661 | -9.0306 | 68.4741 | 0.0109 |
| 5 | Live | LinStatic | 8.317 | 1.088 | 26.344 | -4.2437 | 32.1436 | 0.0051 |
| 5 | Sc | LinStatic | 2.772 | 0.363 | 8.781 | -1.4146 | 10.7145 | 0.0017 |
| 5 | Comb1 | Combination | 37.894 | 4.955 | 127.881 | -19.324 | 146.4561 | 0.0233 |
| 7 | Dead | LinStatic | 11.23 | -11.23 | 33.105 | 43.3184 | 43.3184 | 0 |
| 7 | Live | LinStatic | 5.254 | -5.254 | 12.815 | 20.266 | 20.266 | 0 |
| 7 | Sc | LinStatic | 1.751 | -1.751 | 4.272 | 6.7553 | 6.7553 | 0 |
| 7 | Comb1 | Combination | 23.983 | -23.983 | 65.355 | 92.514 | 92.514 | 0 |
| 9 | Dead | LinStatic | -2.315 | 17.717 | 62.661 | -68.4741 | -9.0306 | 0.0109 |
| 9 | Live | LinStatic | -1.088 | 8.317 | 26.344 | -32.1436 | -4.2437 | 0.0051 |
| 9 | Sc | LinStatic | -0.363 | 2.772 | 8.781 | -10.7145 | -1.4146 | 0.0017 |
| 9 | Comb1 | Combination | -4.955 | 37.894 | 127.881 | -146.4561 | -19.324 | 0.0233 |
| 11 | Dead | LinStatic | -4.006 | -4.006 | 138.459 | 15.6017 | -15.6017 | 0 |
| 11 | Live | LinStatic | -1.886 | -1.886 | 61.458 | 7.3443 | -7.3443 | 0 |
| 11 | Sc | LinStatic | -0.629 | -0.629 | 20.486 | 2.4481 | -2.4481 | 0 |
| 11 | Comb1 | Combination | -8.579 | -8.579 | 289.066 | 33.4106 | -33.4106 | 0 |
| 13 | Dead | LinStatic | -4.006 | 4.006 | 138.459 | -15.6017 | -15.6017 | 0 |
| 13 | Live | LinStatic | -1.886 | 1.886 | 61.458 | -7.3443 | -7.3443 | 0 |
| 13 | Sc | LinStatic | -0.629 | 0.629 | 20.486 | -2.4481 | -2.4481 | 0 |
| 13 | Comb1 | Combination | -8.579 | 8.579 | 289.066 | -33.4106 | -33.4106 | 0 |
| 15 | Dead | LinStatic | -2.315 | -17.717 | 62.661 | 68.4741 | -9.0306 | -0.0109 |
| 15 | Live | LinStatic | -1.088 | -8.317 | 26.344 | 32.1436 | -4.2437 | -0.0051 |
| 15 | Sc | LinStatic | -0.363 | -2.772 | 8.781 | 10.7145 | -1.4146 | -0.0017 |

**Table 5.2 - Joint Reactions (continued)**

| Unique Name | Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft |
|---|---|---|---|---|---|---|---|---|
| 15 | Comb1 | Combination | -4.955 | -37.894 | 127.881 | 146.4561 | -19.324 | -0.0233 |
| 17 | Dead | LinStatic | 2.315 | 17.717 | 62.661 | -68.4741 | 9.0306 | -0.0109 |
| 17 | Live | LinStatic | 1.088 | 8.317 | 26.344 | -32.1436 | 4.2437 | -0.0051 |
| 17 | Sc | LinStatic | 0.363 | 2.772 | 8.781 | -10.7145 | 1.4146 | -0.0017 |
| 17 | Comb1 | Combination | 4.955 | 37.894 | 127.881 | -146.4561 | 19.324 | -0.0233 |
| 19 | Dead | LinStatic | 4.006 | -4.006 | 138.459 | 15.6017 | 15.6017 | 0 |
| 19 | Live | LinStatic | 1.886 | -1.886 | 61.458 | 7.3443 | 7.3443 | 0 |
| 19 | Sc | LinStatic | 0.629 | -0.629 | 20.486 | 2.4481 | 2.4481 | 0 |
| 19 | Comb1 | Combination | 8.579 | -8.579 | 289.066 | 33.4106 | 33.4106 | 0 |
| 21 | Dead | LinStatic | 4.006 | 4.006 | 138.459 | -15.6017 | 15.6017 | 0 |
| 21 | Live | LinStatic | 1.886 | 1.886 | 61.458 | -7.3443 | 7.3443 | 0 |
| 21 | Sc | LinStatic | 0.629 | 0.629 | 20.486 | -2.4481 | 2.4481 | 0 |
| 21 | Comb1 | Combination | 8.579 | 8.579 | 289.066 | -33.4106 | 33.4106 | 0 |
| 23 | Dead | LinStatic | 2.315 | -17.717 | 62.661 | 68.4741 | 9.0306 | 0.0109 |
| 23 | Live | LinStatic | 1.088 | -8.317 | 26.344 | 32.1436 | 4.2437 | 0.0051 |
| 23 | Sc | LinStatic | 0.363 | -2.772 | 8.781 | 10.7145 | 1.4146 | 0.0017 |
| 23 | Comb1 | Combination | 4.955 | -37.894 | 127.881 | 146.4561 | 19.324 | 0.0233 |
| 25 | Dead | LinStatic | -11.23 | 11.23 | 33.105 | -43.3184 | -43.3184 | 0 |
| 25 | Live | LinStatic | -5.254 | 5.254 | 12.815 | -20.266 | -20.266 | 0 |
| 25 | Sc | LinStatic | -1.751 | 1.751 | 4.272 | -6.7553 | -6.7553 | 0 |
| 25 | Comb1 | Combination | -23.983 | 23.983 | 65.355 | -92.514 | -92.514 | 0 |
| 27 | Dead | LinStatic | -17.717 | -2.315 | 62.661 | 9.0306 | -68.4741 | 0.0109 |
| 27 | Live | LinStatic | -8.317 | -1.088 | 26.344 | 4.2437 | -32.1436 | 0.0051 |
| 27 | Sc | LinStatic | -2.772 | -0.363 | 8.781 | 1.4146 | -10.7145 | 0.0017 |
| 27 | Comb1 | Combination | -37.894 | -4.955 | 127.881 | 19.324 | -146.4561 | 0.0233 |
| 29 | Dead | LinStatic | -17.717 | 2.315 | 62.661 | -9.0306 | -68.4741 | -0.0109 |
| 29 | Live | LinStatic | -8.317 | 1.088 | 26.344 | -4.2437 | -32.1436 | -0.0051 |
| 29 | Sc | LinStatic | -2.772 | 0.363 | 8.781 | -1.4146 | -10.7145 | -0.0017 |
| 29 | Comb1 | Combination | -37.894 | 4.955 | 127.881 | -19.324 | -146.4561 | -0.0233 |
| 31 | Dead | LinStatic | -11.23 | -11.23 | 33.105 | 43.3184 | -43.3184 | 0 |
| 31 | Live | LinStatic | -5.254 | -5.254 | 12.815 | 20.266 | -20.266 | 0 |
| 31 | Sc | LinStatic | -1.751 | -1.751 | 4.272 | 6.7553 | -6.7553 | 0 |
| 31 | Comb1 | Combination | -23.983 | -23.983 | 65.355 | 92.514 | -92.514 | 0 |

## 5.3 Strip Results

**Table 5.3 - Strip Forces Summary**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | Start | Dead | LinStatic | -10.59 | -21.857 | -18.5036 | 2.4357 | -72.0084 |
| CSA1 | Span 1 | Start | Live | LinStatic | -4.954 | -9.972 | -8.9655 | 0.6974 | -33.8933 |
| CSA1 | Span 1 | Start | Sc | LinStatic | -1.651 | -3.324 | -2.9885 | 0.2325 | -11.2978 |
| CSA1 | Span 1 | Start | Comb1 | Combination | -22.616 | -46.173 | -40.1354 | 4.3175 | -154.1967 |
| CSA1 | Span 1 | Middle | Dead | LinStatic | -7.859 | 12.987 | -10.5857 | 50.6316 | 18.2753 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | Middle | Live | LinStatic | -3.677 | 6.228 | -4.9404 | 24.0573 | 8.6552 |
| CSA1 | Span 1 | Middle | Sc | LinStatic | -1.226 | 2.076 | -1.6468 | 8.0191 | 2.8851 |
| CSA1 | Span 1 | Middle | Comb1 | Combination | -16.785 | 28.04 | -22.5837 | 108.8725 | 39.2408 |
| CSA1 | Span 1 | End | Dead | LinStatic | -8.216 | 27.726 | 10.9257 | -33.3522 | -126.8821 |
| CSA1 | Span 1 | End | Live | LinStatic | -3.852 | 12.763 | 5.2449 | -16.0762 | -59.5569 |
| CSA1 | Span 1 | End | Sc | LinStatic | -1.284 | 4.254 | 1.7483 | -5.3587 | -19.8523 |
| CSA1 | Span 1 | End | Comb1 | Combination | -17.564 | 58.796 | 23.6006 | -72.175 | -271.3723 |
| CSA1 | Span 2 | Start | Dead | LinStatic | -6.001 | -25.604 | 6.4024 | -29.6087 | -111.6483 |
| CSA1 | Span 2 | Start | Live | LinStatic | -2.812 | -11.766 | 2.942 | -14.3215 | -52.3989 |
| CSA1 | Span 2 | Start | Sc | LinStatic | -0.937 | -3.922 | 0.9807 | -4.7738 | -17.4663 |
| CSA1 | Span 2 | Start | Comb1 | Combination | -12.825 | -54.256 | 13.5669 | -64.1734 | -238.7758 |
| CSA1 | Span 2 | Middle | Dead | LinStatic | -3.651 | 10.866 | -8.6339 | 31.764 | 13.0076 |
| CSA1 | Span 2 | Middle | Live | LinStatic | -1.709 | -5.231 | -4.0271 | 15.1866 | 6.1735 |
| CSA1 | Span 2 | Middle | Sc | LinStatic | -0.57 | 1.744 | 1.3424 | 5.0622 | 2.0578 |
| CSA1 | Span 2 | Middle | Comb1 | Combination | -7.801 | 23.501 | 18.4149 | 68.49 | 27.9561 |
| CSA1 | Span 2 | End | Dead | LinStatic | -6.001 | 25.604 | -6.4024 | -29.6087 | -111.6483 |
| CSA1 | Span 2 | End | Live | LinStatic | -2.812 | 11.766 | -2.942 | -14.3215 | -52.3989 |
| CSA1 | Span 2 | End | Sc | LinStatic | -0.937 | 3.922 | -0.9807 | -4.7738 | -17.4663 |
| CSA1 | Span 2 | End | Comb1 | Combination | -12.825 | 54.256 | -13.5669 | -64.1734 | -238.7758 |
| CSA1 | Span 3 | Start | Dead | LinStatic | -8.216 | -27.726 | -10.9257 | -33.3522 | -126.8821 |
| CSA1 | Span 3 | Start | Live | LinStatic | -3.852 | -12.763 | -5.2449 | -16.0762 | -59.5569 |
| CSA1 | Span 3 | Start | Sc | LinStatic | -1.284 | -4.254 | -1.7483 | -5.3587 | -19.8523 |
| CSA1 | Span 3 | Start | Comb1 | Combination | -17.564 | -58.796 | -23.6006 | -72.175 | -271.3723 |
| CSA1 | Span 3 | Middle | Dead | LinStatic | -7.859 | -12.987 | 10.5857 | 50.6315 | 18.2753 |
| CSA1 | Span 3 | Middle | Live | LinStatic | -3.677 | -6.228 | 4.9404 | 24.0573 | 8.6552 |
| CSA1 | Span 3 | Middle | Sc | LinStatic | -1.226 | -2.076 | 1.6468 | 8.0191 | 2.8851 |
| CSA1 | Span 3 | Middle | Comb1 | Combination | -16.785 | -28.04 | 22.5837 | 108.8725 | 39.2408 |
| CSA1 | Span 3 | End | Dead | LinStatic | -10.59 | 21.857 | 18.5036 | 2.4357 | -72.0084 |
| CSA1 | Span 3 | End | Live | LinStatic | -4.954 | 9.972 | 8.9655 | 0.6974 | -33.8933 |
| CSA1 | Span 3 | End | Sc | LinStatic | -1.651 | 3.324 | 2.9885 | 0.2325 | -11.2978 |
| CSA1 | Span 3 | End | Comb1 | Combination | -22.616 | 46.173 | 40.1354 | 4.3175 | -154.1967 |
| MSA1 | Span 1 | Start | Dead | LinStatic | -4.708 | -7.066 | -8.0944 | 54.7111 | 3.0819 |
| MSA1 | Span 1 | Start | Live | LinStatic | -2.206 | -3.385 | -3.8098 | 25.8455 | 1.4084 |
| MSA1 | Span 1 | Start | Sc | LinStatic | -0.735 | -1.128 | -1.2699 | 8.6152 | 0.4695 |
| MSA1 | Span 1 | Start | Comb1 | Combination | -10.062 | -15.25 | -17.3328 | 117.3443 | 6.515 |
| MSA1 | Span 1 | Middle | Dead | LinStatic | -9.623 | 9.259 | 6.3341 | 74.5513 | 18.1268 |
| MSA1 | Span 1 | Middle | Live | LinStatic | -4.509 | 4.43 | 2.985 | 35.4811 | 8.5887 |
| MSA1 | Span 1 | Middle | Sc | LinStatic | -1.503 | 1.477 | 0.995 | 11.827 | 2.8629 |
| MSA1 | Span 1 | Middle | Comb1 | Combination | -20.566 | 19.97 | 13.571 | 160.4238 | 38.9296 |
| MSA1 | Span 1 | End | Dead | LinStatic | -8.494 | 9.259 | 6.3325 | 17.7788 | -35.6997 |
| MSA1 | Span 1 | End | Live | LinStatic | -3.979 | 4.43 | 2.9842 | 8.4225 | -17.0861 |
| MSA1 | Span 1 | End | Sc | LinStatic | -1.326 | 1.477 | 0.9947 | 2.8075 | -5.6954 |
| MSA1 | Span 1 | End | Comb1 | Combination | -18.151 | 19.97 | 13.5675 | 38.1795 | -77.0117 |
| MSA1 | Span 2 | Start | Dead | LinStatic | -8.026 | -7.113 | -2.7473 | 6.1109 | -35.6058 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA1 | Span 2 | Start | Live | LinStatic | -3.76 | -3.419 | -1.2909 | 2.9289 | -17.0419 |
| MSA1 | Span 2 | Start | Sc | LinStatic | -1.253 | -1.14 | -0.4303 | 0.9763 | -5.6806 |
| MSA1 | Span 2 | Start | Comb1 | Combination | -17.151 | -15.374 | -5.8787 | 13.191 | -76.8108 |
| MSA1 | Span 2 | Middle | Dead | LinStatic | -9.325 | -7.113 | 2.7504 | 41.6006 | 6.3809 |
| MSA1 | Span 2 | Middle | Live | LinStatic | -4.369 | -3.419 | 1.2924 | 19.9683 | 3.0585 |
| MSA1 | Span 2 | Middle | Sc | LinStatic | -1.456 | 1.14 | -0.4308 | 6.6561 | 1.0195 |
| MSA1 | Span 2 | Middle | Comb1 | Combination | -19.928 | 15.374 | -5.8853 | 89.8574 | 13.774 |
| MSA1 | Span 2 | End | Dead | LinStatic | -8.026 | 7.113 | 2.7473 | 6.1109 | -35.6058 |
| MSA1 | Span 2 | End | Live | LinStatic | -3.76 | 3.419 | 1.2909 | 2.9289 | -17.0419 |
| MSA1 | Span 2 | End | Sc | LinStatic | -1.253 | 1.14 | 0.4303 | 0.9763 | -5.6806 |
| MSA1 | Span 2 | End | Comb1 | Combination | -17.151 | 15.374 | 5.8787 | 13.191 | -76.8108 |
| MSA1 | Span 3 | Start | Dead | LinStatic | -8.494 | -9.259 | -6.3325 | 17.7788 | -35.6997 |
| MSA1 | Span 3 | Start | Live | LinStatic | -3.979 | -4.43 | -2.9842 | 8.4225 | -17.0861 |
| MSA1 | Span 3 | Start | Sc | LinStatic | -1.326 | -1.477 | -0.9947 | 2.8075 | -5.6954 |
| MSA1 | Span 3 | Start | Comb1 | Combination | -18.151 | -19.97 | -13.5675 | 38.1795 | -77.0117 |
| MSA1 | Span 3 | Middle | Dead | LinStatic | -9.623 | -9.259 | -6.3341 | 74.5513 | 18.1268 |
| MSA1 | Span 3 | Middle | Live | LinStatic | -4.509 | -4.43 | -2.985 | 35.4811 | 8.5887 |
| MSA1 | Span 3 | Middle | Sc | LinStatic | -1.503 | -1.477 | -0.995 | 11.827 | 2.8629 |
| MSA1 | Span 3 | Middle | Comb1 | Combination | -20.566 | -19.97 | -13.571 | 160.4238 | 38.9296 |
| MSA1 | Span 3 | End | Dead | LinStatic | -4.708 | 7.066 | 8.0944 | 54.7111 | 3.0819 |
| MSA1 | Span 3 | End | Live | LinStatic | -2.206 | 3.385 | 3.8098 | 25.8455 | 1.4084 |
| MSA1 | Span 3 | End | Sc | LinStatic | -0.735 | 1.128 | 1.2699 | 8.6152 | 0.4695 |
| MSA1 | Span 3 | End | Comb1 | Combination | -10.062 | 15.25 | 17.3328 | 117.3443 | 6.515 |
| CSA2 | Span 1 | Start | Dead | LinStatic | -18.44 | -48.478 | -2.323 | 59.6761 | -108.0118 |
| CSA2 | Span 1 | Start | Live | LinStatic | -8.654 | -22.291 | -1.0862 | 27.2546 | -51.1036 |
| CSA2 | Span 1 | Start | Sc | LinStatic | -2.885 | -7.43 | -0.3621 | 9.0849 | -17.0345 |
| CSA2 | Span 1 | Start | Comb1 | Combination | -39.437 | -102.755 | -4.96 | 126.1205 | -231.8214 |
| CSA2 | Span 1 | Middle | Dead | LinStatic | -18.864 | 39.153 | 5.2469 | 179.8072 | 56.0888 |
| CSA2 | Span 1 | Middle | Live | LinStatic | -8.85 | 18.711 | 2.4731 | 85.464 | 26.6546 |
| CSA2 | Span 1 | Middle | Sc | LinStatic | -2.95 | 6.237 | 0.8244 | 28.488 | 8.8849 |
| CSA2 | Span 1 | Middle | Comb1 | Combination | -40.336 | 84.405 | 11.2426 | 386.6965 | 120.6157 |
| CSA2 | Span 1 | End | Dead | LinStatic | -18.46 | 66.829 | 4.9698 | -98.2653 | -339.6658 |
| CSA2 | Span 1 | End | Live | LinStatic | -8.658 | 31.011 | 2.343 | -47.1164 | -160.1692 |
| CSA2 | Span 1 | End | Sc | LinStatic | -2.886 | 10.337 | 0.781 | -15.7055 | -53.3897 |
| CSA2 | Span 1 | End | Comb1 | Combination | -39.467 | 142.217 | 10.6498 | -212.1512 | -727.9373 |
| CSA2 | Span 2 | Start | Dead | LinStatic | -15.127 | -60.414 | 4.5745 | -101.4106 | -313.4719 |
| CSA2 | Span 2 | Start | Live | LinStatic | -7.089 | -27.991 | 2.1587 | -48.599 | -147.8386 |
| CSA2 | Span 2 | Start | Sc | LinStatic | -2.363 | -9.33 | 0.7196 | -16.1997 | -49.2796 |
| CSA2 | Span 2 | Start | Comb1 | Combination | -32.331 | -128.479 | 9.8067 | -218.8908 | -671.8437 |
| CSA2 | Span 2 | Middle | Dead | LinStatic | -15.318 | -31.811 | -0.3063 | 87.6649 | 24.3521 |
| CSA2 | Span 2 | Middle | Live | LinStatic | -7.174 | 15.254 | -0.1485 | 42.079 | 11.7108 |
| CSA2 | Span 2 | Middle | Sc | LinStatic | -2.391 | -5.085 | -0.0495 | 14.0263 | 3.9036 |
| CSA2 | Span 2 | Middle | Comb1 | Combination | -32.73 | -68.681 | -0.6647 | 189.3559 | 52.6441 |
| CSA2 | Span 2 | End | Dead | LinStatic | -15.127 | 60.414 | -4.5745 | -101.4106 | -313.4719 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA2 | Span 2 | End | Live | LinStatic | -7.089 | 27.991 | -2.1587 | -48.599 | -147.8386 |
| CSA2 | Span 2 | End | Sc | LinStatic | -2.363 | 9.33 | -0.7196 | -16.1997 | -49.2796 |
| CSA2 | Span 2 | End | Comb1 | Combination | -32.331 | 128.479 | -9.8067 | -218.8908 | -671.8436 |
| CSA2 | Span 3 | Start | Dead | LinStatic | -18.46 | -66.829 | -4.9698 | -98.2653 | -339.6658 |
| CSA2 | Span 3 | Start | Live | LinStatic | -8.658 | -31.011 | -2.343 | -47.1164 | -160.1692 |
| CSA2 | Span 3 | Start | Sc | LinStatic | -2.886 | -10.337 | -0.781 | -15.7055 | -53.3897 |
| CSA2 | Span 3 | Start | Comb1 | Combination | -39.467 | -142.217 | -10.6498 | -212.1512 | -727.9373 |
| CSA2 | Span 3 | Middle | Dead | LinStatic | -18.864 | -39.153 | -5.2469 | 179.8072 | 56.0888 |
| CSA2 | Span 3 | Middle | Live | LinStatic | -8.85 | -18.711 | -2.4731 | 85.464 | 26.6546 |
| CSA2 | Span 3 | Middle | Sc | LinStatic | -2.95 | -6.237 | -0.8244 | 28.488 | 8.8849 |
| CSA2 | Span 3 | Middle | Comb1 | Combination | -40.336 | -84.405 | -11.2426 | 386.6965 | 120.6157 |
| CSA2 | Span 3 | End | Dead | LinStatic | -18.44 | 48.478 | 2.323 | 59.6761 | -108.0118 |
| CSA2 | Span 3 | End | Live | LinStatic | -8.654 | 22.291 | 1.0862 | 27.2546 | -51.1036 |
| CSA2 | Span 3 | End | Sc | LinStatic | -2.885 | 7.43 | 0.3621 | 9.0849 | -17.0345 |
| CSA2 | Span 3 | End | Comb1 | Combination | -39.437 | 102.755 | 4.96 | 126.1205 | -231.8214 |
| MSA2 | Span 1 | Start | Dead | LinStatic | -2.652 | -7.305 | -6.51E-07 | 59.301 | 3.7013 |
| MSA2 | Span 1 | Start | Live | LinStatic | -1.244 | -3.455 | 0 | 28.0097 | 1.7036 |
| MSA2 | Span 1 | Start | Sc | LinStatic | -0.415 | -1.152 | 0 | 9.3365 | 0.5679 |
| MSA2 | Span 1 | Start | Comb1 | Combination | -5.671 | -15.676 | -1.2E-06 | 127.1805 | 7.8487 |
| MSA2 | Span 1 | Middle | Dead | LinStatic | -7.681 | 10.981 | 7.324E-07 | 78.2602 | 8.8666 |
| MSA2 | Span 1 | Middle | Live | LinStatic | -3.602 | 5.237 | 0 | 37.1367 | 4.2226 |
| MSA2 | Span 1 | Middle | Sc | LinStatic | -1.201 | 1.746 | 0 | 12.3789 | 1.4075 |
| MSA2 | Span 1 | Middle | Comb1 | Combination | -16.422 | 23.652 | 1.221E-06 | 168.1856 | 19.0852 |
| MSA2 | Span 1 | End | Dead | LinStatic | -7.838 | 10.981 | 0 | 8.4682 | -51.5559 |
| MSA2 | Span 1 | End | Live | LinStatic | -3.675 | 5.237 | 0 | 4.0327 | -24.5413 |
| MSA2 | Span 1 | End | Sc | LinStatic | -1.225 | 1.746 | 0 | 1.3442 | -8.1804 |
| MSA2 | Span 1 | End | Comb1 | Combination | -16.756 | 23.652 | 8.138E-07 | 18.2271 | -110.9498 |
| MSA2 | Span 2 | Start | Dead | LinStatic | -7.82 | -8.016 | 0 | -5.1013 | -51.468 |
| MSA2 | Span 2 | Start | Live | LinStatic | -3.666 | -3.841 | 0 | -2.3559 | -24.5 |
| MSA2 | Span 2 | Start | Sc | LinStatic | -1.222 | -1.28 | 0 | -0.7853 | -8.1667 |
| MSA2 | Span 2 | Start | Comb1 | Combination | -16.717 | -17.301 | 6.714E-07 | -10.8334 | -110.7616 |
| MSA2 | Span 2 | Middle | Dead | LinStatic | -7.416 | -8.016 | 5.9E-07 | 34.0308 | -4.8019 |
| MSA2 | Span 2 | Middle | Live | LinStatic | -3.475 | -3.841 | 0 | 16.3907 | -2.2126 |
| MSA2 | Span 2 | Middle | Sc | LinStatic | -1.158 | -1.28 | 0 | 5.4636 | -0.7375 |
| MSA2 | Span 2 | Middle | Comb1 | Combination | -15.849 | -17.301 | 1.404E-06 | 73.6184 | -10.1875 |
| MSA2 | Span 2 | End | Dead | LinStatic | -7.82 | 8.016 | 0 | -5.1013 | -51.468 |
| MSA2 | Span 2 | End | Live | LinStatic | -3.666 | 3.841 | 0 | -2.3559 | -24.5 |
| MSA2 | Span 2 | End | Sc | LinStatic | -1.222 | 1.28 | 0 | -0.7853 | -8.1667 |
| MSA2 | Span 2 | End | Comb1 | Combination | -16.717 | 17.301 | 1.953E-06 | -10.8334 | -110.7616 |
| MSA2 | Span 3 | Start | Dead | LinStatic | -7.838 | -10.981 | -6.561E-07 | 8.4682 | -51.5559 |
| MSA2 | Span 3 | Start | Live | LinStatic | -3.675 | -5.237 | 0 | 4.0327 | -24.5413 |
| MSA2 | Span 3 | Start | Sc | LinStatic | -1.225 | -1.746 | 0 | 1.3442 | -8.1804 |
| MSA2 | Span 3 | Start | Comb1 | Combination | -16.756 | -23.652 | 9.562E-07 | 18.2271 | -110.9498 |
| MSA2 | Span 3 | Middle | Dead | LinStatic | -7.681 | -10.981 | 0 | 78.2601 | 8.8666 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA2 | Span 3 | Middle | Live | LinStatic | -3.602 | -5.237 | 0 | 37.1367 | 4.2226 |
| MSA2 | Span 3 | Middle | Sc | LinStatic | -1.201 | -1.746 | 0 | 12.3789 | 1.4075 |
| MSA2 | Span 3 | Middle | Comb1 | Combination | -16.422 | -23.652 | -1.099E-06 | 168.1856 | 19.0852 |
| MSA2 | Span 3 | End | Dead | LinStatic | -2.652 | 7.305 | 5.697E-07 | 59.301 | 3.7013 |
| MSA2 | Span 3 | End | Live | LinStatic | -1.244 | 3.455 | 0 | 28.0096 | 1.7036 |
| MSA2 | Span 3 | End | Sc | LinStatic | -0.415 | 1.152 | 0 | 9.3365 | 0.5679 |
| MSA2 | Span 3 | End | Comb1 | Combination | -5.671 | 15.676 | 1.267E-06 | 127.1805 | 7.8487 |
| CSA3 | Span 1 | Start | Dead | LinStatic | -18.44 | -48.478 | 2.323 | 59.6761 | -108.0118 |
| CSA3 | Span 1 | Start | Live | LinStatic | -8.654 | -22.291 | 1.0862 | 27.2546 | -51.1036 |
| CSA3 | Span 1 | Start | Sc | LinStatic | -2.885 | -7.43 | 0.3621 | 9.0849 | -17.0345 |
| CSA3 | Span 1 | Start | Comb1 | Combination | -39.437 | -102.755 | 4.96 | 126.1205 | -231.8214 |
| CSA3 | Span 1 | Middle | Dead | LinStatic | -18.864 | 39.153 | -5.2469 | 179.8072 | 56.0888 |
| CSA3 | Span 1 | Middle | Live | LinStatic | -8.85 | 18.711 | -2.4731 | 85.464 | 26.6546 |
| CSA3 | Span 1 | Middle | Sc | LinStatic | -2.95 | 6.237 | -0.8244 | 28.488 | 8.8849 |
| CSA3 | Span 1 | Middle | Comb1 | Combination | -40.336 | 84.405 | -11.2426 | 386.6966 | 120.6157 |
| CSA3 | Span 1 | End | Dead | LinStatic | -18.46 | 66.829 | -4.9698 | -98.2653 | -339.6659 |
| CSA3 | Span 1 | End | Live | LinStatic | -8.658 | 31.011 | -2.343 | -47.1164 | -160.1692 |
| CSA3 | Span 1 | End | Sc | LinStatic | -2.886 | 10.337 | -0.781 | -15.7055 | -53.3897 |
| CSA3 | Span 1 | End | Comb1 | Combination | -39.467 | 142.217 | -10.6498 | -212.1511 | -727.9373 |
| CSA3 | Span 2 | Start | Dead | LinStatic | -15.127 | -60.414 | -4.5745 | -101.4106 | -313.472 |
| CSA3 | Span 2 | Start | Live | LinStatic | -7.089 | -27.991 | -2.1587 | -48.599 | -147.8387 |
| CSA3 | Span 2 | Start | Sc | LinStatic | -2.363 | -9.33 | -0.7196 | -16.1997 | -49.2796 |
| CSA3 | Span 2 | Start | Comb1 | Combination | -32.331 | -128.479 | -9.8067 | -218.8909 | -671.8438 |
| CSA3 | Span 2 | Middle | Dead | LinStatic | -15.318 | -31.811 | 0.3063 | 87.6649 | 24.3521 |
| CSA3 | Span 2 | Middle | Live | LinStatic | -7.174 | 15.254 | 0.1485 | 42.079 | 11.7108 |
| CSA3 | Span 2 | Middle | Sc | LinStatic | -2.391 | -5.085 | 0.0495 | 14.0263 | 3.9036 |
| CSA3 | Span 2 | Middle | Comb1 | Combination | -32.73 | -68.681 | 0.6647 | 189.3559 | 52.6441 |
| CSA3 | Span 2 | End | Dead | LinStatic | -15.127 | 60.414 | 4.5745 | -101.4106 | -313.472 |
| CSA3 | Span 2 | End | Live | LinStatic | -7.089 | 27.991 | 2.1587 | -48.599 | -147.8387 |
| CSA3 | Span 2 | End | Sc | LinStatic | -2.363 | 9.33 | 0.7196 | -16.1997 | -49.2796 |
| CSA3 | Span 2 | End | Comb1 | Combination | -32.331 | 128.479 | 9.8067 | -218.8908 | -671.8438 |
| CSA3 | Span 3 | Start | Dead | LinStatic | -18.46 | -66.829 | 4.9698 | -98.2653 | -339.6658 |
| CSA3 | Span 3 | Start | Live | LinStatic | -8.658 | -31.011 | 2.343 | -47.1164 | -160.1692 |
| CSA3 | Span 3 | Start | Sc | LinStatic | -2.886 | -10.337 | 0.781 | -15.7055 | -53.3897 |
| CSA3 | Span 3 | Start | Comb1 | Combination | -39.467 | -142.217 | 10.6498 | -212.1511 | -727.9373 |
| CSA3 | Span 3 | Middle | Dead | LinStatic | -18.864 | -39.153 | 5.2469 | 179.8072 | 56.0888 |
| CSA3 | Span 3 | Middle | Live | LinStatic | -8.85 | -18.711 | 2.4731 | 85.464 | 26.6546 |
| CSA3 | Span 3 | Middle | Sc | LinStatic | -2.95 | -6.237 | 0.8244 | 28.488 | 8.8849 |
| CSA3 | Span 3 | Middle | Comb1 | Combination | -40.336 | -84.405 | 11.2426 | 386.6965 | 120.6157 |
| CSA3 | Span 3 | End | Dead | LinStatic | -18.44 | 48.478 | -2.323 | 59.6761 | -108.0118 |
| CSA3 | Span 3 | End | Live | LinStatic | -8.654 | 22.291 | -1.0862 | 27.2546 | -51.1036 |
| CSA3 | Span 3 | End | Sc | LinStatic | -2.885 | 7.43 | -0.3621 | 9.0849 | -17.0345 |
| CSA3 | Span 3 | End | Comb1 | Combination | -39.437 | 102.755 | -4.96 | 126.1205 | -231.8214 |
| MSA3 | Span 1 | Start | Dead | LinStatic | -4.708 | -7.066 | 8.0944 | 54.7111 | 3.0819 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA3 | Span 1 | Start | Live | LinStatic | -2.206 | -3.385 | 3.8098 | 25.8455 | 1.4084 |
| MSA3 | Span 1 | Start | Sc | LinStatic | -0.735 | -1.128 | 1.2699 | 8.6152 | 0.4695 |
| MSA3 | Span 1 | Start | Comb1 | Combination | -10.062 | -15.25 | 17.3328 | 117.3443 | 6.515 |
| MSA3 | Span 1 | Middle | Dead | LinStatic | -9.623 | 9.259 | -6.3341 | 74.5513 | 18.1268 |
| MSA3 | Span 1 | Middle | Live | LinStatic | -4.509 | 4.43 | -2.985 | 35.4811 | 8.5887 |
| MSA3 | Span 1 | Middle | Sc | LinStatic | -1.503 | 1.477 | -0.995 | 11.827 | 2.8629 |
| MSA3 | Span 1 | Middle | Comb1 | Combination | -20.566 | 19.97 | -13.571 | 160.4238 | 38.9296 |
| MSA3 | Span 1 | End | Dead | LinStatic | -8.494 | 9.259 | -6.3325 | 17.7788 | -35.6997 |
| MSA3 | Span 1 | End | Live | LinStatic | -3.979 | 4.43 | -2.9842 | 8.4225 | -17.0861 |
| MSA3 | Span 1 | End | Sc | LinStatic | -1.326 | 1.477 | -0.9947 | 2.8075 | -5.6954 |
| MSA3 | Span 1 | End | Comb1 | Combination | -18.151 | 19.97 | -13.5675 | 38.1795 | -77.0117 |
| MSA3 | Span 2 | Start | Dead | LinStatic | -8.026 | -7.113 | 2.7473 | 6.1109 | -35.6058 |
| MSA3 | Span 2 | Start | Live | LinStatic | -3.76 | -3.419 | 1.2909 | 2.9289 | -17.0419 |
| MSA3 | Span 2 | Start | Sc | LinStatic | -1.253 | -1.14 | 0.4303 | 0.9763 | -5.6806 |
| MSA3 | Span 2 | Start | Comb1 | Combination | -17.151 | -15.374 | 5.8787 | 13.191 | -76.8108 |
| MSA3 | Span 2 | Middle | Dead | LinStatic | -9.325 | -7.113 | -2.7504 | 41.6006 | 6.3809 |
| MSA3 | Span 2 | Middle | Live | LinStatic | -4.369 | -3.419 | -1.2924 | 19.9683 | 3.0585 |
| MSA3 | Span 2 | Middle | Sc | LinStatic | -1.456 | -1.14 | 0.4308 | 6.6561 | 1.0195 |
| MSA3 | Span 2 | Middle | Comb1 | Combination | -19.928 | -15.374 | 5.8853 | 89.8574 | 13.774 |
| MSA3 | Span 2 | End | Dead | LinStatic | -8.026 | 7.113 | -2.7473 | 6.1109 | -35.6058 |
| MSA3 | Span 2 | End | Live | LinStatic | -3.76 | 3.419 | -1.2909 | 2.9289 | -17.0419 |
| MSA3 | Span 2 | End | Sc | LinStatic | -1.253 | 1.14 | -0.4303 | 0.9763 | -5.6806 |
| MSA3 | Span 2 | End | Comb1 | Combination | -17.151 | 15.374 | -5.8787 | 13.191 | -76.8108 |
| MSA3 | Span 3 | Start | Dead | LinStatic | -8.494 | -9.259 | 6.3325 | 17.7788 | -35.6997 |
| MSA3 | Span 3 | Start | Live | LinStatic | -3.979 | -4.43 | 2.9842 | 8.4225 | -17.0861 |
| MSA3 | Span 3 | Start | Sc | LinStatic | -1.326 | -1.477 | 0.9947 | 2.8075 | -5.6954 |
| MSA3 | Span 3 | Start | Comb1 | Combination | -18.151 | -19.97 | 13.5675 | 38.1795 | -77.0117 |
| MSA3 | Span 3 | Middle | Dead | LinStatic | -9.623 | -9.259 | 6.3341 | 74.5513 | 18.1268 |
| MSA3 | Span 3 | Middle | Live | LinStatic | -4.509 | -4.43 | 2.985 | 35.4811 | 8.5887 |
| MSA3 | Span 3 | Middle | Sc | LinStatic | -1.503 | -1.477 | 0.995 | 11.827 | 2.8629 |
| MSA3 | Span 3 | Middle | Comb1 | Combination | -20.566 | -19.97 | 13.571 | 160.4238 | 38.9296 |
| MSA3 | Span 3 | End | Dead | LinStatic | -4.708 | 7.066 | -8.0944 | 54.7111 | 3.0819 |
| MSA3 | Span 3 | End | Live | LinStatic | -2.206 | 3.385 | -3.8098 | 25.8455 | 1.4084 |
| MSA3 | Span 3 | End | Sc | LinStatic | -0.735 | 1.128 | -1.2699 | 8.6152 | 0.4695 |
| MSA3 | Span 3 | End | Comb1 | Combination | -10.062 | 15.25 | -17.3328 | 117.3443 | 6.515 |
| CSA4 | Span 1 | Start | Dead | LinStatic | -10.59 | -21.857 | 18.5036 | 2.4357 | -72.0084 |
| CSA4 | Span 1 | Start | Live | LinStatic | -4.954 | -9.972 | 8.9655 | 0.6974 | -33.8933 |
| CSA4 | Span 1 | Start | Sc | LinStatic | -1.651 | -3.324 | 2.9885 | 0.2325 | -11.2978 |
| CSA4 | Span 1 | Start | Comb1 | Combination | -22.616 | -46.173 | 40.1354 | 4.3175 | -154.1967 |
| CSA4 | Span 1 | Middle | Dead | LinStatic | -7.859 | 12.987 | 10.5857 | 50.6315 | 18.2753 |
| CSA4 | Span 1 | Middle | Live | LinStatic | -3.677 | 6.228 | 4.9404 | 24.0573 | 8.6552 |
| CSA4 | Span 1 | Middle | Sc | LinStatic | -1.226 | 2.076 | 1.6468 | 8.0191 | 2.8851 |
| CSA4 | Span 1 | Middle | Comb1 | Combination | -16.785 | 28.04 | 22.5837 | 108.8725 | 39.2408 |
| CSA4 | Span 1 | End | Dead | LinStatic | -8.216 | 27.726 | -10.9257 | -33.3522 | -126.8821 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA4 | Span 1 | End | Live | LinStatic | -3.852 | 12.763 | -5.2449 | -16.0762 | -59.5569 |
| CSA4 | Span 1 | End | Sc | LinStatic | -1.284 | 4.254 | -1.7483 | -5.3587 | -19.8523 |
| CSA4 | Span 1 | End | Comb1 | Combination | -17.564 | 58.796 | -23.6006 | -72.175 | -271.3723 |
| CSA4 | Span 2 | Start | Dead | LinStatic | -6.001 | -25.604 | -6.4024 | -29.6087 | -111.6483 |
| CSA4 | Span 2 | Start | Live | LinStatic | -2.812 | -11.766 | -2.942 | -14.3215 | -52.399 |
| CSA4 | Span 2 | Start | Sc | LinStatic | -0.937 | -3.922 | -0.9807 | -4.7738 | -17.4663 |
| CSA4 | Span 2 | Start | Comb1 | Combination | -12.825 | -54.256 | -13.5669 | -64.1734 | -238.7759 |
| CSA4 | Span 2 | Middle | Dead | LinStatic | -3.651 | -10.866 | -8.6339 | 31.764 | 13.0076 |
| CSA4 | Span 2 | Middle | Live | LinStatic | -1.709 | -5.231 | -4.0271 | 15.1866 | 6.1735 |
| CSA4 | Span 2 | Middle | Sc | LinStatic | -0.57 | 1.744 | 1.3424 | 5.0622 | 2.0578 |
| CSA4 | Span 2 | Middle | Comb1 | Combination | -7.801 | 23.501 | 18.4149 | 68.49 | 27.9561 |
| CSA4 | Span 2 | End | Dead | LinStatic | -6.001 | 25.604 | 6.4024 | -29.6087 | -111.6483 |
| CSA4 | Span 2 | End | Live | LinStatic | -2.812 | 11.766 | 2.942 | -14.3215 | -52.399 |
| CSA4 | Span 2 | End | Sc | LinStatic | -0.937 | 3.922 | 0.9807 | -4.7738 | -17.4663 |
| CSA4 | Span 2 | End | Comb1 | Combination | -12.825 | 54.256 | 13.5669 | -64.1734 | -238.7759 |
| CSA4 | Span 3 | Start | Dead | LinStatic | -8.216 | -27.726 | 10.9257 | -33.3522 | -126.8821 |
| CSA4 | Span 3 | Start | Live | LinStatic | -3.852 | -12.763 | 5.2449 | -16.0762 | -59.5569 |
| CSA4 | Span 3 | Start | Sc | LinStatic | -1.284 | -4.254 | 1.7483 | -5.3587 | -19.8523 |
| CSA4 | Span 3 | Start | Comb1 | Combination | -17.564 | -58.796 | 23.6006 | -72.175 | -271.3723 |
| CSA4 | Span 3 | Middle | Dead | LinStatic | -7.859 | -12.987 | -10.5857 | 50.6315 | 18.2753 |
| CSA4 | Span 3 | Middle | Live | LinStatic | -3.677 | -6.228 | -4.9404 | 24.0573 | 8.6552 |
| CSA4 | Span 3 | Middle | Sc | LinStatic | -1.226 | -2.076 | -1.6468 | 8.0191 | 2.8851 |
| CSA4 | Span 3 | Middle | Comb1 | Combination | -16.785 | -28.04 | -22.5837 | 108.8725 | 39.2408 |
| CSA4 | Span 3 | End | Dead | LinStatic | -10.59 | 21.857 | -18.5036 | 2.4357 | -72.0084 |
| CSA4 | Span 3 | End | Live | LinStatic | -4.954 | 9.972 | -8.9655 | 0.6974 | -33.8933 |
| CSA4 | Span 3 | End | Sc | LinStatic | -1.651 | 3.324 | -2.9885 | 0.2325 | -11.2978 |
| CSA4 | Span 3 | End | Comb1 | Combination | -22.616 | 46.173 | -40.1354 | 4.3175 | -154.1967 |
| CSB1 | Span 1 | Start | Dead | LinStatic | -10.59 | -21.857 | 18.5036 | 2.4357 | -72.0084 |
| CSB1 | Span 1 | Start | Live | LinStatic | -4.954 | -9.972 | 8.9655 | 0.6974 | -33.8933 |
| CSB1 | Span 1 | Start | Sc | LinStatic | -1.651 | -3.324 | 2.9885 | 0.2325 | -11.2978 |
| CSB1 | Span 1 | Start | Comb1 | Combination | -22.616 | -46.173 | 40.1354 | 4.3175 | -154.1967 |
| CSB1 | Span 1 | Middle | Dead | LinStatic | -7.859 | 12.987 | 10.5857 | 50.6316 | 18.2753 |
| CSB1 | Span 1 | Middle | Live | LinStatic | -3.677 | 6.228 | 4.9404 | 24.0573 | 8.6552 |
| CSB1 | Span 1 | Middle | Sc | LinStatic | -1.226 | 2.076 | 1.6468 | 8.0191 | 2.8851 |
| CSB1 | Span 1 | Middle | Comb1 | Combination | -16.785 | 28.04 | 22.5837 | 108.8725 | 39.2408 |
| CSB1 | Span 1 | End | Dead | LinStatic | -8.216 | 27.726 | -10.9257 | -33.3522 | -126.8821 |
| CSB1 | Span 1 | End | Live | LinStatic | -3.852 | 12.763 | -5.2449 | -16.0762 | -59.5569 |
| CSB1 | Span 1 | End | Sc | LinStatic | -1.284 | 4.254 | -1.7483 | -5.3587 | -19.8523 |
| CSB1 | Span 1 | End | Comb1 | Combination | -17.564 | 58.796 | -23.6006 | -72.175 | -271.3723 |
| CSB1 | Span 2 | Start | Dead | LinStatic | -6.001 | -25.604 | -6.4024 | -29.6087 | -111.6483 |
| CSB1 | Span 2 | Start | Live | LinStatic | -2.812 | -11.766 | -2.942 | -14.3215 | -52.399 |
| CSB1 | Span 2 | Start | Sc | LinStatic | -0.937 | -3.922 | -0.9807 | -4.7738 | -17.4663 |
| CSB1 | Span 2 | Start | Comb1 | Combination | -12.825 | -54.256 | -13.5669 | -64.1734 | -238.7759 |
| CSB1 | Span 2 | Middle | Dead | LinStatic | -3.651 | -10.866 | -8.6339 | 31.764 | 13.0076 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB1 | Span 2 | Middle | Live | LinStatic | -1.709 | 5.231 | 4.0271 | 15.1866 | 6.1735 |
| CSB1 | Span 2 | Middle | Sc | LinStatic | -0.57 | 1.744 | 1.3424 | 5.0622 | 2.0578 |
| CSB1 | Span 2 | Middle | Comb1 | Combination | -7.801 | 23.501 | 18.4149 | 68.49 | 27.9561 |
| CSB1 | Span 2 | End | Dead | LinStatic | -6.001 | 25.604 | 6.4024 | -29.6087 | -111.6483 |
| CSB1 | Span 2 | End | Live | LinStatic | -2.812 | 11.766 | 2.942 | -14.3215 | -52.399 |
| CSB1 | Span 2 | End | Sc | LinStatic | -0.937 | 3.922 | 0.9807 | -4.7738 | -17.4663 |
| CSB1 | Span 2 | End | Comb1 | Combination | -12.825 | 54.256 | 13.5669 | -64.1734 | -238.7758 |
| CSB1 | Span 3 | Start | Dead | LinStatic | -8.216 | -27.726 | 10.9257 | -33.3522 | -126.8821 |
| CSB1 | Span 3 | Start | Live | LinStatic | -3.852 | -12.763 | 5.2449 | -16.0762 | -59.5569 |
| CSB1 | Span 3 | Start | Sc | LinStatic | -1.284 | -4.254 | 1.7483 | -5.3587 | -19.8523 |
| CSB1 | Span 3 | Start | Comb1 | Combination | -17.564 | -58.796 | 23.6006 | -72.175 | -271.3723 |
| CSB1 | Span 3 | Middle | Dead | LinStatic | -7.859 | -12.987 | -10.5857 | 50.6316 | 18.2753 |
| CSB1 | Span 3 | Middle | Live | LinStatic | -3.677 | -6.228 | -4.9404 | 24.0573 | 8.6552 |
| CSB1 | Span 3 | Middle | Sc | LinStatic | -1.226 | -2.076 | -1.6468 | 8.0191 | 2.8851 |
| CSB1 | Span 3 | Middle | Comb1 | Combination | -16.785 | -28.04 | -22.5837 | 108.8725 | 39.2408 |
| CSB1 | Span 3 | End | Dead | LinStatic | -10.59 | 21.857 | -18.5036 | 2.4357 | -72.0084 |
| CSB1 | Span 3 | End | Live | LinStatic | -4.954 | 9.972 | -8.9655 | 0.6974 | -33.8933 |
| CSB1 | Span 3 | End | Sc | LinStatic | -1.651 | 3.324 | -2.9885 | 0.2325 | -11.2978 |
| CSB1 | Span 3 | End | Comb1 | Combination | -22.616 | 46.173 | -40.1354 | 4.3175 | -154.1967 |
| MSB1 | Span 1 | Start | Dead | LinStatic | -4.708 | -7.066 | 8.0944 | 54.7111 | 3.0819 |
| MSB1 | Span 1 | Start | Live | LinStatic | -2.206 | -3.385 | 3.8098 | 25.8455 | 1.4084 |
| MSB1 | Span 1 | Start | Sc | LinStatic | -0.735 | -1.128 | 1.2699 | 8.6152 | 0.4695 |
| MSB1 | Span 1 | Start | Comb1 | Combination | -10.062 | -15.25 | 17.3328 | 117.3442 | 6.515 |
| MSB1 | Span 1 | Middle | Dead | LinStatic | -9.623 | 9.259 | -6.3341 | 74.5513 | 18.1268 |
| MSB1 | Span 1 | Middle | Live | LinStatic | -4.509 | 4.43 | -2.985 | 35.4811 | 8.5887 |
| MSB1 | Span 1 | Middle | Sc | LinStatic | -1.503 | 1.477 | -0.995 | 11.827 | 2.8629 |
| MSB1 | Span 1 | Middle | Comb1 | Combination | -20.566 | 19.97 | -13.571 | 160.4238 | 38.9296 |
| MSB1 | Span 1 | End | Dead | LinStatic | -8.494 | 9.259 | -6.3325 | 17.7788 | -35.6997 |
| MSB1 | Span 1 | End | Live | LinStatic | -3.979 | 4.43 | -2.9842 | 8.4225 | -17.0861 |
| MSB1 | Span 1 | End | Sc | LinStatic | -1.326 | 1.477 | -0.9947 | 2.8075 | -5.6954 |
| MSB1 | Span 1 | End | Comb1 | Combination | -18.151 | 19.97 | -13.5675 | 38.1795 | -77.0117 |
| MSB1 | Span 2 | Start | Dead | LinStatic | -8.026 | -7.113 | 2.7473 | 6.1109 | -35.6058 |
| MSB1 | Span 2 | Start | Live | LinStatic | -3.76 | -3.419 | 1.2909 | 2.9289 | -17.0419 |
| MSB1 | Span 2 | Start | Sc | LinStatic | -1.253 | -1.14 | 0.4303 | 0.9763 | -5.6806 |
| MSB1 | Span 2 | Start | Comb1 | Combination | -17.151 | -15.374 | 5.8787 | 13.191 | -76.8108 |
| MSB1 | Span 2 | Middle | Dead | LinStatic | -9.325 | -7.113 | 2.7504 | 41.6006 | 6.3809 |
| MSB1 | Span 2 | Middle | Live | LinStatic | -4.369 | 3.419 | 1.2924 | 19.9683 | 3.0585 |
| MSB1 | Span 2 | Middle | Sc | LinStatic | -1.456 | -1.14 | -0.4308 | 6.6561 | 1.0195 |
| MSB1 | Span 2 | Middle | Comb1 | Combination | -19.928 | 15.374 | 5.8853 | 89.8574 | 13.774 |
| MSB1 | Span 2 | End | Dead | LinStatic | -8.026 | 7.113 | -2.7473 | 6.1109 | -35.6058 |
| MSB1 | Span 2 | End | Live | LinStatic | -3.76 | 3.419 | -1.2909 | 2.9289 | -17.0419 |
| MSB1 | Span 2 | End | Sc | LinStatic | -1.253 | 1.14 | -0.4303 | 0.9763 | -5.6806 |
| MSB1 | Span 2 | End | Comb1 | Combination | -17.151 | 15.374 | -5.8787 | 13.191 | -76.8108 |
| MSB1 | Span 3 | Start | Dead | LinStatic | -8.494 | -9.259 | 6.3325 | 17.7788 | -35.6997 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB1 | Span 3 | Start | Live | LinStatic | -3.979 | -4.43 | 2.9842 | 8.4225 | -17.0861 |
| MSB1 | Span 3 | Start | Sc | LinStatic | -1.326 | -1.477 | 0.9947 | 2.8075 | -5.6954 |
| MSB1 | Span 3 | Start | Comb1 | Combination | -18.151 | -19.97 | 13.5675 | 38.1795 | -77.0117 |
| MSB1 | Span 3 | Middle | Dead | LinStatic | -9.623 | -9.259 | 6.3341 | 74.5513 | 18.1268 |
| MSB1 | Span 3 | Middle | Live | LinStatic | -4.509 | -4.43 | 2.985 | 35.4811 | 8.5887 |
| MSB1 | Span 3 | Middle | Sc | LinStatic | -1.503 | -1.477 | 0.995 | 11.827 | 2.8629 |
| MSB1 | Span 3 | Middle | Comb1 | Combination | -20.566 | -19.97 | 13.571 | 160.4238 | 38.9296 |
| MSB1 | Span 3 | End | Dead | LinStatic | -4.708 | 7.066 | -8.0944 | 54.7111 | 3.0819 |
| MSB1 | Span 3 | End | Live | LinStatic | -2.206 | 3.385 | -3.8098 | 25.8455 | 1.4084 |
| MSB1 | Span 3 | End | Sc | LinStatic | -0.735 | 1.128 | -1.2699 | 8.6152 | 0.4695 |
| MSB1 | Span 3 | End | Comb1 | Combination | -10.062 | 15.25 | -17.3328 | 117.3443 | 6.515 |
| CSB2 | Span 1 | Start | Dead | LinStatic | -18.44 | -48.478 | 2.323 | 59.6761 | -108.0118 |
| CSB2 | Span 1 | Start | Live | LinStatic | -8.654 | -22.291 | 1.0862 | 27.2546 | -51.1036 |
| CSB2 | Span 1 | Start | Sc | LinStatic | -2.885 | -7.43 | 0.3621 | 9.0849 | -17.0345 |
| CSB2 | Span 1 | Start | Comb1 | Combination | -39.437 | -102.755 | 4.96 | 126.1205 | -231.8214 |
| CSB2 | Span 1 | Middle | Dead | LinStatic | -18.864 | 39.153 | -5.2469 | 179.8072 | 56.0887 |
| CSB2 | Span 1 | Middle | Live | LinStatic | -8.85 | 18.711 | -2.4731 | 85.464 | 26.6546 |
| CSB2 | Span 1 | Middle | Sc | LinStatic | -2.95 | 6.237 | -0.8244 | 28.488 | 8.8849 |
| CSB2 | Span 1 | Middle | Comb1 | Combination | -40.336 | 84.405 | -11.2426 | 386.6966 | 120.6157 |
| CSB2 | Span 1 | End | Dead | LinStatic | -18.46 | 66.829 | -4.9698 | -98.2653 | -339.6659 |
| CSB2 | Span 1 | End | Live | LinStatic | -8.658 | 31.011 | -2.343 | -47.1164 | -160.1692 |
| CSB2 | Span 1 | End | Sc | LinStatic | -2.886 | 10.337 | -0.781 | -15.7055 | -53.3897 |
| CSB2 | Span 1 | End | Comb1 | Combination | -39.467 | 142.217 | -10.6498 | -212.1511 | -727.9373 |
| CSB2 | Span 2 | Start | Dead | LinStatic | -15.127 | -60.414 | -4.5745 | -101.4106 | -313.472 |
| CSB2 | Span 2 | Start | Live | LinStatic | -7.089 | -27.991 | -2.1587 | -48.599 | -147.8387 |
| CSB2 | Span 2 | Start | Sc | LinStatic | -2.363 | -9.33 | -0.7196 | -16.1997 | -49.2796 |
| CSB2 | Span 2 | Start | Comb1 | Combination | -32.331 | -128.479 | -9.8067 | -218.8908 | -671.8438 |
| CSB2 | Span 2 | Middle | Dead | LinStatic | -15.318 | 31.811 | -0.3063 | 87.6649 | 24.3521 |
| CSB2 | Span 2 | Middle | Live | LinStatic | -7.174 | -15.254 | 0.1485 | 42.079 | 11.7108 |
| CSB2 | Span 2 | Middle | Sc | LinStatic | -2.391 | -5.085 | 0.0495 | 14.0263 | 3.9036 |
| CSB2 | Span 2 | Middle | Comb1 | Combination | -32.73 | 68.681 | -0.6647 | 189.3559 | 52.6441 |
| CSB2 | Span 2 | End | Dead | LinStatic | -15.127 | 60.414 | 4.5745 | -101.4106 | -313.472 |
| CSB2 | Span 2 | End | Live | LinStatic | -7.089 | 27.991 | 2.1587 | -48.599 | -147.8387 |
| CSB2 | Span 2 | End | Sc | LinStatic | -2.363 | 9.33 | 0.7196 | -16.1997 | -49.2796 |
| CSB2 | Span 2 | End | Comb1 | Combination | -32.331 | 128.479 | 9.8067 | -218.8908 | -671.8438 |
| CSB2 | Span 3 | Start | Dead | LinStatic | -18.46 | -66.829 | 4.9698 | -98.2653 | -339.6659 |
| CSB2 | Span 3 | Start | Live | LinStatic | -8.658 | -31.011 | 2.343 | -47.1164 | -160.1692 |
| CSB2 | Span 3 | Start | Sc | LinStatic | -2.886 | -10.337 | 0.781 | -15.7055 | -53.3897 |
| CSB2 | Span 3 | Start | Comb1 | Combination | -39.467 | -142.217 | 10.6498 | -212.1511 | -727.9373 |
| CSB2 | Span 3 | Middle | Dead | LinStatic | -18.864 | -39.153 | 5.2469 | 179.8072 | 56.0888 |
| CSB2 | Span 3 | Middle | Live | LinStatic | -8.85 | -18.711 | 2.4731 | 85.464 | 26.6546 |
| CSB2 | Span 3 | Middle | Sc | LinStatic | -2.95 | -6.237 | 0.8244 | 28.488 | 8.8849 |
| CSB2 | Span 3 | Middle | Comb1 | Combination | -40.336 | -84.405 | 11.2426 | 386.6965 | 120.6157 |
| CSB2 | Span 3 | End | Dead | LinStatic | -18.44 | 48.478 | -2.323 | 59.6761 | -108.0118 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB2 | Span 3 | End | Live | LinStatic | -8.654 | 22.291 | -1.0862 | 27.2546 | -51.1036 |
| CSB2 | Span 3 | End | Sc | LinStatic | -2.885 | 7.43 | -0.3621 | 9.0849 | -17.0345 |
| CSB2 | Span 3 | End | Comb1 | Combination | -39.437 | 102.755 | -4.96 | 126.1205 | -231.8214 |
| MSB2 | Span 1 | Start | Dead | LinStatic | -2.652 | -7.305 | 0 | 59.301 | 3.7013 |
| MSB2 | Span 1 | Start | Live | LinStatic | -1.244 | -3.455 | 0 | 28.0096 | 1.7036 |
| MSB2 | Span 1 | Start | Sc | LinStatic | -0.415 | -1.152 | 0 | 9.3365 | 0.5679 |
| MSB2 | Span 1 | Start | Comb1 | Combination | -5.671 | -15.676 | 1.099E-06 | 127.1805 | 7.8487 |
| MSB2 | Span 1 | Middle | Dead | LinStatic | -7.681 | 10.981 | -6.51E-07 | 78.2602 | 8.8666 |
| MSB2 | Span 1 | Middle | Live | LinStatic | -3.602 | 5.237 | 0 | 37.1367 | 4.2226 |
| MSB2 | Span 1 | Middle | Sc | LinStatic | -1.201 | 1.746 | 0 | 12.3789 | 1.4075 |
| MSB2 | Span 1 | Middle | Comb1 | Combination | -16.422 | 23.652 | -8.748E-07 | 168.1856 | 19.0852 |
| MSB2 | Span 1 | End | Dead | LinStatic | -7.838 | 10.981 | -6.002E-07 | 8.4682 | -51.5559 |
| MSB2 | Span 1 | End | Live | LinStatic | -3.675 | 5.237 | 0 | 4.0327 | -24.5413 |
| MSB2 | Span 1 | End | Sc | LinStatic | -1.225 | 1.746 | 0 | 1.3442 | -8.1804 |
| MSB2 | Span 1 | End | Comb1 | Combination | -16.756 | 23.652 | -5.29E-07 | 18.2271 | -110.9498 |
| MSB2 | Span 2 | Start | Dead | LinStatic | -7.82 | -8.016 | 0 | -5.1013 | -51.468 |
| MSB2 | Span 2 | Start | Live | LinStatic | -3.666 | -3.841 | 0 | -2.3559 | -24.5 |
| MSB2 | Span 2 | Start | Sc | LinStatic | -1.222 | -1.28 | 0 | -0.7853 | -8.1667 |
| MSB2 | Span 2 | Start | Comb1 | Combination | -16.717 | -17.301 | 8.545E-07 | -10.8334 | -110.7616 |
| MSB2 | Span 2 | Middle | Dead | LinStatic | -7.416 | -8.016 | 0 | 34.0308 | -4.8019 |
| MSB2 | Span 2 | Middle | Live | LinStatic | -3.475 | -3.841 | 0 | 16.3907 | -2.2126 |
| MSB2 | Span 2 | Middle | Sc | LinStatic | -1.158 | -1.28 | 0 | 5.4636 | -0.7375 |
| MSB2 | Span 2 | Middle | Comb1 | Combination | -15.849 | -17.301 | 9.969E-07 | 73.6184 | -10.1875 |
| MSB2 | Span 2 | End | Dead | LinStatic | -7.82 | 8.016 | 1.068E-06 | -5.1013 | -51.468 |
| MSB2 | Span 2 | End | Live | LinStatic | -3.666 | 3.841 | 0 | -2.3559 | -24.5 |
| MSB2 | Span 2 | End | Sc | LinStatic | -1.222 | 1.28 | 0 | -0.7853 | -8.1667 |
| MSB2 | Span 2 | End | Comb1 | Combination | -16.717 | 17.301 | -7.731E-07 | -10.8334 | -110.7616 |
| MSB2 | Span 3 | Start | Dead | LinStatic | -7.838 | -10.981 | 0 | 8.4682 | -51.5559 |
| MSB2 | Span 3 | Start | Live | LinStatic | -3.675 | -5.237 | 0 | 4.0327 | -24.5413 |
| MSB2 | Span 3 | Start | Sc | LinStatic | -1.225 | -1.746 | 0 | 1.3442 | -8.1804 |
| MSB2 | Span 3 | Start | Comb1 | Combination | -16.756 | -23.652 | 6.205E-07 | 18.2271 | -110.9498 |
| MSB2 | Span 3 | Middle | Dead | LinStatic | -7.681 | -10.981 | 5.188E-07 | 78.2602 | 8.8666 |
| MSB2 | Span 3 | Middle | Live | LinStatic | -3.602 | -5.237 | 0 | 37.1367 | 4.2226 |
| MSB2 | Span 3 | Middle | Sc | LinStatic | -1.201 | -1.746 | 0 | 12.3789 | 1.4075 |
| MSB2 | Span 3 | Middle | Comb1 | Combination | -16.422 | -23.652 | 1.058E-06 | 168.1856 | 19.0852 |
| MSB2 | Span 3 | End | Dead | LinStatic | -2.652 | 7.305 | -5.493E-07 | 59.301 | 3.7013 |
| MSB2 | Span 3 | End | Live | LinStatic | -1.244 | 3.455 | 0 | 28.0097 | 1.7036 |
| MSB2 | Span 3 | End | Sc | LinStatic | -0.415 | 1.152 | 0 | 9.3365 | 0.5679 |
| MSB2 | Span 3 | End | Comb1 | Combination | -5.671 | 15.676 | -8.647E-07 | 127.1805 | 7.8487 |
| CSB3 | Span 1 | Start | Dead | LinStatic | -18.44 | -48.478 | -2.323 | 59.6761 | -108.0118 |
| CSB3 | Span 1 | Start | Live | LinStatic | -8.654 | -22.291 | -1.0862 | 27.2546 | -51.1036 |
| CSB3 | Span 1 | Start | Sc | LinStatic | -2.885 | -7.43 | -0.3621 | 9.0849 | -17.0345 |
| CSB3 | Span 1 | Start | Comb1 | Combination | -39.437 | -102.755 | -4.96 | 126.1205 | -231.8214 |
| CSB3 | Span 1 | Middle | Dead | LinStatic | -18.864 | 39.153 | 5.2469 | 179.8072 | 56.0888 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB3 | Span 1 | Middle | Live | LinStatic | -8.85 | 18.711 | 2.4731 | 85.464 | 26.6546 |
| CSB3 | Span 1 | Middle | Sc | LinStatic | -2.95 | 6.237 | 0.8244 | 28.488 | 8.8849 |
| CSB3 | Span 1 | Middle | Comb1 | Combination | -40.336 | 84.405 | 11.2426 | 386.6965 | 120.6157 |
| CSB3 | Span 1 | End | Dead | LinStatic | -18.46 | 66.829 | 4.9698 | -98.2653 | -339.6659 |
| CSB3 | Span 1 | End | Live | LinStatic | -8.658 | 31.011 | 2.343 | -47.1164 | -160.1692 |
| CSB3 | Span 1 | End | Sc | LinStatic | -2.886 | 10.337 | 0.781 | -15.7055 | -53.3897 |
| CSB3 | Span 1 | End | Comb1 | Combination | -39.467 | 142.217 | 10.6498 | -212.1512 | -727.9373 |
| CSB3 | Span 2 | Start | Dead | LinStatic | -15.127 | -60.414 | 4.5745 | -101.4106 | -313.4719 |
| CSB3 | Span 2 | Start | Live | LinStatic | -7.089 | -27.991 | 2.1587 | -48.599 | -147.8386 |
| CSB3 | Span 2 | Start | Sc | LinStatic | -2.363 | -9.33 | 0.7196 | -16.1997 | -49.2796 |
| CSB3 | Span 2 | Start | Comb1 | Combination | -32.331 | -128.479 | 9.8067 | -218.8908 | -671.8437 |
| CSB3 | Span 2 | Middle | Dead | LinStatic | -15.318 | 31.811 | -0.3063 | 87.6649 | 24.3521 |
| CSB3 | Span 2 | Middle | Live | LinStatic | -7.174 | 15.254 | -0.1485 | 42.079 | 11.7108 |
| CSB3 | Span 2 | Middle | Sc | LinStatic | -2.391 | -5.085 | -0.0495 | 14.0263 | 3.9036 |
| CSB3 | Span 2 | Middle | Comb1 | Combination | -32.73 | -68.681 | -0.6647 | 189.3559 | 52.6441 |
| CSB3 | Span 2 | End | Dead | LinStatic | -15.127 | 60.414 | -4.5745 | -101.4106 | -313.4719 |
| CSB3 | Span 2 | End | Live | LinStatic | -7.089 | 27.991 | -2.1587 | -48.599 | -147.8386 |
| CSB3 | Span 2 | End | Sc | LinStatic | -2.363 | 9.33 | -0.7196 | -16.1997 | -49.2796 |
| CSB3 | Span 2 | End | Comb1 | Combination | -32.331 | 128.479 | -9.8067 | -218.8908 | -671.8437 |
| CSB3 | Span 3 | Start | Dead | LinStatic | -18.46 | -66.829 | -4.9698 | -98.2653 | -339.6659 |
| CSB3 | Span 3 | Start | Live | LinStatic | -8.658 | -31.011 | -2.343 | -47.1164 | -160.1692 |
| CSB3 | Span 3 | Start | Sc | LinStatic | -2.886 | -10.337 | -0.781 | -15.7055 | -53.3897 |
| CSB3 | Span 3 | Start | Comb1 | Combination | -39.467 | -142.217 | -10.6498 | -212.1512 | -727.9373 |
| CSB3 | Span 3 | Middle | Dead | LinStatic | -18.864 | -39.153 | -5.2469 | 179.8072 | 56.0888 |
| CSB3 | Span 3 | Middle | Live | LinStatic | -8.85 | -18.711 | -2.4731 | 85.464 | 26.6546 |
| CSB3 | Span 3 | Middle | Sc | LinStatic | -2.95 | -6.237 | -0.8244 | 28.488 | 8.8849 |
| CSB3 | Span 3 | Middle | Comb1 | Combination | -40.336 | -84.405 | -11.2426 | 386.6966 | 120.6157 |
| CSB3 | Span 3 | End | Dead | LinStatic | -18.44 | 48.478 | 2.323 | 59.6761 | -108.0118 |
| CSB3 | Span 3 | End | Live | LinStatic | -8.654 | 22.291 | 1.0862 | 27.2546 | -51.1036 |
| CSB3 | Span 3 | End | Sc | LinStatic | -2.885 | 7.43 | 0.3621 | 9.0849 | -17.0345 |
| CSB3 | Span 3 | End | Comb1 | Combination | -39.437 | 102.755 | 4.96 | 126.1205 | -231.8214 |
| MSB3 | Span 1 | Start | Dead | LinStatic | -4.708 | -7.066 | -8.0944 | 54.7111 | 3.0819 |
| MSB3 | Span 1 | Start | Live | LinStatic | -2.206 | -3.385 | -3.8098 | 25.8455 | 1.4084 |
| MSB3 | Span 1 | Start | Sc | LinStatic | -0.735 | -1.128 | -1.2699 | 8.6152 | 0.4695 |
| MSB3 | Span 1 | Start | Comb1 | Combination | -10.062 | -15.25 | -17.3328 | 117.3443 | 6.515 |
| MSB3 | Span 1 | Middle | Dead | LinStatic | -9.623 | 9.259 | 6.3341 | 74.5513 | 18.1268 |
| MSB3 | Span 1 | Middle | Live | LinStatic | -4.509 | 4.43 | 2.985 | 35.4811 | 8.5887 |
| MSB3 | Span 1 | Middle | Sc | LinStatic | -1.503 | 1.477 | 0.995 | 11.827 | 2.8629 |
| MSB3 | Span 1 | Middle | Comb1 | Combination | -20.566 | 19.97 | 13.571 | 160.4238 | 38.9296 |
| MSB3 | Span 1 | End | Dead | LinStatic | -8.494 | 9.259 | 6.3325 | 17.7788 | -35.6997 |
| MSB3 | Span 1 | End | Live | LinStatic | -3.979 | 4.43 | 2.9842 | 8.4225 | -17.0861 |
| MSB3 | Span 1 | End | Sc | LinStatic | -1.326 | 1.477 | 0.9947 | 2.8075 | -5.6954 |
| MSB3 | Span 1 | End | Comb1 | Combination | -18.151 | 19.97 | 13.5675 | 38.1795 | -77.0117 |
| MSB3 | Span 2 | Start | Dead | LinStatic | -8.026 | -7.113 | -2.7473 | 6.1109 | -35.6058 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB3 | Span 2 | Start | Live | LinStatic | -3.76 | -3.419 | -1.2909 | 2.9289 | -17.0419 |
| MSB3 | Span 2 | Start | Sc | LinStatic | -1.253 | -1.14 | -0.4303 | 0.9763 | -5.6806 |
| MSB3 | Span 2 | Start | Comb1 | Combination | -17.151 | -15.374 | -5.8787 | 13.191 | -76.8108 |
| MSB3 | Span 2 | Middle | Dead | LinStatic | -9.325 | -7.113 | -2.7504 | 41.6006 | 6.3809 |
| MSB3 | Span 2 | Middle | Live | LinStatic | -4.369 | 3.419 | -1.2924 | 19.9683 | 3.0585 |
| MSB3 | Span 2 | Middle | Sc | LinStatic | -1.456 | 1.14 | -0.4308 | 6.6561 | 1.0195 |
| MSB3 | Span 2 | Middle | Comb1 | Combination | -19.928 | -15.374 | -5.8853 | 89.8574 | 13.774 |
| MSB3 | Span 2 | End | Dead | LinStatic | -8.026 | 7.113 | 2.7473 | 6.1109 | -35.6058 |
| MSB3 | Span 2 | End | Live | LinStatic | -3.76 | 3.419 | 1.2909 | 2.9289 | -17.0419 |
| MSB3 | Span 2 | End | Sc | LinStatic | -1.253 | 1.14 | 0.4303 | 0.9763 | -5.6806 |
| MSB3 | Span 2 | End | Comb1 | Combination | -17.151 | 15.374 | 5.8787 | 13.191 | -76.8108 |
| MSB3 | Span 3 | Start | Dead | LinStatic | -8.494 | -9.259 | -6.3325 | 17.7788 | -35.6997 |
| MSB3 | Span 3 | Start | Live | LinStatic | -3.979 | -4.43 | -2.9842 | 8.4225 | -17.0861 |
| MSB3 | Span 3 | Start | Sc | LinStatic | -1.326 | -1.477 | -0.9947 | 2.8075 | -5.6954 |
| MSB3 | Span 3 | Start | Comb1 | Combination | -18.151 | -19.97 | -13.5675 | 38.1795 | -77.0117 |
| MSB3 | Span 3 | Middle | Dead | LinStatic | -9.623 | -9.259 | -6.3341 | 74.5513 | 18.1268 |
| MSB3 | Span 3 | Middle | Live | LinStatic | -4.509 | -4.43 | -2.985 | 35.4811 | 8.5887 |
| MSB3 | Span 3 | Middle | Sc | LinStatic | -1.503 | -1.477 | -0.995 | 11.827 | 2.8629 |
| MSB3 | Span 3 | Middle | Comb1 | Combination | -20.566 | -19.97 | -13.571 | 160.4238 | 38.9296 |
| MSB3 | Span 3 | End | Dead | LinStatic | -4.708 | 7.066 | 8.0944 | 54.7111 | 3.0819 |
| MSB3 | Span 3 | End | Live | LinStatic | -2.206 | 3.385 | 3.8098 | 25.8455 | 1.4084 |
| MSB3 | Span 3 | End | Sc | LinStatic | -0.735 | 1.128 | 1.2699 | 8.6152 | 0.4695 |
| MSB3 | Span 3 | End | Comb1 | Combination | -10.062 | 15.25 | 17.3328 | 117.3443 | 6.515 |
| CSB4 | Span 1 | Start | Dead | LinStatic | -10.59 | -21.857 | -18.5036 | 2.4357 | -72.0084 |
| CSB4 | Span 1 | Start | Live | LinStatic | -4.954 | -9.972 | -8.9655 | 0.6974 | -33.8933 |
| CSB4 | Span 1 | Start | Sc | LinStatic | -1.651 | -3.324 | -2.9885 | 0.2325 | -11.2978 |
| CSB4 | Span 1 | Start | Comb1 | Combination | -22.616 | -46.173 | -40.1354 | 4.3175 | -154.1967 |
| CSB4 | Span 1 | Middle | Dead | LinStatic | -7.859 | 12.987 | -10.5857 | 50.6316 | 18.2753 |
| CSB4 | Span 1 | Middle | Live | LinStatic | -3.677 | 6.228 | -4.9404 | 24.0573 | 8.6552 |
| CSB4 | Span 1 | Middle | Sc | LinStatic | -1.226 | 2.076 | -1.6468 | 8.0191 | 2.8851 |
| CSB4 | Span 1 | Middle | Comb1 | Combination | -16.785 | 28.04 | -22.5837 | 108.8725 | 39.2408 |
| CSB4 | Span 1 | End | Dead | LinStatic | -8.216 | 27.726 | 10.9257 | -33.3522 | -126.8821 |
| CSB4 | Span 1 | End | Live | LinStatic | -3.852 | 12.763 | 5.2449 | -16.0762 | -59.5569 |
| CSB4 | Span 1 | End | Sc | LinStatic | -1.284 | 4.254 | 1.7483 | -5.3587 | -19.8523 |
| CSB4 | Span 1 | End | Comb1 | Combination | -17.564 | 58.796 | 23.6006 | -72.175 | -271.3723 |
| CSB4 | Span 2 | Start | Dead | LinStatic | -6.001 | -25.604 | 6.4024 | -29.6087 | -111.6483 |
| CSB4 | Span 2 | Start | Live | LinStatic | -2.812 | -11.766 | 2.942 | -14.3215 | -52.3989 |
| CSB4 | Span 2 | Start | Sc | LinStatic | -0.937 | -3.922 | 0.9807 | -4.7738 | -17.4663 |
| CSB4 | Span 2 | Start | Comb1 | Combination | -12.825 | -54.256 | 13.5669 | -64.1734 | -238.7758 |
| CSB4 | Span 2 | Middle | Dead | LinStatic | -3.651 | -10.866 | 8.6339 | 31.764 | 13.0076 |
| CSB4 | Span 2 | Middle | Live | LinStatic | -1.709 | 5.231 | 4.0271 | 15.1866 | 6.1735 |
| CSB4 | Span 2 | Middle | Sc | LinStatic | -0.57 | -1.744 | 1.3424 | 5.0622 | 2.0578 |
| CSB4 | Span 2 | Middle | Comb1 | Combination | -7.801 | -23.501 | 18.4149 | 68.49 | 27.9561 |
| CSB4 | Span 2 | End | Dead | LinStatic | -6.001 | 25.604 | -6.4024 | -29.6087 | -111.6483 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB4 | Span 2 | End | Live | LinStatic | -2.812 | 11.766 | -2.942 | -14.3215 | -52.399 |
| CSB4 | Span 2 | End | Sc | LinStatic | -0.937 | 3.922 | -0.9807 | -4.7738 | -17.4663 |
| CSB4 | Span 2 | End | Comb1 | Combination | -12.825 | 54.256 | -13.5669 | -64.1734 | -238.7758 |
| CSB4 | Span 3 | Start | Dead | LinStatic | -8.216 | -27.726 | -10.9257 | -33.3522 | -126.8821 |
| CSB4 | Span 3 | Start | Live | LinStatic | -3.852 | -12.763 | -5.2449 | -16.0762 | -59.5569 |
| CSB4 | Span 3 | Start | Sc | LinStatic | -1.284 | -4.254 | -1.7483 | -5.3587 | -19.8523 |
| CSB4 | Span 3 | Start | Comb1 | Combination | -17.564 | -58.796 | -23.6006 | -72.175 | -271.3723 |
| CSB4 | Span 3 | Middle | Dead | LinStatic | -7.859 | -12.987 | 10.5857 | 50.6315 | 18.2753 |
| CSB4 | Span 3 | Middle | Live | LinStatic | -3.677 | -6.228 | 4.9404 | 24.0573 | 8.6552 |
| CSB4 | Span 3 | Middle | Sc | LinStatic | -1.226 | -2.076 | 1.6468 | 8.0191 | 2.8851 |
| CSB4 | Span 3 | Middle | Comb1 | Combination | -16.785 | -28.04 | 22.5837 | 108.8725 | 39.2408 |
| CSB4 | Span 3 | End | Dead | LinStatic | -10.59 | 21.857 | 18.5036 | 2.4357 | -72.0084 |
| CSB4 | Span 3 | End | Live | LinStatic | -4.954 | 9.972 | 8.9655 | 0.6974 | -33.8933 |
| CSB4 | Span 3 | End | Sc | LinStatic | -1.651 | 3.324 | 2.9885 | 0.2325 | -11.2978 |
| CSB4 | Span 3 | End | Comb1 | Combination | -22.616 | 46.173 | 40.1354 | 4.3175 | -154.1967 |

# 6 Design Data

This chapter provides design data and results.

## 6.1 Concrete Slab Design

**Table 6.1 - Concrete Design Preferences - ACI 318-19**

| Item | Value |
|---|---|
| PhiTen | 0.9 |
| PhiComp | 0.65 |
| PhiShear | 0.75 |
| Increase Flexural Rebar? | No |
| Overwrite Shear Lambdas to One for Mats and Footings? | Yes |
| Ignore Pu? | Yes |
| Pattern Live Load Factor | 0.75 |
| CoverTop ft | 0.0625 |
| CoverBot ft | 0.0625 |
| BarSize | #6 |
| InnerLayer | Layer B |
| PTCGSTop ft | 0.08333 |
| PTCGSBotExt ft | 0.14583 |
| PTCGSBotInt ft | 0.08333 |
| SlabType | Two Way |
| Cover Beam Top ft | 0.125 |
| Cover Beam Bottom ft | 0.125 |
| Bar Size Beam Flexure | #9 |
| Bar Size Beam Shear | #4 |
| PTCGS Beam Top ft | 0.16667 |
| PTCGS Beam Bottom ft | 0.16667 |
| UserStress | No |
| InitConcRat | 0.8 |
| LLFraction | 0.5 |

**Table 6.2 - Concrete Slab Design Overwrites - Strip Based**

| Strip Name | Strip Layer | Strip Design Type | Design? | Ignote PT? | Rebar Material | Cover Specification Type | LLRF |
|---|---|---|---|---|---|---|---|
| CSA1 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA1 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA2 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA2 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA3 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA3 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA4 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB1 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB1 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB2 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB2 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB3 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB3 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |

**Table 6.2 - Concrete Slab Design Overwrites - Strip Based (continued)**

| Strip Name | Strip Layer | Strip Design Type | Design? | Ignote PT? | Rebar Material | Cover Specification Type | LLRF |
|---|---|---|---|---|---|---|---|
| CSB4 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |

**Table 6.3 - Concrete Slab Design Overwrites - Finite Element Based**

| Unique Name | Rebar Material | Cover Specification Type | LLRF | Design? | Ignote PT? |
|---|---|---|---|---|---|
| 1 | A615Gr60 | From Preferences | 1 | Yes | No |
| 2 | A615Gr60 | From Preferences | 1 | Yes | No |
| 3 | A615Gr60 | From Preferences | 1 | Yes | No |
| 4 | A615Gr60 | From Preferences | 1 | Yes | No |
| 5 | A615Gr60 | From Preferences | 1 | Yes | No |
| 6 | A615Gr60 | From Preferences | 1 | Yes | No |
| 7 | A615Gr60 | From Preferences | 1 | Yes | No |
| 8 | A615Gr60 | From Preferences | 1 | Yes | No |
| 9 | A615Gr60 | From Preferences | 1 | Yes | No |
| 10 | A615Gr60 | From Preferences | 1 | Yes | No |
| 11 | A615Gr60 | From Preferences | 1 | Yes | No |
| 12 | A615Gr60 | From Preferences | 1 | Yes | No |
| 13 | A615Gr60 | From Preferences | 1 | Yes | No |
| 14 | A615Gr60 | From Preferences | 1 | Yes | No |
| 15 | A615Gr60 | From Preferences | 1 | Yes | No |
| 16 | A615Gr60 | From Preferences | 1 | Yes | No |
| 17 | A615Gr60 | From Preferences | 1 | Yes | No |
| 34 | | From Preferences | 1 | Yes | No |
| 35 | | From Preferences | 1 | Yes | No |
| 36 | | From Preferences | 1 | Yes | No |
| 37 | | From Preferences | 1 | Yes | No |
| 38 | | From Preferences | 1 | Yes | No |
| 39 | | From Preferences | 1 | Yes | No |
| 40 | | From Preferences | 1 | Yes | No |
| 41 | | From Preferences | 1 | Yes | No |
| 42 | | From Preferences | 1 | Yes | No |
| 43 | | From Preferences | 1 | Yes | No |
| 44 | | From Preferences | 1 | Yes | No |
| 45 | | From Preferences | 1 | Yes | No |
| 46 | | From Preferences | 1 | Yes | No |
| 47 | | From Preferences | 1 | Yes | No |
| 48 | | From Preferences | 1 | Yes | No |
| 49 | | From Preferences | 1 | Yes | No |

**Table 6.4 - Concrete Slab Design Overwrites - Punching Shear - General**

| Unique Name | Check Punching Shear? | Location Type | Perimeter Type | Effective Depth Type | Opening Definition | Reinforcement Type |
|---|---|---|---|---|---|---|
| 2 | Program Determined | Auto | Auto | Auto | Auto | None |
| 4 | Program Determined | Auto | Auto | Auto | Auto | None |
| 6 | Program Determined | Auto | Auto | Auto | Auto | None |
| 8 | Program Determined | Auto | Auto | Auto | Auto | None |
| 10 | Program Determined | Auto | Auto | Auto | Auto | None |
| 12 | Program Determined | Auto | Auto | Auto | Auto | None |
| 14 | Program Determined | Auto | Auto | Auto | Auto | None |
| 16 | Program Determined | Auto | Auto | Auto | Auto | None |
| 18 | Program Determined | Auto | Auto | Auto | Auto | None |
| 20 | Program Determined | Auto | Auto | Auto | Auto | None |
| 22 | Program Determined | Auto | Auto | Auto | Auto | None |
| 24 | Program Determined | Auto | Auto | Auto | Auto | None |
| 26 | Program Determined | Auto | Auto | Auto | Auto | None |
| 28 | Program Determined | Auto | Auto | Auto | Auto | None |
| 30 | Program Determined | Auto | Auto | Auto | Auto | None |
| 32 | Program Determined | Auto | Auto | Auto | Auto | None |
| 1 | Program Determined | Auto | Auto | Auto | Auto | None |
| 3 | Program Determined | Auto | Auto | Auto | Auto | None |
| 5 | Program Determined | Auto | Auto | Auto | Auto | None |
| 7 | Program Determined | Auto | Auto | Auto | Auto | None |
| 9 | Program Determined | Auto | Auto | Auto | Auto | None |
| 11 | Program Determined | Auto | Auto | Auto | Auto | None |
| 13 | Program Determined | Auto | Auto | Auto | Auto | None |
| 15 | Program Determined | Auto | Auto | Auto | Auto | None |
| 17 | Program Determined | Auto | Auto | Auto | Auto | None |
| 19 | Program Determined | Auto | Auto | Auto | Auto | None |
| 21 | Program Determined | Auto | Auto | Auto | Auto | None |
| 23 | Program Determined | Auto | Auto | Auto | Auto | None |
| 25 | Program Determined | Auto | Auto | Auto | Auto | None |
| 27 | Program Determined | Auto | Auto | Auto | Auto | None |
| 29 | Program Determined | Auto | Auto | Auto | Auto | None |
| 31 | Program Determined | Auto | Auto | Auto | Auto | None |

**Table 6.5 - Concrete Slab Design Summary - Span Definition Data**

| StripObject | SpanID | SpanLength ft | StartDist ft | EndDist ft | GlobalX1 ft | GlobalY1 ft | GlobalX2 ft | GlobalY2 ft |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | 30 | 1 | 61 | 0 | 0 | 30 | 0 |
| CSA1 | Span 2 | 30 | 31 | 31 | 30 | 0 | 60 | 0 |
| CSA1 | Span 3 | 30 | 61 | 1 | 60 | 0 | 90 | 0 |
| MSA1 | Span 1 | 30 | 1 | 61 | 0 | 15 | 30 | 15 |
| MSA1 | Span 2 | 30 | 31 | 31 | 30 | 15 | 60 | 15 |
| MSA1 | Span 3 | 30 | 61 | 1 | 60 | 15 | 90 | 15 |
| CSA2 | Span 1 | 30 | 1 | 61 | 0 | 30 | 30 | 30 |
| CSA2 | Span 2 | 30 | 31 | 31 | 30 | 30 | 60 | 30 |

**Table 6.5 - Concrete Slab Design Summary - Span Definition Data (continued)**

| StripObject | SpanID | SpanLength ft | StartDist ft | EndDist ft | GlobalX1 ft | GlobalY1 ft | GlobalX2 ft | GlobalY2 ft |
|---|---|---|---|---|---|---|---|---|
| CSA2 | Span 3 | 30 | 61 | 1 | 60 | 30 | 90 | 30 |
| MSA2 | Span 1 | 30 | 1 | 61 | 0 | 45 | 30 | 45 |
| MSA2 | Span 2 | 30 | 31 | 31 | 30 | 45 | 60 | 45 |
| MSA2 | Span 3 | 30 | 61 | 1 | 60 | 45 | 90 | 45 |
| CSA3 | Span 1 | 30 | 1 | 61 | 0 | 60 | 30 | 60 |
| CSA3 | Span 2 | 30 | 31 | 31 | 30 | 60 | 60 | 60 |
| CSA3 | Span 3 | 30 | 61 | 1 | 60 | 60 | 90 | 60 |
| MSA3 | Span 1 | 30 | 1 | 61 | 0 | 75 | 30 | 75 |
| MSA3 | Span 2 | 30 | 31 | 31 | 30 | 75 | 60 | 75 |
| MSA3 | Span 3 | 30 | 61 | 1 | 60 | 75 | 90 | 75 |
| CSA4 | Span 1 | 30 | 1 | 61 | 0 | 90 | 30 | 90 |
| CSA4 | Span 2 | 30 | 31 | 31 | 30 | 90 | 60 | 90 |
| CSA4 | Span 3 | 30 | 61 | 1 | 60 | 90 | 90 | 90 |
| CSB1 | Span 1 | 30 | 1 | 61 | 0 | 0 | 0 | 30 |
| CSB1 | Span 2 | 30 | 31 | 31 | 0 | 30 | 0 | 60 |
| CSB1 | Span 3 | 30 | 61 | 1 | 0 | 60 | 0 | 90 |
| MSB1 | Span 1 | 30 | 1 | 61 | 15 | 0 | 15 | 30 |
| MSB1 | Span 2 | 30 | 31 | 31 | 15 | 30 | 15 | 60 |
| MSB1 | Span 3 | 30 | 61 | 1 | 15 | 60 | 15 | 90 |
| CSB2 | Span 1 | 30 | 1 | 61 | 30 | 0 | 30 | 30 |
| CSB2 | Span 2 | 30 | 31 | 31 | 30 | 30 | 30 | 60 |
| CSB2 | Span 3 | 30 | 61 | 1 | 30 | 60 | 30 | 90 |
| MSB2 | Span 1 | 30 | 1 | 61 | 45 | 0 | 45 | 30 |
| MSB2 | Span 2 | 30 | 31 | 31 | 45 | 30 | 45 | 60 |
| MSB2 | Span 3 | 30 | 61 | 1 | 45 | 60 | 45 | 90 |
| CSB3 | Span 1 | 30 | 1 | 61 | 60 | 0 | 60 | 30 |
| CSB3 | Span 2 | 30 | 31 | 31 | 60 | 30 | 60 | 60 |
| CSB3 | Span 3 | 30 | 61 | 1 | 60 | 60 | 60 | 90 |
| MSB3 | Span 1 | 30 | 1 | 61 | 75 | 0 | 75 | 30 |
| MSB3 | Span 2 | 30 | 31 | 31 | 75 | 30 | 75 | 60 |
| MSB3 | Span 3 | 30 | 61 | 1 | 75 | 60 | 75 | 90 |
| CSB4 | Span 1 | 30 | 1 | 61 | 90 | 0 | 90 | 30 |
| CSB4 | Span 2 | 30 | 31 | 31 | 90 | 30 | 90 | 60 |
| CSB4 | Span 3 | 30 | 61 | 1 | 90 | 60 | 90 | 90 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -194.9994 | 0.02321 | 0.01305 |
| CSA1 | Span 1 | | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSA1 | Span 1 | Comb1 | Comb1 | Comb1 | End | -298.807 | 0.036206 | 0.01305 |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -265.6366 | 0.032105 | 0.01305 |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -0.3134 | 0 | 0 |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | End | -265.6366 | 0.032105 | 0.01305 |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -298.807 | 0.036206 | 0.01305 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -0.3562 | 0 | 0 |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | End | -194.9994 | 0.02321 | 0.01305 |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -8.7852 | 0.001778 | 0 |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.001928 | 0 |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.013605 | 0.0225 |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.013605 | 0.0225 |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -14.5283 | 0.00253 | 0 |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.013605 | 0.0225 |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.013605 | 0.0225 |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.001928 | 0 |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | End | -8.7852 | 0.001778 | 0 |
| CSA2 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -310.6963 | 0.055238 | 0.045 |
| CSA2 | Span 1 |  | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSA2 | Span 1 | Comb1 | Comb1 | Comb1 | End | -779.9219 | 0.143843 | 0.045 |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -724.8098 | 0.133074 | 0.045 |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -9.7753 | 0.001701 | 0 |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | End | -724.8098 | 0.133074 | 0.045 |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -779.9219 | 0.143843 | 0.045 |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -1.0513 | 0 | 0 |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | End | -310.6963 | 0.055238 | 0.045 |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -8.4351 | 0.00154 | 0 |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | Middle | -23.0905 | 0.004025 | 0 |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | End | -113.0173 | 0.019904 | 0.0225 |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -113.0173 | 0.019904 | 0.0225 |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -33.4142 | 0.005832 | 0.0225 |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | End | -113.0173 | 0.019904 | 0.0225 |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -113.0173 | 0.019904 | 0.0225 |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -23.0905 | 0.004025 | 0 |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | End | -8.4351 | 0.00154 | 0 |
| CSA3 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -310.6963 | 0.055238 | 0.045 |
| CSA3 | Span 1 |  | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSA3 | Span 1 | Comb1 | Comb1 | Comb1 | End | -779.9219 | 0.143843 | 0.045 |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -724.8098 | 0.133074 | 0.045 |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -9.7753 | 0.001701 | 0 |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | End | -724.8098 | 0.133074 | 0.045 |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -779.9219 | 0.143843 | 0.045 |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -1.0513 | 0 | 0 |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | End | -310.6963 | 0.055238 | 0.045 |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -8.7852 | 0.001778 | 0 |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.001928 | 0 |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.013605 | 0.0225 |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.013605 | 0.0225 |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -14.5283 | 0.00253 | 0 |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.013605 | 0.0225 |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.013605 | 0.0225 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.001928 | 0 |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | End | -8.7852 | 0.001778 | 0 |
| CSA4 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -194.9994 | 0.02321 | 0.01305 |
| CSA4 | Span 1 | | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSA4 | Span 1 | Comb1 | Comb1 | Comb1 | End | -298.807 | 0.036206 | 0.01305 |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -265.6366 | 0.032105 | 0.01305 |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -0.3134 | 0 | 0 |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | End | -265.6366 | 0.032105 | 0.01305 |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -298.807 | 0.036206 | 0.01305 |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -0.3562 | 0 | 0 |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | End | -194.9994 | 0.02321 | 0.01305 |
| CSB1 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -194.9994 | 0.024688 | 0.01305 |
| CSB1 | Span 1 | | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSB1 | Span 1 | Comb1 | Comb1 | Comb1 | End | -298.807 | 0.038608 | 0.01305 |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -265.6366 | 0.034206 | 0.01305 |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -0.3134 | 0 | 0 |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | End | -265.6366 | 0.034206 | 0.01305 |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -298.807 | 0.038608 | 0.01305 |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -0.3562 | 0 | 0 |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | End | -194.9994 | 0.024688 | 0.01305 |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -8.7852 | 0.001942 | 0 |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.002107 | 0 |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.014886 | 0.0225 |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.014886 | 0.0225 |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -14.5283 | 0.002765 | 0 |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.014886 | 0.0225 |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.014886 | 0.0225 |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.002107 | 0 |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | End | -8.7852 | 0.001942 | 0 |
| CSB2 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -310.6963 | 0.060607 | 0.045 |
| CSB2 | Span 1 | | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSB2 | Span 1 | Comb1 | Comb1 | Comb1 | End | -779.9219 | 0.159134 | 0.045 |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -724.8098 | 0.14706 | 0.045 |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -9.7753 | 0.001858 | 0 |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | End | -724.8098 | 0.14706 | 0.045 |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -779.9219 | 0.159134 | 0.045 |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -1.0513 | 0 | 0 |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | End | -310.6963 | 0.060607 | 0.045 |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -8.4351 | 0.001682 | 0 |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | Middle | -23.0905 | 0.004399 | 0 |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | End | -113.0173 | 0.021796 | 0.0225 |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -113.0173 | 0.021796 | 0.0225 |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -33.4142 | 0.006375 | 0.0225 |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | End | -113.0173 | 0.021796 | 0.0225 |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -113.0173 | 0.021796 | 0.0225 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -23.0905 | 0.004399 | 0 |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | End | -8.4351 | 0.001682 | 0 |
| CSB3 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -310.6963 | 0.060607 | 0.045 |
| CSB3 | Span 1 | | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSB3 | Span 1 | Comb1 | Comb1 | Comb1 | End | -779.9219 | 0.159134 | 0.045 |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -724.8098 | 0.14706 | 0.045 |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -9.7753 | 0.001858 | 0 |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | End | -724.8098 | 0.14706 | 0.045 |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -779.9219 | 0.159134 | 0.045 |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -1.0513 | 0 | 0 |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | End | -310.6963 | 0.060607 | 0.045 |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -8.7852 | 0.001942 | 0 |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.002107 | 0 |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.014886 | 0.0225 |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.014886 | 0.0225 |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -14.5283 | 0.002765 | 0 |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | End | -77.5632 | 0.014886 | 0.0225 |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -77.5632 | 0.014886 | 0.0225 |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -11.0765 | 0.002107 | 0 |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | End | -8.7852 | 0.001942 | 0 |
| CSB4 | Span 1 | Comb1 | Comb1 | Comb1 | Start | -194.9994 | 0.024688 | 0.01305 |
| CSB4 | Span 1 | | Comb1 | Comb1 | Middle | 0 | 0 | 0 |
| CSB4 | Span 1 | Comb1 | Comb1 | Comb1 | End | -298.807 | 0.038608 | 0.01305 |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | Start | -265.6366 | 0.034206 | 0.01305 |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | Middle | -0.3134 | 0 | 0 |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | End | -265.6366 | 0.034206 | 0.01305 |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | Start | -298.807 | 0.038608 | 0.01305 |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | Middle | -0.3562 | 0 | 0 |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | End | -194.9994 | 0.024688 | 0.01305 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002704 | 0.01275 | 37.513 | 0 |
| CSA1 | Span 1 | | Comb1 | Comb1 | 114.3073 | 0.020341 | 0.01275 | 19.938 | 0 |
| CSA1 | Span 1 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001466 | 0 | 28.04 | 0 |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001075 | 0 | 1.415 | 0 |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | 79.0993 | 0.013973 | 0.01275 | 23.501 | 0 |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001075 | 0 | 23.501 | 0 |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001466 | 0 | 8.937 | 0 |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | 114.3073 | 0.020341 | 0.01275 | 28.04 | 0 |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002704 | 0.01275 | 19.938 | 0 |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.024177 | 0.0225 | 6.793 | 0 |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | 169.139 | 0.029982 | 0.0225 | 15.25 | 0 |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.01174 | 0.0225 | 19.97 | 0 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.006825 | 0.0225 | 6.061 | 0 |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | 93.7867 | 0.016481 | 0.0225 | 15.374 | 0 |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.006825 | 0.0225 | 15.374 | 0 |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.01174 | 0.0225 | 3.722 | 0 |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | 169.139 | 0.029982 | 0.0225 | 19.97 | 0 |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.024177 | 0.0225 | 15.25 | 0 |
| CSA2 | Span 1 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.028798 | 0.045 | 55.255 | 0 |
| CSA2 | Span 1 |  | Comb1 | Comb1 | 397.18 | 0.070651 | 0.045 | 49.457 | 0 |
| CSA2 | Span 1 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001114 | 0 | 84.405 | 0 |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | 0 | 0 | 0 | 14.718 | 0 |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | 208.5167 | 0.036686 | 0.045 | 68.681 | 0 |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | 0.3755 | 0 | 0 | 68.681 | 0 |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001114 | 0 | 27.519 | 0 |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | 397.18 | 0.070651 | 0.045 | 84.405 | 0 |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.028798 | 0.045 | 49.457 | 0 |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | 148.3452 | 0.026233 | 0.0225 | 7.926 | 0 |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | 178.028 | 0.031591 | 0.0225 | 15.444 | 0 |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | 50.8563 | 0.008893 | 0.0225 | 23.652 | 0 |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | 25.6567 | 0.004474 | 0 | 6.921 | 0 |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | 77.2143 | 0.013543 | 0.0225 | 17.301 | 0 |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | 25.6567 | 0.004474 | 0 | 17.301 | 0 |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | 50.8563 | 0.008893 | 0.0225 | 4.219 | 0 |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | 178.028 | 0.031591 | 0.0225 | 23.652 | 0 |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | 148.3452 | 0.026233 | 0.0225 | 15.444 | 0 |
| CSA3 | Span 1 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.028798 | 0.045 | 55.255 | 0 |
| CSA3 | Span 1 |  | Comb1 | Comb1 | 397.18 | 0.070651 | 0.045 | 49.457 | 0 |
| CSA3 | Span 1 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001114 | 0 | 84.405 | 0 |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | 0 | 0 | 0 | 14.718 | 0 |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | 208.5167 | 0.036686 | 0.045 | 68.681 | 0 |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | 0.3755 | 0 | 0 | 68.681 | 0 |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001114 | 0 | 27.519 | 0 |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | 397.18 | 0.070651 | 0.045 | 84.405 | 0 |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.028798 | 0.045 | 49.457 | 0 |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.024177 | 0.0225 | 6.793 | 0 |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | 169.139 | 0.029982 | 0.0225 | 15.25 | 0 |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.01174 | 0.0225 | 19.97 | 0 |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.006825 | 0.0225 | 6.061 | 0 |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | 93.7867 | 0.016481 | 0.0225 | 15.374 | 0 |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.006825 | 0.0225 | 15.374 | 0 |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.01174 | 0.0225 | 3.722 | 0 |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | 169.139 | 0.029982 | 0.0225 | 19.97 | 0 |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.024177 | 0.0225 | 15.25 | 0 |
| CSA4 | Span 1 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002704 | 0.01275 | 37.513 | 0 |
| CSA4 | Span 1 |  | Comb1 | Comb1 | 114.3073 | 0.020341 | 0.01275 | 19.938 | 0 |
| CSA4 | Span 1 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001466 | 0 | 28.04 | 0 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001075 | 0 | 1.415 | 0 |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | 79.0993 | 0.013973 | 0.01275 | 23.501 | 0 |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001075 | 0 | 23.501 | 0 |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001466 | 0 | 8.937 | 0 |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | 114.3073 | 0.020341 | 0.01275 | 28.04 | 0 |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002704 | 0.01275 | 19.938 | 0 |
| CSB1 | Span 1 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002955 | 0.01275 | 37.513 | 0 |
| CSB1 | Span 1 |  | Comb1 | Comb1 | 114.3073 | 0.022322 | 0.01275 | 19.938 | 0 |
| CSB1 | Span 1 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001554 | 0 | 28.04 | 0 |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001139 | 0 | 1.415 | 0 |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | 79.0993 | 0.015311 | 0.01275 | 23.501 | 0 |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001139 | 0 | 23.501 | 0 |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001554 | 0 | 8.937 | 0 |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | 114.3073 | 0.022322 | 0.01275 | 28.04 | 0 |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002955 | 0.01275 | 19.938 | 0 |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.02649 | 0.0225 | 6.793 | 0 |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | 169.139 | 0.032876 | 0.0225 | 15.25 | 0 |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.012843 | 0.0225 | 19.97 | 0 |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.007462 | 0.0225 | 6.061 | 0 |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | 93.7867 | 0.018039 | 0.0225 | 15.374 | 0 |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.007462 | 0.0225 | 15.374 | 0 |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.012843 | 0.0225 | 3.722 | 0 |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | 169.139 | 0.032876 | 0.0225 | 19.97 | 0 |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.02649 | 0.0225 | 15.25 | 0 |
| CSB2 | Span 1 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.031513 | 0.045 | 55.255 | 0 |
| CSB2 | Span 1 |  | Comb1 | Comb1 | 397.18 | 0.077526 | 0.045 | 49.457 | 0 |
| CSB2 | Span 1 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001217 | 0 | 84.405 | 0 |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | 0 | 0 | 0 | 14.718 | 0 |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | 208.5167 | 0.040165 | 0.045 | 68.681 | 0 |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | 0.3755 | 0 | 0 | 68.681 | 0 |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001217 | 0 | 27.519 | 0 |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | 397.18 | 0.077526 | 0.045 | 84.405 | 0 |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.031513 | 0.045 | 49.457 | 0 |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | 148.3452 | 0.02875 | 0.0225 | 7.926 | 0 |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | 178.028 | 0.034648 | 0.0225 | 15.444 | 0 |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | 50.8563 | 0.009725 | 0.0225 | 23.652 | 0 |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | 25.6567 | 0.00489 | 0 | 6.921 | 0 |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | 77.2143 | 0.014818 | 0.0225 | 17.301 | 0 |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | 25.6567 | 0.00489 | 0 | 17.301 | 0 |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | 50.8563 | 0.009725 | 0.0225 | 4.219 | 0 |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | 178.028 | 0.034648 | 0.0225 | 23.652 | 0 |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | 148.3452 | 0.02875 | 0.0225 | 15.444 | 0 |
| CSB3 | Span 1 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.031513 | 0.045 | 55.255 | 0 |
| CSB3 | Span 1 |  | Comb1 | Comb1 | 397.18 | 0.077526 | 0.045 | 49.457 | 0 |
| CSB3 | Span 1 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001217 | 0 | 84.405 | 0 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | 0 | 0 | 0 | 14.718 | 0 |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | 208.5167 | 0.040165 | 0.045 | 68.681 | 0 |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | 0.3755 | 0 | 0 | 68.681 | 0 |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | 6.4049 | 0.001217 | 0 | 27.519 | 0 |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | 397.18 | 0.077526 | 0.045 | 84.405 | 0 |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | 164.0975 | 0.031513 | 0.045 | 49.457 | 0 |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.02649 | 0.0225 | 6.793 | 0 |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | 169.139 | 0.032876 | 0.0225 | 15.25 | 0 |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.012843 | 0.0225 | 19.97 | 0 |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.007462 | 0.0225 | 6.061 | 0 |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | 93.7867 | 0.018039 | 0.0225 | 15.374 | 0 |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | 39.0812 | 0.007462 | 0.0225 | 15.374 | 0 |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | 67.0147 | 0.012843 | 0.0225 | 3.722 | 0 |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | 169.139 | 0.032876 | 0.0225 | 19.97 | 0 |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | 136.9016 | 0.02649 | 0.0225 | 15.25 | 0 |
| CSB4 | Span 1 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002955 | 0.01275 | 37.513 | 0 |
| CSB4 | Span 1 | | Comb1 | Comb1 | 114.3073 | 0.022322 | 0.01275 | 19.938 | 0 |
| CSB4 | Span 1 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001554 | 0 | 28.04 | 0 |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001139 | 0 | 1.415 | 0 |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | 79.0993 | 0.015311 | 0.01275 | 23.501 | 0 |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | 0.0793 | 0.001139 | 0 | 23.501 | 0 |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | 0.1871 | 0.001554 | 0 | 8.937 | 0 |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | 114.3073 | 0.022322 | 0.01275 | 28.04 | 0 |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | 15.5036 | 0.002955 | 0.01275 | 19.938 | 0 |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| CSA1 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA1 | Span 1 | | Comb1 | Comb1 | A |
| CSA1 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA1 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA1 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA1 | Span 3 | Comb1 | Comb1 | Comb1 | A |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| CSA2 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA2 | Span 1 | | Comb1 | Comb1 | A |
| CSA2 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA2 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA2 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA2 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 1 | | Comb1 | Comb1 | A |
| CSA3 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA3 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| MSA3 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 1 | | Comb1 | Comb1 | A |
| CSA4 | Span 1 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 2 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSA4 | Span 3 | Comb1 | Comb1 | Comb1 | A |
| CSB1 | Span 1 | Comb1 | Comb1 | Comb1 | B |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| CSB1 | Span 1 | | Comb1 | Comb1 | B |
| CSB1 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB1 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB1 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB1 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 1 | | Comb1 | Comb1 | B |
| CSB2 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB2 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB2 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 1 | | Comb1 | Comb1 | B |
| CSB3 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB3 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | B |

**Table 6.6 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| MSB3 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| MSB3 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 1 | | Comb1 | Comb1 | B |
| CSB4 | Span 1 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 2 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | B |
| CSB4 | Span 3 | Comb1 | Comb1 | Comb1 | B |

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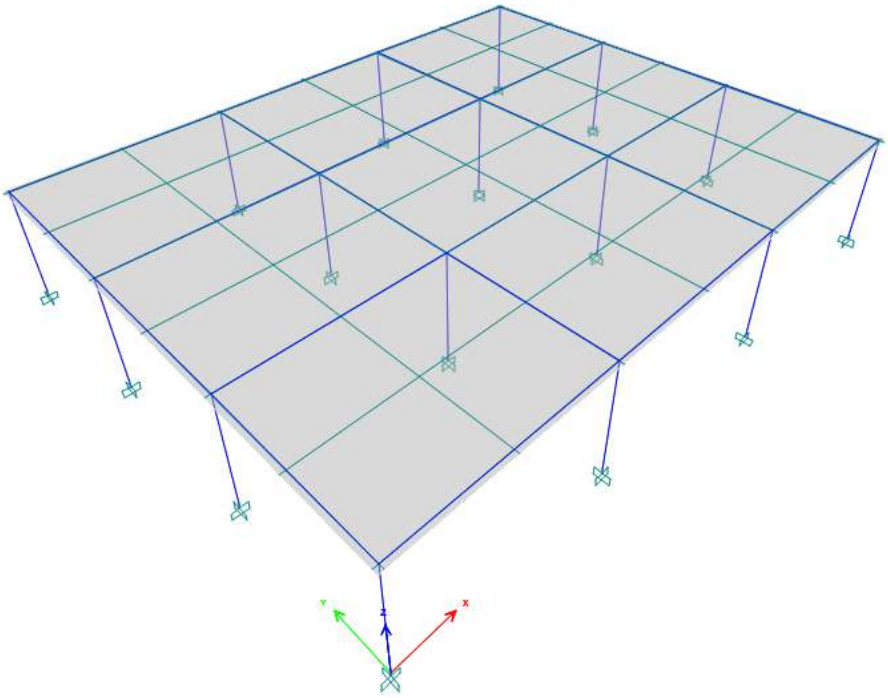

# User Report 1

Model File: Flat slab with beams, Revision 0
26/10/2025

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# 1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

## 1.1 Grid Data

**Table 1.1 - Grid Definitions - General**

| Name | Type | Ux ft | Uy ft | Rz deg | Datum Name | Story Name Above | Story Name Below | Model Datum ft | Story Height Above ft | Story Height Below ft | Bubble Size ft | Color |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GLOBAL | Cartesian | 0 | 0 | 0 | Story1 | Story2 | Base | 12 | 12 | 12 | 5 | Gray6 |

**Table 1.2 - Grid Definitions - Grid Lines**

| Name | Grid Line Type | ID | Ordinate ft | Bubble Location | Visible |
|---|---|---|---|---|---|
| GLOBAL | X (Cartesian) | A | 0 | End | Yes |
| GLOBAL | X (Cartesian) | B | 22 | End | Yes |
| GLOBAL | X (Cartesian) | C | 44 | End | Yes |
| GLOBAL | X (Cartesian) | D | 66 | End | Yes |
| GLOBAL | Y (Cartesian) | 1 | 0 | Start | Yes |
| GLOBAL | Y (Cartesian) | 2 | 17.5 | Start | Yes |
| GLOBAL | Y (Cartesian) | 3 | 35 | Start | Yes |
| GLOBAL | Y (Cartesian) | 4 | 52.5 | Start | Yes |

## 1.2 Line Connectivity

**Table 1.3 - Column Object Connectivity**

| Unique Name | UniquePtI | UniquePtJ | Length ft |
|---|---|---|---|
| 1 | 1 | 2 | 12 |
| 2 | 3 | 4 | 12 |
| 3 | 5 | 6 | 12 |
| 4 | 7 | 8 | 12 |
| 5 | 9 | 10 | 12 |
| 6 | 11 | 12 | 12 |
| 7 | 13 | 14 | 12 |
| 8 | 15 | 16 | 12 |
| 9 | 17 | 18 | 12 |
| 10 | 19 | 20 | 12 |
| 11 | 21 | 22 | 12 |
| 12 | 23 | 24 | 12 |
| 13 | 25 | 26 | 12 |
| 14 | 27 | 28 | 12 |
| 15 | 29 | 30 | 12 |
| 16 | 31 | 32 | 12 |

**Table 1.4 - Beam Object Connectivity**

| Unique Name | UniquePtI | UniquePtJ | Length ft |
|---|---|---|---|
| 17 | 2 | 10 | 22 |
| 18 | 10 | 18 | 22 |
| 19 | 18 | 26 | 22 |
| 20 | 8 | 16 | 22 |
| 21 | 16 | 24 | 22 |
| 22 | 24 | 32 | 22 |
| 23 | 2 | 4 | 17.5 |
| 24 | 4 | 6 | 17.5 |
| 25 | 6 | 8 | 17.5 |
| 26 | 26 | 28 | 17.5 |
| 27 | 28 | 30 | 17.5 |
| 28 | 30 | 32 | 17.5 |
| 29 | 6 | 14 | 22 |
| 30 | 14 | 22 | 22 |
| 31 | 22 | 30 | 22 |
| 32 | 4 | 12 | 22 |
| 33 | 12 | 20 | 22 |
| 34 | 20 | 28 | 22 |
| 36 | 14 | 16 | 17.5 |
| 37 | 12 | 14 | 17.5 |
| 38 | 10 | 12 | 17.5 |
| 39 | 18 | 20 | 17.5 |
| 40 | 20 | 22 | 17.5 |
| 41 | 22 | 24 | 17.5 |

## 1.3 Area Connectivity

**Table 1.5 - Floor Object Connectivity**

| Unique Name | UniquePt1 | UniquePt2 | UniquePt3 | UniquePt4 | Perimeter ft | Area ft2 |
|---|---|---|---|---|---|---|
| 1 | 33 | 34 | 35 | 36 | 241 | 3584.5 |

## 1.4 Strip Connectivity

**Table 1.6 - Strip Object Connectivity**

| Name | Number Segments | Strip Start Point | Segment End Point | Start Width Left ft | Start Width Right ft | End Width Left ft | End Width Right ft | Auto Widen | Layer |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | 1 | 43 | 44 | 4.375 | 0.5 | 4.375 | 0.5 | No | A |
| CSA2 | 1 | 47 | 48 | 4.375 | 4.375 | 4.375 | 4.375 | No | A |
| CSA3 | 1 | 51 | 52 | 11 | 11 | 11 | 11 | No | A |
| CSA4 | 1 | 55 | 56 | 0.5 | 4.375 | 0.5 | 4.375 | No | A |
| CSB1 | 1 | 63 | 64 | 0.5 | 5.5 | 0.5 | 5.5 | No | B |
| CSB2 | 1 | 67 | 68 | 5.5 | 5.5 | 5.5 | 5.5 | No | B |
| CSB3 | 1 | 71 | 72 | 5.5 | 5.5 | 5.5 | 5.5 | No | B |
| CSB4 | 1 | 75 | 76 | 5.5 | 0.5 | 5.5 | 0.5 | No | B |

**Table 1.6 - Strip Object Connectivity (continued)**

| Name | Number Segments | Strip Start Point | Segment End Point | Start Width Left ft | Start Width Right ft | End Width Left ft | End Width Right ft | Auto Widen | Layer |
|---|---|---|---|---|---|---|---|---|---|
| MSA1 | 1 | 45 | 46 | 8.75 | 8.75 | 8.75 | 8.75 | No | A |
| MSA2 | 1 | 49 | 50 | 7.58 | 7.58 | 7.58 | 7.58 | No | A |
| MSA3 | 1 | 53 | 54 | 4.375 | 4.375 | 4.375 | 4.375 | No | A |
| MSB1 | 1 | 65 | 66 | 5.5 | 5.5 | 5.5 | 5.5 | No | B |
| MSB2 | 1 | 69 | 70 | 7.58 | 7.58 | 7.58 | 7.58 | No | B |
| MSB3 | 1 | 73 | 74 | 11 | 11 | 11 | 11 | No | B |

## 1.5 Mass

**Table 1.7 - Mass Source Definition**

| Name | Is Default | Include Lateral Mass? | Include Vertical Mass? | Lump Mass? | Source Self Mass? | Source Added Mass? | Source Load Patterns? | Move Mass Centroid? |
|---|---|---|---|---|---|---|---|---|
| MsSrc1 | Yes | No | Yes | Yes | Yes | Yes | No | No |

**Table 1.8 - Mass Summary by Group**

| Group | Self Mass kip-s2/ft | Self Weight kip | Mass X kip-s2/ft | Mass Y kip-s2/ft | Mass Z kip-s2/ft |
|---|---|---|---|---|---|
| All | 14.53889 | 0 | 14.53889 | 14.53889 | 14.53889 |

# 2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

## 2.1 Materials

**Table 2.1 - Material Properties - General**

| Material | Type | SymType | Grade | Color | Notes |
|---|---|---|---|---|---|
| 4000Psi | Concrete | Isotropic | f'c 4000 psi | Gray8Dark | |
| A416Gr270 | Tendon | Uniaxial | Grade 270 | Red | |
| A615Gr60 | Rebar | Uniaxial | Grade 60 | Green | |

## 2.2 Frame Sections

**Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 3)**

| Name | Material | Shape | Color | Area ft2 | J ft4 | I33 ft4 | I22 ft4 | I23 ft4 | As2 ft2 | As3 ft2 |
|---|---|---|---|---|---|---|---|---|---|---|
| ConcBm1 | 4000Psi | Concrete Tee | Magenta | 2.0417 | 0.924859 | 1.646694 | 1.356578 | 0 | 2.4046 | 2.9581 |
| ConcBm2 | 4000Psi | Concrete Tee | Yellow | 2.0417 | 0.908935 | 1.559518 | 0.98524 | 0 | 2.3745 | 2.9462 |
| ConcCol1 | 4000Psi | Concrete Rectangular | Green | 2.25 | 0.713232 | 0.421875 | 0.421875 | 0 | 1.875 | 1.875 |

**Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 3)**

| Name | S33Pos ft3 | S33Neg ft3 | S22Pos ft3 | S22Neg ft3 | Z33 ft3 | Z22 ft3 | R33 ft | R22 ft | Cw ft6 | CG Offset 3 ft | CG Offset 2 ft | PNA Offset 3 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ConcBm1 | 1.832654 | 1.218446 | 0.904385 | 0.904385 | 2.098586 | 1.720486 | 0.68187 | 0.6189 | | 0 | 0.22647 | 0 |
| ConcBm2 | 1.668322 | 1.18575 | 0.750659 | 0.750659 | 2.000651 | 1.456814 | 0.68187 | 0.54197 | | 0 | 0.19022 | 0 |
| ConcCol1 | 0.5625 | 0.5625 | 0.5625 | 0.5625 | 0.84375 | 0.84375 | 0.43301 | 0.43301 | | 0 | 0 | 0 |

**Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 3)**

| Name | SC Offset 3 ft | SC Offset 2 ft | Area Modifier | As2 Modifier | As3 Modifier | J Modifier | I33 Modifier | I22 Modifier | Mass Modifier | Weight Modifier |
|---|---|---|---|---|---|---|---|---|---|---|
| ConcBm1 | 0 | 0.68295 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ConcBm2 | 0 | 0.61057 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ConcCol1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

## 2.3 Shell Sections

**Table 2.3 - Area Section Property Definitions - Summary**

| Name | Type | Element Type | Material | Total Thickness ft | Deck Material | Deck Depth ft |
|---|---|---|---|---|---|---|
| Slab2 | Slab | Shell-Thin | 4000Psi | 0.5 | | |

## 2.4 Reinforcement Sizes

**Table 2.4 - Reinforcing Bar Sizes**

| Name | Diameter ft | Area ft2 |
|---|---|---|
| #4 | 0.04167 | 0.0014 |
| #6 | 0.0625 | 0.0031 |
| #9 | 0.094 | 0.0069 |

# 3 Assignments

This chapter provides a listing of the assignments applied to the model.

## 3.1 Joint Assignments

**Table 3.1 - Joint Assignments - Summary**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 2 | From Area | |
| 4 | From Area | |
| 6 | From Area | |
| 8 | From Area | |
| 10 | From Area | |
| 12 | From Area | |
| 14 | From Area | |
| 16 | From Area | |
| 18 | From Area | |
| 20 | From Area | |
| 22 | From Area | |
| 24 | From Area | |
| 26 | From Area | |
| 28 | From Area | |
| 30 | From Area | |
| 32 | From Area | |
| 33 | From Area | |
| 34 | From Area | |
| 35 | From Area | |
| 36 | From Area | |
| 43 | From Area | |
| 44 | From Area | |
| 45 | From Area | |
| 46 | From Area | |
| 47 | From Area | |
| 48 | From Area | |
| 49 | From Area | |
| 50 | From Area | |
| 51 | From Area | |
| 52 | From Area | |
| 53 | From Area | |
| 54 | From Area | |
| 55 | From Area | |
| 56 | From Area | |
| 63 | From Area | |
| 64 | From Area | |
| 65 | From Area | |
| 66 | From Area | |
| 67 | From Area | |
| 68 | From Area | |
| 69 | From Area | |
| 70 | From Area | |

**Table 3.1 - Joint Assignments - Summary (continued)**

| UniqueName | Diaphragm | Restraints |
|---|---|---|
| 71 | From Area | |
| 72 | From Area | |
| 73 | From Area | |
| 74 | From Area | |
| 75 | From Area | |
| 76 | From Area | |
| 1 | From Area | UX; UY; UZ; RX; RY; RZ |
| 3 | From Area | UX; UY; UZ; RX; RY; RZ |
| 5 | From Area | UX; UY; UZ; RX; RY; RZ |
| 7 | From Area | UX; UY; UZ; RX; RY; RZ |
| 9 | From Area | UX; UY; UZ; RX; RY; RZ |
| 11 | From Area | UX; UY; UZ; RX; RY; RZ |
| 13 | From Area | UX; UY; UZ; RX; RY; RZ |
| 15 | From Area | UX; UY; UZ; RX; RY; RZ |
| 17 | From Area | UX; UY; UZ; RX; RY; RZ |
| 19 | From Area | UX; UY; UZ; RX; RY; RZ |
| 21 | From Area | UX; UY; UZ; RX; RY; RZ |
| 23 | From Area | UX; UY; UZ; RX; RY; RZ |
| 25 | From Area | UX; UY; UZ; RX; RY; RZ |
| 27 | From Area | UX; UY; UZ; RX; RY; RZ |
| 29 | From Area | UX; UY; UZ; RX; RY; RZ |
| 31 | From Area | UX; UY; UZ; RX; RY; RZ |

## 3.2 Frame Assignments

**Table 3.2 - Frame Assignments - Summary**

| UniqueName | Design Type | Length ft | Analysis Section | Design Section | Max Station Spacing ft | Min Number Stations |
|---|---|---|---|---|---|---|
| 17 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 18 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 19 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 20 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 21 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 22 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 23 | Beam | 17.5 | ConcBm2 | ConcBm2 | 2 | |
| 24 | Beam | 17.5 | ConcBm2 | ConcBm2 | 2 | |
| 25 | Beam | 17.5 | ConcBm2 | ConcBm2 | 2 | |
| 26 | Beam | 17.5 | ConcBm2 | ConcBm2 | 2 | |
| 27 | Beam | 17.5 | ConcBm2 | ConcBm2 | 2 | |
| 28 | Beam | 17.5 | ConcBm2 | ConcBm2 | 2 | |
| 29 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 30 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 31 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 32 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 33 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |

**Table 3.2 - Frame Assignments - Summary (continued)**

| UniqueName | Design Type | Length ft | Analysis Section | Design Section | Max Station Spacing ft | Min Number Stations |
|---|---|---|---|---|---|---|
| 34 | Beam | 22 | ConcBm1 | ConcBm1 | 2 | |
| 36 | Beam | 17.5 | ConcBm1 | ConcBm1 | 2 | |
| 37 | Beam | 17.5 | ConcBm1 | ConcBm1 | 2 | |
| 38 | Beam | 17.5 | ConcBm1 | ConcBm1 | 2 | |
| 39 | Beam | 17.5 | ConcBm1 | ConcBm1 | 2 | |
| 40 | Beam | 17.5 | ConcBm1 | ConcBm1 | 2 | |
| 41 | Beam | 17.5 | ConcBm1 | ConcBm1 | 2 | |
| 1 | Column | 12 | ConcCol1 | N/A | | 3 |
| 2 | Column | 12 | ConcCol1 | N/A | | 3 |
| 3 | Column | 12 | ConcCol1 | N/A | | 3 |
| 4 | Column | 12 | ConcCol1 | N/A | | 3 |
| 5 | Column | 12 | ConcCol1 | N/A | | 3 |
| 6 | Column | 12 | ConcCol1 | N/A | | 3 |
| 7 | Column | 12 | ConcCol1 | N/A | | 3 |
| 8 | Column | 12 | ConcCol1 | N/A | | 3 |
| 9 | Column | 12 | ConcCol1 | N/A | | 3 |
| 10 | Column | 12 | ConcCol1 | N/A | | 3 |
| 11 | Column | 12 | ConcCol1 | N/A | | 3 |
| 12 | Column | 12 | ConcCol1 | N/A | | 3 |
| 13 | Column | 12 | ConcCol1 | N/A | | 3 |
| 14 | Column | 12 | ConcCol1 | N/A | | 3 |
| 15 | Column | 12 | ConcCol1 | N/A | | 3 |
| 16 | Column | 12 | ConcCol1 | N/A | | 3 |

## 3.3 Shell Assignments

**Table 3.3 - Area Assignments - Summary**

| UniqueName | Section Property | Property Type |
|---|---|---|
| 1 | Slab2 | Slab |

# 4 Loads

This chapter provides loading information as applied to the model.

## 4.1 Load Patterns

**Table 4.1 - Load Pattern Definitions**

| Name | Is Auto Load | Type | Self Weight Multiplier |
|---|---|---|---|
| ~LLRF | No | Other | 0 |
| Dead | No | Dead | 1 |
| Live | No | Live | 0 |
| Sc | No | Super Dead | 0 |

## 4.2 Applied Loads

### 4.2.1 Area Loads

**Table 4.2 - Area Load Assignments - Uniform**

| UniqueName | Load Pattern | Direction | Load kip/ft2 |
|---|---|---|---|
| 1 | Live | Gravity | 0.1 |
| 1 | Sc | Gravity | 0 |

## 4.3 Load Cases

**Table 4.3 - Load Case Definitions - Summary**

| Name | Type |
|---|---|
| Dead | Linear Static |
| Live | Linear Static |
| Sc | Linear Static |

## 4.4 Load Combinations

**Table 4.4 - Load Combination Definitions**

| Name | Type | Is Auto | Load Name | SF | Notes |
|---|---|---|---|---|---|
| Comb1 | Linear Add | No | Dead | 1.2 | |
| Comb1 | | | Live | 1.6 | |
| Comb1 | | | Sc | 1.2 | |
| DConS1 | Linear Add | Yes | Dead | 1.4 | Dead [Strength] |
| DConS1 | | | Sc | 1.4 | |
| DConS2 | Linear Add | Yes | Dead | 1.2 | Dead + Live [Strength] |
| DConS2 | | | Live | 1.6 | |
| DConS2 | | | Sc | 1.2 | |

# 5 Analysis Results

This chapter provides analysis results.

## 5.1 Structure Results

**Table 5.1 - Base Reactions**

| Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft | X ft | Y ft | Z ft |
|---|---|---|---|---|---|---|---|---|---|---|
| Dead | LinStatic | 0 | 0 | 467.775 | 12279.0938 | -15436.575 | 0 | 0 | 0 | 0 |
| Live | LinStatic | 0 | 0 | 358.45 | 9409.3125 | -11828.85 | 0 | 0 | 0 | 0 |
| Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Comb1 | Combination | 0 | 0 | 1134.85 | 29789.8125 | -37450.05 | 0 | 0 | 0 | 0 |
| DConS1 | Combination | 0 | 0 | 654.885 | 17190.7313 | -21611.205 | 0 | 0 | 0 | 0 |
| DConS2 | Combination | 0 | 0 | 1134.85 | 29789.8125 | -37450.05 | 0 | 0 | 0 | 0 |

## 5.2 Point Results

**Table 5.2 - Joint Reactions**

| Unique Name | Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft |
|---|---|---|---|---|---|---|---|---|
| 1 | Dead | LinStatic | 1.466 | 0.885 | 14.773 | -3.4454 | 5.6871 | -0.0034 |
| 1 | Live | LinStatic | 1.264 | 0.781 | 7.944 | -3.037 | 4.9044 | -0.0022 |
| 1 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | Comb1 | Combination | 3.781 | 2.311 | 30.438 | -8.9936 | 14.6716 | -0.0075 |
| 1 | DConS1 | Combination | 2.052 | 1.239 | 20.683 | -4.8235 | 7.962 | -0.0047 |
| 1 | DConS2 | Combination | 3.781 | 2.311 | 30.438 | -8.9936 | 14.6716 | -0.0075 |
| 3 | Dead | LinStatic | 2.536 | -0.215 | 26.052 | 0.8441 | 9.8664 | -0.0007 |
| 3 | Live | LinStatic | 2.71 | -0.205 | 18.751 | 0.8037 | 10.5433 | -0.0003 |
| 3 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Comb1 | Combination | 7.379 | -0.586 | 61.265 | 2.2989 | 28.709 | -0.0013 |
| 3 | DConS1 | Combination | 3.551 | -0.301 | 36.473 | 1.1818 | 13.8129 | -0.001 |
| 3 | DConS2 | Combination | 7.379 | -0.586 | 61.265 | 2.2989 | 28.709 | -0.0013 |
| 5 | Dead | LinStatic | 2.536 | 0.215 | 26.052 | -0.8441 | 9.8664 | 0.0007 |
| 5 | Live | LinStatic | 2.71 | 0.205 | 18.751 | -0.8037 | 10.5433 | 0.0003 |
| 5 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Comb1 | Combination | 7.379 | 0.586 | 61.265 | -2.2989 | 28.709 | 0.0013 |
| 5 | DConS1 | Combination | 3.551 | 0.301 | 36.473 | -1.1818 | 13.8129 | 0.001 |
| 5 | DConS2 | Combination | 7.379 | 0.586 | 61.265 | -2.2989 | 28.709 | 0.0013 |
| 7 | Dead | LinStatic | 1.466 | -0.885 | 14.773 | 3.4454 | 5.6871 | 0.0034 |
| 7 | Live | LinStatic | 1.264 | -0.781 | 7.944 | 3.037 | 4.9044 | 0.0022 |
| 7 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | Comb1 | Combination | 3.781 | -2.311 | 30.438 | 8.9936 | 14.6716 | 0.0075 |
| 7 | DConS1 | Combination | 2.052 | -1.239 | 20.683 | 4.8235 | 7.962 | 0.0047 |
| 7 | DConS2 | Combination | 3.781 | -2.311 | 30.438 | 8.9936 | 14.6716 | 0.0075 |
| 9 | Dead | LinStatic | -0.366 | 1.502 | 26.939 | -5.8543 | -1.4405 | 0.0013 |
| 9 | Live | LinStatic | -0.331 | 1.618 | 18.776 | -6.3059 | -1.3047 | 0.0011 |
| 9 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | Comb1 | Combination | -0.97 | 4.392 | 62.369 | -17.1146 | -3.816 | 0.0032 |
| 9 | DConS1 | Combination | -0.513 | 2.103 | 37.715 | -8.196 | -2.0166 | 0.0018 |

**Table 5.2 - Joint Reactions (continued)**

| Unique Name | Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft |
|---|---|---|---|---|---|---|---|---|
| 9 | DConS2 | Combination | -0.97 | 4.392 | 62.369 | -17.1146 | -3.816 | 0.0032 |
| 11 | Dead | LinStatic | -0.613 | -0.363 | 49.179 | 1.4214 | -2.407 | 4.569E-05 |
| 11 | Live | LinStatic | -0.666 | -0.407 | 44.141 | 1.5932 | -2.6119 | 0.0001 |
| 11 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | Comb1 | Combination | -1.801 | -1.087 | 129.641 | 4.2549 | -7.0674 | 0.0002 |
| 11 | DConS1 | Combination | -0.859 | -0.508 | 68.851 | 1.99 | -3.3698 | 0.0001 |
| 11 | DConS2 | Combination | -1.801 | -1.087 | 129.641 | 4.2549 | -7.0674 | 0.0002 |
| 13 | Dead | LinStatic | -0.613 | 0.363 | 49.179 | -1.4214 | -2.407 | -4.569E-05 |
| 13 | Live | LinStatic | -0.666 | 0.407 | 44.141 | -1.5932 | -2.6119 | -0.0001 |
| 13 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | Comb1 | Combination | -1.801 | 1.087 | 129.641 | -4.2549 | -7.0674 | -0.0002 |
| 13 | DConS1 | Combination | -0.859 | 0.508 | 68.851 | -1.99 | -3.3698 | -0.0001 |
| 13 | DConS2 | Combination | -1.801 | 1.087 | 129.641 | -4.2549 | -7.0674 | -0.0002 |
| 15 | Dead | LinStatic | -0.366 | -1.502 | 26.939 | 5.8543 | -1.4405 | -0.0013 |
| 15 | Live | LinStatic | -0.331 | -1.618 | 18.776 | 6.3059 | -1.3047 | -0.0011 |
| 15 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | Comb1 | Combination | -0.97 | -4.392 | 62.369 | 17.1146 | -3.816 | -0.0032 |
| 15 | DConS1 | Combination | -0.513 | -2.103 | 37.715 | 8.196 | -2.0166 | -0.0018 |
| 15 | DConS2 | Combination | -0.97 | -4.392 | 62.369 | 17.1146 | -3.816 | -0.0032 |
| 17 | Dead | LinStatic | 0.366 | 1.502 | 26.939 | -5.8543 | 1.4405 | -0.0013 |
| 17 | Live | LinStatic | 0.331 | 1.618 | 18.776 | -6.3059 | 1.3047 | -0.0011 |
| 17 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | Comb1 | Combination | 0.97 | 4.392 | 62.369 | -17.1146 | 3.816 | -0.0032 |
| 17 | DConS1 | Combination | 0.513 | 2.103 | 37.715 | -8.196 | 2.0166 | -0.0018 |
| 17 | DConS2 | Combination | 0.97 | 4.392 | 62.369 | -17.1146 | 3.816 | -0.0032 |
| 19 | Dead | LinStatic | 0.613 | -0.363 | 49.179 | 1.4214 | 2.407 | -4.569E-05 |
| 19 | Live | LinStatic | 0.666 | -0.407 | 44.141 | 1.5932 | 2.6119 | -0.0001 |
| 19 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | Comb1 | Combination | 1.801 | -1.087 | 129.641 | 4.2549 | 7.0674 | -0.0002 |
| 19 | DConS1 | Combination | 0.859 | -0.508 | 68.851 | 1.99 | 3.3698 | -0.0001 |
| 19 | DConS2 | Combination | 1.801 | -1.087 | 129.641 | 4.2549 | 7.0674 | -0.0002 |
| 21 | Dead | LinStatic | 0.613 | 0.363 | 49.179 | -1.4214 | 2.407 | 4.569E-05 |
| 21 | Live | LinStatic | 0.666 | 0.407 | 44.141 | -1.5932 | 2.6119 | 0.0001 |
| 21 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | Comb1 | Combination | 1.801 | 1.087 | 129.641 | -4.2549 | 7.0674 | 0.0002 |
| 21 | DConS1 | Combination | 0.859 | 0.508 | 68.851 | -1.99 | 3.3698 | 0.0001 |
| 21 | DConS2 | Combination | 1.801 | 1.087 | 129.641 | -4.2549 | 7.0674 | 0.0002 |
| 23 | Dead | LinStatic | 0.366 | -1.502 | 26.939 | 5.8543 | 1.4405 | 0.0013 |
| 23 | Live | LinStatic | 0.331 | -1.618 | 18.776 | 6.3059 | 1.3047 | 0.0011 |
| 23 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | Comb1 | Combination | 0.97 | -4.392 | 62.369 | 17.1146 | 3.816 | 0.0032 |
| 23 | DConS1 | Combination | 0.513 | -2.103 | 37.715 | 8.196 | 2.0166 | 0.0018 |
| 23 | DConS2 | Combination | 0.97 | -4.392 | 62.369 | 17.1146 | 3.816 | 0.0032 |
| 25 | Dead | LinStatic | -1.466 | 0.885 | 14.773 | -3.4454 | -5.6871 | 0.0034 |
| 25 | Live | LinStatic | -1.264 | 0.781 | 7.944 | -3.037 | -4.9044 | 0.0022 |

**Table 5.2 - Joint Reactions (continued)**

| Unique Name | Output Case | Case Type | FX kip | FY kip | FZ kip | MX kip-ft | MY kip-ft | MZ kip-ft |
|---|---|---|---|---|---|---|---|---|
| 25 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | Comb1 | Combination | -3.781 | 2.311 | 30.438 | -8.9936 | -14.6716 | 0.0075 |
| 25 | DConS1 | Combination | -2.052 | 1.239 | 20.683 | -4.8235 | -7.962 | 0.0047 |
| 25 | DConS2 | Combination | -3.781 | 2.311 | 30.438 | -8.9936 | -14.6716 | 0.0075 |
| 27 | Dead | LinStatic | -2.536 | -0.215 | 26.052 | 0.8441 | -9.8664 | 0.0007 |
| 27 | Live | LinStatic | -2.71 | -0.205 | 18.751 | 0.8037 | -10.5433 | 0.0003 |
| 27 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | Comb1 | Combination | -7.379 | -0.586 | 61.265 | 2.2989 | -28.709 | 0.0013 |
| 27 | DConS1 | Combination | -3.551 | -0.301 | 36.473 | 1.1818 | -13.8129 | 0.001 |
| 27 | DConS2 | Combination | -7.379 | -0.586 | 61.265 | 2.2989 | -28.709 | 0.0013 |
| 29 | Dead | LinStatic | -2.536 | 0.215 | 26.052 | -0.8441 | -9.8664 | -0.0007 |
| 29 | Live | LinStatic | -2.71 | 0.205 | 18.751 | -0.8037 | -10.5433 | -0.0003 |
| 29 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | Comb1 | Combination | -7.379 | 0.586 | 61.265 | -2.2989 | -28.709 | -0.0013 |
| 29 | DConS1 | Combination | -3.551 | 0.301 | 36.473 | -1.1818 | -13.8129 | -0.001 |
| 29 | DConS2 | Combination | -7.379 | 0.586 | 61.265 | -2.2989 | -28.709 | -0.0013 |
| 31 | Dead | LinStatic | -1.466 | -0.885 | 14.773 | 3.4454 | -5.6871 | -0.0034 |
| 31 | Live | LinStatic | -1.264 | -0.781 | 7.944 | 3.037 | -4.9044 | -0.0022 |
| 31 | Sc | LinStatic | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | Comb1 | Combination | -3.781 | -2.311 | 30.438 | 8.9936 | -14.6716 | -0.0075 |
| 31 | DConS1 | Combination | -2.052 | -1.239 | 20.683 | 4.8235 | -7.962 | -0.0047 |
| 31 | DConS2 | Combination | -3.781 | -2.311 | 30.438 | 8.9936 | -14.6716 | -0.0075 |

## 5.3 Strip Results

**Table 5.3 - Strip Forces Summary**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | Start | Dead | LinStatic | -0.591 | -0.67 | -1.887 | 0.9935 | -0.9742 |
| CSA1 | Span 1 | Start | Live | LinStatic | -0.51 | -0.782 | -2.6436 | 1.1818 | -1.1476 |
| CSA1 | Span 1 | Start | Comb1 | Combination | -1.526 | -2.055 | -6.4942 | 3.083 | -3.0052 |
| CSA1 | Span 1 | Start | DConS1 | Combination | -0.828 | -0.938 | -2.6418 | 1.3909 | -1.3639 |
| CSA1 | Span 1 | Start | DConS2 | Combination | -1.526 | -2.055 | -6.4942 | 3.083 | -3.0052 |
| CSA1 | Span 1 | Middle | Dead | LinStatic | -0.546 | 0.378 | 1.2758 | 1.7626 | 1.371 |
| CSA1 | Span 1 | Middle | Live | LinStatic | -0.503 | 0.402 | 1.8059 | 1.9843 | 1.575 |
| CSA1 | Span 1 | Middle | Comb1 | Combination | -1.46 | 1.097 | 4.4204 | 5.2899 | 4.1651 |
| CSA1 | Span 1 | Middle | DConS1 | Combination | -0.764 | 0.529 | 1.7862 | 2.4676 | 1.9194 |
| CSA1 | Span 1 | Middle | DConS2 | Combination | -1.46 | 1.097 | 4.4204 | 5.2899 | 4.1651 |
| CSA1 | Span 1 | End | Dead | LinStatic | -0.628 | 1.119 | 1.4965 | 0.2778 | -3.6259 |
| CSA1 | Span 1 | End | Live | LinStatic | -0.6 | 1.342 | 2.1305 | 0.3522 | -4.2896 |
| CSA1 | Span 1 | End | Comb1 | Combination | -1.713 | 3.49 | 5.2045 | 0.897 | -11.2144 |
| CSA1 | Span 1 | End | DConS1 | Combination | -0.88 | 1.567 | 2.095 | 0.389 | -5.0762 |
| CSA1 | Span 1 | End | DConS2 | Combination | -1.713 | 3.49 | 5.2045 | 0.897 | -11.2144 |
| CSA1 | Span 2 | Start | Dead | LinStatic | -0.49 | -1.082 | -1.3773 | 0.1878 | -3.5517 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 2 | Start | Live | LinStatic | -0.479 | -1.309 | -1.9509 | 0.2711 | -4.218 |
| CSA1 | Span 2 | Start | Comb1 | Combination | -1.355 | -3.393 | -4.7741 | 0.6592 | -11.0109 |
| CSA1 | Span 2 | Start | DConS1 | Combination | -0.686 | -1.515 | -1.9282 | 0.263 | -4.9724 |
| CSA1 | Span 2 | Start | DConS2 | Combination | -1.355 | -3.393 | -4.7741 | 0.6592 | -11.0109 |
| CSA1 | Span 2 | Middle | Dead | LinStatic | -0.389 | 0.336 | 1.14 | 1.3553 | 1.0616 |
| CSA1 | Span 2 | Middle | Live | LinStatic | -0.375 | -0.366 | -1.6155 | 1.6035 | 1.3143 |
| CSA1 | Span 2 | Middle | Comb1 | Combination | -1.067 | 0.988 | 3.9527 | 4.192 | 3.3767 |
| CSA1 | Span 2 | Middle | DConS1 | Combination | -0.545 | 0.47 | 1.596 | 1.8974 | 1.4863 |
| CSA1 | Span 2 | Middle | DConS2 | Combination | -1.067 | 0.988 | 3.9527 | 4.192 | 3.3767 |
| CSA1 | Span 2 | End | Dead | LinStatic | -0.49 | 1.082 | 1.3773 | 0.1878 | -3.5517 |
| CSA1 | Span 2 | End | Live | LinStatic | -0.479 | 1.309 | 1.9509 | 0.2711 | -4.218 |
| CSA1 | Span 2 | End | Comb1 | Combination | -1.355 | 3.393 | 4.7741 | 0.6592 | -11.0109 |
| CSA1 | Span 2 | End | DConS1 | Combination | -0.686 | 1.515 | 1.9282 | 0.263 | -4.9724 |
| CSA1 | Span 2 | End | DConS2 | Combination | -1.355 | 3.393 | 4.7741 | 0.6592 | -11.0109 |
| CSA1 | Span 3 | Start | Dead | LinStatic | -0.628 | -1.119 | -1.4965 | 0.2778 | -3.6259 |
| CSA1 | Span 3 | Start | Live | LinStatic | -0.6 | -1.342 | -2.1305 | 0.3522 | -4.2896 |
| CSA1 | Span 3 | Start | Comb1 | Combination | -1.713 | -3.49 | -5.2045 | 0.897 | -11.2144 |
| CSA1 | Span 3 | Start | DConS1 | Combination | -0.88 | -1.567 | -2.095 | 0.389 | -5.0762 |
| CSA1 | Span 3 | Start | DConS2 | Combination | -1.713 | -3.49 | -5.2045 | 0.897 | -11.2144 |
| CSA1 | Span 3 | Middle | Dead | LinStatic | -0.546 | -0.378 | -1.2758 | 1.7626 | 1.371 |
| CSA1 | Span 3 | Middle | Live | LinStatic | -0.503 | -0.402 | -1.8059 | 1.9843 | 1.575 |
| CSA1 | Span 3 | Middle | Comb1 | Combination | -1.46 | -1.097 | -4.4204 | 5.2899 | 4.1651 |
| CSA1 | Span 3 | Middle | DConS1 | Combination | -0.764 | -0.529 | -1.7862 | 2.4676 | 1.9194 |
| CSA1 | Span 3 | Middle | DConS2 | Combination | -1.46 | -1.097 | -4.4204 | 5.2899 | 4.1651 |
| CSA1 | Span 3 | End | Dead | LinStatic | -0.591 | 0.67 | 1.887 | 0.9935 | -0.9742 |
| CSA1 | Span 3 | End | Live | LinStatic | -0.51 | 0.782 | 2.6436 | 1.1818 | -1.1476 |
| CSA1 | Span 3 | End | Comb1 | Combination | -1.526 | 2.055 | 6.4942 | 3.083 | -3.0052 |
| CSA1 | Span 3 | End | DConS1 | Combination | -0.828 | 0.938 | 2.6418 | 1.3909 | -1.3639 |
| CSA1 | Span 3 | End | DConS2 | Combination | -1.526 | 2.055 | 6.4942 | 3.083 | -3.0052 |
| MSA1 | Span 1 | Start | Dead | LinStatic | -1.73 | -3.291 | -0.6146 | 5.3307 | -4.5146 |
| MSA1 | Span 1 | Start | Live | LinStatic | -1.691 | -4.189 | -0.8318 | 6.6146 | -5.9204 |
| MSA1 | Span 1 | Start | Comb1 | Combination | -4.782 | -10.652 | -2.0684 | 16.9801 | -14.8902 |
| MSA1 | Span 1 | Start | DConS1 | Combination | -2.422 | -4.607 | -0.8604 | 7.463 | -6.3205 |
| MSA1 | Span 1 | Start | DConS2 | Combination | -4.782 | -10.652 | -2.0684 | 16.9801 | -14.8902 |
| MSA1 | Span 1 | Middle | Dead | LinStatic | -2.006 | 2.061 | 0.4275 | 9.0305 | 6.8891 |
| MSA1 | Span 1 | Middle | Live | LinStatic | -1.962 | 2.473 | 0.582 | 10.9145 | 8.5056 |
| MSA1 | Span 1 | Middle | Comb1 | Combination | -5.547 | 6.429 | 1.4443 | 28.2998 | 21.8759 |
| MSA1 | Span 1 | Middle | DConS1 | Combination | -2.809 | 2.885 | 0.5985 | 12.6427 | 9.6448 |
| MSA1 | Span 1 | Middle | DConS2 | Combination | -5.547 | 6.429 | 1.4443 | 28.2998 | 21.8759 |
| MSA1 | Span 1 | End | Dead | LinStatic | -1.922 | 5.353 | 0.4273 | 0.4275 | -18.6127 |
| MSA1 | Span 1 | End | Live | LinStatic | -1.884 | 6.86 | 0.5801 | 0.7168 | -23.6211 |
| MSA1 | Span 1 | End | Comb1 | Combination | -5.321 | 17.4 | 1.4409 | 1.6599 | -60.129 |
| MSA1 | Span 1 | End | DConS1 | Combination | -2.691 | 7.495 | 0.5982 | 0.5985 | -26.0577 |
| MSA1 | Span 1 | End | DConS2 | Combination | -5.321 | 17.4 | 1.4409 | 1.6599 | -60.129 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA1 | Span 2 | Start | Dead | LinStatic | -1.684 | -5.214 | -0.2064 | 0.0257 | -18.386 |
| MSA1 | Span 2 | Start | Live | LinStatic | -1.656 | -6.726 | -0.2822 | 0.3317 | -23.371 |
| MSA1 | Span 2 | Start | Comb1 | Combination | -4.67 | -17.018 | -0.6992 | 0.5615 | -59.4568 |
| MSA1 | Span 2 | Start | DConS1 | Combination | -2.357 | -7.299 | -0.289 | 0.0359 | -25.7404 |
| MSA1 | Span 2 | Start | DConS2 | Combination | -4.67 | -17.018 | -0.6992 | 0.5615 | -59.4568 |
| MSA1 | Span 2 | Middle | Dead | LinStatic | -1.664 | -1.906 | -0.2065 | 7.2685 | 5.7156 |
| MSA1 | Span 2 | Middle | Live | LinStatic | -1.639 | -2.329 | -0.2824 | 9.1364 | 7.3735 |
| MSA1 | Span 2 | Middle | Comb1 | Combination | -4.619 | 6.014 | 0.6996 | 23.3404 | 18.6563 |
| MSA1 | Span 2 | Middle | DConS1 | Combination | -2.33 | 2.669 | 0.2891 | 10.1759 | 8.0018 |
| MSA1 | Span 2 | Middle | DConS2 | Combination | -4.619 | 6.014 | 0.6996 | 23.3404 | 18.6563 |
| MSA1 | Span 2 | End | Dead | LinStatic | -1.684 | 5.214 | 0.2064 | 0.0257 | -18.386 |
| MSA1 | Span 2 | End | Live | LinStatic | -1.656 | 6.726 | 0.2822 | 0.3317 | -23.371 |
| MSA1 | Span 2 | End | Comb1 | Combination | -4.67 | 17.018 | 0.6992 | 0.5615 | -59.4568 |
| MSA1 | Span 2 | End | DConS1 | Combination | -2.357 | 7.299 | 0.289 | 0.0359 | -25.7404 |
| MSA1 | Span 2 | End | DConS2 | Combination | -4.67 | 17.018 | 0.6992 | 0.5615 | -59.4568 |
| MSA1 | Span 3 | Start | Dead | LinStatic | -1.922 | -5.353 | -0.4273 | 0.4275 | -18.6127 |
| MSA1 | Span 3 | Start | Live | LinStatic | -1.884 | -6.86 | -0.5801 | 0.7168 | -23.6211 |
| MSA1 | Span 3 | Start | Comb1 | Combination | -5.321 | -17.4 | -1.4409 | 1.6599 | -60.129 |
| MSA1 | Span 3 | Start | DConS1 | Combination | -2.691 | -7.495 | -0.5982 | 0.5985 | -26.0577 |
| MSA1 | Span 3 | Start | DConS2 | Combination | -5.321 | -17.4 | -1.4409 | 1.6599 | -60.129 |
| MSA1 | Span 3 | Middle | Dead | LinStatic | -2.006 | -2.061 | -0.4275 | 9.0305 | 6.8891 |
| MSA1 | Span 3 | Middle | Live | LinStatic | -1.962 | -2.473 | -0.582 | 10.9145 | 8.5056 |
| MSA1 | Span 3 | Middle | Comb1 | Combination | -5.547 | -6.429 | -1.4443 | 28.2998 | 21.8759 |
| MSA1 | Span 3 | Middle | DConS1 | Combination | -2.809 | -2.885 | -0.5985 | 12.6427 | 9.6448 |
| MSA1 | Span 3 | Middle | DConS2 | Combination | -5.547 | -6.429 | -1.4443 | 28.2998 | 21.8759 |
| MSA1 | Span 3 | End | Dead | LinStatic | -1.73 | 3.291 | 0.6146 | 5.3307 | -4.5146 |
| MSA1 | Span 3 | End | Live | LinStatic | -1.691 | 4.189 | 0.8318 | 6.6146 | -5.9204 |
| MSA1 | Span 3 | End | Comb1 | Combination | -4.782 | 10.652 | 2.0684 | 16.9801 | -14.8902 |
| MSA1 | Span 3 | End | DConS1 | Combination | -2.422 | 4.607 | 0.8604 | 7.463 | -6.3205 |
| MSA1 | Span 3 | End | DConS2 | Combination | -4.782 | 10.652 | 2.0684 | 16.9801 | -14.8902 |
| CSA2 | Span 1 | Start | Dead | LinStatic | -1.359 | -0.657 | 0.2156 | 1.0564 | -1.4473 |
| CSA2 | Span 1 | Start | Live | LinStatic | -1.452 | -0.645 | 0.3022 | 1.1944 | -1.5718 |
| CSA2 | Span 1 | Start | Comb1 | Combination | -3.954 | -1.82 | 0.7422 | 3.1787 | -4.2516 |
| CSA2 | Span 1 | Start | DConS1 | Combination | -1.903 | -0.92 | 0.3018 | 1.4789 | -2.0262 |
| CSA2 | Span 1 | Start | DConS2 | Combination | -3.954 | -1.82 | 0.7422 | 3.1787 | -4.2516 |
| CSA2 | Span 1 | Middle | Dead | LinStatic | -1.147 | 0.615 | -0.1474 | 2.3486 | 1.6442 |
| CSA2 | Span 1 | Middle | Live | LinStatic | -1.207 | 0.598 | -0.2087 | 2.443 | 1.73 |
| CSA2 | Span 1 | Middle | Comb1 | Combination | -3.308 | 1.695 | -0.5108 | 6.7271 | 4.741 |
| CSA2 | Span 1 | Middle | DConS1 | Combination | -1.606 | 0.861 | -0.2063 | 3.2881 | 2.3019 |
| CSA2 | Span 1 | Middle | DConS2 | Combination | -3.308 | 1.695 | -0.5108 | 6.7271 | 4.741 |
| CSA2 | Span 1 | End | Dead | LinStatic | -1.063 | 1.572 | -0.1303 | -0.4207 | -6.7825 |
| CSA2 | Span 1 | End | Live | LinStatic | -1.093 | 1.798 | -0.1839 | -0.5379 | -7.9613 |
| CSA2 | Span 1 | End | Comb1 | Combination | -3.025 | 4.763 | -0.4507 | -1.3654 | -20.8771 |
| CSA2 | Span 1 | End | DConS1 | Combination | -1.489 | 2.201 | -0.1824 | -0.5889 | -9.4955 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA2 | Span 1 | End | DConS2 | Combination | -3.025 | 4.763 | -0.4507 | -1.3654 | -20.8771 |
| CSA2 | Span 2 | Start | Dead | LinStatic | -0.777 | -1.455 | 0.1935 | -0.6929 | -6.5601 |
| CSA2 | Span 2 | Start | Live | LinStatic | -0.773 | -1.673 | 0.2675 | -0.8263 | -7.7164 |
| CSA2 | Span 2 | Start | Comb1 | Combination | -2.169 | -4.424 | 0.6603 | -2.1535 | -20.2182 |
| CSA2 | Span 2 | Start | DConS1 | Combination | -1.088 | -2.038 | 0.2709 | -0.9701 | -9.1841 |
| CSA2 | Span 2 | Start | DConS2 | Combination | -2.169 | -4.424 | 0.6603 | -2.1535 | -20.2182 |
| CSA2 | Span 2 | Middle | Dead | LinStatic | -0.794 | 0.483 | -0.1736 | 1.2711 | 0.6327 |
| CSA2 | Span 2 | Middle | Live | LinStatic | -0.79 | 0.459 | 0.2407 | 1.3027 | 0.6577 |
| CSA2 | Span 2 | Middle | Comb1 | Combination | -2.218 | 1.314 | -0.5934 | 3.6097 | 1.8115 |
| CSA2 | Span 2 | Middle | DConS1 | Combination | -1.112 | 0.676 | -0.243 | 1.7796 | 0.8858 |
| CSA2 | Span 2 | Middle | DConS2 | Combination | -2.218 | 1.314 | -0.5934 | 3.6097 | 1.8115 |
| CSA2 | Span 2 | End | Dead | LinStatic | -0.777 | 1.455 | -0.1935 | -0.6929 | -6.5601 |
| CSA2 | Span 2 | End | Live | LinStatic | -0.773 | 1.673 | -0.2675 | -0.8263 | -7.7164 |
| CSA2 | Span 2 | End | Comb1 | Combination | -2.169 | 4.424 | -0.6603 | -2.1535 | -20.2182 |
| CSA2 | Span 2 | End | DConS1 | Combination | -1.088 | 2.038 | -0.2709 | -0.9701 | -9.1841 |
| CSA2 | Span 2 | End | DConS2 | Combination | -2.169 | 4.424 | -0.6603 | -2.1535 | -20.2182 |
| CSA2 | Span 3 | Start | Dead | LinStatic | -1.063 | -1.572 | 0.1303 | -0.4207 | -6.7825 |
| CSA2 | Span 3 | Start | Live | LinStatic | -1.093 | -1.798 | 0.1839 | -0.5379 | -7.9613 |
| CSA2 | Span 3 | Start | Comb1 | Combination | -3.025 | -4.763 | 0.4507 | -1.3654 | -20.8771 |
| CSA2 | Span 3 | Start | DConS1 | Combination | -1.489 | -2.201 | 0.1824 | -0.5889 | -9.4955 |
| CSA2 | Span 3 | Start | DConS2 | Combination | -3.025 | -4.763 | 0.4507 | -1.3654 | -20.8771 |
| CSA2 | Span 3 | Middle | Dead | LinStatic | -1.147 | -0.615 | 0.1474 | 2.3486 | 1.6442 |
| CSA2 | Span 3 | Middle | Live | LinStatic | -1.207 | -0.598 | 0.2087 | 2.443 | 1.73 |
| CSA2 | Span 3 | Middle | Comb1 | Combination | -3.308 | -1.695 | 0.5108 | 6.7271 | 4.741 |
| CSA2 | Span 3 | Middle | DConS1 | Combination | -1.606 | -0.861 | 0.2063 | 3.2881 | 2.3019 |
| CSA2 | Span 3 | Middle | DConS2 | Combination | -3.308 | -1.695 | 0.5108 | 6.7271 | 4.741 |
| CSA2 | Span 3 | End | Dead | LinStatic | -1.359 | 0.657 | -0.2156 | 1.0564 | -1.4473 |
| CSA2 | Span 3 | End | Live | LinStatic | -1.452 | 0.645 | -0.3022 | 1.1944 | -1.5718 |
| CSA2 | Span 3 | End | Comb1 | Combination | -3.954 | 1.82 | -0.7422 | 3.1787 | -4.2516 |
| CSA2 | Span 3 | End | DConS1 | Combination | -1.903 | 0.92 | -0.3018 | 1.4789 | -2.0262 |
| CSA2 | Span 3 | End | DConS2 | Combination | -3.954 | 1.82 | -0.7422 | 3.1787 | -4.2516 |
| MSA2 | Span 1 | Start | Dead | LinStatic | -1.348 | -2.295 | 0 | 4.7126 | -2.7029 |
| MSA2 | Span 1 | Start | Live | LinStatic | -1.438 | -2.951 | 0 | 5.854 | -3.6189 |
| MSA2 | Span 1 | Start | Comb1 | Combination | -3.919 | -7.476 | 0 | 15.0215 | -9.0337 |
| MSA2 | Span 1 | Start | DConS1 | Combination | -1.887 | -3.213 | 0 | 6.5976 | -3.7841 |
| MSA2 | Span 1 | Start | DConS2 | Combination | -3.919 | -7.476 | 0 | 15.0215 | -9.0337 |
| MSA2 | Span 1 | Middle | Dead | LinStatic | -1.714 | 1.496 | 0 | 7.0041 | 5.1363 |
| MSA2 | Span 1 | Middle | Live | LinStatic | -1.784 | 1.769 | 0 | 8.4364 | 6.3324 |
| MSA2 | Span 1 | Middle | Comb1 | Combination | -4.912 | 4.625 | 0 | 21.903 | 16.2953 |
| MSA2 | Span 1 | Middle | DConS1 | Combination | -2.4 | 2.094 | 0 | 9.8058 | 7.1908 |
| MSA2 | Span 1 | Middle | DConS2 | Combination | -4.912 | 4.625 | 0 | 21.903 | 16.2953 |
| MSA2 | Span 1 | End | Dead | LinStatic | -1.698 | 4.055 | 0 | -0.1421 | -14.8381 |
| MSA2 | Span 1 | End | Live | LinStatic | -1.752 | 5.212 | 0 | 0.1146 | -18.7518 |
| MSA2 | Span 1 | End | Comb1 | Combination | -4.84 | 13.206 | 0 | 0.0128 | -47.8087 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA2 | Span 1 | End | DConS1 | Combination | -2.377 | 5.678 | 0 | -0.199 | -20.7734 |
| MSA2 | Span 1 | End | DConS2 | Combination | -4.84 | 13.206 | 0 | 0.0128 | -47.8087 |
| MSA2 | Span 2 | Start | Dead | LinStatic | -1.503 | -3.945 | 0 | -0.5429 | -14.725 |
| MSA2 | Span 2 | Start | Live | LinStatic | -1.53 | -5.106 | 0 | -0.2947 | -18.6277 |
| MSA2 | Span 2 | Start | Comb1 | Combination | -4.253 | -12.903 | 0 | -1.123 | -47.4744 |
| MSA2 | Span 2 | Start | DConS1 | Combination | -2.105 | -5.523 | 0 | -0.7601 | -20.6151 |
| MSA2 | Span 2 | Start | DConS2 | Combination | -4.253 | -12.903 | 0 | -1.123 | -47.4744 |
| MSA2 | Span 2 | Middle | Dead | LinStatic | -1.408 | -1.361 | 0 | 5.2293 | 4.1763 |
| MSA2 | Span 2 | Middle | Live | LinStatic | -1.419 | -1.64 | 0 | 6.4997 | 5.3541 |
| MSA2 | Span 2 | Middle | Comb1 | Combination | -3.96 | -4.257 | 0 | 16.6748 | 13.578 |
| MSA2 | Span 2 | Middle | DConS1 | Combination | -1.972 | 1.905 | 0 | 7.3211 | 5.8468 |
| MSA2 | Span 2 | Middle | DConS2 | Combination | -3.96 | -4.257 | 0 | 16.6748 | 13.578 |
| MSA2 | Span 2 | End | Dead | LinStatic | -1.503 | 3.945 | 0 | -0.5429 | -14.725 |
| MSA2 | Span 2 | End | Live | LinStatic | -1.53 | 5.106 | 0 | -0.2947 | -18.6277 |
| MSA2 | Span 2 | End | Comb1 | Combination | -4.253 | 12.903 | 0 | -1.123 | -47.4744 |
| MSA2 | Span 2 | End | DConS1 | Combination | -2.105 | 5.523 | 0 | -0.7601 | -20.6151 |
| MSA2 | Span 2 | End | DConS2 | Combination | -4.253 | 12.903 | 0 | -1.123 | -47.4744 |
| MSA2 | Span 3 | Start | Dead | LinStatic | -1.698 | -4.055 | 0 | -0.1421 | -14.8381 |
| MSA2 | Span 3 | Start | Live | LinStatic | -1.752 | -5.212 | 0 | 0.1146 | -18.7518 |
| MSA2 | Span 3 | Start | Comb1 | Combination | -4.84 | -13.206 | 0 | 0.0128 | -47.8087 |
| MSA2 | Span 3 | Start | DConS1 | Combination | -2.377 | -5.678 | 0 | -0.199 | -20.7734 |
| MSA2 | Span 3 | Start | DConS2 | Combination | -4.84 | -13.206 | 0 | 0.0128 | -47.8087 |
| MSA2 | Span 3 | Middle | Dead | LinStatic | -1.714 | -1.496 | 0 | 7.0041 | 5.1363 |
| MSA2 | Span 3 | Middle | Live | LinStatic | -1.784 | -1.769 | 0 | 8.4364 | 6.3324 |
| MSA2 | Span 3 | Middle | Comb1 | Combination | -4.912 | -4.625 | 0 | 21.903 | 16.2953 |
| MSA2 | Span 3 | Middle | DConS1 | Combination | -2.4 | -2.094 | 0 | 9.8058 | 7.1908 |
| MSA2 | Span 3 | Middle | DConS2 | Combination | -4.912 | -4.625 | 0 | 21.903 | 16.2953 |
| MSA2 | Span 3 | End | Dead | LinStatic | -1.348 | 2.295 | 0 | 4.7126 | -2.7029 |
| MSA2 | Span 3 | End | Live | LinStatic | -1.438 | 2.951 | 0 | 5.854 | -3.6189 |
| MSA2 | Span 3 | End | Comb1 | Combination | -3.919 | 7.476 | 5.475E-07 | 15.0215 | -9.0337 |
| MSA2 | Span 3 | End | DConS1 | Combination | -1.887 | 3.213 | 0 | 6.5976 | -3.7841 |
| MSA2 | Span 3 | End | DConS2 | Combination | -3.919 | 7.476 | 5.475E-07 | 15.0215 | -9.0337 |
| CSA3 | Span 1 | Start | Dead | LinStatic | -1.359 | -0.657 | -0.2156 | 1.0564 | -1.4473 |
| CSA3 | Span 1 | Start | Live | LinStatic | -1.452 | -0.645 | -0.3022 | 1.1944 | -1.5718 |
| CSA3 | Span 1 | Start | Comb1 | Combination | -3.954 | -1.82 | -0.7422 | 3.1787 | -4.2516 |
| CSA3 | Span 1 | Start | DConS1 | Combination | -1.903 | -0.92 | -0.3018 | 1.4789 | -2.0262 |
| CSA3 | Span 1 | Start | DConS2 | Combination | -3.954 | -1.82 | -0.7422 | 3.1787 | -4.2516 |
| CSA3 | Span 1 | Middle | Dead | LinStatic | -1.147 | 0.615 | 0.1474 | 2.3486 | 1.6442 |
| CSA3 | Span 1 | Middle | Live | LinStatic | -1.207 | 0.598 | 0.2087 | 2.443 | 1.73 |
| CSA3 | Span 1 | Middle | Comb1 | Combination | -3.308 | 1.695 | 0.5108 | 6.7271 | 4.741 |
| CSA3 | Span 1 | Middle | DConS1 | Combination | -1.606 | 0.861 | 0.2063 | 3.2881 | 2.3019 |
| CSA3 | Span 1 | Middle | DConS2 | Combination | -3.308 | 1.695 | 0.5108 | 6.7271 | 4.741 |
| CSA3 | Span 1 | End | Dead | LinStatic | -1.063 | 1.572 | 0.1303 | -0.4207 | -6.7825 |
| CSA3 | Span 1 | End | Live | LinStatic | -1.093 | 1.798 | 0.1839 | -0.5379 | -7.9613 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA3 | Span 1 | End | Comb1 | Combination | -3.025 | 4.763 | 0.4507 | -1.3654 | -20.8771 |
| CSA3 | Span 1 | End | DConS1 | Combination | -1.489 | 2.201 | 0.1824 | -0.5889 | -9.4955 |
| CSA3 | Span 1 | End | DConS2 | Combination | -3.025 | 4.763 | 0.4507 | -1.3654 | -20.8771 |
| CSA3 | Span 2 | Start | Dead | LinStatic | -0.777 | -1.455 | -0.1935 | -0.6929 | -6.5601 |
| CSA3 | Span 2 | Start | Live | LinStatic | -0.773 | -1.673 | -0.2675 | -0.8263 | -7.7164 |
| CSA3 | Span 2 | Start | Comb1 | Combination | -2.169 | -4.424 | -0.6603 | -2.1535 | -20.2182 |
| CSA3 | Span 2 | Start | DConS1 | Combination | -1.088 | -2.038 | -0.2709 | -0.9701 | -9.1841 |
| CSA3 | Span 2 | Start | DConS2 | Combination | -2.169 | -4.424 | -0.6603 | -2.1535 | -20.2182 |
| CSA3 | Span 2 | Middle | Dead | LinStatic | -0.794 | 0.483 | 0.1736 | 1.2711 | 0.6327 |
| CSA3 | Span 2 | Middle | Live | LinStatic | -0.79 | 0.459 | -0.2407 | 1.3027 | 0.6577 |
| CSA3 | Span 2 | Middle | Comb1 | Combination | -2.218 | 1.314 | 0.5934 | 3.6097 | 1.8115 |
| CSA3 | Span 2 | Middle | DConS1 | Combination | -1.112 | 0.676 | -0.243 | 1.7796 | 0.8858 |
| CSA3 | Span 2 | Middle | DConS2 | Combination | -2.218 | 1.314 | 0.5934 | 3.6097 | 1.8115 |
| CSA3 | Span 2 | End | Dead | LinStatic | -0.777 | 1.455 | 0.1935 | -0.6929 | -6.5601 |
| CSA3 | Span 2 | End | Live | LinStatic | -0.773 | 1.673 | 0.2675 | -0.8263 | -7.7164 |
| CSA3 | Span 2 | End | Comb1 | Combination | -2.169 | 4.424 | 0.6603 | -2.1535 | -20.2182 |
| CSA3 | Span 2 | End | DConS1 | Combination | -1.088 | 2.038 | 0.2709 | -0.9701 | -9.1841 |
| CSA3 | Span 2 | End | DConS2 | Combination | -2.169 | 4.424 | 0.6603 | -2.1535 | -20.2182 |
| CSA3 | Span 3 | Start | Dead | LinStatic | -1.063 | -1.572 | -0.1303 | -0.4207 | -6.7825 |
| CSA3 | Span 3 | Start | Live | LinStatic | -1.093 | -1.798 | -0.1839 | -0.5379 | -7.9613 |
| CSA3 | Span 3 | Start | Comb1 | Combination | -3.025 | -4.763 | -0.4507 | -1.3654 | -20.8771 |
| CSA3 | Span 3 | Start | DConS1 | Combination | -1.489 | -2.201 | -0.1824 | -0.5889 | -9.4955 |
| CSA3 | Span 3 | Start | DConS2 | Combination | -3.025 | -4.763 | -0.4507 | -1.3654 | -20.8771 |
| CSA3 | Span 3 | Middle | Dead | LinStatic | -1.147 | -0.615 | -0.1474 | 2.3486 | 1.6442 |
| CSA3 | Span 3 | Middle | Live | LinStatic | -1.207 | -0.598 | -0.2087 | 2.443 | 1.73 |
| CSA3 | Span 3 | Middle | Comb1 | Combination | -3.308 | -1.695 | -0.5108 | 6.7271 | 4.741 |
| CSA3 | Span 3 | Middle | DConS1 | Combination | -1.606 | -0.861 | -0.2063 | 3.2881 | 2.3019 |
| CSA3 | Span 3 | Middle | DConS2 | Combination | -3.308 | -1.695 | -0.5108 | 6.7271 | 4.741 |
| CSA3 | Span 3 | End | Dead | LinStatic | -1.359 | 0.657 | 0.2156 | 1.0564 | -1.4473 |
| CSA3 | Span 3 | End | Live | LinStatic | -1.452 | 0.645 | 0.3022 | 1.1944 | -1.5718 |
| CSA3 | Span 3 | End | Comb1 | Combination | -3.954 | 1.82 | 0.7422 | 3.1787 | -4.2516 |
| CSA3 | Span 3 | End | DConS1 | Combination | -1.903 | 0.92 | 0.3018 | 1.4789 | -2.0262 |
| CSA3 | Span 3 | End | DConS2 | Combination | -3.954 | 1.82 | 0.7422 | 3.1787 | -4.2516 |
| MSA3 | Span 1 | Start | Dead | LinStatic | -0.581 | -2.258 | -0.1094 | 3.8284 | -2.7624 |
| MSA3 | Span 1 | Start | Live | LinStatic | -0.571 | -3.021 | -0.1669 | 4.8468 | -3.8818 |
| MSA3 | Span 1 | Start | Comb1 | Combination | -1.611 | -7.544 | -0.3984 | 12.349 | -9.5258 |
| MSA3 | Span 1 | Start | DConS1 | Combination | -0.814 | -3.162 | -0.1531 | 5.3597 | -3.8674 |
| MSA3 | Span 1 | Start | DConS2 | Combination | -1.611 | -7.544 | -0.3984 | 12.349 | -9.5258 |
| MSA3 | Span 1 | Middle | Dead | LinStatic | -0.968 | 1.377 | 0.0656 | 6.1001 | 4.6913 |
| MSA3 | Span 1 | Middle | Live | LinStatic | -0.95 | 1.76 | 0.1053 | 7.6728 | 6.0263 |
| MSA3 | Span 1 | Middle | Comb1 | Combination | -2.682 | 4.469 | 0.2471 | 19.5966 | 15.2716 |
| MSA3 | Span 1 | Middle | DConS1 | Combination | -1.356 | 1.928 | 0.0918 | 8.5402 | 6.5678 |
| MSA3 | Span 1 | Middle | DConS2 | Combination | -2.682 | 4.469 | 0.2471 | 19.5966 | 15.2716 |
| MSA3 | Span 1 | End | Dead | LinStatic | -0.836 | 3.427 | 0.1557 | 0.347 | -11.5743 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA3 | Span 1 | End | Live | LinStatic | -0.811 | 4.565 | 0.2272 | 0.6055 | -15.229 |
| MSA3 | Span 1 | End | Comb1 | Combination | -2.301 | 11.417 | 0.5503 | 1.3852 | -38.2555 |
| MSA3 | Span 1 | End | DConS1 | Combination | -1.17 | 4.798 | 0.218 | 0.4857 | -16.204 |
| MSA3 | Span 1 | End | DConS2 | Combination | -2.301 | 11.417 | 0.5503 | 1.3852 | -38.2555 |
| MSA3 | Span 2 | Start | Dead | LinStatic | -0.885 | -3.38 | -0.2828 | 0.1823 | -11.5279 |
| MSA3 | Span 2 | Start | Live | LinStatic | -0.87 | -4.523 | -0.3978 | 0.4394 | -15.1694 |
| MSA3 | Span 2 | Start | Comb1 | Combination | -2.454 | -11.293 | -0.9759 | 0.9218 | -38.1045 |
| MSA3 | Span 2 | Start | DConS1 | Combination | -1.239 | -4.732 | -0.396 | 0.2552 | -16.139 |
| MSA3 | Span 2 | Start | DConS2 | Combination | -2.454 | -11.293 | -0.9759 | 0.9218 | -38.1045 |
| MSA3 | Span 2 | Middle | Dead | LinStatic | -0.907 | 1.327 | -0.1663 | 5.2426 | 4.2946 |
| MSA3 | Span 2 | Middle | Live | LinStatic | -0.897 | 1.719 | 0.24 | 6.8074 | 5.6689 |
| MSA3 | Span 2 | Middle | Comb1 | Combination | -2.524 | -4.344 | 0.5836 | 17.1829 | 14.2237 |
| MSA3 | Span 2 | Middle | DConS1 | Combination | -1.27 | -1.858 | 0.2328 | 7.3397 | 6.0124 |
| MSA3 | Span 2 | Middle | DConS2 | Combination | -2.524 | -4.344 | 0.5836 | 17.1829 | 14.2237 |
| MSA3 | Span 2 | End | Dead | LinStatic | -0.885 | 3.38 | 0.2828 | 0.1823 | -11.5279 |
| MSA3 | Span 2 | End | Live | LinStatic | -0.87 | 4.523 | 0.3978 | 0.4394 | -15.1694 |
| MSA3 | Span 2 | End | Comb1 | Combination | -2.454 | 11.293 | 0.9759 | 0.9218 | -38.1045 |
| MSA3 | Span 2 | End | DConS1 | Combination | -1.239 | 4.732 | 0.396 | 0.2552 | -16.139 |
| MSA3 | Span 2 | End | DConS2 | Combination | -2.454 | 11.293 | 0.9759 | 0.9218 | -38.1045 |
| MSA3 | Span 3 | Start | Dead | LinStatic | -0.836 | -3.427 | -0.1557 | 0.347 | -11.5743 |
| MSA3 | Span 3 | Start | Live | LinStatic | -0.811 | -4.565 | -0.2272 | 0.6055 | -15.229 |
| MSA3 | Span 3 | Start | Comb1 | Combination | -2.301 | -11.417 | -0.5503 | 1.3852 | -38.2555 |
| MSA3 | Span 3 | Start | DConS1 | Combination | -1.17 | -4.798 | -0.218 | 0.4857 | -16.204 |
| MSA3 | Span 3 | Start | DConS2 | Combination | -2.301 | -11.417 | -0.5503 | 1.3852 | -38.2555 |
| MSA3 | Span 3 | Middle | Dead | LinStatic | -0.968 | -1.377 | -0.0656 | 6.1001 | 4.6913 |
| MSA3 | Span 3 | Middle | Live | LinStatic | -0.95 | -1.76 | -0.1053 | 7.6728 | 6.0263 |
| MSA3 | Span 3 | Middle | Comb1 | Combination | -2.682 | -4.469 | -0.2471 | 19.5966 | 15.2716 |
| MSA3 | Span 3 | Middle | DConS1 | Combination | -1.356 | -1.928 | -0.0918 | 8.5402 | 6.5678 |
| MSA3 | Span 3 | Middle | DConS2 | Combination | -2.682 | -4.469 | -0.2471 | 19.5966 | 15.2716 |
| MSA3 | Span 3 | End | Dead | LinStatic | -0.581 | 2.258 | 0.1094 | 3.8284 | -2.7624 |
| MSA3 | Span 3 | End | Live | LinStatic | -0.571 | 3.021 | 0.1669 | 4.8468 | -3.8818 |
| MSA3 | Span 3 | End | Comb1 | Combination | -1.611 | 7.544 | 0.3984 | 12.349 | -9.5258 |
| MSA3 | Span 3 | End | DConS1 | Combination | -0.814 | 3.162 | 0.1531 | 5.3597 | -3.8674 |
| MSA3 | Span 3 | End | DConS2 | Combination | -1.611 | 7.544 | 0.3984 | 12.349 | -9.5258 |
| CSA4 | Span 1 | Start | Dead | LinStatic | -0.591 | -0.67 | 1.887 | 0.9935 | -0.9742 |
| CSA4 | Span 1 | Start | Live | LinStatic | -0.51 | -0.782 | 2.6436 | 1.1818 | -1.1476 |
| CSA4 | Span 1 | Start | Comb1 | Combination | -1.526 | -2.055 | 6.4942 | 3.083 | -3.0052 |
| CSA4 | Span 1 | Start | DConS1 | Combination | -0.828 | -0.938 | 2.6418 | 1.3909 | -1.3639 |
| CSA4 | Span 1 | Start | DConS2 | Combination | -1.526 | -2.055 | 6.4942 | 3.083 | -3.0052 |
| CSA4 | Span 1 | Middle | Dead | LinStatic | -0.546 | 0.378 | -1.2758 | 1.7626 | 1.371 |
| CSA4 | Span 1 | Middle | Live | LinStatic | -0.503 | 0.402 | -1.8059 | 1.9843 | 1.575 |
| CSA4 | Span 1 | Middle | Comb1 | Combination | -1.46 | 1.097 | -4.4204 | 5.2899 | 4.1651 |
| CSA4 | Span 1 | Middle | DConS1 | Combination | -0.764 | 0.529 | -1.7862 | 2.4676 | 1.9194 |
| CSA4 | Span 1 | Middle | DConS2 | Combination | -1.46 | 1.097 | -4.4204 | 5.2899 | 4.1651 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA4 | Span 1 | End | Dead | LinStatic | -0.628 | 1.119 | -1.4965 | 0.2778 | -3.6259 |
| CSA4 | Span 1 | End | Live | LinStatic | -0.6 | 1.342 | -2.1305 | 0.3522 | -4.2896 |
| CSA4 | Span 1 | End | Comb1 | Combination | -1.713 | 3.49 | -5.2045 | 0.897 | -11.2144 |
| CSA4 | Span 1 | End | DConS1 | Combination | -0.88 | 1.567 | -2.095 | 0.389 | -5.0762 |
| CSA4 | Span 1 | End | DConS2 | Combination | -1.713 | 3.49 | -5.2045 | 0.897 | -11.2144 |
| CSA4 | Span 2 | Start | Dead | LinStatic | -0.49 | -1.082 | 1.3773 | 0.1878 | -3.5517 |
| CSA4 | Span 2 | Start | Live | LinStatic | -0.479 | -1.309 | 1.9509 | 0.2711 | -4.218 |
| CSA4 | Span 2 | Start | Comb1 | Combination | -1.355 | -3.393 | 4.7741 | 0.6592 | -11.0109 |
| CSA4 | Span 2 | Start | DConS1 | Combination | -0.686 | -1.515 | 1.9282 | 0.263 | -4.9724 |
| CSA4 | Span 2 | Start | DConS2 | Combination | -1.355 | -3.393 | 4.7741 | 0.6592 | -11.0109 |
| CSA4 | Span 2 | Middle | Dead | LinStatic | -0.389 | -0.336 | 1.14 | 1.3553 | 1.0616 |
| CSA4 | Span 2 | Middle | Live | LinStatic | -0.375 | -0.366 | 1.6155 | 1.6035 | 1.3143 |
| CSA4 | Span 2 | Middle | Comb1 | Combination | -1.067 | -0.988 | 3.9527 | 4.192 | 3.3767 |
| CSA4 | Span 2 | Middle | DConS1 | Combination | -0.545 | 0.47 | -1.596 | 1.8974 | 1.4863 |
| CSA4 | Span 2 | Middle | DConS2 | Combination | -1.067 | -0.988 | 3.9527 | 4.192 | 3.3767 |
| CSA4 | Span 2 | End | Dead | LinStatic | -0.49 | 1.082 | -1.3773 | 0.1878 | -3.5517 |
| CSA4 | Span 2 | End | Live | LinStatic | -0.479 | 1.309 | -1.9509 | 0.2711 | -4.218 |
| CSA4 | Span 2 | End | Comb1 | Combination | -1.355 | 3.393 | -4.7741 | 0.6592 | -11.0109 |
| CSA4 | Span 2 | End | DConS1 | Combination | -0.686 | 1.515 | -1.9282 | 0.263 | -4.9724 |
| CSA4 | Span 2 | End | DConS2 | Combination | -1.355 | 3.393 | -4.7741 | 0.6592 | -11.0109 |
| CSA4 | Span 3 | Start | Dead | LinStatic | -0.628 | -1.119 | 1.4965 | 0.2778 | -3.6259 |
| CSA4 | Span 3 | Start | Live | LinStatic | -0.6 | -1.342 | 2.1305 | 0.3522 | -4.2896 |
| CSA4 | Span 3 | Start | Comb1 | Combination | -1.713 | -3.49 | 5.2045 | 0.897 | -11.2144 |
| CSA4 | Span 3 | Start | DConS1 | Combination | -0.88 | -1.567 | 2.095 | 0.389 | -5.0762 |
| CSA4 | Span 3 | Start | DConS2 | Combination | -1.713 | -3.49 | 5.2045 | 0.897 | -11.2144 |
| CSA4 | Span 3 | Middle | Dead | LinStatic | -0.546 | -0.378 | 1.2758 | 1.7626 | 1.371 |
| CSA4 | Span 3 | Middle | Live | LinStatic | -0.503 | -0.402 | 1.8059 | 1.9843 | 1.575 |
| CSA4 | Span 3 | Middle | Comb1 | Combination | -1.46 | -1.097 | 4.4204 | 5.2899 | 4.1651 |
| CSA4 | Span 3 | Middle | DConS1 | Combination | -0.764 | -0.529 | 1.7862 | 2.4676 | 1.9194 |
| CSA4 | Span 3 | Middle | DConS2 | Combination | -1.46 | -1.097 | 4.4204 | 5.2899 | 4.1651 |
| CSA4 | Span 3 | End | Dead | LinStatic | -0.591 | 0.67 | -1.887 | 0.9935 | -0.9742 |
| CSA4 | Span 3 | End | Live | LinStatic | -0.51 | 0.782 | -2.6436 | 1.1818 | -1.1476 |
| CSA4 | Span 3 | End | Comb1 | Combination | -1.526 | 2.055 | -6.4942 | 3.083 | -3.0052 |
| CSA4 | Span 3 | End | DConS1 | Combination | -0.828 | 0.938 | -2.6418 | 1.3909 | -1.3639 |
| CSA4 | Span 3 | End | DConS2 | Combination | -1.526 | 2.055 | -6.4942 | 3.083 | -3.0052 |
| CSB1 | Span 1 | Start | Dead | LinStatic | -0.443 | -0.867 | 2.3339 | 1.6052 | -0.9656 |
| CSB1 | Span 1 | Start | Live | LinStatic | -0.39 | -1.056 | 3.2819 | 1.9962 | -1.1786 |
| CSB1 | Span 1 | Start | Comb1 | Combination | -1.157 | -2.73 | 8.0518 | 5.1202 | -3.0444 |
| CSB1 | Span 1 | Start | DConS1 | Combination | -0.621 | -1.214 | 3.2675 | 2.2472 | -1.3518 |
| CSB1 | Span 1 | Start | DConS2 | Combination | -1.157 | -2.73 | 8.0518 | 5.1202 | -3.0444 |
| CSB1 | Span 1 | Middle | Dead | LinStatic | -0.365 | 0.484 | -1.1417 | 2.4239 | 2.1209 |
| CSB1 | Span 1 | Middle | Live | LinStatic | -0.341 | 0.57 | -1.6231 | 2.96 | 2.581 |
| CSB1 | Span 1 | Middle | Comb1 | Combination | -0.984 | 1.492 | -3.9671 | 7.6447 | 6.6747 |
| CSB1 | Span 1 | Middle | DConS1 | Combination | -0.511 | 0.677 | -1.5984 | 3.3935 | 2.9693 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB1 | Span 1 | Middle | DConS2 | Combination | -0.984 | 1.492 | -3.9671 | 7.6447 | 6.6747 |
| CSB1 | Span 1 | End | Dead | LinStatic | -0.447 | 1.425 | -1.5815 | 0.5818 | -4.2303 |
| CSB1 | Span 1 | End | Live | LinStatic | -0.452 | 1.775 | -2.2519 | 0.6822 | -5.2954 |
| CSB1 | Span 1 | End | Comb1 | Combination | -1.26 | 4.551 | -5.5008 | 1.7896 | -13.549 |
| CSB1 | Span 1 | End | DConS1 | Combination | -0.626 | 1.995 | -2.2141 | 0.8145 | -5.9224 |
| CSB1 | Span 1 | End | DConS2 | Combination | -1.26 | 4.551 | -5.5008 | 1.7896 | -13.549 |
| CSB1 | Span 2 | Start | Dead | LinStatic | -0.367 | -1.375 | 1.2875 | 0.4292 | -4.1647 |
| CSB1 | Span 2 | Start | Live | LinStatic | -0.38 | -1.723 | 1.8358 | 0.5251 | -5.2233 |
| CSB1 | Span 2 | Start | Comb1 | Combination | -1.049 | -4.407 | 4.4823 | 1.3552 | -13.3549 |
| CSB1 | Span 2 | Start | DConS1 | Combination | -0.514 | -1.924 | 1.8025 | 0.6009 | -5.8305 |
| CSB1 | Span 2 | Start | DConS2 | Combination | -1.049 | -4.407 | 4.4823 | 1.3552 | -13.3549 |
| CSB1 | Span 2 | Middle | Dead | LinStatic | -0.268 | 0.43 | -0.9284 | 1.753 | 1.722 |
| CSB1 | Span 2 | Middle | Live | LinStatic | -0.279 | -0.515 | -1.315 | 2.188 | 2.1749 |
| CSB1 | Span 2 | Middle | Comb1 | Combination | -0.768 | 1.339 | -3.2181 | 5.6044 | 5.5463 |
| CSB1 | Span 2 | Middle | DConS1 | Combination | -0.375 | 0.601 | -1.2998 | 2.4542 | 2.4109 |
| CSB1 | Span 2 | Middle | DConS2 | Combination | -0.768 | 1.339 | -3.2181 | 5.6044 | 5.5463 |
| CSB1 | Span 2 | End | Dead | LinStatic | -0.367 | 1.375 | -1.2875 | 0.4292 | -4.1647 |
| CSB1 | Span 2 | End | Live | LinStatic | -0.38 | 1.723 | -1.8358 | 0.5251 | -5.2233 |
| CSB1 | Span 2 | End | Comb1 | Combination | -1.049 | 4.407 | -4.4823 | 1.3552 | -13.3549 |
| CSB1 | Span 2 | End | DConS1 | Combination | -0.514 | 1.924 | -1.8025 | 0.6009 | -5.8305 |
| CSB1 | Span 2 | End | DConS2 | Combination | -1.049 | 4.407 | -4.4823 | 1.3552 | -13.3549 |
| CSB1 | Span 3 | Start | Dead | LinStatic | -0.447 | -1.425 | 1.5815 | 0.5818 | -4.2303 |
| CSB1 | Span 3 | Start | Live | LinStatic | -0.452 | -1.775 | 2.2519 | 0.6822 | -5.2954 |
| CSB1 | Span 3 | Start | Comb1 | Combination | -1.26 | -4.551 | 5.5008 | 1.7896 | -13.549 |
| CSB1 | Span 3 | Start | DConS1 | Combination | -0.626 | -1.995 | 2.2141 | 0.8145 | -5.9224 |
| CSB1 | Span 3 | Start | DConS2 | Combination | -1.26 | -4.551 | 5.5008 | 1.7896 | -13.549 |
| CSB1 | Span 3 | Middle | Dead | LinStatic | -0.365 | -0.484 | 1.1417 | 2.4239 | 2.1209 |
| CSB1 | Span 3 | Middle | Live | LinStatic | -0.341 | -0.57 | 1.6231 | 2.96 | 2.581 |
| CSB1 | Span 3 | Middle | Comb1 | Combination | -0.984 | -1.492 | 3.9671 | 7.6447 | 6.6747 |
| CSB1 | Span 3 | Middle | DConS1 | Combination | -0.511 | -0.677 | 1.5984 | 3.3935 | 2.9693 |
| CSB1 | Span 3 | Middle | DConS2 | Combination | -0.984 | -1.492 | 3.9671 | 7.6447 | 6.6747 |
| CSB1 | Span 3 | End | Dead | LinStatic | -0.443 | 0.867 | -2.3339 | 1.6052 | -0.9656 |
| CSB1 | Span 3 | End | Live | LinStatic | -0.39 | 1.056 | -3.2819 | 1.9962 | -1.1786 |
| CSB1 | Span 3 | End | Comb1 | Combination | -1.157 | 2.73 | -8.0518 | 5.1202 | -3.0444 |
| CSB1 | Span 3 | End | DConS1 | Combination | -0.621 | 1.214 | -3.2675 | 2.2472 | -1.3518 |
| CSB1 | Span 3 | End | DConS2 | Combination | -1.157 | 2.73 | -8.0518 | 5.1202 | -3.0444 |
| MSB1 | Span 1 | Start | Dead | LinStatic | -0.417 | -3.282 | -0.276 | 6.4119 | -3.1043 |
| MSB1 | Span 1 | Start | Live | LinStatic | -0.398 | -4.434 | -0.3813 | 8.4099 | -4.4065 |
| MSB1 | Span 1 | Start | Comb1 | Combination | -1.138 | -11.032 | -0.9412 | 21.1502 | -10.7756 |
| MSB1 | Span 1 | Start | DConS1 | Combination | -0.584 | -4.595 | -0.3864 | 8.9767 | -4.346 |
| MSB1 | Span 1 | Start | DConS2 | Combination | -1.138 | -11.032 | -0.9412 | 21.1502 | -10.7756 |
| MSB1 | Span 1 | Middle | Dead | LinStatic | -0.595 | 2.087 | 0.1513 | 9.6293 | 8.1095 |
| MSB1 | Span 1 | Middle | Live | LinStatic | -0.572 | 2.789 | 0.2114 | 12.6828 | 10.6891 |
| MSB1 | Span 1 | Middle | Comb1 | Combination | -1.629 | 6.968 | 0.5198 | 31.8477 | 26.8339 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB1 | Span 1 | Middle | DConS1 | Combination | -0.834 | 2.922 | 0.2119 | 13.481 | 11.3533 |
| MSB1 | Span 1 | Middle | DConS2 | Combination | -1.629 | 6.968 | 0.5198 | 31.8477 | 26.8339 |
| MSB1 | Span 1 | End | Dead | LinStatic | -0.5 | 4.696 | 0.243 | 1.3464 | -14.499 |
| MSB1 | Span 1 | End | Live | LinStatic | -0.475 | 6.366 | 0.3363 | 1.7081 | -19.753 |
| MSB1 | Span 1 | End | Comb1 | Combination | -1.36 | 15.821 | 0.8297 | 4.3487 | -49.0036 |
| MSB1 | Span 1 | End | DConS1 | Combination | -0.7 | 6.575 | 0.3403 | 1.8849 | -20.2986 |
| MSB1 | Span 1 | End | DConS2 | Combination | -1.36 | 15.821 | 0.8297 | 4.3487 | -49.0036 |
| MSB1 | Span 2 | Start | Dead | LinStatic | -0.665 | -4.538 | -0.2646 | 0.9426 | -14.3412 |
| MSB1 | Span 2 | Start | Live | LinStatic | -0.655 | -6.177 | -0.3612 | 1.2642 | -19.5326 |
| MSB1 | Span 2 | Start | Comb1 | Combination | -1.846 | -15.328 | -0.8954 | 3.1538 | -48.4616 |
| MSB1 | Span 2 | Start | DConS1 | Combination | -0.931 | -6.353 | -0.3705 | 1.3196 | -20.0776 |
| MSB1 | Span 2 | Start | DConS2 | Combination | -1.846 | -15.328 | -0.8954 | 3.1538 | -48.4616 |
| MSB1 | Span 2 | Middle | Dead | LinStatic | -0.708 | 1.903 | -0.173 | 7.0743 | 7.0686 |
| MSB1 | Span 2 | Middle | Live | LinStatic | -0.703 | 2.564 | 0.2372 | 9.477 | 9.4703 |
| MSB1 | Span 2 | Middle | Comb1 | Combination | -1.974 | 6.386 | 0.5872 | 23.6523 | 23.6348 |
| MSB1 | Span 2 | Middle | DConS1 | Combination | -0.991 | -2.664 | 0.2422 | 9.9041 | 9.8961 |
| MSB1 | Span 2 | Middle | DConS2 | Combination | -1.974 | 6.386 | 0.5872 | 23.6523 | 23.6348 |
| MSB1 | Span 2 | End | Dead | LinStatic | -0.665 | 4.538 | 0.2646 | 0.9426 | -14.3412 |
| MSB1 | Span 2 | End | Live | LinStatic | -0.655 | 6.177 | 0.3612 | 1.2642 | -19.5326 |
| MSB1 | Span 2 | End | Comb1 | Combination | -1.846 | 15.328 | 0.8954 | 3.1538 | -48.4616 |
| MSB1 | Span 2 | End | DConS1 | Combination | -0.931 | 6.353 | 0.3705 | 1.3196 | -20.0776 |
| MSB1 | Span 2 | End | DConS2 | Combination | -1.846 | 15.328 | 0.8954 | 3.1538 | -48.4616 |
| MSB1 | Span 3 | Start | Dead | LinStatic | -0.5 | -4.696 | -0.243 | 1.3464 | -14.499 |
| MSB1 | Span 3 | Start | Live | LinStatic | -0.475 | -6.366 | -0.3363 | 1.7081 | -19.753 |
| MSB1 | Span 3 | Start | Comb1 | Combination | -1.36 | -15.821 | -0.8297 | 4.3487 | -49.0036 |
| MSB1 | Span 3 | Start | DConS1 | Combination | -0.7 | -6.575 | -0.3403 | 1.8849 | -20.2986 |
| MSB1 | Span 3 | Start | DConS2 | Combination | -1.36 | -15.821 | -0.8297 | 4.3487 | -49.0036 |
| MSB1 | Span 3 | Middle | Dead | LinStatic | -0.595 | -2.087 | -0.1513 | 9.6293 | 8.1095 |
| MSB1 | Span 3 | Middle | Live | LinStatic | -0.572 | -2.789 | -0.2114 | 12.6828 | 10.6891 |
| MSB1 | Span 3 | Middle | Comb1 | Combination | -1.629 | -6.968 | -0.5198 | 31.8477 | 26.8339 |
| MSB1 | Span 3 | Middle | DConS1 | Combination | -0.834 | -2.922 | -0.2119 | 13.481 | 11.3533 |
| MSB1 | Span 3 | Middle | DConS2 | Combination | -1.629 | -6.968 | -0.5198 | 31.8477 | 26.8339 |
| MSB1 | Span 3 | End | Dead | LinStatic | -0.417 | 3.282 | 0.276 | 6.4119 | -3.1043 |
| MSB1 | Span 3 | End | Live | LinStatic | -0.398 | 4.434 | 0.3813 | 8.4099 | -4.4065 |
| MSB1 | Span 3 | End | Comb1 | Combination | -1.138 | 11.032 | 0.9412 | 21.1502 | -10.7756 |
| MSB1 | Span 3 | End | DConS1 | Combination | -0.584 | 4.595 | 0.3864 | 8.9767 | -4.346 |
| MSB1 | Span 3 | End | DConS2 | Combination | -1.138 | 11.032 | 0.9412 | 21.1502 | -10.7756 |
| CSB2 | Span 1 | Start | Dead | LinStatic | -0.9 | -0.747 | -0.1746 | 1.9622 | -1.013 |
| CSB2 | Span 1 | Start | Live | LinStatic | -0.959 | -0.806 | -0.2408 | 2.4712 | -1.0487 |
| CSB2 | Span 1 | Start | Comb1 | Combination | -2.614 | -2.187 | -0.5949 | 6.3085 | -2.8936 |
| CSB2 | Span 1 | Start | DConS1 | Combination | -1.259 | -1.046 | -0.2444 | 2.7471 | -1.4183 |
| CSB2 | Span 1 | Start | DConS2 | Combination | -2.614 | -2.187 | -0.5949 | 6.3085 | -2.8936 |
| CSB2 | Span 1 | Middle | Dead | LinStatic | -0.805 | 0.719 | -0.0959 | 3.0381 | 2.4965 |
| CSB2 | Span 1 | Middle | Live | LinStatic | -0.84 | 0.791 | -0.1282 | 3.6374 | 2.9682 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB2 | Span 1 | Middle | Comb1 | Combination | -2.31 | 2.129 | -0.3201 | 9.4655 | 7.745 |
| CSB2 | Span 1 | Middle | DConS1 | Combination | -1.126 | 1.006 | -0.1342 | 4.2533 | 3.4951 |
| CSB2 | Span 1 | Middle | DConS2 | Combination | -2.31 | 2.129 | -0.3201 | 9.4655 | 7.745 |
| CSB2 | Span 1 | End | Dead | LinStatic | -0.721 | 1.925 | -0.0112 | -0.0954 | -7.4573 |
| CSB2 | Span 1 | End | Live | LinStatic | -0.739 | 2.338 | -0.0141 | -0.1571 | -9.1966 |
| CSB2 | Span 1 | End | Comb1 | Combination | -2.047 | 6.05 | -0.0359 | -0.3658 | -23.6633 |
| CSB2 | Span 1 | End | DConS1 | Combination | -1.009 | 2.695 | -0.0156 | -0.1335 | -10.4402 |
| CSB2 | Span 1 | End | DConS2 | Combination | -2.047 | 6.05 | -0.0359 | -0.3658 | -23.6633 |
| CSB2 | Span 2 | Start | Dead | LinStatic | -0.512 | -1.853 | -0.0441 | -0.4183 | -7.3354 |
| CSB2 | Span 2 | Start | Live | LinStatic | -0.5 | -2.28 | -0.055 | -0.4907 | -9.0698 |
| CSB2 | Span 2 | Start | Comb1 | Combination | -1.415 | -5.872 | -0.1409 | -1.2871 | -23.3141 |
| CSB2 | Span 2 | Start | DConS1 | Combination | -0.717 | -2.594 | -0.0618 | -0.5857 | -10.2695 |
| CSB2 | Span 2 | Start | DConS2 | Combination | -1.415 | -5.872 | -0.1409 | -1.2871 | -23.3141 |
| CSB2 | Span 2 | Middle | Dead | LinStatic | -0.51 | 0.61 | -0.0329 | 1.7574 | 1.6082 |
| CSB2 | Span 2 | Middle | Live | LinStatic | -0.493 | 0.685 | 0.0414 | 2.1787 | 2.0299 |
| CSB2 | Span 2 | Middle | Comb1 | Combination | -1.401 | 1.827 | -0.1056 | 5.5948 | 5.1776 |
| CSB2 | Span 2 | Middle | DConS1 | Combination | -0.714 | 0.854 | 0.046 | 2.4603 | 2.2514 |
| CSB2 | Span 2 | Middle | DConS2 | Combination | -1.401 | 1.827 | -0.1056 | 5.5948 | 5.1776 |
| CSB2 | Span 2 | End | Dead | LinStatic | -0.512 | 1.853 | 0.0441 | -0.4183 | -7.3354 |
| CSB2 | Span 2 | End | Live | LinStatic | -0.5 | 2.28 | 0.055 | -0.4907 | -9.0698 |
| CSB2 | Span 2 | End | Comb1 | Combination | -1.415 | 5.872 | 0.1409 | -1.2871 | -23.3141 |
| CSB2 | Span 2 | End | DConS1 | Combination | -0.717 | 2.594 | 0.0618 | -0.5857 | -10.2695 |
| CSB2 | Span 2 | End | DConS2 | Combination | -1.415 | 5.872 | 0.1409 | -1.2871 | -23.3141 |
| CSB2 | Span 3 | Start | Dead | LinStatic | -0.721 | -1.925 | 0.0112 | -0.0954 | -7.4573 |
| CSB2 | Span 3 | Start | Live | LinStatic | -0.739 | -2.338 | 0.0141 | -0.1571 | -9.1966 |
| CSB2 | Span 3 | Start | Comb1 | Combination | -2.047 | -6.05 | 0.0359 | -0.3658 | -23.6633 |
| CSB2 | Span 3 | Start | DConS1 | Combination | -1.009 | -2.695 | 0.0156 | -0.1335 | -10.4402 |
| CSB2 | Span 3 | Start | DConS2 | Combination | -2.047 | -6.05 | 0.0359 | -0.3658 | -23.6633 |
| CSB2 | Span 3 | Middle | Dead | LinStatic | -0.805 | -0.719 | 0.0959 | 3.038 | 2.4965 |
| CSB2 | Span 3 | Middle | Live | LinStatic | -0.84 | -0.791 | 0.1282 | 3.6374 | 2.9682 |
| CSB2 | Span 3 | Middle | Comb1 | Combination | -2.31 | -2.129 | 0.3201 | 9.4655 | 7.745 |
| CSB2 | Span 3 | Middle | DConS1 | Combination | -1.126 | -1.006 | 0.1342 | 4.2533 | 3.4951 |
| CSB2 | Span 3 | Middle | DConS2 | Combination | -2.31 | -2.129 | 0.3201 | 9.4655 | 7.745 |
| CSB2 | Span 3 | End | Dead | LinStatic | -0.9 | 0.747 | 0.1746 | 1.9622 | -1.013 |
| CSB2 | Span 3 | End | Live | LinStatic | -0.959 | 0.806 | 0.2408 | 2.4712 | -1.0487 |
| CSB2 | Span 3 | End | Comb1 | Combination | -2.614 | 2.187 | 0.5949 | 6.3085 | -2.8936 |
| CSB2 | Span 3 | End | DConS1 | Combination | -1.259 | 1.046 | 0.2444 | 2.7471 | -1.4183 |
| CSB2 | Span 3 | End | DConS2 | Combination | -2.614 | 2.187 | 0.5949 | 6.3085 | -2.8936 |
| MSB2 | Span 1 | Start | Dead | LinStatic | -0.401 | -3.492 | 0 | 7.4425 | -2.857 |
| MSB2 | Span 1 | Start | Live | LinStatic | -0.429 | -4.721 | 0 | 9.753 | -4.0752 |
| MSB2 | Span 1 | Start | Comb1 | Combination | -1.168 | -11.745 | -5.628E-07 | 24.5358 | -9.9488 |
| MSB2 | Span 1 | Start | DConS1 | Combination | -0.562 | -4.889 | 0 | 10.4195 | -3.9998 |
| MSB2 | Span 1 | Start | DConS2 | Combination | -1.168 | -11.745 | -5.628E-07 | 24.5358 | -9.9488 |
| MSB2 | Span 1 | Middle | Dead | LinStatic | -0.709 | 2.284 | 0 | 10.5869 | 8.662 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB2 | Span 1 | Middle | Live | LinStatic | -0.733 | 3.033 | 0 | 13.8901 | 11.4133 |
| MSB2 | Span 1 | Middle | Comb1 | Combination | -2.023 | 7.593 | 0 | 34.9285 | 28.6557 |
| MSB2 | Span 1 | Middle | DConS1 | Combination | -0.993 | 3.198 | 0 | 14.8216 | 12.1269 |
| MSB2 | Span 1 | Middle | DConS2 | Combination | -2.023 | 7.593 | 0 | 34.9285 | 28.6557 |
| MSB2 | Span 1 | End | Dead | LinStatic | -0.789 | 5.404 | 0 | 1.0203 | -17.1969 |
| MSB2 | Span 1 | End | Live | LinStatic | -0.805 | 7.297 | 0 | 1.4024 | -23.174 |
| MSB2 | Span 1 | End | Comb1 | Combination | -2.235 | 18.16 | 0 | 3.4681 | -57.7147 |
| MSB2 | Span 1 | End | DConS1 | Combination | -1.105 | 7.566 | 0 | 1.4284 | -24.0756 |
| MSB2 | Span 1 | End | DConS2 | Combination | -2.235 | 18.16 | 0 | 3.4681 | -57.7147 |
| MSB2 | Span 2 | Start | Dead | LinStatic | -0.784 | -5.252 | 0 | 0.7732 | -17.0691 |
| MSB2 | Span 2 | Start | Live | LinStatic | -0.789 | -7.13 | 0 | 1.1512 | -22.9972 |
| MSB2 | Span 2 | Start | Comb1 | Combination | -2.203 | -17.711 | 0 | 2.7697 | -57.2785 |
| MSB2 | Span 2 | Start | DConS1 | Combination | -1.097 | -7.353 | 0 | 1.0825 | -23.8967 |
| MSB2 | Span 2 | Start | DConS2 | Combination | -2.203 | -17.711 | 0 | 2.7697 | -57.2785 |
| MSB2 | Span 2 | Middle | Dead | LinStatic | -0.707 | 2.07 | 0 | 7.5119 | 7.444 |
| MSB2 | Span 2 | Middle | Live | LinStatic | -0.699 | 2.781 | 0 | 10.1205 | 10.0482 |
| MSB2 | Span 2 | Middle | Comb1 | Combination | -1.967 | -6.934 | 0 | 25.2071 | 25.0099 |
| MSB2 | Span 2 | Middle | DConS1 | Combination | -0.989 | 2.899 | 0 | 10.5166 | 10.4216 |
| MSB2 | Span 2 | Middle | DConS2 | Combination | -1.967 | -6.934 | 0 | 25.2071 | 25.0099 |
| MSB2 | Span 2 | End | Dead | LinStatic | -0.784 | 5.252 | 0 | 0.7732 | -17.0691 |
| MSB2 | Span 2 | End | Live | LinStatic | -0.789 | 7.13 | 0 | 1.1512 | -22.9972 |
| MSB2 | Span 2 | End | Comb1 | Combination | -2.203 | 17.711 | 0 | 2.7697 | -57.2785 |
| MSB2 | Span 2 | End | DConS1 | Combination | -1.097 | 7.353 | 0 | 1.0825 | -23.8967 |
| MSB2 | Span 2 | End | DConS2 | Combination | -2.203 | 17.711 | 0 | 2.7697 | -57.2785 |
| MSB2 | Span 3 | Start | Dead | LinStatic | -0.789 | -5.404 | 0 | 1.0203 | -17.1969 |
| MSB2 | Span 3 | Start | Live | LinStatic | -0.805 | -7.297 | 0 | 1.4024 | -23.174 |
| MSB2 | Span 3 | Start | Comb1 | Combination | -2.235 | -18.16 | 0 | 3.4681 | -57.7147 |
| MSB2 | Span 3 | Start | DConS1 | Combination | -1.105 | -7.566 | 0 | 1.4284 | -24.0756 |
| MSB2 | Span 3 | Start | DConS2 | Combination | -2.235 | -18.16 | 0 | 3.4681 | -57.7147 |
| MSB2 | Span 3 | Middle | Dead | LinStatic | -0.709 | -2.284 | 0 | 10.5869 | 8.662 |
| MSB2 | Span 3 | Middle | Live | LinStatic | -0.733 | -3.033 | 0 | 13.8901 | 11.4133 |
| MSB2 | Span 3 | Middle | Comb1 | Combination | -2.023 | -7.593 | 0 | 34.9285 | 28.6557 |
| MSB2 | Span 3 | Middle | DConS1 | Combination | -0.993 | -3.198 | 0 | 14.8216 | 12.1269 |
| MSB2 | Span 3 | Middle | DConS2 | Combination | -2.023 | -7.593 | 0 | 34.9285 | 28.6557 |
| MSB2 | Span 3 | End | Dead | LinStatic | -0.401 | 3.492 | 0 | 7.4425 | -2.857 |
| MSB2 | Span 3 | End | Live | LinStatic | -0.429 | 4.721 | 0 | 9.753 | -4.0752 |
| MSB2 | Span 3 | End | Comb1 | Combination | -1.168 | 11.745 | -6.116E-07 | 24.5358 | -9.9488 |
| MSB2 | Span 3 | End | DConS1 | Combination | -0.562 | 4.889 | 0 | 10.4195 | -3.9998 |
| MSB2 | Span 3 | End | DConS2 | Combination | -1.168 | 11.745 | -6.116E-07 | 24.5358 | -9.9488 |
| CSB3 | Span 1 | Start | Dead | LinStatic | -0.9 | -0.747 | 0.1746 | 1.9622 | -1.013 |
| CSB3 | Span 1 | Start | Live | LinStatic | -0.959 | -0.806 | 0.2408 | 2.4712 | -1.0487 |
| CSB3 | Span 1 | Start | Comb1 | Combination | -2.614 | -2.187 | 0.5949 | 6.3085 | -2.8936 |
| CSB3 | Span 1 | Start | DConS1 | Combination | -1.259 | -1.046 | 0.2444 | 2.7471 | -1.4183 |
| CSB3 | Span 1 | Start | DConS2 | Combination | -2.614 | -2.187 | 0.5949 | 6.3085 | -2.8936 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB3 | Span 1 | Middle | Dead | LinStatic | -0.805 | 0.719 | 0.0959 | 3.0381 | 2.4965 |
| CSB3 | Span 1 | Middle | Live | LinStatic | -0.84 | 0.791 | 0.1282 | 3.6374 | 2.9682 |
| CSB3 | Span 1 | Middle | Comb1 | Combination | -2.31 | 2.129 | 0.3201 | 9.4655 | 7.745 |
| CSB3 | Span 1 | Middle | DConS1 | Combination | -1.126 | 1.006 | 0.1342 | 4.2533 | 3.4951 |
| CSB3 | Span 1 | Middle | DConS2 | Combination | -2.31 | 2.129 | 0.3201 | 9.4655 | 7.745 |
| CSB3 | Span 1 | End | Dead | LinStatic | -0.721 | 1.925 | 0.0112 | -0.0954 | -7.4573 |
| CSB3 | Span 1 | End | Live | LinStatic | -0.739 | 2.338 | 0.0141 | -0.1571 | -9.1966 |
| CSB3 | Span 1 | End | Comb1 | Combination | -2.047 | 6.05 | 0.0359 | -0.3658 | -23.6633 |
| CSB3 | Span 1 | End | DConS1 | Combination | -1.009 | 2.695 | 0.0156 | -0.1335 | -10.4402 |
| CSB3 | Span 1 | End | DConS2 | Combination | -2.047 | 6.05 | 0.0359 | -0.3658 | -23.6633 |
| CSB3 | Span 2 | Start | Dead | LinStatic | -0.512 | -1.853 | 0.0441 | -0.4183 | -7.3354 |
| CSB3 | Span 2 | Start | Live | LinStatic | -0.5 | -2.28 | 0.055 | -0.4907 | -9.0698 |
| CSB3 | Span 2 | Start | Comb1 | Combination | -1.415 | -5.872 | 0.1409 | -1.2871 | -23.3141 |
| CSB3 | Span 2 | Start | DConS1 | Combination | -0.717 | -2.594 | 0.0618 | -0.5857 | -10.2695 |
| CSB3 | Span 2 | Start | DConS2 | Combination | -1.415 | -5.872 | 0.1409 | -1.2871 | -23.3141 |
| CSB3 | Span 2 | Middle | Dead | LinStatic | -0.51 | 0.61 | -0.0329 | 1.7574 | 1.6082 |
| CSB3 | Span 2 | Middle | Live | LinStatic | -0.493 | 0.685 | 0.0414 | 2.1787 | 2.0299 |
| CSB3 | Span 2 | Middle | Comb1 | Combination | -1.401 | 1.827 | -0.1056 | 5.5948 | 5.1776 |
| CSB3 | Span 2 | Middle | DConS1 | Combination | -0.714 | 0.854 | -0.046 | 2.4603 | 2.2514 |
| CSB3 | Span 2 | Middle | DConS2 | Combination | -1.401 | 1.827 | -0.1056 | 5.5948 | 5.1776 |
| CSB3 | Span 2 | End | Dead | LinStatic | -0.512 | 1.853 | -0.0441 | -0.4183 | -7.3354 |
| CSB3 | Span 2 | End | Live | LinStatic | -0.5 | 2.28 | -0.055 | -0.4907 | -9.0698 |
| CSB3 | Span 2 | End | Comb1 | Combination | -1.415 | 5.872 | -0.1409 | -1.2871 | -23.3141 |
| CSB3 | Span 2 | End | DConS1 | Combination | -0.717 | 2.594 | -0.0618 | -0.5857 | -10.2695 |
| CSB3 | Span 2 | End | DConS2 | Combination | -1.415 | 5.872 | -0.1409 | -1.2871 | -23.3141 |
| CSB3 | Span 3 | Start | Dead | LinStatic | -0.721 | -1.925 | -0.0112 | -0.0954 | -7.4573 |
| CSB3 | Span 3 | Start | Live | LinStatic | -0.739 | -2.338 | -0.0141 | -0.1571 | -9.1966 |
| CSB3 | Span 3 | Start | Comb1 | Combination | -2.047 | -6.05 | -0.0359 | -0.3658 | -23.6633 |
| CSB3 | Span 3 | Start | DConS1 | Combination | -1.009 | -2.695 | -0.0156 | -0.1335 | -10.4402 |
| CSB3 | Span 3 | Start | DConS2 | Combination | -2.047 | -6.05 | -0.0359 | -0.3658 | -23.6633 |
| CSB3 | Span 3 | Middle | Dead | LinStatic | -0.805 | -0.719 | -0.0959 | 3.038 | 2.4965 |
| CSB3 | Span 3 | Middle | Live | LinStatic | -0.84 | -0.791 | -0.1282 | 3.6374 | 2.9682 |
| CSB3 | Span 3 | Middle | Comb1 | Combination | -2.31 | -2.129 | -0.3201 | 9.4655 | 7.745 |
| CSB3 | Span 3 | Middle | DConS1 | Combination | -1.126 | -1.006 | -0.1342 | 4.2533 | 3.4951 |
| CSB3 | Span 3 | Middle | DConS2 | Combination | -2.31 | -2.129 | -0.3201 | 9.4655 | 7.745 |
| CSB3 | Span 3 | End | Dead | LinStatic | -0.9 | 0.747 | -0.1746 | 1.9622 | -1.013 |
| CSB3 | Span 3 | End | Live | LinStatic | -0.959 | 0.806 | -0.2408 | 2.4712 | -1.0487 |
| CSB3 | Span 3 | End | Comb1 | Combination | -2.614 | 2.187 | -0.5949 | 6.3085 | -2.8936 |
| CSB3 | Span 3 | End | DConS1 | Combination | -1.259 | 1.046 | -0.2444 | 2.7471 | -1.4183 |
| CSB3 | Span 3 | End | DConS2 | Combination | -2.614 | 2.187 | -0.5949 | 6.3085 | -2.8936 |
| MSB3 | Span 1 | Start | Dead | LinStatic | -1.264 | -4.565 | -0.3562 | 8.9896 | -4.6334 |
| MSB3 | Span 1 | Start | Live | LinStatic | -1.227 | -5.96 | -0.4843 | 11.6426 | -6.2031 |
| MSB3 | Span 1 | Start | Comb1 | Combination | -3.48 | -15.014 | -1.2023 | 29.4156 | -15.4851 |
| MSB3 | Span 1 | Start | DConS1 | Combination | -1.769 | -6.391 | -0.4987 | 12.5854 | -6.4868 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB3 | Span 1 | Start | DConS2 | Combination | -3.48 | -15.014 | -1.2023 | 29.4156 | -15.4851 |
| MSB3 | Span 1 | Middle | Dead | LinStatic | -1.367 | 2.926 | 0.1671 | 13.5662 | 11.484 |
| MSB3 | Span 1 | Middle | Live | LinStatic | -1.336 | 3.758 | 0.2305 | 17.48 | 14.7871 |
| MSB3 | Span 1 | Middle | Comb1 | Combination | -3.778 | 9.524 | 0.5694 | 44.2474 | 37.4401 |
| MSB3 | Span 1 | Middle | DConS1 | Combination | -1.913 | 4.096 | 0.234 | 18.9926 | 16.0776 |
| MSB3 | Span 1 | Middle | DConS2 | Combination | -3.778 | 9.524 | 0.5694 | 44.2474 | 37.4401 |
| MSB3 | Span 1 | End | Dead | LinStatic | -1.271 | 7.099 | 0.2291 | 1.91 | -22.4428 |
| MSB3 | Span 1 | End | Live | LinStatic | -1.255 | 9.348 | 0.3139 | 2.3657 | -29.6833 |
| MSB3 | Span 1 | End | Comb1 | Combination | -3.533 | 23.476 | 0.7772 | 6.0771 | -74.4248 |
| MSB3 | Span 1 | End | DConS1 | Combination | -1.779 | 9.939 | 0.3207 | 2.6739 | -31.42 |
| MSB3 | Span 1 | End | DConS2 | Combination | -3.533 | 23.476 | 0.7772 | 6.0771 | -74.4248 |
| MSB3 | Span 2 | Start | Dead | LinStatic | -1.26 | -6.858 | -0.0828 | 1.1903 | -22.1645 |
| MSB3 | Span 2 | Start | Live | LinStatic | -1.255 | -9.082 | -0.1141 | 1.5912 | -29.3336 |
| MSB3 | Span 2 | Start | Comb1 | Combination | -3.521 | -22.76 | -0.282 | 3.9744 | -73.5312 |
| MSB3 | Span 2 | Start | DConS1 | Combination | -1.764 | -9.601 | -0.1159 | 1.6665 | -31.0303 |
| MSB3 | Span 2 | Start | DConS2 | Combination | -3.521 | -22.76 | -0.282 | 3.9744 | -73.5312 |
| MSB3 | Span 2 | Middle | Dead | LinStatic | -1.243 | 2.636 | 0.072 | 9.7252 | 9.6108 |
| MSB3 | Span 2 | Middle | Live | LinStatic | -1.239 | 3.426 | 0.0992 | 12.7959 | 12.6914 |
| MSB3 | Span 2 | Middle | Comb1 | Combination | -3.474 | 8.645 | -0.2451 | 32.1438 | 31.8392 |
| MSB3 | Span 2 | Middle | DConS1 | Combination | -1.74 | 3.69 | 0.1008 | 13.6153 | 13.4551 |
| MSB3 | Span 2 | Middle | DConS2 | Combination | -3.474 | 8.645 | -0.2451 | 32.1438 | 31.8392 |
| MSB3 | Span 2 | End | Dead | LinStatic | -1.26 | 6.858 | 0.0828 | 1.1903 | -22.1645 |
| MSB3 | Span 2 | End | Live | LinStatic | -1.255 | 9.082 | 0.1141 | 1.5912 | -29.3336 |
| MSB3 | Span 2 | End | Comb1 | Combination | -3.521 | 22.76 | 0.282 | 3.9744 | -73.5312 |
| MSB3 | Span 2 | End | DConS1 | Combination | -1.764 | 9.601 | 0.1159 | 1.6665 | -31.0303 |
| MSB3 | Span 2 | End | DConS2 | Combination | -3.521 | 22.76 | 0.282 | 3.9744 | -73.5312 |
| MSB3 | Span 3 | Start | Dead | LinStatic | -1.271 | -7.099 | -0.2291 | 1.91 | -22.4428 |
| MSB3 | Span 3 | Start | Live | LinStatic | -1.255 | -9.348 | -0.3139 | 2.3657 | -29.6833 |
| MSB3 | Span 3 | Start | Comb1 | Combination | -3.533 | -23.476 | -0.7772 | 6.0771 | -74.4248 |
| MSB3 | Span 3 | Start | DConS1 | Combination | -1.779 | -9.939 | -0.3207 | 2.6739 | -31.42 |
| MSB3 | Span 3 | Start | DConS2 | Combination | -3.533 | -23.476 | -0.7772 | 6.0771 | -74.4248 |
| MSB3 | Span 3 | Middle | Dead | LinStatic | -1.367 | -2.926 | -0.1671 | 13.5662 | 11.484 |
| MSB3 | Span 3 | Middle | Live | LinStatic | -1.336 | -3.758 | -0.2305 | 17.48 | 14.7871 |
| MSB3 | Span 3 | Middle | Comb1 | Combination | -3.778 | -9.524 | -0.5694 | 44.2474 | 37.4401 |
| MSB3 | Span 3 | Middle | DConS1 | Combination | -1.913 | -4.096 | -0.234 | 18.9926 | 16.0776 |
| MSB3 | Span 3 | Middle | DConS2 | Combination | -3.778 | -9.524 | -0.5694 | 44.2474 | 37.4401 |
| MSB3 | Span 3 | End | Dead | LinStatic | -1.264 | 4.565 | 0.3562 | 8.9896 | -4.6334 |
| MSB3 | Span 3 | End | Live | LinStatic | -1.227 | 5.96 | 0.4843 | 11.6426 | -6.2031 |
| MSB3 | Span 3 | End | Comb1 | Combination | -3.48 | 15.014 | 1.2023 | 29.4156 | -15.4851 |
| MSB3 | Span 3 | End | DConS1 | Combination | -1.769 | 6.391 | 0.4987 | 12.5854 | -6.4868 |
| MSB3 | Span 3 | End | DConS2 | Combination | -3.48 | 15.014 | 1.2023 | 29.4156 | -15.4851 |
| CSB4 | Span 1 | Start | Dead | LinStatic | -0.443 | -0.867 | -2.3339 | 1.6052 | -0.9656 |
| CSB4 | Span 1 | Start | Live | LinStatic | -0.39 | -1.056 | -3.2819 | 1.9962 | -1.1786 |
| CSB4 | Span 1 | Start | Comb1 | Combination | -1.157 | -2.73 | -8.0518 | 5.1202 | -3.0444 |

**Table 5.3 - Strip Forces Summary (continued)**

| Strip | Span ID | Location | Output Case | Case Type | Abs Max P kip | Abs Max V2 kip | Abs Max T kip-ft | Max M3 kip-ft | Min M3 kip-ft |
|---|---|---|---|---|---|---|---|---|---|
| CSB4 | Span 1 | Start | DConS1 | Combination | -0.621 | -1.214 | -3.2675 | 2.2472 | -1.3518 |
| CSB4 | Span 1 | Start | DConS2 | Combination | -1.157 | -2.73 | -8.0518 | 5.1202 | -3.0444 |
| CSB4 | Span 1 | Middle | Dead | LinStatic | -0.365 | 0.484 | 1.1417 | 2.4239 | 2.1209 |
| CSB4 | Span 1 | Middle | Live | LinStatic | -0.341 | 0.57 | 1.6231 | 2.96 | 2.581 |
| CSB4 | Span 1 | Middle | Comb1 | Combination | -0.984 | 1.492 | 3.9671 | 7.6447 | 6.6747 |
| CSB4 | Span 1 | Middle | DConS1 | Combination | -0.511 | 0.677 | 1.5984 | 3.3935 | 2.9693 |
| CSB4 | Span 1 | Middle | DConS2 | Combination | -0.984 | 1.492 | 3.9671 | 7.6447 | 6.6747 |
| CSB4 | Span 1 | End | Dead | LinStatic | -0.447 | 1.425 | 1.5815 | 0.5818 | -4.2303 |
| CSB4 | Span 1 | End | Live | LinStatic | -0.452 | 1.775 | 2.2519 | 0.6822 | -5.2954 |
| CSB4 | Span 1 | End | Comb1 | Combination | -1.26 | 4.551 | 5.5008 | 1.7896 | -13.549 |
| CSB4 | Span 1 | End | DConS1 | Combination | -0.626 | 1.995 | 2.2141 | 0.8145 | -5.9224 |
| CSB4 | Span 1 | End | DConS2 | Combination | -1.26 | 4.551 | 5.5008 | 1.7896 | -13.549 |
| CSB4 | Span 2 | Start | Dead | LinStatic | -0.367 | -1.375 | -1.2875 | 0.4292 | -4.1647 |
| CSB4 | Span 2 | Start | Live | LinStatic | -0.38 | -1.723 | -1.8358 | 0.5251 | -5.2233 |
| CSB4 | Span 2 | Start | Comb1 | Combination | -1.049 | -4.407 | -4.4823 | 1.3552 | -13.3549 |
| CSB4 | Span 2 | Start | DConS1 | Combination | -0.514 | -1.924 | -1.8025 | 0.6009 | -5.8305 |
| CSB4 | Span 2 | Start | DConS2 | Combination | -1.049 | -4.407 | -4.4823 | 1.3552 | -13.3549 |
| CSB4 | Span 2 | Middle | Dead | LinStatic | -0.268 | 0.43 | 0.9284 | 1.753 | 1.722 |
| CSB4 | Span 2 | Middle | Live | LinStatic | -0.279 | 0.515 | -1.315 | 2.188 | 2.1749 |
| CSB4 | Span 2 | Middle | Comb1 | Combination | -0.768 | -1.339 | 3.2181 | 5.6044 | 5.5463 |
| CSB4 | Span 2 | Middle | DConS1 | Combination | -0.375 | 0.601 | 1.2998 | 2.4542 | 2.4109 |
| CSB4 | Span 2 | Middle | DConS2 | Combination | -0.768 | -1.339 | 3.2181 | 5.6044 | 5.5463 |
| CSB4 | Span 2 | End | Dead | LinStatic | -0.367 | 1.375 | 1.2875 | 0.4292 | -4.1647 |
| CSB4 | Span 2 | End | Live | LinStatic | -0.38 | 1.723 | 1.8358 | 0.5251 | -5.2233 |
| CSB4 | Span 2 | End | Comb1 | Combination | -1.049 | 4.407 | 4.4823 | 1.3552 | -13.3549 |
| CSB4 | Span 2 | End | DConS1 | Combination | -0.514 | 1.924 | 1.8025 | 0.6009 | -5.8305 |
| CSB4 | Span 2 | End | DConS2 | Combination | -1.049 | 4.407 | 4.4823 | 1.3552 | -13.3549 |
| CSB4 | Span 3 | Start | Dead | LinStatic | -0.447 | -1.425 | -1.5815 | 0.5818 | -4.2303 |
| CSB4 | Span 3 | Start | Live | LinStatic | -0.452 | -1.775 | -2.2519 | 0.6822 | -5.2954 |
| CSB4 | Span 3 | Start | Comb1 | Combination | -1.26 | -4.551 | -5.5008 | 1.7896 | -13.549 |
| CSB4 | Span 3 | Start | DConS1 | Combination | -0.626 | -1.995 | -2.2141 | 0.8145 | -5.9224 |
| CSB4 | Span 3 | Start | DConS2 | Combination | -1.26 | -4.551 | -5.5008 | 1.7896 | -13.549 |
| CSB4 | Span 3 | Middle | Dead | LinStatic | -0.365 | -0.484 | -1.1417 | 2.4239 | 2.1209 |
| CSB4 | Span 3 | Middle | Live | LinStatic | -0.341 | -0.57 | -1.6231 | 2.96 | 2.581 |
| CSB4 | Span 3 | Middle | Comb1 | Combination | -0.984 | -1.492 | -3.9671 | 7.6447 | 6.6747 |
| CSB4 | Span 3 | Middle | DConS1 | Combination | -0.511 | -0.677 | -1.5984 | 3.3935 | 2.9693 |
| CSB4 | Span 3 | Middle | DConS2 | Combination | -0.984 | -1.492 | -3.9671 | 7.6447 | 6.6747 |
| CSB4 | Span 3 | End | Dead | LinStatic | -0.443 | 0.867 | 2.3339 | 1.6052 | -0.9656 |
| CSB4 | Span 3 | End | Live | LinStatic | -0.39 | 1.056 | 3.2819 | 1.9962 | -1.1786 |
| CSB4 | Span 3 | End | Comb1 | Combination | -1.157 | 2.73 | 8.0518 | 5.1202 | -3.0444 |
| CSB4 | Span 3 | End | DConS1 | Combination | -0.621 | 1.214 | 3.2675 | 2.2472 | -1.3518 |
| CSB4 | Span 3 | End | DConS2 | Combination | -1.157 | 2.73 | 8.0518 | 5.1202 | -3.0444 |

# 6 Design Data

This chapter provides design data and results.

## 6.1 Concrete Frame Design

**Table 6.1 - Concrete Beam Overwrites - ACI 318-19**

| Unique Name | Cover Type | RLLF | Ignore PT? |
|---|---|---|---|
| 17 | Section | 1 | No |
| 18 | Section | 1 | No |
| 19 | Section | 1 | No |
| 20 | Section | 1 | No |
| 21 | Section | 1 | No |
| 22 | Section | 1 | No |
| 23 | Section | 1 | No |
| 24 | Section | 1 | No |
| 25 | Section | 1 | No |
| 26 | Section | 1 | No |
| 27 | Section | 1 | No |
| 28 | Section | 1 | No |
| 29 | Section | 1 | No |
| 30 | Section | 1 | No |
| 31 | Section | 1 | No |
| 32 | Section | 1 | No |
| 33 | Section | 1 | No |
| 34 | Section | 1 | No |
| 36 | Section | 1 | No |
| 37 | Section | 1 | No |
| 38 | Section | 1 | No |
| 39 | Section | 1 | No |
| 40 | Section | 1 | No |
| 41 | Section | 1 | No |

**Table 6.2 - Concrete Beam Flexure Envelope - ACI 318-19**

| UniqueName | Section | Location | -ve Moment Combo | -ve Moment kip-ft | As Top ft2 | +ve Moment Combo | +ve Moment kip-ft | As Bot ft2 | Status |
|---|---|---|---|---|---|---|---|---|---|
| 17 | ConcBm1 | End-I | DConS2 | -11.2409 | 0.000947 | DConS2 | 47.0967 | 0.003972 | |
| 17 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 72.2981 | 0.006112 | |
| 17 | ConcBm1 | End-J | DConS2 | -69.7451 | 0.005956 | DConS2 | 32.685 | 0.002753 | |
| 18 | ConcBm1 | End-I | DConS2 | -65.071 | 0.005551 | DConS2 | 23.7623 | 0.002 | |
| 18 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 53.3743 | 0.004505 | |
| 18 | ConcBm1 | End-J | DConS2 | -65.071 | 0.005551 | DConS2 | 23.7623 | 0.002 | |
| 19 | ConcBm1 | End-I | DConS2 | -69.7451 | 0.005956 | DConS2 | 32.685 | 0.002753 | |
| 19 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 72.2981 | 0.006112 | |
| 19 | ConcBm1 | End-J | DConS2 | -11.2409 | 0.000947 | DConS2 | 47.0967 | 0.003972 | |
| 20 | ConcBm1 | End-I | DConS2 | -11.2409 | 0.000947 | DConS2 | 47.0967 | 0.003972 | |
| 20 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 72.2981 | 0.006112 | |
| 20 | ConcBm1 | End-J | DConS2 | -69.7451 | 0.005956 | DConS2 | 32.685 | 0.002753 | |

**Table 6.2 - Concrete Beam Flexure Envelope - ACI 318-19 (continued)**

| UniqueName | Section | Location | -ve Moment Combo | -ve Moment kip-ft | As Top ft2 | +ve Moment Combo | +ve Moment kip-ft | As Bot ft2 | Status |
|---|---|---|---|---|---|---|---|---|---|
| 21 | ConcBm1 | End-I | DConS2 | -65.071 | 0.005551 | DConS2 | 23.7623 | 0.002 | |
| 21 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 53.3743 | 0.004505 | |
| 21 | ConcBm1 | End-J | DConS2 | -65.071 | 0.005551 | DConS2 | 23.7623 | 0.002 | |
| 22 | ConcBm1 | End-I | DConS2 | -69.7451 | 0.005956 | DConS2 | 32.685 | 0.002753 | |
| 22 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 72.2981 | 0.006112 | |
| 22 | ConcBm1 | End-J | DConS2 | -11.2409 | 0.000947 | DConS2 | 47.0967 | 0.003972 | |
| 23 | ConcBm2 | End-I | DConS2 | -1.8744 | 0.000157 | DConS2 | 24.1889 | 0.002037 | |
| 23 | ConcBm2 | Middle | DConS2 | 0 | 0 | DConS2 | 44.0287 | 0.003715 | |
| 23 | ConcBm2 | End-J | DConS2 | -38.4612 | 0.00326 | DConS2 | 12.6227 | 0.001061 | |
| 24 | ConcBm2 | End-I | DConS2 | -36.8053 | 0.003118 | DConS2 | 6.6423 | 0.000558 | |
| 24 | ConcBm2 | Middle | DConS2 | 0 | 0 | DConS2 | 27.5482 | 0.002324 | |
| 24 | ConcBm2 | End-J | DConS2 | -36.8053 | 0.003118 | DConS2 | 6.6423 | 0.000558 | |
| 25 | ConcBm2 | End-I | DConS2 | -38.4612 | 0.00326 | DConS2 | 12.6227 | 0.001061 | |
| 25 | ConcBm2 | Middle | DConS2 | 0 | 0 | DConS2 | 44.0287 | 0.003715 | |
| 25 | ConcBm2 | End-J | DConS2 | -1.8744 | 0.000157 | DConS2 | 24.1889 | 0.002037 | |
| 26 | ConcBm2 | End-I | DConS2 | -1.8744 | 0.000157 | DConS2 | 24.1889 | 0.002037 | |
| 26 | ConcBm2 | Middle | DConS2 | 0 | 0 | DConS2 | 44.0287 | 0.003715 | |
| 26 | ConcBm2 | End-J | DConS2 | -38.4612 | 0.00326 | DConS2 | 12.6227 | 0.001061 | |
| 27 | ConcBm2 | End-I | DConS2 | -36.8053 | 0.003118 | DConS2 | 6.6423 | 0.000558 | |
| 27 | ConcBm2 | Middle | DConS2 | 0 | 0 | DConS2 | 27.5482 | 0.002324 | |
| 27 | ConcBm2 | End-J | DConS2 | -36.8053 | 0.003118 | DConS2 | 6.6423 | 0.000558 | |
| 28 | ConcBm2 | End-I | DConS2 | -38.4612 | 0.00326 | DConS2 | 12.6227 | 0.001061 | |
| 28 | ConcBm2 | Middle | DConS2 | 0 | 0 | DConS2 | 44.0287 | 0.003715 | |
| 28 | ConcBm2 | End-J | DConS2 | -1.8744 | 0.000157 | DConS2 | 24.1889 | 0.002037 | |
| 29 | ConcBm1 | End-I | DConS2 | -25.8352 | 0.002183 | DConS2 | 94.5868 | 0.00794 | |
| 29 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 146.9084 | 0.00938 | |
| 29 | ConcBm1 | End-J | DConS2 | -140.9127 | 0.009189 | DConS2 | 71.1538 | 0.006015 | |
| 30 | ConcBm1 | End-I | DConS2 | -132.0949 | 0.008594 | DConS2 | 56.1257 | 0.004738 | |
| 30 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 115.2405 | 0.00794 | |
| 30 | ConcBm1 | End-J | DConS2 | -132.0949 | 0.008594 | DConS2 | 56.1257 | 0.004738 | |
| 31 | ConcBm1 | End-I | DConS2 | -140.9127 | 0.009189 | DConS2 | 71.1538 | 0.006015 | |
| 31 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 146.9084 | 0.00938 | |
| 31 | ConcBm1 | End-J | DConS2 | -25.8352 | 0.002183 | DConS2 | 94.5868 | 0.00794 | |
| 32 | ConcBm1 | End-I | DConS2 | -25.8352 | 0.002183 | DConS2 | 94.5868 | 0.00794 | |
| 32 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 146.9084 | 0.00938 | |
| 32 | ConcBm1 | End-J | DConS2 | -140.9127 | 0.009189 | DConS2 | 71.1538 | 0.006015 | |
| 33 | ConcBm1 | End-I | DConS2 | -132.0949 | 0.008594 | DConS2 | 56.1257 | 0.004738 | |
| 33 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 115.2405 | 0.00794 | |
| 33 | ConcBm1 | End-J | DConS2 | -132.0949 | 0.008594 | DConS2 | 56.1257 | 0.004738 | |
| 34 | ConcBm1 | End-I | DConS2 | -140.9127 | 0.009189 | DConS2 | 71.1538 | 0.006015 | |
| 34 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 146.9084 | 0.00938 | |
| 34 | ConcBm1 | End-J | DConS2 | -25.8352 | 0.002183 | DConS2 | 94.5868 | 0.00794 | |
| 36 | ConcBm1 | End-I | DConS2 | -77.5669 | 0.006637 | DConS2 | 30.7687 | 0.002591 | |
| 36 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 89.4648 | 0.007576 | |

**Table 6.2 - Concrete Beam Flexure Envelope - ACI 318-19 (continued)**

| UniqueName | Section | Location | -ve Moment Combo | -ve Moment kip-ft | As Top ft2 | +ve Moment Combo | +ve Moment kip-ft | As Bot ft2 | Status |
|---|---|---|---|---|---|---|---|---|---|
| 36 | ConcBm1 | End-J | DConS2 | -6.0328 | 0.000507 | DConS2 | 48.1651 | 0.004063 | |
| 37 | ConcBm1 | End-I | DConS2 | -74.7086 | 0.006388 | DConS2 | 18.9382 | 0.001593 | |
| 37 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 59.0824 | 0.004989 | |
| 37 | ConcBm1 | End-J | DConS2 | -74.7086 | 0.006388 | DConS2 | 18.9382 | 0.001593 | |
| 38 | ConcBm1 | End-I | DConS2 | -6.0328 | 0.000507 | DConS2 | 48.1651 | 0.004063 | |
| 38 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 89.4648 | 0.007576 | |
| 38 | ConcBm1 | End-J | DConS2 | -77.5669 | 0.006637 | DConS2 | 30.7687 | 0.002591 | |
| 39 | ConcBm1 | End-I | DConS2 | -6.0328 | 0.000507 | DConS2 | 48.1651 | 0.004063 | |
| 39 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 89.4648 | 0.007576 | |
| 39 | ConcBm1 | End-J | DConS2 | -77.5669 | 0.006637 | DConS2 | 30.7687 | 0.002591 | |
| 40 | ConcBm1 | End-I | DConS2 | -74.7086 | 0.006388 | DConS2 | 18.9382 | 0.001593 | |
| 40 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 59.0824 | 0.004989 | |
| 40 | ConcBm1 | End-J | DConS2 | -74.7086 | 0.006388 | DConS2 | 18.9382 | 0.001593 | |
| 41 | ConcBm1 | End-I | DConS2 | -77.5669 | 0.006637 | DConS2 | 30.7687 | 0.002591 | |
| 41 | ConcBm1 | Middle | DConS2 | 0 | 0 | DConS2 | 89.4648 | 0.007576 | |
| 41 | ConcBm1 | End-J | DConS2 | -6.0328 | 0.000507 | DConS2 | 48.1651 | 0.004063 | |

**Table 6.3 - Concrete Beam Shear Envelope - ACI 318-19 (Part 1 of 2)**

| UniqueName | Location | Section | Shear Design Combo | Shear Force kip | Torsion for Av/s kip-ft | VRebar (Av/s) ft2/ft | TTrnCombo | Torsion for TTrnRebar kip-ft | TTrnRebar (At/s) ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| 17 | End-I | ConcBm1 | DConS2 | 15.117 | 6.4221 | 0 | DConS2 | 6.4221 | 0.00174 |
| 17 | Middle | ConcBm1 | DConS2 | 13.716 | 4.0794 | 0 | DConS2 | 4.6188 | 0.00174 |
| 17 | End-J | ConcBm1 | DConS2 | 18.567 | 4.6451 | 0 | DConS2 | 4.6451 | 0.00174 |
| 18 | End-I | ConcBm1 | DConS2 | 14.907 | 4.1576 | 0 | DConS2 | 4.1576 | 0.00174 |
| 18 | Middle | ConcBm1 | DConS2 | 10.322 | 3.6624 | 0 | DConS2 | 3.6624 | 0.00173 |
| 18 | End-J | ConcBm1 | DConS2 | 14.907 | 4.1576 | 0 | DConS2 | 4.1576 | 0.00174 |
| 19 | End-I | ConcBm1 | DConS2 | 18.567 | 4.6451 | 0 | DConS2 | 4.6451 | 0.00174 |
| 19 | Middle | ConcBm1 | DConS2 | 13.716 | 4.0794 | 0 | DConS2 | 4.6188 | 0.00174 |
| 19 | End-J | ConcBm1 | DConS2 | 15.117 | 6.4221 | 0 | DConS2 | 6.4221 | 0.00174 |
| 20 | End-I | ConcBm1 | DConS2 | 15.117 | 6.4221 | 0 | DConS2 | 6.4221 | 0.00174 |
| 20 | Middle | ConcBm1 | DConS2 | 13.716 | 4.0794 | 0 | DConS2 | 4.6188 | 0.00174 |
| 20 | End-J | ConcBm1 | DConS2 | 18.567 | 4.6451 | 0 | DConS2 | 4.6451 | 0.00174 |
| 21 | End-I | ConcBm1 | DConS2 | 14.907 | 4.1576 | 0 | DConS2 | 4.1576 | 0.00174 |
| 21 | Middle | ConcBm1 | DConS2 | 10.322 | 3.6624 | 0 | DConS2 | 3.6624 | 0.00173 |
| 21 | End-J | ConcBm1 | DConS2 | 14.907 | 4.1576 | 0 | DConS2 | 4.1576 | 0.00174 |
| 22 | End-I | ConcBm1 | DConS2 | 18.567 | 4.6451 | 0 | DConS2 | 4.6451 | 0.00174 |
| 22 | Middle | ConcBm1 | DConS2 | 13.716 | 4.0794 | 0 | DConS2 | 4.6188 | 0.00174 |
| 22 | End-J | ConcBm1 | DConS2 | 15.117 | 6.4221 | 0 | DConS2 | 6.4221 | 0.00174 |
| 23 | End-I | ConcBm2 | DConS2 | 11.39 | 6.049 | 0 | DConS2 | 6.049 | 0.00168 |
| 23 | Middle | ConcBm2 | DConS2 | 9.663 | 2.821 | 0 | DConS2 | 3.7625 | 0.00167 |
| 23 | End-J | ConcBm2 | DConS2 | 14.033 | 4.0866 | 0 | DConS2 | 4.0866 | 0.00168 |
| 24 | End-I | ConcBm2 | DConS2 | 10.619 | 3.3816 | 0 | DConS2 | 3.3816 | 0.00167 |
| 24 | Middle | ConcBm2 | DConS2 | 6.643 | 2.3796 | 0 | DConS2 | 2.3796 | 0.00167 |

**Table 6.3 - Concrete Beam Shear Envelope - ACI 318-19 (Part 1 of 2, continued)**

| UniqueName | Location | Section | Shear Design Combo | Shear Force kip | Torsion for Av/s kip-ft | VRebar (Av/s) ft2/ft | TTrnCombo | Torsion for TTrnRebar kip-ft | TTrnRebar (At/s) ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| 24 | End-J | ConcBm2 | DConS2 | 10.619 | 3.3816 | 0 | DConS2 | 3.3816 | 0.00167 |
| 25 | End-I | ConcBm2 | DConS2 | 14.033 | 4.0866 | 0 | DConS2 | 4.0866 | 0.00168 |
| 25 | Middle | ConcBm2 | DConS2 | 9.663 | 2.821 | 0 | DConS2 | 3.7625 | 0.00167 |
| 25 | End-J | ConcBm2 | DConS2 | 11.39 | 6.049 | 0 | DConS2 | 6.049 | 0.00168 |
| 26 | End-I | ConcBm2 | DConS2 | 11.39 | 6.049 | 0 | DConS2 | 6.049 | 0.00168 |
| 26 | Middle | ConcBm2 | DConS2 | 9.663 | 2.821 | 0 | DConS2 | 3.7625 | 0.00167 |
| 26 | End-J | ConcBm2 | DConS2 | 14.033 | 4.0866 | 0 | DConS2 | 4.0866 | 0.00168 |
| 27 | End-I | ConcBm2 | DConS2 | 10.619 | 3.3816 | 0 | DConS2 | 3.3816 | 0.00167 |
| 27 | Middle | ConcBm2 | DConS2 | 6.643 | 2.3796 | 0 | DConS2 | 2.3796 | 0.00167 |
| 27 | End-J | ConcBm2 | DConS2 | 10.619 | 3.3816 | 0 | DConS2 | 3.3816 | 0.00167 |
| 28 | End-I | ConcBm2 | DConS2 | 14.033 | 4.0866 | 0 | DConS2 | 4.0866 | 0.00168 |
| 28 | Middle | ConcBm2 | DConS2 | 9.663 | 2.821 | 0 | DConS2 | 3.7625 | 0.00167 |
| 28 | End-J | ConcBm2 | DConS2 | 11.39 | 6.049 | 0 | DConS2 | 6.049 | 0.00168 |
| 29 | End-I | ConcBm1 | DConS2 | 29.952 | 0.4159 | 0 | DConS2 | 0.4159 | 0.00175 |
| 29 | Middle | ConcBm1 | DConS2 | 27.506 | 0.2189 | 0 | DConS2 | 0.3302 | 0.00174 |
| 29 | End-J | ConcBm1 | DConS2 | 37.263 | 0.2236 | 0.00036 | DConS2 | 0.2236 | 0.00174 |
| 30 | End-I | ConcBm1 | DConS2 | 30.5 | 0.278 | 0 | DConS2 | 0.2596 | 0.00173 |
| 30 | Middle | ConcBm1 | DConS2 | 21.234 | 0.2596 | 0 | DConS2 | 0.1187 | 0.00173 |
| 30 | End-J | ConcBm1 | DConS2 | 30.5 | 0.278 | 0 | DConS2 | 0.2596 | 0.00173 |
| 31 | End-I | ConcBm1 | DConS2 | 37.263 | 0.2236 | 0.00036 | DConS2 | 0.2236 | 0.00174 |
| 31 | Middle | ConcBm1 | DConS2 | 27.506 | 0.2189 | 0 | DConS2 | 0.3302 | 0.00174 |
| 31 | End-J | ConcBm1 | DConS2 | 29.952 | 0.4159 | 0 | DConS2 | 0.4159 | 0.00175 |
| 32 | End-I | ConcBm1 | DConS2 | 29.952 | 0.4159 | 0 | DConS2 | 0.4159 | 0.00175 |
| 32 | Middle | ConcBm1 | DConS2 | 27.506 | 0.2189 | 0 | DConS2 | 0.3302 | 0.00174 |
| 32 | End-J | ConcBm1 | DConS2 | 37.263 | 0.2236 | 0.00036 | DConS2 | 0.2236 | 0.00174 |
| 33 | End-I | ConcBm1 | DConS2 | 30.5 | 0.278 | 0 | DConS2 | 0.2596 | 0.00173 |
| 33 | Middle | ConcBm1 | DConS2 | 21.234 | 0.2596 | 0 | DConS2 | 0.1187 | 0.00173 |
| 33 | End-J | ConcBm1 | DConS2 | 30.5 | 0.278 | 0 | DConS2 | 0.2596 | 0.00173 |
| 34 | End-I | ConcBm1 | DConS2 | 37.263 | 0.2236 | 0.00036 | DConS2 | 0.2236 | 0.00174 |
| 34 | Middle | ConcBm1 | DConS2 | 27.506 | 0.2189 | 0 | DConS2 | 0.3302 | 0.00174 |
| 34 | End-J | ConcBm1 | DConS2 | 29.952 | 0.4159 | 0 | DConS2 | 0.4159 | 0.00175 |
| 36 | End-I | ConcBm1 | DConS2 | 28.221 | 0.065 | 0 | DConS2 | 0.0504 | 0.00173 |
| 36 | Middle | ConcBm1 | DConS2 | 18.977 | 0.0504 | 0 | DConS2 | 0.1916 | 0.00174 |
| 36 | End-J | ConcBm1 | DConS2 | 22.866 | 0.272 | 0 | DConS2 | 0.272 | 0.00174 |
| 37 | End-I | ConcBm1 | DConS2 | 21.444 | 0.1337 | 0 | DConS2 | 0.0364 | 0.00173 |
| 37 | Middle | ConcBm1 | DConS2 | 13.07 | 0.0364 | 0 | DConS2 | 0 | 0.00173 |
| 37 | End-J | ConcBm1 | DConS2 | 21.444 | 0.1337 | 0 | DConS2 | 0.0364 | 0.00173 |
| 38 | End-I | ConcBm1 | DConS2 | 22.866 | 0.272 | 0 | DConS2 | 0.272 | 0.00174 |
| 38 | Middle | ConcBm1 | DConS2 | 18.977 | 0.0504 | 0 | DConS2 | 0.1916 | 0.00174 |
| 38 | End-J | ConcBm1 | DConS2 | 28.221 | 0.065 | 0 | DConS2 | 0.0504 | 0.00173 |
| 39 | End-I | ConcBm1 | DConS2 | 22.866 | 0.272 | 0 | DConS2 | 0.272 | 0.00174 |
| 39 | Middle | ConcBm1 | DConS2 | 18.977 | 0.0504 | 0 | DConS2 | 0.1916 | 0.00174 |
| 39 | End-J | ConcBm1 | DConS2 | 28.221 | 0.065 | 0 | DConS2 | 0.0504 | 0.00173 |
| 40 | End-I | ConcBm1 | DConS2 | 21.444 | 0.1337 | 0 | DConS2 | 0.0364 | 0.00173 |

**Table 6.3 - Concrete Beam Shear Envelope - ACI 318-19 (Part 1 of 2, continued)**

| UniqueName | Location | Section | Shear Design Combo | Shear Force kip | Torsion for Av/s kip-ft | VRebar (Av/s) ft2/ft | TTrnCombo | Torsion for TTrnRebar kip-ft | TTrnRebar (At/s) ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| 40 | Middle | ConcBm1 | DConS2 | 13.07 | 0.0364 | 0 | DConS2 | 0 | 0.00173 |
| 40 | End-J | ConcBm1 | DConS2 | 21.444 | 0.1337 | 0 | DConS2 | 0.0364 | 0.00173 |
| 41 | End-I | ConcBm1 | DConS2 | 28.221 | 0.065 | 0 | DConS2 | 0.0504 | 0.00173 |
| 41 | Middle | ConcBm1 | DConS2 | 18.977 | 0.0504 | 0 | DConS2 | 0.1916 | 0.00174 |
| 41 | End-J | ConcBm1 | DConS2 | 22.866 | 0.272 | 0 | DConS2 | 0.272 | 0.00174 |

**Table 6.3 - Concrete Beam Shear Envelope - ACI 318-19 (Part 2 of 2)**

| UniqueName | Location | TLngCombo | Torsion for TLngRebar kip-ft | TLngRebar (Al) ft2 | Status |
|---|---|---|---|---|---|
| 17 | End-I | DConS2 | 6.4221 | 0.009877 | |
| 17 | Middle | DConS2 | 4.6188 | 0.009855 | |
| 17 | End-J | DConS2 | 4.6451 | 0.009856 | |
| 18 | End-I | DConS2 | 4.1576 | 0.009834 | |
| 18 | Middle | DConS2 | 3.6624 | 0.009826 | |
| 18 | End-J | DConS2 | 4.1576 | 0.009834 | |
| 19 | End-I | DConS2 | 4.6451 | 0.009856 | |
| 19 | Middle | DConS2 | 4.6188 | 0.009855 | |
| 19 | End-J | DConS2 | 6.4221 | 0.009877 | |
| 20 | End-I | DConS2 | 6.4221 | 0.009877 | |
| 20 | Middle | DConS2 | 4.6188 | 0.009855 | |
| 20 | End-J | DConS2 | 4.6451 | 0.009856 | |
| 21 | End-I | DConS2 | 4.1576 | 0.009834 | |
| 21 | Middle | DConS2 | 3.6624 | 0.009826 | |
| 21 | End-J | DConS2 | 4.1576 | 0.009834 | |
| 22 | End-I | DConS2 | 4.6451 | 0.009856 | |
| 22 | Middle | DConS2 | 4.6188 | 0.009855 | |
| 22 | End-J | DConS2 | 6.4221 | 0.009877 | |
| 23 | End-I | DConS2 | 6.049 | 0.009506 | |
| 23 | Middle | DConS2 | 3.7625 | 0.009488 | |
| 23 | End-J | DConS2 | 4.0866 | 0.009501 | |
| 24 | End-I | DConS2 | 3.3816 | 0.009486 | |
| 24 | Middle | DConS2 | 2.3796 | 0.009472 | |
| 24 | End-J | DConS2 | 3.3816 | 0.009486 | |
| 25 | End-I | DConS2 | 4.0866 | 0.009501 | |
| 25 | Middle | DConS2 | 3.7625 | 0.009488 | |
| 25 | End-J | DConS2 | 6.049 | 0.009506 | |
| 26 | End-I | DConS2 | 6.049 | 0.009506 | |
| 26 | Middle | DConS2 | 3.7625 | 0.009488 | |
| 26 | End-J | DConS2 | 4.0866 | 0.009501 | |
| 27 | End-I | DConS2 | 3.3816 | 0.009486 | |
| 27 | Middle | DConS2 | 2.3796 | 0.009472 | |
| 27 | End-J | DConS2 | 3.3816 | 0.009486 | |
| 28 | End-I | DConS2 | 4.0866 | 0.009501 | |

**Table 6.3 - Concrete Beam Shear Envelope - ACI 318-19 (Part 2 of 2, continued)**

| UniqueName | Location | TLngCombo | Torsion for TLngRebar kip-ft | TLngRebar (Al) ft2 | Status |
|---|---|---|---|---|---|
| 28 | Middle | DConS2 | 3.7625 | 0.009488 | |
| 28 | End-J | DConS2 | 6.049 | 0.009506 | |
| 29 | End-I | DConS2 | 0.4159 | 0.009917 | |
| 29 | Middle | DConS2 | 0.3302 | 0.009881 | |
| 29 | End-J | DConS2 | 0.2236 | 0.009855 | |
| 30 | End-I | DConS2 | 0.2596 | 0.009829 | |
| 30 | Middle | DConS2 | 0.1187 | 0.009831 | |
| 30 | End-J | DConS2 | 0.2596 | 0.009829 | |
| 31 | End-I | DConS2 | 0.2236 | 0.009855 | |
| 31 | Middle | DConS2 | 0.3302 | 0.009881 | |
| 31 | End-J | DConS2 | 0.4159 | 0.009917 | |
| 32 | End-I | DConS2 | 0.4159 | 0.009917 | |
| 32 | Middle | DConS2 | 0.3302 | 0.009881 | |
| 32 | End-J | DConS2 | 0.2236 | 0.009855 | |
| 33 | End-I | DConS2 | 0.2596 | 0.009829 | |
| 33 | Middle | DConS2 | 0.1187 | 0.009831 | |
| 33 | End-J | DConS2 | 0.2596 | 0.009829 | |
| 34 | End-I | DConS2 | 0.2236 | 0.009855 | |
| 34 | Middle | DConS2 | 0.3302 | 0.009881 | |
| 34 | End-J | DConS2 | 0.4159 | 0.009917 | |
| 36 | End-I | DConS2 | 0.0504 | 0.009826 | |
| 36 | Middle | DConS2 | 0.1916 | 0.009843 | |
| 36 | End-J | DConS2 | 0.272 | 0.009864 | |
| 37 | End-I | DConS2 | 0.0364 | 0.009807 | |
| 37 | Middle | DConS2 | 0 | 0.009807 | |
| 37 | End-J | DConS2 | 0.0364 | 0.009807 | |
| 38 | End-I | DConS2 | 0.272 | 0.009864 | |
| 38 | Middle | DConS2 | 0.1916 | 0.009843 | |
| 38 | End-J | DConS2 | 0.0504 | 0.009826 | |
| 39 | End-I | DConS2 | 0.272 | 0.009864 | |
| 39 | Middle | DConS2 | 0.1916 | 0.009843 | |
| 39 | End-J | DConS2 | 0.0504 | 0.009826 | |
| 40 | End-I | DConS2 | 0.0364 | 0.009807 | |
| 40 | Middle | DConS2 | 0 | 0.009807 | |
| 40 | End-J | DConS2 | 0.0364 | 0.009807 | |
| 41 | End-I | DConS2 | 0.0504 | 0.009826 | |
| 41 | Middle | DConS2 | 0.1916 | 0.009843 | |
| 41 | End-J | DConS2 | 0.272 | 0.009864 | |

## 6.2 Concrete Slab Design

**Table 6.4 - Concrete Design Preferences - ACI 318-19**

| Item | Value |
|---|---|
| PhiTen | 0.9 |
| PhiComp | 0.65 |
| PhiShear | 0.75 |
| Increase Flexural Rebar? | No |
| Overwrite Shear Lambdas to One for Mats and Footings? | Yes |
| Ignore Pu? | Yes |
| Pattern Live Load Factor | 0.75 |
| CoverTop ft | 0.0625 |
| CoverBot ft | 0.0625 |
| BarSize | #6 |
| InnerLayer | Layer B |
| PTCGSTop ft | 0.08333 |
| PTCGSBotExt ft | 0.14583 |
| PTCGSBotInt ft | 0.08333 |
| SlabType | Two Way |
| Cover Beam Top ft | 0.125 |
| Cover Beam Bottom ft | 0.125 |
| Bar Size Beam Flexure | #9 |
| Bar Size Beam Shear | #4 |
| PTCGS Beam Top ft | 0.16667 |
| PTCGS Beam Bottom ft | 0.16667 |
| UserStress | No |
| InitConcRat | 0.8 |
| LLFraction | 0.5 |

**Table 6.5 - Concrete Slab Design Overwrites - Strip Based**

| Strip Name | Strip Layer | Strip Design Type | Design? | Ignote PT? | Rebar Material | Cover Specification Type | LLRF |
|---|---|---|---|---|---|---|---|
| CSA1 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA1 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA2 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA2 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA3 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSA3 | A | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSA4 | A | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB1 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB1 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB2 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB2 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB3 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| MSB3 | B | Middle Strip | Yes | No | A615Gr60 | From Preferences | 1 |
| CSB4 | B | Column Strip | Yes | No | A615Gr60 | From Preferences | 1 |

**Table 6.6 - Concrete Slab Design Overwrites - Finite Element Based**

| Unique Name | Rebar Material | Cover Specification Type | LLRF | Design? | Ignote PT? |
|---|---|---|---|---|---|
| 1 | A615Gr60 | From Preferences | 1 | Yes | No |

**Table 6.7 - Concrete Slab Design Overwrites - Punching Shear - General**

| Unique Name | Check Punching Shear? | Location Type | Perimeter Type | Effective Depth Type | Opening Definition | Reinforcement Type |
|---|---|---|---|---|---|---|
| 2 | Program Determined | Auto | Auto | Auto | Auto | None |
| 4 | Program Determined | Auto | Auto | Auto | Auto | None |
| 6 | Program Determined | Auto | Auto | Auto | Auto | None |
| 8 | Program Determined | Auto | Auto | Auto | Auto | None |
| 10 | Program Determined | Auto | Auto | Auto | Auto | None |
| 12 | Program Determined | Auto | Auto | Auto | Auto | None |
| 14 | Program Determined | Auto | Auto | Auto | Auto | None |
| 16 | Program Determined | Auto | Auto | Auto | Auto | None |
| 18 | Program Determined | Auto | Auto | Auto | Auto | None |
| 20 | Program Determined | Auto | Auto | Auto | Auto | None |
| 22 | Program Determined | Auto | Auto | Auto | Auto | None |
| 24 | Program Determined | Auto | Auto | Auto | Auto | None |
| 26 | Program Determined | Auto | Auto | Auto | Auto | None |
| 28 | Program Determined | Auto | Auto | Auto | Auto | None |
| 30 | Program Determined | Auto | Auto | Auto | Auto | None |
| 32 | Program Determined | Auto | Auto | Auto | Auto | None |
| 1 | Program Determined | Auto | Auto | Auto | Auto | None |
| 3 | Program Determined | Auto | Auto | Auto | Auto | None |
| 5 | Program Determined | Auto | Auto | Auto | Auto | None |
| 7 | Program Determined | Auto | Auto | Auto | Auto | None |
| 9 | Program Determined | Auto | Auto | Auto | Auto | None |
| 11 | Program Determined | Auto | Auto | Auto | Auto | None |
| 13 | Program Determined | Auto | Auto | Auto | Auto | None |
| 15 | Program Determined | Auto | Auto | Auto | Auto | None |
| 17 | Program Determined | Auto | Auto | Auto | Auto | None |
| 19 | Program Determined | Auto | Auto | Auto | Auto | None |
| 21 | Program Determined | Auto | Auto | Auto | Auto | None |
| 23 | Program Determined | Auto | Auto | Auto | Auto | None |
| 25 | Program Determined | Auto | Auto | Auto | Auto | None |
| 27 | Program Determined | Auto | Auto | Auto | Auto | None |
| 29 | Program Determined | Auto | Auto | Auto | Auto | None |
| 31 | Program Determined | Auto | Auto | Auto | Auto | None |

**Table 6.8 - Concrete Slab Design Summary - Span Definition Data**

| StripObject | SpanID | SpanLength ft | StartDist ft | EndDist ft | GlobalX1 ft | GlobalY1 ft | GlobalX2 ft | GlobalY2 ft |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | 22 | 0.5 | 44.5 | 0 | 0 | 22 | 0 |
| CSA1 | Span 2 | 22 | 22.5 | 22.5 | 22 | 0 | 44 | 0 |
| CSA1 | Span 3 | 22 | 44.5 | 0.5 | 44 | 0 | 66 | 0 |

**Table 6.8 - Concrete Slab Design Summary - Span Definition Data (continued)**

| StripObject | SpanID | SpanLength ft | StartDist ft | EndDist ft | GlobalX1 ft | GlobalY1 ft | GlobalX2 ft | GlobalY2 ft |
|---|---|---|---|---|---|---|---|---|
| MSA1 | Span 1 | 22 | 0.5 | 44.5 | 0 | 8.75 | 22 | 8.75 |
| MSA1 | Span 2 | 22 | 22.5 | 22.5 | 22 | 8.75 | 44 | 8.75 |
| MSA1 | Span 3 | 22 | 44.5 | 0.5 | 44 | 8.75 | 66 | 8.75 |
| CSA2 | Span 1 | 22 | 0.5 | 44.5 | 0 | 17.5 | 22 | 17.5 |
| CSA2 | Span 2 | 22 | 22.5 | 22.5 | 22 | 17.5 | 44 | 17.5 |
| CSA2 | Span 3 | 22 | 44.5 | 0.5 | 44 | 17.5 | 66 | 17.5 |
| MSA2 | Span 1 | 22 | 0.5 | 44.5 | 0 | 26.25 | 22 | 26.25 |
| MSA2 | Span 2 | 22 | 22.5 | 22.5 | 22 | 26.25 | 44 | 26.25 |
| MSA2 | Span 3 | 22 | 44.5 | 0.5 | 44 | 26.25 | 66 | 26.25 |
| CSA3 | Span 1 | 22 | 0.5 | 44.5 | 0 | 35 | 22 | 35 |
| CSA3 | Span 2 | 22 | 22.5 | 22.5 | 22 | 35 | 44 | 35 |
| CSA3 | Span 3 | 22 | 44.5 | 0.5 | 44 | 35 | 66 | 35 |
| MSA3 | Span 1 | 22 | 0.5 | 44.5 | 0 | 43.75 | 22 | 43.75 |
| MSA3 | Span 2 | 22 | 22.5 | 22.5 | 22 | 43.75 | 44 | 43.75 |
| MSA3 | Span 3 | 22 | 44.5 | 0.5 | 44 | 43.75 | 66 | 43.75 |
| CSA4 | Span 1 | 22 | 0.5 | 44.5 | 0 | 52.5 | 22 | 52.5 |
| CSA4 | Span 2 | 22 | 22.5 | 22.5 | 22 | 52.5 | 44 | 52.5 |
| CSA4 | Span 3 | 22 | 44.5 | 0.5 | 44 | 52.5 | 66 | 52.5 |
| CSB1 | Span 1 | 17.5 | 0.5 | 35.5 | 0 | 0 | 0 | 17.5 |
| CSB1 | Span 2 | 17.5 | 18 | 18 | 0 | 17.5 | 0 | 35 |
| CSB1 | Span 3 | 17.5 | 35.5 | 0.5 | 0 | 35 | 0 | 52.5 |
| MSB1 | Span 1 | 17.5 | 0.5 | 35.5 | 11 | 0 | 11 | 17.5 |
| MSB1 | Span 2 | 17.5 | 18 | 18 | 11 | 17.5 | 11 | 35 |
| MSB1 | Span 3 | 17.5 | 35.5 | 0.5 | 11 | 35 | 11 | 52.5 |
| CSB2 | Span 1 | 17.5 | 0.5 | 35.5 | 22 | 0 | 22 | 17.5 |
| CSB2 | Span 2 | 17.5 | 18 | 18 | 22 | 17.5 | 22 | 35 |
| CSB2 | Span 3 | 17.5 | 35.5 | 0.5 | 22 | 35 | 22 | 52.5 |
| MSB2 | Span 1 | 17.5 | 0.5 | 35.5 | 33 | 0 | 33 | 17.5 |
| MSB2 | Span 2 | 17.5 | 18 | 18 | 33 | 17.5 | 33 | 35 |
| MSB2 | Span 3 | 17.5 | 35.5 | 0.5 | 33 | 35 | 33 | 52.5 |
| CSB3 | Span 1 | 17.5 | 0.5 | 35.5 | 44 | 0 | 44 | 17.5 |
| CSB3 | Span 2 | 17.5 | 18 | 18 | 44 | 17.5 | 44 | 35 |
| CSB3 | Span 3 | 17.5 | 35.5 | 0.5 | 44 | 35 | 44 | 52.5 |
| MSB3 | Span 1 | 17.5 | 0.5 | 35.5 | 55 | 0 | 55 | 17.5 |
| MSB3 | Span 2 | 17.5 | 18 | 18 | 55 | 17.5 | 55 | 35 |
| MSB3 | Span 3 | 17.5 | 35.5 | 0.5 | 55 | 35 | 55 | 52.5 |
| CSB4 | Span 1 | 17.5 | 0.5 | 35.5 | 66 | 0 | 66 | 17.5 |
| CSB4 | Span 2 | 17.5 | 18 | 18 | 66 | 17.5 | 66 | 35 |
| CSB4 | Span 3 | 17.5 | 35.5 | 0.5 | 66 | 35 | 66 | 52.5 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -9.5002 | 0.003049 | 0.004387 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.4657 | 0.000465 | 0 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -13.9738 | 0.004514 | 0.004387 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -13.9738 | 0.004514 | 0.004387 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -1.4914 | 0.000473 | 0 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -13.9738 | 0.004514 | 0.004387 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -13.9738 | 0.004514 | 0.004387 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.4657 | 0.000465 | 0 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -9.5002 | 0.003049 | 0.004387 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -29.5529 | 0.009466 | 0.01575 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.7155 | 0.000543 | 0 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -65.5812 | 0.021324 | 0.01575 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -65.5812 | 0.021324 | 0.01575 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -2.8093 | 0.00089 | 0 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -65.5812 | 0.021324 | 0.01575 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -65.5812 | 0.021324 | 0.01575 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.7155 | 0.000543 | 0 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -29.5529 | 0.009466 | 0.01575 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -10.9346 | 0.003492 | 0.007875 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.224 | 0.000388 | 0 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -22.9572 | 0.007403 | 0.007875 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -22.9572 | 0.007403 | 0.007875 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -3.3085 | 0.00105 | 0 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -22.9572 | 0.007403 | 0.007875 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -22.9572 | 0.007403 | 0.007875 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.224 | 0.000388 | 0 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -10.9346 | 0.003492 | 0.007875 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -18.0012 | 0.005746 | 0.013644 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -0.4571 | 0.000145 | 0 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -51.419 | 0.016675 | 0.013644 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -51.419 | 0.016675 | 0.013644 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -1.3677 | 0.000433 | 0 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -51.419 | 0.016675 | 0.013644 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -51.419 | 0.016675 | 0.013644 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.4571 | 0.000145 | 0 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -18.0012 | 0.005746 | 0.013644 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -10.9346 | 0.003492 | 0.007875 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.224 | 0.000388 | 0 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -22.9572 | 0.007403 | 0.007875 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -22.9572 | 0.007403 | 0.007875 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -3.3085 | 0.00105 | 0 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -22.9572 | 0.007403 | 0.007875 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -22.9572 | 0.007403 | 0.007875 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.224 | 0.000388 | 0 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -10.9346 | 0.003492 | 0.007875 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -14.6118 | 0.004689 | 0.007875 |
| MSA3 | Span 1 | | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -40.2825 | 0.013183 | 0.007875 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -40.2825 | 0.013183 | 0.007875 |
| MSA3 | Span 2 | | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -40.2825 | 0.013183 | 0.007875 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -40.2825 | 0.013183 | 0.007875 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.0665 | 0 | 0 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -14.6118 | 0.004689 | 0.007875 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -9.5002 | 0.003049 | 0.004387 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.4657 | 0.000465 | 0 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | End | -13.9738 | 0.004514 | 0.004387 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -13.9738 | 0.004514 | 0.004387 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -1.4914 | 0.000473 | 0 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | End | -13.9738 | 0.004514 | 0.004387 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -13.9738 | 0.004514 | 0.004387 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.4657 | 0.000465 | 0 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | End | -9.5002 | 0.003049 | 0.004387 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -11.0995 | 0.004229 | 0.0054 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.1219 | 0.00042 | 0 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -16.5991 | 0.006384 | 0.0054 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -16.5991 | 0.006384 | 0.0054 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -1.1016 | 0.000413 | 0 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -16.5991 | 0.006384 | 0.0054 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -16.5991 | 0.006384 | 0.0054 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.1219 | 0.00042 | 0 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -11.0995 | 0.004229 | 0.0054 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -17.0184 | 0.00648 | 0.0099 |
| MSB1 | Span 1 | | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | End | -51.081 | 0.020048 | 0.0099 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -51.081 | 0.020048 | 0.0099 |
| MSB1 | Span 2 | | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | End | -51.081 | 0.020048 | 0.0099 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -51.081 | 0.020048 | 0.0099 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.028 | 0 | 0 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | End | -17.0184 | 0.00648 | 0.0099 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -13.2767 | 0.005026 | 0.0099 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.796 | 0.000673 | 0 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -27.0369 | 0.010366 | 0.0099 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -27.0369 | 0.010366 | 0.0099 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -2.7754 | 0.001041 | 0 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -27.0369 | 0.010366 | 0.0099 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -27.0369 | 0.010366 | 0.0099 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.796 | 0.000673 | 0 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -13.2767 | 0.005026 | 0.0099 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 1 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Location | FTopMoment kip-ft | FTopArea ft2 | FTopAMin ft2 |
|---|---|---|---|---|---|---|---|---|
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -20.1748 | 0.007663 | 0.013644 |
| MSB2 | Span 1 | | DConS2 | DConS2 | Middle | 0 | 0 | 0 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | End | -61.7584 | 0.024087 | 0.013644 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -61.7584 | 0.024087 | 0.013644 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -0.0255 | 0 | 0 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | End | -61.7584 | 0.024087 | 0.013644 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -61.7584 | 0.024087 | 0.013644 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -0.2041 | 0 | 0 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | End | -20.1748 | 0.007663 | 0.013644 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -13.2767 | 0.005026 | 0.0099 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.796 | 0.000673 | 0 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -27.0369 | 0.010366 | 0.0099 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -27.0369 | 0.010366 | 0.0099 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -2.7754 | 0.001041 | 0 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -27.0369 | 0.010366 | 0.0099 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -27.0369 | 0.010366 | 0.0099 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.796 | 0.000673 | 0 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -13.2767 | 0.005026 | 0.0099 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -34.6722 | 0.013174 | 0.0198 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.8081 | 0.000677 | 0 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | End | -80.8128 | 0.031382 | 0.0198 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -80.8128 | 0.031382 | 0.0198 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -1.9741 | 0.000739 | 0 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | End | -80.8128 | 0.031382 | 0.0198 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -80.8128 | 0.031382 | 0.0198 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.8081 | 0.000677 | 0 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | End | -34.6722 | 0.013174 | 0.0198 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | Start | -11.0995 | 0.004229 | 0.0054 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | Middle | -1.1219 | 0.00042 | 0 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | End | -16.5991 | 0.006384 | 0.0054 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | Start | -16.5991 | 0.006384 | 0.0054 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | Middle | -1.1016 | 0.000413 | 0 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | End | -16.5991 | 0.006384 | 0.0054 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | Start | -16.5991 | 0.006384 | 0.0054 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | Middle | -1.1219 | 0.00042 | 0 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | End | -11.0995 | 0.004229 | 0.0054 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 8.5684 | 0.002746 | 0.004387 | 1.605 | 0 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 8.6118 | 0.00276 | 0.004387 | 0.124 | 0 |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 6.2581 | 0.001999 | 0.004387 | 3.49 | 0 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3927 | 0.00172 | 0.004387 | 3.49 | 0 |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 7.4759 | 0.002392 | 0.004387 | 0.988 | 0 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3927 | 0.00172 | 0.004387 | 0.988 | 0 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 6.2581 | 0.001999 | 0.004387 | 3.393 | 0 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 8.6118 | 0.00276 | 0.004387 | 1.097 | 0 |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 8.5684 | 0.002746 | 0.004387 | 0.763 | 0 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 29.3153 | 0.009389 | 0.01575 | 2.007 | 0 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 31.8378 | 0.010208 | 0.01575 | 0.503 | 0 |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | 13.1318 | 0.004179 | 0.01575 | 17.4 | 0 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 11.4952 | 0.003655 | 0.01575 | 17.4 | 0 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 28.4621 | 0.009113 | 0.01575 | 6.014 | 0 |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | 11.4952 | 0.003655 | 0.01575 | 6.014 | 0 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 13.1318 | 0.004179 | 0.01575 | 17.018 | 0 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 31.8378 | 0.010208 | 0.01575 | 6.429 | 0 |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | 29.3153 | 0.009389 | 0.01575 | 3.831 | 0 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 8.6234 | 0.002749 | 0.007875 | 2.425 | 0 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 8.2255 | 0.002621 | 0.007875 | 0.087 | 0 |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 2.7551 | 0.000874 | 0 | 4.763 | 0 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 3.5587 | 0.00113 | 0 | 4.763 | 0 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 6.6985 | 0.002132 | 0.007875 | 1.314 | 0 |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 3.5587 | 0.00113 | 0 | 1.314 | 0 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 2.7551 | 0.000874 | 0 | 4.424 | 0 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 8.2255 | 0.002621 | 0.007875 | 1.695 | 0 |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 8.6234 | 0.002749 | 0.007875 | 0.565 | 0 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 22.2965 | 0.007131 | 0.013644 | 3.476 | 0 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 24.3541 | 0.007797 | 0.013644 | 0.043 | 0 |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | 7.2701 | 0.002309 | 0.013644 | 13.206 | 0 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 6.815 | 0.002164 | 0 | 13.206 | 0 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 19.2393 | 0.006144 | 0.013644 | 4.257 | 0 |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | 6.815 | 0.002164 | 0 | 4.257 | 0 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 7.2701 | 0.002309 | 0.013644 | 12.903 | 0 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 24.3541 | 0.007797 | 0.013644 | 4.625 | 0 |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | 22.2965 | 0.007131 | 0.013644 | 2.236 | 0 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 8.6234 | 0.002749 | 0.007875 | 2.425 | 0 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 8.2255 | 0.002621 | 0.007875 | 0.087 | 0 |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 2.7551 | 0.000874 | 0 | 4.763 | 0 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 3.5587 | 0.00113 | 0 | 4.763 | 0 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 6.6985 | 0.002132 | 0.007875 | 1.314 | 0 |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 3.5587 | 0.00113 | 0 | 1.314 | 0 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 2.7551 | 0.000874 | 0 | 4.424 | 0 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 8.2255 | 0.002621 | 0.007875 | 1.695 | 0 |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 8.6234 | 0.002749 | 0.007875 | 0.565 | 0 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 16.8001 | 0.00539 | 0.007875 | 3.904 | 0 |
| MSA3 | Span 1 |  | DConS2 | DConS2 | 20.9229 | 0.006736 | 0.007875 | 0.409 | 0 |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | 5.8271 | 0.001853 | 0.007875 | 11.417 | 0 |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 4.9073 | 0.001559 | 0.007875 | 11.417 | 0 |
| MSA3 | Span 2 |  | DConS2 | DConS2 | 18.0701 | 0.005804 | 0.007875 | 4.344 | 0 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | 4.9073 | 0.001559 | 0.007875 | 4.344 | 0 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 5.8271 | 0.001853 | 0.007875 | 11.293 | 0 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 20.9229 | 0.006736 | 0.007875 | 4.469 | 0 |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | 16.8001 | 0.00539 | 0.007875 | 2.77 | 0 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | 8.5684 | 0.002746 | 0.004387 | 1.605 | 0 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | 8.6118 | 0.00276 | 0.004387 | 0.124 | 0 |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | 6.2581 | 0.001999 | 0.004387 | 3.49 | 0 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3927 | 0.00172 | 0.004387 | 3.49 | 0 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | 7.4759 | 0.002392 | 0.004387 | 0.988 | 0 |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3927 | 0.00172 | 0.004387 | 0.988 | 0 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | 6.2581 | 0.001999 | 0.004387 | 3.393 | 0 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | 8.6118 | 0.00276 | 0.004387 | 1.097 | 0 |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | 8.5684 | 0.002746 | 0.004387 | 0.763 | 0 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 11.1614 | 0.004253 | 0.0054 | 1.301 | 0 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 10.2259 | 0.00389 | 0.0054 | 0.201 | 0 |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 7.5438 | 0.002928 | 0.0054 | 4.551 | 0 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 5.8934 | 0.002316 | 0.0054 | 4.551 | 0 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 8.4215 | 0.003194 | 0.0054 | 1.339 | 0 |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 5.8934 | 0.002316 | 0.0054 | 1.339 | 0 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 7.5438 | 0.002928 | 0.0054 | 4.407 | 0 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 10.2259 | 0.00389 | 0.0054 | 1.492 | 0 |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 11.1614 | 0.004253 | 0.0054 | 0.93 | 0 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 26.3283 | 0.010087 | 0.0099 | 3.745 | 0 |
| MSB1 | Span 1 |  | DConS2 | DConS2 | 32.9165 | 0.01269 | 0.0099 | 1.179 | 0 |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | 9.61 | 0.003626 | 0.0099 | 15.821 | 0 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 6.6574 | 0.002505 | 0.0099 | 15.821 | 0 |
| MSB1 | Span 2 |  | DConS2 | DConS2 | 26.2574 | 0.010059 | 0.0099 | 6.386 | 0 |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | 6.6574 | 0.002505 | 0.0099 | 6.386 | 0 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 9.61 | 0.003626 | 0.0099 | 15.328 | 0 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 32.9165 | 0.01269 | 0.0099 | 6.968 | 0 |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | 26.3283 | 0.010087 | 0.0099 | 4.136 | 0 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 13.876 | 0.005256 | 0.0099 | 2.271 | 0 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 12.7868 | 0.004838 | 0.0099 | 0.524 | 0 |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 5.757 | 0.002165 | 0 | 6.05 | 0 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3077 | 0.001995 | 0 | 6.05 | 0 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 10.4359 | 0.00394 | 0.0099 | 1.827 | 0 |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3077 | 0.001995 | 0 | 1.827 | 0 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 5.757 | 0.002165 | 0 | 5.872 | 0 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 12.7868 | 0.004838 | 0.0099 | 2.129 | 0 |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 13.876 | 0.005256 | 0.0099 | 0.495 | 0 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 32.5886 | 0.012454 | 0.013644 | 5.685 | 0 |
| MSB2 | Span 1 |  | DConS2 | DConS2 | 36.1738 | 0.013858 | 0.013644 | 1.482 | 0 |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | 12.3568 | 0.00466 | 0.013644 | 18.16 | 0 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 8.9677 | 0.003374 | 0.013644 | 18.16 | 0 |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 29.5664 | 0.011276 | 0.013644 | 6.934 | 0 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 2 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | FBotMoment kip-ft | FBotArea ft2 | FBotAMin ft2 | VForce kip | VArea ft2/ft |
|---|---|---|---|---|---|---|---|---|---|
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | 8.9677 | 0.003374 | 0.013644 | 6.934 | 0 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 12.3568 | 0.00466 | 0.013644 | 17.711 | 0 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 36.1738 | 0.013858 | 0.013644 | 7.593 | 0 |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | 32.5886 | 0.012454 | 0.013644 | 3.977 | 0 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 13.876 | 0.005256 | 0.0099 | 2.271 | 0 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 12.7868 | 0.004838 | 0.0099 | 0.524 | 0 |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 5.757 | 0.002165 | 0 | 6.05 | 0 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3077 | 0.001995 | 0 | 6.05 | 0 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 10.4359 | 0.00394 | 0.0099 | 1.827 | 0 |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 5.3077 | 0.001995 | 0 | 1.827 | 0 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 5.757 | 0.002165 | 0 | 5.872 | 0 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 12.7868 | 0.004838 | 0.0099 | 2.129 | 0 |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 13.876 | 0.005256 | 0.0099 | 0.495 | 0 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 44.1254 | 0.016839 | 0.0198 | 2.316 | 0 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 47.2602 | 0.018061 | 0.0198 | 1.638 | 0 |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | 19.6552 | 0.007417 | 0.0198 | 23.476 | 0 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 14.6585 | 0.005519 | 0.0198 | 23.476 | 0 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 39.7714 | 0.015147 | 0.0198 | 8.645 | 0 |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | 14.6585 | 0.005519 | 0.0198 | 8.645 | 0 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 19.6552 | 0.007417 | 0.0198 | 22.76 | 0 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 47.2602 | 0.018061 | 0.0198 | 9.524 | 0 |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | 44.1254 | 0.016839 | 0.0198 | 5.326 | 0 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | 11.1614 | 0.004253 | 0.0054 | 1.301 | 0 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | 10.2259 | 0.00389 | 0.0054 | 0.201 | 0 |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | 7.5438 | 0.002928 | 0.0054 | 4.551 | 0 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | 5.8934 | 0.002316 | 0.0054 | 4.551 | 0 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | 8.4215 | 0.003194 | 0.0054 | 1.339 | 0 |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | 5.8934 | 0.002316 | 0.0054 | 1.339 | 0 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | 7.5438 | 0.002928 | 0.0054 | 4.407 | 0 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | 10.2259 | 0.00389 | 0.0054 | 1.492 | 0 |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | 11.1614 | 0.004253 | 0.0054 | 0.93 | 0 |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA1 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | A |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| MSA1 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA1 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA2 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA2 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA3 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| MSA3 | Span 1 |  | DConS2 | DConS2 | A |
| MSA3 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA3 | Span 2 |  | DConS2 | DConS2 | A |
| MSA3 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| MSA3 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 1 | DConS2 | DConS2 | DConS2 | A |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 2 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSA4 | Span 3 | DConS2 | DConS2 | DConS2 | A |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB1 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| MSB1 | Span 1 |  | DConS2 | DConS2 | B |
| MSB1 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB1 | Span 2 |  | DConS2 | DConS2 | B |
| MSB1 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB1 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB2 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 1 |  | DConS2 | DConS2 | B |
| MSB2 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB2 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | B |

**Table 6.9 - Concrete Slab Design Summary - Flexure and Shear Data (Part 3 of 3, continued)**

| StripObject | SpanID | FTopCombo | FBotCombo | VCombo | Layer |
|---|---|---|---|---|---|
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB3 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| MSB3 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 1 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 2 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | B |
| CSB4 | Span 3 | DConS2 | DConS2 | DConS2 | B |