Proyecta y Edifica S.A. de C.V.
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DICTAMEN ESTRUCTURAL

REVISIÓN CUALITATIVA Y CUANTITATIVA DE LAS ESTRUCTURAS EXISTENTES

HOSPITAL RURAL NO.69, SAN QUINTÍN - BAJA CALIFORNIA

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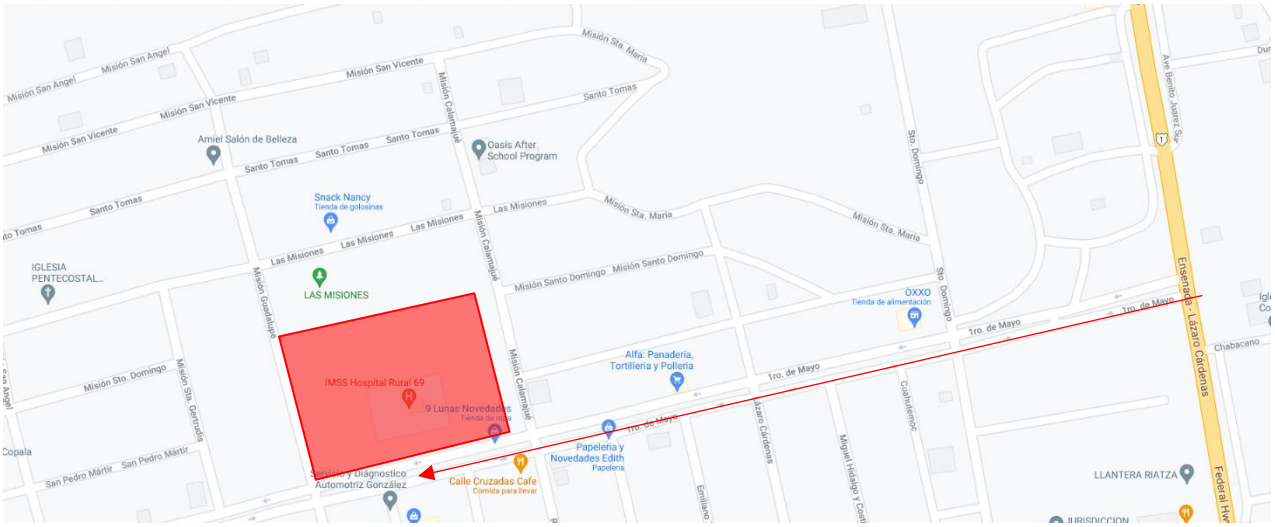
1. GENERALIDADES.

IMSS-BIENESTAR es un programa del Gobierno Federal, administrado por el Instituto Mexicano del Seguro Social desconcentrado de la Secretaría de Salud, cuya misión es la de garantizar el derecho a la salud de los mexicanos, e impulsar la igualdad de oportunidades de la población marginada del país. El objetivo principal del Programa IMSS-BIENESTAR es otorgar servicios integrales de salud, gratuita a personas en desventaja social y económica en comunidades apartadas.

Para cumplir con lo anterior el Instituto Mexicano del Seguro Social, con objeto de mejorar la calidad del servicio para la población sin capacidad contributiva y en condiciones de marginación en zonas rurales y urbanas, de la localidad de San Quintín, Baja California y sus zonas de influencia, requiere llevar a cabo el desarrollo del proyecto ejecutivo para la obra denominada: "AMPLIACIÓN SEGUNDA ETAPA Y REMODELACIÓN INTEGRAL DEL HOSPITAL RURAL NÚMERO 69, EN SAN QUINTÍN, BAJA CALIFORNIA" el cual opera en un inmueble propiedad del Instituto Mexicano del Seguro Social de un nivel, que ya no cumple en su totalidad con las condiciones físicas de infraestructura ni médicas actuales, situación que impide la adecuada prestación de servicios a la población.

El HOSPITAL RURAL NÚMERO 69, se ubica en calle Primero de Mayo número 400, colonia Vicente Guerrero, San Quintín Baja California.

La vía de acceso principal es por la carretera Trans peninsular Ensenada-San Quintín, localizado a 580 m., debiendo tomar la avenida primero de mayo, siendo el único acceso, ya que las calles colindantes son privadas.



Dichas Instalaciones poseen una planta arquitectónica de geometrías irregulares conformadas por varios cuerpos de 1 nivel, con una antigüedad aproximada de 21 años, inaugurada en 1999. La estructura es a base de un sistema ortogonal de columnas y trabes de concreto reforzado, cubiertas a base de losas macizas horizontales de los mismos materiales; sistema de cimentación con zapatas aisladas de concreto reforzado; con una geometría sensiblemente cuadrada (80.00 m x 87.73 m. aproximadamente) implicando una extensión del predio propiedad del Instituto Mexicano del Seguro Social de aproximadamente 17,800 m^2; con una superficie de construcción actual aproximada de 6,750.00 m^2; que tendrá una ampliación aproximada de 1,470m2 y una superficie de remodelación mayor a 2,560m^2.

Recientemente se realizó la primera etapa de ampliación en la que se agregaron tres cuerpos independientes, el primero dedicado a Hospitalización (30 camas), el segundo a consulta externa y el tercero para un albergue para alojar a familiares de pacientes que proceden de localidades lejanas al Hospital.

Con la ampliación e intervención de la capacidad resolutiva del Hospital Rural, se pretende como eje rector incrementar la eficiencia, seguridad y calidad de la atención que brinda actualmente el servicio médico, proporcionando a la población, mejores instalaciones y espacios dignos.

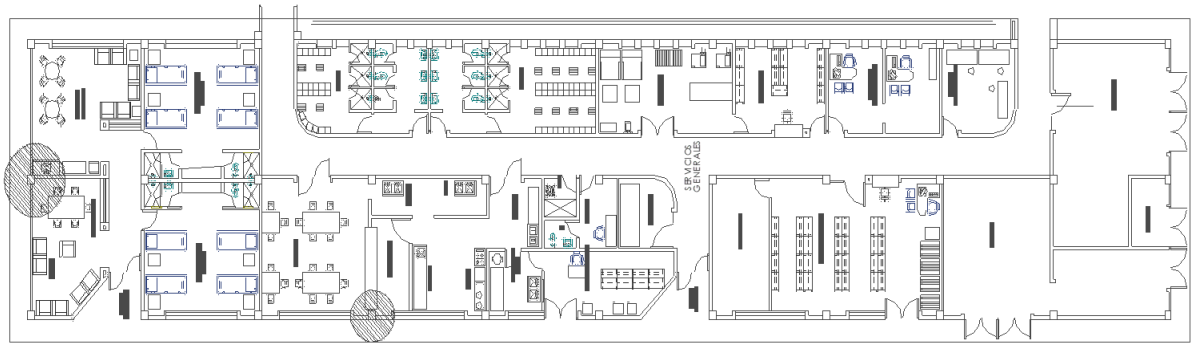
2. OBJETIVO.

El objetivo del presente dictamen es realizar un desarrollo numérico para revisar las secciones y armados de la estructura del Hospital, de tal forma que se determine si el factor de seguridad que tiene la estructura, cumple con lo que exige la actual normativa, para ello, tendremos que aplicar otro espectro de diseño el cual nos lo da el programa "PRODISIS" que lo editó le Comisión Federal de Electricidad y que es el que actualmente rige para todas las regiones de la República Mexicana.

Lo más probable, es que fue calculada estructuralmente con el manual de la Comisión Federal de Electricidad de diseño por sismo del año 1993 y/o el reglamento de construcciones del Distrito Federal y sus normas técnicas complementarias, por lo que, se tendrá que hacer un modelo matemático de análisis con datos precisos obtenidos del levantamiento realizado en sitio para saber si cumple con las deformaciones máximas, desplazamientos laterales que pudo haber sufrido durante su vida útil.
Este análisis deberá de darnos los esfuerzos por cargas gravitacionales, horizontales, obtención de las deformaciones, desplazamientos y periodos de la estructura.

El Hospital se conforma por los siguientes servicios:

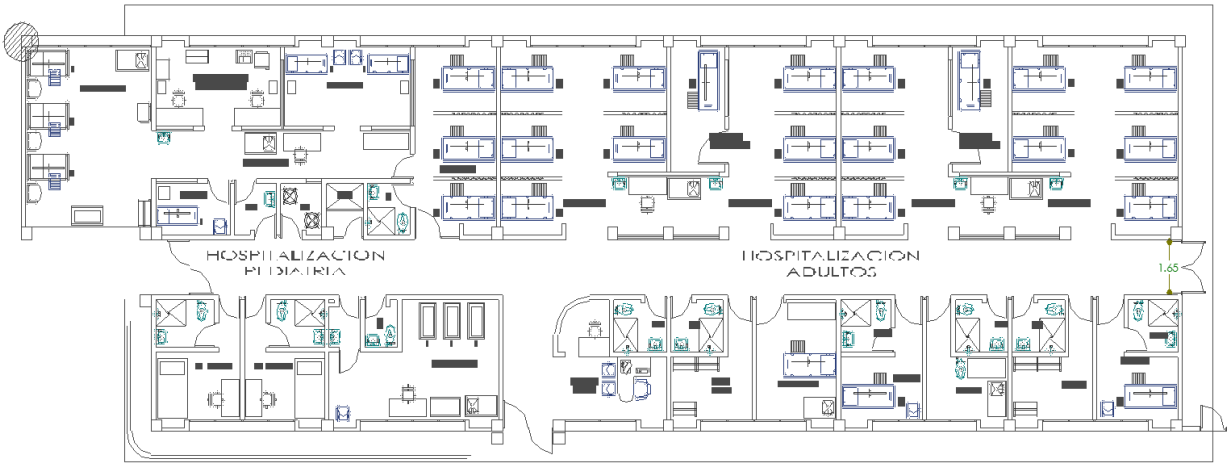
Servicios Generales



Se localiza en el lado este del hospital, y está construido con losas inclinadas, trabes y columnas de concreto armado, los claros son de 6.30m x 6.30m, las trabes de 30cm x 60cm y columnas de 43cm x 43cm (promedio).

Esta área se comunica por medio de pasillos con las áreas de Urgencias y Hospitalización, los cuales están construidos con columnas independientes.

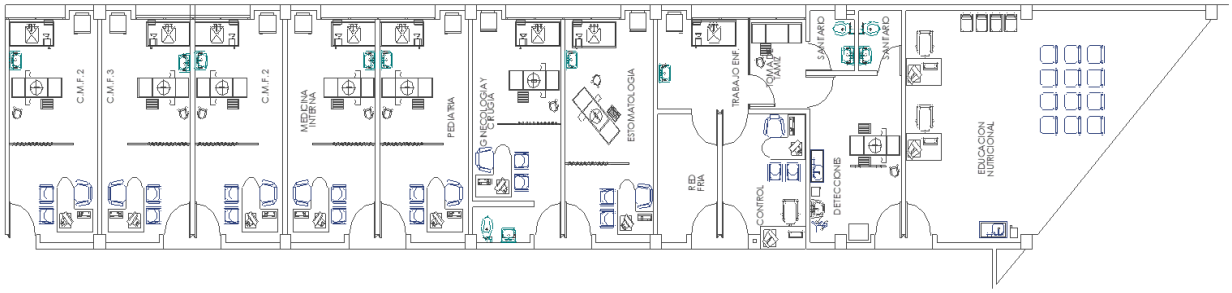
Hospitalización pediátrica y adultos



Se localiza en el lado norte del hospital, y está construido con losas inclinadas, trabes y columnas de concreto armado, los claros son de 60.30m x 6.30m, las trabes tienen geometría de 60cm x 30cm y las columnas de 43cm x 43cm (promedio).

Esta área se comunica con Servicios Generales, Tococirugía y Gobierno

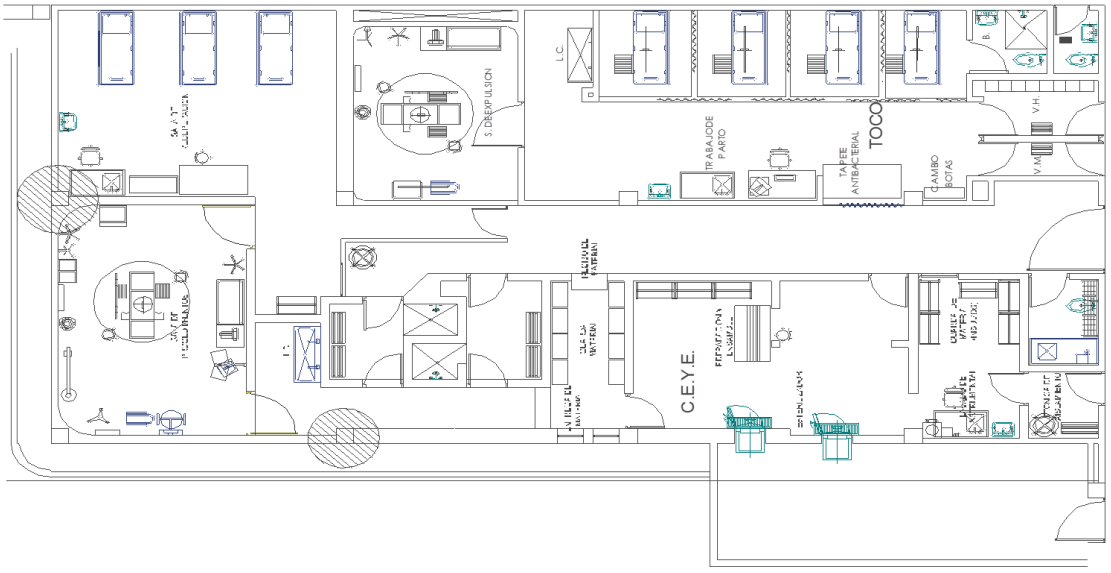
Consulta Externa



Se localiza en el lado oeste del hospital, y está construido con losas inclinadas, trabes y columnas de concreto armado, los claros son de 60.30m x 6.30m, las trabes tienen geometría de 60cm x 30cm y las columnas de 43cm x 43cm (promedio).

Esta área se comunica con Acceso Principal, Gobierno y Urgencias.

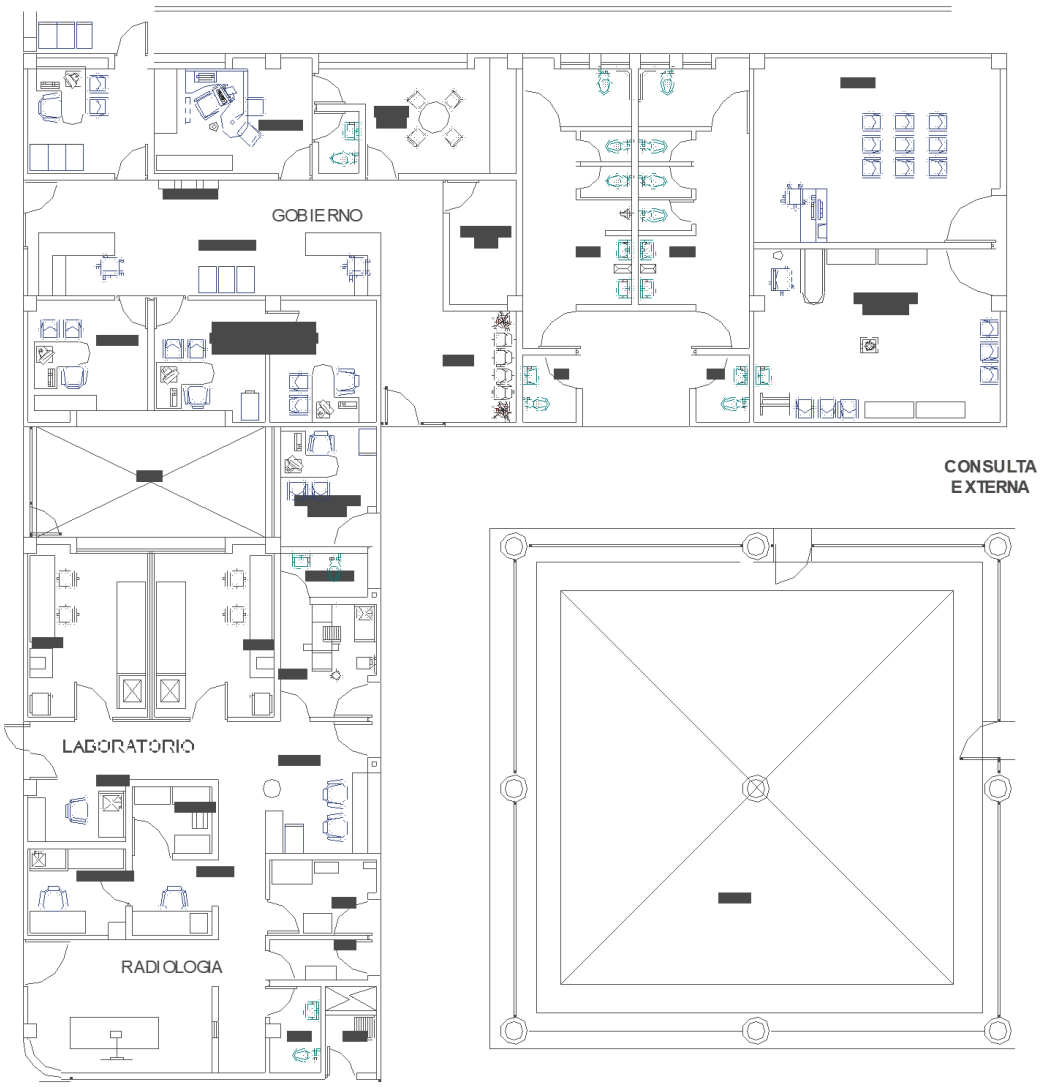
Tococirugía y CEYE



Se localiza en el lado este del hospital, está construido con losas inclinadas, trabes y columnas de concreto armado, los claros son de 6.30m. x 6.30m, las trabes de 30cm. x 60cm. y columnas de 43cm. x 43cm.(promedio).

Esta área se comunica por medio de pasillos con los servicios de Laboratorio, Radiología y Gobierno y están construidos con columnas independientes.

Gobierno, Laboratorio y Radiología



Se localiza en el lado sur del hospital, solo en la zona de Laboratorio y Radiología está construido con losas y trabes horizontales, lo demás área está construida con losas inclinadas, trabes y columnas de concreto armado, los claros son de 6.30m x 6.30m, las trabes de 30cm x 60cm las columnas de 43cm x 43cm (promedio).

El patio central es un distribuidor del hospital y esta zona se comunica prácticamente a todos los servicios excepto a Servicios Generales.

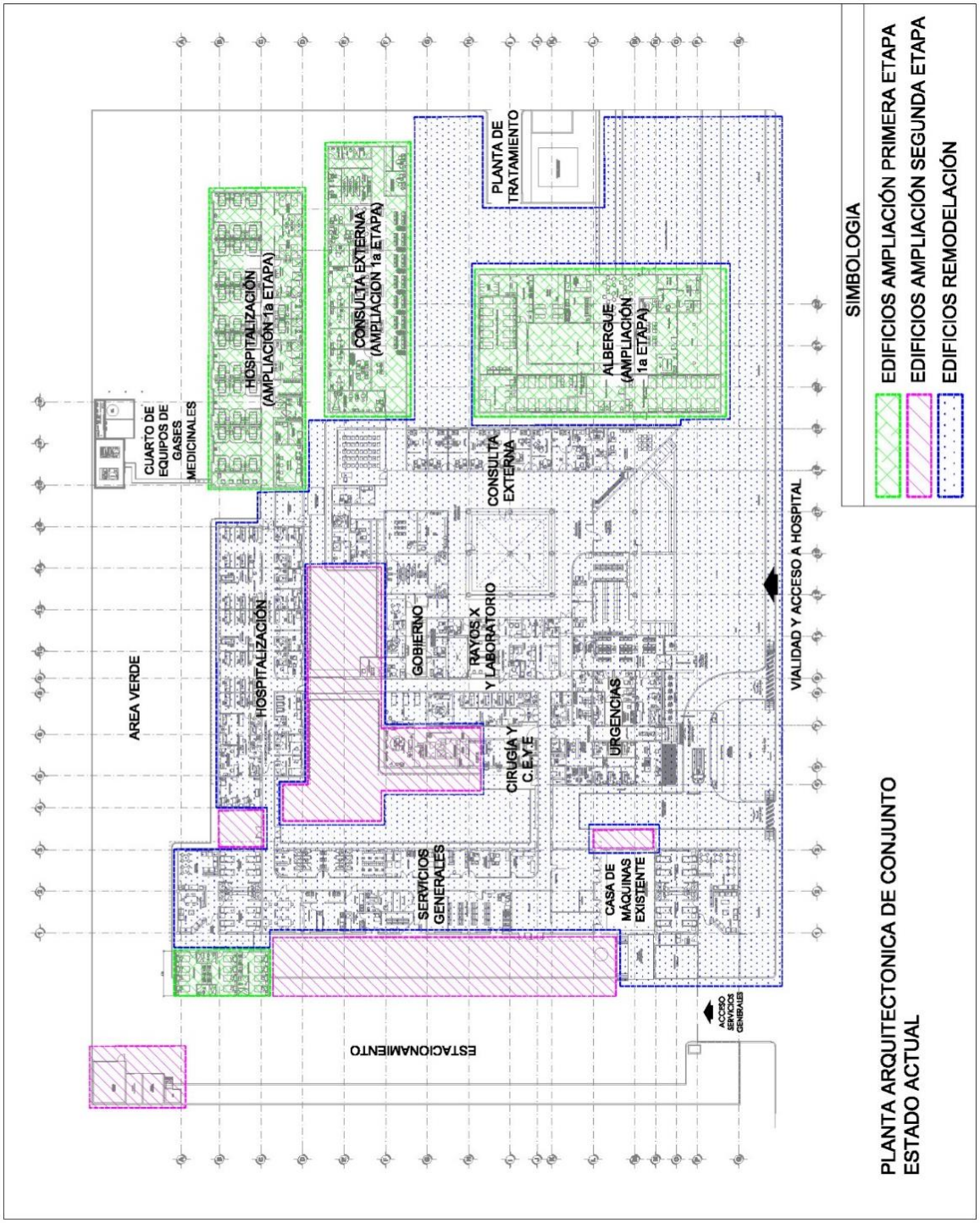
3. DESCRIPCIÓN TECNICA.

Se tomaron las acciones de inspeccionar detalladamente el estado de todos los elementos estructurales, para dar un diagnóstico de las condiciones de seguridad estructural que guardan todos y cada uno de los elementos que conforman este sistema, y en su caso, tomar las medidas necesarias para garantizar su estabilidad, por lo que a continuación presentamos de forma objetiva los puntos estructurales observados en la visita.

Se trata de una estructura de 21 años de edad, en planta tiene una longitud de 51.70 m. por 44.50 m. de ancho, en la parte central el centro cuenta con un patio cuadrado de 10.20 m por lado. La estructura es a base de marcos rígidos de concreto reforzado, con columnas de 40cm x 40cm y trabes de 60cm de peralte por 30cm de ancho.

La estructura cuenta con planta baja y planta de azotea, lo que genera un único entrepiso, el sistema de piso de la azotea se resolvió con losas macizas de concreto reforzado, dichas losas tienen una pendiente del 30% y tienen como acabado teja de barro rojo, con excepción del área denominada “auxiliares de diagnósticos”, en donde la losa es plana para poder apoyar sobre ella el cuarto de Aire Acondicionado.

La altura de la estructura es de 4.16 m en la parte más alta y de 2.40 m en la parte más baja por el tema de la pendiente.


PLANTA ARQUITECTONICA DE CONJUNTO
ESTADO ACTUAL
SIMBOLOGIA
EDIFICIOS AMPLIACIÓN PRIMERA ETAPA
EDIFICIOS AMPLIACIÓN SEGUNDA ETAPA
EDIFICIOS REMODELACIÓN
PLANTA DE TRATAMIENTO
CONSULTA EXTERNA (AMPLIACION 1a ETAPA)
HOSPITALIZACIÓN (AMPLIACIÓN 1a ETAPA)
ALBERGUE (AMPLIACIÓN 1a ETAPA)
CUARTO DE EQUIPOS DE GASES MEDICINALES
CONSULTA EXTERNA
VIALIDAD Y ACCESO A HOSPITAL
AREA VERDE
HOSPITALIZACIÓN
GOBIERNO
RAYOS X Y LABORATORIO
URGENCIAS
CIRUGIA Y C.E.Y.E
SERVICIOS GENERALES
CASA DE MÁQUINAS EXISTENTE
ACCESO SERVICIOS GENERALES
ESTACIONAMIENTO

CRITERIOS PARA LA REVISIÓN ESTRUCTURAL

LINEAMIENTOS GENERALES

Son los conceptos básicos relacionados con las normativas vigentes, procedimientos preestablecidos y conceptos de ingeniería basados en experiencia que permitirán el desarrollo del dictamen estructural en los mejores términos para garantizar la seguridad.

Para la elaboración del dictamen, se realizarán los cálculos que se considerarán en las acciones provocadas por las cargas muertas, vivas y accidentales (sismo), que servirán de complemento a la información proporcionada con respecto al diseño en el sentido transversal y longitudinal de la estructura, tomando en cuenta las geometrías y disposición de todos y cada uno de los elementos que se obtuvieron del levantamiento físico que se realizó en sitio.

Para dichas consideraciones, se usan como base los lineamientos establecidos en las siguientes normatividades:

- Normas Oficiales Mexicanas (NOM).
- Reglamento de Construcciones del D.F. y sus NTC 2017.
- Manual de Diseño de Obras Civiles Diseño por Sismo 2015.
- Manual de Diseño de Obras Civiles Diseño por Viento 2020.
- Norma Institucional del Instituto Mexicano del Seguro Social

Códigos internacionales

- American Concrete Institute ACI-318-08 ACI
- American Institute of Steel Construction AISC
- American Society for Testing and Materials ASTM
- American Welding Society AWS

DATOS PARA EL ANÁLISIS

PARÁMETROS DE DISEÑO

Los parámetros de análisis y diseño estructural se definen en función del Reglamento de Construcciones del Distrito Federal y sus Normas Técnicas Complementarias 2017, así como del Manual de Diseño de Obras Civiles Diseño por Sismo 2015.

CARGAS DE DISEÑO

CARGAS MUERTAS

Son las acciones que actúan de manera permanente sobre la estructura y que generalmente actúan de manera vertical, en éstas está implícito el peso propio de todas y cada uno de los elementos estructurales, la aplicación de estas cargas se considera constante tanto en magnitud como en su posición durante la vida útil de la estructura.

EN AZOTEA (SIN PENDIENTE)

- Losa maciza de 10 cm de peralte 240 Kg/m^2
- Peso de enladrillado, lechadeado e impermeabilizante 280 Kg/m^2
- Relleno de tezontle 100 Kg/m^2
- Plafón e instalaciones 70 kg/m2
- Peso de equipos 30 Kg/m^2
- Adicional por Reglamento 40 Kg/m^2

EN AZOTEA (CON PENDIENTE 30%)

- Losa maciza de 10 cm de peralte 240 Kg/m^2
- Peso de impermeabilizante 10 Kg/m^2
- Relleno de Teja 32 Kg/m^2
- Plafón e instalaciones 70 Kg/m^2
- Adicional por Reglamento 40 Kg/m^2

CARGAS VIVAS

Estas acciones si bien también son consideradas como permanentes durante la vida útil de la estructura, la magnitud podrá variar dependiendo del uso o destino, además que tendrán un valor diferente dependiendo del tipo de combinación que se haga de ellas con las acciones accidentales con el propósito de lograr las condiciones más desfavorables posibles, al grado de considerarse nulas ya que en términos reales esta es una probabilidad y que además pudiera resultar critica.

EN AZOTEA (PENDIENTES MENORES A 5%)

- Carga viva maxima 100 Kg/m2
- Carga viva accidental 70 Kg/m2
- Carga viva media 15 Kg/m2

EN AZOTEA (PENDIENTES MAYORES A 5%)

- Carga viva máxima 40 Kg/m2
- Carga viva accidental 20 Kg/m2
- Carga viva media 5 Kg/m2

Notas:

El peso propio de la estructura (trabes y columnas), lo calcula el mismo programa en función de la sección o designación los elementos modelados y de la densidad de los diferentes materiales.

A continuación, editamos los lineamientos que consigna el Reglamento de Construcciones del Distrito Federal y sus Normas Técnicas Complementarias, para poder determinar el factor de comportamiento sísmico.

FUERZAS DE SISMO

ANA SIS-CFE 2015		DICTAMEN ESTRUCTURAL HOSPITAL RURAL No. 69	FECHA 10-ago-21
-	-	**FACTORES REDUCTIVOS (IRREGULARIDAD)**	

DETERMINANDO LA IRREGULARIDAD DE LA ESTRUCTURA

1.- La distribución en planta de masas, muros y otros elementos resistentes, es sensiblemente simétrica con respecto a dos ejes ortogonales. Estos elementos son sensiblemente paralelos a los ejes ortogonales principales del edificio.

CUMPLE

2.- La relación de su altura a la dimensión menor de su base no es mayor que 2.5

Altura = 4.45 m Ancho = 37.80 m Altura / Ancho = 0.12

CUMPLE

3.- La relación de largo a ancho de la base no es mayor que 2.5.

Largo = 51.30 m Ancho = 37.80 m Largo / Ancho = 1.36

CUMPLE

4.- En planta no tiene entrantes ni salientes de dimensiones mayores que 20 por ciento de la dimensión de la planta

Ancho = 37.800 m 20%= 7.56 m Entrante 1.5

CUMPLE

5.- En cada nivel se tiene un sistema de techo o piso rígido y resistente, lo que deberá justificarse con resultados de análisis de modelos simplificados del sistema de piso a utilizar.

CUMPLE

6.- El sistema de piso no tiene aberturas que en algún nivel excedan 20 por ciento de su área en planta en dicho nivel, y las áreas huecas no difieren en posición de un piso a otro. Se exime de este requisito la azotea de la construcción.

CUMPLE SOLO SE TIENE AZOTEA

7.- El peso de cada nivel, incluyendo la carga viva que debe considerarse para diseño sísmico, no es mayor que 110% ni menor que 70% del correspondiente al piso inmediato inferior. El último nivel de la construcción está exento de condiciones de peso mínimo.

CUMPLE

8.- Ningún piso tiene un área, delimitada por los paños exteriores de sus elementos resistentes verticales, mayor que el 110% ni menor que 70% de la del piso inmediato inferior. El último piso de la construcción está exento de condiciones de área mínima. Además, el área de ningún entrepiso excede en más de 50% a la menor de los pisos inferiores.

CUMPLE

NOTAS:		

ANA SIS-CFE 2015		DICTAMEN ESTRUCTURAL HOSPITAL RURAL No. 69	FECHA 10-ago-21
-	-	**FACTORES REDUCTIVOS (IRREGULARIDAD)**	

9.- Todas las columnas están restringidas en todos los pisos en las dos dirrecciones de análisis por diafragmas horizontales o por vigas. Por consigiente, ninguna columna pasa a través de un piso sin estar ligada con él.

CUMPLE

10.- La rigidez y la resistencia al corte de cada entrepiso no excede en más de 50% a la del piso inmediatamente inferior. El último entrepiso queda excluido de esta condición.

CUMPLE SOLO SE TIENE AZOTEA.

11.- En cada entrepiso, la excentricidad torsional calculada estáticamente no excede en más de 10% su dimensión en planta, medida paralelamente a la excentricidad torsional.

CUMPLE

POR TANTO ESTRUCTURA REGULAR

NOTAS:		

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- -	ESPECTRO DE DISEÑO Y DE SERVICIO	PÁGINA 1 DE 2

Tipo de Estructura

1 Edificios

2 Estructuras Industriales

3 Péndulos Invertidos y Apéndices

5 Chimeneas, Silos y Similares

6 Tanques, Depósitos y Similares

7 Puentes

13 Aerogeneradores

Factores que modifican al espectro

$Q =$ 2

$R_0 =$ 2

$\rho =$ 1.25

$\alpha =$ 1 ☐ Acd

T (s)	a
0.00	0.16
0.01	0.19
0.02	0.21
0.03	0.24
0.04	0.27
0.05	0.29
0.06	0.32
0.07	0.34
0.08	0.37
0.09	0.40
0.10	0.43
0.11	0.45
0.12	0.48
0.13	0.51
0.14	0.54
0.15	0.56
0.16	0.59
0.17	0.62
0.18	0.65
0.19	0.68
0.20	0.71
0.21	0.70
0.22	0.70
0.23	0.70
0.24	0.69
0.25	0.69
0.26	0.68
0.27	0.68
0.28	0.67
0.29	0.67
0.30	0.67
0.31	0.66
0.32	0.66
0.33	0.66
0.34	0.65
0.35	0.65
0.36	0.64

REFERENCIAS

EC. 3.4.1 NTCS

EC. 3.5.1 NTCS

NOTAS:

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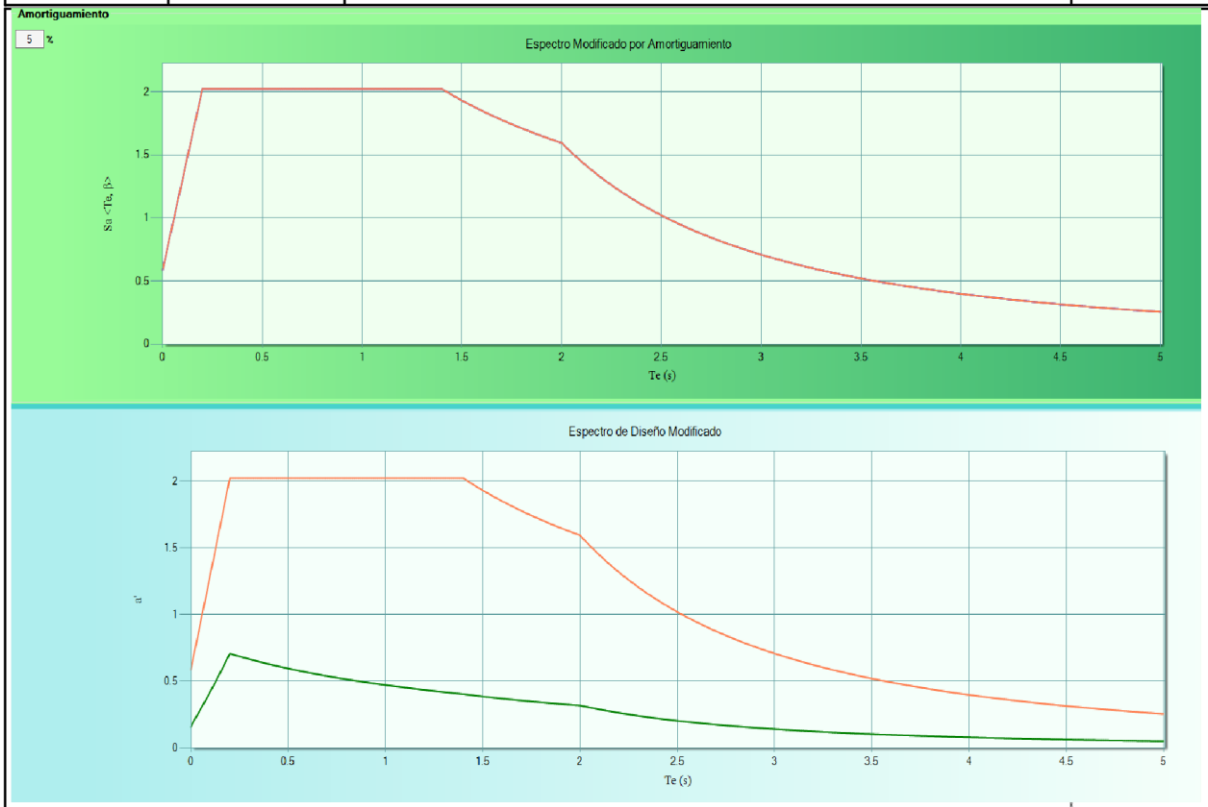
- -	ESPECTRO DE DISEÑO Y DE SERVICIO	PÁGINA 2 DE 2



	Masa kg/m2	Área m2	Masa sismica (ton)
Planta Primer Nivel			
Carga Muerta	352	2009.0	707.16
Peso de columnas	0.71	62.0	44.04
Peso de trabes	0.36	595.0	214.20
Carga Viva Accidental	20	2009.0	40.18
		total	1005.59

Nivel	hi	Wi	No. Apoyos	Masa x col
	(m)	(T)		(T)
1er.Niv	3.75	1005.59	62	16.22

NOTAS:

Nota:
Como se podrá apreciar en las dos hojas anteriores, los valores obtenidos son los que da el programa PRODISIS, de la CFE y como se ve la aceleración C=0.71, la cual es muy fuerte, pero es la que le corresponde al sitio.

COMBINACIONES DE CARGA

Del Manual de Diseño de Obras Civiles Capítulo C.1.2 Acciones 2017, se determinan las combinaciones a utilizar para los cuerpos catalogados como Grupo A1.

Estructura del Grupo A1.

A continuación, editamos el artículo 1.4 de las Normas Técnicas Complementarias del Reglamento de Construcciones de la Ciudad de México del 2017:

Clasificación de las estructuras.

Para fines de diseño sísmico las construcciones se clasificarán en los grupos y subgrupos que se indican en el artículo 139 del título Sexto del Reglamento de Construcciones para la Ciudad de México, que se reproducen a continuación:

Grupo A. Edificaciones cuya falla estructural podría tener consecuencias particularmente graves y éstas se subdividen en dos subgrupos:

Subgrupo A1: Edificaciones que reúnan al menos una de las características siguientes:

a) Edificaciones que es necesario mantener en operación aún después de un sismo de magnitud importante, como: hospitales, aeropuertos, terminales y estaciones de transporte, instalaciones militares, centros de operación de servicios de emergencia, subestaciones eléctricas y nucleares, estructuras para la transmisión y distribución de electricidad, centrales telefónicas y repetidoras, estaciones de radio y televisión, antenas de transmisión y, en su caso, los inmuebles que las soportan o contienen, estaciones de bomberos, sistemas de almacenamiento, bombeo, distribución y abastecimiento de agua potable, estructuras que alojen equipo cuyo funcionamiento sea esencial para la población, tanques de agua, puentes vehiculares y pasarelas peatonales.

b) Edificaciones cuya falla puede implicar un severo peligro para la población, por contener cantidades importantes de sustancias tóxicas o explosivas, como: gasolineras, depósitos o instalaciones de sustancias inflamables o tóxicas y estructuras que contengan explosivos o substancias inflamables.

Subgrupo A2: Edificaciones cuya falla podría causar:

a) Un número elevado de pérdidas de vidas humanas, como: estadios, salas de reuniones, templos y auditorios que puedan albergar más de 700 personas; edificios que tengan áreas de reunión que puedan albergar más de 700 personas.

b) Una afectación a la población particularmente vulnerable, como: escuelas de educación preescolar, primaria y secundaria.

c) La pérdida de material de gran valor histórico, legal o cultural: museos, monumentos y estructuras que contengan archivos históricos.

Grupo B. Edificaciones comunes destinadas a viviendas, oficinas y locales comerciales, hoteles y construcciones comerciales e industriales no incluidas en el Grupo A, las que se subdividen en:

Subgrupo B1: Pertenece a este subgrupo las edificaciones que reúnen las siguientes características:

a) Edificaciones de más de 30 m de altura o con más de 6,000 m² de área total construida, ubicadas en las zonas I y II a que se alude en el artículo 170 de este Reglamento, y construcciones de más de 15 m de altura o más de 3,000 m² de área total construida, en la zona III; en ambos casos las áreas se refieren a un solo cuerpo de edificio que cuente con medios propios de desalojo: acceso y escaleras; incluyendo las áreas de anexos, como pueden ser los propios cuerpos de escaleras. El área de un cuerpo que no cuente con medios propios de desalojo se adicionará a la de aquel otro a través del cual se desaloje.

b) Las estructuras anexas a los hospitales, aeropuertos o terminales de transporte, como estacionamientos, restaurantes, etc., que sean independientes y no esenciales para el funcionamiento de estos.

Subgrupo B2: Las demás de este grupo:

Para diseño estructural

1. 1.5 CM + 1.7 CV max
2. 1.1 CM + 1.1 CV acc. + 1.1 SX + 0.33 SZ
3. 1.1 CM + 1.1 CV acc. + 1.1 SX – 0.33 SZ
4. 1.1 CM + 1.1 CV acc. – 1.1 SX + 0.33 SZ
5. 1.1 CM + 1.1 CV acc. – 1.1 SX – 0.33 SZ
6. 1.1 CM + 1.1 CV acc. + 0.33 SX + 1.1 SZ
7. 1.1 CM + 1.1 CV acc. + 0.33 SX – 1.1 SZ
8. 1.1 CM + 1.1 CV acc. – 0.33 SX + 1.1 SZ
9. 1.1 CM + 1.1 CV acc. – 0.33 SX – 1.1 SZ
10. Excentricidad accidental según NORMA TECNICA COMPLEMENTARIA

Para revisión de estado límite de servicio

1. 1.0 CM + 1.0 CV max.
2. 1.0 CM + 1.0 CV acc. + 1.0 SX + 0.30 SZ
3. 1.0 CM + 1.0 CV acc. + 1.0 SX – 0.30 SZ
4. 1.0 CM + 1.0 CV acc. – 1.0 SX + 0.30 SZ
5. 1.0 CM + 1.0 CV acc. – 1.0 SX – 0.30 SZ
6. 1.0 CM + 1.0 CV acc. + 0.30 SX + 1.0 SZ
7. 1.0 CM + 1.0 CV acc. + 0.30 SX – 1.0 SZ
8. 1.0 CM + 1.0 CV acc. – 0.30 SX + 1.0 SZ
9. 1.0 CM + 1.0 CV acc. – 0.30 SX – 1.0 SZ

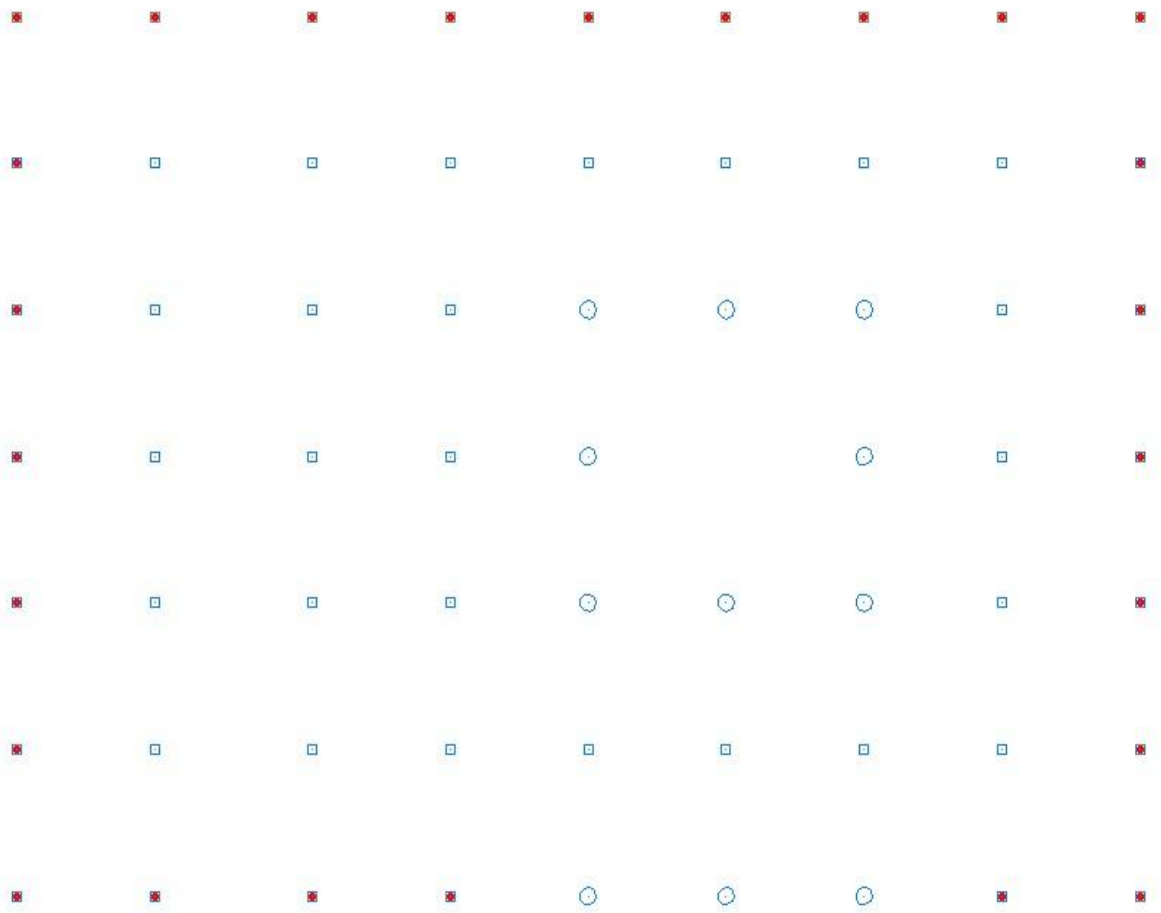
DISEÑO ESTRUCTURAL

ESTADOS LÍMITE DE FALLA (RESISTENCIA)

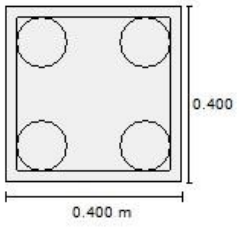
Se define de esta manera al estado de esfuerzos que podría hacer fallar a una estructura desde el punto de vista de su resistencia o capacidad para tomar cargas. Puede suponerse que el estado de falla es el parámetro que nos permite comparar el nivel de esfuerzos a que está sometido un elemento con relación a la resistencia que puede alcanzar, pero involucrando los factores definidos en los párrafos anteriores.

De los resultados del Análisis Estructural obtenidos, procedemos a la realización de la revisión de los elementos estructurales.

REVISIÓN DE COLUMNAS



Ubicación de columnas C-1



Design Load

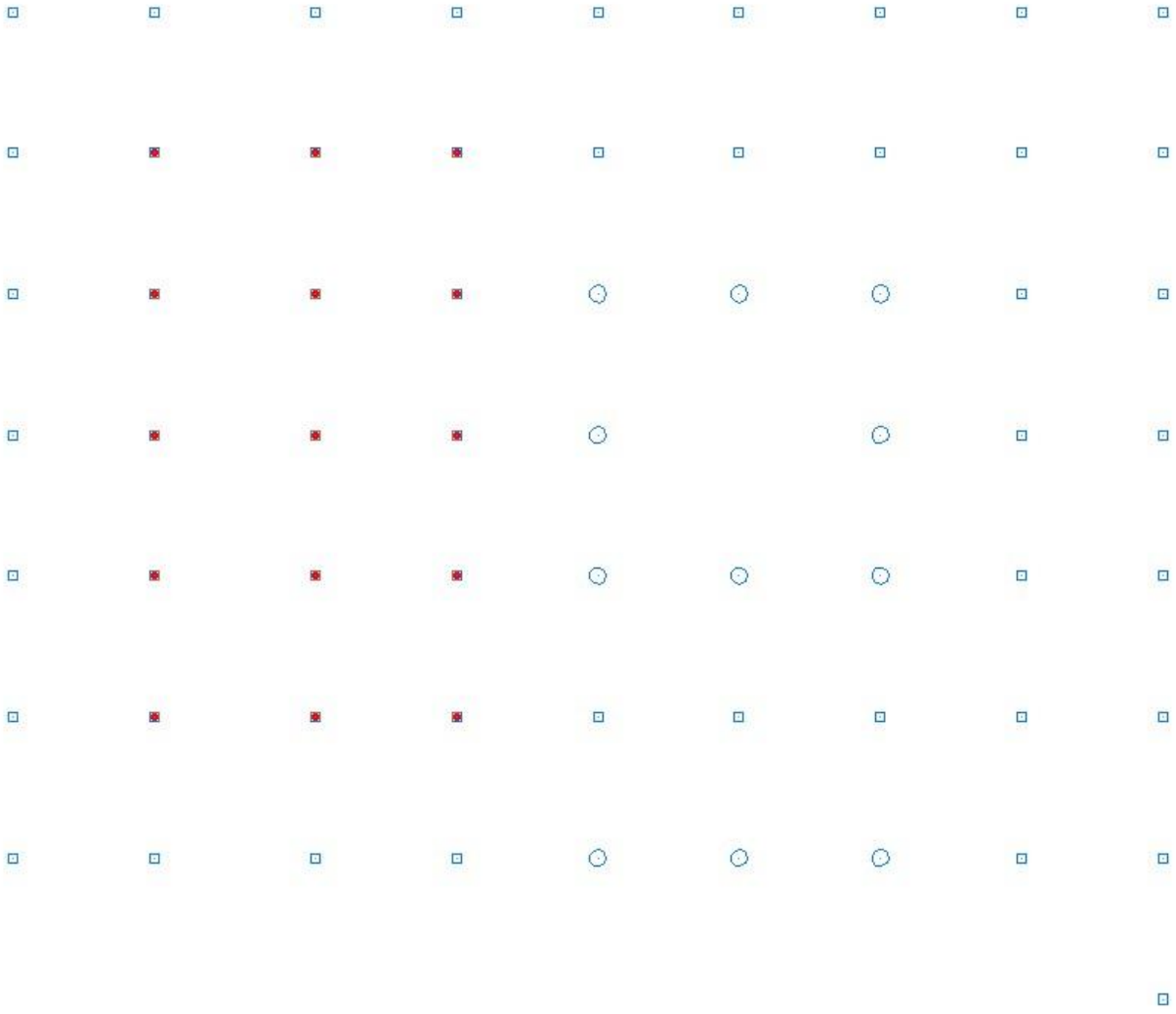
Load	11
Location	END
Pu(Kns)	233.5
Mz(Kns-Mt)	50.47
My(Kns-Mt)	182.45

Design Parameter

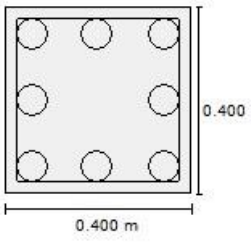
Fy(Mpa)	414
Fc(Mpa)	25
As Reqd(mm²)	4813
As (%)	3.14
Bar Size	40
Bar No	4

Armado requerido: 48.13 cm2
Estribos #3@20 cm

Nota: Los esfuerzos y el diseño de la columna lo realiza el programa STAAD PRO



Ubicación de columnas C-2



Design Load

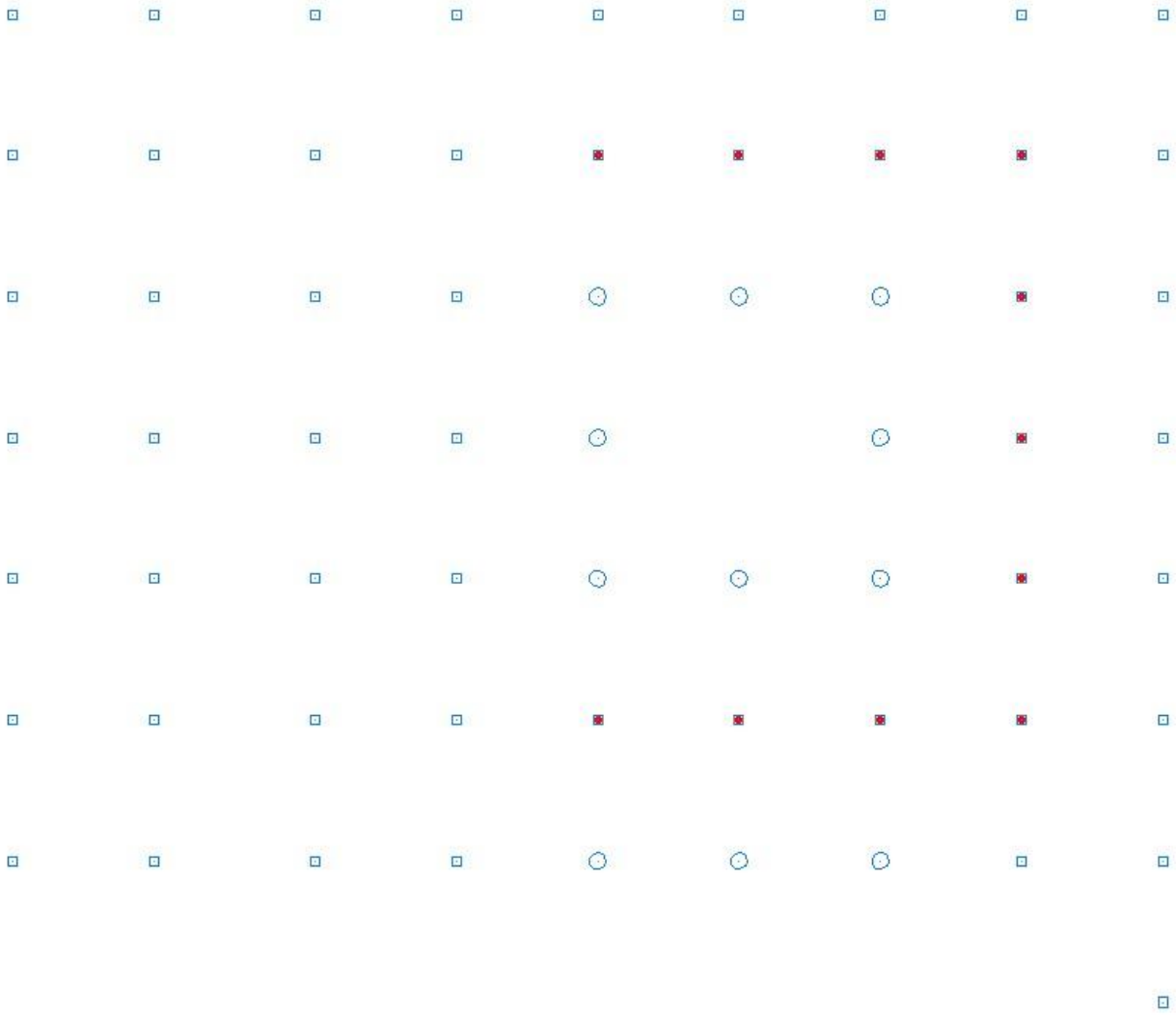
Load	14
Location	STA
Pu(Kns)	465.78
Mz(Kns-Mt)	90.23
My(Kns-Mt)	87.52

Design Parameter

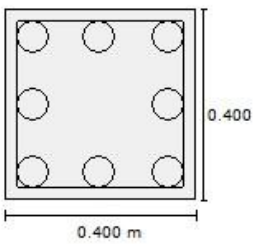
Fy(Mpa)	414
Fc(Mpa)	25
As Reqd(mm²)	2442
As (%)	1.57
Bar Size	20
Bar No	8

Armado requerido: 24.42 cm2
Estribos #3@20 cm

Nota: Los esfuerzos y el diseño de la columna lo realiza el programa STAAD PRO



Ubicación de columnas C-3



Design Load

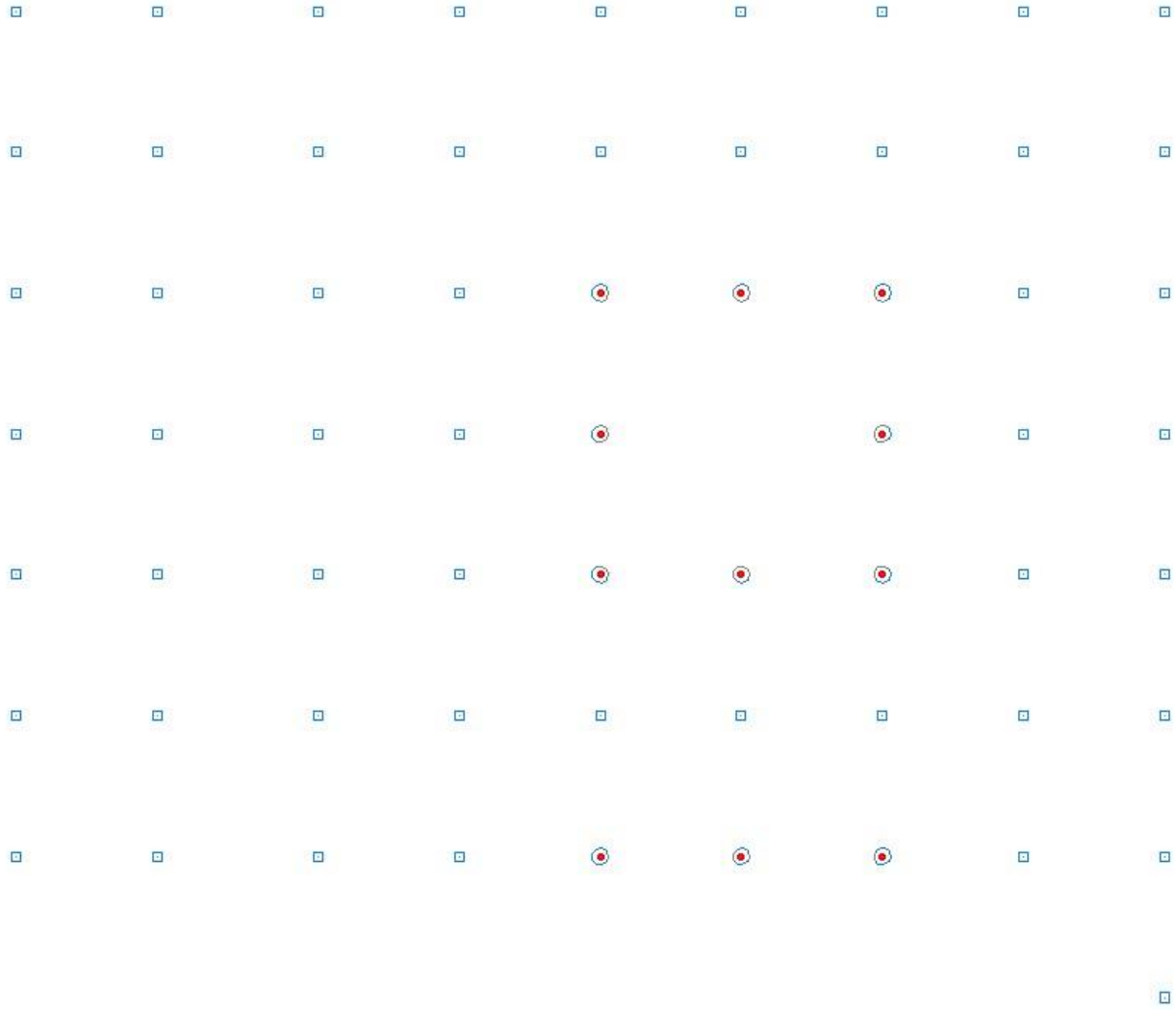
Load	6
Location	END
Pu(Kns)	504.94
Mz(Kns-Mt)	4.01
My(Kns-Mt)	0.22

Design Parameter

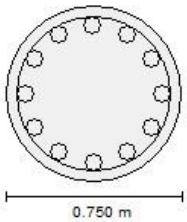
Fy(Mpa)	414
Fc(Mpa)	25
As Reqd(mm²)	1600
As (%)	1.00
Bar Size	16
Bar No	8

Armado requerido: 16.00 cm2
Estribos #3@20 cm

Nota: Los esfuerzos y el diseño de la columna lo realiza el programa STAAD PRO



Ubicación de columnas C-4

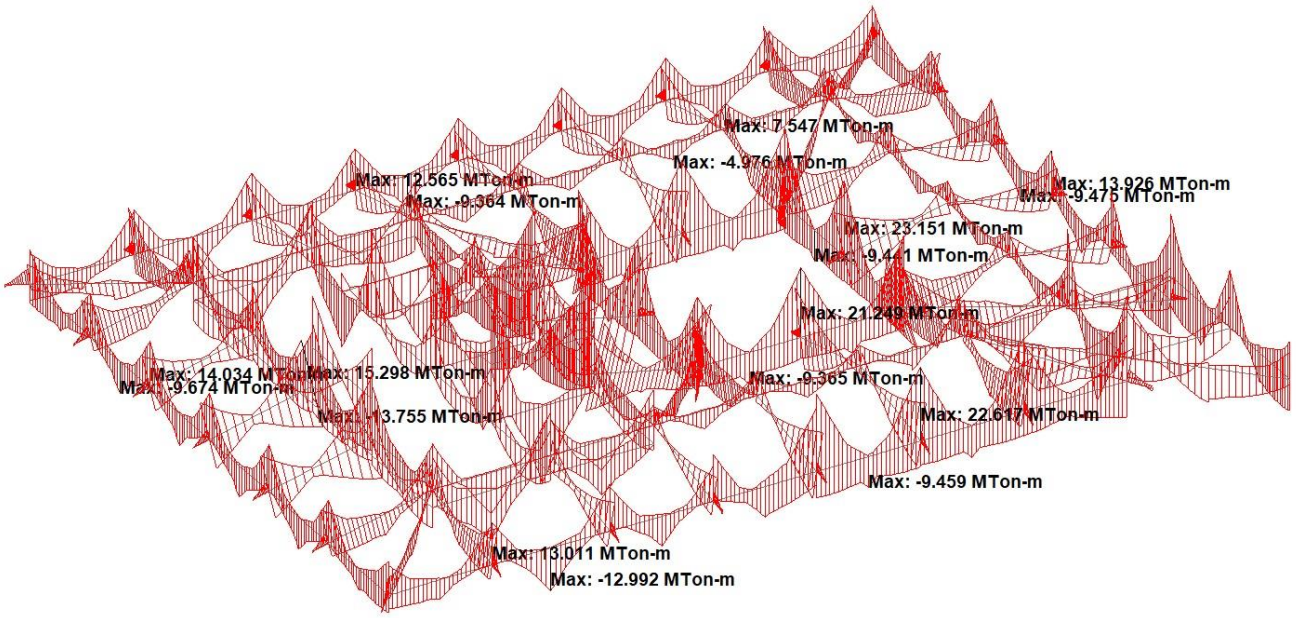


Design Load	
Load	11
Location	END
Pu(Kns)	244.74
Mz(Kns-Mt)	261.95
My(Kns-Mt)	659.57

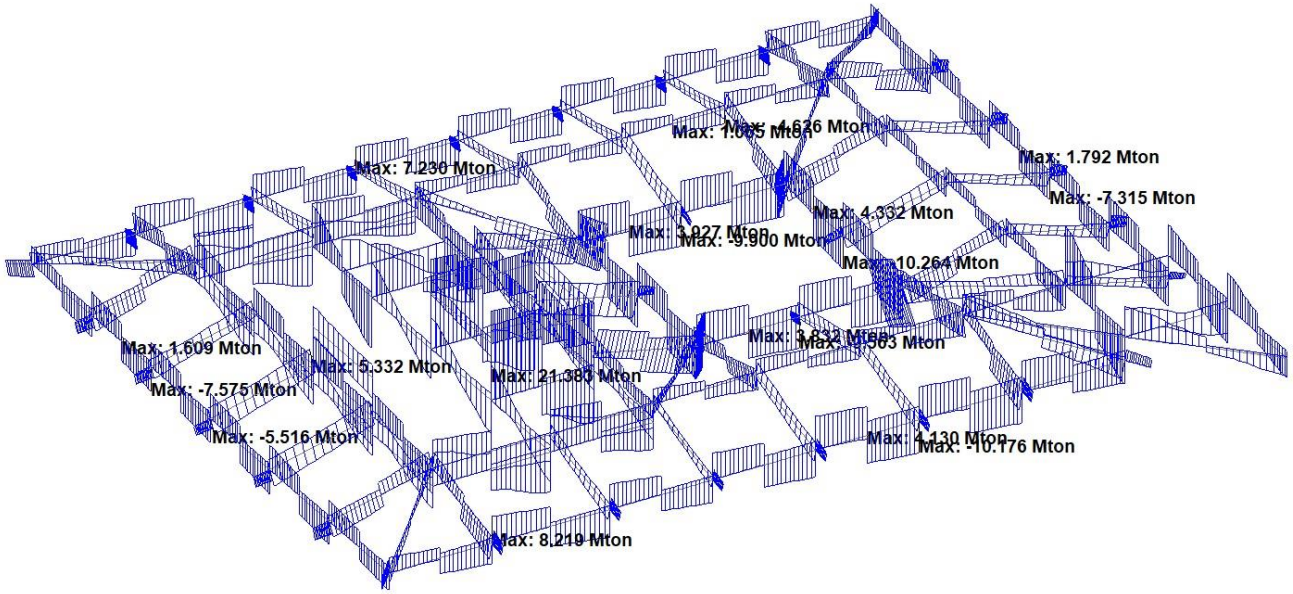
Design Parameter	
Fy(Mpa)	414
Fc(Mpa)	25
As Reqd(mm²)	9498
As (%)	2.18
Bar Size	32
Bar No	12

Armado requerido: 94.98 cm2
Estribos #3@20 cm
REVISIÓN DE TRABES

Nota: Los esfuerzos y el diseño de la columna lo realiza el programa STAAD PRO



Diagramas de Momentos Flexionantes



Diagramas de Fuerzas Cortantes

A continuación, diseñamos dos trabes con los valores obtenidos, cabe aclarar, que estamos dando un valor al esfuerzo permisible del concreto de 200 kg/cm2 (siendo el valor más bajo de las pruebas), que es el resultado del laboratorio de la resistencia de los núcleos de concreto que se extrajeron para su análisis. Al final del documento se anexan los reportes del Laboratorio con las pruebas de las extracciones de concreto.

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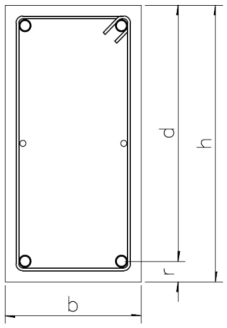
MIEMBRO: - / COMBINACIÓN: -	TRABE T-1	PÁGINA 1 DE 3

ESQUEMA



DATOS GENERALES

Concreto	f'_c =	200	kg / cm^2
	f''_c =	170	kg / cm^2
	f''_c =	170	kg / cm^2
	β_1 =	0.85	
Acero Principal	fy =	4,200	kg / cm^2
Acero Estribos	fyv =	4,200	kg / cm^2
		1.5	
Factores de Resistencia	FR_M =	0.9	Flexión
	FR_V =	0.8	Cortante
	FR_T =	0.8	Torsión

REFERENCIAS

DATOS GEOMÉTRICOS

Peralte Total	h =	60	cm
Recubrimiento	r =	4	cm
Peralte Efectivo	d =	56	cm
Ancho	b =	30	cm
Longitud	L =	365	cm

ELEMENTOS MECÁNICOS ¿Factorizados? **SI**

Mu(+) =	9.70	Ton-m
Mu(-) =	15.30	Ton-m
Vu =	7.60	Ton
Tu =		Ton-m

REFUERZO POR CAMBIOS VOLUMÉTRICOS

¿El elemento estructural esta expuesto a la intemperie o en contacto con el suelo? **NO**

¿Existe contracción profunda o es importante el aspecto de la superficie del elemento? **NO**

$$as = \frac{660\ x_1}{fy\,(x_1 + 100)} = 0.06 \text{ cm}^2/\text{cm} = 5.89 \text{ cm}^2/\text{m}$$

as = 5.89 cm^2/m

Espesor = 60 cm >15cm por lo tanto colocar el refuerzo en: 2 Caras

5.89 / 2 = 2.95 cm^2/m/cara → para cortante

Refuerzo propuesto cada cara:

2 vars # 3 As 1 var = 0.71 cm^2 → As = 2.85 cm^2

Refuerzo a repartir en cada lecho:

Ast = (5.89 - 2.85)/2 = 1.52 cm^2/lecho → para flexión, correspondiente a 0.0009

NOTAS: ESTE DISEÑO SE HIZO DE ACUERDO A LOS CRITERIOS Y LINEAMIENTOS DE LAS NORMAS TÉCNICAS COMPLEMENTARIAS DEL REGLAMENTO DE CONSTRUCCIONES DEL DISTRITO FEDERAL. NTC-RCFD-17

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MIEMBRO -	COMBINACIÓN -	TRABE T-1	PÁGINA 2 DE 3

REFERENCIAS

DISEÑO POR FLEXION

CUANTÍAS DE ACERO

$$\rho_{mín} = \frac{0.7\sqrt{f'c}}{fy} =$$ 0.0024 Asmín= 3.96 cm²

$$\rho_{máx} = \frac{f''c}{fy} x \frac{6000\beta_1}{fy+6000} =$$ 0.0202 Asmáx= 34.00 cm²
0.0152 0.75 Asmáx= 25.50 cm²

$$\rho_{req} = \frac{f''c}{fy}\left(1-\sqrt{1-\frac{2M_R}{F_R bd^2 f''c}}\right) =$$

(+) 0.0028 Asreq= 4.75 cm²
0.0038 1.33 Asreq= 6.32 cm²

(-) 0.0046 Asreq= 7.66 cm²
0.0061 1.33 Asreq= 10.19 cm²

ACERO POSITIVO → **RIGE** **As REQ**

2	vars #	5	As 1 var =	1.98	cm² →	As =	3.96	cm²
1	vars #	5	As 1 var =	1.98	cm² →	As =	1.98	cm²
						Ast =	5.94	cm²

$$\rho = \frac{As}{bd} =$$ 0.0035 0.35% **BIEN**

$$q = \rho \frac{fy}{f''c} =$$ 0.0873

$$M_R = F_R bd^2 q(1-0.5q) f''c =$$ 12.02 Ton-m

Mu / MR = 0.81 < 1.00 **BIEN**

ACERO NEGATIVO → **RIGE** **As REQ**

2	vars #	5	As 1 var =	1.98	cm² →	As =	3.96	cm²
2	vars #	5	As 1 var =	1.98	cm² →	As =	3.96	cm²
						Ast =	7.92	cm²

$$\rho = \frac{As}{bd} =$$ 0.0047 0.47% **BIEN**

$$q = \rho \frac{fy}{f''c} =$$ 0.1164

$$M_R = F_R bd^2 q(1-0.5q) f''c =$$ 15.78 Ton-m

Mu / MR = 0.97 < 1.00 **BIEN**

NOTAS:

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CON-TR-RCDF17		DICTAMEN ESTRUCTURAL HOSPITAL RURAL No. 69	FECHA 10-ago-21
MIEMBRO -	COMBINACIÓN -	TRABE T-1	PÁGINA 3 DE 3

REFERENCIAS

DISEÑO POR CORTANTE

Limite para Vu = 7.60 Ton < $2.5F_R bd\sqrt{f_c^{"}}$ = 43.81 Ton **BIEN**

CORTANTE QUE RESISTE EL CONCRETO

H = 60cm <= 70 cm Por lo que se aplicará el factor de reducción FR = 1.00

L/h = 6.08 **> 5 aplican las siguientes ecuaciones según sea p**

$V_{CR} = F_R bd(0.2+20\rho)\sqrt{f_c^{"}}$ = 5.16 Ton **p=0.00471< 0.015 aplica esta ecuación**

$V_{CR} = 0.5F_R bd\sqrt{f_c^{"}}$ = 8.76 Ton

V_{CR} = 5.16 Ton < Vu = 7.60 Ton **REQUIERE ESTRIBOS**

CORTANTE QUE RESISTEN LOS ESTRIBOS

Vs = Vu - V_{CR} = 2.44 Ton

$V = 1.5F_R bd\sqrt{f_c^{"}}$ = 26.29 Ton > Vu = 7.60 Ton

La separación de estribos no deberá ser mayor que smáx = 0.5d = 28.0 cm

El área de acero mínimo a la separación máxima es $Avmín = 0.30\sqrt{f_c^{"}}\frac{bs}{fy}$ = N/A cm^2

Usando 2 Ramas del # 3 Av = 1.43 cm^2

$scalc = \frac{F_R Avfyd}{Vs}$ = 110 cm

ESTRIBOS POR CAMBIOS VOLUMÉTRICOS

Se propone var # 3 Av = 0.71 cm^2

Separación = 79 cm no cumple, la separación será de 28 cm

Estribos del #3 @ 28 cm en 2 ramas. Rige refuerzo por cambios volumétricos

CONCLUSIÓN: **Se acepta la sección de 30 x 60 cm y con un refuerzo en el lecho inferior de 2 vars # 5, bastoneada con 1 vars # 5; en el lecho superior de 2 vars # 5, bastoneada con 2 vars # 5 y estribos de #3 @ 28 cm, en 2 ramas.**

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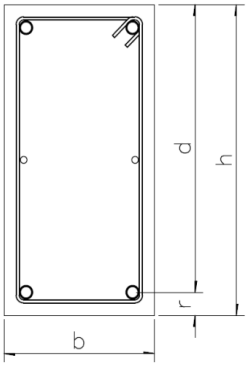
MIEMBRO: - / COMBINACIÓN: -	TRABE T-2	PÁGINA 1 DE 3

ESQUEMA



DATOS GENERALES

Concreto	f'_c =	200	kg / cm^2
	f''_c =	170	kg / cm^2
	f''_c =	170	kg / cm^2
	β_1 =	0.85	
Acero Principal	fy =	4,200	kg / cm^2
Acero Estribos	fyv =	4,200	kg / cm^2
		1.5	
Factores de Resistencia	FR_M =	0.9	Flexión
	FR_V =	0.8	Cortante
	FR_T =	0.8	Torsión

REFERENCIAS

DATOS GEOMÉTRICOS

Peralte Total	h =	60	cm
Recubrimiento	r =	4	cm
Peralte Efectivo	d =	56	cm
Ancho	b =	30	cm
Longitud	L =	365	cm

ELEMENTOS MECÁNICOS

¿Factorizados? **SI**

Mu(+) =	9.40	Ton-m
Mu(-) =	23.15	Ton-m
Vu =	9.90	Ton
Tu =		Ton-m

REFUERZO POR CAMBIOS VOLUMÉTRICOS

¿El elemento estructural esta expuesto a la intemperie o en contacto con el suelo? **NO**

¿Existe contracción profunda o es importante el aspecto de la superficie del elemento? **NO**

$$as = \frac{660\ x_1}{fy\left(x_1 + 100\right)} = 0.06 \text{ cm}^2/\text{cm} = 5.89 \text{ cm}^2/\text{m}$$

as = 5.89 cm^2/m

Espesor = 60 cm >15cm por lo tanto colocar el refuerzo en: 2 Caras

5.89 / 2 = 2.95 cm^2/m/cara → para cortante

Refuerzo propuesto cada cara:

2 vars # 3 As 1 var = 0.71 cm^2 → As = 2.85 cm^2

Refuerzo a repartir en cada lecho:

Ast = (5.89 - 2.85)/2 = 1.52 cm^2/lecho → para flexión, correspondiente a 0.0009

NOTAS: ESTE DISEÑO SE HIZO DE ACUERDO A LOS CRITERIOS Y LINEAMIENTOS DE LAS NORMAS TÉCNICAS COMPLEMENTARIAS DEL REGLAMENTO DE CONSTRUCCIONES DEL DISTRITO FEDERAL. NTC-RCFD-17

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REFERENCIAS

DISEÑO POR FLEXION

CUANTÍAS DE ACERO

$$\rho_{mín} = \frac{0.7\sqrt{f'c}}{fy} = 0.0024 \qquad Asmín = 3.96 \text{ cm}^2$$

$$\rho_{máx} = \frac{f''c}{fy} x \frac{6000\beta_1}{fy+6000} = 0.0202 \qquad Asmáx = 34.00 \text{ cm}^2$$

0.0152 0.75 Asmáx= 25.50 cm²

$$\rho_{req} = \frac{f''c}{fy}\left(1-\sqrt{1-\frac{2M_R}{F_R bd^2 f''c}}\right) =$$

(+) 0.0027 Asreq= 4.60 cm²
0.0036 1.33 Asreq= 6.11 cm²

(-) 0.0071 Asreq= 11.99 cm²
0.0095 1.33 Asreq= 15.95 cm²

ACERO POSITIVO → **RIGE As REQ**

2	vars #	6	As 1 var =	2.85	cm² →	As =	5.70 cm²
	vars #		As 1 var =	-	cm² →	As =	- cm²
						Ast =	5.70 cm²

$$\rho = \frac{As}{bd} = 0.0034 \quad 0.34\% \quad \textbf{BIEN} \qquad q = \rho\frac{fy}{f''c} = 0.0838$$

$$M_R = F_R bd^2 q(1-0.5q) f''c = 11.56 \text{ Ton-m} \qquad Mu / MR = 0.81 < 1.00 \quad \textbf{BIEN}$$

ACERO NEGATIVO → **RIGE As REQ**

2	vars #	6	As 1 var =	2.85	cm² →	As =	5.70 cm²
2	vars #	6	As 1 var =	2.85	cm² →	As =	5.70 cm²
						Ast =	11.40 cm²

$$\rho = \frac{As}{bd} = 0.0068 \quad 0.68\% \quad \textbf{BIEN} \qquad q = \rho\frac{fy}{f''c} = 0.1677$$

$$M_R = F_R bd^2 q(1-0.5q) f''c = 22.11 \text{ Ton-m} \qquad Mu / MR = 1.05 > 1.00 \quad \textbf{SE ACEPTA}$$

NOTAS:

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MIEMBRO -	COMBINACIÓN -	TRABE T-2	PÁGINA 3 DE 3

REFERENCIAS

DISEÑO POR CORTANTE

Limite para Vu = 9.90 Ton < $2.5F_R bd\sqrt{f_c^{"}}$ = 43.81 Ton **BIEN**

CORTANTE QUE RESISTE EL CONCRETO

H = 60cm <= 70 cm Por lo que se aplicará el factor de reducción FR = 1.00

L/h = 6.08 **> 5 aplican las siguientes ecuaciones según sea p**

$V_{CR} = F_R bd(0.2+20\rho)\sqrt{f_c^{"}}$ = 5.88 Ton **p=0.00679< 0.015 aplica esta ecuación**

$V_{CR} = 0.5F_R bd\sqrt{f_c^{"}}$ = 8.76 Ton

V_{CR} = 5.88 Ton < Vu = 9.90 Ton **REQUIERE ESTRIBOS**

CORTANTE QUE RESISTEN LOS ESTRIBOS

Vs = Vu - V_{CR} = 4.02 Ton

$V = 1.5F_R bd\sqrt{f_c^{"}}$ = 26.29 Ton > Vu = 9.90 Ton

La separación de estribos no deberá ser mayor que smáx = 0.5d = 28.0 cm

El área de acero mínimo a la separación máxima es $Avmín = 0.30\sqrt{f_c^{"}}\frac{bs}{fy}$ = N/A cm^2

Usando 2 Ramas del # 3 Av = 1.43 cm^2

$scalc = \frac{F_R Avfyd}{Vs}$ = 67 cm

ESTRIBOS POR CAMBIOS VOLUMÉTRICOS

Se propone var # 3 Av = 0.71 cm^2

Separación = 79 cm no cumple, la separación será de 28 cm

Estribos del #3 @ 28 cm en 2 ramas. Rige refuerzo por cambios volumétricos

CONCLUSIÓN: **Se acepta la sección de 30 x 60 cm y con un refuerzo en el lecho inferior de 2 vars # 6 ; en el lecho superior de 2 vars # 6, bastoneada con 2 vars # 6 y estribos de #3 @ 28 cm, en 2 ramas.**

ESTADOS LÍMITE DE SERVICIO

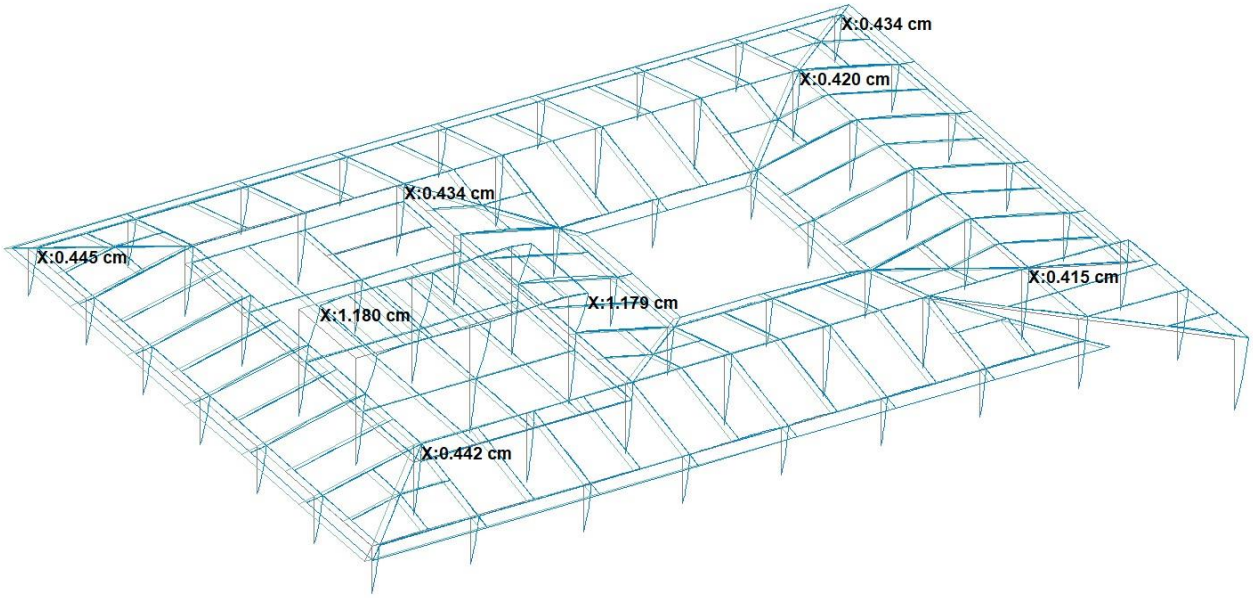
REVISIÓN DE DESPLAZAMIENTOS LATERALES

De la Tabla 3.5 “Distorsiones permisibles de entrepiso” del Manual de Diseño de Obras Civiles Diseño por Sismo 2015, se establece el límite para los desplazamientos laterales contra el estado límite de colapso.

Marcos de acero, de concreto reforzado o compuestos de ambos materiales con ductilidad limitada.

DISTORSIÓN PERMITIDA = 0.015H

Dado que los muros divisorios no presentan una junta elástica con los marcos de concreto, la distorsión será como máximo de 0.010 H.



Proyecta y Edifica S.A. de C.V.
Cuauhtémoc No. 53 Col. San Pedro Iztacalco
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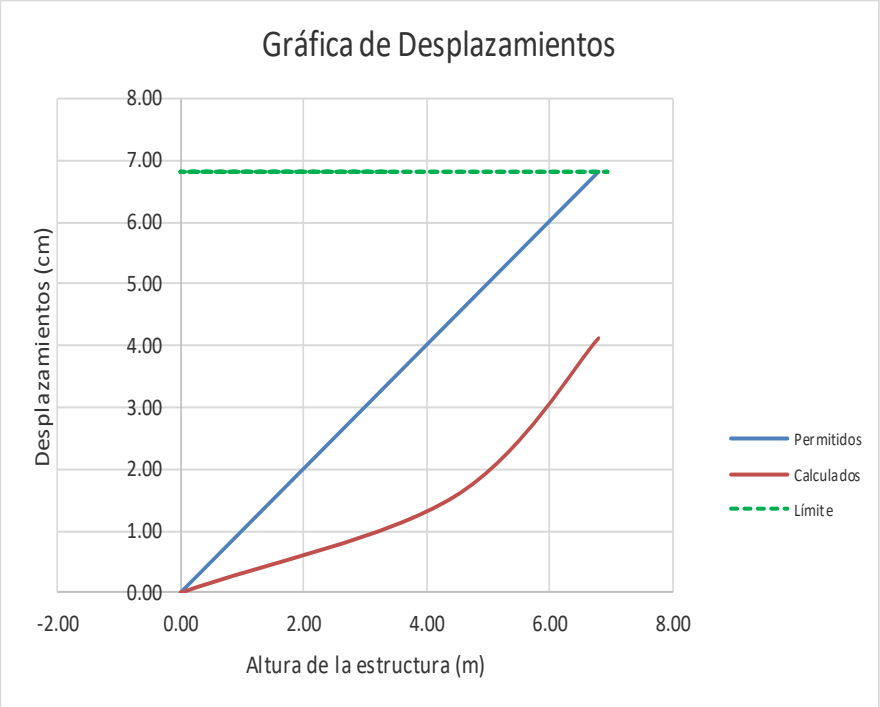
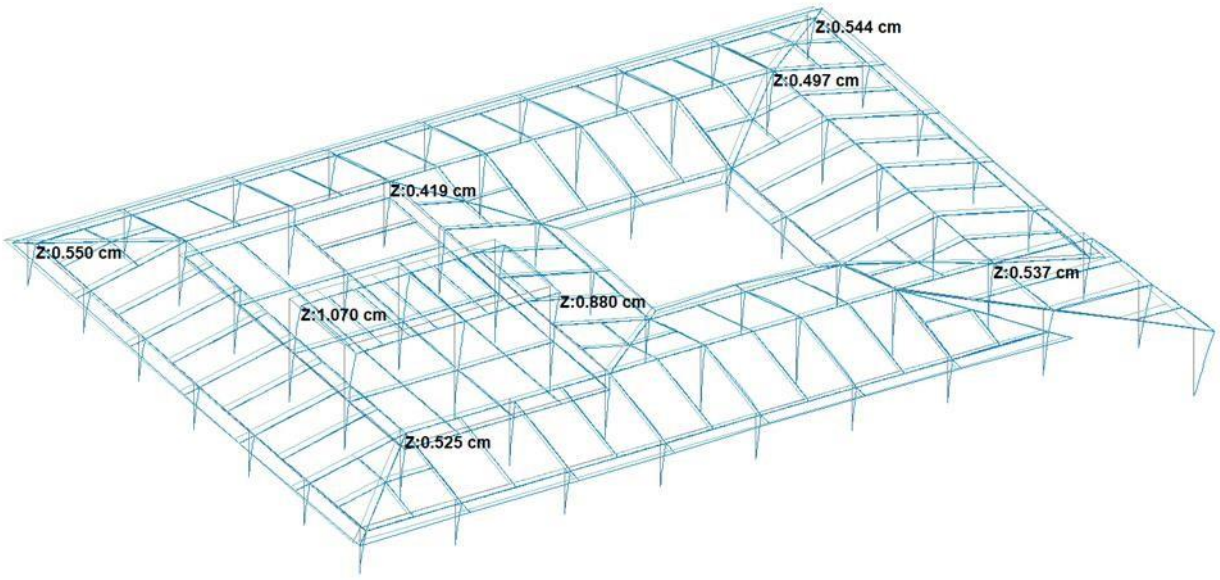
REFERENCIAS

DESPLAZAMIENTOS EN X

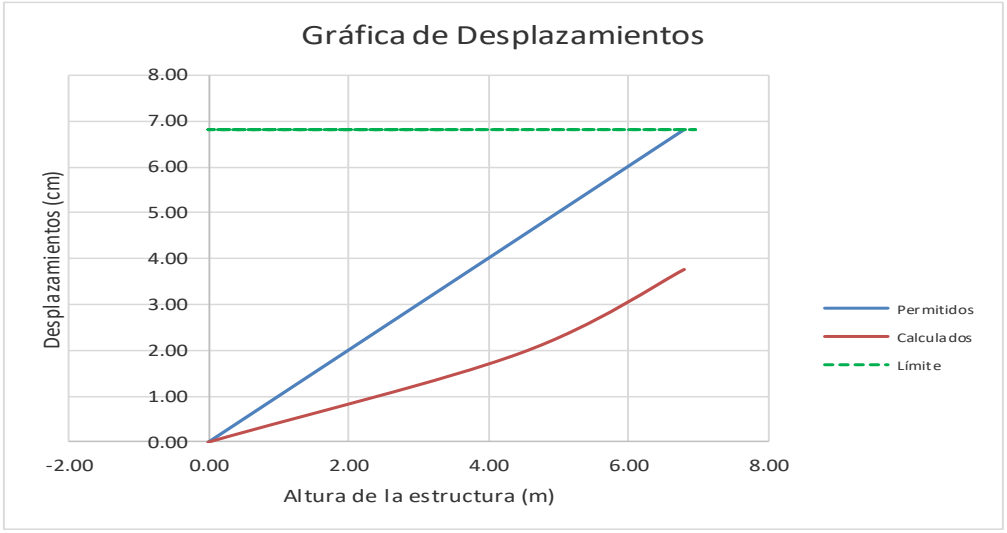
Niveles	Altura (m)	Desp. Calculado (cm)	QR	Desp. Real (cm)	Desp. Permitido (cm)	CONCLUSIÓN
Nivel 2	6.80	1.18	3.50	4.13	6.80	CUMPLE
Nivel 1	4.45	0.45	3.50	1.56	4.45	CUMPLE
Banqueta	0.00	0.00	3.50	0.00	0.00	CUMPLE



NOTAS:

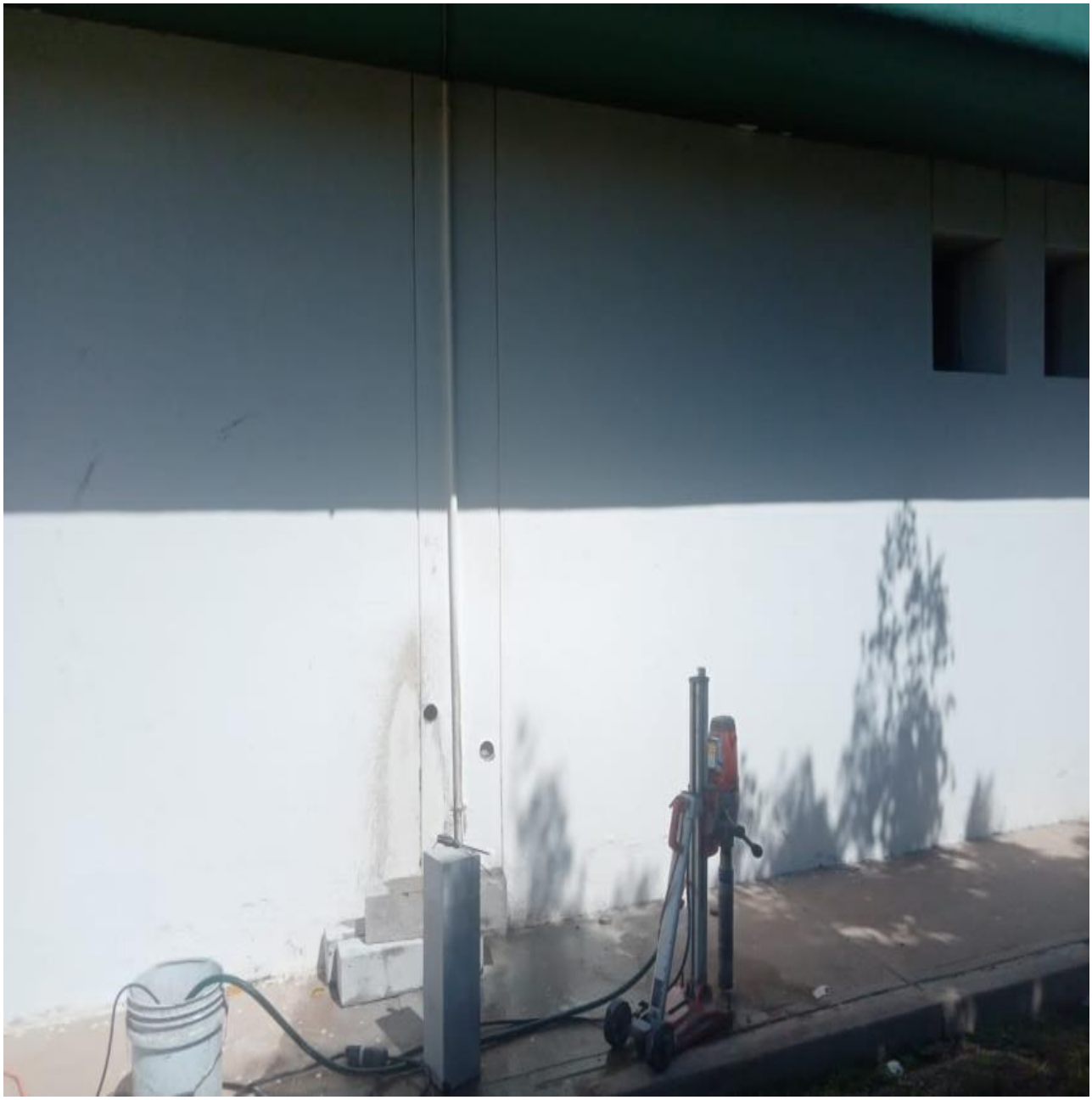


Niveles	Altura (m)	Desp. Calculado (cm)	QR	Desp. Real (cm)	Desp. Permitido (cm)	CONCLUSIÓN
Nivel 2	6.80	1.07	3.50	3.75	6.80	CUMPLE
Nivel 1	4.45	0.55	3.50	1.93	4.45	CUMPLE
Banqueta	0.00	0.00	3.50	0.00	0.00	CUMPLE

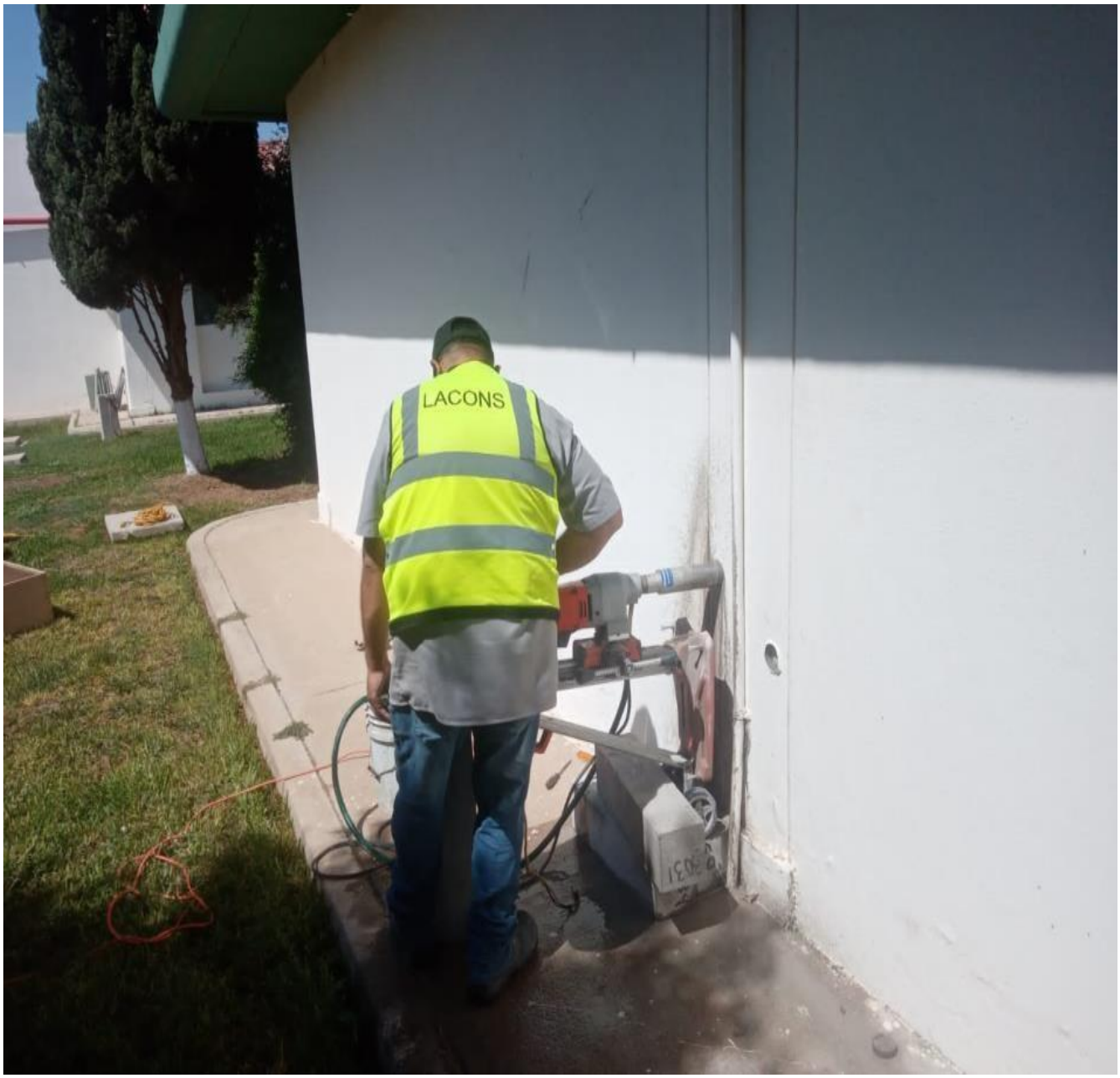


4. REPORTE FOTOGRAFICO

A continuación, mostramos evidencias de los núcleos de concreto en donde se realizaron las pruebas de resistencia a la compresión.

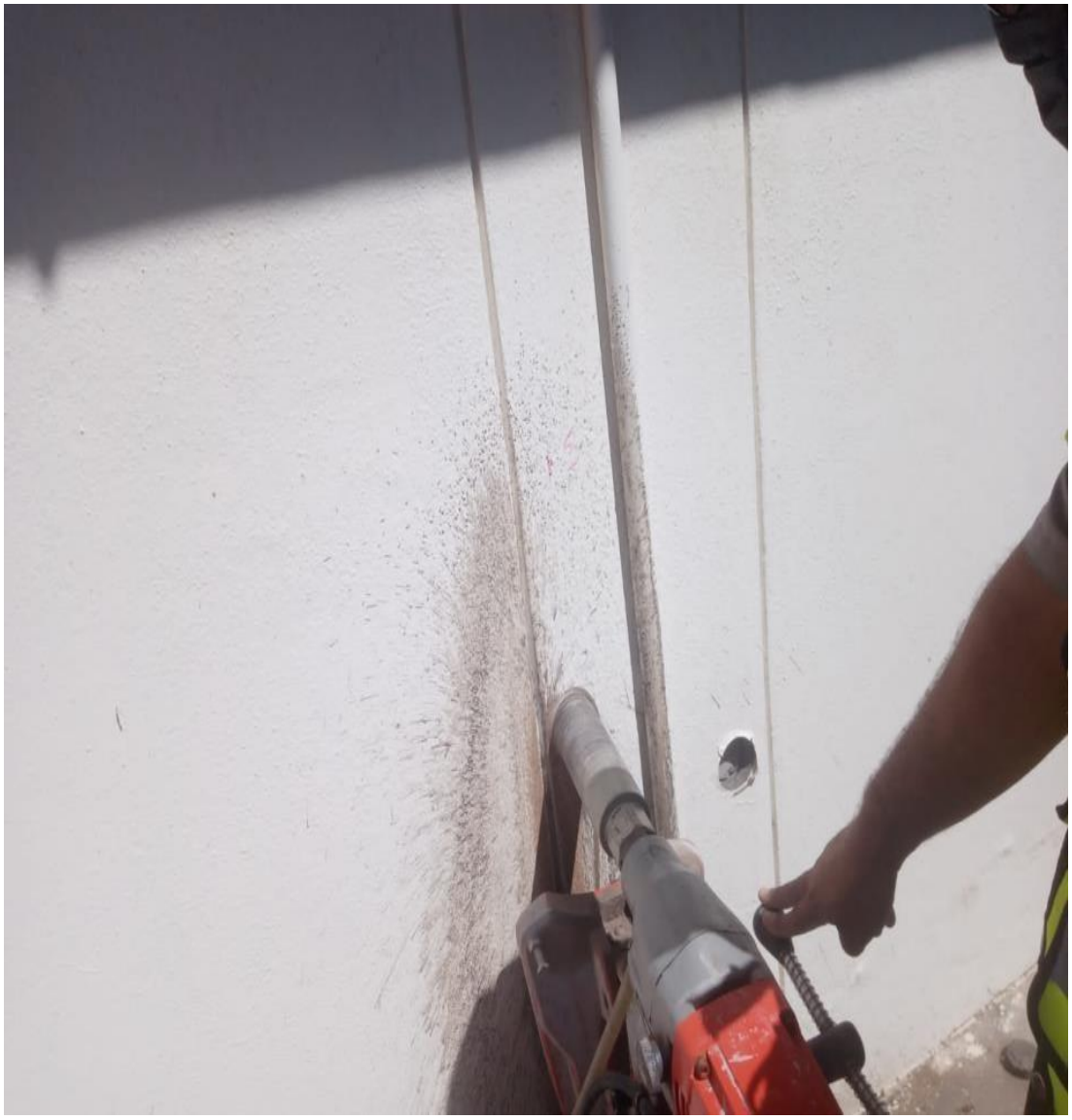


Equipo de extracción



Extracción de los núcleos de concreto.

Columna “muestreada”



Extracción de los núcleos

Tomando muestras en junta constructiva

Extracción de “muestra”.

Vista de columna en la parte posterior del hospital en donde se extrajo muestra

Columna “muestreada” en la zona de Servicios Generales

Extrayendo “muestra” en trabe de losa plana sobre el área de Tococirugía.

Columna en donde se encontró el acero de refuerzo y se tuvieron que hacer tres intentos para sacar el núcleo de concreto.

Extracción de núcleo en azotea sobre el área de Tococirugía.

Al fondo se muestra trabe en donde se extrajo núcleo de concreto.

Columna en donde se aprecia el agujero de la probeta y la vena que se realizó para determinar el acero de refuerzo de la columna.

Nótese los estribos que se localizan a cada 20 cm.

Acercamiento de las venas para visualizar el tipo de acero de refuerzo.

Vista del Orificio al retirar la probeta de concreto.

Vista de columna, realizando el mismo proceso para determinar el tipo de armado y su separación.

Proceso para abrir venas en columnas.

Vista del Acero de Refuerzo expuesto en columna.

Vista de columna con las venas en donde se aprecia la separación de estribos

Vista de orificio para extraer la probeta de concreto, encontrándose el acero de refuerzo.

En la vena que se efectuó en las trabes del área del cuarto del aire acondicionado de azotea, y después de 9 cm, no se encontró el acero de refuerzo, (nótese que la trabe no tiene fisuras).

Vista de otra trabe en la misma zona, en donde se penetraron 6 cm y no se encontró el acero de refuerzo.

Vena efectuada en trabe, nótese que los estribos son de alambrón

Aspecto general de los trabajos en trabes para conocer determinar el tipo de armado.

Vista de venas en columnas de junta constructiva

Venas en columna, nótese el acero de refuerzo principal amarrado con alambre recocido

Vena en columna, se aprecia la separación de estribos del # 3

Reparación de las calas y perforaciones que se realizaron en columnas, se utilizó estabilizador de volumen para tapar dichas perforaciones.

5. CONCLUSIONES

Para emitir las conclusiones nos apegamos a lo indicado en el Reglamento de Construcción del año 1994 y el Manual para Obras Civiles de la Comisión Federal de Electricidad del año 1993

- LA CIMENTACIÓN, la cual está construida a base de zapatas aisladas, contratrabes de liga, se han comportado correctamente y no se acusa ningún hundimiento diferencial.

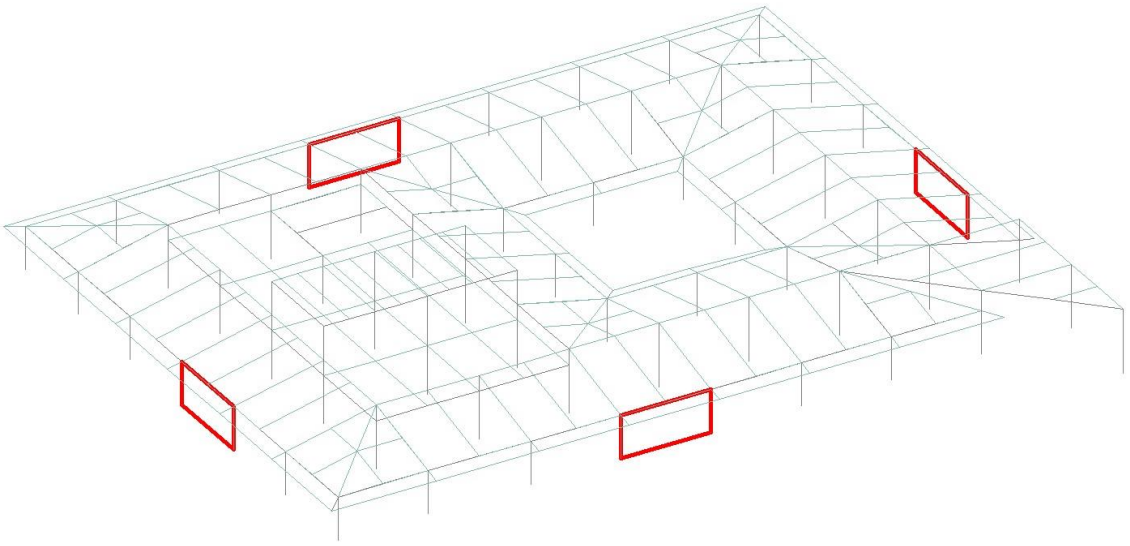
- LAS COLUMNAS, que tienen una sección de 43 x 43cm, no presentan ningún indicio de daño, mucho menos grietas, y en el modelo matemático nos arroja que la mayoría de ellas son suficientes con el mínimo porcentaje de acero de refuerzo siendo del 1%.

- LAS TRABES, como elementos principales para proporcionar la rigidez adecuada, se encuentran dentro de los rangos permisibles de flexión.

- LAS LOSAS, son construidas de concreto armado y no presentan flechas, ni agrietamiento en ningún cuerpo, son de 10 cm de espesor y se han comportado adecuadamente.

- Dada la edad y los armados conocidos, así como la zona sísmica, puede ser que no cumpla con la norma vigente.

Al ser más grande la aceleración de diseño actual, respecto la aceleración con la cual fue diseñado el inmueble, deberán colocarse elementos en cuando menos un entre eje por cara, que tenga la capacidad de tomar las fuerzas cortantes excedentes producto del cambio de norma, en un arreglo como el mostrado en la imagen.



Propuesta de elementos para tomar la fuerza cortante excedente.

En función de lo estudiado, analizado y comprobado, consideramos que los cuerpos que se desarrollen en la ampliación del Hospital, no se deberán unir estructuralmente a los existentes, ya que se pueden presentar irregularidades en planta que no son convenientes desde el punto de vista estructural.

6. RECOMENDACIONES

Derivada de la visita al sitio y las conclusiones anteriormente expuestas, se sugieren los siguientes aspectos para tomar en cuenta en el proyecto ejecutivo de ampliación y remodelación:

a) Se recomienda en medida de lo posible no alterar los muros, ya que si bien es cierto son de relleno, algunos de ellos están pegados a las columnas y es incierto cuanto puedan contribuir a la rigidez del sistema estructural.

b) Al desarrollar el proyecto estructural, este deberá cumplir con lo estipulado en el reglamento de construcciones para Ciudad de México, en cuanto a las separaciones mínimas que deben guardar, ya sea el desplazamiento calculado o no menos de 5 cm para cada edificio, esto quiere decir, que las juntas constructivas entre el hospital actual y las ampliaciones deberá de ser cuando menos de 10 cm. de separación.

c) En caso de alterar demasiado los muros del edificio actual, se deberá hacer un modelo matemático de la nueva disposición de los elementos y en su caso realizar un proyecto de refuerzo.

d) Las nuevas ampliaciones al hospital deberán cumplir con todo lo que consigna el Reglamento para Construcciones para la Ciudad de México y sus Normas Técnicas complementarias, ya que el hospital se encuentra en una zona sísmica muy alta, por lo que el proyecto estructural de las ampliaciones, se debe de apegar a todos los lineamientos que contiene las Normas Técnicas Complementarias para Diseño Sísmico.

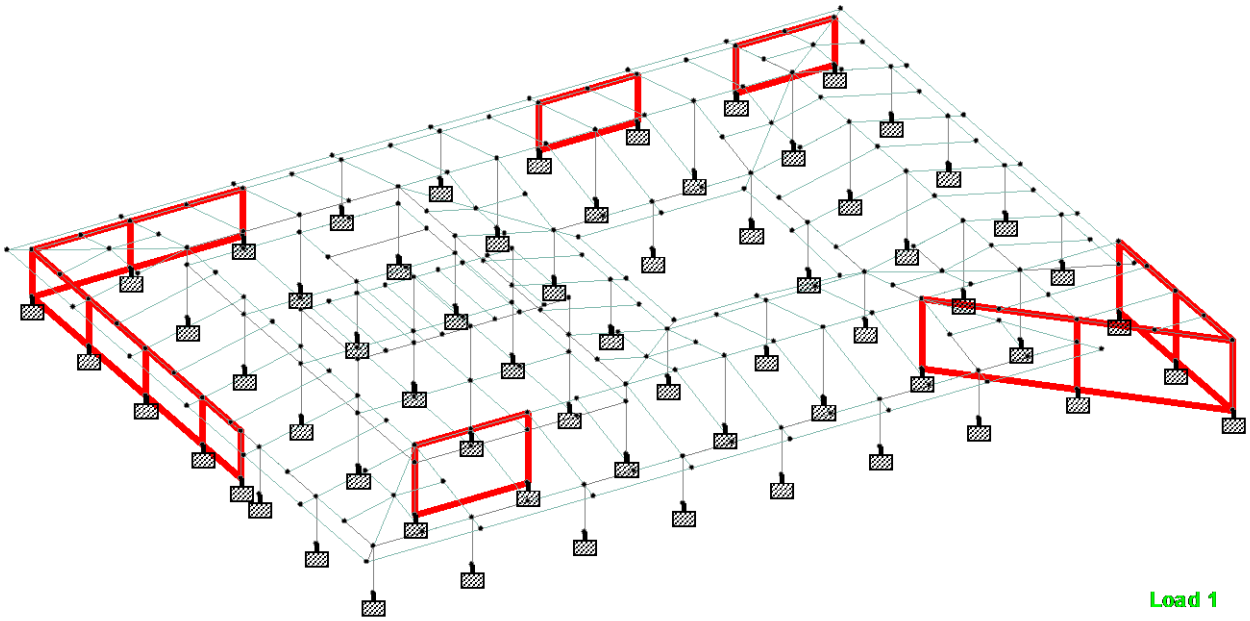
e) En términos generales, se recomienda atender las conclusiones para no demoler elementos estructurales principales en los cuerpos existentes, ya que la estructura ha trabajado con muchos muros que, si bien no están empacados en todos los lados del muro, si lo están en las columnas y esto le proporciona rigidez al sistema estructural.

7. OBSERVACIONES

Es importante puntualizar que los análisis anteriores están realizados con los parámetros de cargas y del espectro de diseño, y fueron realizados con los valores actuales que nos da el programa PRODISIS de la Comisión Federal de Electricidad, arrojando resultados de las cuantías de acero que se requieren, tanto en las columnas como en la trabes, variando los porcentajes de acero dependiendo de la posición de la columna en el sistema estructural, más sin embargo, la unidad fue calculada hace 21 años por lo que seguramente los valores de los parámetros para realizar el cálculo estructural fueron otros, y como se puede observar, la estructura en todos sus elementos están sin daño alguno como se constató y se mencionó anteriormente. Probablemente en el modelo original, se tomó en cuenta la contribución de la rigidez de los muros, ya que los muros que se utilizaron fueron especiales, pues los llamaron “estructurales”, sería conveniente realizar un modelo matemático tomando en cuenta estos elementos para conocer los porcentajes de acero que requieren las columnas, ya que como se ve en las fotos de las calas efectuadas el acero de refuerzo en columnas es de 4 varillas del #8 y estribos del #2, lo cual es muy importante para determinar el grado de Seguridad Estructural que guarda la estructura actualmente.

A continuación elaboramos un modelo matemático tomando en cuenta los muros más significativos de la estructura, los cuales le proporciona mayor rigidez a la estructura, ya que, en lugar de estuvieran separados, los pegaron a las trabes y columnas de la parte baja de las losas inclinadas, y si observamos lo resultados que nos proporciona el modelo matemático y tomando en cuenta la contribución de esos muros, el resultado que nos arroja el programa es que disminuye la cantidad de acero de refuerzo que necesitan los elementos estructurales, tal y como se pudo observar en las calas efectuadas en sitio, en donde las columnas tienen 4 varillas del no 8, dando como resultado que cumplen con el porcentaje mínimo de acero requerido.

Modelo matemático:



A continuación, editamos los archivos de entrada y de salida del modelo matemático con el resultado de la cuantía de acero requerida para las columnas que nos arroja el análisis.

DATOS DE ENTRADA DEL MODELO

```
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11. 18 0 3 9.45; 19 0 3 12.6; 20 0 3 15.75; 21 0 3 18.9; 22 0 3 22.05; 23 0 3 25.2
12. 24 0 3 28.35; 25 0 3 31.5; 26 0 3 34.65; 27 0 3 37.8; 28 INPUT FILE: hoshos2.STD
 2. START JOB INFORMATION
 3. ENGINEER DATE 15-AUG-21
 4. END JOB INFORMATION
 5. INPUT WIDTH 79
 6. UNIT METER MTON
 7. JOINT COORDINATES
```

8. 1 -1 2.78 -1; 2 -1 2.78 6.3; 3 -1 2.78 12.6; 4 -1 2.78 18.9; 5 -1 2.78 25.2

9. 6 -1 2.78 31.5; 7 -1 2.78 38.8; 8 0 0 0; 9 0 0 6.3; 10 0 0 12.6; 11 0 0 18.9

3.15 3 0

13. 29 3.15 3 37.8; 30 3.15 3.725 3.15; 31 3.15 3.725 6.3; 32 3.15 3.725 31.5

14. 33 3.15 3.725 34.65; 34 6.3 0 0; 35 6.3 0 6.3; 36 6.3 0 12.6; 37 6.3 0 18.9

15. 38 6.3 0 25.2; 39 6.3 0 31.5; 40 6.3 0 37.8; 41 6.3 2.78 -1; 42 6.3 2.78 38.8

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19. 56 6.3 4.45 18.9; 57 6.3 4.45 22.05; 58 6.3 4.45 25.2; 59 6.3 4.45 28.35

20. 60 6.3 4.45 31.5; 61 6.3 6.8 18.9; 62 6.3 6.8 25.2; 63 8.1 6.8 18.9

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101. 152 95 108; 153 96 109; 154 99 100; 155 99 110; 156 100 111; 157 90 126
102. 158 104 105; 159 105 106; 160 106 107; 161 101 108; 162 109 102; 163 110 111
103. 164 110 112; 165 111 113; 166 101 123; 167 102 124; 168 103 125; 169 104 127
104. 170 105 128; 171 106 129; 172 107 130; 173 108 131; 174 109 139; 175 112 113
105. 176 112 140; 177 113 141; 178 123 114; 179 124 120; 180 125 115; 181 127 116

106. 182 128 117; 183 129 118; 184 130 119; 185 121 123; 186 124 122; 187 125 126

107. 188 126 127; 189 127 128; 190 128 129; 191 129 130; 192 123 131; 193 139 124

108. 194 131 125; 195 133 127; 196 135 128; 197 137 129; 198 139 130; 199 131 132

109. 200 132 133; 201 133 134; 202 134 135; 203 135 136; 204 136 137; 205 137 138

110. 206 138 139; 207 140 135; 208 141 137; 209 140 141; 210 123 142; 211 124 143

111. 212 131 144; 213 132 144; 214 133 145; 215 137 146; 216 138 147; 217 147 139

112. 218 131 148; 219 139 149; 220 142 148; 221 144 145; 222 134 161; 223 135 162

113. 224 136 163; 225 146 147; 226 149 143; 227 148 144; 228 147 149; 229 142 159

114. 230 143 165; 231 144 160; 232 145 160; 233 146 164; 234 164 147; 235 144 166

115. 236 147 167; 237 148 168; 238 149 169; 239 159 150; 240 160 152; 241 162 153

116. 242 164 154; 243 165 156; 244 168 151; 245 169 155; 246 157 159; 247 165 158

117. 248 160 161; 249 161 162; 250 162 163; 251 163 164; 252 166 160; 253 164 167

118. 254 159 168; 255 169 165; 256 168 166; 257 167 169; 258 160 170; 259 162 171

119. 260 172 164; 261 159 173; 262 160 174; 263 164 175; 264 165 176; 265 168 177

120. 266 169 178; 267 173 177; 268 177 174; 269 175 178; 270 178 176; 271 173 189

121. 272 174 190; 273 175 191; 274 176 192; 275 177 193; 276 178 194; 277 189 179

122. 278 190 181; 279 191 182; 280 192 184; 281 193 180; 282 194 183; 283 185 189

123. 284 190 186; 285 187 191; 286 192 188; 287 189 193; 288 193 190; 289 191 194

124. 290 194 192; 291 189 195; 292 190 196; 293 191 197; 294 192 198; 295 193 199

125. 296 194 200; 297 195 199; 298 199 196; 299 197 200; 300 200 198; 301 195 213

126. 302 196 214; 303 197 218; 304 198 219; 305 199 223; 306 200 224; 307 201 218

127. 308 214 202; 309 216 203; 310 213 204; 311 214 206; 312 216 207; 313 218 208

128. 314 219 210; 315 223 205; 316 224 209; 317 211 213; 318 219 212; 319 214 215

129. 320 215 216; 321 216 217; 322 217 218; 323 220 214; 324 218 221; 325 222 219

130. 326 213 223; 327 223 220; 328 221 224; 329 224 222; 330 213 225; 331 219 226

131. 332 227 214; 333 228 214; 334 229 218; 335 230 218; 336 220 227; 337 221 230

132. 338 222 231; 339 224 231; 340 223 232; 341 224 233; 342 224 234; 343 231 226

133. 344 225 232; 345 227 228; 346 215 249; 347 250 216; 348 217 251; 349 229 230

134. 350 232 227; 351 230 233; 352 225 243; 353 226 244; 354 231 244; 355 246 227

135. 356 227 247; 357 248 228; 358 252 229; 359 230 253; 360 254 230; 361 232 246

136. 362 233 254; 363 234 255; 364 234 256; 365 243 235; 366 244 241; 367 246 236

137. 368 248 237; 369 250 238; 370 252 239; 371 254 240; 372 242 243; 373 243 245

138. 374 256 244; 375 245 246; 376 246 247; 377 247 248; 378 248 249; 379 249 250
139. 380 250 251; 381 251 252; 382 252 253; 383 253 254; 384 254 255; 385 255 256
140. 386 244 257; 387 243 258; 388 245 259; 389 246 259; 390 246 260; 391 256 261
141. 392 258 259; 393 259 260; 394 247 273; 395 248 274; 396 249 275; 397 250 276
142. 398 251 277; 399 252 278; 400 253 279; 401 254 280; 402 254 281; 403 255 282
143. 404 256 283; 405 258 270; 406 259 270; 407 259 271; 408 260 272; 409 261 284
144. 410 261 285; 411 270 262; 412 272 263; 413 274 264; 414 276 265; 415 278 266
145. 416 280 267; 417 283 268; 418 285 269; 419 270 271; 420 271 272; 421 272 273
146. 422 273 274; 423 274 275; 424 275 276; 425 276 277; 426 277 278; 427 278 279
147. 428 279 280; 429 281 280; 430 281 282; 431 282 283; 432 283 284; 433 284 285
148. 434 286 270; 435 272 287; 436 274 288; 437 276 289; 438 278 290; 439 280 291
149. 605 293 23; 606 293 292
150. ELEMENT INCIDENCES SHELL
151. 440 1 15 17 2; 441 2 17 19 3; 442 3 19 21 4; 443 4 21 23 5; 444 5 23 25 6
152. 445 6 25 27 7; 446 15 30 16; 447 26 33 27; 448 16 30 31 17; 449 25 32 33 26
153. 450 15 28 30; 451 27 33 29; 452 1 41 43 15; 453 27 44 42 7; 454 17 52 53 18
154. 455 18 53 54 19; 456 19 54 55 20; 457 20 55 56 21; 458 21 56 57 22
155. 459 22 57 58 23; 460 23 58 59 24; 461 24 59 60 25; 462 30 52 31; 463 32 60 33
156. 464 28 43 50 30; 465 33 51 44 29; 466 30 50 52; 467 33 60 51; 468 61 63 64 62
157. 469 45 67 68 46; 470 46 68 69 47; 471 47 69 70 48; 472 48 70 71 49
158. 473 43 65 72 52; 474 60 73 66 44; 475 63 74 75 64; 476 41 85 87 43
159. 477 44 88 86 42; 478 74 76 77 75; 479 67 89 91 68; 480 68 91 92 69
160. 481 69 92 93 70; 482 70 93 94 71; 483 65 87 95 72; 484 73 96 88 66
161. 485 76 97 98 77; 486 97 99 100 98; 487 91 104 105 92; 488 92 105 106 93
162. 489 93 106 107 94; 490 87 101 108 95; 491 96 109 102 88; 492 99 110 111 100
163. 493 85 121 123 87; 494 88 124 122 86; 495 89 125 126 90; 496 110 112 113 111
164. 497 104 127 128 105; 498 105 128 129 106; 499 106 129 130 107
165. 500 101 123 131 108; 501 109 139 124 102; 502 112 140 141 113; 503 131 144 132
166. 504 138 147 139; 505 123 142 148 131; 506 139 149 143 124; 507 132 144 145 133
167. 508 137 146 147 138; 509 131 148 144; 510 147 149 139; 511 121 157 159 123
168. 512 124 165 158 122; 513 133 160 161 134; 514 134 161 162 135
169. 515 135 162 163 136; 516 136 163 164 137; 517 144 160 145; 518 146 164 147

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170. 519 142 159 168 148; 520 149 169 165 143; 521 148 168 166 144
171. 522 147 167 169 149; 523 144 166 160; 524 147 164 167; 525 160 170 171 162
172. 526 162 171 172 164; 527 159 173 177 168; 528 168 177 174 160
173. 529 164 175 178 169; 530 169 178 176 165; 531 157 185 189 159
174. 532 165 192 188 158; 533 160 190 186 170; 534 172 187 191 164
175. 535 173 189 193 177; 536 177 193 190 174; 537 175 191 194 178
176. 538 178 194 192 176; 539 189 195 199 193; 540 193 199 196 190
177. 541 191 197 200 194; 542 194 200 198 192; 543 187 201 218 191
178. 544 190 214 202 186; 545 185 211 213 189; 546 192 219 212 188
179. 547 195 213 223 199; 548 199 223 214 196; 549 197 218 224 200
180. 550 200 224 219 198; 551 203 216 218 201; 552 202 214 216 203; 553 220 227 214
181. 554 218 230 221; 555 224 231 222; 556 222 231 226 219; 557 213 225 232 223
182. 558 223 232 227 220; 559 221 230 233 224; 560 214 227 228; 561 218 229 230
183. 562 211 242 243 213; 563 214 248 249 215; 564 215 249 250 216
184. 565 216 250 251 217; 566 217 251 252 218; 567 219 244 257 212
185. 568 224 254 255 234; 569 231 244 226; 570 232 246 227; 571 230 254 233
186. 572 225 243 246 232; 573 227 247 248 228; 574 229 252 253 230; 575 227 246 247
187. 576 230 253 254; 577 234 255 256; 578 245 259 246; 579 243 258 259 245
188. 580 246 259 260; 581 246 272 273 247; 582 247 273 274 248; 583 248 274 275 249
189. 584 249 275 276 250; 585 250 276 277 251; 586 251 277 278 252
190. 587 252 278 279 253; 588 253 279 280 254; 589 254 281 282 255
191. 590 255 282 283 256; 591 242 286 270 243; 592 256 283 284 261; 593 258 270 259
192. 594 259 271 272 260; 595 259 270 271; 596 261 284 285; 597 270 286 287 272
193. 598 272 287 288 274; 599 274 288 289 276; 600 276 289 290 278
194. 601 278 290 291 280; 602 15 17 9 8; 603 17 19 10 9; 604 19 21 11 10
195. 607 21 293 292 11; 608 15 43 34 8; 609 43 87 78 34; 610 243 270 262 235
196. 611 189 213 204 179; 612 281 283 268 267; 613 283 285 269 268
197. 614 224 256 241 209; 615 256 285 269 241; 616 60 96 83 39
198. ELEMENT PROPERTY
199. 440 TO 601 THICKNESS 0.1
200. 602 TO 604 607 TO 616 THICKNESS 0.15
201. DEFINE MATERIAL START
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202. ISOTROPIC CONCRETE
203. E 2.21467E+006
204. POISSON 0.17
205. DENSITY 2.40262
206. ALPHA 1E-005
207. DAMP 0.05
208. TYPE CONCRETE
209. STRENGTH FCU 2812.28
210. ISOTROPIC TABIQUE
211. E 85000
212. POISSON 0.3
213. DENSITY 1.8
214. END DEFINE MATERIAL
215. MEMBER PROPERTY AMERICAN
216. 8 TO 14 54 TO 60 69 TO 73 84 85 122 TO 128 138 TO 141 178 TO 184 194 TO 198 -
217. 207 208 239 244 245 277 281 282 310 315 316 365 TO 371 374 411 TO 418 429 -
218. 606 PRIS YD 0.4 ZD 0.4
219. 1 TO 7 15 TO 29 31 32 34 39 41 43 46 47 50 TO 53 61 TO 68 74 TO 83 86 -
220. 89 TO 91 95 TO 97 110 TO 112 116 TO 118 129 TO 137 142 TO 153 155 TO 157 -
221. 164 TO 174 176 177 185 TO 193 199 TO 206 209 TO 212 214 215 217 TO 219 223 -
222. 229 TO 234 237 238 246 TO 266 271 TO 276 283 TO 296 301 TO 309 317 TO 335 -
223. 339 TO 342 347 352 TO 355 357 358 360 TO 362 364 372 373 375 TO 387 -
224. 389 TO 391 395 397 399 401 402 404 TO 406 408 410 419 TO 428 430 TO 439 -
225. 605 PRIS YD 0.6 ZD 0.3
226. 30 33 35 TO 38 40 42 44 45 48 49 98 101 TO 107 119 154 158 TO 163 175 213 -
227. 216 220 TO 222 224 TO 228 235 236 267 TO 270 297 TO 300 336 TO 338 -
228. 343 TO 346 348 TO 351 356 359 363 388 392 TO 394 396 398 400 403 407 -
229. 409 PRIS YD 0.6 ZD 0.25
230. 87 88 92 TO 94 99 100 108 109 113 TO 115 120 121 PRIS YD 0.7 ZD 0.3
231. 240 TO 243 278 TO 280 311 TO 314 PRIS YD 0.75
232. CONSTANTS
233. MATERIAL CONCRETE MEMB 1 TO 601 605 606
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234. MATERIAL TABIQUE MEMB 602 TO 604 607 TO 616
235. SUPPORTS
236. 8 TO 14 34 TO 40 78 TO 84 114 TO 120 150 TO 156 179 TO 184 204 TO 210 235 -
237. 236 TO 241 262 TO 269 292 FIXED
238. LOAD 1 LOADTYPE NONE  TITLE CARGA MUERTA
239. SELFWEIGHT Y -1
240. ELEMENT LOAD
241. 440 TO 467 473 474 476 477 483 484 490 491 493 494 500 501 503 TO 567 569 -
242. 570 TO 576 578 TO 588 591 593 TO 595 597 TO 601 PR 0.36
243. FLOOR LOAD
244. YRANGE 3.35 3.35 FLOAD -0.56 XRANGE 6.3 19.8  ZRANGE 6.3 31.5  GY
245. YRANGE 4.45 4.45 FLOAD -0.56 XRANGE 38.7 51.3  ZRANGE 31.5 44.1  GY
246. LOAD 2 LOADTYPE NONE  TITLE CARGA VIVA MAXIMA
247. ELEMENT LOAD
248. 440 TO 467 473 474 476 477 483 484 490 491 493 494 500 501 503 TO 567 569 -
249. 570 TO 576 578 TO 588 591 593 TO 595 597 TO 601 PR 0.04
250. FLOOR LOAD
251. YRANGE 3.35 3.35 FLOAD -0.1 XRANGE 6.3 19.8  ZRANGE 6.3 31.5  GY
252. YRANGE 4.45 4.45 FLOAD -0.1 XRANGE 38.7 51.3  ZRANGE 31.5 44.1  GY
253. LOAD 3 LOADTYPE NONE  TITLE CARGA VIVA REDUCIDA
254. ELEMENT LOAD
255. 440 TO 467 473 474 476 477 483 484 490 491 493 494 500 501 503 TO 567 569 -
256. 570 TO 576 578 TO 588 591 593 TO 595 597 TO 601 PR 0.02
257. FLOOR LOAD
258. YRANGE 3.35 3.35 FLOAD -0.07 XRANGE 6.3 19.8  ZRANGE 6.3 31.5  GY
259. YRANGE 4.45 4.45 FLOAD -0.07 XRANGE 38.7 51.3  ZRANGE 31.5 44.1  GY
260. LOAD 4 LOADTYPE NONE  TITLE SISMO EN X
261. JOINT LOAD
262. 61 62 97 98 140 141 FX 8.93
263. 15 17 19 21 23 25 27 43 44 52 54 56 58 60 87 88 95 96 123 124 131 133 135 -
264. 137 139 159 160 162 164 165 168 169 189 TO 194 213 214 216 218 219 223 224 -
265. 243 246 248 250 252 254 256 270 272 274 276 278 281 283 285 293 FX 9.88
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266. 61 62 97 98 140 141 FZ 8.93
267. 15 17 19 21 23 25 27 43 44 52 54 56 58 60 87 88 95 96 123 124 131 133 135 -
268. 137 139 159 160 162 164 165 168 169 189 TO 194 213 214 216 218 219 223 224 -
269. 243 246 248 250 252 254 256 270 272 274 276 278 281 283 285 293 FZ 9.88
270. SPECTRUM CQC X 1 ACC SCALE 9.81 DAMP 0.05 LIN SAVE
271. *
272. 0 0.157562; 0.01 0.189693; 0.02 0.21607; 0.03 0.242031; 0.04 0.267982
273. 0.05 0.294053; 0.06 0.3203; 0.07 0.346751; 0.08 0.373421; 0.09 0.400317
274. 0.1 0.427445; 0.11 0.454808; 0.12 0.482408; 0.13 0.510249; 0.14 0.538331
275. 0.15 0.566658; 0.16 0.59523; 0.17 0.624051; 0.18 0.653122; 0.19 0.682448
276. 0.2 0.71203; 0.21 0.707607; 0.22 0.703239; 0.23 0.698925; 0.24 0.694663
277. 0.25 0.690453; 0.26 0.686294; 0.27 0.682184; 0.28 0.678124; 0.29 0.674111
278. 0.3 0.670146; 0.31 0.666227; 0.32 0.662353; 0.33 0.658525; 0.34 0.65474
279. 0.35 0.650999; 0.36 0.6473; 0.37 0.643643; 0.38 0.640027; 0.39 0.636451
280. 0.4 0.632916; 0.41 0.629419; 0.42 0.62596; 0.43 0.62254; 0.44 0.619156
281. 0.45 0.61581; 0.46 0.612499; 0.47 0.609223; 0.48 0.605983; 0.49 0.602777
282. 0.5 0.599604; 0.51 0.596465; 0.52 0.593358; 0.53 0.590284; 0.54 0.587241
283. 0.55 0.58423; 0.56 0.581249; 0.57 0.578298; 0.58 0.575378; 0.59 0.572486
284. 0.6 0.569624; 0.61 0.56679; 0.62 0.563984; 0.63 0.561206; 0.64 0.558455
285. 0.65 0.555731; 0.66 0.553033; 0.67 0.550361; 0.68 0.547715; 0.69 0.545095
286. 0.7 0.542499; 0.71 0.539928; 0.72 0.537381; 0.73 0.534858; 0.74 0.532359
287. 0.75 0.529883; 0.76 0.52743; 0.77 0.524999; 0.78 0.522591; 0.79 0.520205
288. 0.8 0.51784; 0.81 0.515497; 0.82 0.513175; 0.83 0.510874; 0.84 0.508593
289. 0.85 0.506332; 0.86 0.504092; 0.87 0.501871; 0.88 0.49967; 0.89 0.497488
290. 0.9 0.495325; 0.91 0.493181; 0.92 0.491055; 0.93 0.488948; 0.94 0.486858
291. 0.95 0.484786; 0.96 0.482732; 0.97 0.480695; 0.98 0.478676; 0.99 0.476673
292. 1 0.474687; 1.01 0.472717; 1.02 0.470764; 1.03 0.468826; 1.04 0.466905
293. 1.05 0.464999; 1.06 0.463109; 1.07 0.461234; 1.08 0.459374; 1.09 0.457529
294. 1.1 0.455699; 1.11 0.453884; 1.12 0.452083; 1.13 0.450296; 1.14 0.448523
295. 1.15 0.446764; 1.16 0.445019; 1.17 0.443287; 1.18 0.441569; 1.19 0.439864
296. 1.2 0.438172; 1.21 0.436493; 1.22 0.434827; 1.23 0.433174; 1.24 0.431533
297. 1.25 0.429905; 1.26 0.428289; 1.27 0.426685; 1.28 0.425093; 1.29 0.423512
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298. 1.3 0.421944; 1.31 0.420387; 1.32 0.418841; 1.33 0.417307; 1.34 0.415784
299. 1.35 0.414272; 1.36 0.412771; 1.37 0.411281; 1.38 0.409801; 1.39 0.408333
300. 1.4 0.406874; 1.41 0.404948; 1.42 0.403045; 1.43 0.401164; 1.44 0.399304
301. 1.45 0.397466; 1.46 0.395649; 1.47 0.393853; 1.48 0.392077; 1.49 0.390321
302. 1.5 0.388584; 1.51 0.386866; 1.52 0.385168; 1.53 0.383488; 1.54 0.381826
303. 1.55 0.380182; 1.56 0.378555; 1.57 0.376946; 1.58 0.375354; 1.59 0.373778
304. 1.6 0.372219; 1.61 0.370676; 1.62 0.369149; 1.63 0.367638; 1.64 0.366142
305. 1.65 0.364661; 1.66 0.363195; 1.67 0.361744; 1.68 0.360307; 1.69 0.358884
306. 1.7 0.357476; 1.71 0.35608; 1.72 0.354699; 1.73 0.353331; 1.74 0.351976
307. 1.75 0.350634; 1.76 0.349304; 1.77 0.347987; 1.78 0.346683; 1.79 0.34539
308. 1.8 0.34411; 1.81 0.342841; 1.82 0.341584; 1.83 0.340339; 1.84 0.339105
309. 1.85 0.337882; 1.86 0.336669; 1.87 0.335468; 1.88 0.334277; 1.89 0.333097
310. 1.9 0.331927; 1.91 0.330768; 1.92 0.329618
311. LOAD 5 LOADTYPE NONE TITLE SISMO EN Z
312. SPECTRUM CQC Z 1 ACC SCALE 9.81 DAMP 0.05 LIN SAVE
313. 0 0.157562; 0.01 0.189693; 0.02 0.21607; 0.03 0.242031; 0.04 0.267982
314. 0.05 0.294053; 0.06 0.3203; 0.07 0.346751; 0.08 0.373421; 0.09 0.400317
315. 0.1 0.427445; 0.11 0.454808; 0.12 0.482408; 0.13 0.510249; 0.14 0.538331
316. 0.15 0.566658; 0.16 0.59523; 0.17 0.624051; 0.18 0.653122; 0.19 0.682448
317. 0.2 0.71203; 0.21 0.707607; 0.22 0.703239; 0.23 0.698925; 0.24 0.694663
318. 0.25 0.690453; 0.26 0.686294; 0.27 0.682184; 0.28 0.678124; 0.29 0.674111
319. 0.3 0.670146; 0.31 0.666227; 0.32 0.662353; 0.33 0.658525; 0.34 0.65474
320. 0.35 0.650999; 0.36 0.6473; 0.37 0.643643; 0.38 0.640027; 0.39 0.636451
321. 0.4 0.632916; 0.41 0.629419; 0.42 0.62596; 0.43 0.62254; 0.44 0.619156
322. 0.45 0.61581; 0.46 0.612499; 0.47 0.609223; 0.48 0.605983; 0.49 0.602777
323. 0.5 0.599604; 0.51 0.596465; 0.52 0.593358; 0.53 0.590284; 0.54 0.587241
324. 0.55 0.58423; 0.56 0.581249; 0.57 0.578298; 0.58 0.575378; 0.59 0.572486
325. 0.6 0.569624; 0.61 0.56679; 0.62 0.563984; 0.63 0.561206; 0.64 0.558455
326. 0.65 0.555731; 0.66 0.553033; 0.67 0.550361; 0.68 0.547715; 0.69 0.545095
327. 0.7 0.542499; 0.71 0.539928; 0.72 0.537381; 0.73 0.534858; 0.74 0.532359
328. 0.75 0.529883; 0.76 0.52743; 0.77 0.524999; 0.78 0.522591; 0.79 0.520205
329. 0.8 0.51784; 0.81 0.515497; 0.82 0.513175; 0.83 0.510874; 0.84 0.508593

330. 0.85 0.506332; 0.86 0.504092; 0.87 0.501871; 0.88 0.49967; 0.89 0.497488
331. 0.9 0.495325; 0.91 0.493181; 0.92 0.491055; 0.93 0.488948; 0.94 0.486858
332. 0.95 0.484786; 0.96 0.482732; 0.97 0.480695; 0.98 0.478676; 0.99 0.476673
333. 1 0.474687; 1.01 0.472717; 1.02 0.470764; 1.03 0.468826; 1.04 0.466905
334. 1.05 0.464999; 1.06 0.463109; 1.07 0.461234; 1.08 0.459374; 1.09 0.457529
335. 1.1 0.455699; 1.11 0.453884; 1.12 0.452083; 1.13 0.450296; 1.14 0.448523
336. 1.15 0.446764; 1.16 0.445019; 1.17 0.443287; 1.18 0.441569; 1.19 0.439864
337. 1.2 0.438172; 1.21 0.436493; 1.22 0.434827; 1.23 0.433174; 1.24 0.431533
338. 1.25 0.429905; 1.26 0.428289; 1.27 0.426685; 1.28 0.425093; 1.29 0.423512
339. 1.3 0.421944; 1.31 0.420387; 1.32 0.418841; 1.33 0.417307; 1.34 0.415784
340. 1.35 0.414272; 1.36 0.412771; 1.37 0.411281; 1.38 0.409801; 1.39 0.408333
341. 1.4 0.406874; 1.41 0.404948; 1.42 0.403045; 1.43 0.401164; 1.44 0.399304
342. 1.45 0.397466; 1.46 0.395649; 1.47 0.393853; 1.48 0.392077; 1.49 0.390321
343. 1.5 0.388584; 1.51 0.386866; 1.52 0.385168; 1.53 0.383488; 1.54 0.381826
344. 1.55 0.380182; 1.56 0.378555; 1.57 0.376946; 1.58 0.375354; 1.59 0.373778
345. 1.6 0.372219; 1.61 0.370676; 1.62 0.369149; 1.63 0.367638; 1.64 0.366142
346. 1.65 0.364661; 1.66 0.363195; 1.67 0.361744; 1.68 0.360307; 1.69 0.358884
347. 1.7 0.357476; 1.71 0.35608; 1.72 0.354699; 1.73 0.353331; 1.74 0.351976
348. 1.75 0.350634; 1.76 0.349304; 1.77 0.347987; 1.78 0.346683; 1.79 0.34539
349. 1.8 0.34411; 1.81 0.342841; 1.82 0.341584; 1.83 0.340339; 1.84 0.339105
350. 1.85 0.337882; 1.86 0.336669; 1.87 0.335468; 1.88 0.334277; 1.89 0.333097
351. 1.9 0.331927; 1.91 0.330768; 1.92 0.329618
352. LOAD COMB 6 CM+CVMAX
353. 1 1.4 2 1.7
354. LOAD COMB 7 CM+CV+SX+.3SZ
355. 1 1.1 3 1.1 4 1.1 5 0.33
356. LOAD COMB 8 CM+CV-SX-.3SZ
357. 1 1.1 3 1.1 4 -1.1 5 -0.33
358. LOAD COMB 9 CM+CV+SX-.3SZ
359. 1 1.1 3 1.1 4 1.1 5 -0.33
360. LOAD COMB 10 CM+CV-SX+.3SZ
361. 1 1.1 3 1.1 4 -1.1 5 0.33

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362. LOAD COMB 11 CM+CV+0.3SX+SZ
363. 1 1.1 3 1.1 4 0.33 5 1.1
364. LOAD COMB 12 CM+CV-0.3SX-SZ
365. 1 1.1 3 1.1 4 -0.33 5 -1.1
366. LOAD COMB 13 CM+CV+0.3SX-SZ
367. 1 1.1 3 1.1 4 0.33 5 -1.1
368. LOAD COMB 14 CM+CV-0.3SX+SZ
369. 1 1.1 3 1.1 4 -0.33 5 1.1
370. PERFORM ANALYSIS


         P R O B L E M   S T A T I S T I C S
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   NUMBER OF JOINTS        293  NUMBER OF MEMBERS     441
   NUMBER OF PLATES        175  NUMBER OF SOLIDS        0
   NUMBER OF SURFACES        0  NUMBER OF SUPPORTS     64


       SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER


   ORIGINAL/FINAL BAND-WIDTH=   282/    34/    186 DOF
   TOTAL PRIMARY LOAD CASES =     5, TOTAL DEGREES OF FREEDOM =    1374
   SIZE OF STIFFNESS MATRIX =      256 DOUBLE  KILO-WORDS
   REQRD/AVAIL. DISK SPACE  =     18.2/ 167014.5 MB


NUMBER OF MODES REQUESTED              =     6
NUMBER OF EXISTING MASSES IN THE MODEL =   134
NUMBER OF MODES THAT WILL BE USED      =     6

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CALCULATED FREQUENCIES FOR LOAD CASE 4

MODE	FREQUENCY(CYCLES/SEC)	PERIOD(SEC)	ACCURACY
1	6.452	0.15499	3.952E-11
2	6.760	0.14792	8.275E-12
3	7.806	0.12811	8.607E-12
4	8.564	0.11677	3.646E-10
5	9.705	0.10304	9.424E-09
6	10.207	0.09797	2.592E-08

CALCULATED FREQUENCIES FOR LOAD CASE 4

MODE	FREQUENCY(CYCLES/SEC)	PERIOD(SEC)	ACCURACY
7	12.675	0.07890	2.890E-08
8	15.813	0.06324	4.749E-06
9	16.610	0.06020	8.267E-07

C O M P O S I T E D A M P I N G SUMMARY

MODE	STRAIN ENERGY	DAMP*ENERGY	COMPOSITE DAMPING
1	2.887971E+02	1.385806E+01	0.0480
2	3.220788E+02	1.460157E+01	0.0453
3	3.323990E+02	1.610515E+01	0.0485
4	1.852661E+03	7.417604E+01	0.0400
5	5.654070E+03	2.052916E+02	0.0363
6	3.557757E+03	1.212927E+02	0.0341

RESPONSE SPECTRUM LOAD 4

RESPONSE LOAD CASE 4

MODE	MODAL WEIGHT (MODAL MASS TIMES g) IN MTON X	Y	Z	GENERALIZED WEIGHT
1	2.312224E+02	0.000000E+00	4.912513E+00	6.154668E+01
2	3.344533E-01	0.000000E+00	2.485499E+02	6.252594E+01
3	1.037013E+00	0.000000E+00	7.757209E+00	4.840379E+01
4	4.183804E+01	0.000000E+00	1.611470E+02	2.241330E+02
5	3.649332E+02	0.000000E+00	6.600344E+01	5.325507E+02
6	1.232553E+01	0.000000E+00	1.641645E+02	3.029574E+02

CQC MODAL COMBINATION METHOD USED.

DYNAMIC WEIGHT X Y Z	6.562600E+02	0.000000E+00	6.562600E+02 MTON
MISSING WEIGHT X Y Z	-4.569436E+00	0.000000E+00	-3.725455E+00 MTON
MODAL WEIGHT X Y Z	6.516906E+02	0.000000E+00	6.525346E+02 MTON

MODE	ACCELERATION-G	DAMPING
1	0.58110	0.05000
2	0.56097	0.05000
3	0.50517	0.05000
4	0.47366	0.05000
5	0.43590	0.05000
6	0.42208	0.05000

MODAL BASE ACTIONS

MODAL BASE ACTIONS FORCES IN MTON LENGTH IN METE

MODE	PERIOD	FX	FY	FZ	MOMENTS ARE ABOUT THE ORIGIN MX	MY	MZ
1	0.155	134.36	0.00	-19.58	-80.20	3649.41	-680.96
2	0.148	0.19	0.00	5.11	25.46	-79.23	-1.14
3	0.128	0.52	0.00	-1.43	-5.31	135.07	-1.36
4	0.117	19.82	0.00	-38.89	-135.01	2465.98	-61.75
5	0.103	159.07	0.00	67.65	226.09	374.26	-522.87
6	0.098	5.20	0.00	-18.99	-55.32	140.57	-15.38

PARTICIPATION FACTORS

MODE	MASS PARTICIPATION FACTORS IN PERCENT X	Y	Z	SUMM-X	SUMM-Y	SUMM-Z	BASE SHEAR IN MTON X	Y	Z
1	35.23	0.00	0.75	35.233	0.000	0.749	134.36	0.00	0.00
2	0.05	0.00	37.87	35.284	0.000	38.622	0.19	0.00	0.00
3	0.16	0.00	1.18	35.442	0.000	39.804	0.52	0.00	0.00
4	6.38	0.00	24.56	41.818	0.000	64.360	19.82	0.00	0.00
5	55.61	0.00	10.06	97.426	0.000	74.417	159.07	0.00	0.00
6	1.88	0.00	25.02	99.304	0.000	99.432	5.20	0.00	0.00
					TOTAL SRSS SHEAR		209.23	0.00	0.00
					TOTAL 10PCT SHEAR		213.32	0.00	0.00
					TOTAL ABS SHEAR		319.17	0.00	0.00
					TOTAL CQC SHEAR		225.16	0.00	0.00

RESPONSE SPECTRUM LOAD 5

MODE	MODAL WEIGHT (MODAL MASS TIMES g) IN MTON X	Y	Z	GENERALIZED WEIGHT
1	2.312224E+02	0.000000E+00	4.912513E+00	6.154668E+01
2	3.344533E-01	0.000000E+00	2.485499E+02	6.252594E+01
3	1.037013E+00	0.000000E+00	7.757209E+00	4.840379E+01
4	4.183804E+01	0.000000E+00	1.611470E+02	2.241330E+02
5	3.649332E+02	0.000000E+00	6.600344E+01	5.325507E+02
6	1.232553E+01	0.000000E+00	1.641645E+02	3.029574E+02

CQC MODAL COMBINATION METHOD USED.

DYNAMIC WEIGHT X Y Z	6.562600E+02	0.000000E+00	6.562600E+02 MTON
MISSING WEIGHT X Y Z	-4.569436E+00	0.000000E+00	-3.725455E+00 MTON
MODAL WEIGHT X Y Z	6.516906E+02	0.000000E+00	6.525346E+02 MTON

MODE	ACCELERATION-G	DAMPING
1	0.58110	0.05000
2	0.56097	0.05000
3	0.50517	0.05000
4	0.47366	0.05000
5	0.43590	0.05000
6	0.42208	0.05000

MODAL BASE ACTIONS

MODAL BASE ACTIONS FORCES IN MTON LENGTH IN METE

MOMENTS ARE ABOUT THE ORIGIN

MODE	PERIOD	FX	FY	FZ	MX	MY	MZ
1	0.155	-19.58	0.00	2.85	11.69	-531.94	99.26
2	0.148	5.11	0.00	139.43	694.05	-2159.79	-31.18
3	0.128	-1.43	0.00	3.92	14.52	-369.42	3.72
4	0.117	-38.89	0.00	76.33	264.96	-4839.67	121.18
5	0.103	67.65	0.00	28.77	96.15	159.17	-222.37
6	0.098	-18.99	0.00	69.29	201.90	-513.03	56.13

PARTICIPATION FACTORS

	MASS PARTICIPATION FACTORS IN PERCENT						BASE SHEAR IN MTON		
MODE	X	Y	Z	SUMM-X	SUMM-Y	SUMM-Z	X	Y	Z
1	35.23	0.00	0.75	35.233	0.000	0.749	0.00	0.00	2.85
2	0.05	0.00	37.87	35.284	0.000	38.622	0.00	0.00	139.43
3	0.16	0.00	1.18	35.442	0.000	39.804	0.00	0.00	3.92
4	6.38	0.00	24.56	41.818	0.000	64.360	0.00	0.00	76.33
5	55.61	0.00	10.06	97.426	0.000	74.417	0.00	0.00	28.77
6	1.88	0.00	25.02	99.304	0.000	99.432	0.00	0.00	69.29
					TOTAL SRSS	SHEAR	0.00	0.00	175.84
					TOTAL 10PCT	SHEAR	0.00	0.00	190.53
					TOTAL ABS	SHEAR	0.00	0.00	320.59
					TOTAL CQC	SHEAR	0.00	0.00	211.38

371. LOAD LIST 1 TO 6

372. PRINT SUPPORT REACTION

SUPPORT REACTION

SUPPORT REACTIONS -UNIT MTON METE STRUCTURE TYPE = SPACE

JOINT	LOAD	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM Z
8	1	0.29	21.98	0.29	-2.35	-0.02	2.32
	2	-0.04	0.60	-0.04	-0.10	0.00	0.09
	3	-0.02	0.29	-0.03	-0.05	0.00	0.05
	4	6.88	6.59	1.38	0.48	0.06	2.81
	5	2.26	6.76	7.58	3.09	0.05	1.01
	6	0.35	31.79	0.33	-3.46	-0.04	3.41
9	1	0.56	27.24	-0.73	-0.67	-0.05	-0.48
	2	-0.02	0.99	-0.08	-0.08	-0.01	0.04
	3	-0.01	0.49	-0.05	-0.04	0.00	0.03
	4	1.81	0.33	2.36	0.76	0.06	3.05
	5	0.42	0.19	13.46	3.41	0.03	0.71
	6	0.75	39.82	-1.16	-1.08	-0.08	-0.61
10	1	-0.22	28.93	-0.48	-0.30	-0.04	0.53
	2	-0.08	1.12	-0.05	-0.03	0.00	0.12
	3	-0.05	0.56	-0.03	-0.02	0.00	0.07
	4	2.23	0.58	2.22	0.58	0.08	3.71
	5	0.37	0.21	13.90	3.44	0.03	0.64
	6	-0.44	42.42	-0.76	-0.47	-0.07	0.95
11	1	-0.24	25.36	-0.35	2.30	0.03	0.62
	2	-0.09	0.99	-0.01	0.11	0.00	0.14
	3	-0.05	0.50	0.00	0.06	0.00	0.08
	4	2.87	1.76	1.60	0.47	0.03	4.51
	5	0.38	0.43	12.44	3.74	0.04	0.67
	6	-0.48	37.19	-0.51	3.41	0.05	1.10

12	1	-0.08	19.09	0.99	1.08	-0.03	0.34
	2	-0.06	0.89	0.06	0.07	0.00	0.10
	3	-0.04	0.44	0.03	0.04	0.00	0.06
	4	2.65	1.93	0.27	0.42	0.03	4.22
	5	0.52	1.92	2.34	3.63	0.04	0.93
	6	-0.22	28.23	1.48	1.63	-0.04	0.65
13	1	0.71	23.29	0.00	0.17	0.07	-0.67
	2	-0.01	1.04	0.00	0.02	0.01	0.03
	3	-0.01	0.52	0.01	0.02	0.00	0.02
	4	2.06	0.69	0.30	0.47	0.04	3.46
	5	0.81	0.19	2.33	3.67	0.05	1.37
	6	0.97	34.37	0.00	0.28	0.11	-0.89
14	1	0.62	16.85	-0.54	-0.38	0.02	-0.56
	2	0.00	0.65	0.01	0.02	0.00	0.00
	3	0.00	0.33	0.01	0.02	0.00	0.00
	4	2.04	0.38	0.28	0.44	0.02	3.32
	5	1.14	1.20	2.22	3.58	0.06	1.85
	6	0.88	24.70	-0.74	-0.50	0.03	-0.78
34	1	-0.68	29.22	0.91	1.03	0.03	1.80
	2	-0.08	1.09	0.01	0.02	0.00	0.14
	3	-0.05	0.55	0.01	0.01	0.00	0.07
	4	13.03	0.12	0.19	0.32	0.02	3.13

SUPPORT REACTIONS -UNIT MTON METE STRUCTURE TYPE = SPACE

JOINT	LOAD	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM Z
	5	4.39	0.42	1.81	3.07	0.03	1.02
	6	-1.09	42.76	1.29	1.46	0.04	2.76
35	1	1.35	40.51	0.60	0.69	-0.01	-1.49
	2	0.13	1.85	0.08	0.09	0.00	-0.14
	3	0.09	1.06	0.05	0.06	0.00	-0.10
	4	1.04	3.14	0.14	0.23	0.01	2.00
	5	0.27	0.96	1.19	2.21	0.02	0.51
	6	2.11	59.85	0.97	1.11	-0.02	-2.32
36	1	2.61	44.12	-0.07	-0.05	0.00	-2.86
	2	0.28	3.25	-0.01	-0.01	0.00	-0.30
	3	0.19	2.11	-0.01	0.00	0.00	-0.21
	4	0.93	0.72	0.15	0.25	0.01	1.89
	5	0.25	1.12	1.31	2.34	0.02	0.45
	6	4.12	67.30	-0.11	-0.08	0.00	-4.52
37	1	2.48	48.89	0.03	0.04	0.00	-2.70
	2	0.26	2.98	0.00	0.00	0.00	-0.28
	3	0.18	1.93	0.00	0.00	0.00	-0.20
	4	0.92	1.10	0.14	0.24	0.01	1.90
	5	0.29	4.95	1.31	2.33	0.02	0.54
	6	3.92	73.50	0.04	0.06	0.00	-4.26
38	1	2.44	50.27	0.10	0.11	0.00	-2.66
	2	0.26	3.16	0.01	0.01	0.00	-0.28
	3	0.18	2.06	0.01	0.01	0.00	-0.20
	4	1.00	1.33	0.14	0.24	0.01	2.00
	5	0.37	4.81	1.33	2.36	0.02	0.72

	6	3.86	75.76	0.15	0.18	0.00	-4.20
39	1	1.88	45.05	-0.55	-0.60	0.01	3.09
	2	0.15	1.84	-0.07	-0.08	0.00	0.13
	3	0.10	1.06	-0.05	-0.06	0.00	0.06
	4	5.91	9.82	0.12	0.22	0.02	2.11
	5	2.68	3.29	1.13	2.18	0.03	0.95
	6	2.88	66.21	-0.89	-0.98	0.01	4.55
40	1	0.34	24.26	-0.79	-0.86	-0.06	-0.24
	2	0.02	1.10	0.00	0.00	0.00	-0.02
	3	0.01	0.55	0.00	0.00	0.00	-0.01
	4	2.25	0.24	0.19	0.33	0.03	3.53
	5	1.25	0.54	1.89	3.20	0.04	1.95
	6	0.51	35.84	-1.12	-1.21	-0.09	-0.37
78	1	-0.84	28.49	0.34	0.41	0.04	-3.71
	2	-0.07	1.25	-0.01	-0.02	0.00	-0.17
	3	-0.04	0.63	0.00	-0.01	0.00	-0.08
	4	7.91	5.00	0.27	0.46	0.02	3.09
	5	2.69	1.81	1.83	3.11	0.06	1.09
	6	-1.29	42.01	0.45	0.54	0.06	-5.47
79	1	-0.45	43.36	1.41	1.58	0.01	0.52
	2	-0.03	3.13	0.18	0.20	0.00	0.04
	3	-0.02	2.01	0.12	0.14	0.00	0.03
	4	1.27	0.12	0.16	0.28	0.01	2.24
	5	0.31	0.58	1.08	2.08	0.02	0.56
	6	-0.69	66.03	2.27	2.55	0.01	0.79
80	1	-1.39	46.09	-0.42	-0.43	0.00	1.53
	2	-0.14	4.71	-0.04	-0.04	0.00	0.15
	3	-0.10	3.29	-0.03	-0.03	0.00	0.11
	4	1.42	0.28	0.17	0.30	0.01	2.42
	5	0.30	0.57	1.47	2.50	0.02	0.51
	6	-2.19	72.54	-0.66	-0.68	0.00	2.40
81	1	-0.61	62.30	0.02	0.04	0.00	0.69

	2	-0.07	4.56	0.00	0.00	0.00	0.08
	3	-0.05	3.19	0.00	0.00	0.00	0.05
	4	1.41	0.41	0.21	0.34	0.01	2.26
	5	0.48	3.73	1.05	1.95	0.02	0.74
	6	-0.97	94.98	0.04	0.07	0.00	1.10
82	1	-0.66	64.24	0.20	0.22	0.00	0.74
	2	-0.08	4.81	0.02	0.02	0.00	0.09
	3	-0.05	3.36	0.02	0.02	0.00	0.06
	4	1.38	0.32	0.21	0.34	0.02	2.23
	5	0.68	3.55	1.10	2.00	0.02	1.04
	6	-1.05	98.10	0.31	0.35	0.00	1.19
83	1	-1.35	47.80	-1.02	-1.12	0.00	-4.31
	2	-0.11	3.06	-0.14	-0.16	0.00	-0.22
	3	-0.07	1.96	-0.10	-0.11	0.00	-0.13
	4	6.28	5.93	0.15	0.27	0.02	2.67
	5	2.73	2.45	1.18	2.21	0.03	1.16
	6	-2.08	72.13	-1.67	-1.83	0.01	-6.41
84	1	-0.39	25.24	-0.25	-0.27	0.01	0.42
	2	-0.02	1.22	0.02	0.03	0.00	0.03
	3	-0.01	0.61	0.01	0.01	0.00	0.01
	4	2.13	0.05	0.22	0.37	0.04	3.40
	5	1.17	0.39	1.86	3.15	0.04	1.86
	6	-0.59	37.41	-0.31	-0.33	0.02	0.63
114	1	-0.11	23.11	0.08	0.17	0.00	0.13
	2	-0.01	1.11	-0.03	-0.02	0.00	0.01
	3	0.00	0.55	-0.01	-0.01	0.00	0.01
	4	1.93	0.11	0.32	0.54	0.03	3.04
	5	0.71	0.28	1.76	3.00	0.03	1.11
	6	-0.17	34.23	0.07	0.19	0.00	0.20
115	1	-0.57	36.29	1.04	1.25	-0.01	0.66
	2	-0.08	1.81	0.11	0.13	0.00	0.09
	3	-0.05	1.06	0.08	0.09	0.00	0.06

	4	1.14	1.30	0.20	0.38	0.02	2.09
	5	0.27	1.19	1.13	2.14	0.02	0.51
	6	-0.93	53.88	1.65	1.96	-0.01	1.07
116	1	-1.09	36.01	-0.22	-0.19	0.00	1.19
	2	-0.14	2.59	-0.02	-0.02	0.00	0.16
	3	-0.10	1.67	-0.01	-0.01	0.00	0.11
	4	1.19	0.98	0.26	0.44	0.03	2.16
	5	0.24	1.17	1.27	2.28	0.02	0.46
	6	-1.76	54.81	-0.35	-0.30	0.00	1.93
117	1	-1.85	45.58	0.07	0.10	0.00	2.05
	2	-0.20	2.78	0.00	0.00	0.00	0.22
	3	-0.14	1.78	0.00	0.00	0.00	0.15
	4	1.26	2.66	0.26	0.45	0.02	2.24
	5	0.27	5.20	1.27	2.27	0.02	0.52
	6	-2.93	68.53	0.10	0.15	0.00	3.25
118	1	-1.79	45.04	0.11	0.12	0.00	1.99
	2	-0.19	2.73	0.01	0.01	0.00	0.21
	3	-0.13	1.77	0.01	0.01	0.00	0.15
	4	1.29	2.75	0.25	0.43	0.01	2.30
	5	0.35	5.54	1.28	2.28	0.02	0.69
	6	-2.83	67.70	0.17	0.19	0.00	3.15
119	1	-0.90	36.98	-0.53	-0.60	0.00	1.01
	2	-0.09	1.79	-0.07	-0.08	0.00	0.10
	3	-0.06	1.04	-0.05	-0.05	0.00	0.07
	4	1.23	1.61	0.23	0.41	0.02	2.26
	5	0.49	1.34	1.09	2.09	0.02	0.94
	6	-1.40	54.81	-0.85	-0.97	-0.01	1.58
120	1	0.02	22.70	-0.06	-0.11	0.00	-0.03
	2	0.00	1.09	0.03	0.03	0.00	-0.01
	3	0.00	0.55	0.01	0.01	0.00	0.00
	4	2.31	0.55	0.30	0.50	0.02	3.55
	5	1.30	0.38	1.71	2.95	0.03	1.99

	6	0.04	33.63	-0.04	-0.11	-0.01	-0.05
150	1	0.06	23.09	0.08	0.17	0.00	-0.05
	2	0.00	1.11	-0.03	-0.03	0.00	0.00
	3	0.00	0.55	-0.01	-0.01	0.00	0.00
	4	1.94	0.05	0.44	0.75	0.04	3.05
	5	0.74	0.22	1.69	2.91	0.04	1.17
	6	0.08	34.21	0.06	0.19	0.01	-0.07
151	1	0.00	32.18	0.16	0.22	0.01	-0.01
	2	0.00	1.36	0.01	0.01	0.00	0.00
	3	0.00	0.68	0.00	0.00	0.00	0.00
	4	0.61	0.94	0.20	0.44	0.02	1.42
	5	0.17	1.96	0.78	1.71	0.02	0.39
	6	0.00	47.37	0.23	0.32	0.01	-0.03
152	1	-0.62	40.15	-0.82	-1.37	0.09	0.54
	2	0.04	1.63	-0.03	-0.08	0.01	-0.08
	3	0.03	0.79	-0.01	-0.04	0.01	-0.05
	4	8.34	3.39	2.60	4.74	0.47	15.82
	5	1.88	3.78	9.26	17.57	0.40	3.51
	6	-0.79	58.98	-1.20	-2.04	0.14	0.62
153	1	-0.31	25.77	0.10	0.20	0.00	-0.31
	2	0.08	1.09	0.00	0.00	0.00	-0.17
	3	0.05	0.55	0.00	0.00	0.00	-0.10
	4	7.15	3.18	2.27	4.33	0.40	15.49
	5	1.65	0.49	8.93	17.19	0.79	3.83
	6	-0.29	37.94	0.14	0.27	-0.01	-0.72
154	1	-0.57	40.04	1.04	1.77	-0.08	0.39
	2	0.04	1.56	0.03	0.07	-0.01	-0.07
	3	0.02	0.75	0.02	0.04	-0.01	-0.05
	4	10.00	5.59	2.38	4.18	0.35	18.18
	5	3.42	4.14	9.08	17.17	0.28	6.35
	6	-0.74	58.71	1.50	2.60	-0.13	0.42

155	1	0.01	32.05	-0.15	-0.20	0.00	-0.04
	2	0.00	1.37	-0.01	-0.01	0.00	-0.01
	3	0.00	0.68	0.00	0.00	0.00	0.00
	4	0.66	0.75	0.18	0.39	0.02	1.54
	5	0.33	0.85	0.81	1.72	0.02	0.75
	6	0.02	47.20	-0.23	-0.29	-0.01	-0.07
156	1	0.15	25.29	-0.46	-1.10	0.06	-0.37
	2	0.03	1.10	0.04	0.02	0.01	-0.06
	3	0.02	0.55	0.02	0.02	0.01	-0.04
	4	8.72	0.85	1.45	3.38	0.75	17.25
	5	5.06	1.61	6.11	14.28	0.60	10.00
	6	0.25	37.29	-0.59	-1.51	0.10	-0.61
179	1	0.02	25.67	0.18	0.28	-0.02	2.02
	2	0.01	1.12	-0.02	-0.02	0.00	0.09
	3	0.01	0.56	-0.01	-0.01	0.00	0.05
	4	7.39	5.09	0.60	1.04	0.05	3.19
	5	2.98	2.02	1.69	2.92	0.06	1.26
	6	0.03	37.84	0.22	0.35	-0.03	2.99
180	1	0.00	30.26	-0.02	-0.03	0.00	0.00
	2	0.00	1.35	0.00	-0.01	0.00	0.00
	3	0.00	0.68	0.00	0.00	0.00	0.00
	4	0.64	0.67	0.29	0.62	0.01	1.45
	5	0.17	1.58	0.81	1.75	0.02	0.39
	6	0.00	44.66	-0.03	-0.05	0.00	-0.01
181	1	0.30	25.37	-0.88	-1.72	-0.02	-0.52
	2	0.04	1.12	-0.02	-0.10	0.00	-0.07
	3	0.03	0.56	-0.01	-0.05	0.00	-0.05
	4	8.13	0.42	2.29	5.31	0.51	15.52
	5	1.78	1.40	6.34	14.75	0.37	3.38
	6	0.49	37.42	-1.27	-2.58	-0.02	-0.85

182	1	0.34	25.35	0.93	1.84	0.04	-0.62
	2	0.03	1.11	0.00	0.04	0.01	-0.05
	3	0.02	0.55	0.00	0.02	0.00	-0.03
	4	8.69	0.31	1.85	4.30	0.61	16.71
	5	3.42	1.18	5.86	13.61	0.33	6.57
	6	0.53	37.38	1.30	2.64	0.07	-0.96
183	1	0.01	29.48	0.01	0.02	0.00	-0.03
	2	0.00	1.31	0.00	0.00	0.00	0.00
	3	0.00	0.65	0.00	0.00	0.00	0.00
	4	0.69	0.49	0.25	0.53	0.01	1.57
	5	0.34	0.42	0.79	1.67	0.02	0.78
	6	0.02	43.49	0.01	0.03	0.00	-0.05
184	1	0.32	25.48	-0.71	-1.41	0.05	-0.65
	2	0.05	1.12	0.01	-0.02	0.01	-0.10
	3	0.04	0.56	0.01	-0.01	0.01	-0.07
	4	9.06	0.41	1.83	4.29	0.59	17.36
	5	5.34	1.39	5.69	13.37	0.55	10.25
	6	0.54	37.58	-0.97	-2.01	0.08	-1.08
204	1	0.14	25.63	0.10	0.19	0.01	-2.09
	2	0.01	1.10	-0.03	-0.03	0.00	-0.10
	3	0.01	0.55	-0.01	-0.01	0.00	-0.05
	4	7.38	5.28	0.78	1.34	0.02	3.04
	5	2.98	2.16	1.77	3.03	0.05	1.25
	6	0.22	37.76	0.09	0.22	0.02	-3.10
205	1	0.02	32.50	0.16	0.22	-0.01	-0.02
	2	0.00	1.41	0.01	0.01	0.00	0.00
	3	0.00	0.70	0.00	0.00	0.00	0.00
	4	0.61	1.28	0.35	0.76	0.02	1.41
	5	0.18	2.80	0.78	1.71	0.02	0.40
	6	0.03	47.88	0.24	0.33	-0.02	-0.04

206	1	0.90	41.19	-0.94	-1.48	-0.04	-1.40
	2	0.05	1.82	-0.06	-0.11	0.00	-0.09
	3	0.03	0.91	-0.03	-0.06	0.00	-0.05
	4	8.35	0.88	3.85	7.36	0.31	15.84
	5	1.94	2.52	8.95	17.02	0.36	3.53
	6	1.34	60.76	-1.40	-2.26	-0.06	-2.12
207	1	0.78	25.39	-0.12	-0.23	-0.02	-1.48
	2	0.01	1.12	-0.03	-0.06	-0.01	-0.06
	3	0.00	0.56	-0.02	-0.03	0.00	-0.03
	4	6.09	1.26	3.65	6.99	0.10	14.11
	5	1.72	0.37	8.49	16.27	0.44	3.99
	6	1.10	37.45	-0.22	-0.42	-0.04	-2.16
208	1	0.90	41.21	0.54	0.86	0.01	-1.38
	2	0.01	1.75	-0.03	-0.04	0.00	-0.04
	3	0.00	0.85	-0.02	-0.03	0.00	-0.01
	4	9.17	1.27	3.57	6.71	0.30	17.11
	5	3.44	2.45	8.39	15.99	0.29	6.66
	6	1.27	60.66	0.70	1.14	0.01	-2.00
209	1	0.86	44.69	0.78	-6.26	0.04	6.14
	2	0.05	1.93	0.04	-0.36	0.00	0.34
	3	0.03	1.11	0.02	-0.23	0.00	0.22
	4	3.38	3.33	2.78	0.46	0.04	1.79
	5	2.26	4.94	2.77	1.19	0.05	1.10
	6	1.29	65.85	1.15	-9.37	0.06	9.17
210	1	0.38	25.42	-2.12	-2.74	0.28	-0.80
	2	0.05	1.07	-0.08	-0.14	0.03	-0.13
	3	0.05	0.55	-0.05	-0.09	0.02	-0.10
	4	8.54	0.61	2.20	5.15	0.63	16.68
	5	5.24	1.55	5.46	12.75	0.60	10.09
	6	0.63	37.41	-3.10	-4.07	0.45	-1.34

235	1	-0.08	25.01	0.84	0.96	-0.06	2.18
	2	0.00	1.03	0.01	0.01	0.00	0.07
	3	0.00	0.52	0.00	0.01	0.00	0.03
	4	7.18	4.98	0.94	1.61	0.05	3.00
	5	2.96	2.12	1.89	3.23	0.08	1.18
	6	-0.12	36.76	1.19	1.36	-0.09	3.17
236	1	-0.02	40.13	0.02	0.03	0.00	0.04
	2	0.00	1.59	0.00	0.00	0.00	0.00
	3	0.00	0.79	0.00	0.00	0.00	0.00
	4	0.65	0.20	0.39	0.88	0.01	1.48
	5	0.18	0.28	0.80	1.79	0.02	0.40
	6	-0.04	58.88	0.03	0.04	0.00	0.06
237	1	-0.17	32.75	-0.02	-0.03	0.01	0.24
	2	-0.01	1.43	0.00	0.00	0.00	0.01
	3	0.00	0.71	0.00	0.00	0.00	0.01
	4	0.72	2.07	0.36	0.83	0.02	1.57
	5	0.16	1.12	0.71	1.65	0.03	0.35
	6	-0.25	48.28	-0.03	-0.04	0.02	0.36
238	1	0.00	30.16	-0.01	-0.02	0.00	0.01
	2	0.00	1.34	0.00	0.00	0.00	0.00
	3	0.00	0.67	0.00	0.00	0.00	0.00
	4	0.77	1.63	0.37	0.83	0.02	1.67
	5	0.22	0.61	0.74	1.69	0.02	0.47
	6	0.01	44.50	-0.01	-0.03	0.00	0.01
239	1	-0.15	32.01	-0.02	-0.04	-0.01	0.22
	2	-0.01	1.31	0.00	-0.01	0.00	0.01
	3	0.00	0.64	0.00	0.00	0.00	0.01
	4	0.75	1.90	0.35	0.82	0.01	1.64
	5	0.30	1.22	0.72	1.65	0.02	0.67
	6	-0.23	47.05	-0.03	-0.07	-0.02	0.33

240	1	-0.15	41.17	0.32	0.46	-0.01	0.21
	2	0.00	2.88	0.06	0.09	0.00	0.00
	3	0.00	1.87	0.05	0.07	0.00	0.00
	4	0.71	0.93	0.37	0.84	0.02	1.61
	5	0.37	0.85	0.75	1.68	0.03	0.87
	6	-0.21	62.53	0.55	0.80	-0.01	0.30
241	1	-1.19	46.92	-1.41	0.87	0.15	-1.47
	2	-0.05	2.52	-0.09	-0.01	0.01	-0.08
	3	-0.02	1.69	-0.06	-0.02	0.01	-0.05
	4	7.47	0.79	5.84	1.28	0.03	2.82
	5	4.93	0.46	5.14	2.53	0.06	1.44
	6	-1.74	69.97	-2.12	1.21	0.23	-2.20
262	1	-0.60	19.68	0.83	0.79	0.04	-1.90
	2	0.00	0.65	0.01	0.01	0.00	-0.07
	3	0.01	0.32	0.01	0.01	0.00	-0.04
	4	7.04	5.96	1.23	2.02	0.01	3.00
	5	2.86	2.24	2.31	3.77	0.03	1.28
	6	-0.84	28.66	1.19	1.12	0.06	-2.78
263	1	-0.85	22.64	0.01	-0.04	0.01	0.98
	2	-0.01	1.02	0.01	0.00	0.00	0.01
	3	0.00	0.51	0.00	0.00	0.00	0.01
	4	1.60	0.25	1.38	2.15	0.03	2.70
	5	0.47	0.33	2.54	3.97	0.05	0.78
	6	-1.20	33.42	0.03	-0.06	0.02	1.39
264	1	-0.13	23.06	-0.04	-0.07	0.01	0.24
	2	0.02	1.11	-0.01	-0.01	0.00	-0.02
	3	0.01	0.56	0.00	0.00	0.00	-0.01
	4	1.59	0.24	1.33	2.10	0.04	2.72
	5	0.36	0.10	2.46	3.88	0.06	0.61
	6	-0.13	34.18	-0.07	-0.12	0.02	0.30

265	1	-0.20	23.09	-0.09	-0.12	-0.01	0.32
	2	0.02	1.11	-0.01	-0.01	0.00	-0.01
	3	0.01	0.55	0.00	0.00	0.00	-0.01
	4	1.59	0.24	1.34	2.11	0.04	2.74
	5	0.46	0.07	2.47	3.89	0.06	0.78
	6	-0.26	34.21	-0.14	-0.18	-0.01	0.42
266	1	-0.07	23.72	0.14	0.11	0.01	0.16
	2	0.02	1.14	0.01	0.01	0.00	-0.02
	3	0.01	0.57	0.01	0.01	0.00	-0.01
	4	1.65	0.22	1.33	2.10	0.04	2.83
	5	0.69	0.17	2.46	3.87	0.05	1.17
	6	-0.05	35.15	0.21	0.16	0.02	0.19
267	1	-0.24	26.42	-0.40	-4.23	-0.17	0.35
	2	0.00	1.35	-0.01	-0.30	-0.01	0.00
	3	0.00	0.84	0.01	-0.19	-0.01	0.00
	4	1.86	3.69	3.77	1.88	0.04	3.06
	5	1.02	6.57	7.04	3.48	0.08	1.68
	6	-0.32	39.28	-0.58	-6.43	-0.27	0.50
268	1	-1.15	28.24	-0.09	0.99	0.00	1.70
	2	-0.14	1.71	-0.03	0.09	0.00	0.21
	3	-0.10	1.19	-0.02	0.06	0.00	0.15
	4	0.67	0.67	5.31	1.26	0.02	1.63
	5	0.55	0.76	10.07	2.42	0.04	1.30
	6	-1.85	42.43	-0.17	1.54	0.00	2.74
269	1	-0.86	19.50	-1.39	6.21	-0.02	-4.24
	2	-0.08	0.63	-0.13	0.42	0.00	-0.29
	3	-0.06	0.44	-0.09	0.29	0.00	-0.20
	4	3.26	5.15	3.89	0.78	0.03	2.09
	5	2.44	8.41	6.50	1.50	0.04	2.16
	6	-1.34	28.37	-2.16	9.41	-0.03	-6.42

292	1	-0.01	9.05	-0.42	0.73	0.06	0.33
	2	-0.04	0.27	0.00	0.04	0.01	0.08
	3	-0.02	0.13	0.00	0.03	0.00	0.05
	4	1.89	0.84	0.76	0.41	0.06	3.68
	5	0.38	4.62	6.46	3.61	0.05	0.79
	6	-0.08	13.13	-0.59	1.09	0.09	0.60

********** END OF LATEST ANALYSIS RESULT **********

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373. LOAD LIST 6 TO 14
374. START CONCRETE DESIGN
----------------------------CONCRETE DESIGN-----------------------------------
375. CODE ACI
376. FC 2500 MEMB 1 TO 222 224 TO 306 308 TO 439 446 448 450 452 462 464 466 468 -
377. 473 475 476 478 483 485 486 490 492 493 496 500 502 505 511 519 527 531 535 -
378. 605 606
379. FYSEC 42000 MEMB 1 TO 29 31 32 34 39 41 43 46 47 50 TO 73 75 TO 83 89 TO 97 -
380. 110 111 117 118 122 TO 131 133 TO 139 145 TO 153 166 167 173 174 178 TO 187 -
381. 189 TO 199 203 205 210 TO 212 214 215 217 TO 219 229 TO 234 237 TO 248 250 -
382. 252 TO 266 271 TO 296 301 TO 306 308 TO 335 339 TO 342 347 352 TO 355 357 -
383. 358 360 361 365 TO 374 376 TO 383 386 387 389 TO 391 395 397 399 401 402 -
384. 405 406 408 411 TO 430 432 434 TO 439 605 606
385. DESIGN COLUMN 8 TO 14 54 TO 60 69 TO 73 84 85 122 TO 128 138 TO 141 -
386. 178 TO 184 194 TO 198 207 208 239 TO 245 277 TO 282 310 TO 316 365 TO 371 -
387. 374 411 TO 418 429 606
=============================================================================
     COLUMN  NO.     8  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
-------------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
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     COLUMN  NO.     9  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.    10  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM
BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
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     COLUMN  NO.    11  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


======================================================================

     COLUMN  NO.    12  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
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COLUMN NO. 13 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED

ONLY MINIMUM STEEL IS REQUIRED.

AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	6	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)

TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 14 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED

ONLY MINIMUM STEEL IS REQUIRED.

AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	6	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)

TIE BAR NUMBER 12 SPACING 256.00 MM

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======================================================================

     COLUMN  NO.    54  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.    55  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
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=====================================================================

     COLUMN  NO.    56  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.    57  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM
BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.    58  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


======================================================================

     COLUMN  NO.    59  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.    60  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.    69  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.    70  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  2272.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 12 - 16 MM               1.508        8      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
=====================================================================

     COLUMN  NO.    71  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  1712.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 16 - 12 MM               1.131        8      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 192.00 MM


=====================================================================
```

COLUMN NO. 72 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2048.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	8	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 73 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	6	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 84 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED

AREA OF STEEL REQUIRED = 5744.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 25 MM	3.682	8	STA	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)

TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 85 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED

AREA OF STEEL REQUIRED = 6528.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
16 - 25 MM	4.909	12	STA	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)

TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 122 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	6	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 123 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7 FC - 24.5 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	6	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

```
=====================================================================

     COLUMN  NO.   124  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   125  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   126  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   127  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   128  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   138  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  1824.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  4 - 25 MM               1.227        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 400.00 MM
```

```
======================================================================

     COLUMN  NO.   139  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------
  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


======================================================================

     COLUMN  NO.   140  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  4288.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  4 - 40 MM               3.142        7      STA     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   141  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  3840.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 25 MM               2.454        7      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


======================================================================

     COLUMN  NO.   178  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   179  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM

=====================================================================

     COLUMN  NO.   180  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   181  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
=====================================================================

     COLUMN  NO.   182  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   183  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM

======================================================================

     COLUMN  NO.   184  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   194  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


======================================================================

     COLUMN  NO.   195  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM
BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   196  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  2048.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 20 - 12 MM               1.414        8      STA     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 192.00 MM


=====================================================================

     COLUMN  NO.   197  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  2272.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 12 - 16 MM               1.508        8      STA     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   198  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   207  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  6752.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 16 - 25 MM               4.909       11      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   208  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  6304.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 32 MM               4.021       11      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.   239  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   240  DESIGN PER ACI 318-08 - AXIAL + BENDING



FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.   241  DESIGN PER ACI 318-08 - AXIAL + BENDING



FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   242  DESIGN PER ACI 318-08 - AXIAL + BENDING



FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        AREA OF STEEL REQUIRED =  4727.1  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  6 - 32 MM               1.092       11      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM

=====================================================================

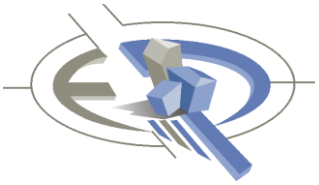
     COLUMN  NO.   243  DESIGN PER ACI 318-08 - AXIAL + BENDING



FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
```



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=====================================================================

     COLUMN  NO.   244  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
-------------------------------------------------------------
  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   245  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
-------------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   277  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM

======================================================================

     COLUMN  NO.   278  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   279  DESIGN PER ACI 318-08 - AXIAL + BENDING



FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
-------------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
=====================================================================

     COLUMN  NO.   280  DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
-------------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   281  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   282  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   310  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.   311  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   312  DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM

=====================================================================

     COLUMN  NO.   313  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   314  DESIGN PER ACI 318-08 - AXIAL + BENDING



FY - 413.7  FC -  24.5 MPA,  CIRC SIZE  750.0 MMS DIAMETER  TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  4417.9  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

 22 - 16 MM               1.001        6      END     0.650
(EQUALLY SPACED)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.   315  DESIGN PER ACI 318-08 - AXIAL + BENDING



FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   316  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   365  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   366  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.   367  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   368  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.   369  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   370  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   371  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   374  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        AREA OF STEEL REQUIRED =  2496.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 20 MM               1.571        6      STA     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 320.00 MM


=====================================================================

     COLUMN  NO.   411  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   412  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
======================================================================

     COLUMN  NO.   413  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   414  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


=====================================================================

     COLUMN  NO.   415  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM
BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
---------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   416  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


======================================================================

     COLUMN  NO.   417  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
======================================================================

     COLUMN  NO.   418  DESIGN PER ACI 318-08 - AXIAL + BENDING
FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


======================================================================

     COLUMN  NO.   429  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
----------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM
```

```
=====================================================================

     COLUMN  NO.   606  DESIGN PER ACI 318-08 - AXIAL + BENDING


FY - 413.7  FC -  24.5 MPA,  SQRE SIZE - 400.0 X 400.0 MMS, TIED
        ONLY MINIMUM STEEL IS REQUIRED.
        AREA OF STEEL REQUIRED =  1600.0  SQ. MM

BAR CONFIGURATION       REINF PCT.   LOAD   LOCATION   PHI
-------------------------------------------------------------

  8 - 16 MM               1.005        6      END     0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER   12 SPACING 256.00 MM


********************END OF COLUMN DESIGN RESULTS********************
388. DESIGN BEAM 1 TO 7 15 TO 29 31 32 34 39 41 43 46 47 50 TO 53 61 TO 68 -
389. 74 TO 83 86 89 TO 91 95 TO 97 110 TO 112 116 TO 118 129 TO 137 142 TO 153 -
390. 155 TO 157 164 TO 174 176 177 185 TO 193 199 TO 206 209 TO 212 214 215 217 -
391. 218 TO 219 223 229 TO 234 237 238 246 TO 266 271 TO 276 283 TO 296 -
392. 301 TO 309 317 TO 335 339 TO 342 347 352 TO 355 357 358 360 TO 362 364 372 -
393. 373 375 TO 387 389 TO 391 395 397 399 401 402 404 TO 406 408 410 419 TO 428 -
394. 430 TO 439 605
```

```
=====================================================================

       BEAM  NO.     1 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN -  1431. MM  FY -  414.  FC -  25.  MPA, SIZE -  300. X  600. MMS

LEVEL    HEIGHT     BAR INFO       FROM          TO           ANCHOR

          (MM)                     (MM)         (MM)         STA  END

_____________________________________________________________________


  1         57.     2 - 12MM         0.          146.        YES  NO

  2        543.     2 - 12MM         0.         1431.        YES  YES


        B E A M  N O.   1  D E S I G N  R E S U L T S - SHEAR


 AT START SUPPORT - Vu=   20.88 KNS  Vc=  127.49 KNS  Vs=    0.00 KNS

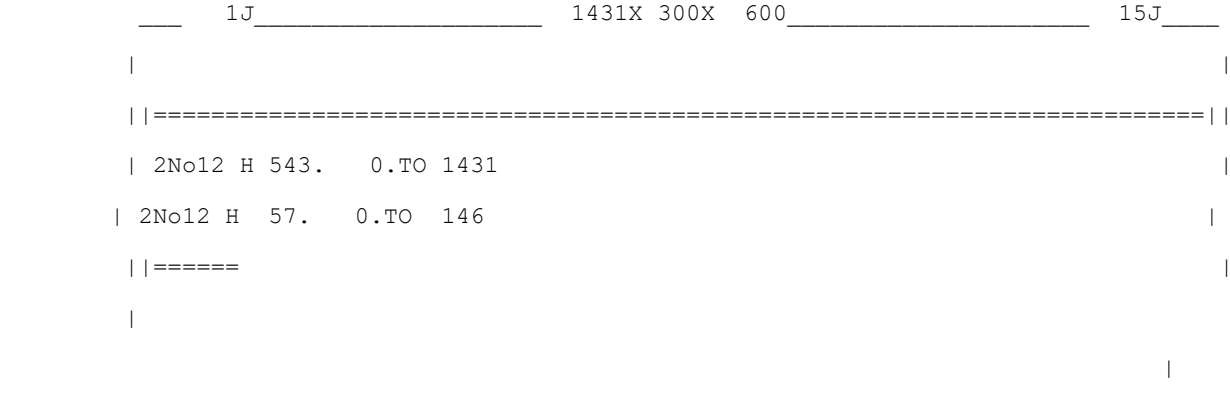
 Tu=    0.33 KN-MET  Tc=    5.3 KN-MET  Ts=    0.0 KN-MET  LOAD     6

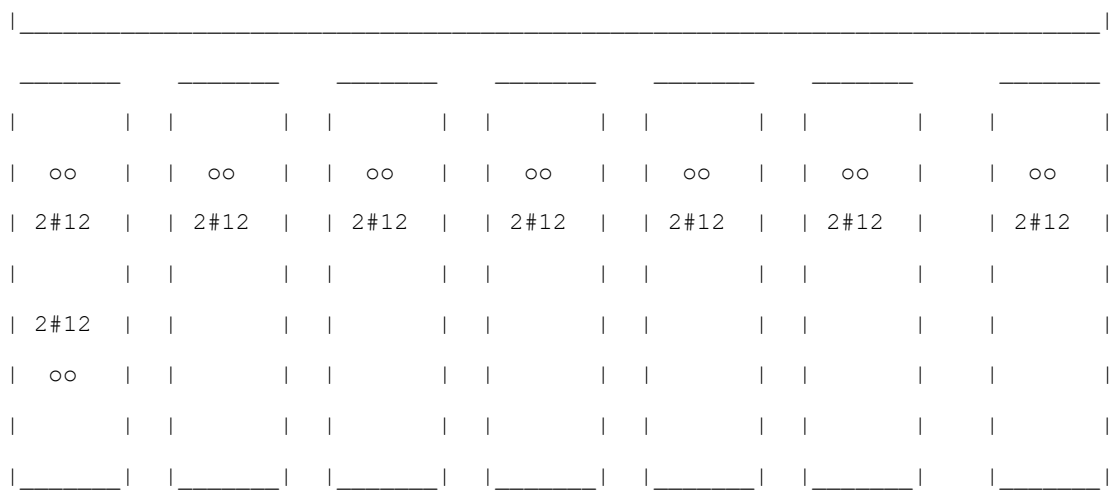
                  STIRRUPS ARE NOT REQUIRED.

 AT END   SUPPORT - Vu=   22.98 KNS  Vc=  127.42 KNS  Vs=    0.00 KNS

 Tu=    0.33 KN-MET  Tc=    5.2 KN-MET  Ts=    0.0 KN-MET  LOAD     6

                  STIRRUPS ARE NOT REQUIRED.
```



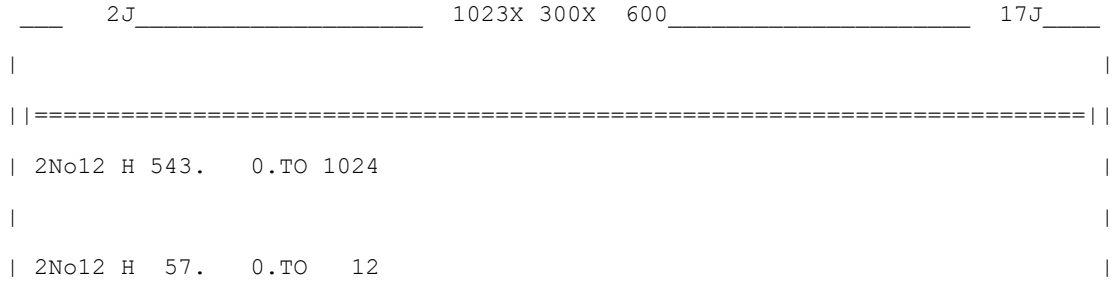


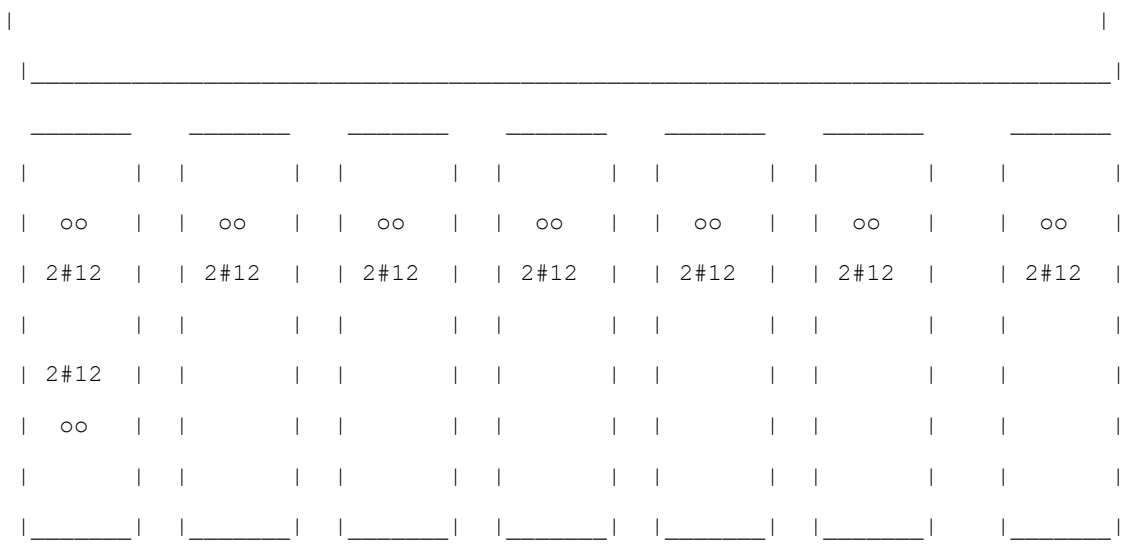
BEAM NO. 2 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	0.	12.	YES	NO
2	543.	2 - 12MM	0.	1024.	YES	YES

B E A M N O. 2 D E S I G N R E S U L T S - SHEAR



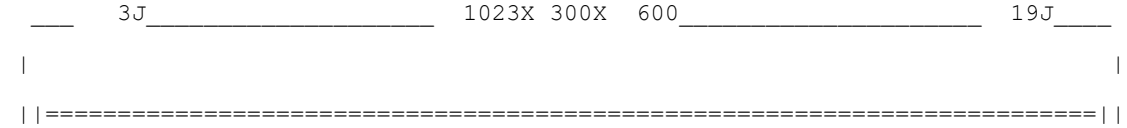


BEAM NO. 3 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	0.	2.	YES	NO
2	543.	2 - 12MM	0.	1024.	YES	YES

B E A M N O. 3 D E S I G N R E S U L T S - SHEAR



```
 | 2No12 H 543.   0.TO 1024                                                    |
 |                                                                             |
 | 2No12 H  57.   0.TO    2                                                    |
|                                                                               |
 |_____________________________________________________________________________|

  _______    _______    _______    _______    _______    _______      _______
 |       |  |       |  |       |  |       |  |       |  |       |    |       |
 |  oo   |  |  oo   |  |  oo   |  |  oo   |  |  oo   |  |  oo   |    |  oo   |
 | 2#12  |  | 2#12  |  | 2#12  |  | 2#12  |  | 2#12  |  | 2#12  |    | 2#12  |
 |       |  |       |  |       |  |       |  |       |  |       |    |       |
 | 2#12  |  |       |  |       |  |       |  |       |  |       |    |       |
 |  oo   |  |       |  |       |  |       |  |       |  |       |    |       |
 |       |  |       |  |       |  |       |  |       |  |       |    |       |
 |_______|  |_______|  |_______|  |_______|  |_______|  |_______|    |_______|
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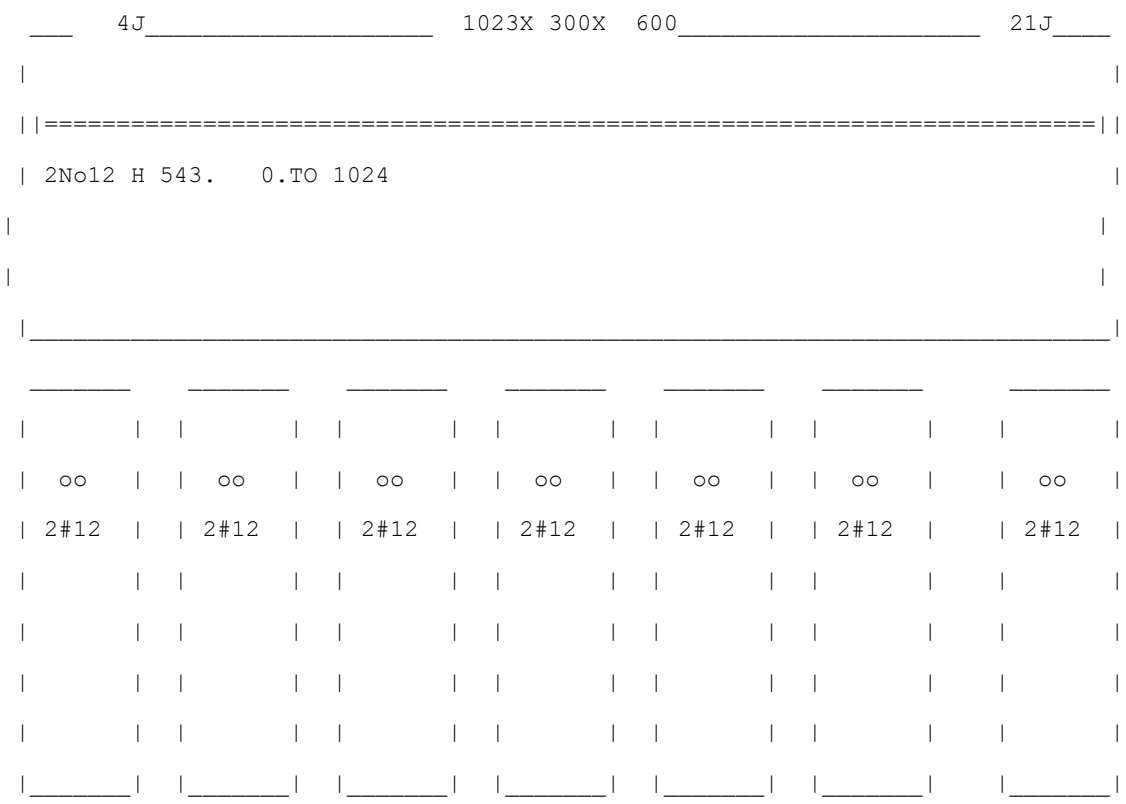
BEAM NO. 4 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	543.	2 - 12MM	0.	1024.	YES	YES

B E A M N O. 4 D E S I G N R E S U L T S - SHEAR

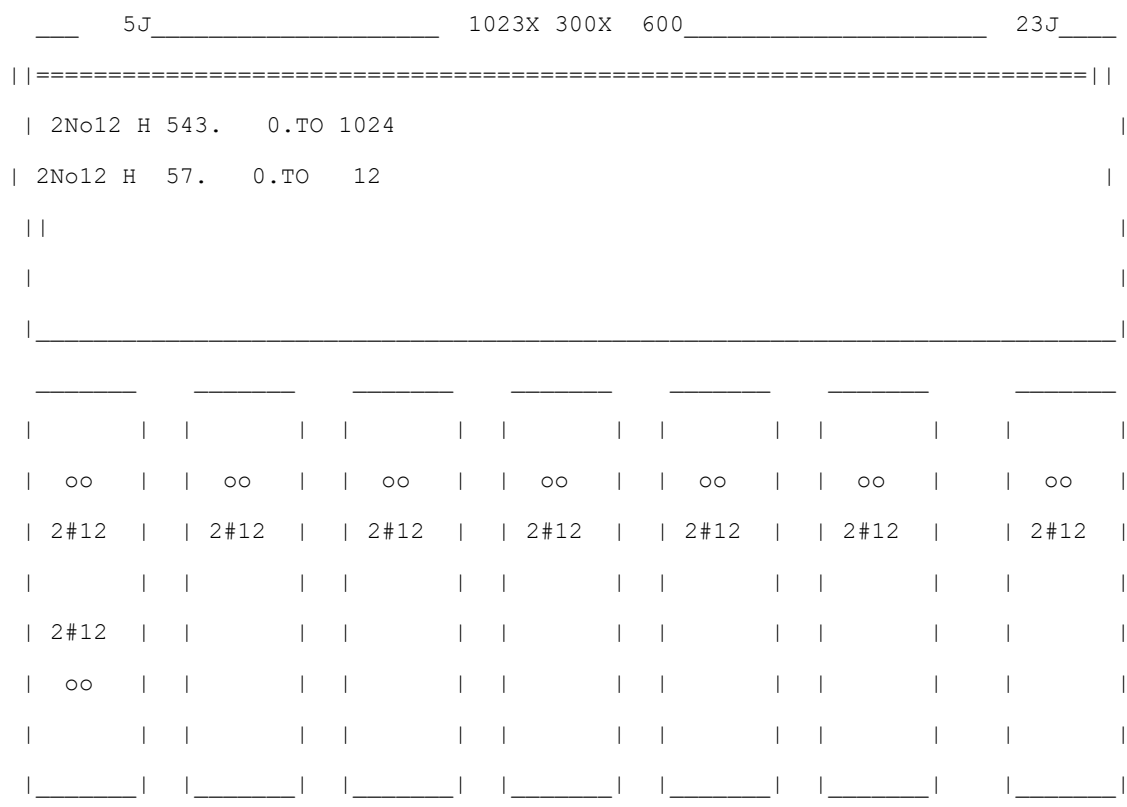


BEAM NO. 5 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	0.	12.	YES	NO
2	543.	2 - 12MM	0.	1024.	YES	YES

B E A M N O. 5 D E S I G N R E S U L T S - SHEAR

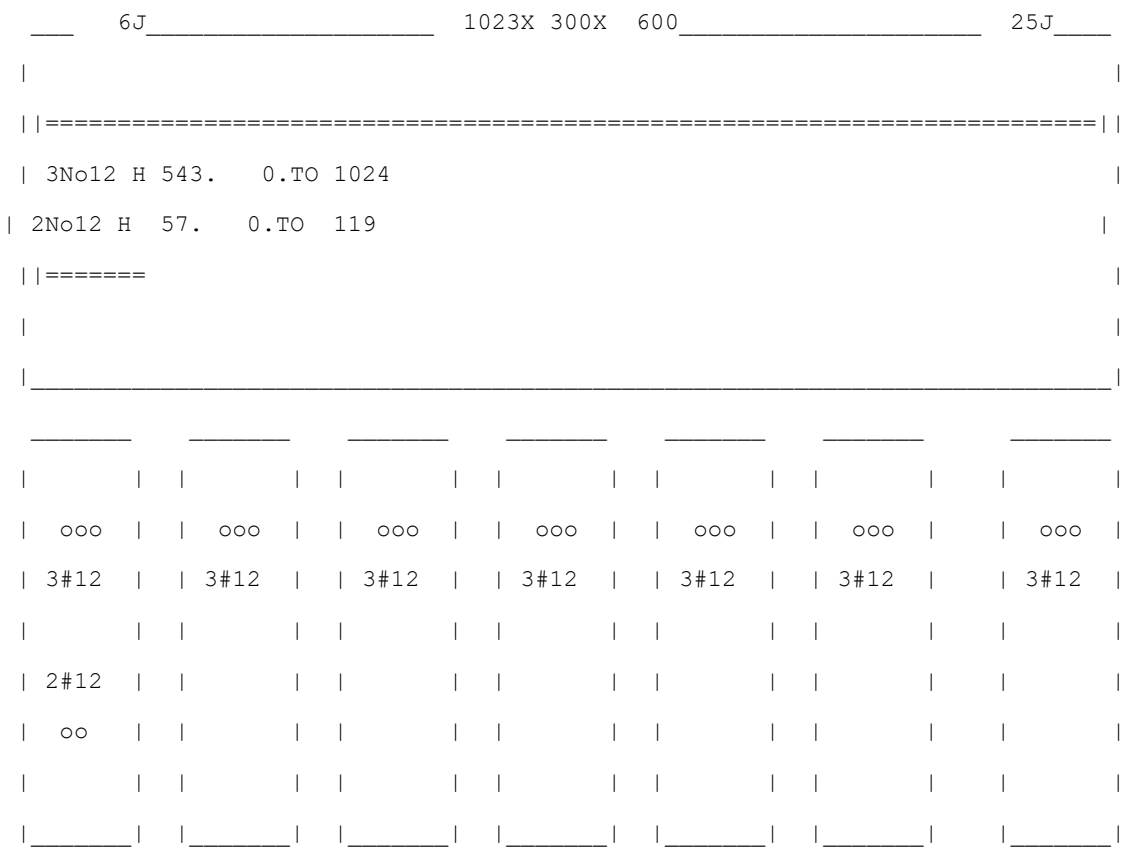


BEAM NO. 6 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	0.	119.	YES	NO
2	543.	3 - 12MM	0.	1024.	YES	YES

B E A M N O. 6 D E S I G N R E S U L T S - SHEAR



BEAM NO. 7 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

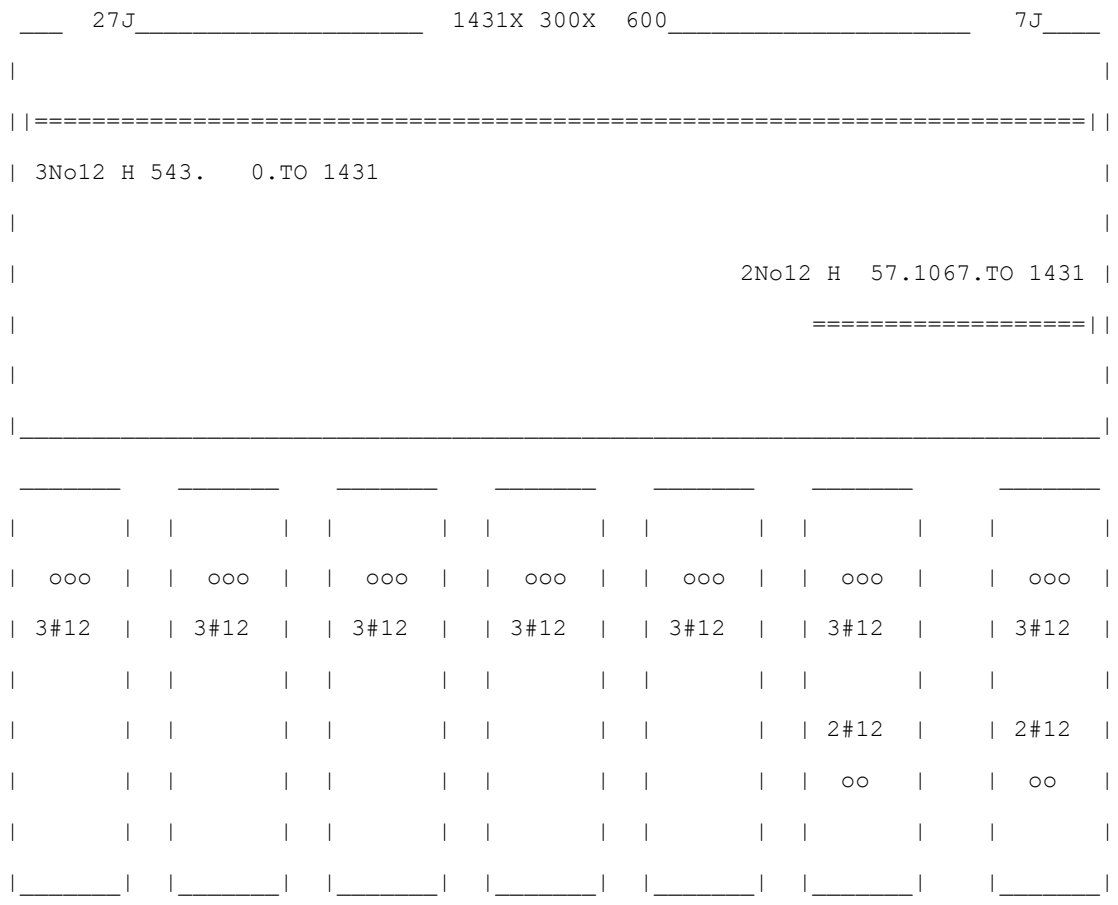
LEN - 1431. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

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

1	57.	2 - 12MM	1067.	NO	YES
2	543.	3 - 12MM	0.	YES	YES

B E A M N O. 7 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 30.83 KNS Vc= 126.07 KNS Vs= 0.00 KNS
Tu= 0.43 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 28.73 KNS Vc= 126.14 KNS Vs= 0.00 KNS
Tu= 0.43 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



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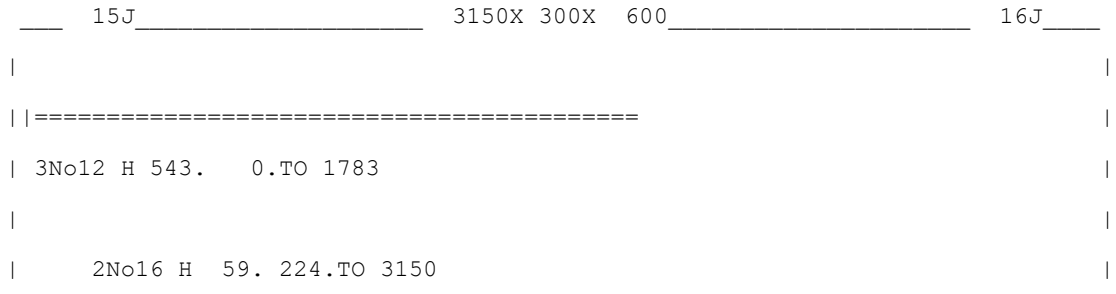
BEAM NO. 15 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

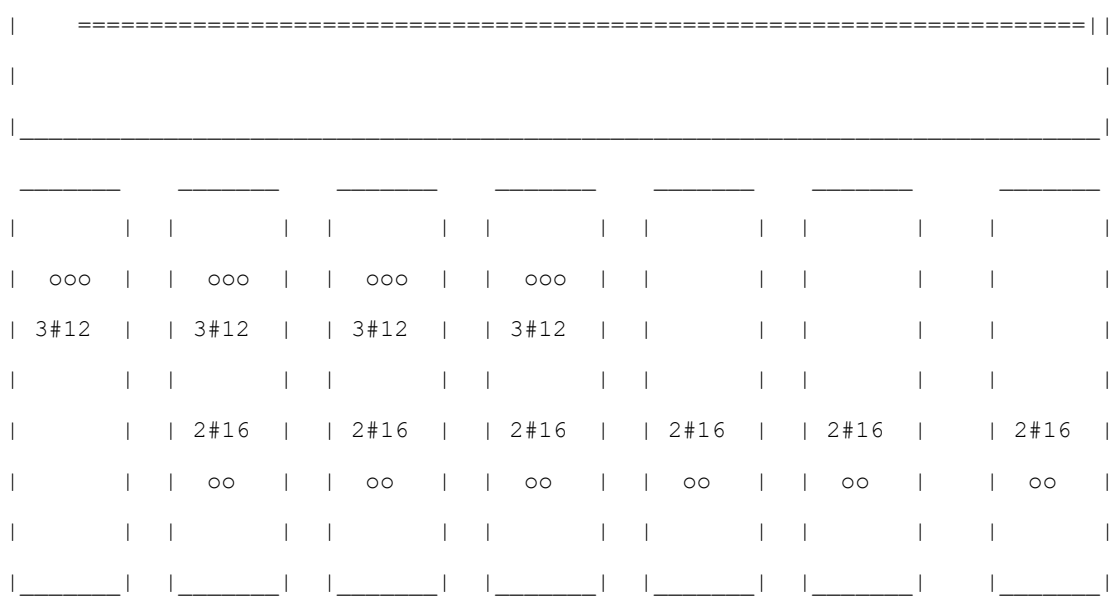
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	224.	3150.	NO	YES
2	543.	3 - 12MM	0.	1783.	YES	NO

B E A M N O. 15 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 36.81 KNS Vc= 123.20 KNS Vs= 0.00 KNS
Tu= 2.48 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 24.47 KNS Vc= 123.20 KNS Vs= 0.00 KNS
Tu= 2.48 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.





BEAM NO. 16 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

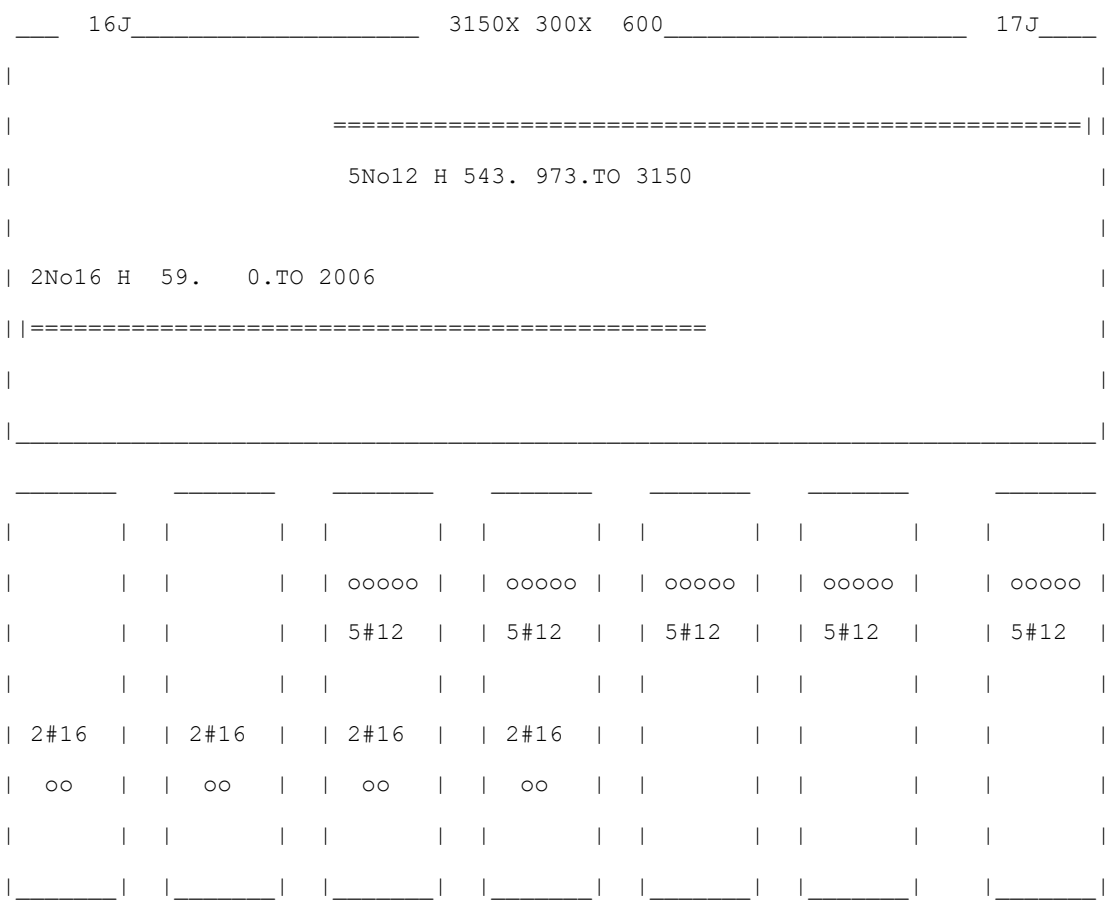
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	0.	2006.	YES	NO
2	543.	5 - 12MM	973.	3150.	NO	YES

B E A M N O. 16 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 34.88 KNS Vc= 132.62 KNS Vs= 0.00 KNS
Tu= 1.34 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6

```
                    STIRRUPS ARE NOT REQUIRED.
  AT END   SUPPORT - Vu=   47.21 KNS  Vc=  132.62 KNS  Vs=    0.00 KNS
  Tu=    1.34 KN-MET  Tc=    5.5 KN-MET  Ts=    0.0 KN-MET  LOAD     6
                    STIRRUPS ARE NOT REQUIRED.
```

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        BEAM  NO.    17 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

  LEN -  3150. MM  FY -  414.  FC -  25.  MPA, SIZE -  300. X  600. MMS

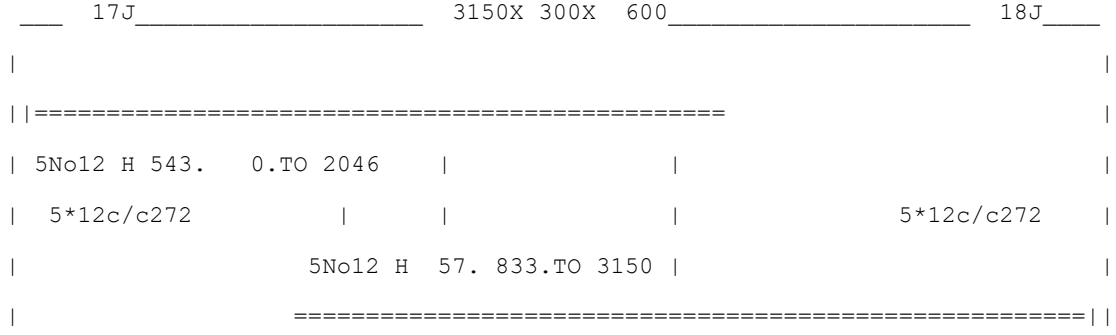
  LEVEL    HEIGHT     BAR INFO       FROM          TO           ANCHOR
```

	(MM)		(MM)	(MM)	STA	END
1	57.	5 - 12MM	833.	3150.	NO	YES
2	543.	5 - 12MM	0.	2046.	YES	NO

B E A M N O. 17 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 62.43 KNS Vc= 134.12 KNS Vs= 0.00 KNS
Tu= 0.85 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 50.10 KNS Vc= 132.04 KNS Vs= 0.00 KNS
Tu= 0.85 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM



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BEAM NO. 18 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

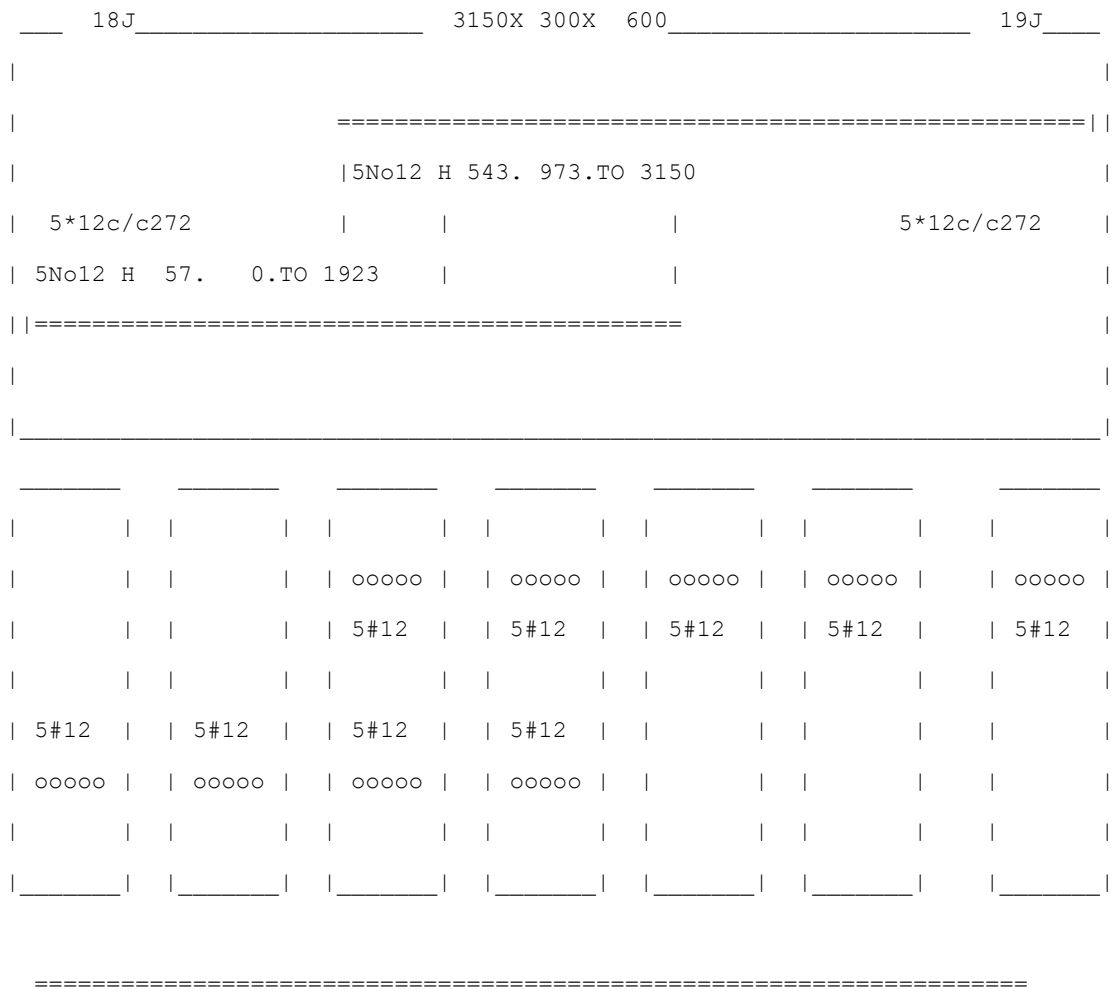
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	1923.	YES	NO
2	543.	5 - 12MM	973.	3150.	NO	YES

B E A M N O. 18 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 54.18 KNS Vc= 133.75 KNS Vs= 0.00 KNS

```
   Tu=    0.80 KN-MET  Tc=    6.2 KN-MET  Ts=    0.0 KN-MET  LOAD     6
   NO STIRRUPS ARE REQUIRED FOR TORSION.
   REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
   PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM  C/C FOR 1038. MM

   AT END   SUPPORT - Vu=   66.51 KNS  Vc=  134.55 KNS  Vs=    0.00 KNS
   Tu=    0.80 KN-MET  Tc=    6.2 KN-MET  Ts=    0.0 KN-MET  LOAD     6
   NO STIRRUPS ARE REQUIRED FOR TORSION.
   REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
   PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM  C/C FOR 1038. MM
```



BEAM NO. 19 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

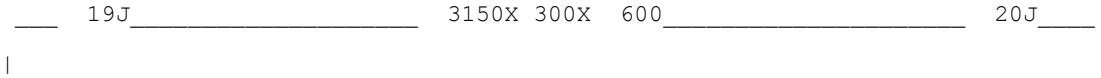
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

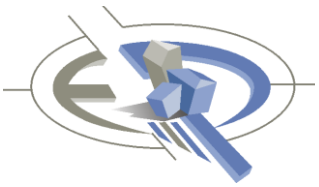
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	1096.	3150.	NO	YES
2	543.	5 - 12MM	0.	2046.	YES	NO

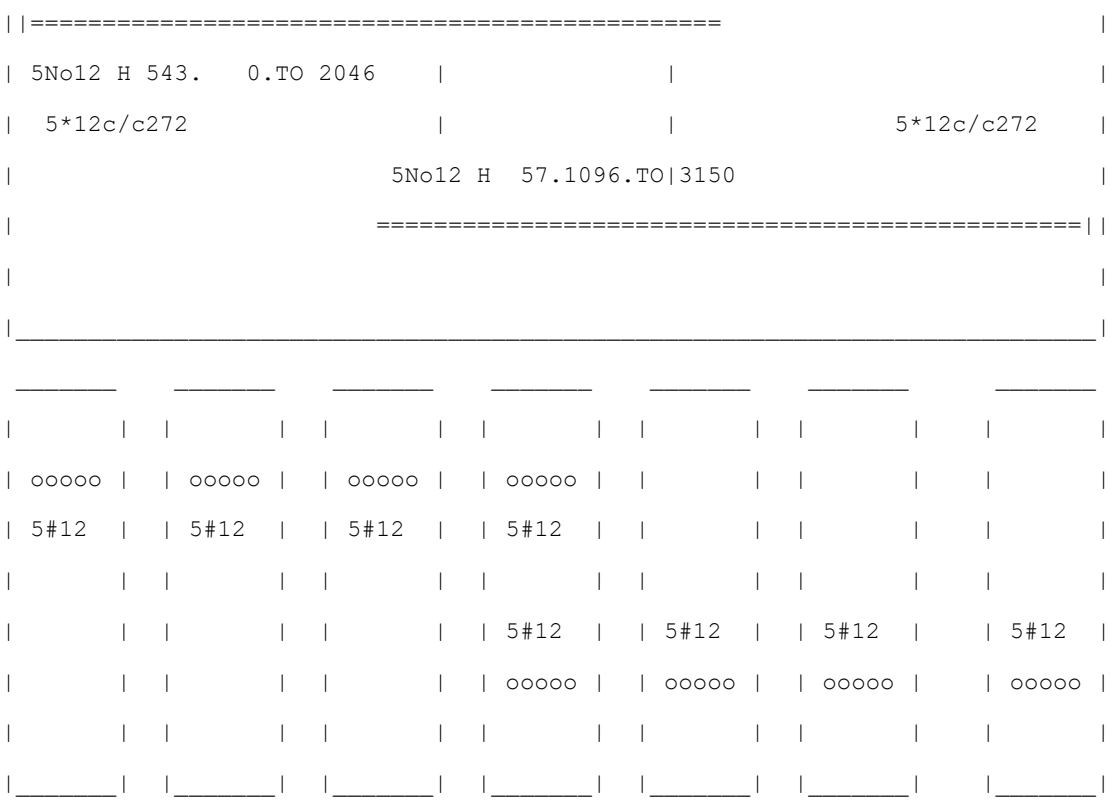
B E A M N O. 19 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 66.64 KNS Vc= 134.79 KNS Vs= 0.00 KNS
Tu= 1.00 KN-MET Tc= 6.2 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 54.31 KNS Vc= 133.78 KNS Vs= 0.00 KNS
Tu= 1.00 KN-MET Tc= 6.2 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM







BEAM NO. 20 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	2185.	YES	NO
2	543.	5 - 12MM	973.	3150.	NO	YES

B E A M N O. 20 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 50.72 KNS Vc= 133.35 KNS Vs= 0.00 KNS

Tu= 0.29 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

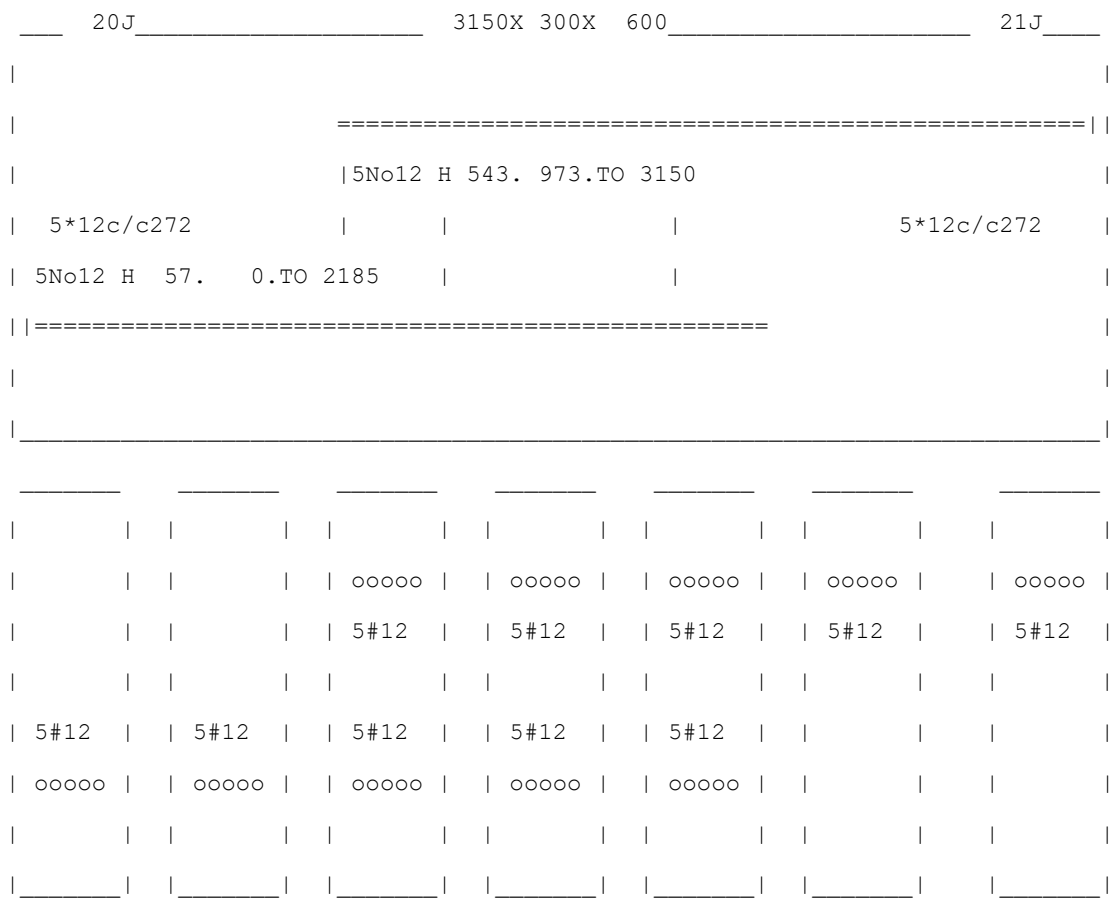
AT END SUPPORT - Vu= 63.05 KNS Vc= 136.82 KNS Vs= 0.00 KNS

Tu= 0.29 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM



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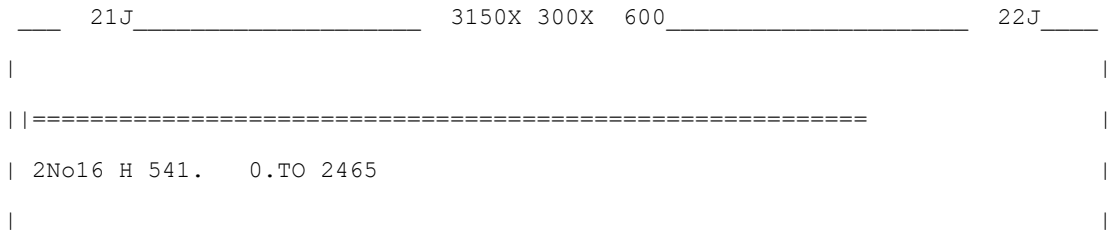
BEAM NO. 21 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	605.	3150.	NO	YES
2	541.	2 - 16MM	0.	2465.	YES	NO

B E A M N O. 21 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 35.62 KNS Vc= 138.20 KNS Vs= 0.00 KNS
Tu= 2.48 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 23.29 KNS Vc= 132.46 KNS Vs= 0.00 KNS
Tu= 2.48 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



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|              3No12 H   57. 605.TO 3150                                   |
|             =============================================================||
|                                                                          |
|__________________________________________________________________________|
 _______    _______    _______    _______    _______    _______      _______
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|  oo   |  |  oo   |  |  oo   |  |  oo   |  |  oo   |  |       |    |       |
| 2#16  |  | 2#16  |  | 2#16  |  | 2#16  |  | 2#16  |  |       |    |       |
|       |  |       |  |       |  |       |  |       |  |       |    |       |
|       |  |       |  | 3#12  |  | 3#12  |  | 3#12  |  | 3#12  |    | 3#12  |
|       |  |       |  |  ooo  |  |  ooo  |  |  ooo  |  |  ooo  |    |  ooo  |
|       |  |       |  |       |  |       |  |       |  |       |    |       |
|_______|  |_______|  |_______|  |_______|  |_______|  |_______|    |_______|

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        BEAM  NO.    22 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

 LEN -  1100. MM  FY -  414.  FC -  25.  MPA, SIZE -  300. X  600. MMS

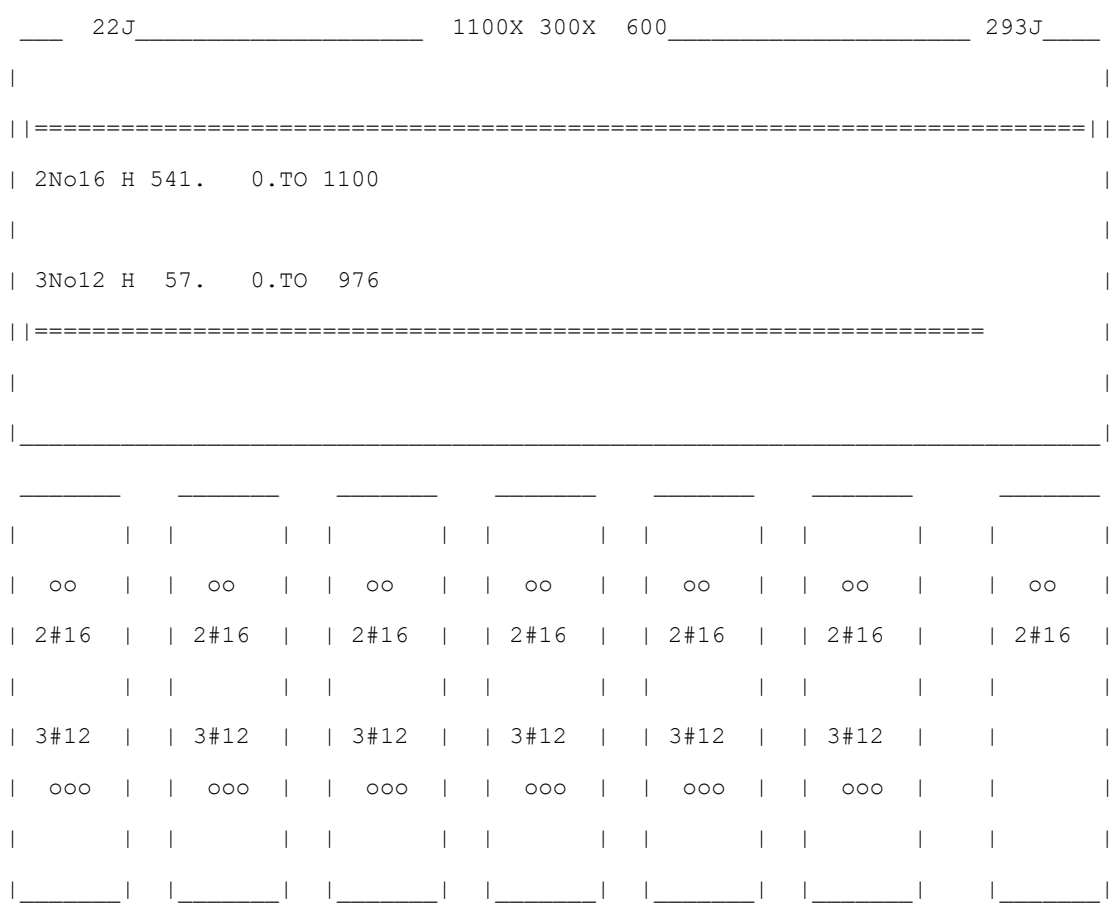
 LEVEL    HEIGHT     BAR INFO        FROM         TO          ANCHOR
           (MM)                      (MM)        (MM)        STA  END
 _____________________________________________________________________


   1        57.     3 - 12MM          0.         976.        YES  NO
   2       541.     2 - 16MM          0.        1100.        YES  YES

        B E A M   N O.    22 D E S I G N  R E S U L T S - SHEAR


  AT START SUPPORT - Vu=   87.07 KNS  Vc=  247.72 KNS  Vs=    0.00 KNS
```

```
   Tu=     5.15 KN-MET   Tc=     6.2 KN-MET   Ts=     0.0 KN-MET   LOAD      6
                       STIRRUPS ARE NOT REQUIRED.
   AT END   SUPPORT - Vu=    87.23 KNS   Vc=  247.72 KNS   Vs=     0.00 KNS
   Tu=     5.15 KN-MET   Tc=     6.2 KN-MET   Ts=     0.0 KN-MET   LOAD      6
                       STIRRUPS ARE NOT REQUIRED.
```

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        BEAM  NO.    23 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

  LEN -  3150. MM  FY -  414.  FC -  25.  MPA, SIZE -  300. X  600. MMS

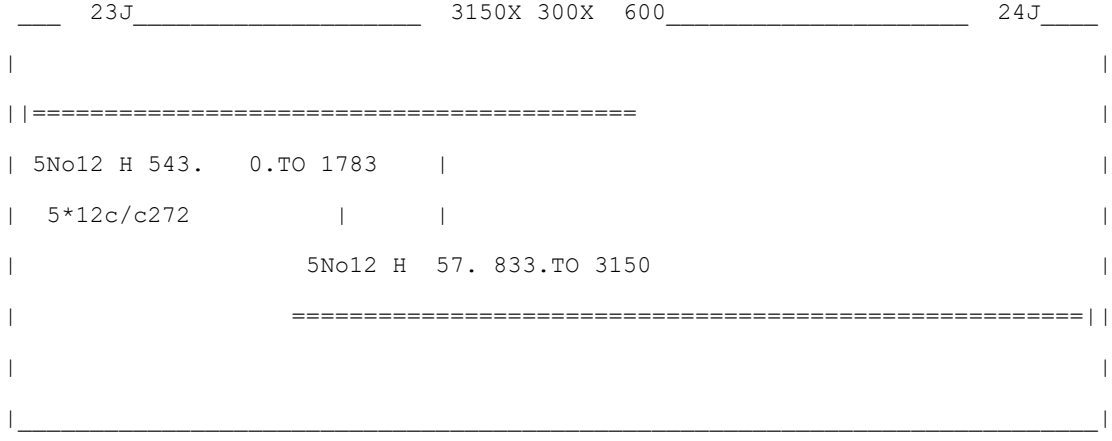
  LEVEL    HEIGHT     BAR INFO       FROM          TO           ANCHOR
```

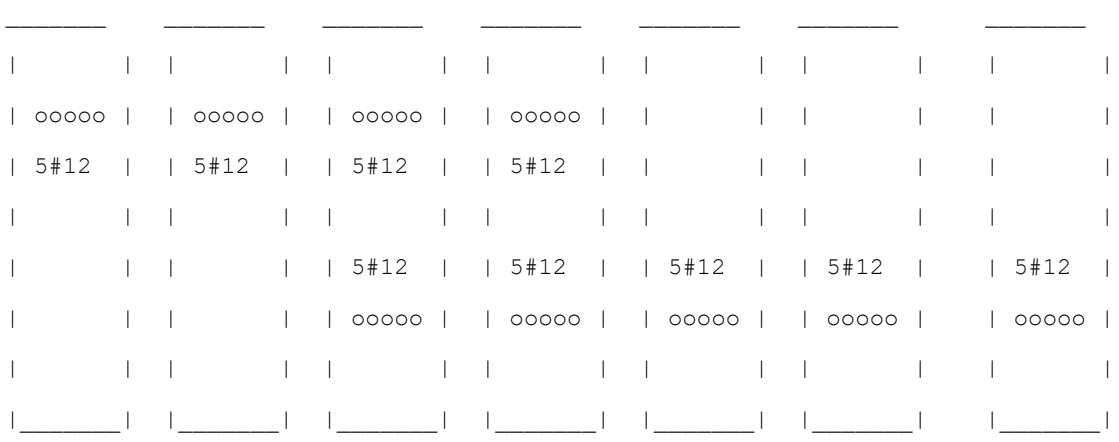
	(MM)		(MM)	(MM)	STA	END
1	57.	5 - 12MM	833.	3150.	NO	YES
2	543.	5 - 12MM	0.	1783.	YES	NO

B E A M N O. 23 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 61.50 KNS Vc= 139.23 KNS Vs= 0.00 KNS
Tu= 0.46 KN-MET Tc= 6.2 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 49.17 KNS Vc= 131.96 KNS Vs= 0.00 KNS
Tu= 0.46 KN-MET Tc= 6.2 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.





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BEAM NO. 24 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	2185.	YES	NO
2	543.	5 - 12MM	973.	3150.	NO	YES

B E A M N O. 24 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 55.58 KNS Vc= 132.10 KNS Vs= 0.00 KNS
Tu= 1.21 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

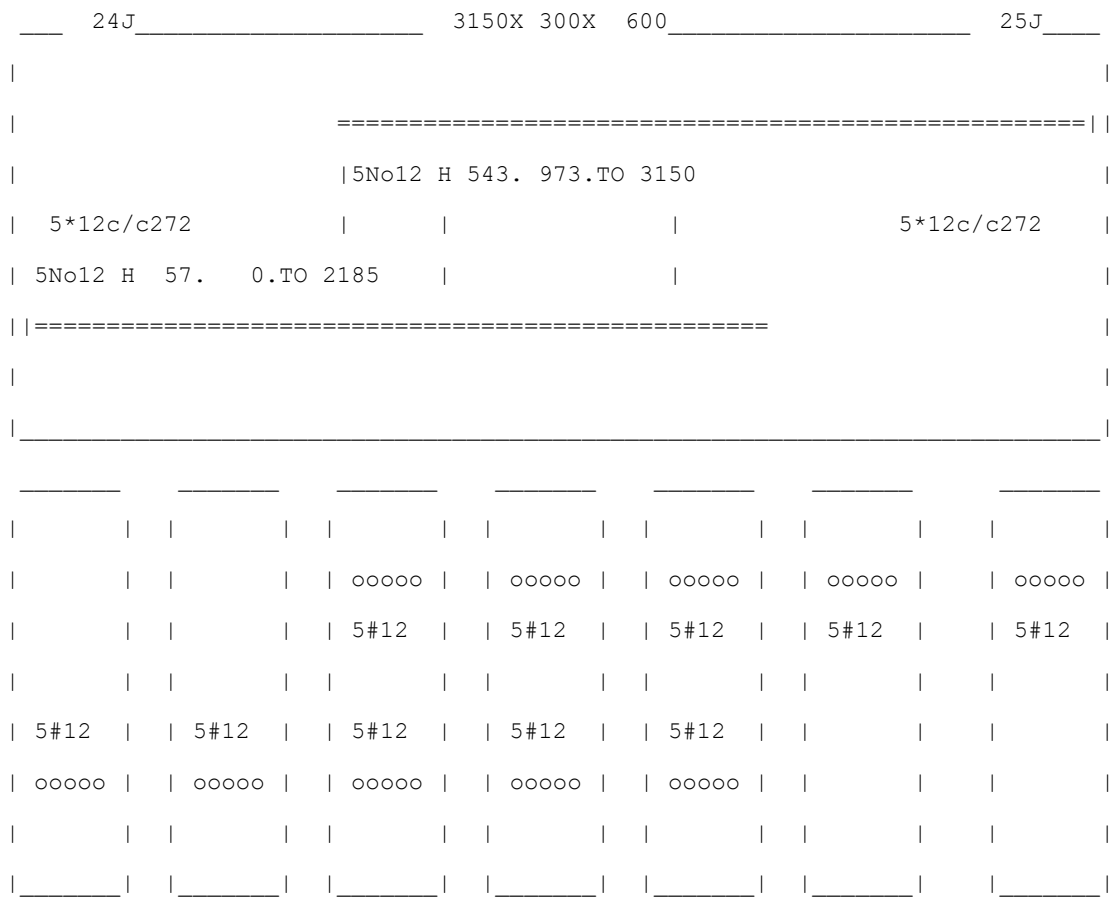
AT END SUPPORT - Vu= 67.91 KNS Vc= 134.06 KNS Vs= 0.00 KNS

Tu= 1.21 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM



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BEAM NO. 25 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

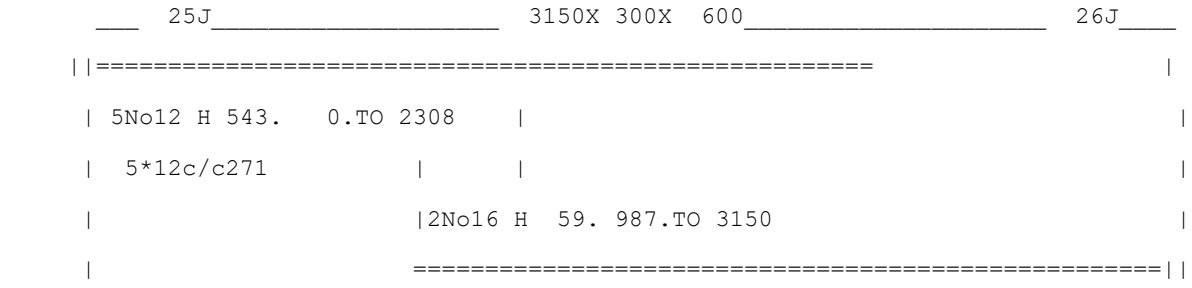
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

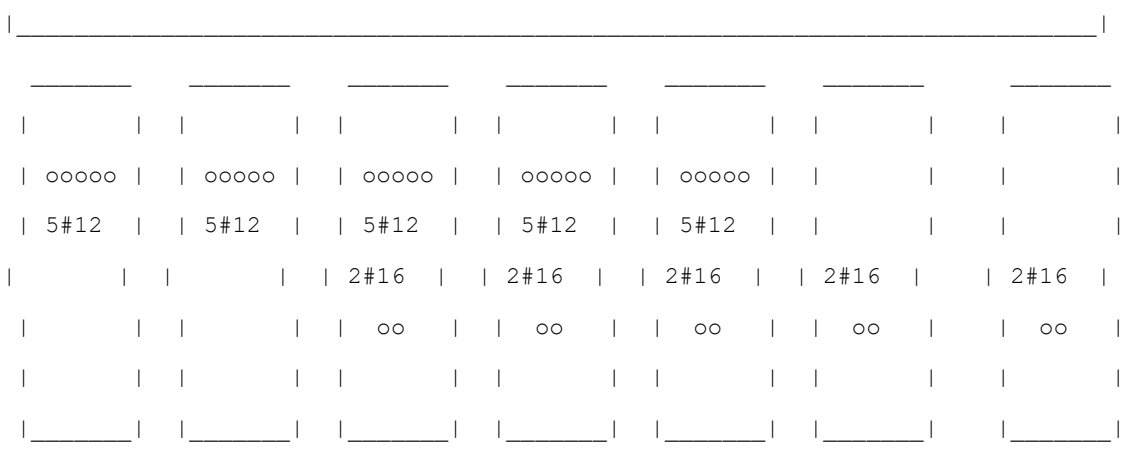
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	987.	3150.	NO	YES
2	543.	5 - 12MM	0.	2308.	YES	NO

B E A M N O. 25 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 51.88 KNS Vc= 133.08 KNS Vs= 0.00 KNS
Tu= 1.54 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 39.55 KNS Vc= 133.08 KNS Vs= 0.00 KNS
Tu= 1.54 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.





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BEAM NO. 26 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

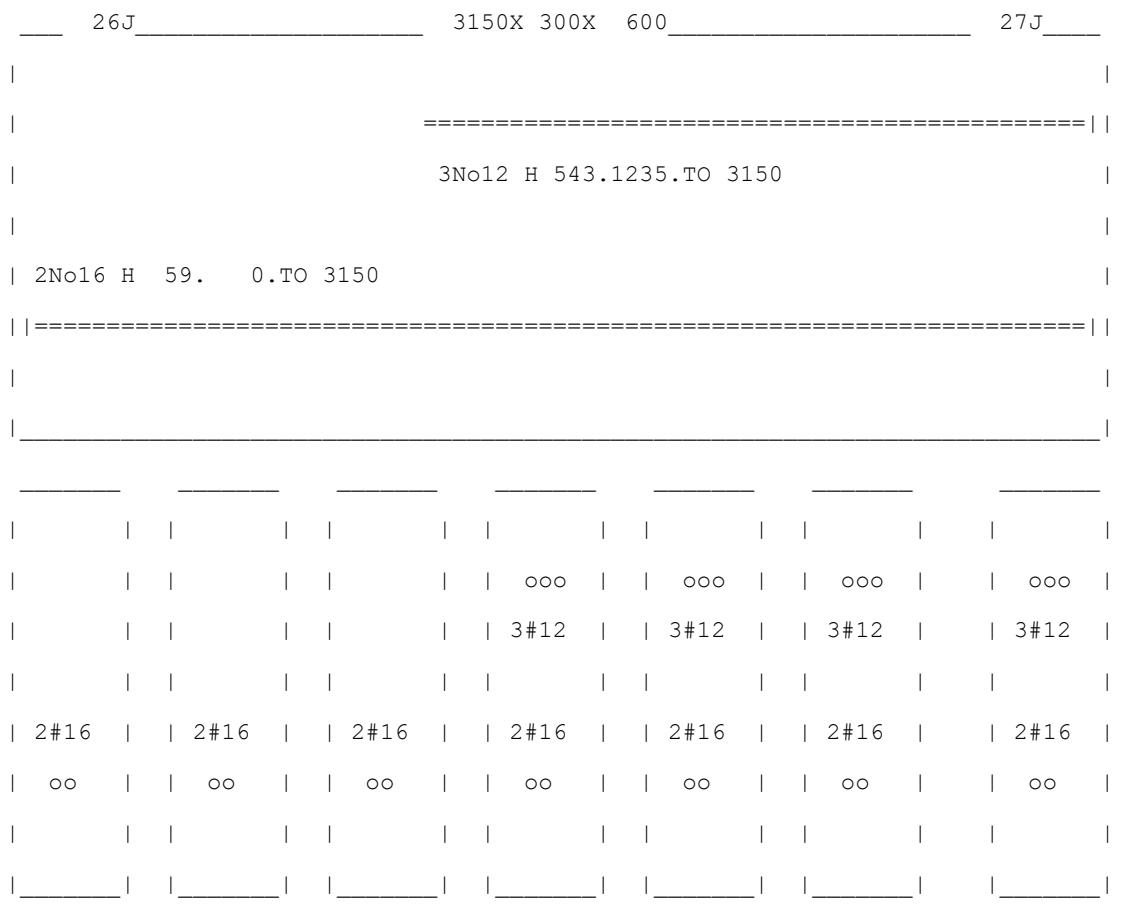
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	0.	3150.	YES	YES
2	543.	3 - 12MM	1235.	3150.	NO	YES

B E A M N O. 26 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 21.05 KNS Vc= 121.51 KNS Vs= 0.00 KNS
Tu= 1.68 KN-MET Tc= 5.0 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 33.39 KNS Vc= 121.51 KNS Vs= 0.00 KNS
Tu= 1.68 KN-MET Tc= 5.0 KN-MET Ts= 0.0 KN-MET LOAD 6

STIRRUPS ARE NOT REQUIRED.



BEAM NO. 27 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

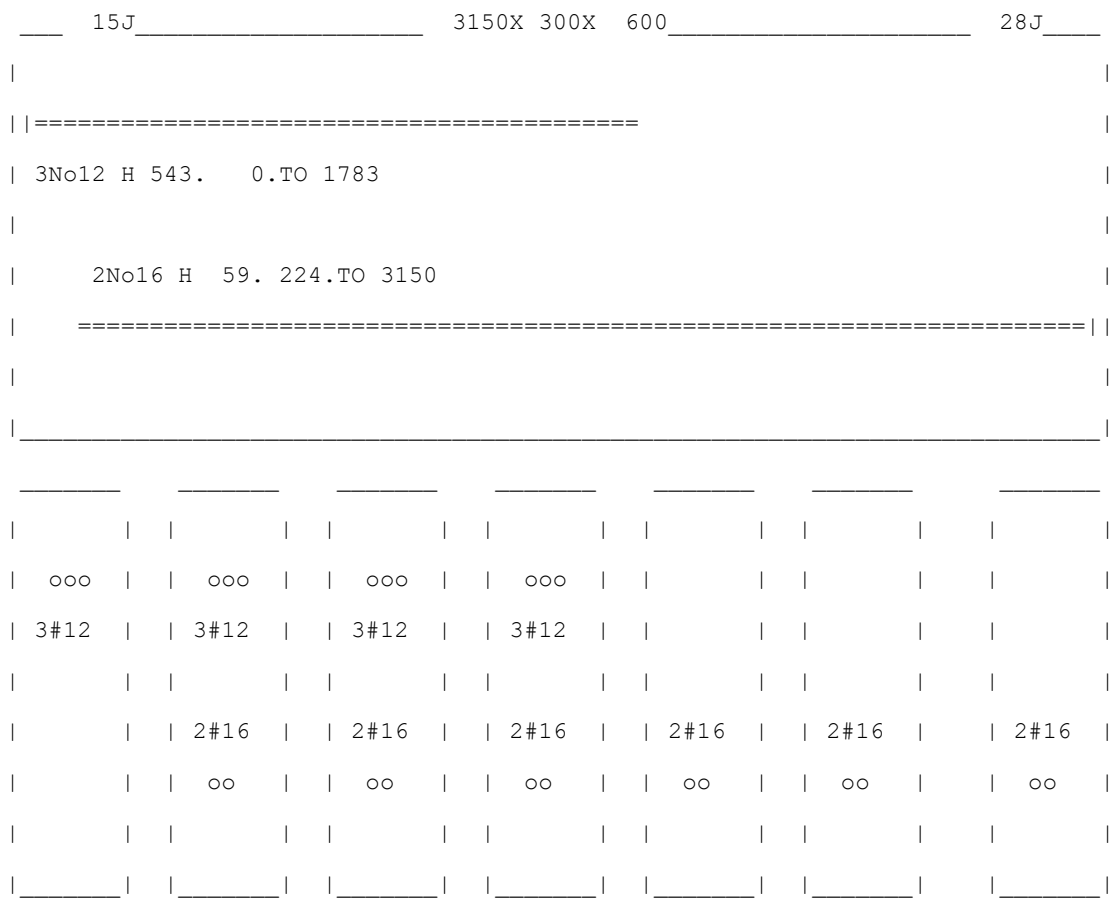
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

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

1	59.	2 - 16MM	224.	3150.	NO YES
2	543.	3 - 12MM	0.	1783.	YES NO

B E A M N O. 27 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 36.47 KNS Vc= 123.29 KNS Vs= 0.00 KNS
Tu= 2.63 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 24.14 KNS Vc= 123.29 KNS Vs= 0.00 KNS
Tu= 2.63 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



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       BEAM  NO.    28 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

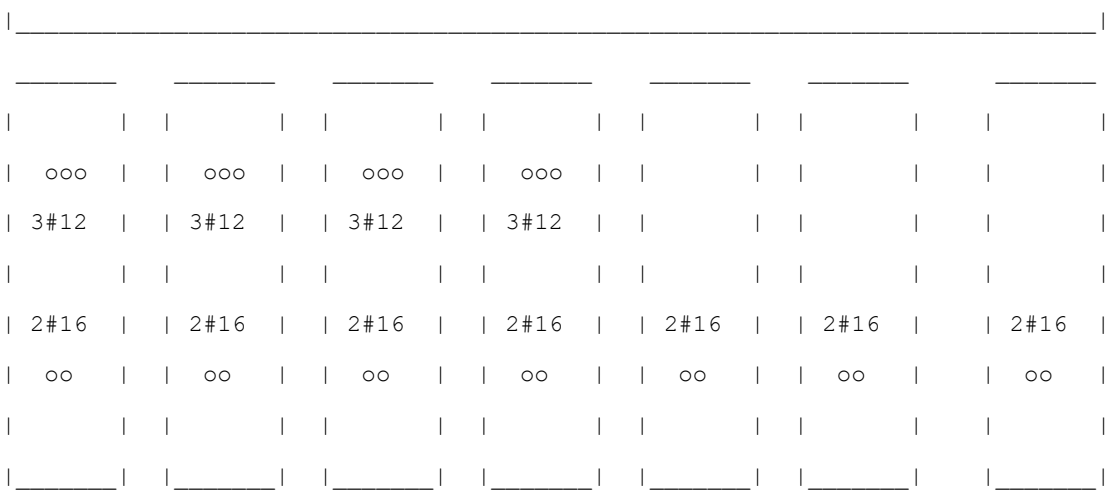
LEN -  3150. MM  FY -  414.  FC -  25.  MPA, SIZE -  300. X  600. MMS

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


  1         59.     2 - 16MM         0.         3150.        YES  YES
  2        543.     3 - 12MM         0.         1783.        YES  NO

       B E A M  N O.    28 D E S I G N  R E S U L T S - SHEAR


 AT START SUPPORT - Vu=   32.82 KNS  Vc=  122.05 KNS  Vs=    0.00 KNS
 Tu=    1.43 KN-MET  Tc=    5.0 KN-MET  Ts=    0.0 KN-MET  LOAD     6
                  STIRRUPS ARE NOT REQUIRED.
 AT END   SUPPORT - Vu=   20.48 KNS  Vc=  122.05 KNS  Vs=    0.00 KNS
 Tu=    1.43 KN-MET  Tc=    5.0 KN-MET  Ts=    0.0 KN-MET  LOAD     6
                  STIRRUPS ARE NOT REQUIRED.
```



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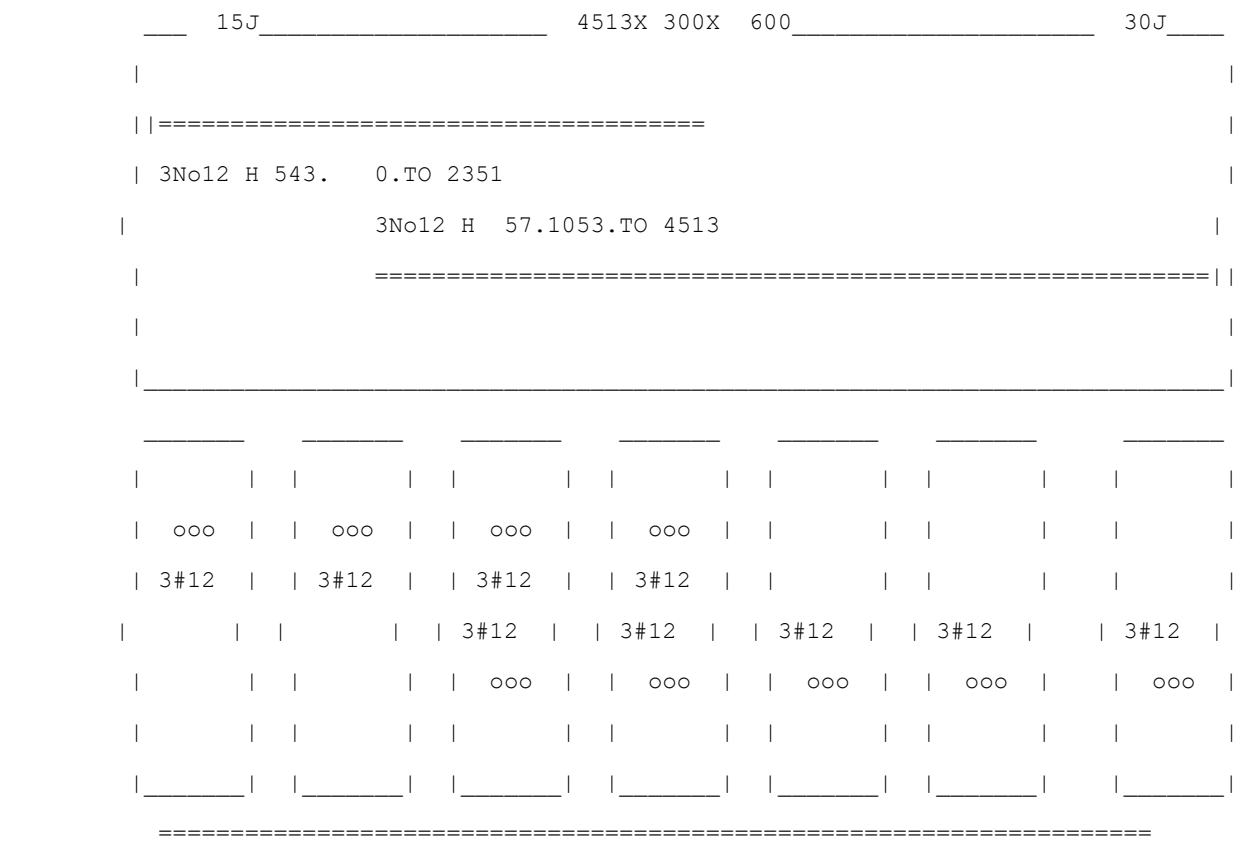
BEAM NO. 29 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 4513. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	1053.	4513.	NO	YES
2	543.	3 - 12MM	0.	2351.	YES	NO

B E A M N O. 29 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 27.90 KNS Vc= 132.45 KNS Vs= 0.00 KNS
Tu= 0.02 KN-MET Tc= 6.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 7.74 KNS Vc= 128.37 KNS Vs= 0.00 KNS
Tu= 0.02 KN-MET Tc= 6.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



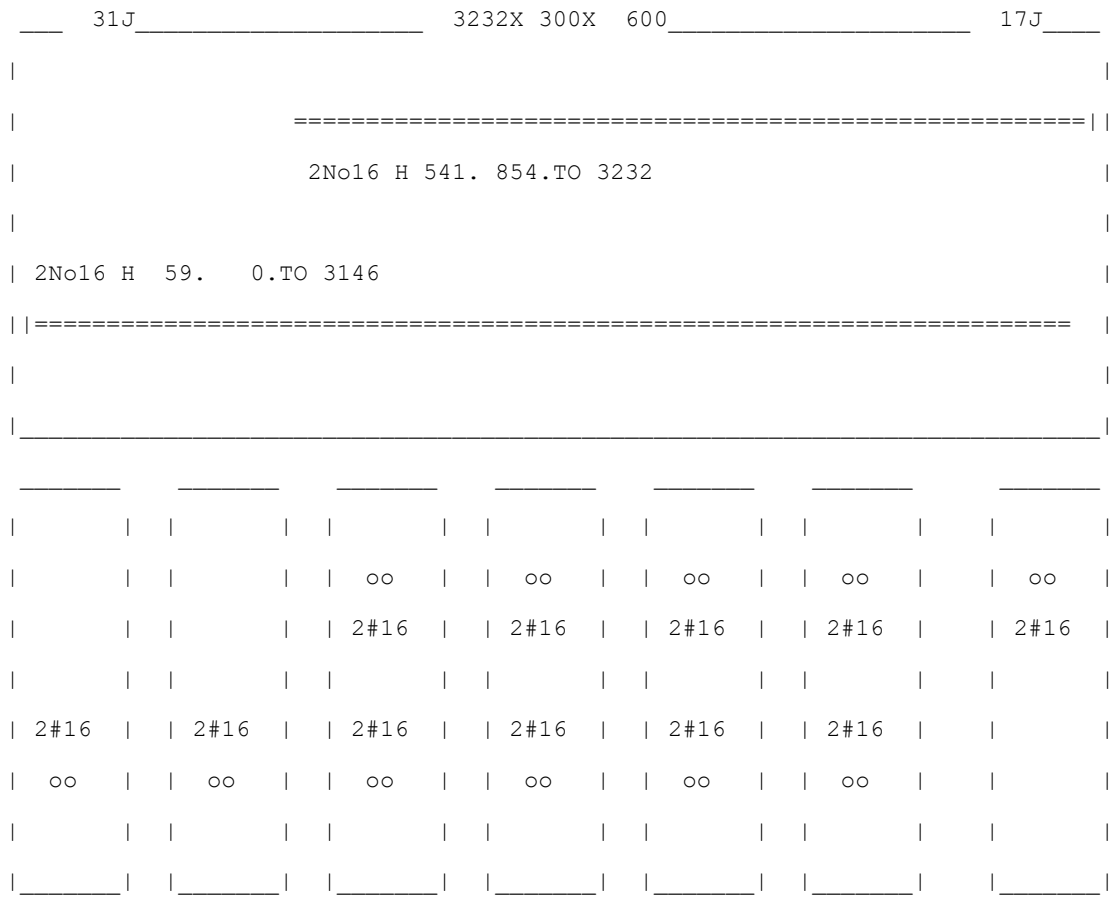
BEAM NO. 31 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	0.	3146.	YES	NO
2	541.	2 - 16MM	854.	3232.	NO	YES

B E A M N O. 31 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 24.69 KNS Vc= 129.28 KNS Vs= 0.00 KNS
Tu= 4.17 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 37.18 KNS Vc= 134.79 KNS Vs= 0.00 KNS
Tu= 4.17 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



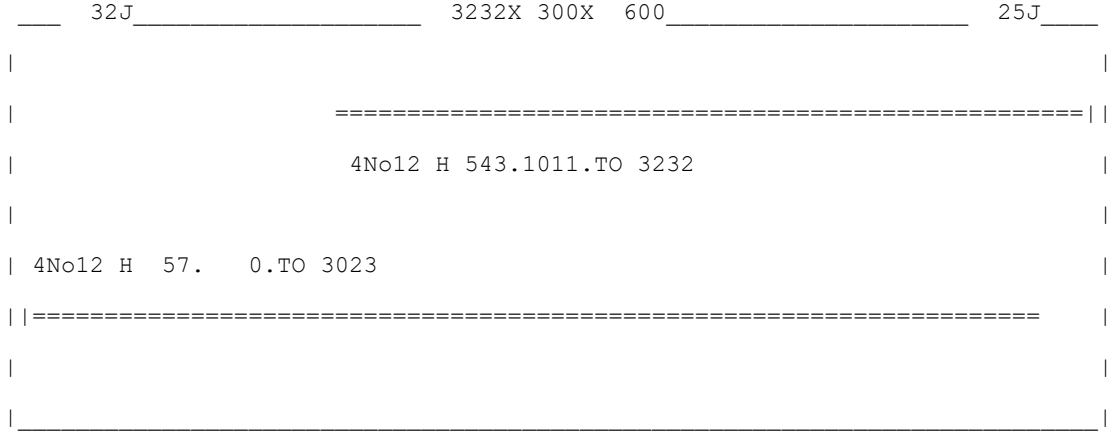
BEAM NO. 32 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	4 - 12MM	0.	3023.	YES	NO
2	543.	4 - 12MM	1011.	3232.	NO	YES

B E A M N O. 32 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 27.73 KNS Vc= 129.97 KNS Vs= 0.00 KNS
Tu= 4.85 KN-MET Tc= 5.7 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 40.22 KNS Vc= 134.94 KNS Vs= 0.00 KNS
Tu= 4.85 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



		oooo	oooo	oooo	oooo	oooo
		4#12	4#12	4#12	4#12	4#12
4#12	4#12	4#12	4#12	4#12	4#12	
oooo	oooo	oooo	oooo	oooo	oooo	

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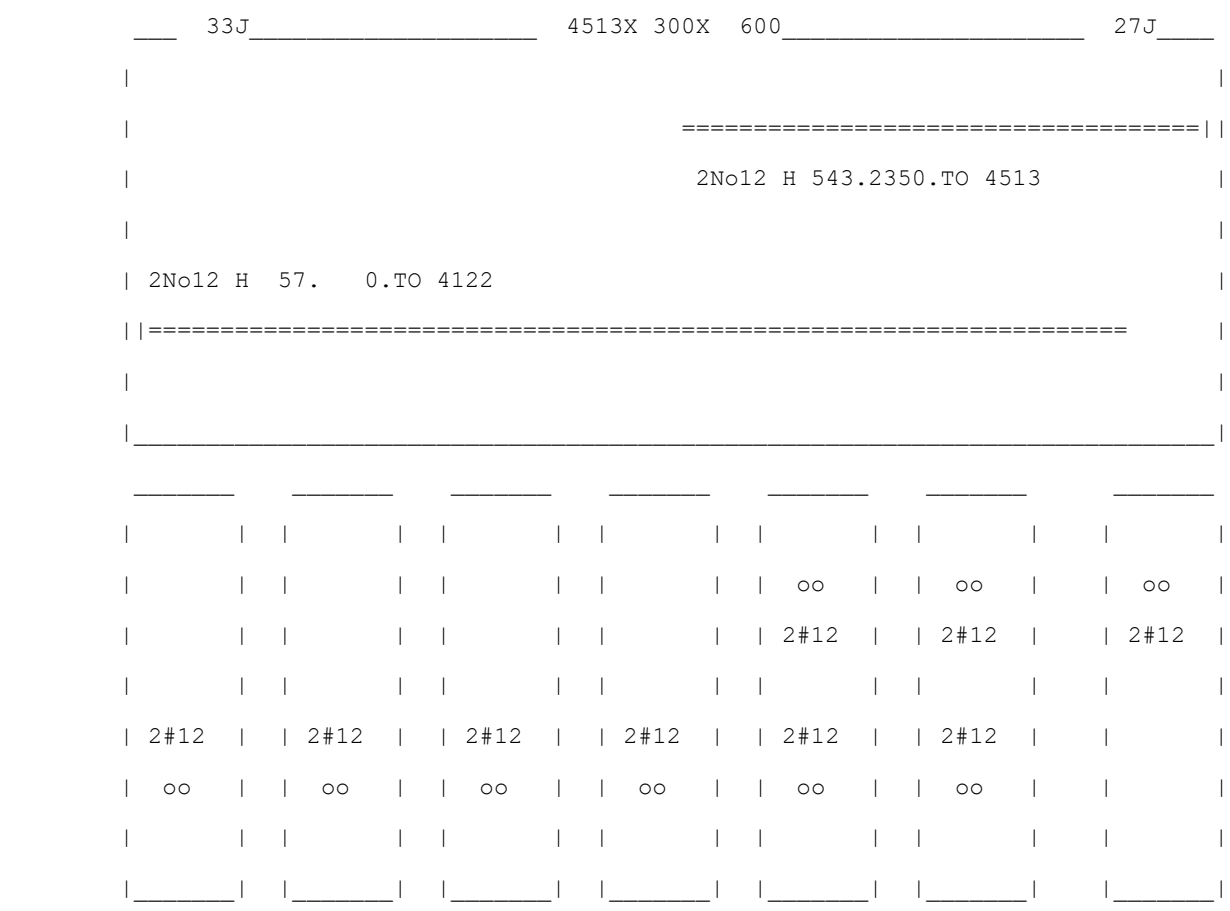
BEAM NO. 34 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 4513. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	0.	4122.	YES	NO
2	543.	2 - 12MM	2350.	4513.	NO	YES

B E A M N O. 34 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 3.76 KNS Vc= 128.04 KNS Vs= 0.00 KNS
Tu= 0.04 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 23.92 KNS Vc= 250.31 KNS Vs= 0.00 KNS
Tu= 0.04 KN-MET Tc= 6.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



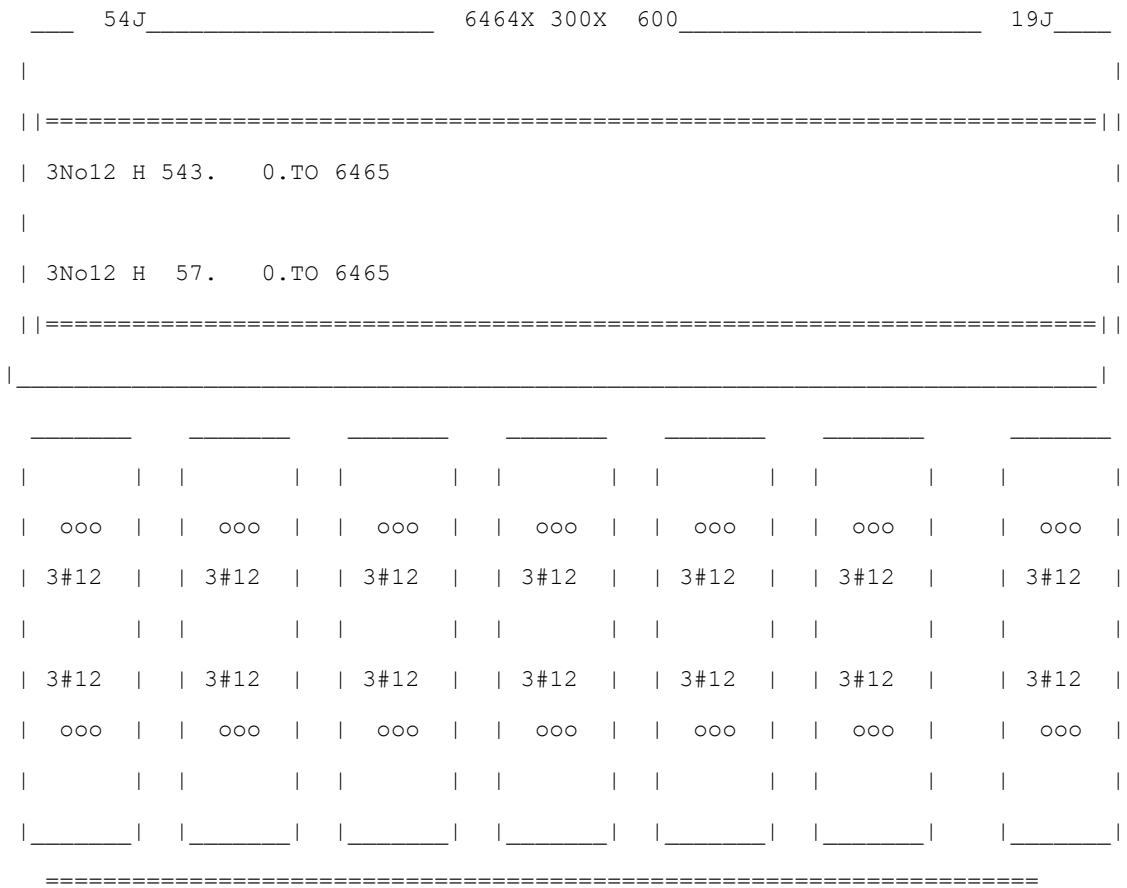
BEAM NO. 39 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 6465. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	0.	6465.	YES	YES
2	543.	3 - 12MM	0.	6465.	YES	YES

B E A M N O. 39 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 15.18 KNS Vc= 128.48 KNS Vs= 0.00 KNS
Tu= 0.01 KN-MET Tc= 5.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 16.02 KNS Vc= 130.03 KNS Vs= 0.00 KNS
Tu= 0.01 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



BEAM NO. 41 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

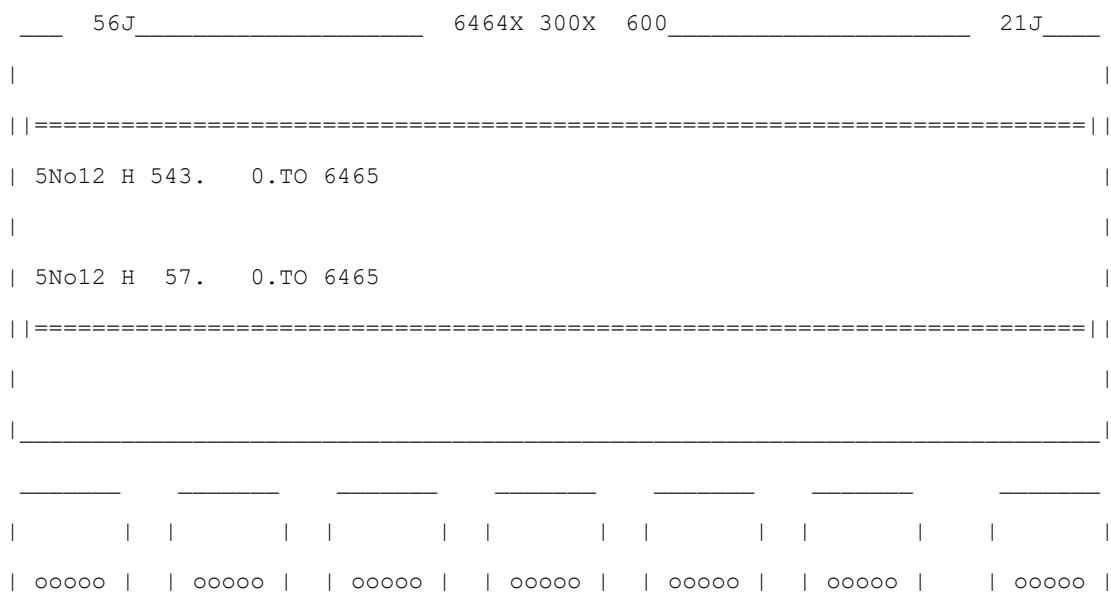
LEN - 6465. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

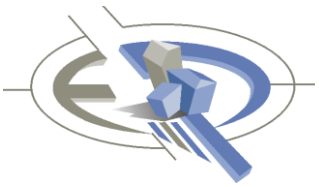
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	6465.	YES	YES
2	543.	5 - 12MM	0.	6465.	YES	YES

B E A M N O. 41 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 14.47 KNS Vc= 133.06 KNS Vs= 0.00 KNS
Tu= 0.55 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.

AT END SUPPORT - Vu= 16.73 KNS Vc= 139.71 KNS Vs= 0.00 KNS
Tu= 0.55 KN-MET Tc= 5.6 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.





5#12		5#12		5#12		5#12		5#12		5#12		5#12
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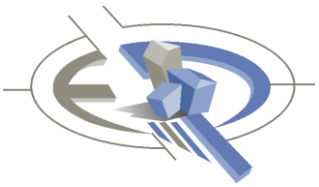
BEAM NO. 43 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

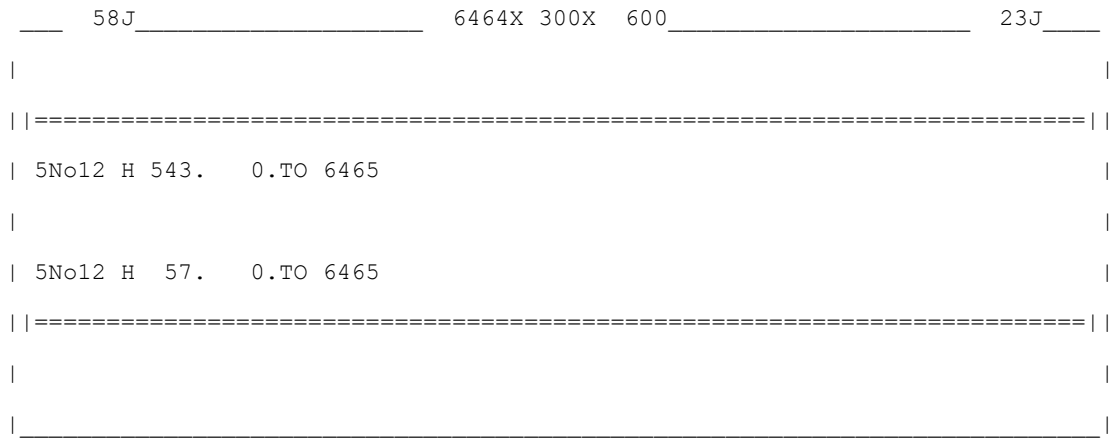
LEN - 6465. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	6465.	YES	YES
2	543.	5 - 12MM	0.	6465.	YES	YES

B E A M N O. 43 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 13.01 KNS Vc= 130.57 KNS Vs= 0.00 KNS
Tu= 1.86 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 18.19 KNS Vc= 132.12 KNS Vs= 0.00 KNS
Tu= 1.86 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.





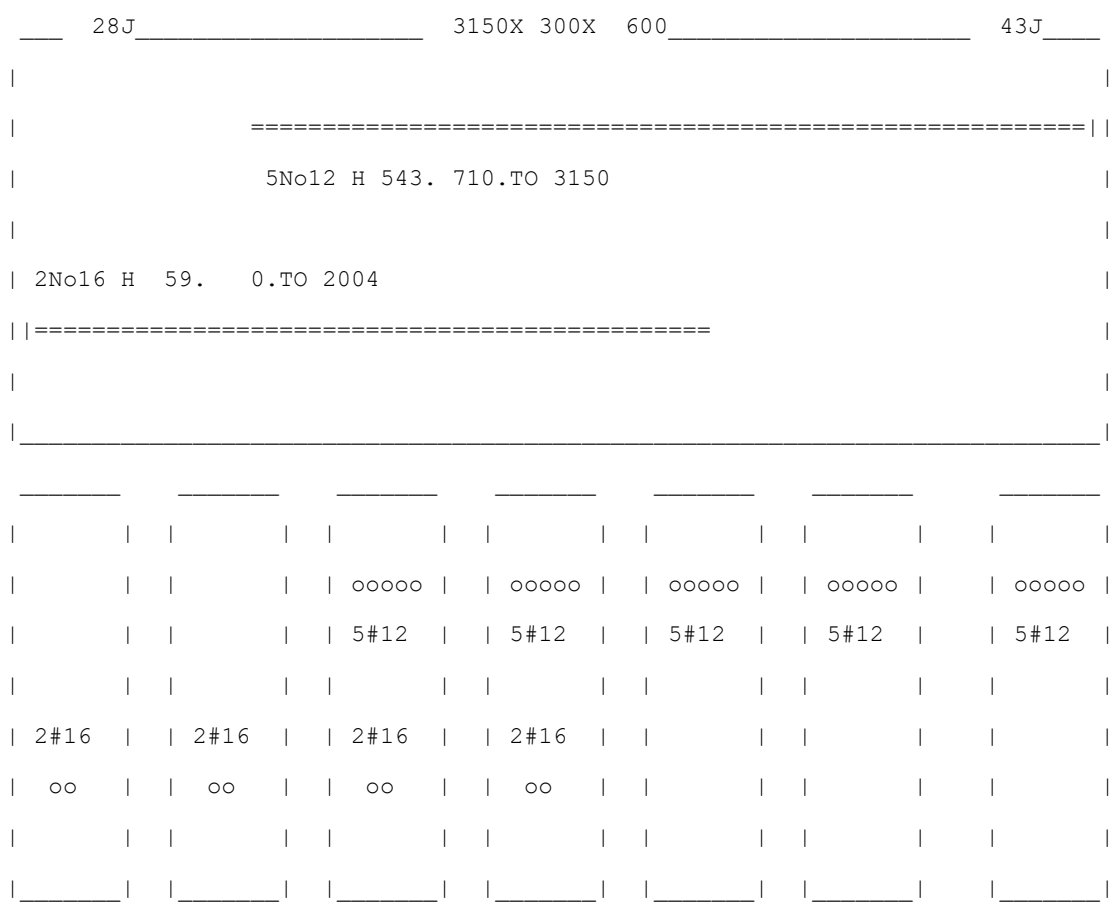
BEAM NO. 46 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	0.	2004.	YES	NO
2	543.	5 - 12MM	710.	3150.	NO	YES

B E A M N O. 46 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 35.88 KNS Vc= 132.66 KNS Vs= 0.00 KNS
Tu= 1.77 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 48.21 KNS Vc= 132.66 KNS Vs= 0.00 KNS
Tu= 1.77 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



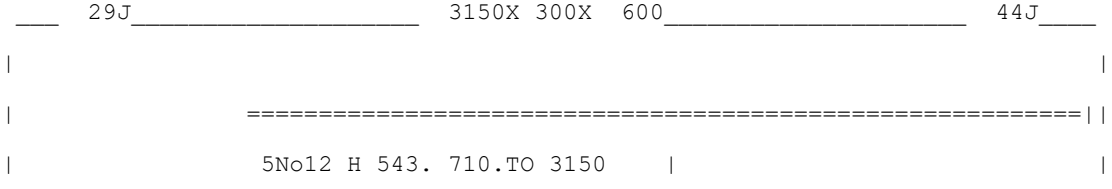
BEAM NO. 47 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

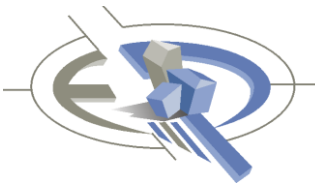
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	0.	2012.	YES	NO
2	543.	5 - 12MM	710.	3150.	NO	YES

B E A M N O. 47 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 40.08 KNS Vc= 133.05 KNS Vs= 0.00 KNS
Tu= 2.45 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 52.41 KNS Vc= 133.05 KNS Vs= 0.00 KNS
Tu= 2.45 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1038. MM





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| 2No16 H  59.   0.TO 2012                     |                               |
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|       |  |       |  | 5#12  |  | 5#12  |  | 5#12  |  | 5#12  |     | 5#12  |
|       |  |       |  |       |  |       |  |       |  |       |     |       |
| 2#16  |  | 2#16  |  | 2#16  |  | 2#16  |  |       |  |       |     |       |
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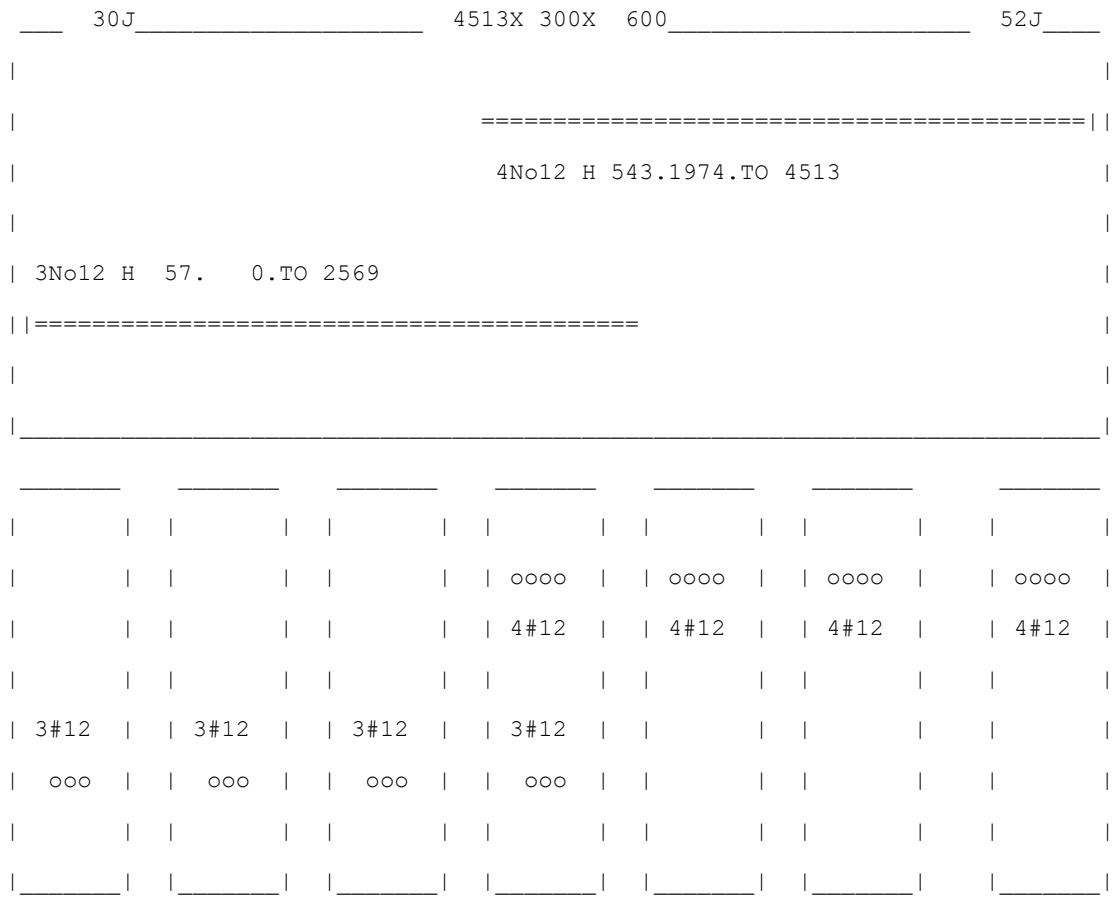
BEAM NO. 50 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 4513. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	0.	2569.	YES	NO
2	543.	4 - 12MM	1974.	4513.	NO	YES

B E A M N O. 50 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 13.00 KNS Vc= 128.87 KNS Vs= 0.00 KNS
Tu= 0.75 KN-MET Tc= 6.0 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 33.17 KNS Vc= 130.48 KNS Vs= 0.00 KNS
Tu= 0.75 KN-MET Tc= 6.0 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



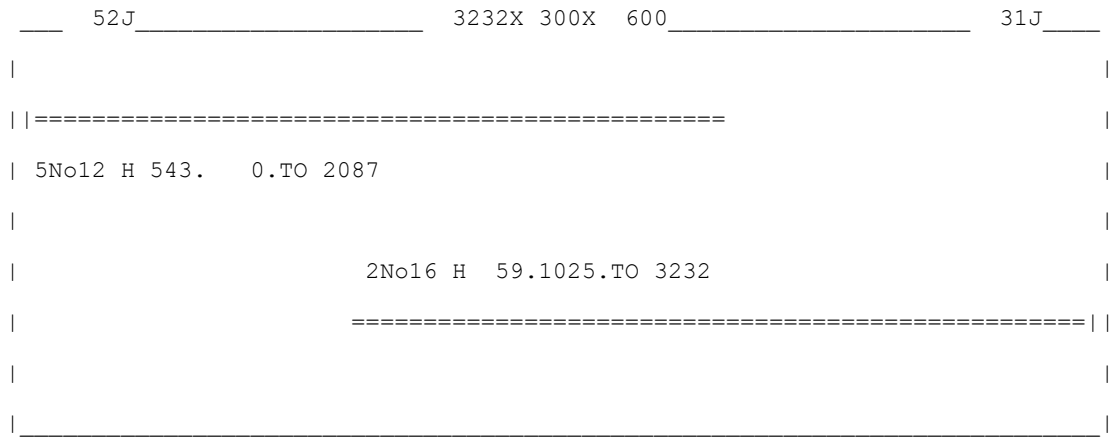
BEAM NO. 51 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

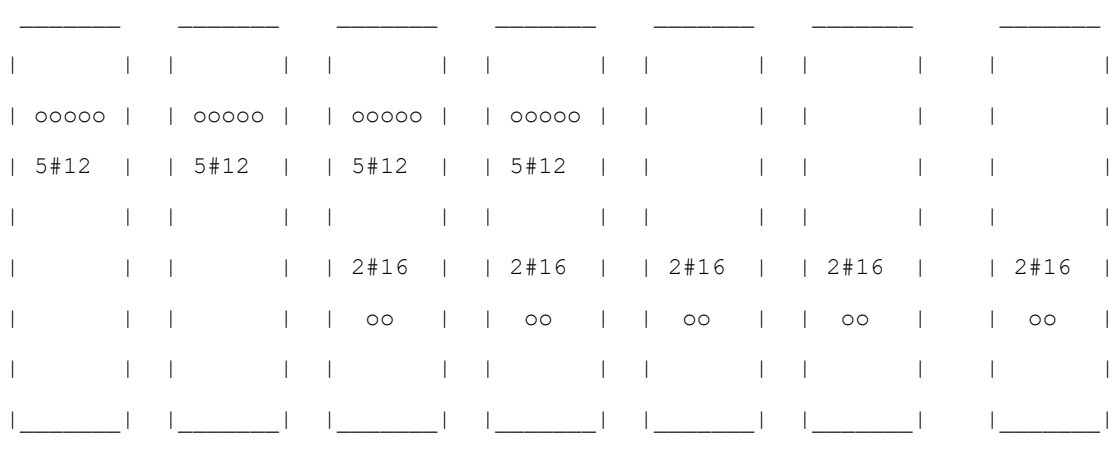
LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	1025.	3232.	NO	YES
2	543.	5 - 12MM	0.	2087.	YES	NO

B E A M N O. 51 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 45.28 KNS Vc= 127.53 KNS Vs= 0.00 KNS
Tu= 2.03 KN-MET Tc= 5.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 32.79 KNS Vc= 128.15 KNS Vs= 0.00 KNS
Tu= 2.03 KN-MET Tc= 5.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.





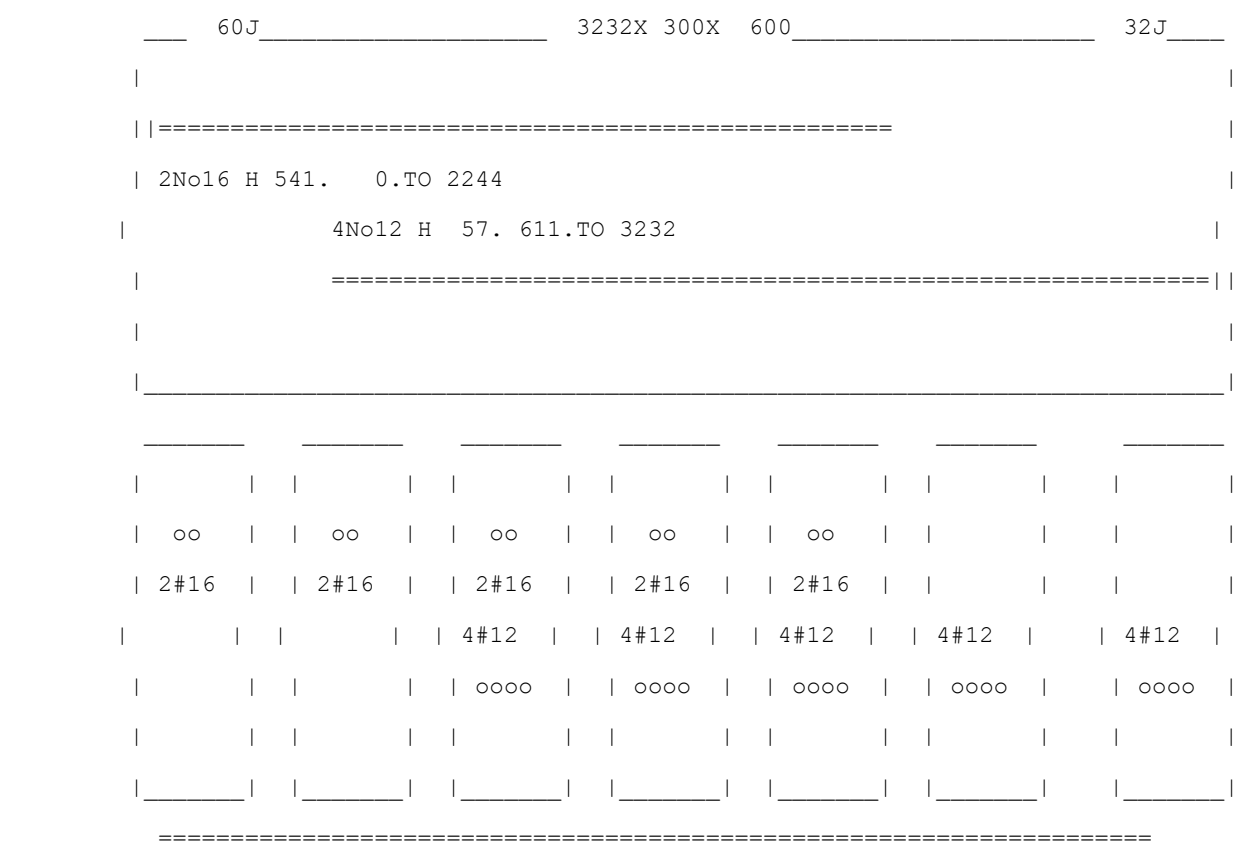
BEAM NO. 52 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	4 - 12MM	611.	3232.	NO	YES
2	541.	2 - 16MM	0.	2244.	YES	NO

B E A M N O. 52 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 43.13 KNS Vc= 126.20 KNS Vs= 0.00 KNS
Tu= 2.24 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 30.64 KNS Vc= 126.82 KNS Vs= 0.00 KNS
Tu= 2.24 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



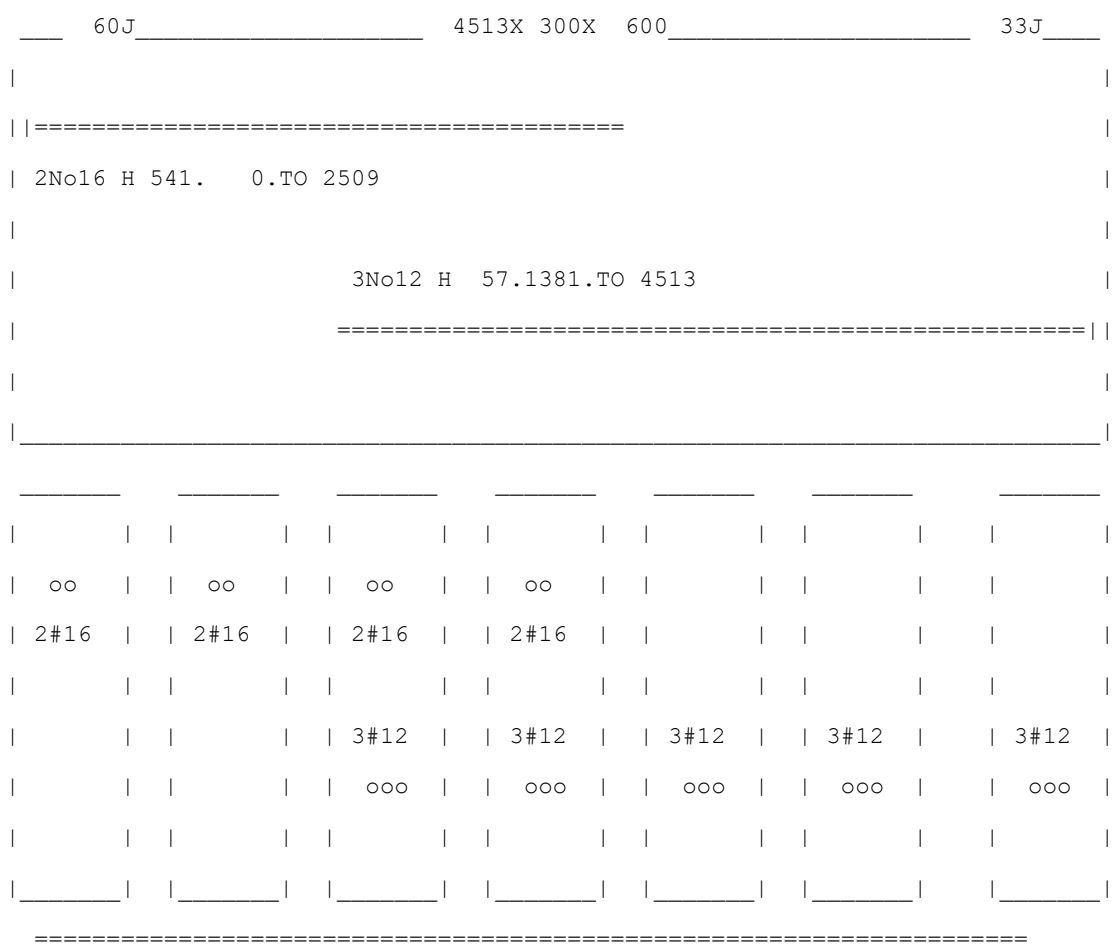
BEAM NO. 53 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 4513. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	1381.	4513.	NO	YES
2	541.	2 - 16MM	0.	2509.	YES	NO

B E A M N O. 53 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 31.66 KNS Vc= 131.58 KNS Vs= 0.00 KNS
Tu= 0.32 KN-MET Tc= 6.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 11.50 KNS Vc= 128.85 KNS Vs= 0.00 KNS
Tu= 0.32 KN-MET Tc= 6.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.

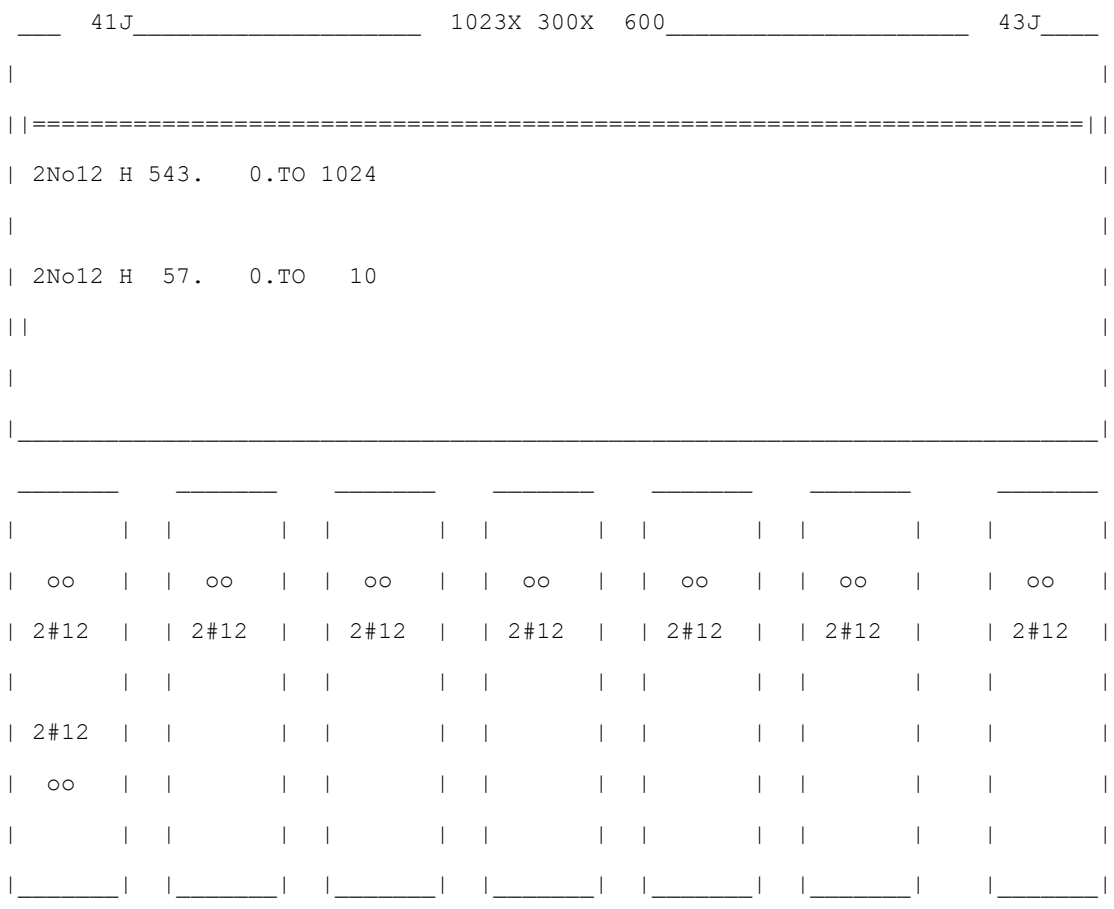


BEAM NO. 61 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	0.	10.	YES	NO
2	543.	2 - 12MM	0.	1024.	YES	YES

B E A M N O. 61 D E S I G N R E S U L T S - SHEAR

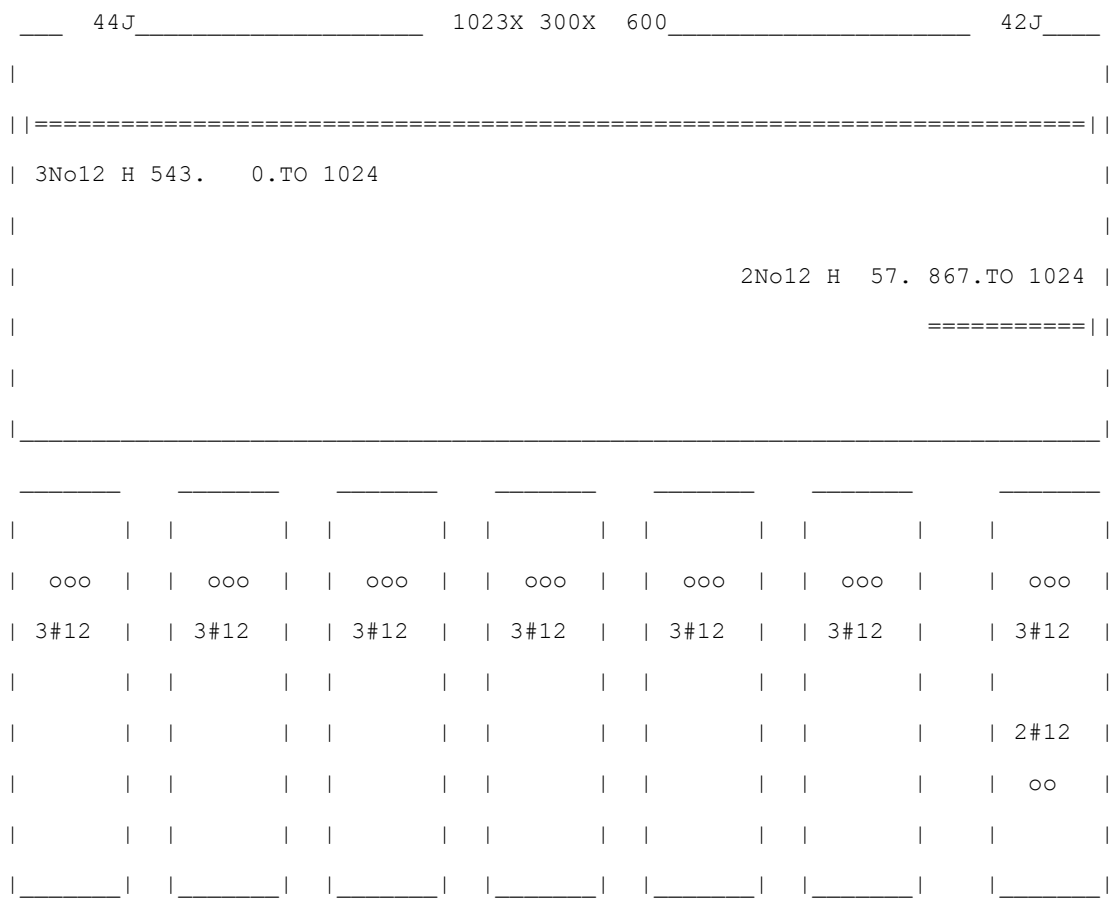


BEAM NO. 62 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	867.	1024.	NO	YES
2	543.	3 - 12MM	0.	1024.	YES	YES

B E A M N O. 62 D E S I G N R E S U L T S - SHEAR



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BEAM NO. 63 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

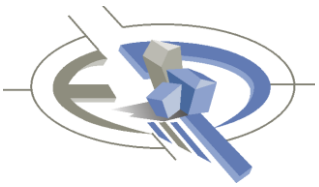
LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

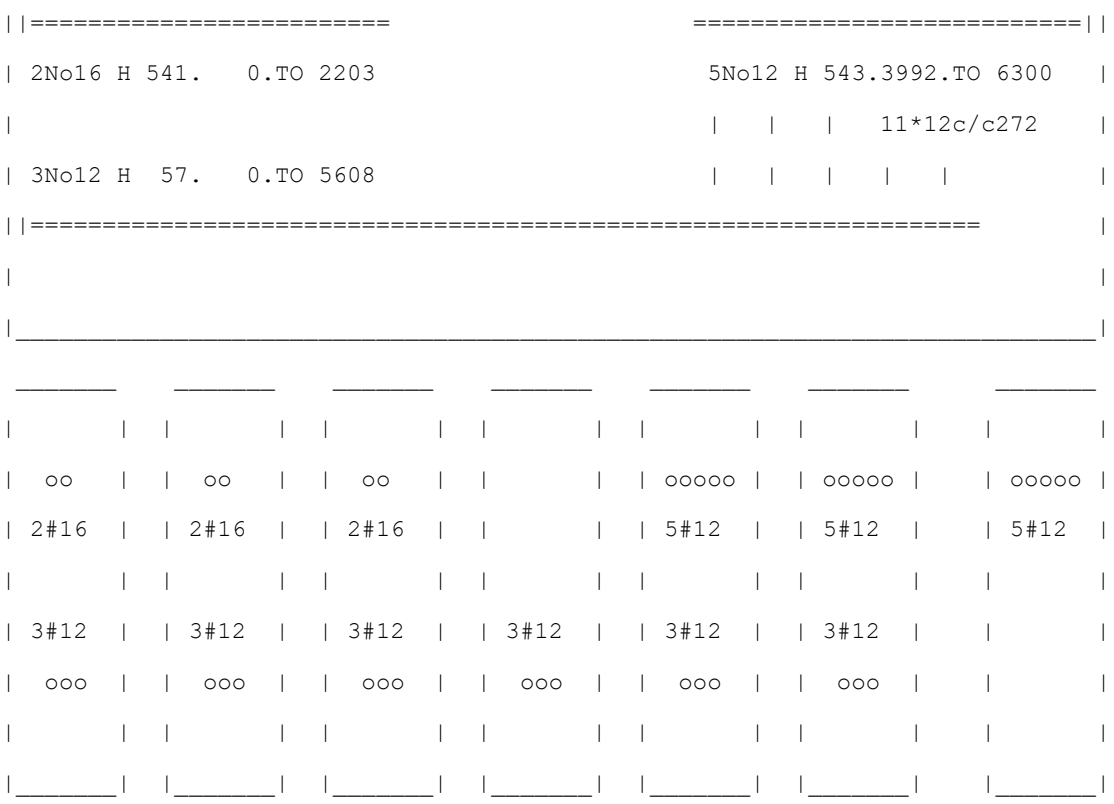
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	0.	5608.	YES	NO
2	541.	2 - 16MM	0.	2203.	YES	NO
3	543.	5 - 12MM	3992.	6300.	NO	YES

B E A M N O. 63 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 47.65 KNS Vc= 131.41 KNS Vs= 0.00 KNS
Tu= 4.58 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 57.05 KNS Vc= 131.41 KNS Vs= 0.00 KNS
Tu= 4.58 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM

___ 45J_____ 6300X 300X 600_____ 46J____





BEAM NO. 64 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	500.	5538.	NO	NO
2	543.	5 - 12MM	0.	2046.	YES	NO
3	543.	4 - 12MM	3992.	6300.	NO	YES

B E A M N O. 64 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 53.81 KNS Vc= 131.68 KNS Vs= 0.00 KNS

Tu= 0.34 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM

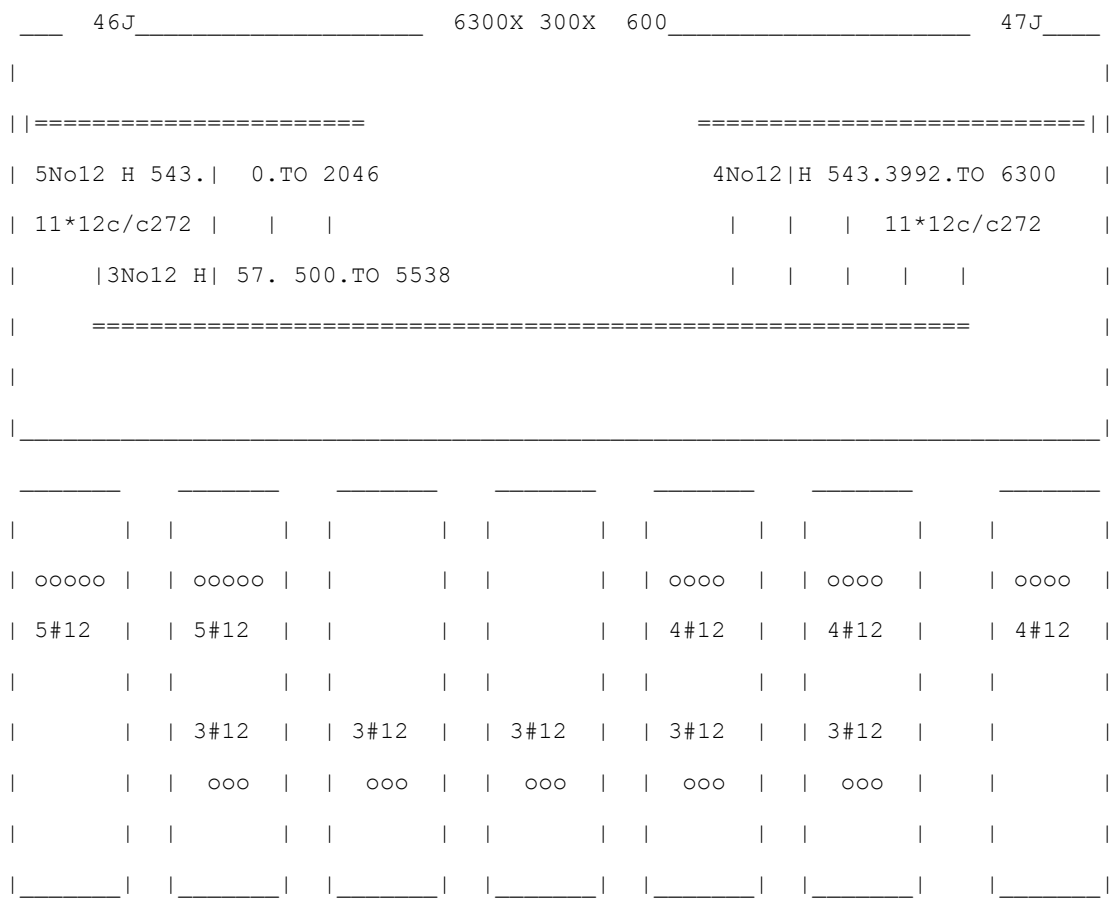
AT END SUPPORT - Vu= 50.90 KNS Vc= 131.68 KNS Vs= 0.00 KNS

Tu= 0.34 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM



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BEAM NO. 65 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

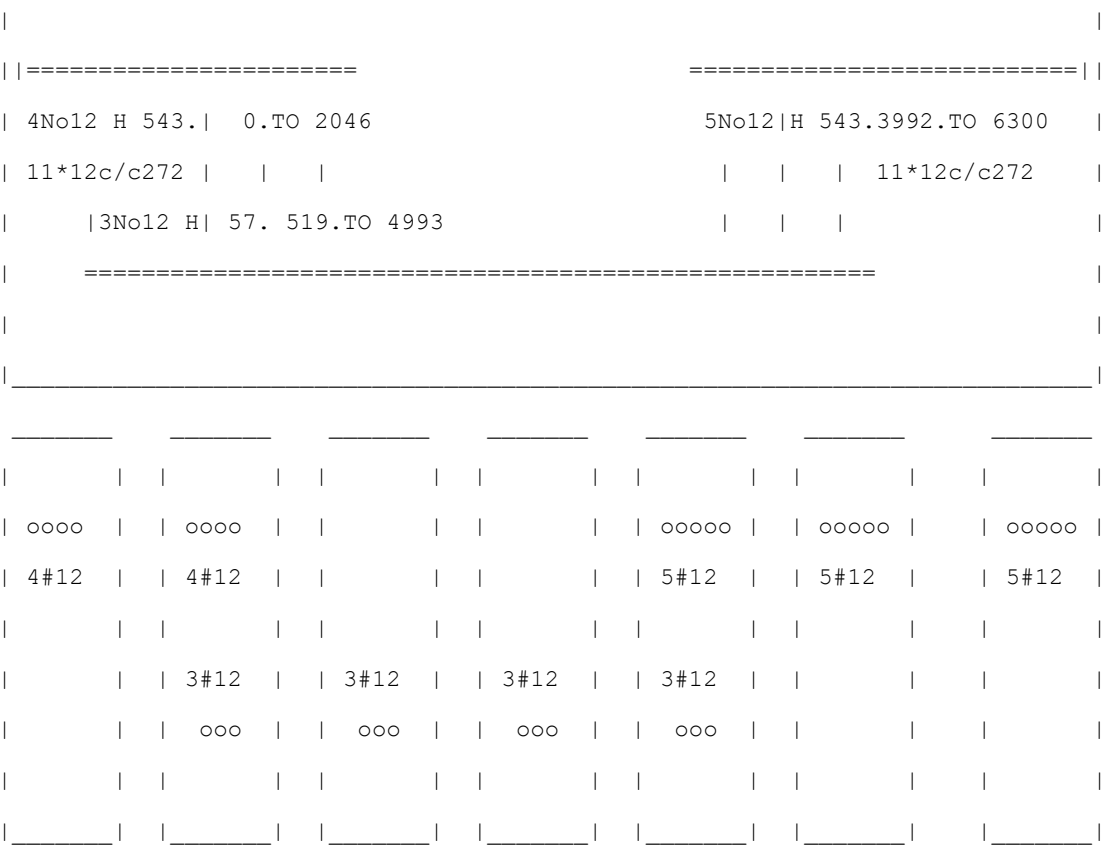
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	3 - 12MM	519.	4993.	NO	NO
2	543.	4 - 12MM	0.	2046.	YES	NO
3	543.	5 - 12MM	3992.	6300.	NO	YES

B E A M N O. 65 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 51.48 KNS Vc= 133.04 KNS Vs= 0.00 KNS
Tu= 0.15 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM

AT END SUPPORT - Vu= 53.23 KNS Vc= 133.04 KNS Vs= 0.00 KNS
Tu= 0.15 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM

___ 47J_____ 6300X 300X 600_____ 48J____



BEAM NO. 66 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

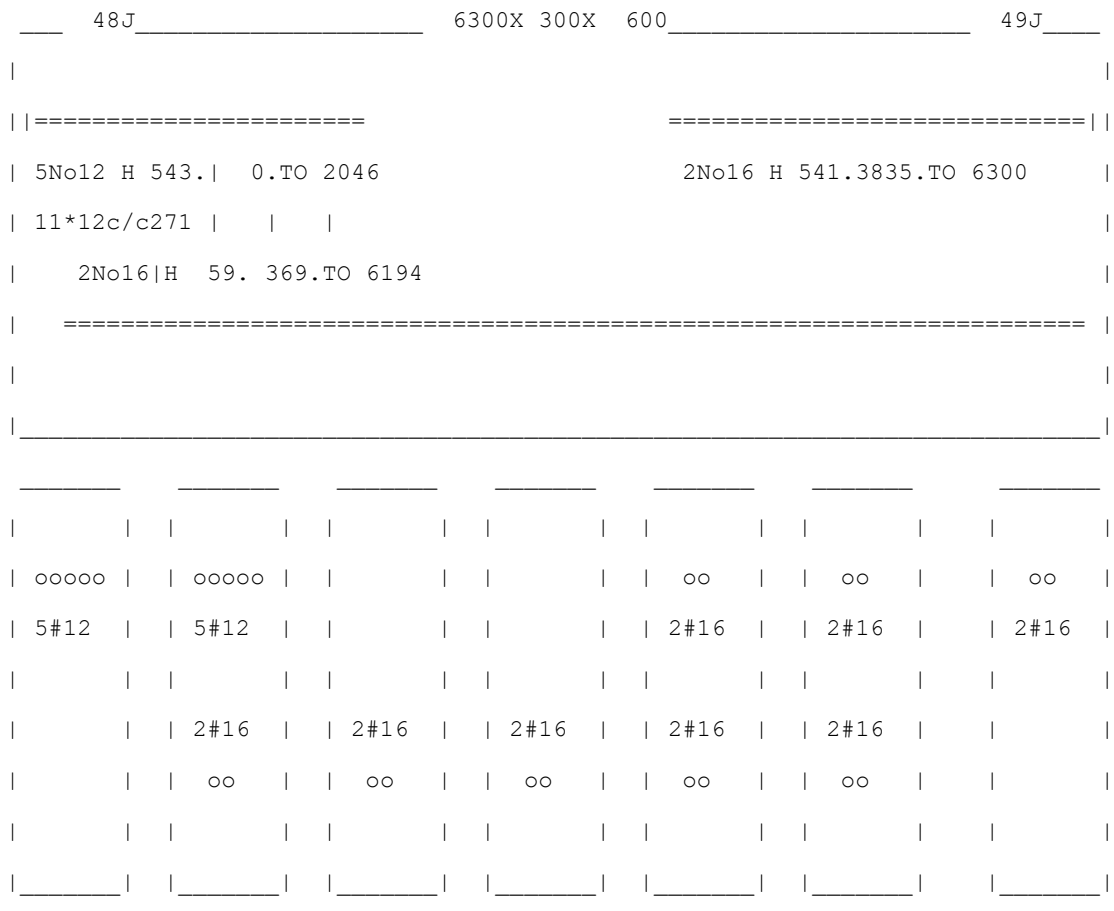
LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	369.	6194.	NO	NO
2	543.	5 - 12MM	0.	2046.	YES	NO
3	541.	2 - 16MM	3835.	6300.	NO	YES

B E A M N O. 66 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 56.77 KNS Vc= 131.22 KNS Vs= 0.00 KNS
Tu= 4.29 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 2614. MM

AT END SUPPORT - Vu= 47.93 KNS Vc= 131.22 KNS Vs= 0.00 KNS
Tu= 4.29 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



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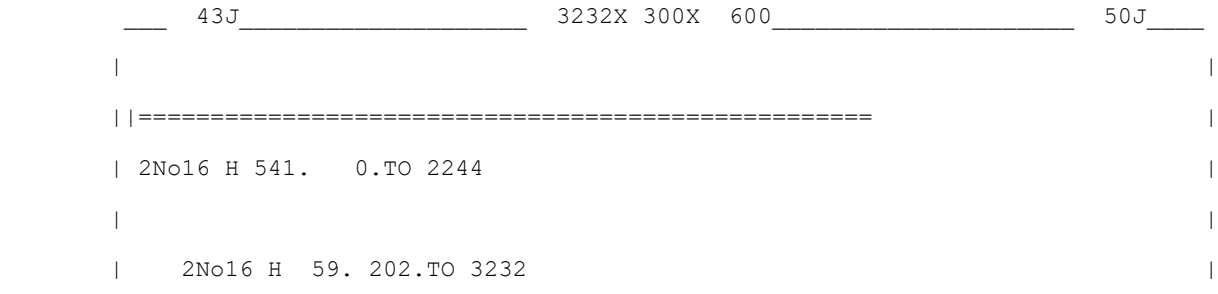
BEAM NO. 67 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

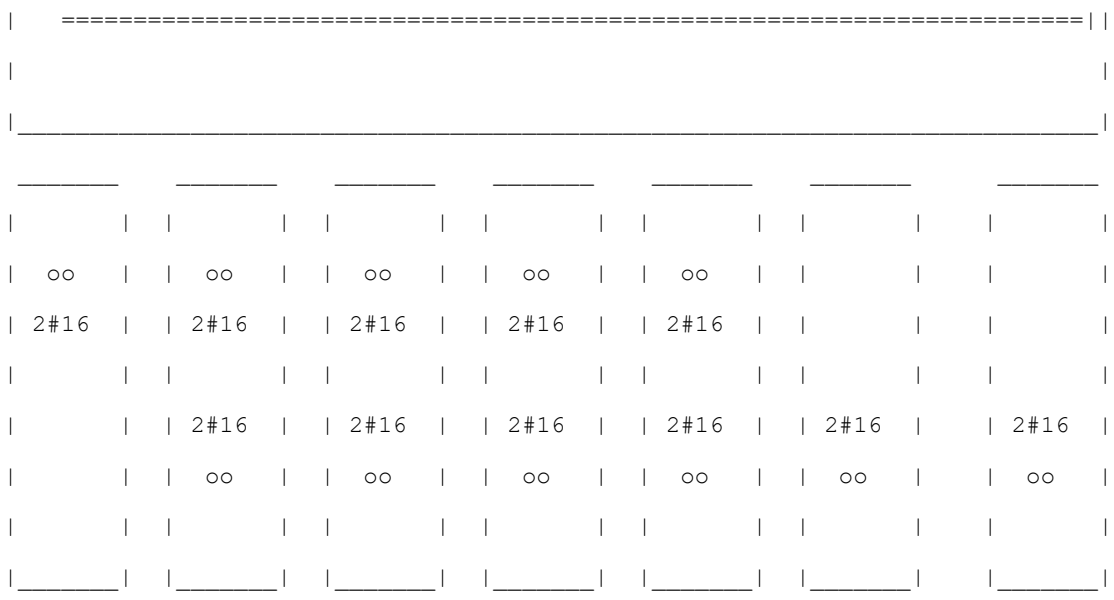
LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	202.	3232.	NO	YES
2	541.	2 - 16MM	0.	2244.	YES	NO

B E A M N O. 67 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 40.14 KNS Vc= 132.60 KNS Vs= 0.00 KNS
Tu= 4.16 KN-MET Tc= 5.7 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 27.64 KNS Vc= 129.38 KNS Vs= 0.00 KNS
Tu= 4.16 KN-MET Tc= 5.6 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.





BEAM NO. 68 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	0.	2896.	YES	NO
2	541.	2 - 16MM	854.	3232.	NO	YES

B E A M N O. 68 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 27.21 KNS Vc= 129.30 KNS Vs= 0.00 KNS
Tu= 6.09 KN-MET Tc= 5.6 KN-MET Ts= 8.1 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1080. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.54 SQ.CM.

AT END SUPPORT - Vu= 39.71 KNS Vc= 132.70 KNS Vs= 0.00 KNS

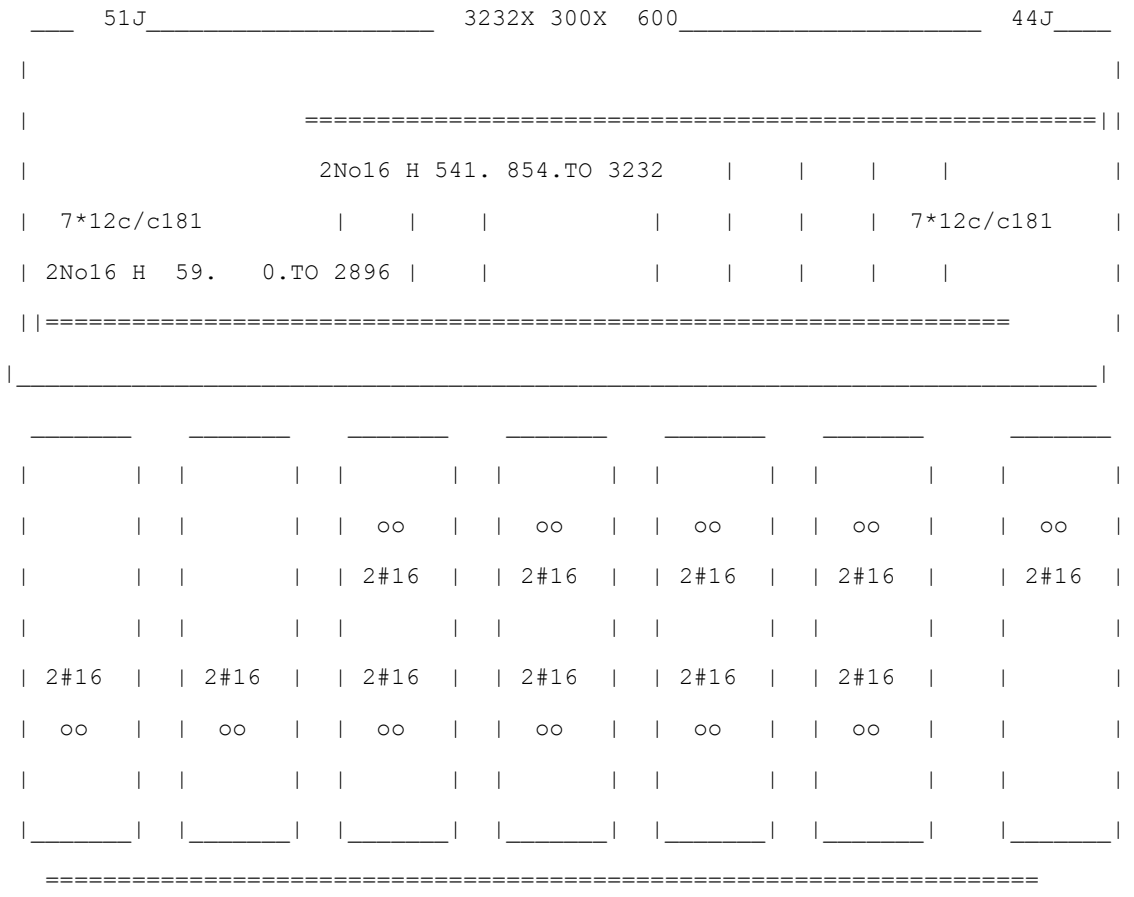
Tu= 6.09 KN-MET Tc= 5.6 KN-MET Ts= 8.1 KN-MET LOAD 6

STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1080. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.54 SQ.CM.



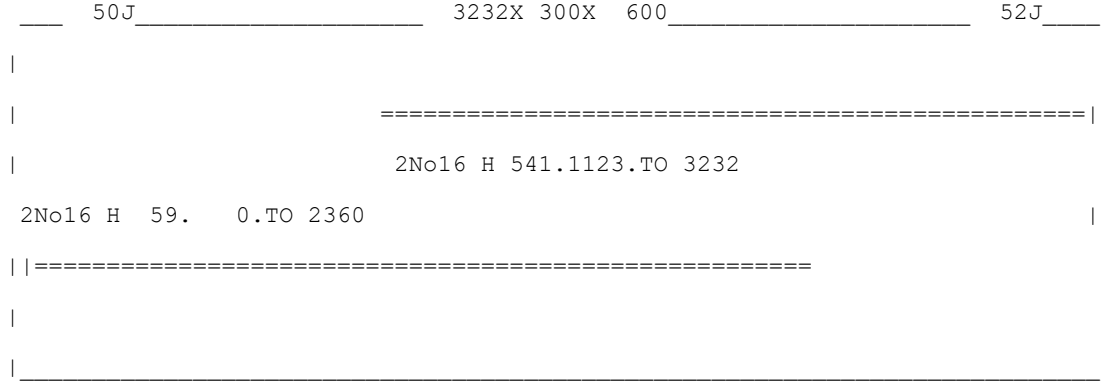
BEAM NO. 74 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

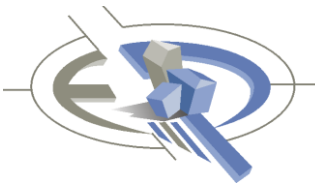
LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

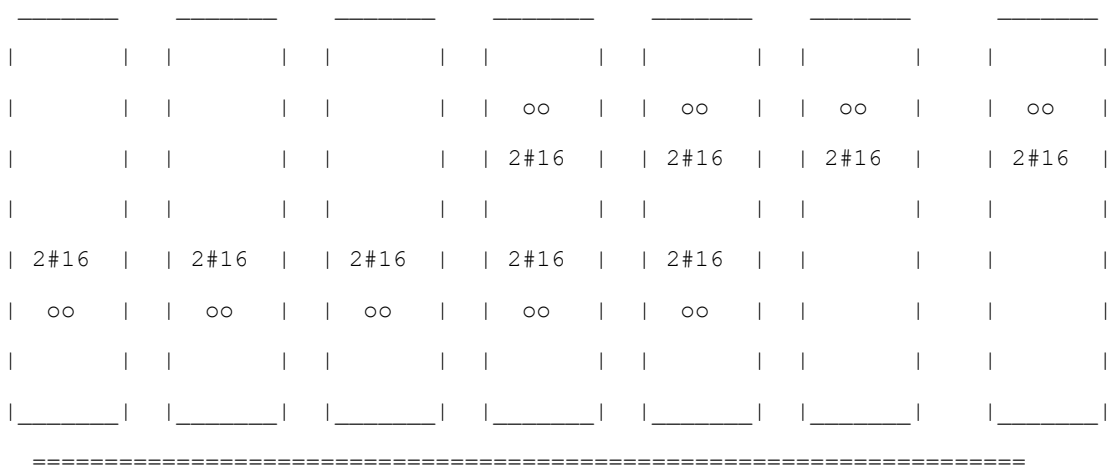
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	0.	2360.	YES	NO
2	541.	2 - 16MM	1123.	3232.	NO	YES

B E A M N O. 74 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 29.98 KNS Vc= 125.73 KNS Vs= 0.00 KNS
Tu= 3.10 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 42.48 KNS Vc= 125.11 KNS Vs= 0.00 KNS
Tu= 3.10 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.







BEAM NO. 75 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3232. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

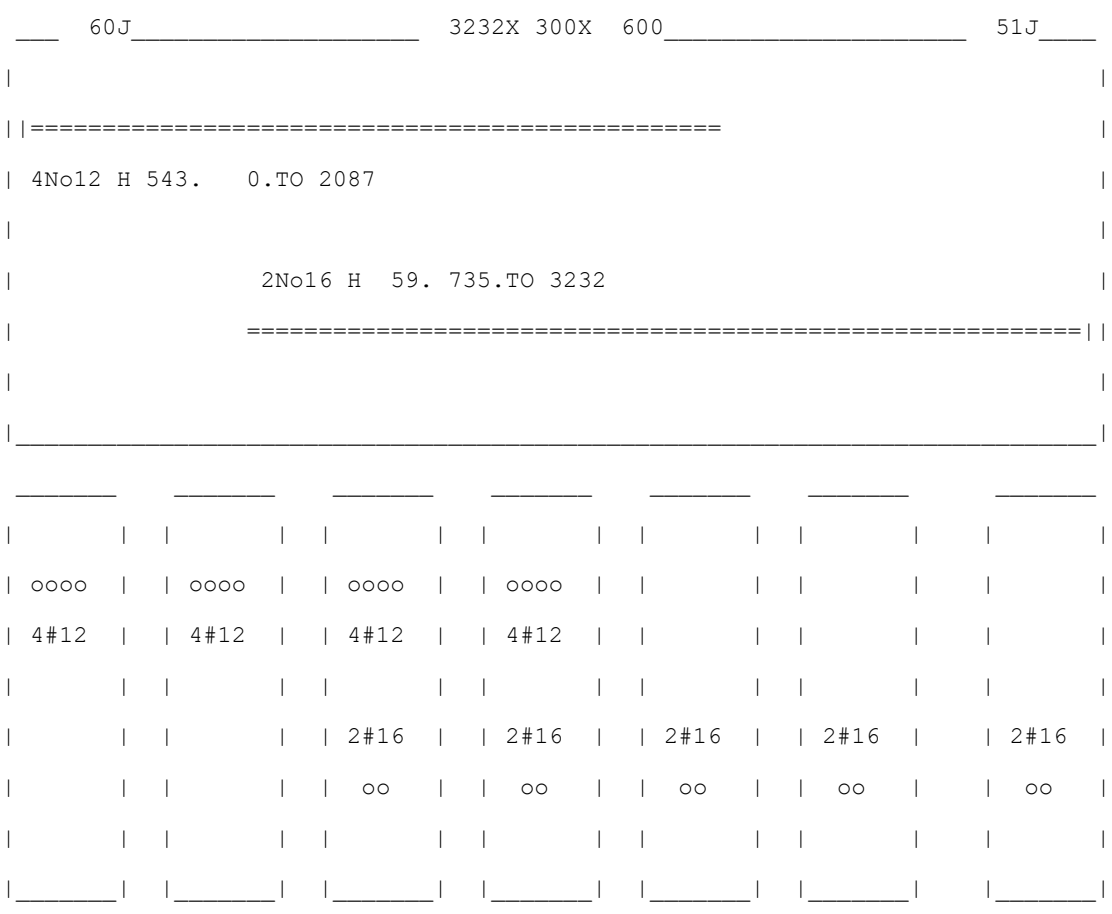
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 16MM	735.	3232.	NO	YES
2	543.	4 - 12MM	0.	2087.	YES	NO

B E A M N O. 75 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 43.66 KNS Vc= 123.58 KNS Vs= 0.00 KNS
Tu= 1.55 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 31.17 KNS Vc= 124.20 KNS Vs= 0.00 KNS

Tu= 1.55 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6

STIRRUPS ARE NOT REQUIRED.



BEAM NO. 76 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

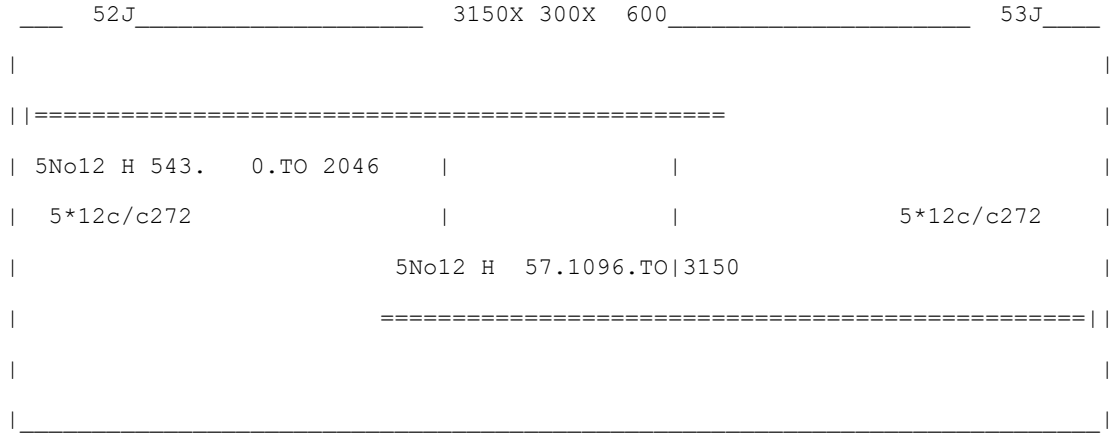
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END

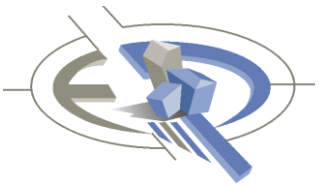
1	57.	5 - 12MM	1096.	3150.	NO	YES
2	543.	5 - 12MM	0.	2046.	YES	NO

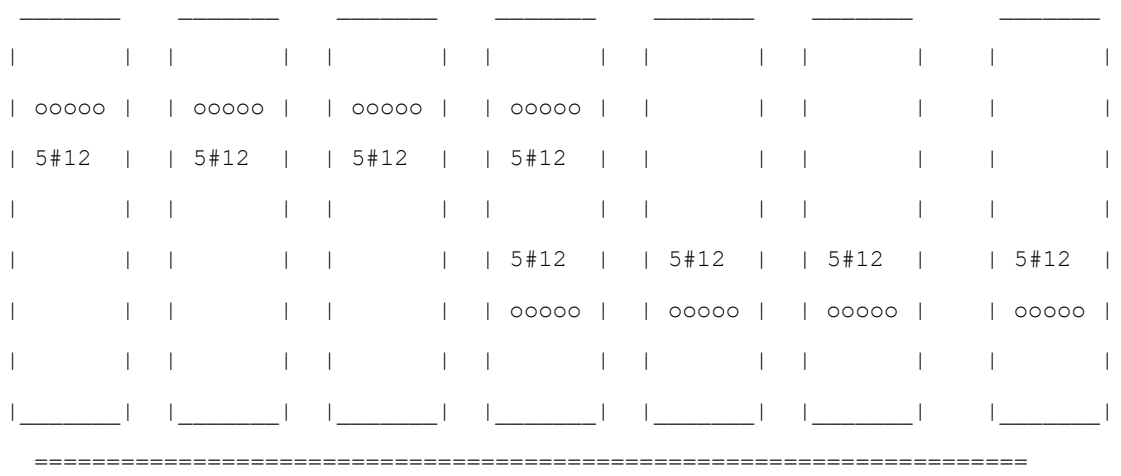
B E A M N O. 76 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 66.55 KNS Vc= 133.21 KNS Vs= 0.00 KNS
Tu= 1.96 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 54.22 KNS Vc= 133.12 KNS Vs= 0.00 KNS
Tu= 1.96 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM







BEAM NO. 77 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

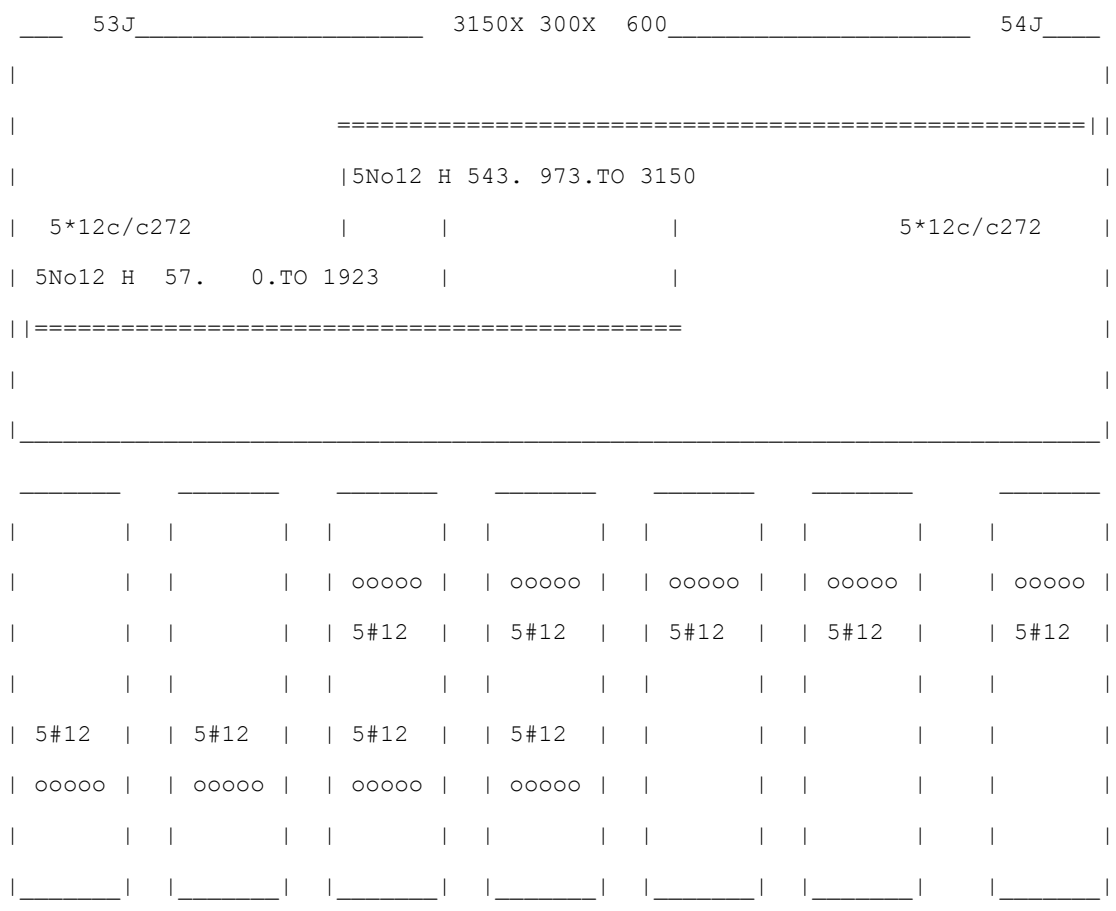
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	1923.	YES	NO
2	543.	5 - 12MM	973.	3150.	NO	YES

B E A M N O. 77 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 51.05 KNS Vc= 132.08 KNS Vs= 0.00 KNS
Tu= 0.82 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 63.38 KNS Vc= 132.08 KNS Vs= 0.00 KNS
Tu= 0.82 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM



BEAM NO. 78 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

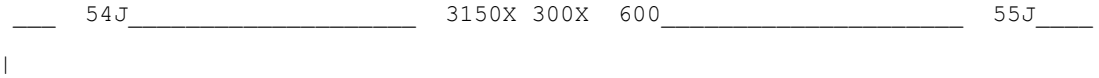
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	833.	3150.	NO	YES
2	543.	5 - 12MM	0.	2308.	YES	NO

B E A M N O. 78 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 65.57 KNS Vc= 127.37 KNS Vs= 0.00 KNS
Tu= 0.87 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 53.24 KNS Vc= 127.37 KNS Vs= 0.00 KNS
Tu= 0.87 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM



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||=======================================================                       |
| 5No12 H 543.   0.TO 2308    |               |      |                          |
|  5*12c/c272          |      |               |      |        5*12c/c272        |
|                  5No12 H  57. 833.TO 3150 |      |                            |
|                 =======================================================||
|                                                                               |
|_______________________________________________________________________________|
 _______    _______    _______    _______    _______    _______      _______
|       |  |       |  |       |  |       |  |       |  |       |    |       |
| ooooo |  | ooooo |  | ooooo |  | ooooo |  | ooooo |  |       |    |       |
| 5#12  |  | 5#12  |  | 5#12  |  | 5#12  |  | 5#12  |  |       |    |       |
|       |  |       |  |       |  |       |  |       |  |       |    |       |
|       |  |       |  | 5#12  |  | 5#12  |  | 5#12  |  | 5#12  |    | 5#12  |
|       |  |       |  | ooooo |  | ooooo |  | ooooo |  | ooooo |    | ooooo |
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       BEAM  NO.    79 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

 LEN -  3150. MM  FY -  414.  FC -  25.  MPA, SIZE -  300. X  600. MMS

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


   1         57.     5 - 12MM         0.         2710.         YES   NO
   2        539.     2 - 20MM       396.         3150.         NO    YES
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B E A M N O. 79 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 51.78 KNS Vc= 126.31 KNS Vs= 0.00 KNS

Tu= 0.02 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

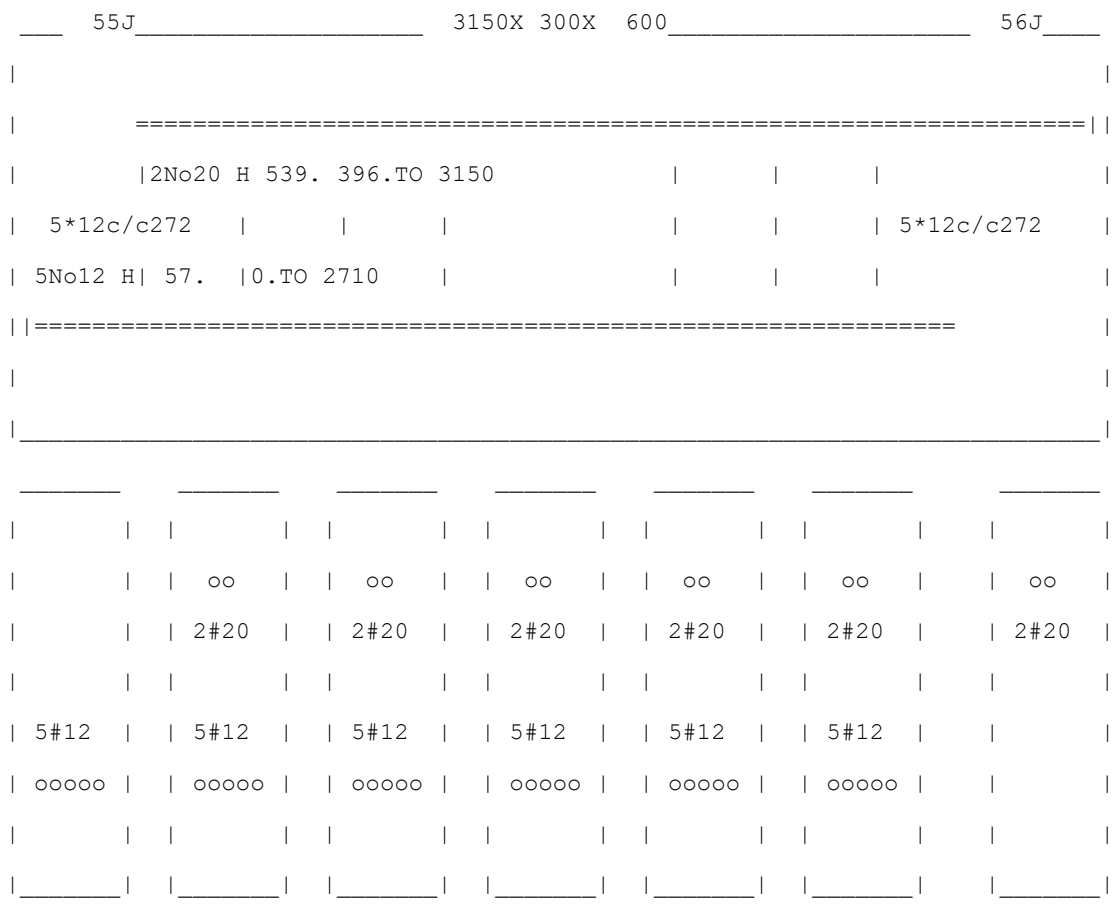
AT END SUPPORT - Vu= 64.11 KNS Vc= 126.31 KNS Vs= 0.00 KNS

Tu= 0.02 KN-MET Tc= 5.2 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM



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BEAM NO. 80 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

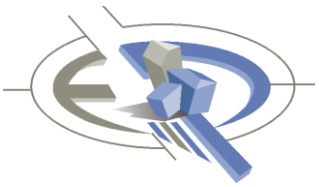
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	3150.	YES	YES
2	541.	4 - 16MM	0.	2728.	YES	NO

B E A M N O. 80 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 64.60 KNS Vc= 125.09 KNS Vs= 0.00 KNS
Tu= 1.23 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 52.27 KNS Vc= 125.09 KNS Vs= 0.00 KNS
Tu= 1.23 KN-MET Tc= 5.1 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM



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 ___  56J_____________________  3150X 300X  600_____________________  57J____
|                                                                              |
||=============================================================          |
| 4No16 H|541.  |0.TO 2728    |               |      |      |                |
|  5*12c/c272   |      |      |               |      |      | 5*12c/c272     |
| 5No12 H| 57.  |0.TO 3150    |               |      |      |                |
||=============================================================================||
|                                                                              |
|______________________________________________________________________________|

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| oooo  |  | oooo  |  | oooo  |  | oooo  |  | oooo  |  | oooo  |    |       |
| 4#16  |  | 4#16  |  | 4#16  |  | 4#16  |  | 4#16  |  | 4#16  |    |       |
|       |  |       |  |       |  |       |  |       |  |       |    |       |
| 5#12  |  | 5#12  |  | 5#12  |  | 5#12  |  | 5#12  |  | 5#12  |    | 5#12  |
| ooooo |  | ooooo |  | ooooo |  | ooooo |  | ooooo |  | ooooo |    | ooooo |
|       |  |       |  |       |  |       |  |       |  |       |    |       |
|_______|  |_______|  |_______|  |_______|  |_______|  |_______|    |_______|
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BEAM NO. 81 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	3150.	YES	YES
2	541.	4 - 16MM	553.	3150.	NO	YES

B E A M N O. 81 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 48.14 KNS Vc= 119.43 KNS Vs= 0.00 KNS

Tu= 7.39 KN-MET Tc= 4.9 KN-MET Ts= 9.9 KN-MET LOAD 8

STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.87 SQ.CM.

AT END SUPPORT - Vu= 41.01 KNS Vc= 119.43 KNS Vs= 0.00 KNS

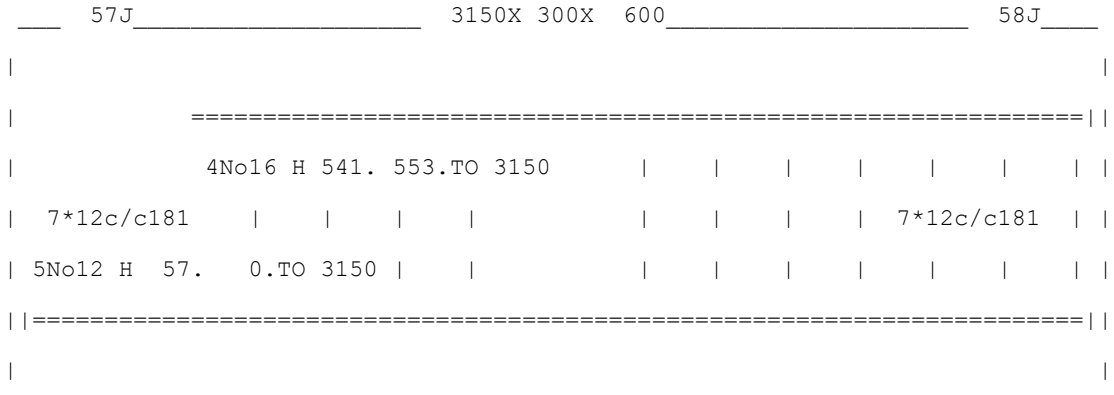
Tu= 7.39 KN-MET Tc= 4.9 KN-MET Ts= 9.9 KN-MET LOAD 7

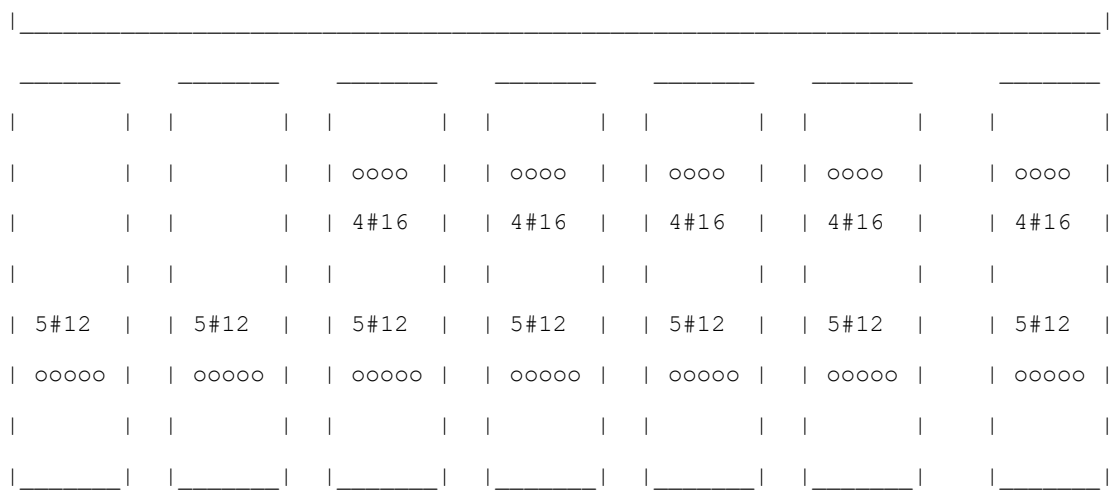
STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.87 SQ.CM.





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BEAM NO. 82 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	308.	3150.	NO	YES
2	541.	3 - 16MM	0.	2465.	YES	NO

B E A M N O. 82 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 42.76 KNS Vc= 124.87 KNS Vs= 0.00 KNS
Tu= 7.59 KN-MET Tc= 5.1 KN-MET Ts= 10.1 KN-MET LOAD 8
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.92 SQ.CM.

AT END SUPPORT - Vu= 42.45 KNS Vc= 124.87 KNS Vs= 0.00 KNS

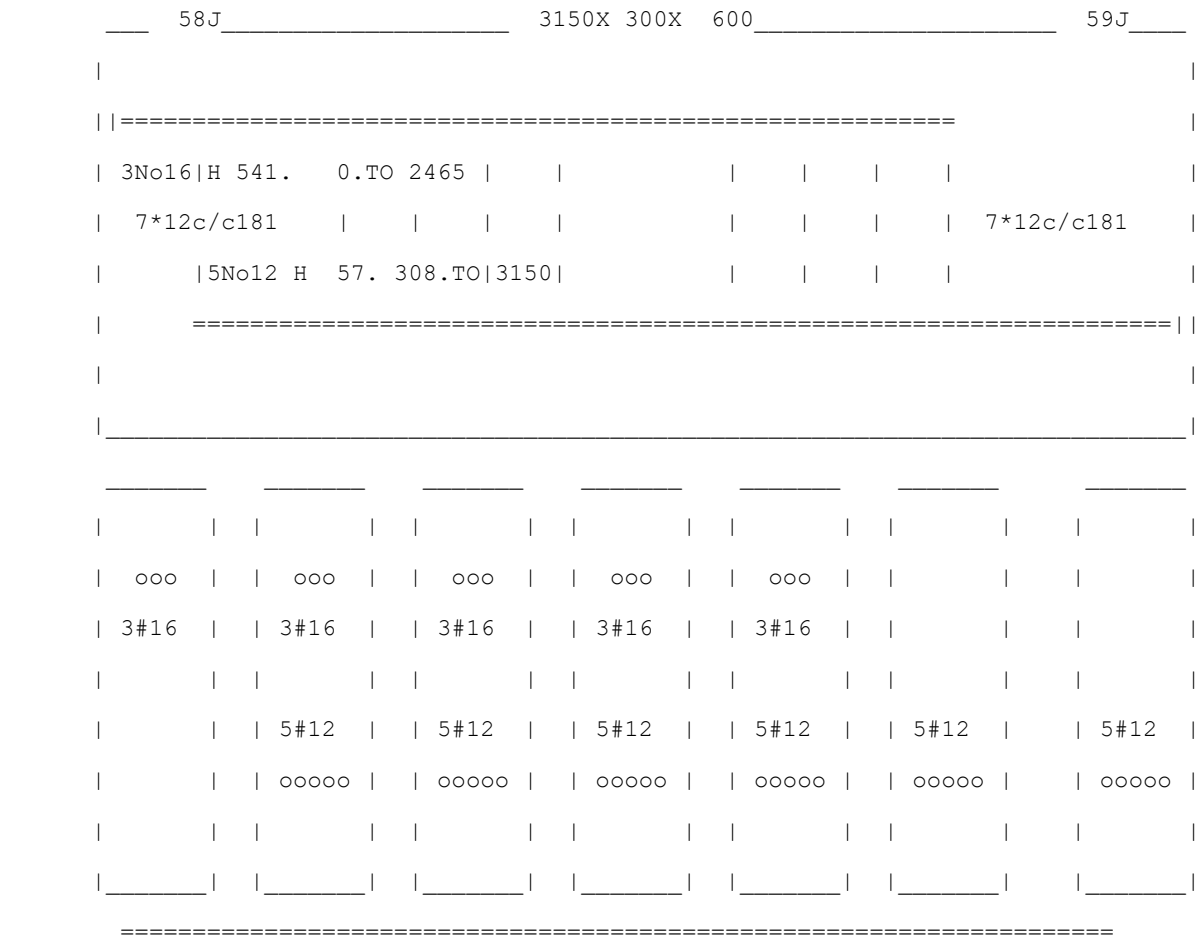
Tu= 7.59 KN-MET Tc= 5.1 KN-MET Ts= 10.1 KN-MET LOAD 7

STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.92 SQ.CM.



BEAM NO. 83 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

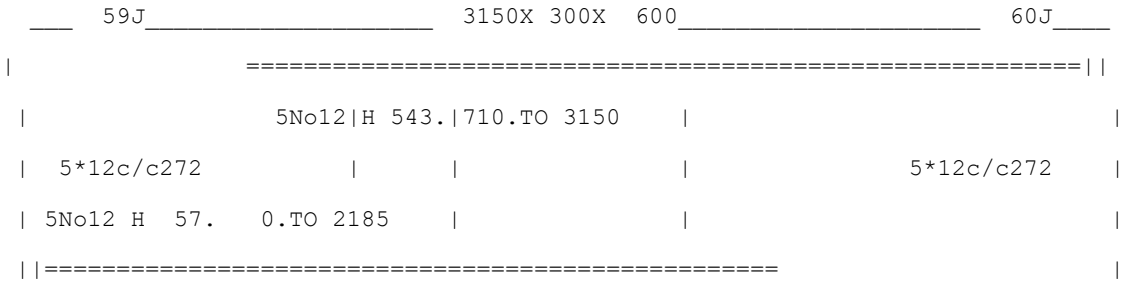
LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

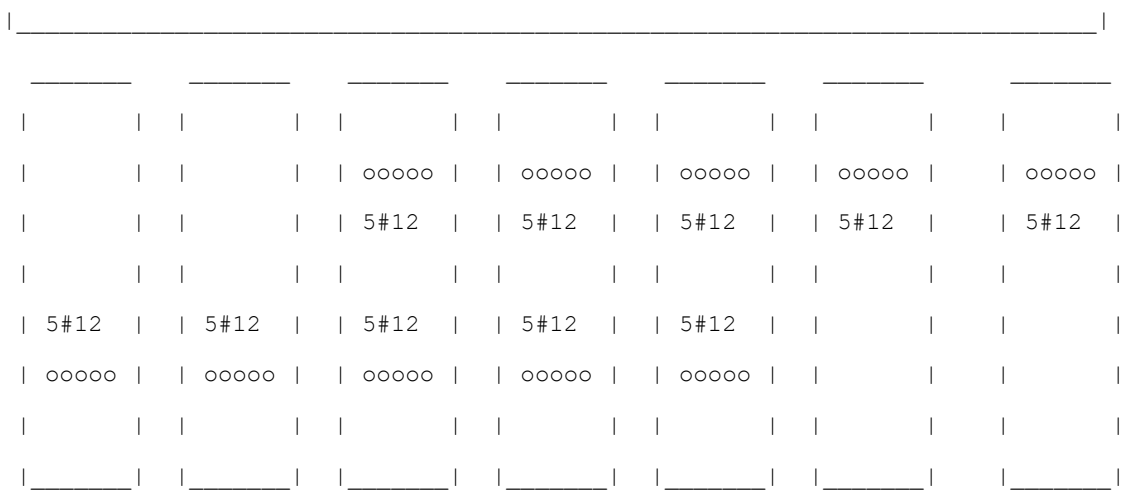
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	2185.	YES	NO
2	543.	5 - 12MM	710.	3150.	NO	YES

B E A M N O. 83 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 55.53 KNS Vc= 133.08 KNS Vs= 0.00 KNS
Tu= 0.64 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM

AT END SUPPORT - Vu= 67.87 KNS Vc= 133.08 KNS Vs= 0.00 KNS
Tu= 0.64 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1038. MM





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BEAM NO. 86 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

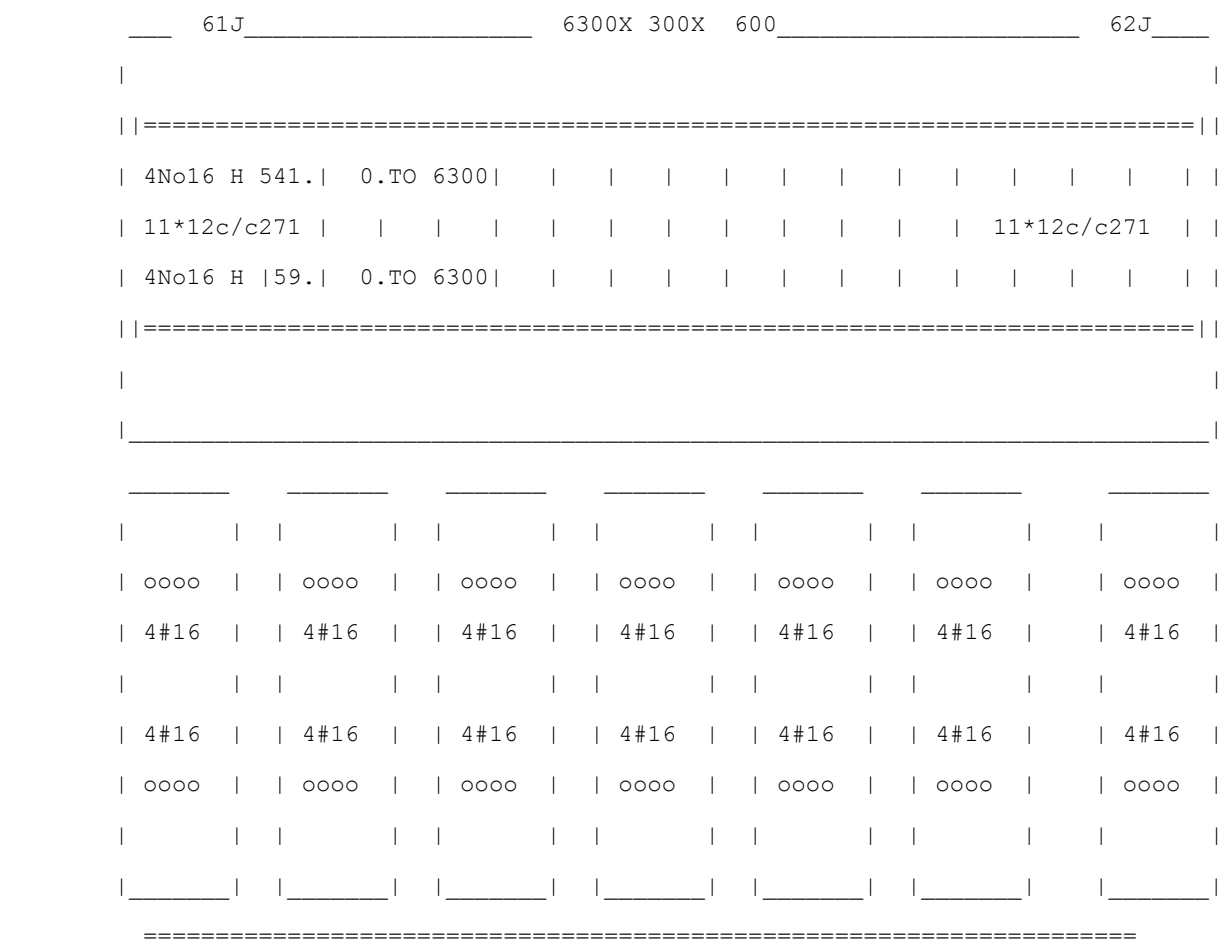
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 16MM	0.	6300.	YES	YES
2	541.	4 - 16MM	0.	6300.	YES	YES

B E A M N O. 86 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 50.16 KNS Vc= 129.73 KNS Vs= 0.00 KNS
Tu= 1.24 KN-MET Tc= 5.6 KN-MET Ts= 0.0 KN-MET LOAD 11
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 2614. MM

AT END SUPPORT - Vu= 50.55 KNS Vc= 129.79 KNS Vs= 0.00 KNS
Tu= 1.24 KN-MET Tc= 5.6 KN-MET Ts= 0.0 KN-MET LOAD 12
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 2614. MM



BEAM NO. 89 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

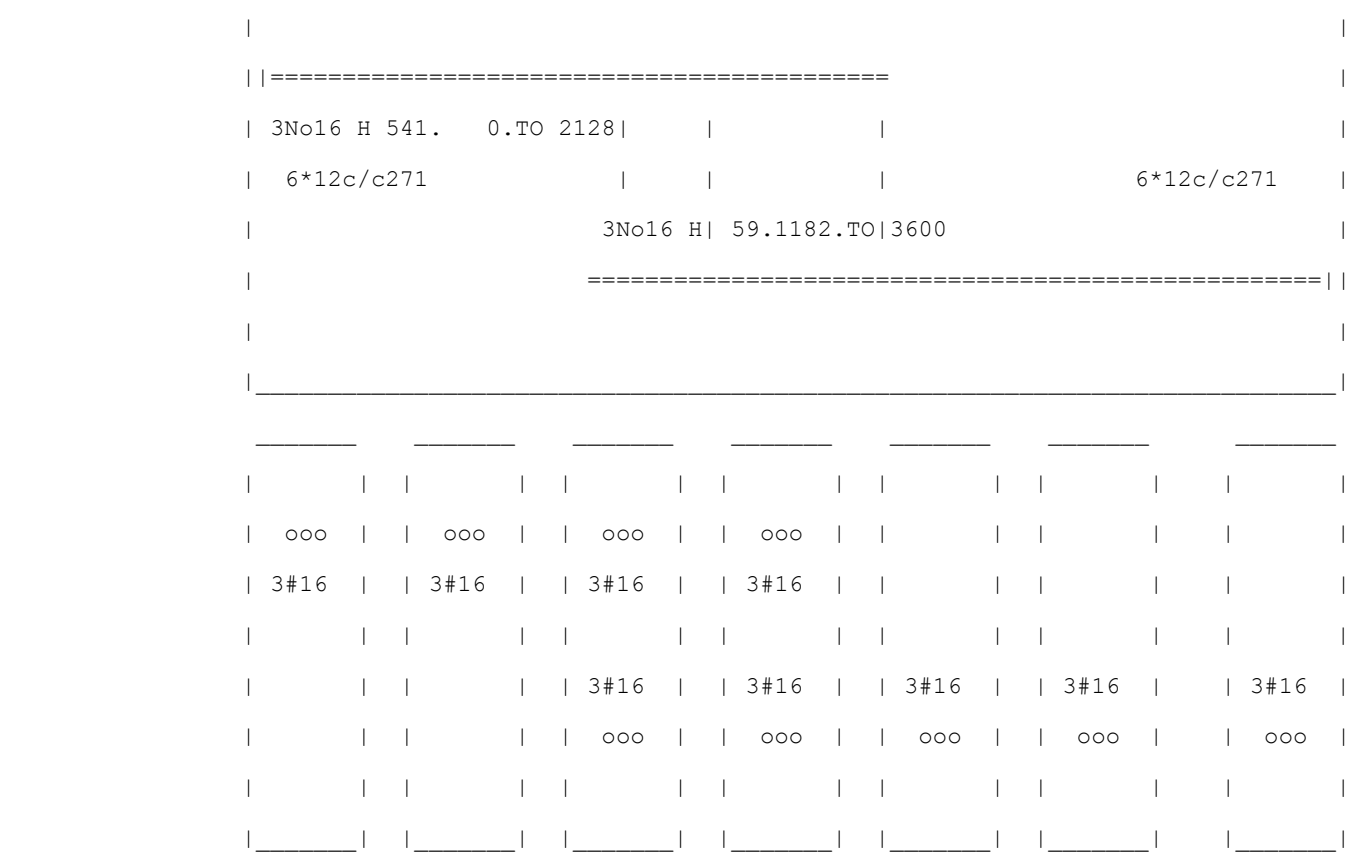
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 16MM	1182.	3600.	NO	YES
2	541.	3 - 16MM	0.	2128.	YES	NO

B E A M N O. 89 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 70.59 KNS Vc= 132.53 KNS Vs= 0.00 KNS
Tu= 0.38 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM

AT END SUPPORT - Vu= 55.58 KNS Vc= 130.82 KNS Vs= 0.00 KNS
Tu= 0.38 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM

___ 43J_____ 3600X 300X 600_____ 65J____



BEAM NO. 90 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

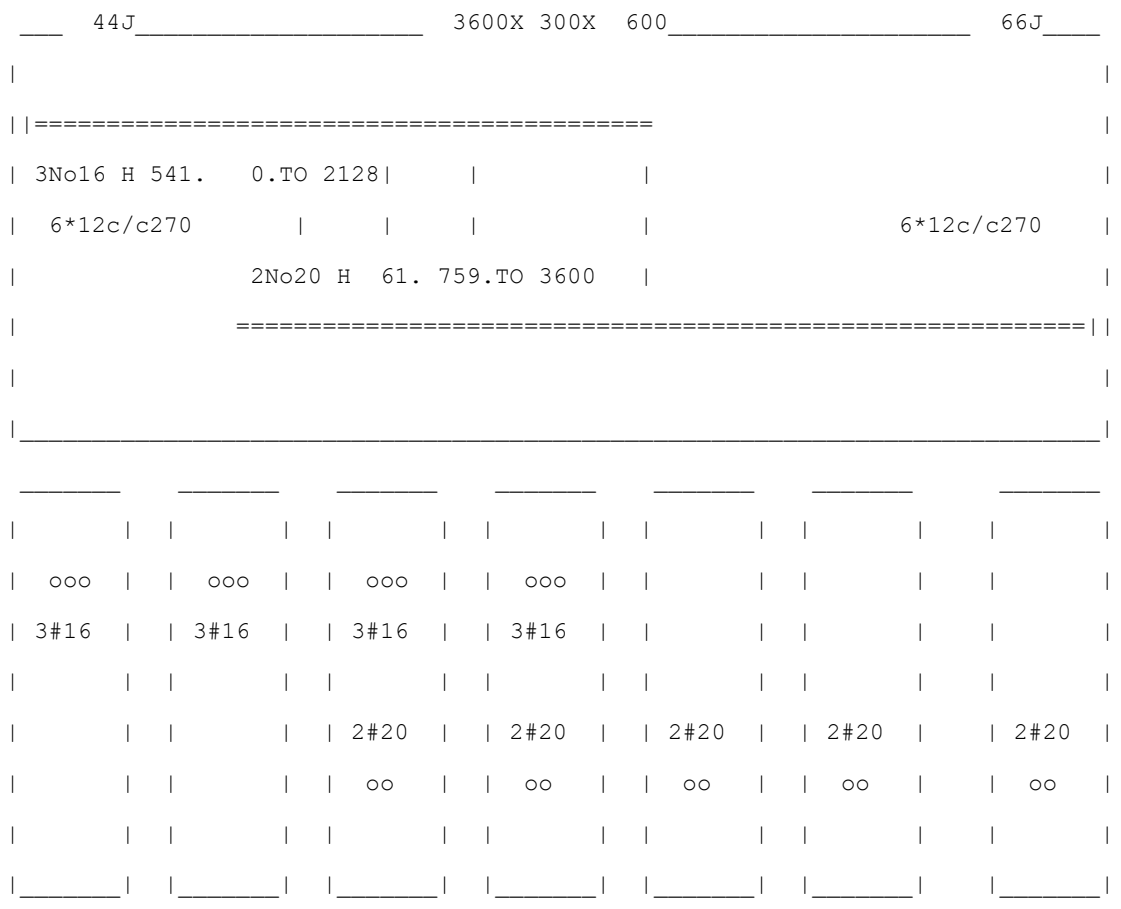
LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	2 - 20MM	759.	3600.	NO	YES
2	541.	3 - 16MM	0.	2128.	YES	NO

B E A M N O. 90 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 72.16 KNS Vc= 132.66 KNS Vs= 0.00 KNS
Tu= 1.35 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 1264. MM

AT END SUPPORT - Vu= 57.16 KNS Vc= 130.52 KNS Vs= 0.00 KNS
Tu= 1.35 KN-MET Tc= 5.8 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 1264. MM



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BEAM NO. 91 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

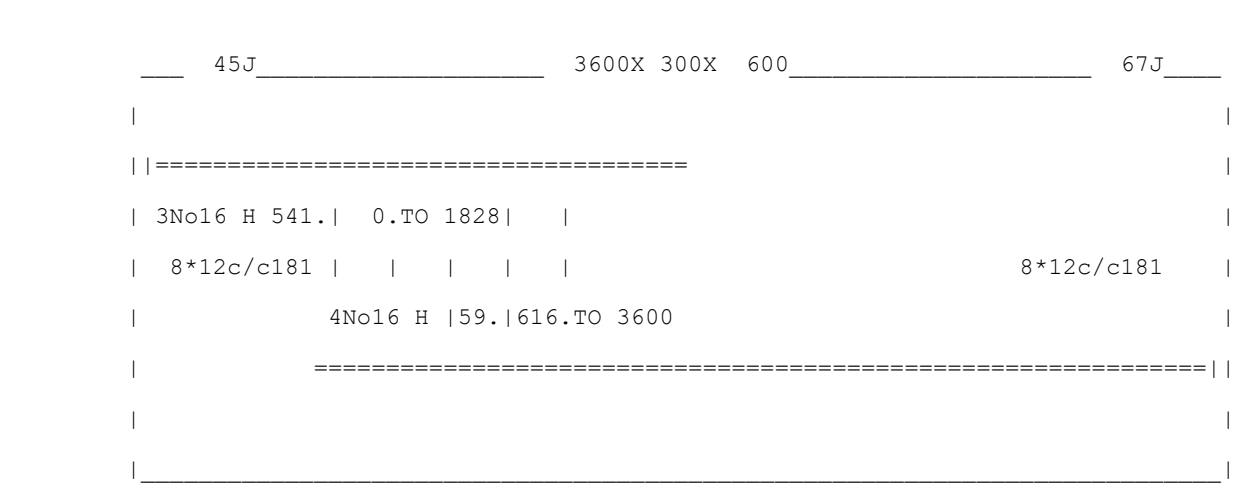
LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 16MM	616.	3600.	NO	YES
2	541.	3 - 16MM	0.	1828.	YES	NO

B E A M N O. 91 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 90.36 KNS Vc= 126.94 KNS Vs= 0.00 KNS
Tu= 13.48 KN-MET Tc= 5.2 KN-MET Ts= 18.0 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.41 SQ.CM.

AT END SUPPORT - Vu= 48.50 KNS Vc= 126.94 KNS Vs= 0.00 KNS
Tu= 13.48 KN-MET Tc= 5.2 KN-MET Ts= 18.0 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.41 SQ.CM.



BEAM NO. 95 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 16MM	624.	3600.	NO	YES
2	543.	5 - 12MM	0.	1671.	YES	NO

B E A M N O. 95 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 89.29 KNS Vc= 129.11 KNS Vs= 0.00 KNS

Tu= 12.75 KN-MET Tc= 5.3 KN-MET Ts= 17.0 KN-MET LOAD 6

STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.23 SQ.CM.

AT END SUPPORT - Vu= 47.43 KNS Vc= 129.11 KNS Vs= 0.00 KNS

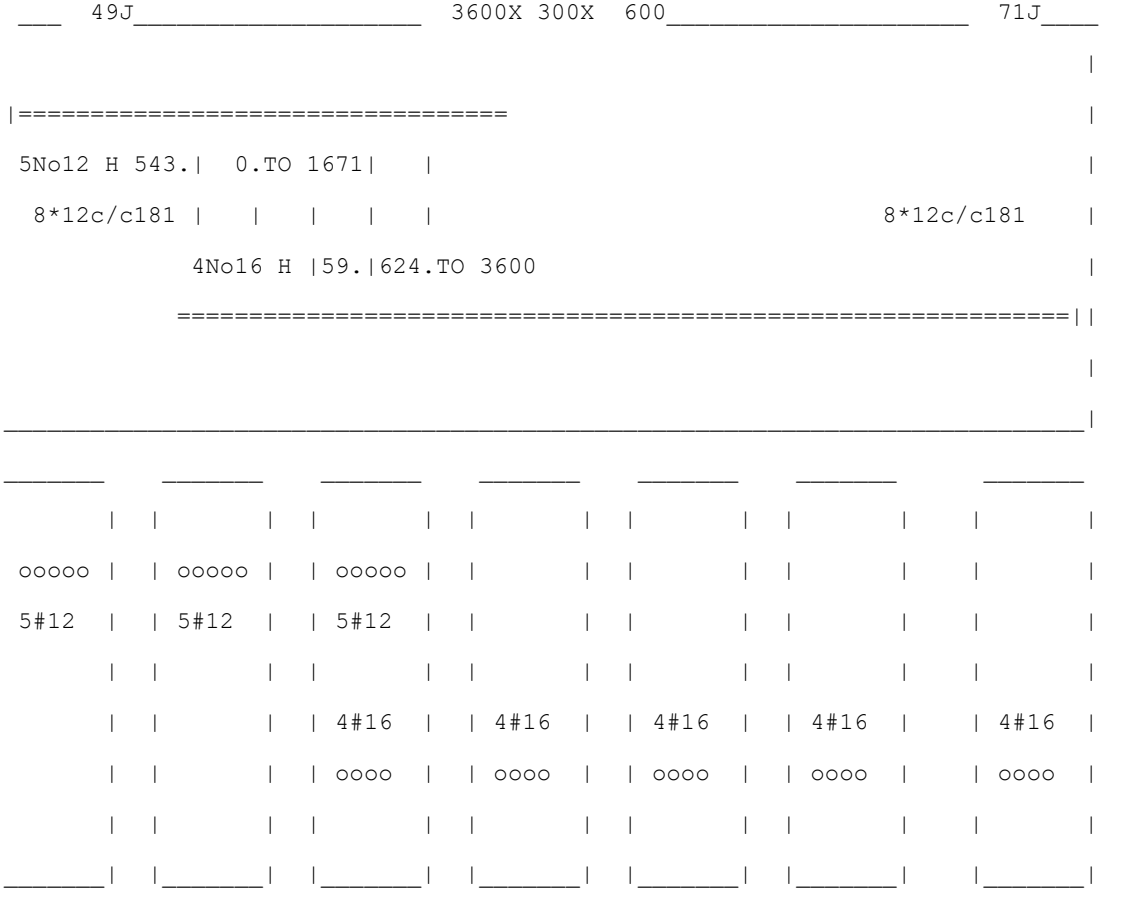
Tu= 12.75 KN-MET Tc= 5.3 KN-MET Ts= 17.0 KN-MET LOAD 6

STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.23 SQ.CM.



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BEAM NO. 96 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

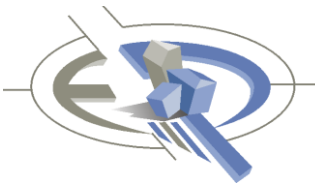
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 16MM	1179.	3600.	NO	YES
2	541.	4 - 16MM	0.	2128.	YES	NO

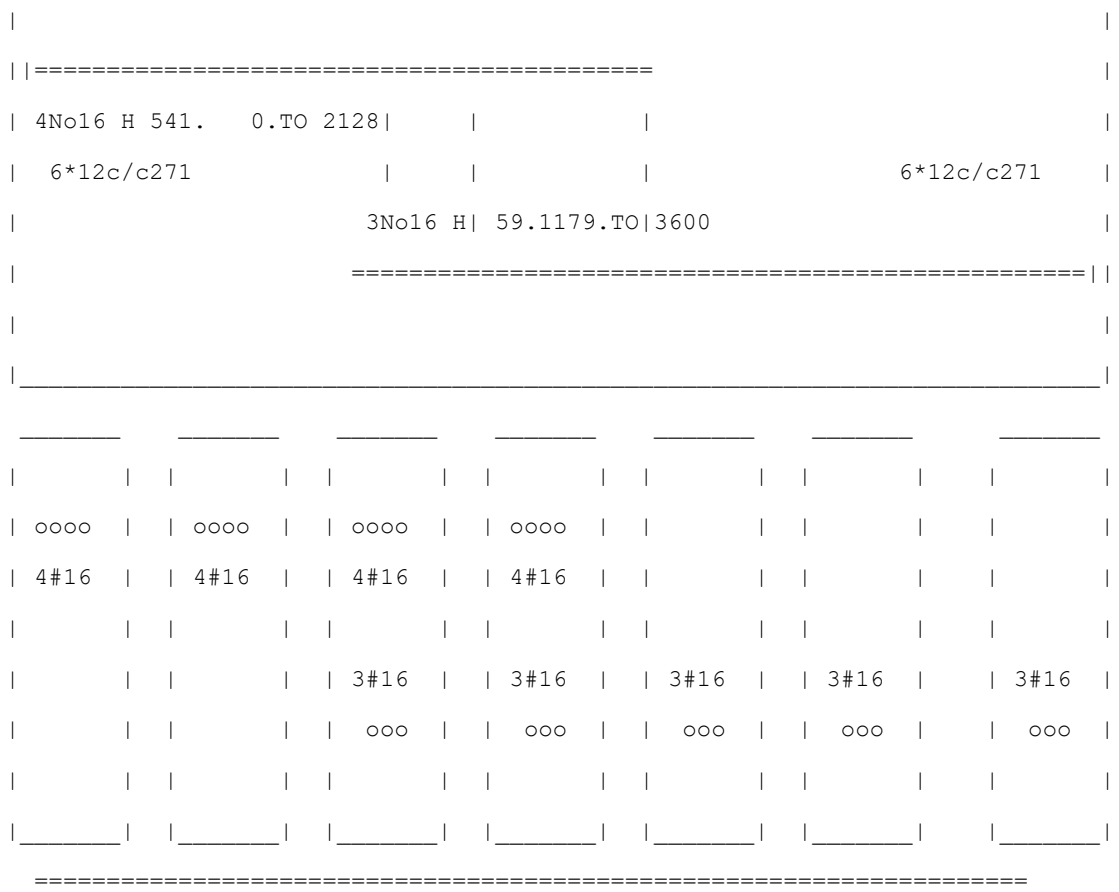
B E A M N O. 96 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 73.63 KNS Vc= 133.77 KNS Vs= 0.00 KNS
Tu= 0.25 KN-MET Tc= 6.4 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM

AT END SUPPORT - Vu= 58.63 KNS Vc= 132.37 KNS Vs= 0.00 KNS
Tu= 0.25 KN-MET Tc= 6.4 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM

___ 52J_____ 3600X 300X 600_____ 72J____





BEAM NO. 97 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	1292.	3600.	NO	YES
2	541.	4 - 16MM	0.	2428.	YES	NO

B E A M N O. 97 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 74.61 KNS Vc= 132.61 KNS Vs= 0.00 KNS

Tu= 1.35 KN-MET Tc= 6.2 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1264. MM

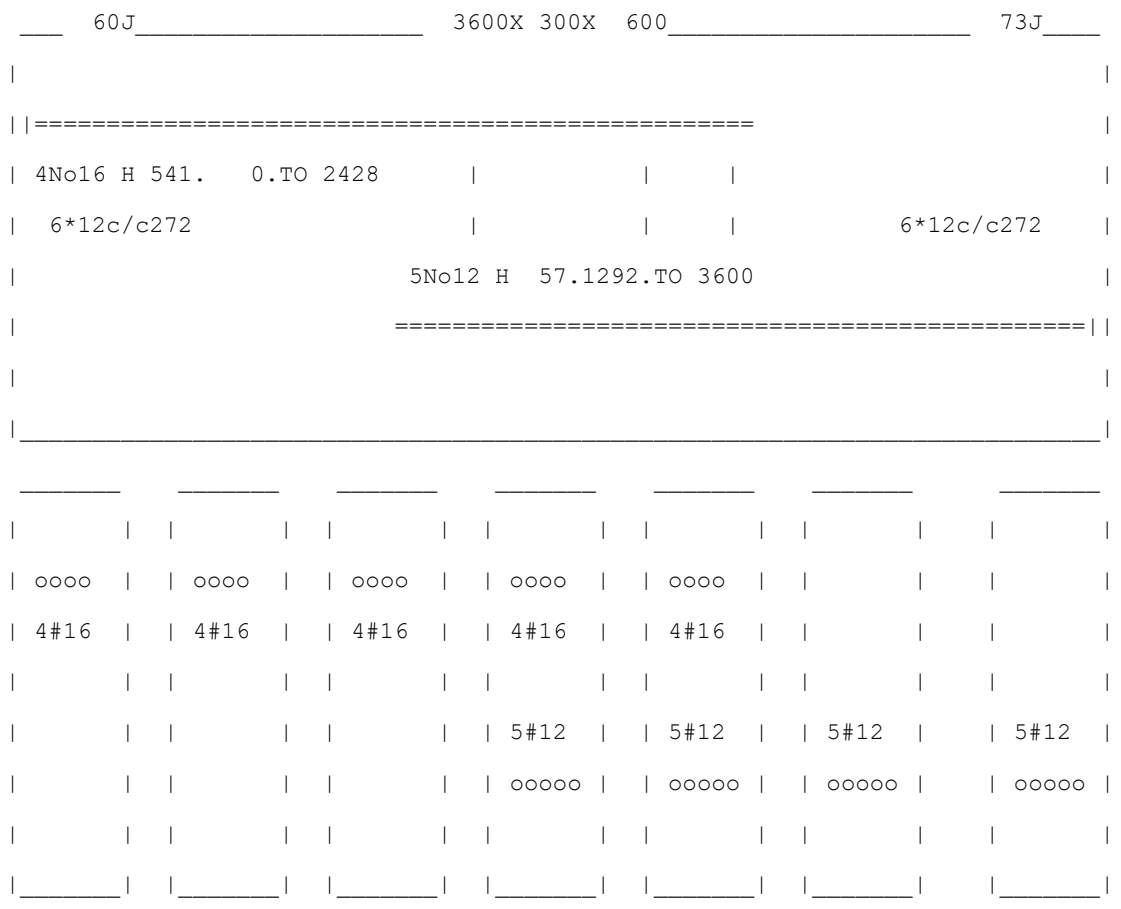
AT END SUPPORT - Vu= 59.61 KNS Vc= 132.54 KNS Vs= 0.00 KNS

Tu= 1.35 KN-MET Tc= 6.2 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1264. MM



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BEAM NO. 110 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

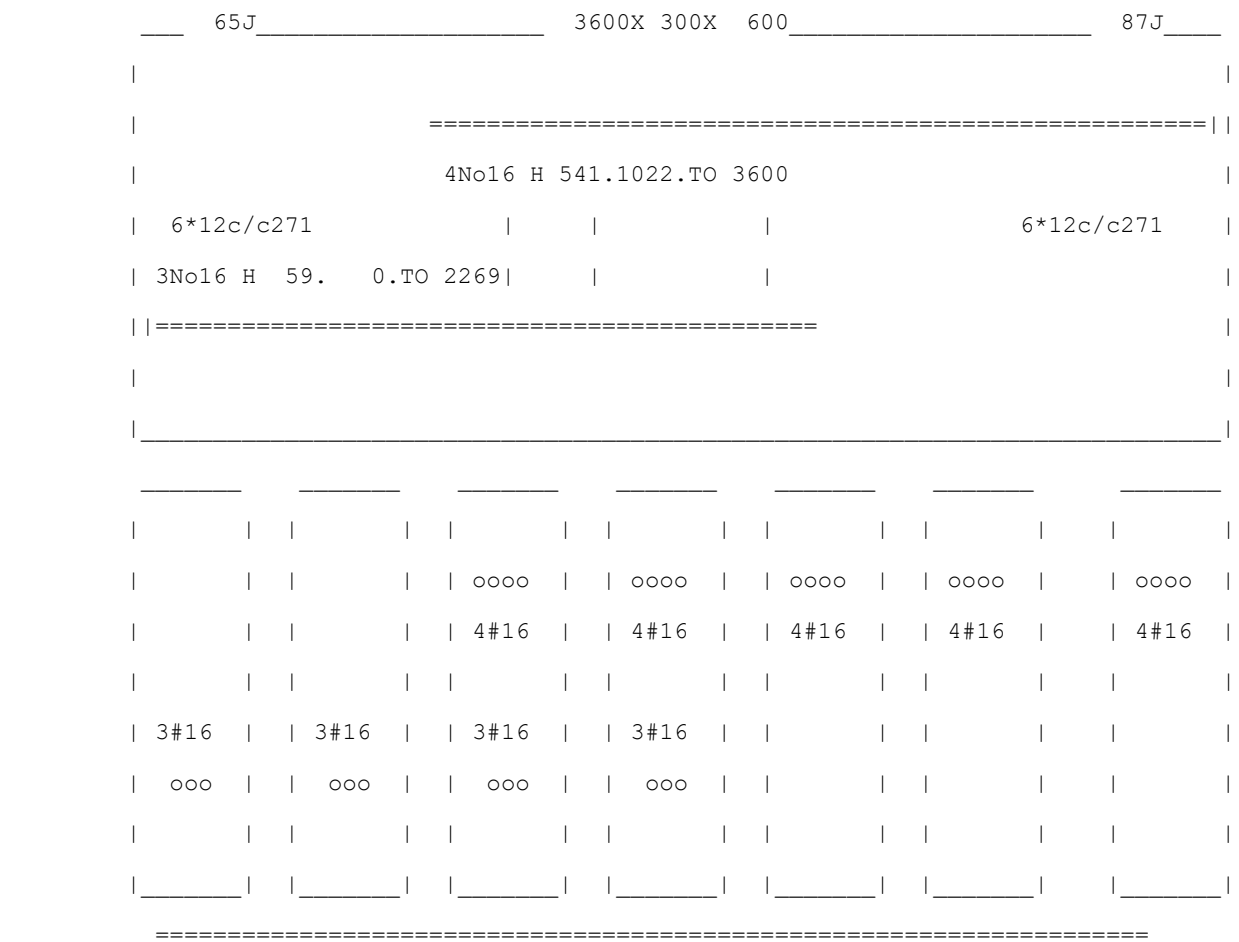
LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 16MM	0.	2269.	YES	NO
2	541.	4 - 16MM	1022.	3600.	NO	YES

B E A M N O. 110 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 61.91 KNS Vc= 131.72 KNS Vs= 0.00 KNS
Tu= 1.61 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM

AT END SUPPORT - Vu= 76.91 KNS Vc= 131.98 KNS Vs= 0.00 KNS
Tu= 1.61 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM



BEAM NO. 111 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

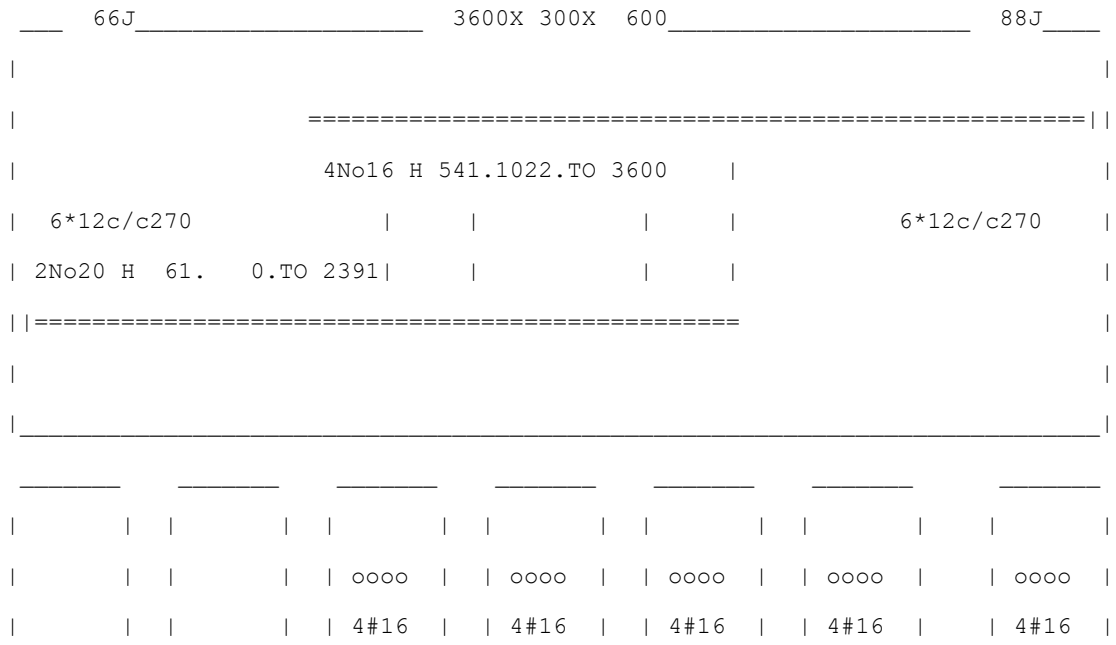
LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	2 - 20MM	0.	2391.	YES	NO
2	541.	4 - 16MM	1022.	3600.	NO	YES

B E A M N O. 111 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 59.57 KNS Vc= 130.96 KNS Vs= 0.00 KNS
Tu= 0.67 KN-MET Tc= 6.0 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 1264. MM

AT END SUPPORT - Vu= 74.57 KNS Vc= 132.54 KNS Vs= 0.00 KNS
Tu= 0.67 KN-MET Tc= 6.0 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 270. MM C/C FOR 1264. MM



2#20		2#20		2#20		2#20					
oo		oo		oo		oo					

BEAM NO. 112 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 16MM	0.	2236.	YES	NO
2	539.	3 - 20MM	1165.	3600.	NO	YES

B E A M N O. 112 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 64.35 KNS Vc= 126.03 KNS Vs= 0.00 KNS
Tu= 8.42 KN-MET Tc= 5.2 KN-MET Ts= 11.2 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.13 SQ.CM.

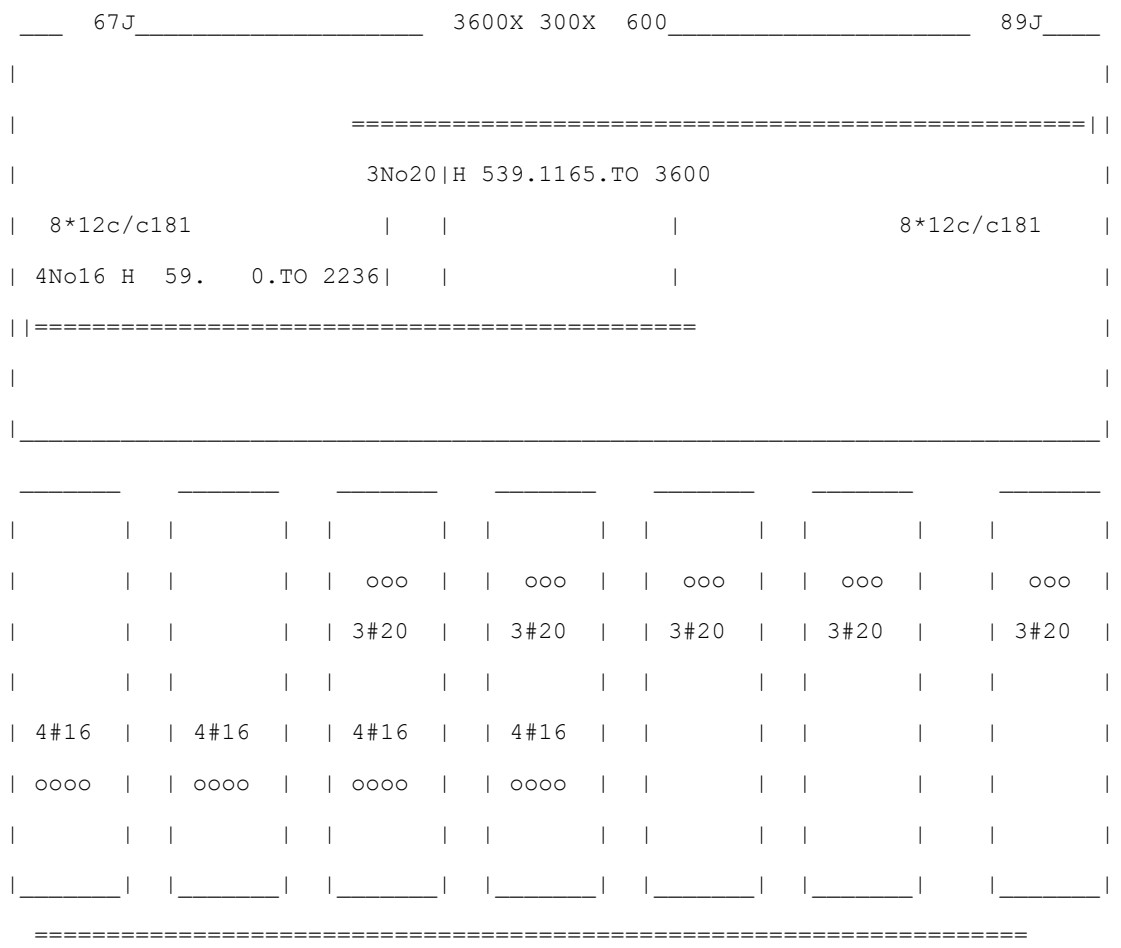
AT END SUPPORT - Vu= 106.21 KNS Vc= 126.03 KNS Vs= 15.58 KNS

Tu= 8.42 KN-MET Tc= 5.2 KN-MET Ts= 11.2 KN-MET LOAD 6

STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.13 SQ.CM.



BEAM NO. 116 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

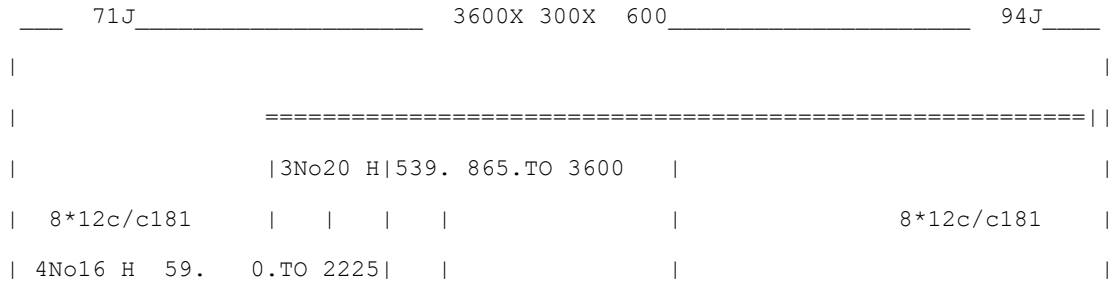
LEVEL	HEIGHT	BAR INFO	FROM	TO	ANCHOR

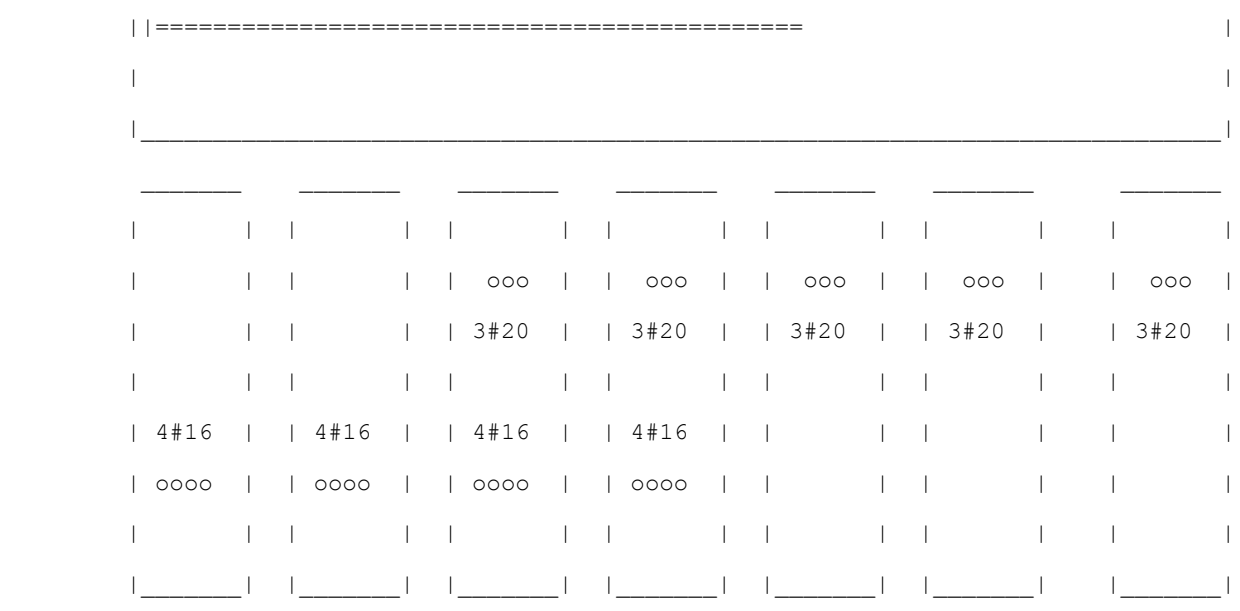
	(MM)		(MM)	(MM)	STA	END
1	59.	4 - 16MM	0.	2225.	YES	NO
2	539.	3 - 20MM	865.	3600.	NO	YES

B E A M N O. 116 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 64.84 KNS Vc= 130.77 KNS Vs= 0.00 KNS
Tu= 9.69 KN-MET Tc= 5.4 KN-MET Ts= 12.9 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.45 SQ.CM.

AT END SUPPORT - Vu= 106.70 KNS Vc= 130.77 KNS Vs= 11.50 KNS
Tu= 9.69 KN-MET Tc= 5.4 KN-MET Ts= 12.9 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1264. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.45 SQ.CM.





BEAM NO. 117 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 16MM	0.	2270.	YES	NO
2	541.	4 - 16MM	1322.	3600.	NO	YES

B E A M N O. 117 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 58.13 KNS Vc= 131.65 KNS Vs= 0.00 KNS

Tu= 1.09 KN-MET Tc= 6.1 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM

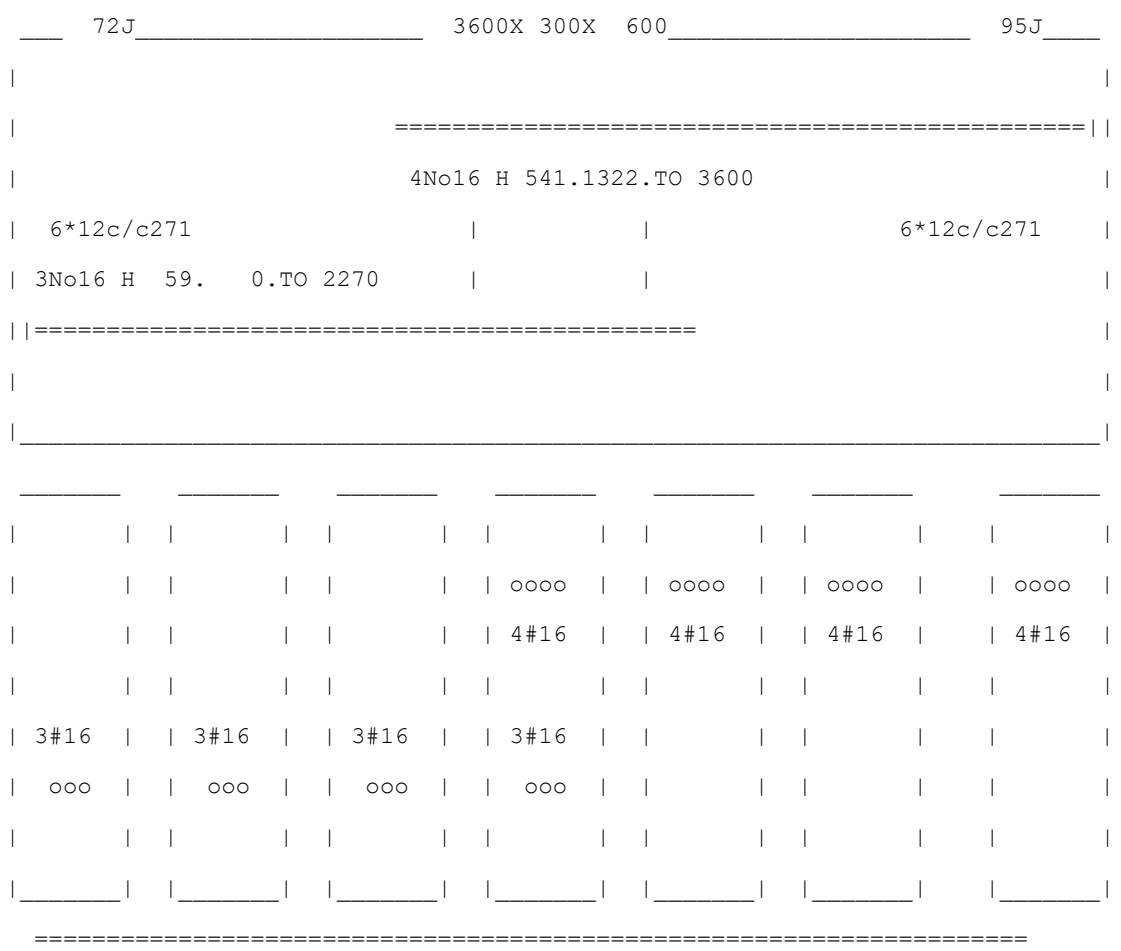
AT END SUPPORT - Vu= 73.13 KNS Vc= 132.99 KNS Vs= 0.00 KNS

Tu= 1.09 KN-MET Tc= 6.1 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 271. MM C/C FOR 1264. MM



BEAM NO. 118 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

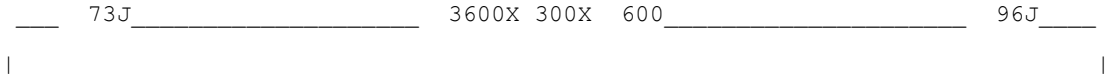
LEN - 3600. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

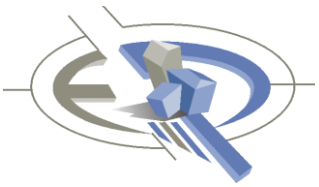
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	0.	2155.	YES	NO
2	541.	4 - 16MM	1022.	3600.	NO	YES

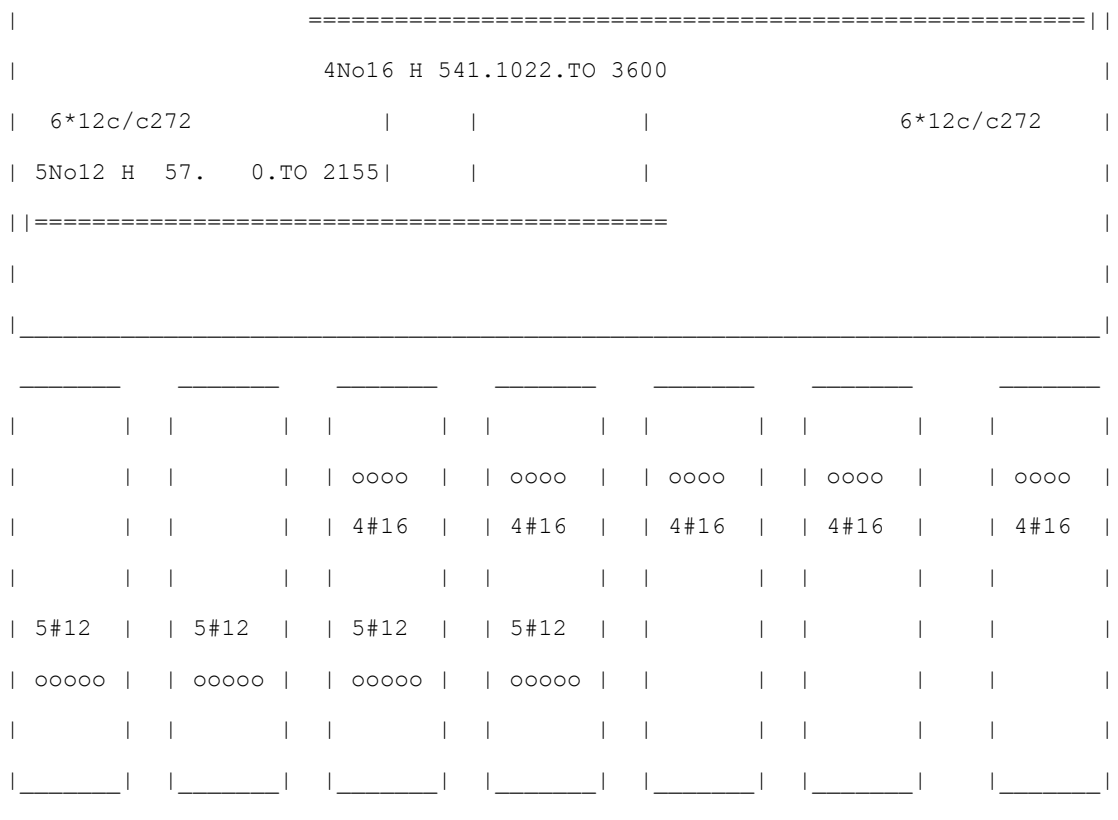
B E A M N O. 118 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 57.91 KNS Vc= 131.83 KNS Vs= 0.00 KNS
Tu= 0.05 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1264. MM

AT END SUPPORT - Vu= 72.92 KNS Vc= 132.32 KNS Vs= 0.00 KNS
Tu= 0.05 KN-MET Tc= 5.9 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 1264. MM





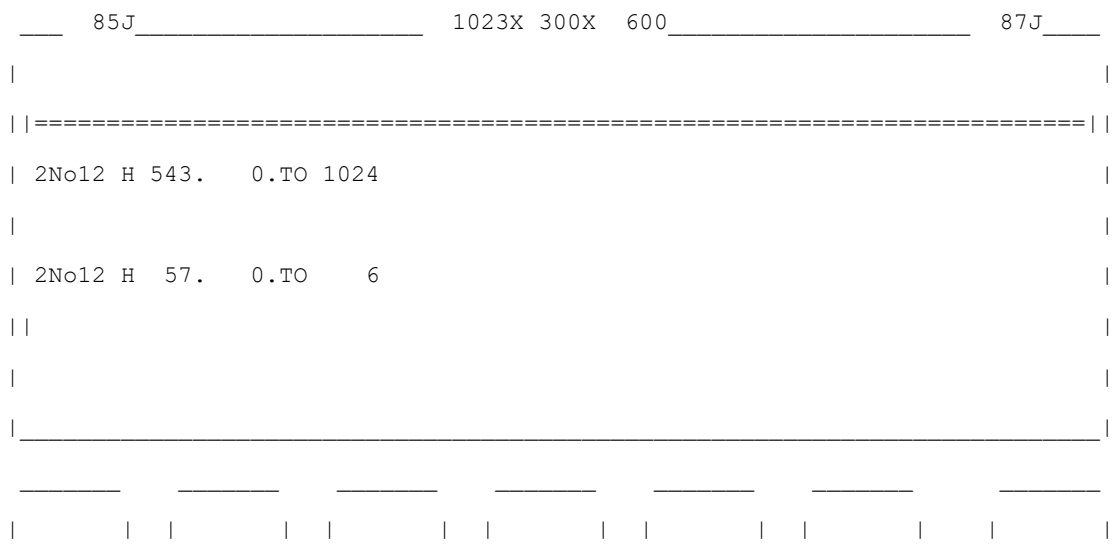


BEAM NO. 129 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	0.	6.	YES	NO
2	543.	2 - 12MM	0.	1024.	YES	YES

B E A M N O. 129 D E S I G N R E S U L T S - SHEAR



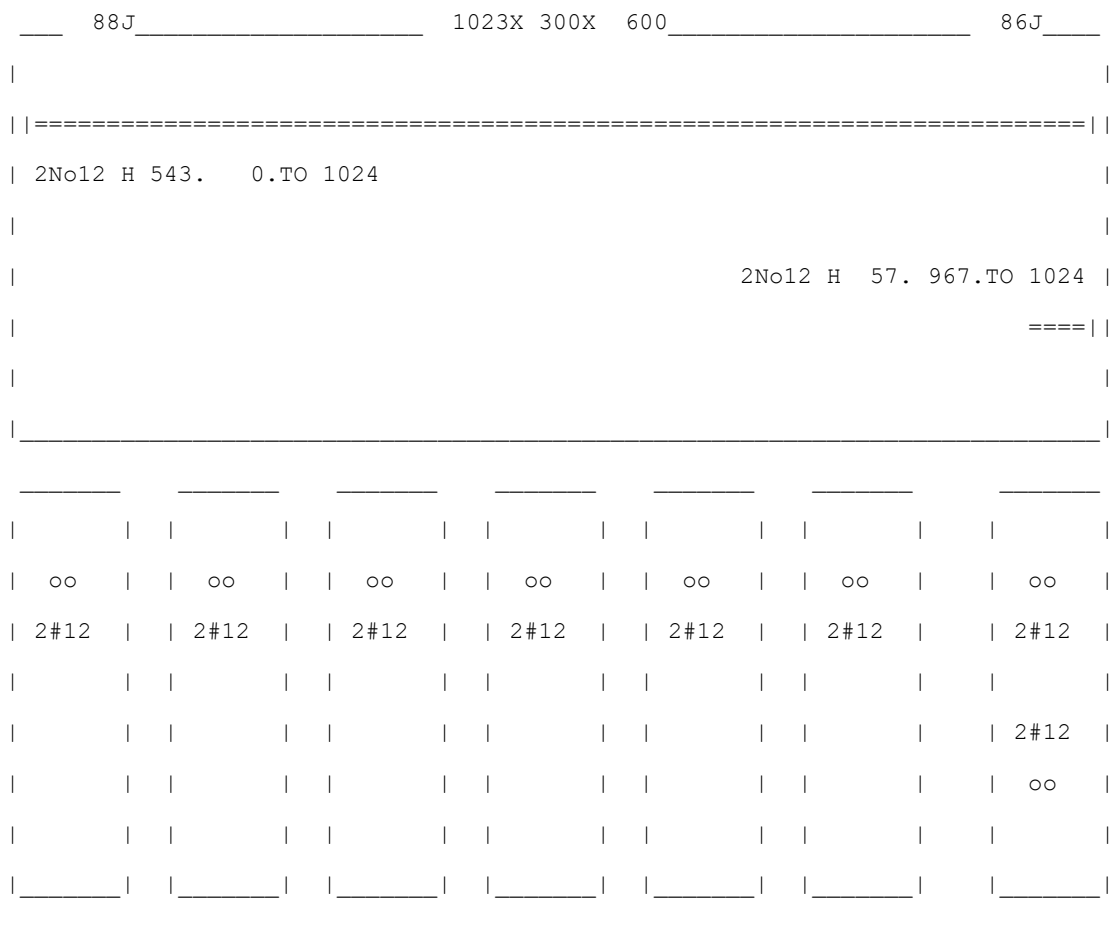
BEAM NO. 130 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1024. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	2 - 12MM	967.	1024.	NO	YES

2 543. 2 - 12MM 0. 1024. YES YES

B E A M N O. 130 D E S I G N R E S U L T S - SHEAR



BEAM NO. 131 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

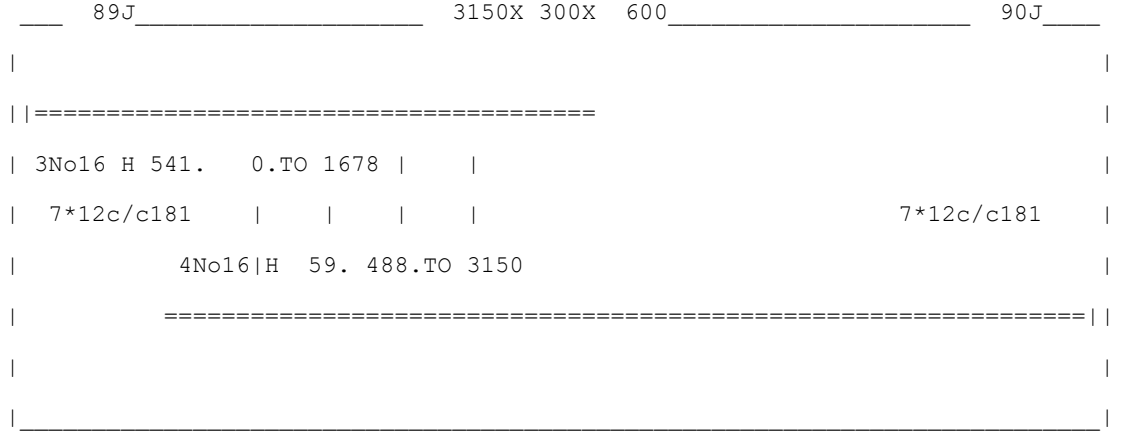
LEVEL HEIGHT BAR INFO FROM TO ANCHOR

	(MM)		(MM)	(MM)	STA	END
1	59.	4 - 16MM	488.	3150.	NO	YES
2	541.	3 - 16MM	0.	1678.	YES	NO

B E A M N O. 131 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 109.25 KNS Vc= 129.54 KNS Vs= 16.13 KNS
Tu= 17.64 KN-MET Tc= 5.4 KN-MET Ts= 23.5 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.46 SQ.CM.

AT END SUPPORT - Vu= 49.23 KNS Vc= 129.54 KNS Vs= 0.00 KNS
Tu= 17.64 KN-MET Tc= 5.4 KN-MET Ts= 23.5 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.46 SQ.CM.



ooo	ooo	ooo	ooo					
3#16	3#16	3#16	3#16					
	4#16	4#16	4#16	4#16	4#16	4#16	4#16	
	oooo	oooo	oooo	oooo	oooo	oooo	oooo	

BEAM NO. 132 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 3150. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	3 - 20MM	0.	2355.	YES	NO
2	537.	2 - 25MM	695.	3150.	NO	YES

B E A M N O. 132 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 76.48 KNS Vc= 129.76 KNS Vs= 0.00 KNS
Tu= 24.62 KN-MET Tc= 5.4 KN-MET Ts= 32.8 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 6.23 SQ.CM.

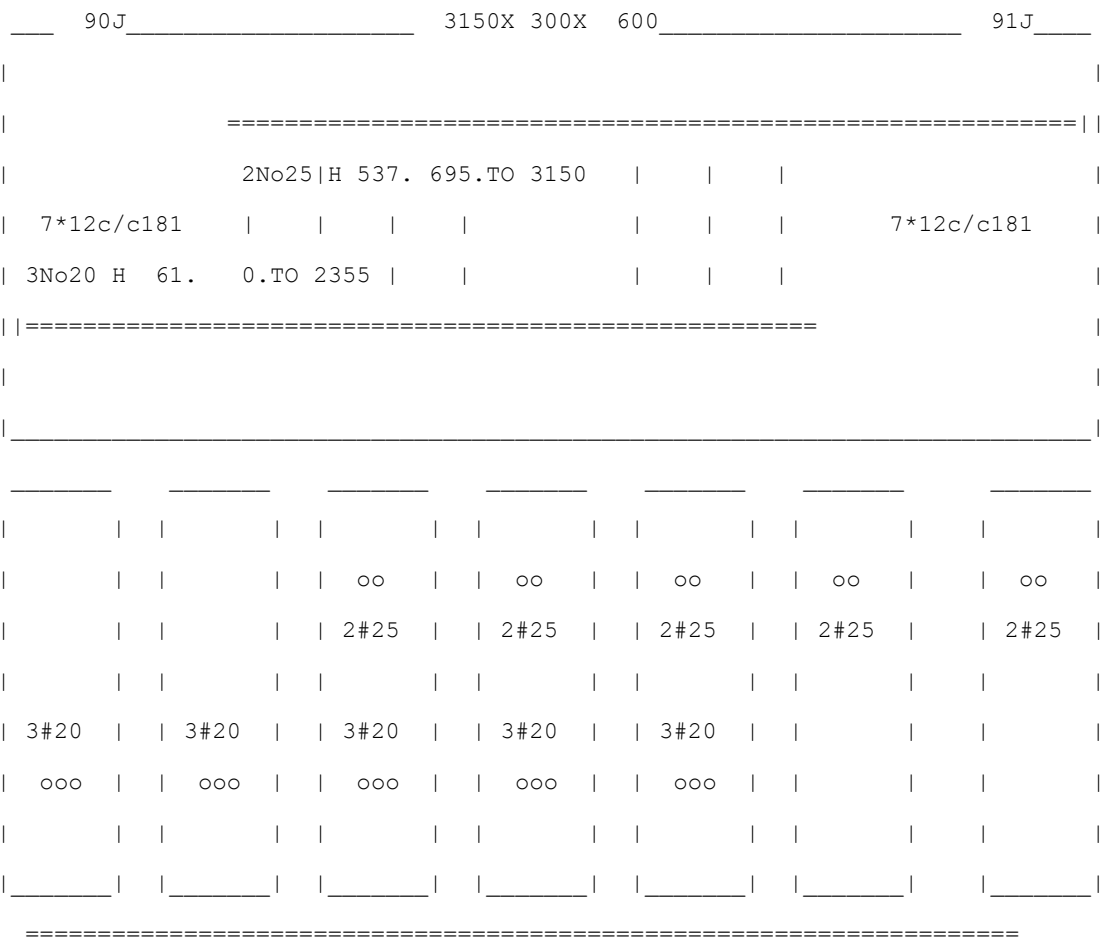
AT END SUPPORT - Vu= 136.50 KNS Vc= 129.76 KNS Vs= 52.24 KNS

Tu= 24.62 KN-MET Tc= 5.4 KN-MET Ts= 32.8 KN-MET LOAD 6

STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 181. MM C/C FOR 1038. MM

ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 6.23 SQ.CM.



BEAM NO. 133 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

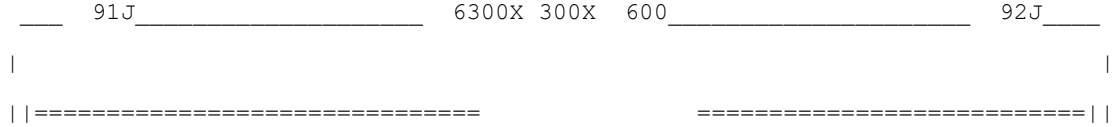
LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

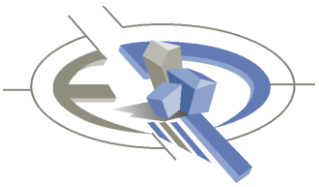
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	4 - 12MM	970.	5593.	NO	NO
2	541.	4 - 16MM	0.	2728.	YES	NO
3	543.	5 - 12MM	3992.	6300.	NO	YES

B E A M N O. 133 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 91.80 KNS Vc= 132.14 KNS Vs= 0.00 KNS
Tu= 2.83 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM

AT END SUPPORT - Vu= 79.13 KNS Vc= 132.14 KNS Vs= 0.00 KNS
Tu= 2.83 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM





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| 4No16 H 541.|  0.TO 2728|   |                  5No12|H 543.3992.TO 6300   |
| 11*12c/c272 |   |   |   |   |                   |   |   |  11*12c/c272    |
|           4No12 H  57. 970.TO 5593              |   |   |   |   |         |
|          ============================================================        |
|                                                                              |
|______________________________________________________________________________|

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| 4#16  |  | 4#16  |  | 4#16  |  |       |  | 5#12  |  | 5#12  |    | 5#12  |
|       |  |       |  |       |  |       |  |       |  |       |    |       |
|       |  | 4#12  |  | 4#12  |  | 4#12  |  | 4#12  |  | 4#12  |    |       |
|       |  | oooo  |  | oooo  |  | oooo  |  | oooo  |  | oooo  |    |       |
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BEAM NO. 134 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	440.	5598.	NO	NO
2	541.	4 - 16MM	0.	6300.	YES	YES

B E A M N O. 134 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 83.56 KNS Vc= 131.66 KNS Vs= 0.00 KNS

Tu= 0.15 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM

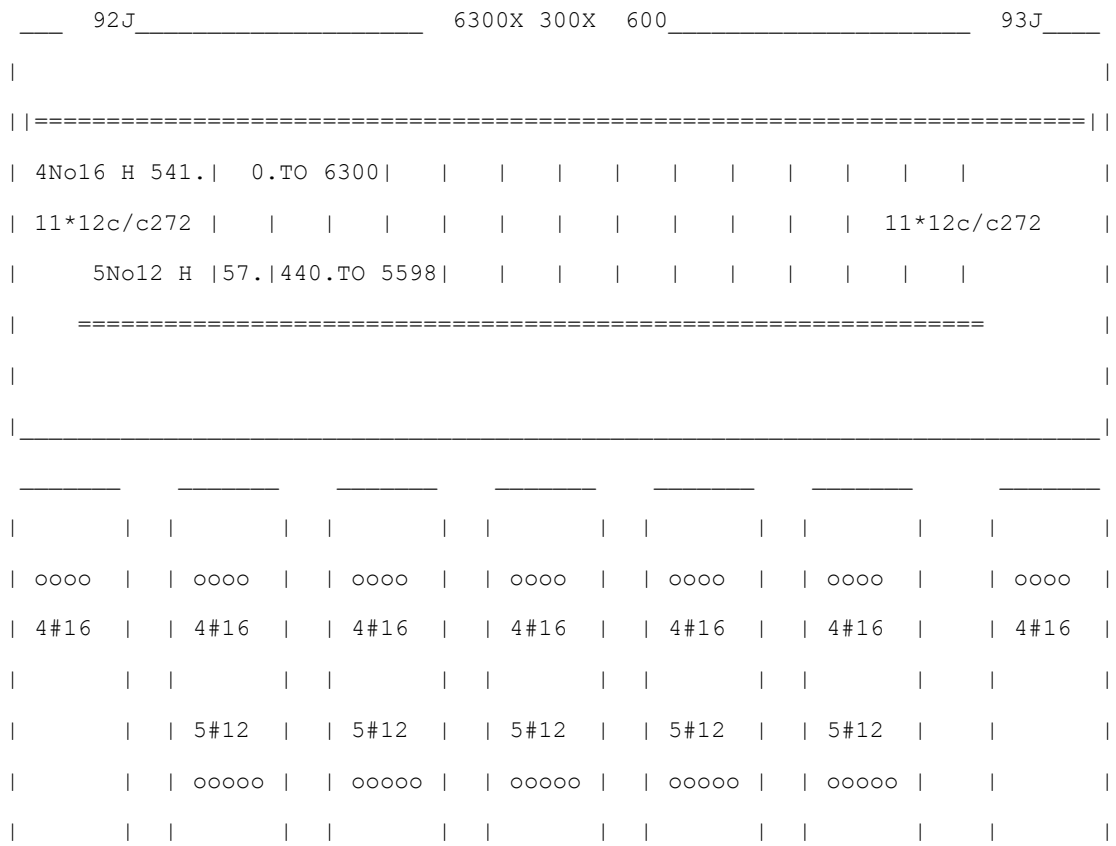
AT END SUPPORT - Vu= 87.38 KNS Vc= 131.66 KNS Vs= 0.00 KNS

Tu= 0.15 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6

NO STIRRUPS ARE REQUIRED FOR TORSION.

REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM



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BEAM NO. 135 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 6300. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

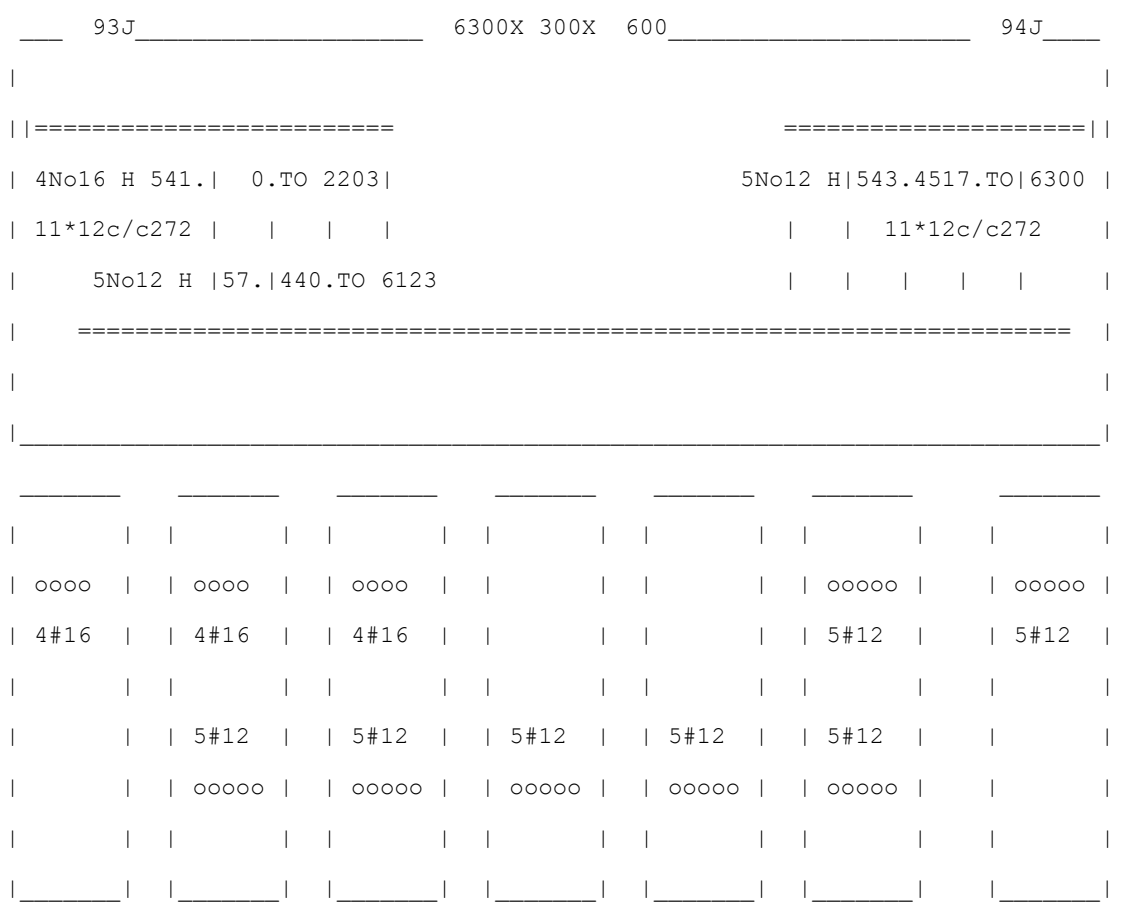
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	57.	5 - 12MM	440.	6123.	NO	NO
2	541.	4 - 16MM	0.	2203.	YES	NO
3	543.	5 - 12MM	4517.	6300.	NO	YES

B E A M N O. 135 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 93.40 KNS Vc= 131.96 KNS Vs= 0.00 KNS
Tu= 1.39 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM

AT END SUPPORT - Vu= 77.53 KNS Vc= 131.96 KNS Vs= 0.00 KNS
Tu= 1.39 KN-MET Tc= 5.5 KN-MET Ts= 0.0 KN-MET LOAD 6
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.

PROVIDE 12 MM 2-LEGGED STIRRUPS AT 272. MM C/C FOR 2614. MM



BEAM NO. 136 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

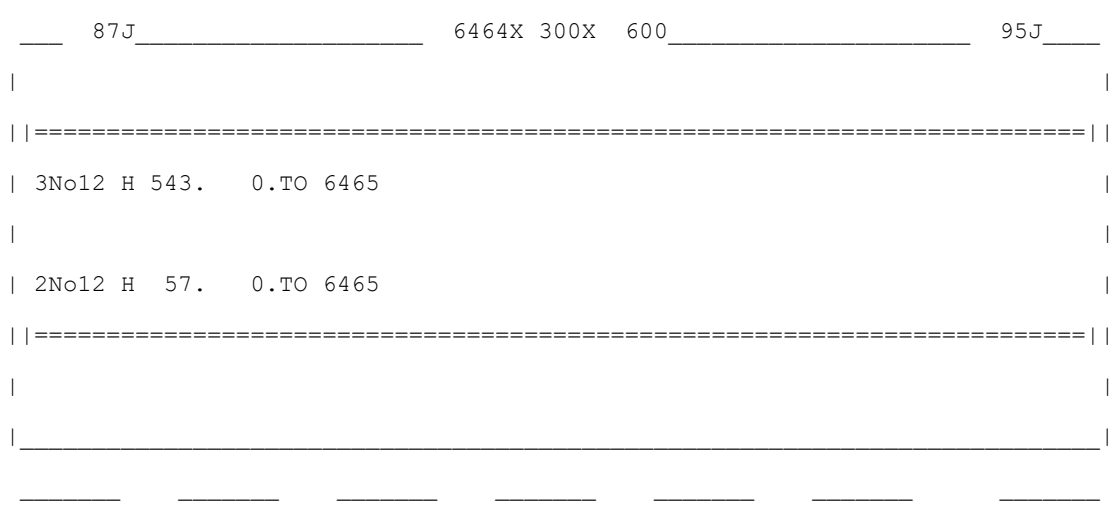
LEN - 6465. MM FY - 414. FC - 25. MPA, SIZE - 300. X 600. MMS

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

1	57.	2 - 12MM	0.	6465.	YES	YES
2	543.	3 - 12MM	0.	6465.	YES	YES

B E A M N O. 136 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 20.21 KNS Vc= 130.54 KNS Vs= 0.00 KNS
Tu= 0.88 KN-MET Tc= 5.4 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 10.99 KNS Vc= 128.99 KNS Vs= 0.00 KNS
Tu= 0.88 KN-MET Tc= 5.3 KN-MET Ts= 0.0 KN-MET LOAD 6
STIRRUPS ARE NOT REQUIRED.



FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
512 TOP : Longitudinal direction - Only minimum steel required.
512 BOTT: Longitudinal direction - Only minimum steel required.
512 TOP : Transverse direction - Only minimum steel required.
512 BOTT: Transverse direction - Only minimum steel required.

512 TOP :	0.180	0.09 /	7	0.180	0.00 /	11		
BOTT:	0.180	0.13 /	8	0.180	0.22 /	6		

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
513 TOP : Longitudinal direction - Only minimum steel required.
513 BOTT: Longitudinal direction - Only minimum steel required.
513 TOP : Transverse direction - Only minimum steel required.
513 BOTT: Transverse direction - Only minimum steel required.

513 TOP :	0.180	0.19 /	7	0.180	0.26 /	11		
BOTT:	0.180	0.00 /	8	0.180	0.16 /	12		

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
517 TOP : Longitudinal direction - Only minimum steel required.
517 BOTT: Longitudinal direction - Only minimum steel required.
517 TOP : Transverse direction - Only minimum steel required.
517 BOTT: Transverse direction - Only minimum steel required.

517 TOP :	0.180	0.13 /	7	0.180	0.21 /	7		
BOTT:	0.180	0.15 /	8	0.180	0.09 /	8		

FY: 413.682 MPA FC: 24.516 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM

519 TOP : Longitudinal direction - Only minimum steel required.

519 BOTT: Longitudinal direction - Only minimum steel required.

519 TOP : Transverse direction - Only minimum steel required.

519 BOTT: Transverse direction - Only minimum steel required.

519 TOP :	0.180	0.06 /	7	0.180	0.02 /	11
BOTT:	0.180	0.09 /	8	0.180	0.11 /	12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

520 TOP : Longitudinal direction - Only minimum steel required.

520 BOTT: Longitudinal direction - Only minimum steel required.

520 TOP : Transverse direction - Only minimum steel required.

520 BOTT: Transverse direction - Only minimum steel required.

520 TOP :	0.180	0.19 /	7	0.180	0.08 /	11
BOTT:	0.180	0.22 /	8	0.180	0.17 /	12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

521 TOP : Longitudinal direction - Only minimum steel required.

521 BOTT: Longitudinal direction - Only minimum steel required.

521 TOP : Transverse direction - Only minimum steel required.

521 BOTT: Transverse direction - Only minimum steel required.

521 TOP :	0.180	0.10 /	7	0.180	0.16 /	6
BOTT:	0.180	0.00 /	8	0.180	0.00 /	12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

523 TOP : Longitudinal direction - Only minimum steel required.

523 BOTT: Longitudinal direction - Only minimum steel required.

523 TOP : Transverse direction - Only minimum steel required.

523 BOTT: Transverse direction - Only minimum steel required.

523 TOP :	0.180	0.14 /	11	0.180	0.21 /	11

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    BOTT:     0.180         0.00 /    8       0.180          0.31 /   12

    FY:   413.682 MPA FC:    24.516 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
527 TOP : Longitudinal direction - Only minimum steel required.
527 BOTT: Longitudinal direction - Only minimum steel required.
527 TOP : Transverse direction   - Only minimum steel required.
527 BOTT: Transverse direction   - Only minimum steel required.
527 TOP :     0.180         0.07 /    7       0.180          0.05 /   11
    BOTT:     0.180         0.08 /    8       0.180          0.10 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
530 TOP : Longitudinal direction - Only minimum steel required.
530 BOTT: Longitudinal direction - Only minimum steel required.
530 TOP : Transverse direction   - Only minimum steel required.
530 BOTT: Transverse direction   - Only minimum steel required.
530 TOP :     0.180         0.21 /    7       0.180          0.11 /   11
    BOTT:     0.180         0.25 /    8       0.180          0.16 /   12

    FY:   413.682 MPA FC:    24.516 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
531 TOP : Longitudinal direction - Only minimum steel required.
531 BOTT: Longitudinal direction - Only minimum steel required.
531 TOP : Transverse direction   - Only minimum steel required.
531 BOTT: Transverse direction   - Only minimum steel required.
531 TOP :     0.180         0.00 /    7       0.180          0.00 /   11
    BOTT:     0.180         0.00 /    8       0.180          0.22 /    6

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
532 TOP : Longitudinal direction - Only minimum steel required.
```

532 BOTT: Longitudinal direction - Only minimum steel required.

532 TOP : Transverse direction - Only minimum steel required.

532 BOTT: Transverse direction - Only minimum steel required.

532 TOP : 0.180 0.00 / 7 0.180 0.00 / 11

BOTT: 0.180 0.05 / 8 0.180 0.23 / 6

FY: 413.682 MPA FC: 24.516 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

535 TOP : Longitudinal direction - Only minimum steel required.

535 BOTT: Longitudinal direction - Only minimum steel required.

535 TOP : Transverse direction - Only minimum steel required.

535 BOTT: Transverse direction - Only minimum steel required.

535 TOP : 0.180 0.10 / 7 0.180 0.09 / 11

BOTT: 0.180 0.03 / 8 0.180 0.07 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

538 TOP : Longitudinal direction - Only minimum steel required.

538 BOTT: Longitudinal direction - Only minimum steel required.

538 TOP : Transverse direction - Only minimum steel required.

538 BOTT: Transverse direction - Only minimum steel required.

538 TOP : 0.180 0.21 / 7 0.180 0.13 / 11

BOTT: 0.180 0.19 / 8 0.180 0.13 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

539 TOP : Longitudinal direction - Only minimum steel required.

539 BOTT: Longitudinal direction - Only minimum steel required.

539 TOP : Transverse direction - Only minimum steel required.

539 BOTT: Transverse direction - Only minimum steel required.

539 TOP : 0.180 0.04 / 7 0.180 0.08 / 11

BOTT: 0.180 0.09 / 8 0.180 0.08 / 12

```
    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
542 TOP : Longitudinal direction - Only minimum steel required.
542 BOTT: Longitudinal direction - Only minimum steel required.
542 TOP : Transverse direction   - Only minimum steel required.
542 BOTT: Transverse direction   - Only minimum steel required.
542 TOP :     0.180         0.20 /    7       0.180          0.14 /   11
    BOTT:     0.180         0.22 /    8       0.180          0.14 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
545 TOP : Longitudinal direction - Only minimum steel required.
545 BOTT: Longitudinal direction - Only minimum steel required.
545 TOP : Transverse direction   - Only minimum steel required.
545 BOTT: Transverse direction   - Only minimum steel required.
545 TOP :     0.180         0.00 /    7       0.180          0.00 /   11
    BOTT:     0.180         0.11 /    6       0.180          0.24 /    6

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
546 TOP : Longitudinal direction - Only minimum steel required.
546 BOTT: Longitudinal direction - Only minimum steel required.
546 TOP : Transverse direction   - Only minimum steel required.
546 BOTT: Transverse direction   - Only minimum steel required.
546 TOP :     0.180         0.00 /    7       0.180          0.00 /   11
    BOTT:     0.180         0.05 /    6       0.180          0.23 /    6

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
547 TOP : Longitudinal direction - Only minimum steel required.
547 BOTT: Longitudinal direction - Only minimum steel required.
```

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547 TOP : Transverse direction   - Only minimum steel required.
547 BOTT: Transverse direction   - Only minimum steel required.
547 TOP :     0.180         0.02 /    7       0.180          0.04 /   11
    BOTT:     0.180         0.10 /    8       0.180          0.10 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
550 TOP : Longitudinal direction - Only minimum steel required.
550 BOTT: Longitudinal direction - Only minimum steel required.
550 TOP : Transverse direction   - Only minimum steel required.
550 BOTT: Transverse direction   - Only minimum steel required.
550 TOP :     0.180         0.18 /    7       0.180          0.14 /   11
    BOTT:     0.180         0.24 /    8       0.180          0.09 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
555 TOP : Longitudinal direction - Only minimum steel required.
555 BOTT: Longitudinal direction - Only minimum steel required.
555 TOP : Transverse direction   - Only minimum steel required.
555 BOTT: Transverse direction   - Only minimum steel required.
555 TOP :     0.180         0.12 /    6       0.180          0.19 /   11
    BOTT:     0.180         0.00 /    8       0.180          0.00 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
556 TOP : Longitudinal direction - Only minimum steel required.
556 BOTT: Longitudinal direction - Only minimum steel required.
556 TOP : Transverse direction   - Only minimum steel required.
556 BOTT: Transverse direction   - Only minimum steel required.
556 TOP :     0.180         0.17 /    7       0.180          0.21 /   11
    BOTT:     0.180         0.23 /    8       0.180          0.22 /   12
```

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
557 TOP : Longitudinal direction - Only minimum steel required.
557 BOTT: Longitudinal direction - Only minimum steel required.
557 TOP : Transverse direction - Only minimum steel required.
557 BOTT: Transverse direction - Only minimum steel required.

557 TOP :	0.180	0.09 /	7	0.180	0.03 /	11
BOTT:	0.180	0.06 /	8	0.180	0.10 /	12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
562 TOP : Longitudinal direction - Only minimum steel required.
562 BOTT: Longitudinal direction - Only minimum steel required.
562 TOP : Transverse direction - Only minimum steel required.
562 BOTT: Transverse direction - Only minimum steel required.

562 TOP :	0.180	0.06 /	6	0.180	0.00 /	11
BOTT:	0.180	0.00 /	8	0.180	0.21 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
567 TOP : Longitudinal direction - Only minimum steel required.
567 BOTT: Longitudinal direction - Only minimum steel required.
567 TOP : Transverse direction - Only minimum steel required.
567 BOTT: Transverse direction - Only minimum steel required.

567 TOP :	0.180	0.13 /	7	0.180	0.00 /	11
BOTT:	0.180	0.00 /	8	0.180	0.20 /	8

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
569 TOP : Longitudinal direction - Only minimum steel required.
569 BOTT: Longitudinal direction - Only minimum steel required.
569 TOP : Transverse direction - Only minimum steel required.

```
569 BOTT: Transverse direction   - Only minimum steel required.
569 TOP :     0.180         0.24 /    6       0.180          0.40 /    7
    BOTT:     0.180         0.00 /    8       0.180          0.00 /    8

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
572 TOP : Longitudinal direction - Only minimum steel required.
572 BOTT: Longitudinal direction - Only minimum steel required.
572 TOP : Transverse direction   - Only minimum steel required.
572 BOTT: Transverse direction   - Only minimum steel required.
572 TOP :     0.180         0.14 /    7       0.180          0.09 /   11
    BOTT:     0.180         0.00 /    8       0.180          0.03 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
578 TOP : Longitudinal direction - Only minimum steel required.
578 BOTT: Longitudinal direction - Only minimum steel required.
578 TOP : Transverse direction   - Only minimum steel required.
578 BOTT: Transverse direction   - Only minimum steel required.
578 TOP :     0.180         0.18 /    6       0.180          0.09 /   11
    BOTT:     0.180         0.00 /    8       0.180          0.02 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
579 TOP : Longitudinal direction - Only minimum steel required.
579 BOTT: Longitudinal direction - Only minimum steel required.
579 TOP : Transverse direction   - Only minimum steel required.
579 BOTT: Transverse direction   - Only minimum steel required.
579 TOP :     0.180         0.09 /    7       0.180          0.31 /   11
    BOTT:     0.180         0.04 /    8       0.180          0.00 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
```

```
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
580 TOP : Longitudinal direction - Only minimum steel required.
580 BOTT: Longitudinal direction - Only minimum steel required.
580 TOP : Transverse direction   - Only minimum steel required.
580 BOTT: Transverse direction   - Only minimum steel required.
580 TOP :     0.180         0.05 /   11       0.180          0.26 /    7
    BOTT:     0.180         0.00 /    8       0.180          0.00 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
581 TOP : Longitudinal direction - Only minimum steel required.
581 BOTT: Longitudinal direction - Only minimum steel required.
581 TOP : Transverse direction   - Only minimum steel required.
581 BOTT: Transverse direction   - Only minimum steel required.
581 TOP :     0.180         0.07 /    7       0.180          0.10 /   11
    BOTT:     0.180         0.02 /    8       0.180          0.04 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
582 TOP : Longitudinal direction - Only minimum steel required.
582 BOTT: Longitudinal direction - Only minimum steel required.
582 TOP : Transverse direction   - Only minimum steel required.
582 BOTT: Transverse direction   - Only minimum steel required.
582 TOP :     0.180         0.02 /    7       0.180          0.08 /   11
    BOTT:     0.180         0.09 /    8       0.180          0.12 /   12

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
583 TOP : Longitudinal direction - Only minimum steel required.
583 BOTT: Longitudinal direction - Only minimum steel required.
583 TOP : Transverse direction   - Only minimum steel required.
583 BOTT: Transverse direction   - Only minimum steel required.
```

583 TOP : 0.180 0.04 / 7 0.180 0.09 / 11
BOTT: 0.180 0.09 / 8 0.180 0.11 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
584 TOP : Longitudinal direction - Only minimum steel required.
584 BOTT: Longitudinal direction - Only minimum steel required.
584 TOP : Transverse direction - Only minimum steel required.
584 BOTT: Transverse direction - Only minimum steel required.
584 TOP : 0.180 0.07 / 7 0.180 0.09 / 11
BOTT: 0.180 0.07 / 8 0.180 0.08 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
585 TOP : Longitudinal direction - Only minimum steel required.
585 BOTT: Longitudinal direction - Only minimum steel required.
585 TOP : Transverse direction - Only minimum steel required.
585 BOTT: Transverse direction - Only minimum steel required.
585 TOP : 0.180 0.08 / 7 0.180 0.09 / 11
BOTT: 0.180 0.07 / 8 0.180 0.09 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM
586 TOP : Longitudinal direction - Only minimum steel required.
586 BOTT: Longitudinal direction - Only minimum steel required.
586 TOP : Transverse direction - Only minimum steel required.
586 BOTT: Transverse direction - Only minimum steel required.
586 TOP : 0.180 0.04 / 7 0.180 0.05 / 11
BOTT: 0.180 0.09 / 8 0.180 0.12 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM
COVER (BOTTOM): 19.050 MM TH: 100.000 MM

587 TOP : Longitudinal direction - Only minimum steel required.

587 BOTT: Longitudinal direction - Only minimum steel required.

587 TOP : Transverse direction - Only minimum steel required.

587 BOTT: Transverse direction - Only minimum steel required.

587 TOP : 0.180 0.01 / 7 0.180 0.08 / 11

BOTT: 0.180 0.10 / 8 0.180 0.10 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

588 TOP : Longitudinal direction - Only minimum steel required.

588 BOTT: Longitudinal direction - Only minimum steel required.

588 TOP : Transverse direction - Only minimum steel required.

588 BOTT: Transverse direction - Only minimum steel required.

588 TOP : 0.180 0.01 / 7 0.180 0.14 / 11

BOTT: 0.180 0.06 / 8 0.180 0.03 / 12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

591 TOP : Longitudinal direction - Only minimum steel required.

591 BOTT: Longitudinal direction - Only minimum steel required.

591 TOP : Transverse direction - Only minimum steel required.

591 BOTT: Transverse direction - Only minimum steel required.

591 TOP : 0.180 0.00 / 7 0.180 0.00 / 11

BOTT: 0.180 0.06 / 8 0.180 0.23 / 6

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

593 TOP : Longitudinal direction - Only minimum steel required.

593 BOTT: Longitudinal direction - Only minimum steel required.

593 TOP : Transverse direction - Only minimum steel required.

593 BOTT: Transverse direction - Only minimum steel required.

593 TOP : 0.180 0.26 / 7 0.180 0.31 / 6

```
    BOTT:     0.180         0.00 /    8       0.180          0.00 /    6

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
594 TOP : Longitudinal direction - Only minimum steel required.
594 BOTT: Longitudinal direction - Only minimum steel required.
594 TOP : Transverse direction   - Only minimum steel required.
594 BOTT: Transverse direction   - Only minimum steel required.
594 TOP :     0.180         0.25 /    7       0.180          0.14 /   11
    BOTT:     0.180         0.00 /    8       0.180          0.00 /    6

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
595 TOP : Longitudinal direction - Only minimum steel required.
595 BOTT: Longitudinal direction - Only minimum steel required.
595 TOP : Transverse direction   - Only minimum steel required.
595 BOTT: Transverse direction   - Only minimum steel required.
595 TOP :     0.180         0.26 /   11       0.180          0.47 /   11
    BOTT:     0.180         0.00 /    8       0.180          0.00 /    6

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
597 TOP : Longitudinal direction - Only minimum steel required.
597 BOTT: Longitudinal direction - Only minimum steel required.
597 TOP : Transverse direction   - Only minimum steel required.
597 BOTT: Transverse direction   - Only minimum steel required.
597 TOP :     0.180         0.00 /   11       0.180          0.00 /   11
    BOTT:     0.180         0.14 /    6       0.180          0.05 /    6

    FY:   413.682 MPA FC:    27.579 MPA COVER (TOP):    19.050 MM
    COVER (BOTTOM):    19.050 MM TH:   100.000 MM
598 TOP : Longitudinal direction - Only minimum steel required.
```

598 BOTT: Longitudinal direction - Only minimum steel required.

598 TOP : Transverse direction - Only minimum steel required.

598 BOTT: Transverse direction - Only minimum steel required.

598 TOP :	0.180	0.00 /	11	0.180	0.00 /	11
BOTT:	0.180	0.23 /	6	0.180	0.04 /	12

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

599 TOP : Longitudinal direction - Only minimum steel required.

599 BOTT: Longitudinal direction - Only minimum steel required.

599 TOP : Transverse direction - Only minimum steel required.

599 BOTT: Transverse direction - Only minimum steel required.

599 TOP :	0.180	0.00 /	11	0.180	0.00 /	11
BOTT:	0.180	0.22 /	6	0.180	0.03 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

600 TOP : Longitudinal direction - Only minimum steel required.

600 BOTT: Longitudinal direction - Only minimum steel required.

600 TOP : Transverse direction - Only minimum steel required.

600 BOTT: Transverse direction - Only minimum steel required.

600 TOP :	0.180	0.00 /	11	0.180	0.00 /	11
BOTT:	0.180	0.23 /	6	0.180	0.08 /	6

FY: 413.682 MPA FC: 27.579 MPA COVER (TOP): 19.050 MM

COVER (BOTTOM): 19.050 MM TH: 100.000 MM

601 TOP : Longitudinal direction - Only minimum steel required.

601 BOTT: Longitudinal direction - Only minimum steel required.

601 TOP : Transverse direction - Only minimum steel required.

601 BOTT: Transverse direction - Only minimum steel required.

601 TOP :	0.180	0.00 /	11	0.180	0.15 /	6
BOTT:	0.180	0.15 /	6	0.180	0.00 /	6

```
**************************END OF ELEMENT DESIGN**************************

399. END CONCRETE DESIGN
400. FINISH

     ***********************************************************
     *    For technical assistance on STAAD.Pro, please visit    *
     *    http://selectservices.bentley.com/en-US/               *
     *                                                           *
     *    Details about additional assistance from               *
     *    Bentley and Partners can be found at program menu      *
     *    Help->Technical Support                                *
     *                                                           *
     *       Copyright © 1997-2013 Bentley Systems, Inc.
     *                 http://www.bentley.com                    *
     ***********************************************************
```

A continuación, editamos un resumen del porcentaje que requieren las 84 columnas que conforman la estructura,

RESUMEN DE ACERO DE REFUERZO NECESARIO PARA LAS COLUMNAS DEL HOSPITAL RURAL No 69 EN SAN QUINTIN, BAJA CALIFORNIS

	No de col	porcentaje de acero	acero minimo	mas que el minimo
1	8	1.00	4#8	
2	9	1.00	4#8	
3	10	1.00	4#8	
4	11	1.00	4#8	
5	12	1.00	4#8	
6	13	1.00	4#8	
7	14	1.00	4#8	
8	54	1.00	4#8	
9	55	1.00	4#8	
10	56	1.00	4#8	
11	57	1.00	4#8	
12	58	1.00	4#8	
13	59	1.00	4#8	
14	60	1.00	4#8	
15	69	1.00	4#8	
16	70	1.50		5#8
17	71	1.13	4#8	
18	72	1.41		5#8
19	73	1.00	4#8	
20	84	3.68		8#8
21	85	4.90		15#8
22	122	1.00	4#8	
23	123	1.00	4#8	
24	124	1.00	4#8	
25	125	1.00	4#8	
26	126	1.00	4#8	
27	127	1.00	4#8	
28	128	1.00	4#8	
29	138	1.22	4#8	
30	139	1.00	4#8	
31	140	3.14		10#8
32	141	2.45		8#8
33	178	1.00	4#8	
34	179	1.00	4#8	
35	180	1.00	4#8	
36	181	1.00	4#8	
37	182	1.00	4#8	
38	183	1.00	4#8	
39	184	1.00	4#8	
40	194	1.00	4#8	
41	195	1.00	4#8	

42	196	1.41		5#8		
43	197	1.50		5#8		
44	198	1.00	4#8			
45	207	4.90		15#8		
46	208	4.02		13#8		
47	239	1.00	4#8			
48	240	1.00	4#8			
49	241	1.00	4#8			
50	242	1.09	4#8			
51	243	1.00	4#8			
52	244	1.00	4#8			
53	245	1.00	4#8			
54	277	1.00	4#8			
55	278	1.00	4#8			
56	279	1.00	4#8			
57	280	1.00	4#8			
58	281	1.00	4#8			
59	282	1.00	4#8			
60	310	1.00	4#8			
61	311	1.00	4#8			
62	312	1.00	4#8			
63	313	1.00	4#8			
64	314	1.00	4#8			
65	315	1.00	4#8			
66	316	1.00	4#8			
67	365	1.00	4#8			
68	366	1.00	4#8			
69	367	1.00	4#8			
70	368	1.00	4#8			
71	369	1.00	4#8			
72	370	1.00	4#8			
73	371	1.00	4#8			
74	374	1.57		5#8		
75	411	1.00	4#8			
76	412	1.00	4#8			
77	413	1.00	4#8			
78	414	1.00	4#8			
79	415	1.00	4#8			
80	416	1.00	4#8			
81	417	1.00	4#8			
82	418	1.00	4#8			
83	429	1.00	4#8			
84	606	1.00	4#8			
COMO SE APRECIA EN ESTE RESUMEN, DE 84 COLUMNAS,						
SOLO 11 DE ELLAS REQUIEREN PORCENTAJE ARRIBA DEL						
1%						

Se marcaron en color amarillo 6 columnas en donde el programa nos indica que cumple con mínimo porcentaje de acero requerido.

Como se puede observar en las condiciones constructivas en la que está actualmente la unidad, la estructura cumple con los requisitos de seguridad estructural que consigna el Reglamento de Construcciones de la CDMX o el Manual para Obras Civiles de la C.F.E.

Elaboró.

Ing. Miguel Omar Méndez López
Cedula Profesional. 9988777
PROYECTA Y EDIFICA, S.A. de C.V.

CEDULA PROFESIONAL