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# 22 Thames Street, New York, NY

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## Peer-review Report Phase I (Foundation)

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Rosenwasser/Grossman Consulting  
Engineers, P.C.

February, 2014

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Prepared for

Henry II Thames LP

c/o Fisher Brothers Management

Prepared by

Ben Pimentel, PE

Sunghwa Han, PE, SE, LEED AP

Ben Pimentel hereby certifies that I have performed the peer review in accordance with the New York City Building Code and requirements set forth therein.

Name: Ben Pimentel

License No.: 086645

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### 1.1 Executive Summary

The proposed building will be located at the South-East corner of the intersection between Thames Street and Greenwich Street in the Lower Manhattan District. The site is approximately 9,000 ft<sup>2</sup> and the proposed building is designed to be a 780 ft tall residential tower consisting of 71 floors above grade and two levels below grade.

The site was occupied by a 10 story building with one level of basement supported by a shallow foundation system consisting of piers with enlarged bases. Substructures for NYCT subway Line 1 and Line R are located underneath of Greenwich Street and Trinity Place respectively. Two neighboring buildings remain: a 5 story landmark building (78-86 Trinity Place), The American Stock Exchange, resting on shallow spread footings on the south side and a 14 story building (88-92 Trinity Place) on the east of the project site.

Rosenwasser/Grossman Consulting Engineers P.C. was retained by the owner to provide a peer review based on the New York City building Code 2008 Section BC 1627. Our peer review is divided into two phases; 1) Review of the foundation design and 2) Review of the super-structure. The clients request these two phases review to accommodate the construction schedule. At the phase I (Review of foundation), overall performance of the structure, adequacy of the estimated design loads and the selected design criteria, appropriate interpretation of geo-technical engineering report and the wind tunnel testing report, and overall performance of structural members which directly anchor to the foundation are reviewed. Design of the remaining structural members will be reviewed at the following phase II (Review of super structure).

It shall be noted that Rosenwasser/Grossman Consulting Engineers P.C states its own opinion as a peer reviewer regarding the design provided by the engineer of record. The structural engineer of record shall retain sole responsibility for the structural design of the entire building.

A structural analysis model which was originally prepared by the engineer of record was reviewed. For our peer-review, necessary modifications have been made onto the analysis model received from the engineer of record. The representative structural members were checked using the results obtained from the modified analysis model. Code compliance of the design according to the New York City Building Code 2008 section 1627.6.1 for foundation is summarized in the checklist (See appendix A).

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Below is the list of information Rosenwasser/Grossman Consulting Engineers P.C received from the engineer of record for our peer-review.

< References >

1. Structural drawings (TA Review set dated October 8, 2013 and Foundation bid set dated December 8, 2013)
2. Geo-technical engineering report prepared by Langan Engineering dated October 25, 2013
3. Wind Tunnel testing reports prepared by CPP Inc.
  - a. Interim Structural Loads Report issued in September, 2013
  - b. Interim Structural Loads Report, Revision 1 issued in November, 2013
4. Narrative of the structural design criteria dated November 15, 2013 and received on January 7, 2014

## 1.2. Design Criteria

### 1.2.1. Design Code and References

- New York City Building Code 2008
- ACI 318-02 Building Code Requirements for Structural Concrete

### 1.2.2 Design loads

#### 1.2.2.1 Gravity loads

Typical floors for residential units			
	Superimposed dead load	: 20	psf
	Live load	: 40	psf
Typical mechanical floors (Equip. weight is separately considered)			
	Superimposed dead load	: 50	psf
	Live load	: 100	psf
Main roof (Weight of damper is included in the 400 psf of live load)			
	Superimposed dead load	: 50	psf
	Live load	: 400	psf
Ground floor			
	Superimposed dead load	: 50	psf
	Live load	: 100	psf

## 22 Thames Street, New York

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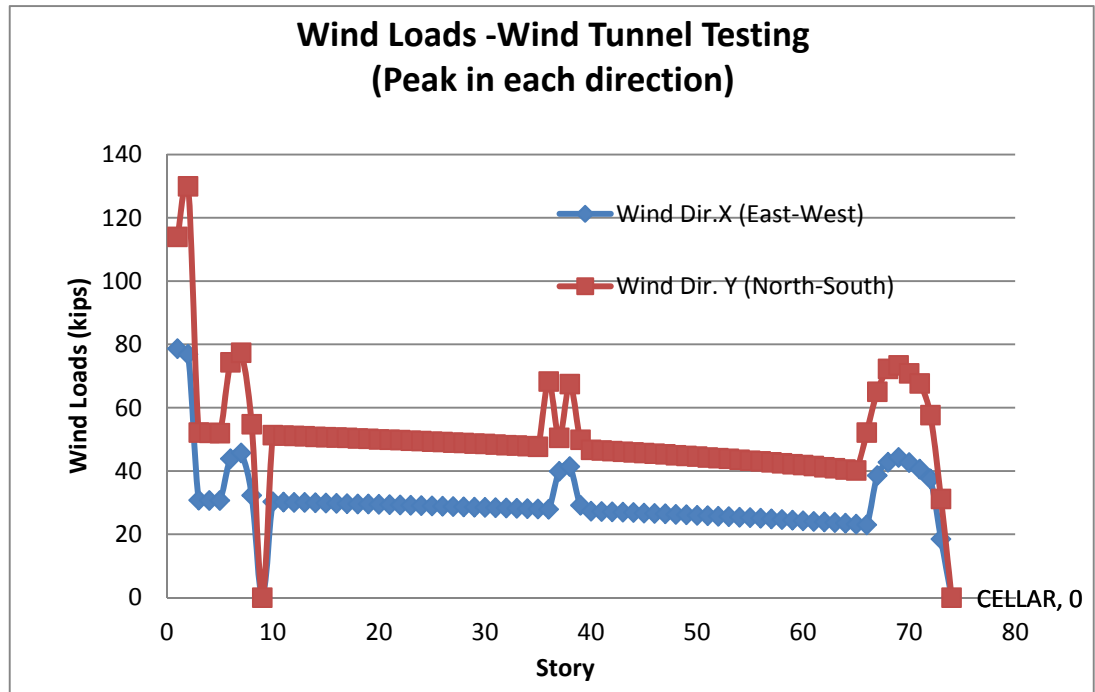
Rosenwasser/Grossman Consulting Engineers P.C

Retail (2F, 3F & 4F)			
Superimposed dead load	:	50	psf
Live load	:	100	psf
Storage or amenities (Cellar / Sub-cellar floor)			
Superimposed dead load	:	25	psf
Live load	:	100	psf

### 1.2.2.2 Wind Loads

Wind loads are estimated from the wind tunnel testing.

- Basic Wind Speed for New York City: 98mph measured at 33 ft above ground as a 3 second gust (Based on local wind climate with annual probability with 0.02, 50 year mean recurrence interval)
- Importance Factor: I=1.0 (Structural Occupancy Category II)
- Assumed damping ratio:
  - 2% of critical damping for estimation of structural loads
  - 2% of critical damping (inherent damping) for estimation of accelerations without a supplementary damping system
- Design wind loads : 50 year recurrence wind loads (wind tunnel testing)
  - Wind Load in N-S Direction: 3,762 kips
  - Wind Load in E-W Direction: 2,219 kips



1.2.2.3 Seismic Loads

- Site: New York City ( $S_S = 0.365 \text{ g}$ , :  $S_1 = 0.071 \text{ g}$ )
- Seismic Use Group I (Occupancy category II)
- Site Class: D ( $F_a = 1.51$  &  $F_v = 2.4$ )
- Importance Factor:  $I = 1.0$  (Seismic use group I)
- Load Resisting System: Bearing system consisting of ordinary reinforced concrete shear walls
- Response Modification Factor:  $R = 4.0$
- System Over-strength Factor:  $\Omega_o = 2.5$
- Deflection Amplification Factor:  $C_d = 4.0$
- Seismic Design Category: C
- Seismic Base Shear:  $125,810 \text{ kips} \times 0.016 = 2,012 \text{ kips}$ 
  - Approximate fundamental period:  $T_a = C_t (h_n)^x = 0.02 \times 780^{(0.75)} = 3 \text{ sec}$
  - Upper limit on building period:  $C_u \times T = 1.7 \times 3.0 = 5.1 \text{ sec}$
  - Effective seismic building weight: Approximately 125,810 kips including weight of mechanical equipment (weight of a supplementary damping system shall be included for the final design)
  - Seismic Response Coefficient  $C_s$ 

$$S_{DS} = 2/3 \times S_D \times F_a = 2/3 \times 0.365 \times 1.51 = 0.367 \text{ g}$$

$$S_{D1} = 2/3 \times S_1 \times F_v = 2/3 \times 0.071 \times 2.4 = 0.1136 \text{ g}$$

$$C_s \text{ min} = 0.044 \times S_{DS} \times I = 0.044 \times 0.367 \times 1.0 = 0.016$$

$$C_s \text{ max} = S_{D1}/(T \times R/I) = 0.1136 / (5.1 \times 4.0 / 1.0) = 0.0056$$

$$C_s = S_{DS}/(R/I) = 0.367 / (4.0/1.0) = 0.09175 > \underline{C_{\text{min}} = 0.016}$$

- Analysis procedure: Modal response spectrum analysis

### 1.3 Structural System

#### 1.3.1 Gravity Load Resisting System

Typically 8 inch thick flat plate (typical floor: residential units) supported by cast-in-place concrete columns and shear walls was utilized to resist the gravity loads.

#### 1.3.2 Lateral Load Resisting System

Main core shear walls and full height belt walls at the mid height and the top of the building are utilized to resist the lateral loads.

### 1.4 Foundation system

The proposed building is surrounded by the existing buildings and substructures for NYCT. Substructures for NYCT subway line 1 and line R are located underneath of Greenwich Street and Trinity Place respectively. Each tunnel for Line 1 and Line R was constructed as one tunnel with two tracks. The bottom of the subway tunnels is approximately at EL. -16 (BPMD: Borough President of Manhattan Datum) for line 1 and EL. -14 (BPMD) for line R.

Currently two neighboring buildings remain: a 5 story landmark building (78-86 Trinity Place) resting on shallow spread footings in south and a 14 story building (88-92 Trinity Place) in east of the project site. It was found that a portion of the building at 88-92 Trinity Place is supported by a deep foundation consisting of 100 ton capacity of HP piles driven to rock.

The geo-technical engineering report indicates that the 1 in 100 year flood elevation is at EL. +9.35 (MBPD) which is proposed to be used for the design ground water elevation. Due to the adjacent existing buildings and surrounding substructures, deep footing system consisting of drilled caissons socketed into rock 47 ft to 57 ft below the existing grade is recommended to be used to support columns and core shear walls. Capacity of caissons varies from 200 ton to 750 ton in compression and from 100 ton to 250 ton in tension.

During construction of foundation, excavation and underpinning of the adjacent structures will be required. Since the excavated area is extended to below ground water level, the geo-technical engineers recommended a drilled secant pile wall for temporarily excavation support and a temporary water barrier. This continuous 27 inch thick secant pile wall is installed to prevent any load transfer from the proposed development to the existing NYCB substructures and the adjacent existing buildings. Therefore, secant wall needs to be designed for the soil

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lateral pressure, hydrostatic pressure and the lateral surcharge loads from the adjacent existing structures and sidewalk. In addition to the secant walls, cast-in-place concrete liner walls are designed to resist surcharge loads from sidewalk, soil lateral pressure, and hydro static pressure.

Some of the exterior columns and a portion of shear walls are resting on this secant wall with additional embedded steel members to supplement the required compressive force and uplift force. As a part of our review, the specified loads for secant walls supporting portion of the proposed development are reviewed. However, review on the design of secant wall was not included in this peer-review, since it was not designed by the engineer of record.

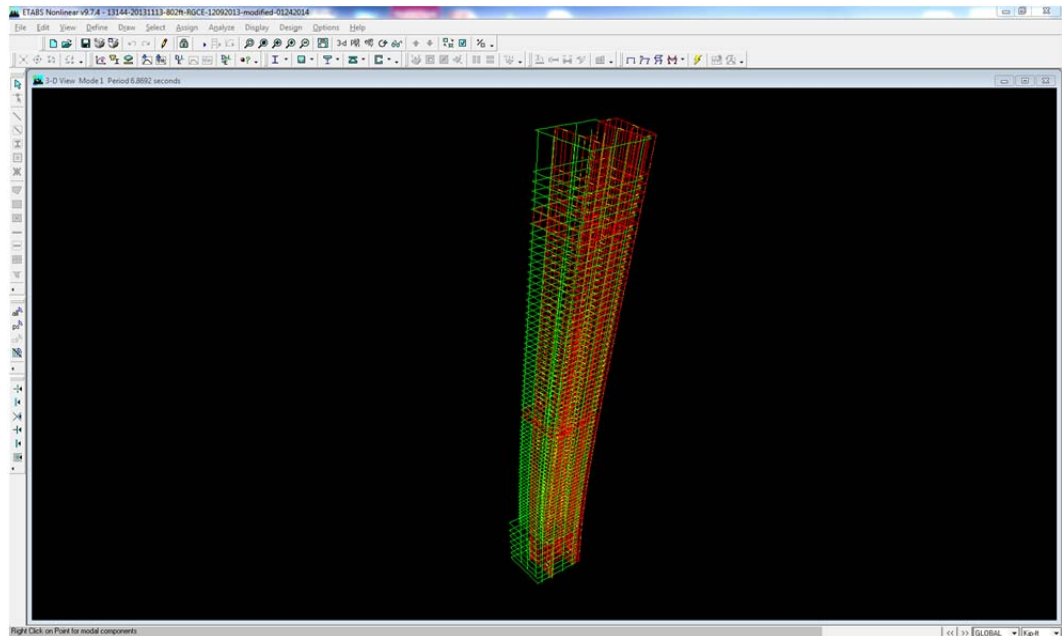
For slab at the lowest level (EL. -15' - 4"), 20 inch thick structural slab is designed to support hydrostatic pressure associated with 1 % chance flood elevation (EL. +9.35 Manhattan Borough President's Datum).

### 1.5 Analysis Output

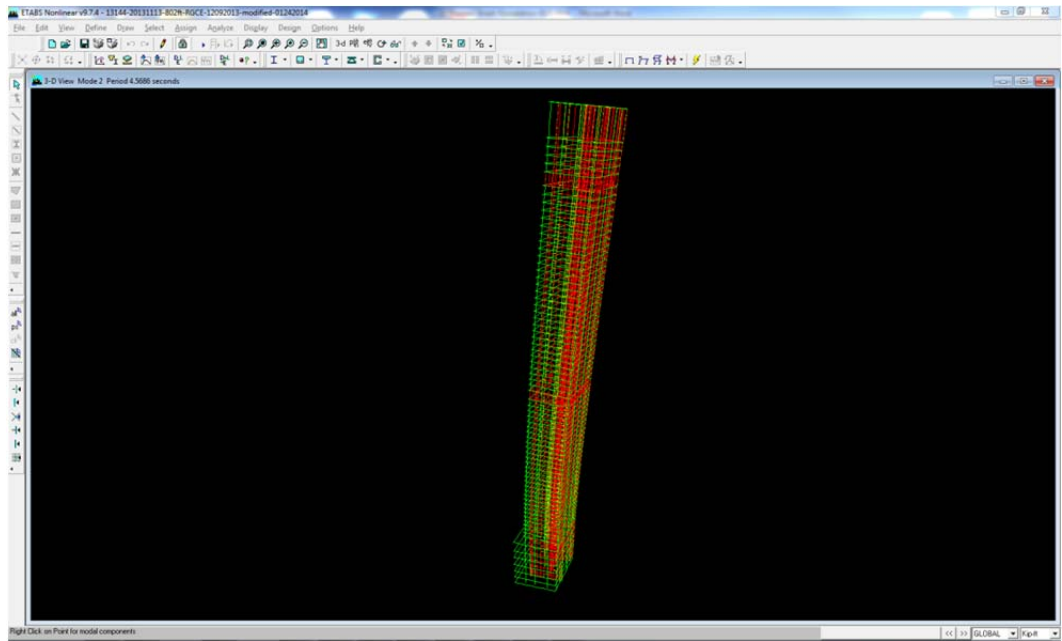
#### 1.5.1 Building periods: Based on our analysis model

- 1<sup>st</sup> Mode: 6.8 sec (East-West direction)
- 2<sup>nd</sup> Mode: 4.5 sec (North-south direction)
- 3<sup>rd</sup> Mode: 2.2 sec (Torsion)

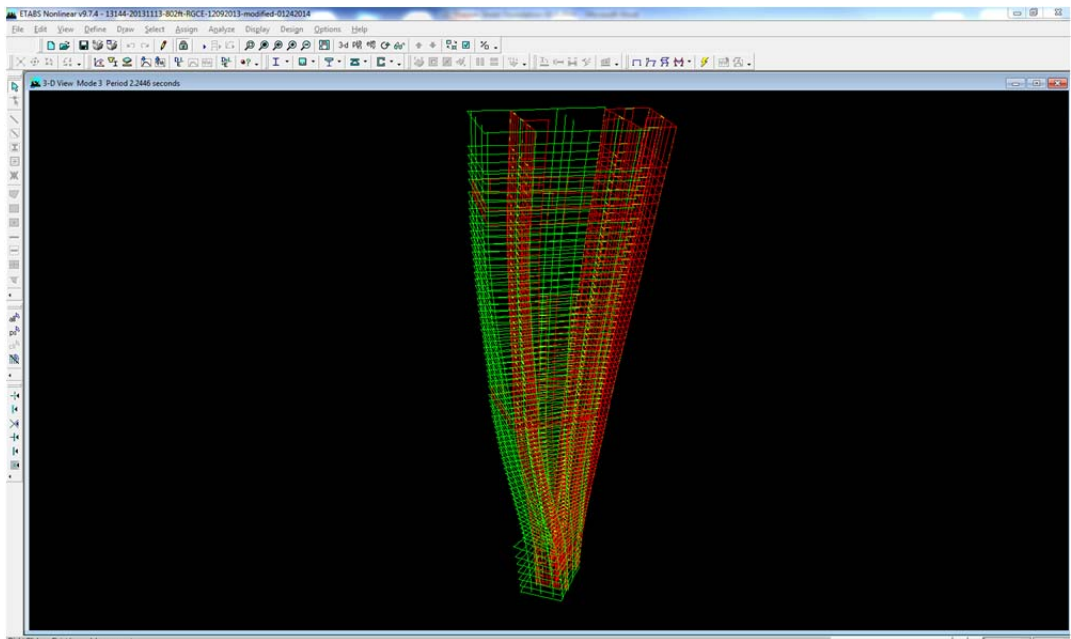
< 1<sup>st</sup> Mode >



< 2<sup>nd</sup> Mode >



< 3<sup>rd</sup> Mode >



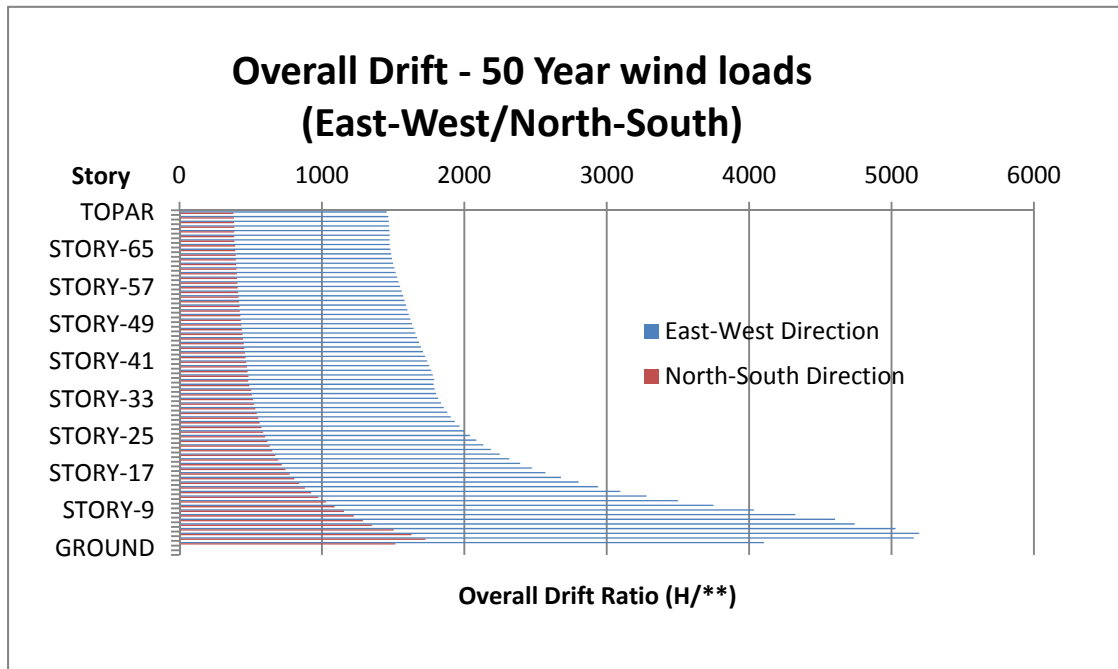
- Comparison of computed building periods

Mode	Direction	Reviewer's analysis result	Dynamic properties used for estimation of wind loads (indicated on the wind tunnel testing report)
1st	East-west direction	6.8 sec	6.8 sec
2nd	North-south direction	4.5 sec	4.5 sec
3rd	Torsion	2.5 sec	2.2 sec

1.5.2 Maximum Drift

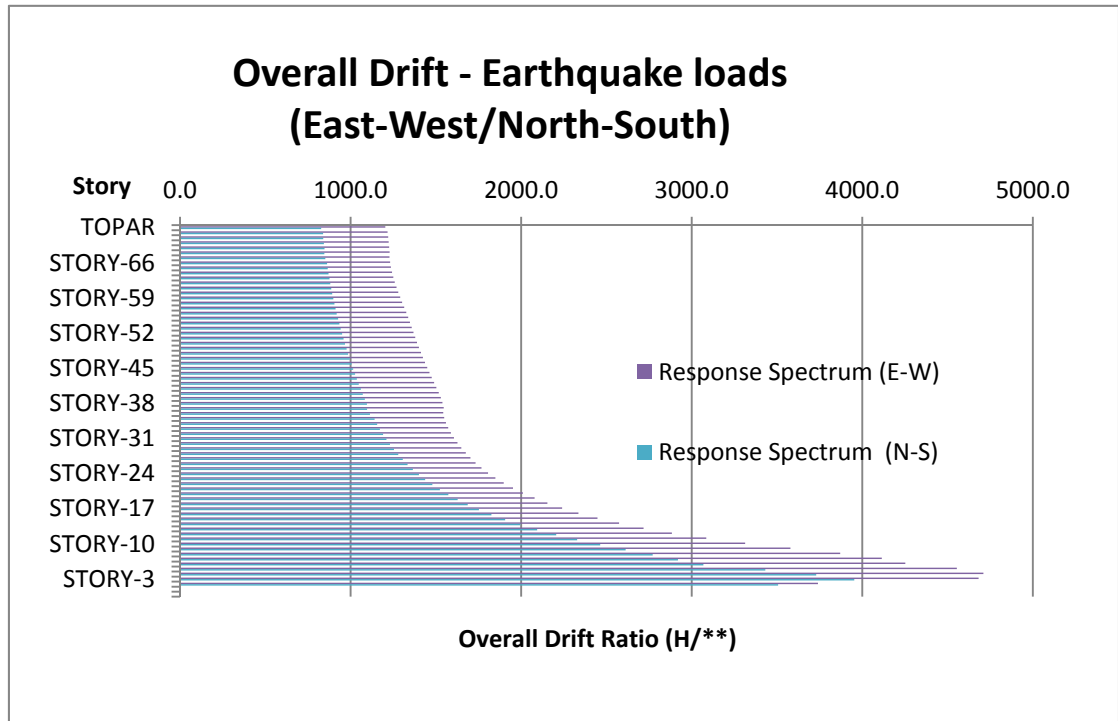
A. Wind loads (Based on 50 year recurrence wind loads)

- East-West direction (X-direction): 6.5 inch (H/1455) at main roof
- North-South direction (Y-direction): 24.9 inch (H/379) at main roof



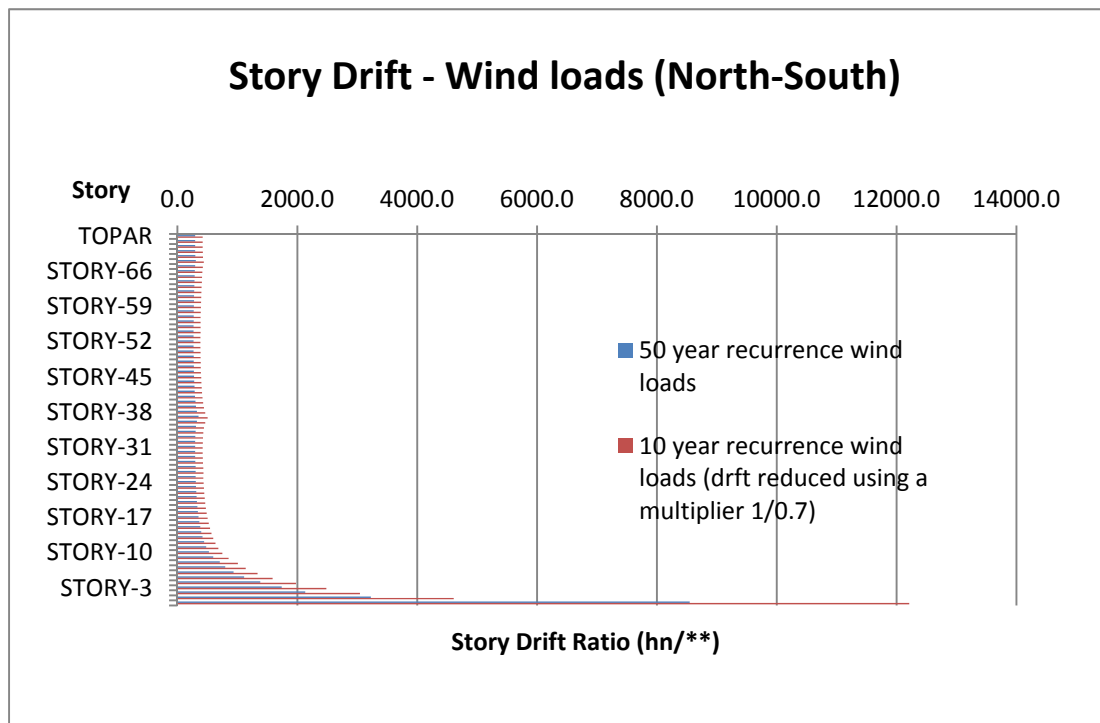
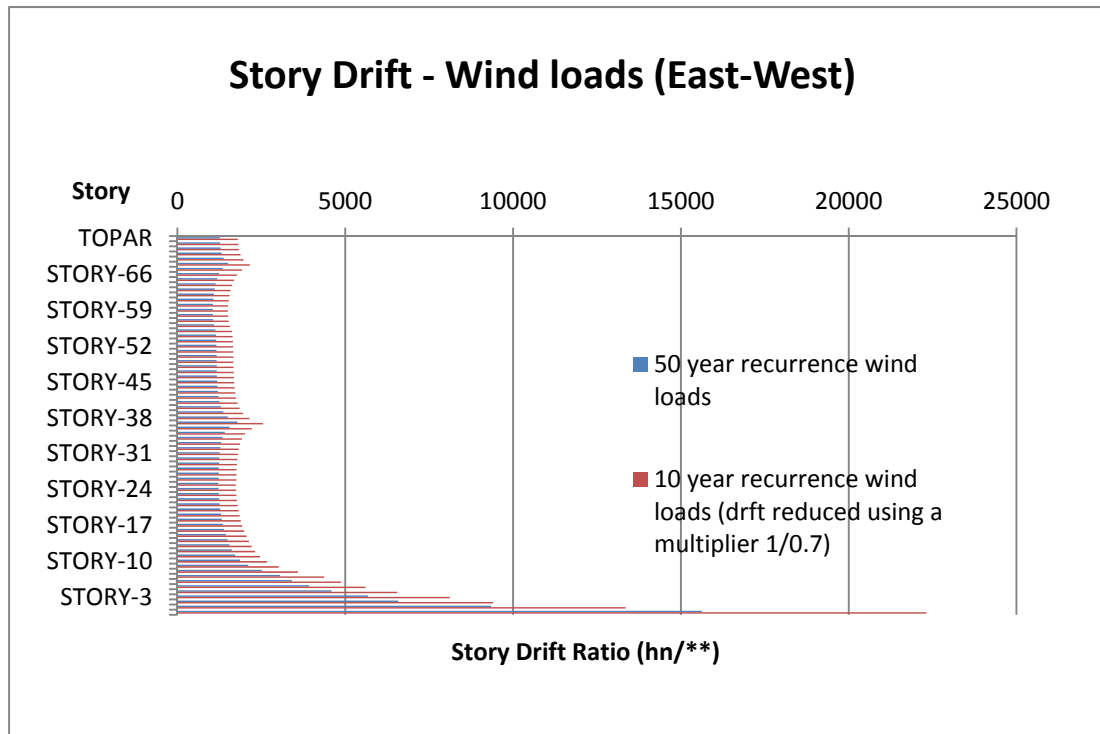
B. Earthquake loads

- East-West direction (X-direction): 7.6 inch (H/1237) at main roof
- North-South direction (Y-direction): 11.4 inch (H/827) at main roof

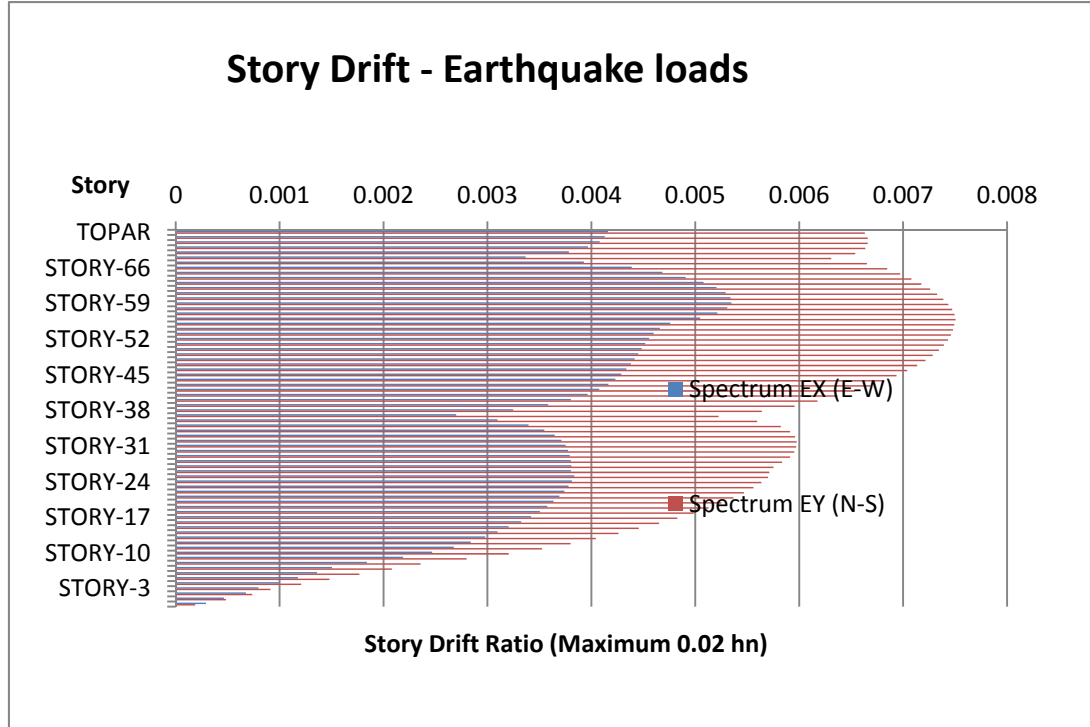


1.5.3 Maximum Story Drift

- A. Wind loads (Based on 10 year recurrence wind loads): Story drifts are increased using a multiplier  $1/0.7$  from the analysis results which were based on 50 year recurrence wind loads
- X-direction (East-West) :  $h_n/1505$  at 59<sup>th</sup> floor
  - Y-direction (North-South) :  $h_n/384$  at 52<sup>nd</sup> floor



- B. Earthquake loads: less than 0.02 hn (Allowable maximum story drift for occupancy category II)



1.6 Design of Structural Members

1.6.1 Columns and Shear walls: Column and shear walls are directly anchored into the foundation system are reviewed. The rest of columns and shear walls will be reviewed at the next phase.

1.6.1.1 Columns

- Axial loads for all columns were calculated for strength requirements. See Appendix B “Sample Calculation Sheet” for detail.
- Reinforcing at columns is checked. See Appendix B “Sample Calculation Sheet” for detail.

1.6.1.2 Shear walls

- Reinforcing at shear walls at the sub-cellar floor is checked. See Appendix B “Sample Calculation Sheet” for detail.

1.6.2 Mat foundation supporting shear walls

- Layout of 24 inch diameter caissons is reviewed. See Appendix B “Sample Calculation Sheet” for detail.
- Required capacity of caissons specified on the foundation drawing is compared with the analysis result based on the modified analysis model. See Appendix B “Sample Calculation Sheet” for detail.

### 1.6.3 Liner foundation walls

In addition to the 27 inch thick secant pile wall, additional liner foundation walls are designed to support a surcharge from the sidewalk, the lateral soil pressure, and the hydrostatic pressure.

### 1.6.4 Structural slab at the sub-cellar floor

A sub-cellar floor slab is located at EL. -15'-4". The 1 in 100 year floor elevation is at EL. +9.35 (MBPD). It is recommended to design the structural slab for 1375 lb/ft<sup>2</sup> of hydrostatic pressure.

### 1.6.5 Secant pile wall

A portion of the shear walls and column 4 and 7 are resting on the secant walls. Additional embedded steel members are specified to supplement the required compressive force at the secant walls. The specified required compressive force supporting shear walls and columns is reviewed, but the design of the secant pile wall was not reviewed.

## 2.1 Summary of relevant engineering investigation

### 2.1.1 Geo-technical engineering report

A review of the site building information and an investigation of subsurface conditions were conducted by Langan Engineering. Below is the summary of their findings and recommendations as stated in the geo-technical engineering report dated October 25, 2013.

- The installation of secant walls along the perimeter of the site is recommended to cut off influx of ground water and to provide temporary excavation support during construction
- A deep foundation system consisting of caissons socketed into rock is recommend for columns and shear walls
- Monitoring of the adjacent existing structures and sidewalk is recommended during excavation and construction of foundation
- A test pit shall be made prior to construction to collect information of the adjacent substructures and the existing buildings
- The ground water level is estimated to be at EL. +9.35" based on 1% chance of flood

### 2.1.2 Wind tunnel testing report

Wind forces and moments for use in designing of the structural system for the building were determined from HFB (High-Frequency-Force Balance Method) by CPP. Below is the summary of their findings and recommendations stated in the wind tunnel testing report dated September, 2013 and revision I issued in November, 2013.

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- Wind forces and moments are based on a 50 year recurrence wind. Ten load cases in consideration of wind directionality and structural dynamic properties of the are provided
- Wind testing was done for three different configurations of the surrounding conditions. Wind tunnel testing report Revision I indicated that the final wind loads are provided for the configuration C which doesn't include Beacon.
- The wind tunnel testing report indicated that the 10 year peak accelerations for the building with a 2% of inherent damping ratio exceed the commonly acceptable range for residential buildings. It is recommended to incorporate a supplementary damping system to lower the acceleration below 18 or 20 milli-g.

### 3.1 Reviewer's opinion

Rosenwasser/Grossman Consulting Engineers, P.C. has completed the peer review of the foundation design documents prepared by the engineer of record, Desimone Consulting Engineers. As per the client's request, we have reviewed the foundation design as the first phase of our peer review in conjunction with a review of the overall behavior of the building as it would affect the foundation design.

During our peer-review, it was found that there is an alternative interpretation in the classification of the basic- seismic-force-resisting system for the building. We believe that the seismic force resisting system for the proposed building should be categorized as a bearing system consisting of ordinary reinforced concrete shear walls, since the majority of the gravity loads is resisted by shear walls. This change of the seismic-force-resisting system categorization increases the base shear. However, the wind loads are significantly larger than the seismic loads even with the changed basic-seismic-force-resisting system. Drifts due to the seismic loads are still within an acceptable range and design of the structural members is governed by the wind loads. This discrepancy in category of the basic- seismic-force-resisting system for the building will be further discussed in our phase II peer-review.

It is our opinion that the current foundation design seems to comply with the building design codes and the standard of care except for the areas mentioned in this report.

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Appendix A. Code compliance check list

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**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
<b>1. Design Loads</b>					
1) Gravity loads	NYC BC 1607 Table 1607.1	Loading Schedule on Dwg. S-001		√	
2) Wind loads	NYCBC BC 1609	<ul style="list-style-type: none"> <li>• Wind design data on Dwg. S-001</li> <li>• Wind tunnel testing interim reports (dated September 2013 and December 2013)</li> </ul>	The design wind loads are provided by CPP using the wind tunnel testing	√	
3) Seismic loads	NYCBC BC 1609	Seismic design data on Dwg. S-001			<ul style="list-style-type: none"> <li>• Correction on the category of the basic seismic-force-resisting system is required. Accordingly, response modification factor (R ), system over-strength factor (<math>\Omega_0</math>), and deflection amplification factor (Cd) need to be revised</li> <li>• Base shear for the</li> </ul>

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
					seismic load needs to be revised.
4) Soil lateral loads	NYCBC BC 1610	<ul style="list-style-type: none"> <li>Geotechnical report dated October 25, 2013</li> </ul>	Geo-technical engineering report indicates that equivalent lateral soil pressure at rest is based on soil unit weight of 125 pcf and lateral earth pressure coefficient (K <sub>o</sub> ) of 0.5 and a design flood (I in 100 year) ground water elevation is at El. +9.35 (BPMD)	√	<ul style="list-style-type: none"> <li>Secant pile wall needs to be designed for the equivalent lateral pressure mentioned in detail. In addition, a surcharge from the adjacent substructures and the adjoining existing buildings shall be considered in design of secant pile wall.</li> <li>Liner foundation wall is designed for the lateral pressure</li> </ul>
<b>2. Structural Design Criteria and Assumptions</b>					
1) Serviceability					
A. Lateral displacement		Structural drawings	<ul style="list-style-type: none"> <li>Story drift due to wind loads: As confirmed by the engineer of record, 10 year recurrence wind loads were used to estimate story drift for evaluation of</li> </ul>	√	<ul style="list-style-type: none"> <li>Story drift criteria (h<sub>n</sub>/400 at 10 year recurrence wind) used for design can be acceptable, as long as</li> </ul>

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
			<p>serviceability. According to our study, story drift at the critical floor (52F) is close to <math>h_n/385</math></p> <ul style="list-style-type: none"> <li>• Story drift due to earthquake loads: less than <math>0.02h_n</math> (maximum allowable story drift for seismic use group I/Bearing system using ordinary reinforced concrete shear walls)</li> </ul>		<p>non-structural elements such as cladding and components, partitions and mechanical equipment are properly designed to accommodate this estimated building movement</p>
B. Perception to motion	ISO criteria (these criteria are chosen by the wind tunnel testing lab)		<ul style="list-style-type: none"> <li>• Wind tunnel testing results indicated excessive accelerations.</li> <li>• CPP (wind tunnel testing lab) recommends installation of a supplementary damping system to reduce accelerations to improve tenants' perception to motion.</li> </ul>	√	<ul style="list-style-type: none"> <li>• Final design of a damper needs to be completed and a supporting system of a damper needs to be incorporated into the final design of the structure</li> </ul>
2) Analysis	NYCBC BC section 1604.4	Structural drawings	<ul style="list-style-type: none"> <li>• A computer analysis model prepared by the engineer of record is reviewed and necessary modifications are made for our peer review</li> </ul>	√	

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
			<ul style="list-style-type: none"> <li>As a part of phase I peer review, overall behavior of the structure and internal forces at members (columns and shear walls below ground level) directly anchored to foundation were reviewed and compared with the original design</li> </ul>		
3) Anchorage to foundation	NYCBC BC section 1604.8	<ul style="list-style-type: none"> <li>Foundation/Sub-cellar floor framing plan (Dwg. S-FO-100)</li> <li>Typical foundation details (Dwg. S-FO-103)</li> <li>Cellar floor framing plan (Dwg. S-FO-101)</li> <li>Mat reinforcing part plan (Dwg. FO-111 &amp; 122)</li> <li>Column schedule (Dwg. S-301)</li> <li>Cellar Shear wall reinforcement plan (Dwg. S-311)</li> <li>Ground floor Shear</li> </ul>	<ul style="list-style-type: none"> <li>Columns (1 through 7) were checked for the design loads (the gravity loads and the lateral loads) from base (foundation) to top (main roof)</li> <li>Reinforcing at the lower levels are reviewed</li> <li>Shear walls at the lower levels (ground floor and sub-cellar floor) and checked for the design loads (the gravity loads and the lateral loads)</li> </ul>	√	<ul style="list-style-type: none"> <li>Our analysis indicated that the calculated axial loads for the columns and shear walls are agreed with design loads computed by the engineer of record</li> </ul>

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
		wall reinforcement plan (Dwg. S-311)			
4) Lateral displacement capacity of slab-column connection not to contribute lateral resistance	NYCBC BC section 21.11.5				<ul style="list-style-type: none"> <li>To be checked at phase II</li> </ul>
<b>3. Conformity of structural design with engineering investigation</b>					
1) Geo-technical engineering report		<ul style="list-style-type: none"> <li>Structural drawings</li> <li>Geotechnical report dated October 25, 2013</li> </ul>			
A. Stability of the adjacent buildings		<ul style="list-style-type: none"> <li>Foundation / Sub-cellular floor framing plan (Dwg. FO-S-100)</li> <li>Foundation sections and details (FO-104, 105, 106,</li> </ul>	<ul style="list-style-type: none"> <li>Secant pile wall along the perimeter of the site was recommended by the geotechnical engineers to cut off influx of ground water and to provide excavation support during construction</li> </ul>	√	<ul style="list-style-type: none"> <li>Design of secant pile wall is not reviewed, since it is not the design provided by engineer of record.</li> <li>Secant pile wall shall be designed for a surcharge from the</li> </ul>

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
		and 107)			sidewalk, the existing subway structures, and the adjacent buildings.
B. Deep footings-Caissons		<ul style="list-style-type: none"> <li>• Dwg. S-001 General notes</li> <li>• Foundation / Sub-cellar floor framing plan (Dwg. FO-S-100)</li> </ul>	<ul style="list-style-type: none"> <li>• Reaction at each caisson is reviewed for the various load combinations including dead loads, live loads, wind loads, and seismic loads. (For details, see Appendix B)</li> </ul>	√	
C. Ground water level and waterproofing			<ul style="list-style-type: none"> <li>• Design ground water level is assumed to be at EL +9.35 (BPMD)</li> <li>• Waterproofing (foundation walls and slab-on-grade) is called for on structural drawings</li> </ul>	√	
D. Additional investigation & protection of adjacent and on-site structure			<ul style="list-style-type: none"> <li>• Geo-technical engineers recommend to do test pit prior to construction for information of foundation types, depths, and conditions of the existing footings for the adjacent buildings</li> </ul>		

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
E. Protection of adjacent and on-site structures			<ul style="list-style-type: none"> <li>Construction induced vibrations shall be monitored within the adjacent buildings and subway tunnels during demolition, foundation excavation / construction, underpinning, and temporarily excavation support work proceeds</li> </ul>		
F. Uplift		Dwg. FO-100 Foundation/sub- cellar 2 floor plan	Rock anchors are recommended to control uplift if necessary.	√	Rock anchor is not required
<b>2) Wind tunnel testing report</b>					
			<ul style="list-style-type: none"> <li>Wind forces and moments are based on a 50 year recurrence wind. Ten load cases in consideration of wind directionality and structural dynamic properties of the are provided</li> <li>The wind tunnel testing report indicated that the 10 year peak accelerations for the</li> </ul>		



**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
			building with a 2% of inherent damping ratio exceed the commonly acceptable range for residential buildings. It is recommended to incorporate a supplementary damping system to lower the acceleration below 18 or 20 milli-g.		
<b>4. Complete load path</b>					
1) Gravity loads		Structural drawings	<ul style="list-style-type: none"> <li>Gravity loads are resisted by cast-in-place flat plate (horizontal elements) and cast-in-place columns and shear walls (vertical elements).</li> </ul>	√	Load path for the gravity loads is complete
2) Wind loads		Structural drawings	<ul style="list-style-type: none"> <li>Wind loads are transferred to shear walls by rigid diaphragm (typically 8 inch thick flat plate)</li> <li>Lateral load resisting system consists of core shear walls and belt walls located at roof and mid-height of the building</li> </ul>	√	Load path for the wind loads is complete

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
			<ul style="list-style-type: none"> <li>Cellar floor was assumed to be the base for the lateral loads and overturning moments due to wind loads are resisted by continuous secant walls and caissons</li> </ul>		
3) Seismic loads		Structural drawings	<ul style="list-style-type: none"> <li>Seismic loads are transferred to shear walls by rigid diaphragm (typically 8 inch thick flat plate)</li> <li>Lateral load resisting system consists of core shear walls and belt walls located at roof and mid-height of the building</li> </ul> <p>Cellar floor was assumed to be the base for the lateral loads and overturning moments due to wind loads are resisted by continuous secant walls and caissons</p>	√	Load path for the seismic loads is complete
4) Soil lateral load	NYCBC BC 1610	Ground floor framing plan, cellar floor framing plan and foundation / sub-cellar floor framing plan	<ul style="list-style-type: none"> <li>Support condition of liner foundation walls at floors (ground floor, cellar floor, and sub-cellar floor) is reviewed</li> </ul>	√	Load path for the soil lateral load is complete

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
<b>5. Design of members</b>	NYCBC BC 1627.6.2	Structural drawings	Representative structural elements (flat plate at one typical floor, shear walls, columns, link beams, independent footing, mat foundation and foundation walls) to be checked based on the results from our analysis.		
1) Flat plate		<ul style="list-style-type: none"> <li>Dwg. Floor framing plan</li> </ul>	<ul style="list-style-type: none"> <li>Adequacy of slab thickness and reinforcing is reviewed</li> </ul>		Actual design (reinforcing) To be checked at phase II
2) Shear wall		<ul style="list-style-type: none"> <li>Shear wall rebar plans</li> </ul>	<ul style="list-style-type: none"> <li>Reinforcing at shear walls supporting ground floor and cellar floor is reviewed</li> </ul>		Rest of shear walls to be checked at phase II
3) Columns			<ul style="list-style-type: none"> <li>Reinforcing at Column 1 through 7 at the lower levels is reviewed</li> </ul>		The final review will be done at phase II
4) Link Beams					To be checked at phase II
5) Transfer Beams					To be checked at phase II
6) Caisson cap for shear walls		<ul style="list-style-type: none"> <li>Foundation plan/Sub-cellar floor framing plan (Dwg. FO-100)</li> </ul>	<ul style="list-style-type: none"> <li>Adequacy of layout of caissons is reviewed.</li> <li>Adequacy of the specified caisson capacity is reviewed.</li> </ul>	√	<ul style="list-style-type: none"> <li>See Appendix B. sample calculation sheets for details.</li> </ul>

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
		<ul style="list-style-type: none"> <li>• Mat reinforcing part plan (Dwg. FO-111)</li> </ul>	<ul style="list-style-type: none"> <li>• Adequacy of depth and reinforcement of caisson cap is reviewed.</li> </ul>		
7) Structural slab at sub-cellar floor		<ul style="list-style-type: none"> <li>• Foundation plan/Sub-cellar floor framing plan (Dwg. FO-100)</li> </ul>	Adequacy of 20 inch thick mat slab with mini caissons along the perimeter of the site is reviewed	√	<ul style="list-style-type: none"> <li>• See Appendix B. sample calculation sheets for details.</li> </ul>
8) Liner foundation walls		<ul style="list-style-type: none"> <li>• Foundation/Sub-cellar floor framing plan (Dwg. S-FO-100)</li> <li>• Cellar floor framing plan (Dwg. S-FO-101)</li> <li>• Ground floor framing plan (Dwg. S-201)</li> <li>• Typical foundation details (Dwg. S-FO-103)</li> <li>• Mat reinforcing</li> </ul>	<ul style="list-style-type: none"> <li>• 600 psf of surcharge load is assumed to be applied on sidewalk</li> <li>• Design of liner foundation wall Type “A” is reviewed. See Appendix B. sample calculation sheets for details</li> </ul>	√	

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
		part plan (Dwg. FO-111 & 122) <ul style="list-style-type: none"> <li>• Column schedule (Dwg. S-301)</li> <li>• Cellar Shear wall reinforcement plan (Dwg. S-311) Ground floor</li> </ul>			
<b>6. Performance-specified structural components</b>					
1) Cladding					To be reviewed at phase II
2) Supplementary damping system					To be reviewed at phase II
<b>7. Structural Integrity</b>					To be reviewed at phase II
1) Prescriptive requirement	NYCBC BC 1625				
A. Continuity and ties	NYCBC BC 1917.2				To be reviewed at phase II

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
• Slab reinforcing	NYCBC BC 1917.2.1				
• Peripheral ties	NYCBC BC 1917.2.2				
• Horizontal ties	NYCBC BC 1917.2.3				
• Vertical ties	NYCBC BC 1917.2.4				
B. Lateral bracing	NYCBC BC 1625.3				To be reviewed at phase II
C. Vehicular impact	NYCBC BC 1625.5				To be reviewed at phase II
<b>8. General conformance of structural plans with architectural plans</b>					To be reviewed at phase II
<b>9. Major mechanical items</b>					To be reviewed at phase II
1) Water tank					
2) Emergency					

**Peer Review (Foundation design only) – Code Compliance Check List as per NYCBC BC section 1627.6.1 Scope of the structural peer review**

Item	Referenced Code section	Referenced document	Detail	Remarks (Code compliance)	
generator					
3) Cooling tower					
4) Fuel oil tank					
5) Supplementary damping system					
<b>10. General completeness of structural drawings</b>					To be reviewed at phase II

Appendix B. Sample calculation sheets

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22 Thames Street Peer-Review

				Concrete			
Story	Height	Elevation	SimilarTo	Col/Bm/		Slab Thk	S. Wall / Belt Wall stiffness
				Wall	Slab		
TOPAR	38.5	786.71	ROOF			9	
ROOF	9.67	748.21	None			9	
STORY-71	9.67	738.54	ROOF			9	
STORY-70	9.67	728.87	ROOF			9	
STORY-69	9.67	719.2	ROOF			9	
MECH3	16	709.53	ROOF			9	
STORY-67	10.92	693.53	ROOF			12	
STORY-66	9.67	682.61	ROOF			9	
STORY-65	9.67	672.94	ROOF			9	
STORY-64	9.67	663.27	ROOF			9	
STORY-63	9.67	653.6	ROOF			9	
STORY-62	9.67	643.93	ROOF			9	
STORY-61	9.67	634.26	ROOF			9	
STORY-60	9.67	624.59	ROOF			9	
STORY-59	9.67	614.92	ROOF			9	
STORY-58	9.67	605.25	ROOF			9	
STORY-57	9.67	595.58	ROOF			9	
STORY-56	9.67	585.91	ROOF			9	
STORY-55	9.67	576.24	None			8	
STORY-54	9.67	566.57	STORY-55			8	
STORY-53	9.67	556.9	STORY-55			8	
STORY-52	9.67	547.23	STORY-55			8	
STORY-51	9.67	537.56	STORY-55			8	
STORY-50	9.67	527.89	STORY-55			8	
STORY-49	9.67	518.22	STORY-55			8	
STORY-48	9.67	508.55	STORY-55			8	
STORY-47	9.67	498.88	STORY-55			8	
STORY-46	9.67	489.21	STORY-55			8	
STORY-45	9.67	479.54	STORY-55			8	
STORY-44	9.67	469.87	STORY-55			8	
STORY-43	9.67	460.2	STORY-55			8	
STORY-42	9.67	450.53	STORY-55			8	
STORY-41	9.67	440.86	STORY-55			8	
STORY-40	9.67	431.19	STORY-55			8	
STORY-39	9.67	421.52	STORY-55			8	
STORY-38	9.67	411.85	STORY-55			8	
MECH2	16	402.18	None			8	
STORY-36	10.92	386.18	MECH2			12	
STORY-35	9.67	375.26	MECH2			8	
STORY-34	9.67	365.59	MECH2			8	
STORY-33	9.67	355.92	MECH2			8	
STORY-32	9.67	346.25	MECH2			8	
STORY-31	9.67	336.58	MECH2			8	
STORY-30	9.67	326.91	MECH2			8	
STORY-29	9.67	317.24	MECH2			8	
STORY-28	9.67	307.57	MECH2			8	
STORY-27	9.67	297.9	MECH2			8	
STORY-26	9.67	288.23	MECH2			8	
STORY-25	9.67	278.56	MECH2			8	
STORY-24	9.67	268.89	MECH2			8	
STORY-23	9.67	259.22	MECH2			8	
STORY-22	9.67	249.55	MECH2			8	
STORY-21	9.67	239.88	MECH2			8	
STORY-20	9.67	230.21	MECH2			8	
STORY-19	9.67	220.54	MECH2			8	
STORY-18	9.67	210.87	MECH2			8	
STORY-17	9.67	201.2	MECH2			8	
STORY-16	9.67	191.53	MECH2			8	
STORY-15	9.67	181.86	None			8	
STORY-14	9.67	172.19	STORY-15			8	
STORY-13	9.67	162.52	STORY-15			8	
STORY-12	9.67	152.85	STORY-15			8	
STORY-11	9.67	143.18	STORY-15			8	
STORY-10	9.67	133.51	STORY-15			8	
STORY-9	9.67	123.84	STORY-15			8	
STORY-8	9.67	114.17	STORY-15			8	
STORY-7	9.67	104.5	None			8	
STORY-6	22.42	94.83	STORY-7			9	
STORY-5	16.83	72.41	STORY-7			12	
STORY-4	20	55.58	STORY-7			12	
STORY-3	18.75	35.58	STORY-7			12	
STORY-2	16.83	16.83	STORY-7			12	
GROUND	16.75	0	STORY-7			12	
CELLAR	10	-16.75	STORY-7			12	
BASE	0	-26.75	None				

**Seismic Loads (based on NYCBC 2008)**

Method: Equivalent Lateral Force (ELF) Procedure According to ASCE 7-02 Section 9

**Criteria : (Refer to ASCE 7-02 Table 9.5.2.5.1) for permitted analytical procedure**

1. Building assigned to Seismic Design Category **A, B & C: permitted for all structures**
2. Building assigned to Seismic Design Category **D, E & F:**
  - a. Occupancy category I or II buildings of light-framed construction **not exceeding 3 stories** in height
  - b. Other occupancy category I or II building **not exceeding 2 stories** in height
  - c. Regular structures with  $T < 3.5 T_s$  and all structures of light frame construction
  - d. Irregular structures with  $T < 3.5 T_s$  and having only horizontal irregularities type 2, 3, 4 or 5 of Table 9.5.2.3.2 or vertical irregularities type 4, 5a, or 5b of Table 9.5.2.3.3

↓ Note for users : Input in red (in shaded area and TABLE 1)

**Limitation (According to ASCE 7-02 Table 9.5.2.5.1)**

Not permitted to use ELF procedure for building assigned to Seismic Design Category D, E & F and having Irregularities listed below

- |   |  |
|---|--|
| <p><b>1) With Horizontal Irregularities</b></p> <ul style="list-style-type: none"> <li>- 1a. Torsional Irregularity</li> <li>- 1b. Extreme Torsional Irregularities</li> <li>- A combination of other horizontal irregularities (2, 3, 4 or 5)</li> </ul> | <p><b>2) With Vertical Irregularities</b></p> <ul style="list-style-type: none"> <li>- 1a. Stiffness-Soft story Irregularities</li> <li>- 1b. Stiffness-Extreme Soft Story Irregularities</li> <li>- 2. Weight (Mass) Irregularities</li> <li>- 3. Vertical Geometry Irregularities</li> <li>- A combination of other vertical irregularities (4, 5a or 5b)</li> </ul> |
|---|--|

**Required Input**

<b>1) Geometry</b>	
Height above the base to the highest level of the structure (hn)	<b>780.0</b> ft
Effective Seismic Weight (Wp)	<b>1,508,600</b> kips
<b>2) Parameters for seismic load Computation (New York City)</b>	
Spectral response acceleration at short periods (Ss)	<b>0.365</b> g
Spectral response acceleration at 1 sec periods (S1)	<b>0.071</b> g
Occupancy Category	<b>II</b>
Seismic Use Group	<b>I</b>
Importance Factor (I)	<b>1</b>
Site Class	<b>D</b>
Seismic Force Resisting System	<b>Dual systems with intermediate moment frames with ordinary reinforced concrete shear wall</b>
Response Modification Coefficient ( R)	<b>4</b>
System Overstrength Factor (Ω)	<b>2.5</b>
Deflection Amplification Factor (Cd)	<b>4</b>
<b>Determined Seismic Design Category</b>	<b>C</b>

**Period Calculation (As per ASCE 7-02 Section 9.5.5.3.4)**

Ct	<b>0.02</b> (BC 1617.4 amendment to ASCE)
x	<b>0.75</b>
Approximate Fundamental Period (Ta)	2.95 sec
Period from Analysis (T)	<b>6.80</b> sec
Cu:	1.6728
Actual Period used for Base Shear Calculation	4.94 sec < Tmax. (= Cu x Ta)

**Base Shear calculation**

Short period site coefficient (Fa)	<b>1.51</b>
Long period (at 1-sec) site coefficient (Fv)	<b>2.4</b>
Max. Spect. R. Accel. at short periods adjusted for site class (S ms)	0.55115 g
Max. Spect. R. Accel. at 1-sec. period adjusted for site class (S m1)	0.170 g
Design Spect. R. Accel. at short periods adjusted for site class (S os)	<b>0.367</b> g
Design Spect. R. Accel. at 1-sec. period adjusted for site class (S o1)	<b>0.114</b> g
Ts (So1/So5)	0.309 sec
<b>Seismic Response Coefficient (Cs = Sos/(R/I))</b>	<b>0.092</b>
<b>Base Shear (V) - Ultimate Level Loads</b>	<b>0.016 xWp = 24389.64 kips</b>

**Vertical Distribution of Seismic Forces**

Exponent for Vertical Distribution of Seismic Forces (k)	<b>2.000</b>
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**Occupancy Category (NYCBC 2008 Table 1604.5)**

Occupancy Category	Seismic Use Group	Seismic Factor (I)
I	I	1
II	I	1
III	II	1.25
IV	III	1.5

**Seismic Design Category (ASCE 7-02 Table 11.6-1 & 11.6-2)**

SDS	S1	Occupancy Category	
		I, II or III	IV
SDS < 0.167	SD1 < 0.067	A	A
0.167 ≤ SDS ≤ 0.33	0.067 ≤ SD1 ≤ 0.133	B	C
0.33 ≤ SDS ≤ 0.5	0.133 ≤ SD1 ≤ 0.2	C	C
0.5 ≤ SDS	0.2 ≤ SD1	D	D

**Site Coefficient Fa & Fv (NYCBC 2008 Table 1615.1.2 (1) & (2))**

Site Class	Soil profile Name	Fa	Fv
A	Hard rock	0.8	0.8
B	Rock	1.0	1.0
C	Very dense soil and soft rock	1.2	1.7
D	Stiff soil profile	1.51	2.4
E	Soft soil profile	2.13	3.5
F		-	-

**Ct and x (NYCBC 2008 Section 1617.4 / ASCE 7-02 Table 9.5.5.3.2)**

Structure Type	Ct	x
Dual system & hn > 400 ft	0.03	0.75
Dual system & 160 ft < hn < 400 ft	0.02+0.01x(hn-160)/240	0.75
Steel Moment Resisting Frame	0.028	0.8
Conc. Moment Resisting Frame	0.016	0.9
Eccentrically Braced Steel Frame	0.03	0.75
All other structural systems	0.02	0.75

**Cu for upper limit (ASCE 7-02 Table 9.5.5.3.1)**

SD1	Cu
SD1	≥ 0.4
	1.4
	0.3
	1.4
	0.2
	1.5
	0.15
	1.6
SD1	≤ 0.1
	1.7

**Cs - Upper bound and Lower bound (ASCE 7-02 Section 9.5.5.2.1)**

Upper bound	SD1/T/(R/I)	(1) ASCE 7-02 Eq. 9.5.5.2.1-2	0.006
Lower bound	0.5 x S1/(R/I)	(2) ASCE 7-02 Eq. 9.5.5.2.1-4	0.046
	0.044 x SDS x I	(3) ASCE 7-02 Eq. 9.5.5.2.1-3	0.016
	0.01	(4) ASCE 7-05 Eq. 12.8-5	0.010

**Exponent for period calculation (ASCE 7-02 Section 9.5.5.4)**

Periods	k
T ≤ 0.5	1
0.5 < T ≤ 2.5	Interpolate
T > 2.5	2

## Distribution of Base Shear induced at each floor

TABLE 1

Floor	S. Height (ft)	Elevation (ft)	Weight (kips)	Wxh <sup>2</sup> /k (kips)	Sesmic Force (kips)	Shear Force (kips)	Overturning Moment (kips.ft)
			-	-	0	-	-
TOPAR	38.5	813.46	1668	1,103,557,969	1083	1,083	41,697
ROOF	9.67	774.96	2391	1,435,861,854	1409	2,492	65,796
STORY-71	9.67	765.29	1288	754,090,575	740	3,232	97,052
STORY-70	9.67	755.62	1288	735,154,001	721	3,954	135,285
STORY-69	9.67	745.95	1288	716,458,225	703	4,657	180,316
MECH3	16	736.28	1988	1,077,878,223	1058	5,715	271,751
STORY-67	10.92	720.28	2404	1,247,330,292	1224	6,939	347,523
STORY-66	9.67	709.36	1422	715,645,558	702	7,641	421,413
STORY-65	9.67	699.69	1389	680,071,215	667	8,309	501,757
STORY-64	9.67	690.02	1389	661,403,391	649	8,958	588,378
STORY-63	9.67	680.35	1389	642,995,358	631	9,589	681,101
STORY-62	9.67	670.68	1389	624,847,117	613	10,202	779,754
STORY-61	9.67	661.01	1389	606,958,669	596	10,798	884,166
STORY-60	9.67	651.34	1389	589,330,013	578	11,376	994,172
STORY-59	9.67	641.67	1389	571,961,149	561	11,937	1,109,606
STORY-58	9.67	632	1389	554,852,077	545	12,482	1,230,305
STORY-57	9.67	622.33	1389	538,002,797	528	13,010	1,356,110
STORY-56	9.67	612.66	1389	521,413,309	512	13,522	1,486,863
STORY-55	9.67	602.99	1339	486,770,239	478	13,999	1,622,236
STORY-54	9.67	593.32	1357	477,576,371	469	14,468	1,762,141
STORY-53	9.67	583.65	1356	461,856,330	453	14,921	1,906,429
STORY-52	9.67	573.98	1356	446,678,903	438	15,360	2,054,957
STORY-51	9.67	564.31	1356	431,755,038	424	15,783	2,207,581
STORY-50	9.67	554.64	1356	417,084,735	409	16,193	2,364,164
STORY-49	9.67	544.97	1356	402,667,994	395	16,588	2,524,568
STORY-48	9.67	535.3	1356	388,504,817	381	16,969	2,688,659
STORY-47	9.67	525.63	1356	374,595,201	368	17,337	2,856,305
STORY-46	9.67	515.96	1356	360,939,148	354	17,691	3,027,377
STORY-45	9.67	506.29	1356	347,536,657	341	18,032	3,201,746
STORY-44	9.67	496.62	1356	334,387,729	328	18,360	3,379,289
STORY-43	9.67	486.95	1356	321,492,363	316	18,676	3,559,883
STORY-42	9.67	477.28	1356	308,850,560	303	18,979	3,743,408
STORY-41	9.67	467.61	1356	296,462,319	291	19,270	3,929,747
STORY-40	9.67	457.94	1356	284,327,640	279	19,549	4,118,784
STORY-39	9.67	448.27	1356	272,446,524	267	19,816	4,310,406
STORY-38	9.67	438.6	1356	260,818,970	256	20,072	4,504,504
MECH2	16	428.93	2242	412,454,892	405	20,477	4,832,134
STORY-36	10.92	412.93	2757	470,089,904	461	20,938	5,060,780
STORY-35	9.67	402.01	1536	248,168,113	244	21,182	5,265,608
STORY-34	9.67	392.34	1492	229,664,054	225	21,407	5,472,616
STORY-33	9.67	382.67	1492	218,482,514	214	21,622	5,681,697
STORY-32	9.67	373	1492	207,580,003	204	21,825	5,892,749
STORY-31	9.67	363.33	1492	196,956,523	193	22,019	6,105,669
STORY-30	9.67	353.66	1492	186,612,072	183	22,202	6,320,360
STORY-29	9.67	343.99	1492	176,546,652	173	22,375	6,536,727
STORY-28	9.67	334.32	1492	166,760,261	164	22,539	6,754,676
STORY-27	9.67	324.65	1496	157,682,556	155	22,693	6,974,122
STORY-26	9.67	314.98	1504	149,184,863	146	22,840	7,194,983
STORY-25	9.67	305.31	1504	140,165,413	138	22,977	7,417,175
STORY-24	9.67	295.64	1504	131,427,180	129	23,106	7,640,614
STORY-23	9.67	285.97	1504	122,970,164	121	23,227	7,865,220
STORY-22	9.67	276.3	1504	114,794,366	113	23,340	8,090,915
STORY-21	9.67	266.63	1504	106,899,784	105	23,445	8,317,625
STORY-20	9.67	256.96	1504	99,286,420	97	23,542	8,545,277
STORY-19	9.67	247.29	1504	91,954,272	90	23,632	8,773,802
STORY-18	9.67	237.62	1504	84,903,342	83	23,716	9,003,132
STORY-17	9.67	227.95	1504	78,133,629	77	23,792	9,233,204
STORY-16	9.67	218.28	1504	71,645,133	70	23,863	9,463,956
STORY-15	9.67	208.61	1504	65,451,166	64	23,927	9,695,329
STORY-14	9.67	198.94	1505	59,563,787	58	23,985	9,927,267
STORY-13	9.67	189.27	1505	53,914,011	53	24,038	10,159,717
STORY-12	9.67	179.6	1505	48,545,697	48	24,086	10,392,628
STORY-11	9.67	169.93	1505	43,458,846	43	24,129	10,625,951
STORY-10	9.67	160.26	1505	38,653,458	38	24,166	10,859,641
STORY-9	9.67	150.59	1505	34,129,533	33	24,200	11,093,655
STORY-8	9.67	140.92	1633	32,434,735	32	24,232	11,327,977
STORY-7	9.67	131.25	1719	29,606,252	29	24,261	11,562,579
STORY-6	22.42	121.58	2889	42,709,415	42	24,303	12,107,448
STORY-5	16.83	99.16	3913	38,475,586	38	24,341	12,517,099
STORY-4	20	82.33	3707	25,127,195	25	24,365	13,004,403

STORY-3	18.75	62.33	3843	14,930,776	15	24,380	13,461,525
STORY-2	16.83	43.58	3726	7,076,475	7	24,387	13,871,955
GROUND	16.75	26.75	3586	2,566,073	3	24,389	14,280,476
CELLAR	10	10	3229	322,912	0	24,390	14,524,373
<b>Sub Total</b>			<b>125,811</b>	<b>24,851,891,357</b>	<b>24,389.64</b>	<b>24,389.64</b>	<b>14,524,373</b>

**22 Thames Street**

**Column Axial Loads Comparison**

		Column No.						
		1	2	3	4	5	6	7
Desimone Column Schedule (S-301)	Dead Load	2175	2550	2550	2175	3765	4585	3870
	Live Load	450	620	620	450	870	1100	975
	Wx (Strngth)	513	505	494	486	119	86	75
	Wy (Strngth)	1284	413	696	1554	1324	387	1452
Desimone Etabs Model	Dead Load	3208	3015	3178	2667	3006	2758	2612
	Live Load	992	892	960	721	886	789	757
	Wx (Strngth)	513	505	494	486	119	86	75
	Wy (Strngth)	1284	413	696	1554	1324	387	1452
RGCE (Based on Tributary Area)	Dead Load	3004	3793	3978	2537	4616	4394	4893
	Live Load	691	751	837	393	1018	956	892
	Wx (Strngth)	513	505	494	486	119	86	75
	Wy (Strngth)	1284	413	696	1554	1324	387	1452

**Project: 22 Thames Street, New York**

fy: 75 ksi  
 φ: 0.65

**At Foundation level (Sub-Cellar Floor)**

< Desimone Design >

Gravity Loads: From column schedule on Dwg. S-301

Lateral Loads: From Etabs (Wind Strength X & Y)

Unit: kips, in

Col	Conc. Str (ksi)	Column Size (in)			Service Axial Loads			Axial Force-Combination (Service)		Axial Force-Combination (Strength)		Reinforcng						Caissons			
		Diameter	Width	Depth	Wind Load	Dead Load	Live Load	min.	max.	min	max	max. Stress (ksi)	Tens. (ratio)	Comp. (ratio)	Req. Reinf.	Required As (in2)	Design (in2)	Desing / Required	Req. no. of Caissons	Caisson Capacity	Design
1	14	36	31.9	31.9	1284	2175	450	21	3476	-97	4889	4.80	0.0014	0.0075	0.75%	7.63	25.40	3.3	1.7	1000T	3
2	14	36	31.9	31.9	515	2550	620	1015	3401	1471	4194	4.12	0.0000	0.0075	0.75%	7.63	32.76	4.3	2.3	750T	3
3	14	36	31.9	31.9	695	2550	620	835	3536	1183	4482	4.40	0.0000	0.0075	0.75%	7.63	32.76	4.3	2.4	750T	3
4	14	36	31.9	31.9	1554	2175	450	-249	3678	-529	5321	5.23	0.0077	0.0075	0.77%	7.84	25.40	3.2	1.8	1000T	-
5	14	38	33.67	33.67	1324	3765	870	935	5411	1270	7071	6.24	0.0000	0.01	1.00%	11.34	32.76	2.9	2.7	1000T	3
6	14	38	33.67	33.67	387	4585	1100	2364	5700	3507	7262	6.41	0.0000	0.01	1.00%	11.34	21.84	1.9	2.9	1000T	3
7	14	40	35.44	35.44	1452	3870	975	870	5690	1160	7455	5.94	0.0000	0.0075	0.75%	9.42	43.68	4.6	1.9	1500T	-

Maximum Tension - Service load: 249 kips (Column 4)

< RGCE check >

Gravity Loads: From spread sheets based on tributary area

Lateral Loads: From Etabs (Wind Strength X & Y)

Unit: kips, in

Col	Conc. Str (ksi)	Column Size (in)			Service Axial Loads			Axial Force-Combination (Service)		Axial Force-Combination (Strength)		Reinforcng						Caissons			
		Diameter	Width	Depth	Wind Load	Dead Load	Live Load	min.	max.	min	max	max. Stress (ksi)	Tens. (ratio)	Comp. (ratio)	Req. Reinf.	Required As (in2)	Design (in2)	Desing / Required	Req. no. of Caissons	Caisson Capacity	Design
1	14	36	31.9	31.9	1284	3004	691	518	4485	649	6005	5.90	0.0000	0.0075	0.75%	7.63	25.40	3.3	2.2	1000T	3
2	14	36	31.9	31.9	515	3793	751	1761	4743	2590	5753	5.65	0.0000	0.0075	0.75%	7.63	32.76	4.3	2.4	1000T	3
3	14	36	31.9	31.9	695	3978	837	1692	5127	2468	6304	6.20	0.0000	0.01	1.00%	10.18	32.76	3.2	2.6	1000T	3
4	14	36	31.9	31.9	1554	2537	393	-32	3997	-203	5727	5.63	0.0030	0.0075	0.75%	7.63	25.40	3.3	2.0	1000T	-
5	14	38	33.67	33.67	1324	4616	1018	1446	6373	2036	8167	7.20	0.0000	0.031	3.10%	35.09	32.76	0.9	3.2	1000T	3 (OK)
6	14	38	33.67	33.67	387	4394	956	2249	5401	3335	6802	6.00	0.0000	0.0075	0.75%	8.50	21.84	2.6	2.7	1000T	3
7	14	40	35.44	35.44	1452	4892	892	1483	6650	2080	8640	6.88	0.0000	0.02	2.11%	26.44	43.68	1.7	2.2	1500T	-

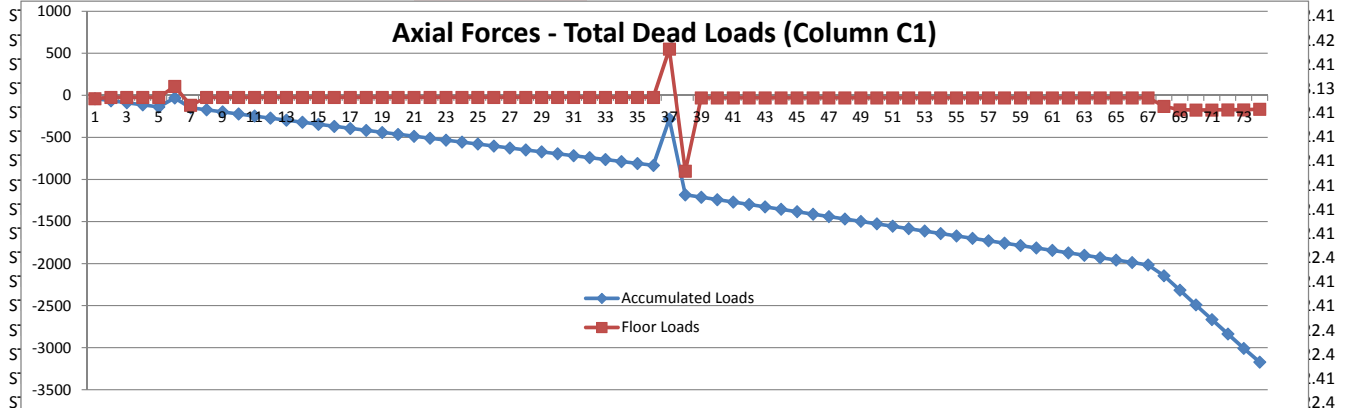
Maximum Tension - Service load: 32 kips (Column 4)

C1 (C5) - Column Load

Story	Column	Load	Loc	Accumulated Loads	Floor Loads	V2	V3	T	M2	M3
TOPAR	C5	TDEADLOAD	0	-38.19	-38.19	-1	1	-0	10	##
ROOF	C5	TDEADLOAD	0	-62.79	-24.6	-3	2	0	9	##
STORY-71	C5	TDEADLOAD	0	-87.4	-24.61	-3	2	0	9	##
STORY-70	C5	TDEADLOAD	0	-112	-24.6	-3	2	0	9	##
STORY-69	C5	TDEADLOAD	0	-136.61	-24.61	-1	2	0	9	-1
MECH3	C5	TDEADLOAD	0	-29.13	107.48	1	1	0	7	5
STORY-67	C5	TDEADLOAD	0	-145.7	-116.57	-1	1	0	9	##
STORY-66	C5	TDEADLOAD	0	-170.3	-24.6	-3	2	0	9	##
STORY-65	C5	TDEADLOAD	0	-194.91	-24.61	-3	2	0	9	##
STORY-64	C5	TDEADLOAD	0	-219.51	-24.6	-3	2	0	9	##
STORY-63	C5	TDEADLOAD	0	-244.11	-24.6	-3	2	0	9	##
STORY-62	C5	TDEADLOAD	0	-268.72	-24.61	-3	2	0	9	##
STORY-61	C5	TDEADLOAD	0	-293.32	-24.6	-3	2	0	9	##
STORY-60	C5	TDEADLOAD	0	-317.93	-24.61	-3	2	0	9	##
STORY-59	C5	TDEADLOAD	0	-342.53	-24.6	-3	2	0	9	##
STORY-58	C5	TDEADLOAD	0	-367.13	-24.6	-3	2	0	9	##

Tributary Area

Story	ObjectLabel	ObjectType	TribArea	RLLF	Tributary A
TOPAR	C5	Column	122.42	1	122.42
ROOF	C5	Column	244.83	0.9241	122.41
STORY-71	C5	Column	367.26	0.8262	122.43
STORY-70	C5	Column	489.68	0.7283	122.42
STORY-69	C5	Column	612.13	0.6303	122.45
MECH3	C5	Column	133.32	1	-478.81
STORY-67	C5	Column	798.92	0.4809	665.6
STORY-66	C5	Column	921.33	0.4	122.41
STORY-65	C5	Column	1043.76	0.4	122.43
STORY-64	C5	Column	1166.18	0.4	122.42
STORY-63	C5	Column	1288.59	0.4	122.41
STORY-62	C5	Column	1411.01	0.4	122.42
STORY-61	C5	Column	1533.43	0.4	122.42
STORY-60	C5	Column	1655.84	0.4	122.41
STORY-59	C5	Column	1778.26	0.4	122.42
STORY-58	C5	Column	1900.68	0.4	122.42



STORY-40	C5	TDEADLOAD	0	-785.57	-23.07	-2	2	0	8	##
STORY-39	C5	TDEADLOAD	0	-808.64	-23.07	-2	2	0	10	##
STORY-38	C5	TDEADLOAD	0	-831.71	-23.07	-1	1	0	1	-3
MECH2	C5	TDEADLOAD	0	-280.67	551.04	1	2	0	23	-4
STORY-36	C5	TDEADLOAD	0	-1180.91	-900.24	-3	3	1	13	##
STORY-35	C5	TDEADLOAD	0	-1209.67	-28.76	-2	1	2	8	##
STORY-34	C5	TDEADLOAD	0	-1238.44	-28.77	-2	2	2	9	##
STORY-33	C5	TDEADLOAD	0	-1267.21	-28.77	-2	2	2	9	##
STORY-32	C5	TDEADLOAD	0	-1295.97	-28.76	-2	2	2	9	##
STORY-31	C5	TDEADLOAD	0	-1324.74	-28.77	-2	2	2	9	##
STORY-30	C5	TDEADLOAD	0	-1353.51	-28.77	-2	2	2	9	##
STORY-29	C5	TDEADLOAD	0	-1382.27	-28.76	-2	2	3	8	##
STORY-28	C5	TDEADLOAD	0	-1411.04	-28.77	-2	2	3	8	##
STORY-27	C5	TDEADLOAD	0	-1439.81	-28.77	-2	2	3	8	##
STORY-26	C5	TDEADLOAD	0	-1468.58	-28.77	-2	2	3	7	##
STORY-25	C5	TDEADLOAD	0	-1497.35	-28.77	-2	2	3	7	##
STORY-24	C5	TDEADLOAD	0	-1526.12	-28.77	-2	2	3	7	##
STORY-23	C5	TDEADLOAD	0	-1554.89	-28.77	-2	2	2	6	##
STORY-22	C5	TDEADLOAD	0	-1583.66	-28.77	-2	2	2	6	##
STORY-21	C5	TDEADLOAD	0	-1612.43	-28.77	-2	2	2	6	##
STORY-20	C5	TDEADLOAD	0	-1641.2	-28.77	-2	2	2	6	##
STORY-19	C5	TDEADLOAD	0	-1669.98	-28.78	-2	2	2	6	##
STORY-18	C5	TDEADLOAD	0	-1698.75	-28.77	-2	2	2	6	##
STORY-17	C5	TDEADLOAD	0	-1727.52	-28.77	-2	2	2	6	##
STORY-16	C5	TDEADLOAD	0	-1756.29	-28.77	-2	2	1	6	##
STORY-15	C5	TDEADLOAD	0	-1785.06	-28.77	-2	2	1	6	##
STORY-14	C5	TDEADLOAD	0	-1813.83	-28.77	-2	2	1	6	##
STORY-13	C5	TDEADLOAD	0	-1842.6	-28.77	-2	2	1	6	##
STORY-12	C5	TDEADLOAD	0	-1871.38	-28.78	-2	2	1	6	##
STORY-11	C5	TDEADLOAD	0	-1900.15	-28.77	-2	2	0	5	##
STORY-10	C5	TDEADLOAD	0	-1928.92	-28.77	-2	2	0	6	##
STORY-9	C5	TDEADLOAD	0	-1957.69	-28.77	-2	1	-0	-1	##
STORY-8	C5	TDEADLOAD	0	-1986.46	-28.77	-5	5	-1	35	##
STORY-7	C5	TDEADLOAD	0	-2015.23	-28.77	9	##	-1	##	71
STORY-6	C5	TDEADLOAD	0	-2144.7	-129.47	7	##	-0	##	77
STORY-5	C5	TDEADLOAD	0	-2316.07	-171.37	14	##	-0	##	##
STORY-4	C5	TDEADLOAD	0	-2490.8	-174.73	9	##	-1	##	91
STORY-3	C5	TDEADLOAD	0	-2664.21	-173.41	11	##	-1	##	##
STORY-2	C5	TDEADLOAD	0	-2835.58	-171.37	11	##	0	##	95
GROUND	C5	TDEADLOAD	0	-3006.86	-171.28	12	##	1	##	##
CELLAR	C5	TDEADLOAD	0	-3170.99	-164.13	9	##	0	0	0
STORY-40	C5	TDEADLOAD	0	-785.57	-23.07	-2	2	0	8	##
STORY-39	C5	TDEADLOAD	0	-808.64	-23.07	-2	2	0	10	##
STORY-38	C5	TDEADLOAD	0	-831.71	-23.07	-1	1	0	1	-3
MECH2	C5	TDEADLOAD	0	-280.67	551.04	1	2	0	23	-4
STORY-36	C5	TDEADLOAD	0	-1180.91	-900.24	-3	3	1	13	##
STORY-35	C5	TDEADLOAD	0	-1209.67	-28.76	-2	1	2	8	##
STORY-34	C5	TDEADLOAD	0	-1238.44	-28.77	-2	2	2	9	##
STORY-33	C5	TDEADLOAD	0	-1267.21	-28.77	-2	2	2	9	##
STORY-32	C5	TDEADLOAD	0	-1295.97	-28.76	-2	2	2	9	##
STORY-31	C5	TDEADLOAD	0	-1324.74	-28.77	-2	2	2	9	##
STORY-30	C5	TDEADLOAD	0	-1353.51	-28.77	-2	2	2	9	##
STORY-29	C5	TDEADLOAD	0	-1382.27	-28.76	-2	2	3	8	##
STORY-28	C5	TDEADLOAD	0	-1411.04	-28.77	-2	2	3	8	##
STORY-27	C5	TDEADLOAD	0	-1439.81	-28.77	-2	2	3	8	##
STORY-26	C5	TDEADLOAD	0	-1468.58	-28.77	-2	2	3	7	##
STORY-25	C5	TDEADLOAD	0	-1497.35	-28.77	-2	2	3	7	##
STORY-24	C5	TDEADLOAD	0	-1526.12	-28.77	-2	2	3	7	##
STORY-23	C5	TDEADLOAD	0	-1554.89	-28.77	-2	2	2	6	##
STORY-22	C5	TDEADLOAD	0	-1583.66	-28.77	-2	2	2	6	##
STORY-21	C5	TDEADLOAD	0	-1612.43	-28.77	-2	2	2	6	##
STORY-20	C5	TDEADLOAD	0	-1641.2	-28.77	-2	2	2	6	##
STORY-19	C5	TDEADLOAD	0	-1669.98	-28.78	-2	2	2	6	##
STORY-18	C5	TDEADLOAD	0	-1698.75	-28.77	-2	2	2	6	##
STORY-17	C5	TDEADLOAD	0	-1727.52	-28.77	-2	2	2	6	##
STORY-16	C5	TDEADLOAD	0	-1756.29	-28.77	-2	2	1	6	##
STORY-15	C5	TDEADLOAD	0	-1785.06	-28.77	-2	2	1	6	##
STORY-14	C5	TDEADLOAD	0	-1813.83	-28.77	-2	2	1	6	##
STORY-13	C5	TDEADLOAD	0	-1842.6	-28.77	-2	2	1	6	##
STORY-12	C5	TDEADLOAD	0	-1871.38	-28.78	-2	2	1	6	##
STORY-11	C5	TDEADLOAD	0	-1900.15	-28.77	-2	2	0	5	##
STORY-10	C5	TDEADLOAD	0	-1928.92	-28.77	-2	2	0	6	##
STORY-9	C5	TDEADLOAD	0	-1957.69	-28.77	-2	1	-0	-1	##
STORY-8	C5	TDEADLOAD	0	-1986.46	-28.77	-5	5	-1	35	##
STORY-7	C5	TDEADLOAD	0	-2015.23	-28.77	9	##	-1	##	71
STORY-6	C5	TDEADLOAD	0	-2144.7	-129.47	7	##	-0	##	77
STORY-5	C5	TDEADLOAD	0	-2316.07	-171.37	14	##	-0	##	##
STORY-4	C5	TDEADLOAD	0	-2490.8	-174.73	9	##	-1	##	91
STORY-3	C5	TDEADLOAD	0	-2664.21	-173.41	11	##	-1	##	##
STORY-2	C5	TDEADLOAD	0	-2835.58	-171.37	11	##	0	##	95
GROUND	C5	TDEADLOAD	0	-3006.86	-171.28	12	##	1	##	##
CELLAR	C5	TDEADLOAD	0	-3170.99	-164.13	9	##	0	0	0
STORY-40	C5	TDEADLOAD	0	-785.57	-23.07	-2	2	0	8	##
STORY-39	C5	TDEADLOAD	0	-808.64	-23.07	-2	2	0	10	##
STORY-38	C5	TDEADLOAD	0	-831.71	-23.07	-1	1	0	1	-3
MECH2	C5	TDEADLOAD	0	-280.67	551.04	1	2	0	23	-4
STORY-36	C5	TDEADLOAD	0	-1180.91	-900.24	-3	3	1	13	##
STORY-35	C5	TDEADLOAD	0	-1209.67	-28.76	-2	1	2	8	##
STORY-34	C5	TDEADLOAD	0	-1238.44	-28.77	-2	2	2	9	##
STORY-33	C5	TDEADLOAD	0	-1267.21	-28.77	-2	2	2	9	##
STORY-32	C5	TDEADLOAD	0	-1295.97	-28.76	-2	2	2	9	##
STORY-31	C5	TDEADLOAD	0	-1324.74	-28.77	-2	2	2	9	##
STORY-30	C5	TDEADLOAD	0	-1353.51	-28.77	-2	2	2	9	##
STORY-29	C5	TDEADLOAD	0	-1382.27	-28.76	-2	2	3	8	##
STORY-28	C5	TDEADLOAD	0	-1411.04	-28.77	-2	2	3	8	##
STORY-27	C5	TDEADLOAD	0	-1439.81	-28.77	-2	2	3	8	##
STORY-26	C5	TDEADLOAD	0	-1468.58	-28.77	-2	2	3	7	##
STORY-25	C5	TDEADLOAD	0	-1497.35	-28.77	-2	2	3	7	##
STORY-24	C5	TDEADLOAD	0	-1526.12	-28.77	-2	2	3	7	##
STORY-23	C5	TDEADLOAD	0	-1554.89	-28.77	-2	2	2	6	##
STORY-22	C5	TDEADLOAD	0	-1583.66	-28.77	-2	2	2	6	##
STORY-21	C5	TDEADLOAD	0	-1612.43	-28.77	-2	2	2	6	##
STORY-20	C5	TDEADLOAD	0	-1641.2	-28.77	-2	2	2	6	##
STORY-19	C5	TDEADLOAD	0	-1669.98	-28.78	-2	2	2	6	##
STORY-18	C5	TDEADLOAD	0	-1698.75	-28.77	-2	2	2	6	##
STORY-17	C5	TDEADLOAD	0	-1727.52	-28.77	-2	2	2	6	##
STORY-16	C5	TDEADLOAD	0	-1756.29	-28.77	-2	2	1	6	##
STORY-15	C5	TDEADLOAD	0	-1785.06	-28.77	-2	2	1	6	##
STORY-14	C5	TDEADLOAD	0	-1813.83	-28.77	-2	2	1	6	##
STORY-13	C5	TDEADLOAD	0	-18						







Column Axial Load - Schematic

Project : 22 Thames Street

Column C2 (c6)-Edge-Middle Tributary area (Schematic) From Etabs

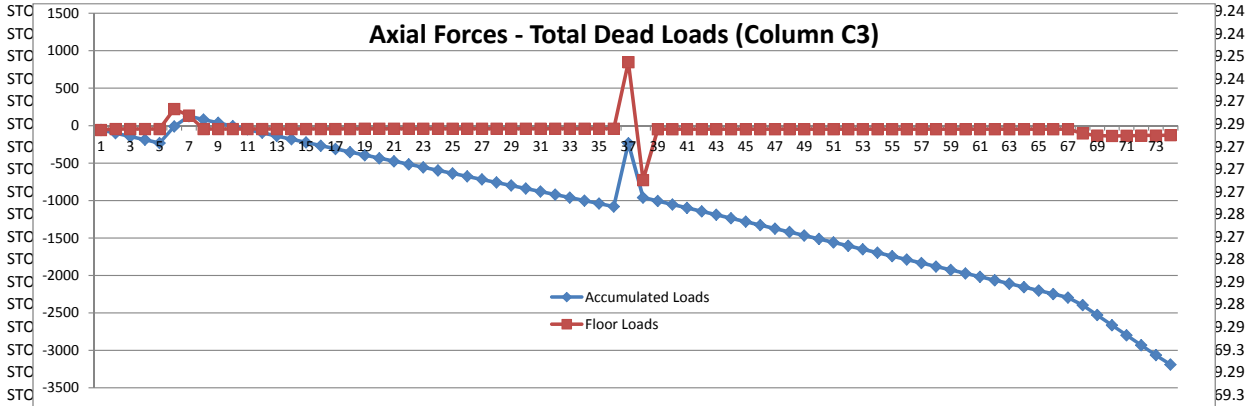
FL	STORY HEIGHT (ft)	EQUIV SECTION AREA (in <sup>2</sup> )		SLAB THK. (in)	TRIBUTARY AREA		Accum. Trib. (ft <sup>2</sup> )	ADD LOADS		K Element Factor	DSTRB. LOAD		DEAD LOAD	LIVE L. REDUCTION	WITH LIVE LOAD REDUCTION								factored Stress (ksi)	Con. C (ksi)	Ratio										
		(B)	(D)		(ft <sup>2</sup> )	(m <sup>2</sup> )		DEAD (kips)	LIVE (kips)		SDL (lb/ft <sup>2</sup> )	LL (lb/ft <sup>2</sup> )			COLUMN (kips)	SLAB (kips)	RED. F.	RED L.L.(kips)	FLOOR LOAD							SUMMATION LOAD									
		(kips)	(kips)		(kips)	(kips)		(kips)	(kips)		(kips)	(kips)			(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)				(kips)	(kips)	(kips)	(kips)						
TO PAR	38.5	18	15.95	15.95	9	263	244	263.0	8	0	4	20	40	10.00	42.85	0.712	7.50	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8	3.8%
ROOF	9.67	18	15.95	15.95	9	263	244	526.0	8	0	4	20	400	2.36	42.85	1.000	106.20	45.2	7.5	52.7	66.2	55.3	71.5	62.7	78.3	0.3	8	14.8%							
STORY-71	9.67	18	15.95	15.95	9	263	244	789.0	8	0	4	20	40	2.36	42.85	0.517	5.44	45.2	105.2	150.4	222.6	100.4	112.7	213.1	300.8	1.2	8	17.9%							
STORY-70	9.67	18	15.95	15.95	9	263	244	1052.0	8	0	4	20	40	2.36	42.85	0.481	5.06	45.2	5.4	50.6	63.0	145.6	118.1	263.8	1.4	8	20.9%								
STORY-69	9.67	18	15.95	15.95	9	263	244	1315.0	8	0	4	20	40	2.36	42.85	0.457	4.81	45.2	5.1	50.3	62.4	190.8	123.2	314.0	426.1	1.7	8	24.1%							
MECH3	1.6	18	15.95	15.95	9	263	244	1578.0	8	0	4	20	40	4.04	42.85	0.439	4.62	46.9	4.8	51.7	64.0	237.7	128.0	365.7	490.1	1.9	8	27.1%							
STORY-67	10.92	18	15.95	15.95	12	263	244	1841.0	8	0	4	20	150	2.63	52.71	1.000	39.45	45.5	4.6	50.1	62.0	283.2	132.6	415.8	552.0	2.2	8	33.5%							
STORY-66	9.67	18	15.95	15.95	9	263	244	2104.0	8	0	4	20	40	2.36	42.85	0.414	4.35	55.1	39.5	94.5	129.2	338.3	172.1	510.3	681.2	2.7	8	36.5%							
STORY-65	9.67	18	15.95	15.95	9	263	244	2367.0	8	0	4	20	40	2.36	42.85	0.404	4.25	45.2	4.4	49.6	61.2	383.5	176.4	559.9	742.5	2.9	8	39.5%							
STORY-64	9.67	18	15.95	15.95	9	263	244	2630.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.3	49.5	61.1	428.7	180.7	609.4	803.5	3.2	8	42.5%							
STORY-63	9.67	18	15.95	15.95	9	263	244	2893.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	473.9	184.9	658.8	864.5	3.4	8	45.5%							
STORY-62	9.67	18	15.95	15.95	9	263	244	3156.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	519.1	189.1	708.2	925.5	3.6	8	48.5%							
STORY-61	9.67	18	15.95	15.95	9	263	244	3419.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	564.3	193.3	757.6	986.5	3.9	8	51.5%							
STORY-60	9.67	18	15.95	15.95	9	263	244	3682.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	609.5	197.5	807.0	1047.5	4.1	8	54.5%							
STORY-59	9.67	18	15.95	15.95	9	263	244	3945.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	654.8	201.7	856.5	1108.4	4.4	8	57.5%							
STORY-58	9.67	18	15.95	15.95	9	263	244	4208.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	700.0	205.9	905.9	1169.4	4.6	8	60.5%							
STORY-57	9.67	18	15.95	15.95	9	263	244	4471.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	745.2	210.1	955.3	1230.4	4.8	8	63.5%							
STORY-56	9.67	18	15.95	15.95	9	263	244	4734.0	8	0	4	20	40	2.36	42.85	0.400	4.21	45.2	4.2	49.4	61.0	790.4	214.3	1004.7	1291.4	5.1	8	53.2%							
STORY-55	9.67	18	15.95	15.95	8	263	244	4997.0	8	0	4	20	40	2.39	39.56	0.400	4.21	45.2	4.2	49.4	61.0	835.6	218.5	1054.2	1352.4	5.3	10	31.2%							
STORY-54	9.67	24	21.26	21.26	8	263	244	5260.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	879.4	222.8	1102.2	1411.7	3.1	10	32.5%							
STORY-53	9.67	24	21.26	21.26	8	263	244	5523.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	923.2	227.0	1150.2	1471.0	3.3	10	33.8%							
STORY-52	9.67	24	21.26	21.26	8	263	244	5786.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	967.0	231.2	1198.2	1530.3	3.4	10	35.2%							
STORY-51	9.67	24	21.26	21.26	8	263	244	6049.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1010.8	235.4	1246.2	1589.6	3.5	10	36.5%							
STORY-50	9.67	24	21.26	21.26	8	263	244	6312.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1054.6	239.6	1294.2	1648.9	3.6	10	37.8%							
STORY-49	9.67	24	21.26	21.26	8	263	244	6575.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1098.4	243.8	1342.2	1708.2	3.8	10	39.1%							
STORY-48	9.67	24	21.26	21.26	8	263	244	6838.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1142.2	248.0	1390.2	1767.5	3.9	10	40.4%							
STORY-47	9.67	24	21.26	21.26	8	263	244	7101.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1186.0	252.2	1438.2	1826.8	4.0	10	41.7%							
STORY-46	9.67	24	21.26	21.26	8	263	244	7364.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1229.8	256.4	1486.2	1886.1	4.2	10	43.0%							
STORY-45	9.67	24	21.26	21.26	8	263	244	7627.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1273.6	260.6	1534.2	1945.3	4.3	10	44.3%							
STORY-44	9.67	24	21.26	21.26	8	263	244	7890.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1317.4	264.8	1582.3	2004.6	4.4	10	45.6%							
STORY-43	9.67	24	21.26	21.26	8	263	244	8153.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1361.2	269.0	1630.3	2063.9	4.6	10	47.0%							
STORY-42	9.67	24	21.26	21.26	8	263	244	8416.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1405.0	273.2	1678.3	2123.2	4.7	10	48.3%							
STORY-41	9.67	24	21.26	21.26	8	263	244	8679.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1448.8	277.5	1726.3	2182.5	4.8	10	49.6%							
STORY-40	9.67	24	21.26	21.26	8	263	244	8942.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1492.6	281.7	1774.3	2241.8	5.0	10	50.9%							
STORY-39	9.67	24	21.26	21.26	8	263	244	9205.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1536.4	285.9	1822.3	2301.1	5.1	10	52.2%							
STORY-38	9.67	24	21.26	21.26	8	263	244	9468.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1580.2	290.1	1870.3	2360.4	5.2	10	44.7%							
MECH2	1.6	24	21.26	21.26	8	263	244	9731.0	8	0	4	20	40	4.24	39.56	0.400	4.21	43.8	4.2	48.0	59.3	1624.0	294.3	1918.3	2420.3	5.4	12	25.8%							
STORY-36	10.92	32	28.35	28.35	12	263	244	9994.0	8	0	4	20	40	7.54	39.56	0.400	4.21	47.1	4.2	51.3	63.3	2535.8	298.5	1973.4	2487.4	3.1	12	27.2%							
STORY-35	9.67	32	28.35	28.35	8	263	244	10257.0	8	0	4	20	40	7.54	39.56	0.400	4.21	47.1	4.2	51.3	63.3	2579.6	302.7	2021.4	2546.7	3.3	12	28.5%							
STORY-34	9.67	32	28.35	28.35	8	263	244	10520.0	8	0	4	20	40	7.54	39.56	0.400	4.21	47.1	4.2	51.3	63.3	2623.4	306.9	2069.4	2606.0	3.4	12	29.2%							
STORY-33	9.67	32	28.35	28.35	8	263	244	10783.0	8	0	4	20	40	7.54	39.56	0.400	4.21	47.1	4																

C3 (C7) - Column Load

Story	Column	Load	Loc	Accumulat		V2	V3	T	M2	M3
				Floor	Loads					
TOPAR	C7	TDEADLOAD	0	-57.24	-57.24	-1	-1	0	##	##
ROOF	C7	TDEADLOAD	0	-100.94	-43.7	-3	-2	0	##	##
STORY-71	C7	TDEADLOAD	0	-144.6	-43.66	-3	-3	0	##	##
STORY-70	C7	TDEADLOAD	0	-188.27	-43.67	-4	-3	0	##	##
STORY-69	C7	TDEADLOAD	0	-231.92	-43.65	-2	-2	0	-9	-7
<b>MECH3</b>	<b>C7</b>	<b>TDEADLOAD</b>	<b>0</b>	<b>-9.98</b>	<b>221.94</b>	<b>0</b>	<b>-1</b>	<b>0</b>	<b>-4</b>	<b>-4</b>
STORY-67	C7	TDEADLOAD	0	125.32	135.3	-3	-2	0	##	##
STORY-66	C7	TDEADLOAD	0	81.65	-43.67	-4	-3	0	##	##
STORY-65	C7	TDEADLOAD	0	37.98	-43.67	-3	-3	0	##	##
STORY-64	C7	TDEADLOAD	0	-5.69	-43.67	-3	-3	0	##	##
STORY-63	C7	TDEADLOAD	0	-49.36	-43.67	-3	-3	0	##	##
STORY-62	C7	TDEADLOAD	0	-93.04	-43.68	-3	-3	0	##	##
STORY-61	C7	TDEADLOAD	0	-136.71	-43.67	-3	-3	0	##	##
STORY-60	C7	TDEADLOAD	0	-180.38	-43.67	-3	-3	0	##	##
STORY-59	C7	TDEADLOAD	0	-224.06	-43.68	-3	-3	0	##	##

Tributary Area

Story	ObjectLabel	ObjectType	TribArea	RLLF	Tributary A
BASE	3714	Point	16191.97	0.4	16191.97
TOPAR	C7	Column	269.13	0.9047	-15922.8
ROOF	C7	Column	538.54	0.6892	269.41
STORY-71	C7	Column	807.66	0.4739	269.12
STORY-70	C7	Column	1076.88	0.4	269.22
STORY-69	C7	Column	1345.94	0.4	269.06
MECH3	C7	Column	0	1	-1345.94
STORY-67	C7	Column	0	1	0
STORY-66	C7	Column	0	1	0
STORY-65	C7	Column	0	1	0
STORY-64	C7	Column	0	1	0
STORY-63	C7	Column	0	1	0
STORY-62	C7	Column	17.31	1	17.31
STORY-61	C7	Column	286.55	0.8908	269.24
STORY-60	C7	Column	555.79	0.6754	269.24



STORY-40	C7	TDEADLOAD	0	-1000.03	-40.31	-2	-2	0	##	##
STORY-39	C7	TDEADLOAD	0	-1040.35	-40.32	-3	-2	0	##	##
STORY-38	C7	TDEADLOAD	0	-1080.65	-40.3	-1	-1	0	-7	-4
<b>MECH2</b>	<b>C7</b>	<b>TDEADLOAD</b>	<b>0</b>	<b>-233.51</b>	<b>847.14</b>	<b>0</b>	<b>-1</b>	<b>0</b>	<b>-8</b>	<b>-8</b>
STORY-36	C7	TDEADLOAD	0	-959.61	-726.1	-3	-3	1	##	##
STORY-35	C7	TDEADLOAD	0	-1005.62	-46.01	-2	-2	2	##	##
STORY-34	C7	TDEADLOAD	0	-1051.62	-46	-3	-2	2	##	##
STORY-33	C7	TDEADLOAD	0	-1097.62	-46	-2	-2	2	##	##
STORY-32	C7	TDEADLOAD	0	-1143.62	-46	-2	-2	2	##	##
STORY-31	C7	TDEADLOAD	0	-1189.62	-46	-2	-2	2	##	##
STORY-30	C7	TDEADLOAD	0	-1235.63	-46.01	-2	-2	2	##	##
STORY-29	C7	TDEADLOAD	0	-1281.63	-46	-2	-2	3	##	##
STORY-28	C7	TDEADLOAD	0	-1327.63	-46	-2	-2	3	##	##
STORY-27	C7	TDEADLOAD	0	-1373.63	-46	-2	-2	3	##	##
STORY-26	C7	TDEADLOAD	0	-1419.64	-46.01	-2	-2	3	##	##
STORY-25	C7	TDEADLOAD	0	-1465.64	-46	-2	-2	3	##	##
STORY-24	C7	TDEADLOAD	0	-1511.64	-46	-2	-2	3	##	##
STORY-23	C7	TDEADLOAD	0	-1557.64	-46	-2	-2	2	##	##
STORY-22	C7	TDEADLOAD	0	-1603.65	-46.01	-2	-2	2	##	##
STORY-21	C7	TDEADLOAD	0	-1649.65	-46	-2	-2	2	##	##
STORY-20	C7	TDEADLOAD	0	-1695.66	-46.01	-2	-2	2	##	##
STORY-19	C7	TDEADLOAD	0	-1741.66	-46	-2	-2	2	##	##
STORY-18	C7	TDEADLOAD	0	-1787.67	-46.01	-2	-2	2	##	##
STORY-17	C7	TDEADLOAD	0	-1833.67	-46	-2	-2	2	##	##
STORY-16	C7	TDEADLOAD	0	-1879.68	-46.01	-2	-2	1	##	##
STORY-15	C7	TDEADLOAD	0	-1925.68	-46	-3	-2	1	##	##
STORY-14	C7	TDEADLOAD	0	-1971.68	-46	-2	-2	1	##	##
STORY-13	C7	TDEADLOAD	0	-2017.69	-46.01	-3	-2	1	##	##
STORY-12	C7	TDEADLOAD	0	-2063.69	-46	-3	-2	1	##	##
STORY-11	C7	TDEADLOAD	0	-2109.7	-46.01	-3	-2	0	##	##
STORY-10	C7	TDEADLOAD	0	-2155.7	-46	-3	-2	0	##	##
STORY-9	C7	TDEADLOAD	0	-2201.71	-46.01	-2	-2	0	##	##
STORY-8	C7	TDEADLOAD	0	-2247.72	-46.01	-5	-3	-1	##	##
STORY-7	C7	TDEADLOAD	0	-2293.73	-46.01	7	-1	-1	1	58
STORY-6	C7	TDEADLOAD	0	-2395.16	-101.43	6	0	0	-4	65
STORY-5	C7	TDEADLOAD	0	-2527.82	-132.66	12	0	0	-4	90
STORY-4	C7	TDEADLOAD	0	-2663.84	-136.02	8	0	-1	-5	77
STORY-3	C7	TDEADLOAD	0	-2798.54	-134.7	9	0	-1	1	84
STORY-2	C7	TDEADLOAD	0	-2931.19	-132.65	10	-1	0	-3	79
GROUND	C7	TDEADLOAD	0	-3063.76	-132.57	11	-1	1	-7	89
CELLAR	C7	TDEADLOAD	0	-3189.18	-125.42	8	0	0	0	0

STORY-41	C7	Column	5672.01	0.4	269.3
STORY-40	C7	Column	5941.31	0.4	269.3
STORY-39	C7	Column	6210.63	0.4	269.32
STORY-38	C7	Column	6479.9	0.4	269.27
MECH2	C7	Column	1223.98	0.4	-5255.92
STORY-36	C7	Column	4532.5	0.4	3308.52
STORY-35	C7	Column	4801.76	0.4	269.26
STORY-34	C7	Column	5071.01	0.4	269.25
STORY-33	C7	Column	5340.26	0.4	269.25
STORY-32	C7	Column	5609.52	0.4	269.26
STORY-31	C7	Column	5878.78	0.4	269.26
STORY-30	C7	Column	6148.04	0.4	269.26
STORY-29	C7	Column	6417.3	0.4	269.26
STORY-28	C7	Column	6686.56	0.4	269.26
STORY-27	C7	Column	6955.82	0.4	269.26
STORY-26	C7	Column	7225.06	0.4	269.24
STORY-25	C7	Column	7494.31	0.4	269.25
STORY-24	C7	Column	7763.58	0.4	269.27
STORY-23	C7	Column	8032.85	0.4	269.27
STORY-22	C7	Column	8302.12	0.4	269.27
STORY-21	C7	Column	8571.39	0.4	269.27
STORY-20	C7	Column	8840.66	0.4	269.27
STORY-19	C7	Column	9109.94	0.4	269.28
STORY-18	C7	Column	9379.22	0.4	269.28
STORY-17	C7	Column	9648.49	0.4	269.27
STORY-16	C7	Column	9917.77	0.4	269.28
STORY-15	C7	Column	10187.05	0.4	269.28
STORY-14	C7	Column	10456.33	0.4	269.28
STORY-13	C7	Column	10725.6	0.4	269.27
STORY-12	C7	Column	10994.88	0.4	269.28
STORY-11	C7	Column	11264.16	0.4	269.28
STORY-10	C7	Column	11533.44	0.4	269.28
STORY-9	C7	Column	11802.71	0.4	269.27
STORY-8	C7	Column	12072.02	0.4	269.31
STORY-7	C7	Column	12341.34	0.4	269.32
STORY-6	C7	Column	12891.45	0.4	550.11
STORY-5	C7	Column	13441.54	0.4	550.09
STORY-4	C7	Column	13991.63	0.4	550.09
STORY-3	C7	Column	14541.75	0.4	550.12
STORY-2	C7	Column	15091.82	0.4	550.07
GROUND	C7	Column	15641.89	0.4	550.07

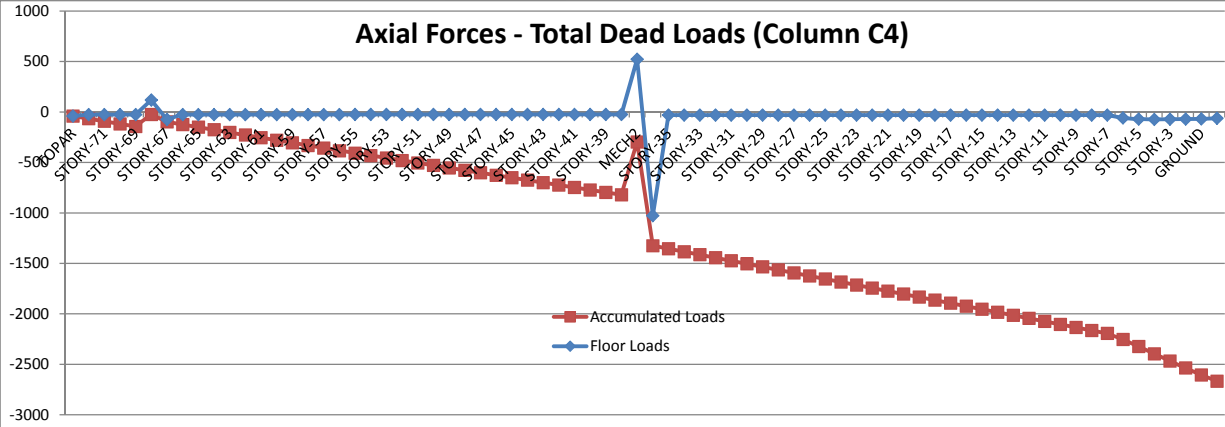


C4 - Column Load

Story	Column	Load	Loc	Accumulated						
				Loads	Floor Loads	V2	V3	T	M2	M3
TOPAR	C8	TDEADLOAD	0	-39.55	-39.55	-0	2	-0	23	-5
ROOF	C8	TDEADLOAD	0	-65.52	-25.97	-1	4	0	21	-5
STORY-71	C8	TDEADLOAD	0	-91.49	-25.97	-1	4	0	20	-5
STORY-70	C8	TDEADLOAD	0	-117.45	-25.96	-1	5	0	26	-5
STORY-69	C8	TDEADLOAD	0	-143.42	-25.97	-1	1	0	-2	-7
MECH3	C8	TDEADLOAD	0	-24.68	118.74	-0	-1	0	-9	-4
STORY-67	C8	TDEADLOAD	0	-97.41	-72.73	-1	1	0	15	-5
STORY-66	C8	TDEADLOAD	0	-123.38	-25.97	-1	5	0	8	-5
STORY-65	C8	TDEADLOAD	0	-149.34	-25.96	-1	4	0	8	-5

Tributary Area

Story	ObjectLabel	ObjectType	TribArea	RLLF	Tributary A
BASE	3759	Point	12923.4	0.4	12923.4
TOPAR	C8	Column	134.93	1	-12788.5
ROOF	C8	Column	269.89	0.9041	134.96
STORY-71	C8	Column	404.85	0.7961	134.96
STORY-70	C8	Column	539.82	0.6881	134.97
STORY-69	C8	Column	674.79	0.5802	134.97
MECH3	C8	Column	104.87	1	-569.92
STORY-67	C8	Column	467.16	0.7463	362.29
STORY-66	C8	Column	602.11	0.6383	134.95



STORY-64											134.96					
STORY-63											134.96					
STORY-62											134.96					
STORY-61											134.95					
STORY-60											134.96					
STORY-59											134.95					
STORY-58											134.95					
STORY-57											134.96					
STORY-56											134.95					
STORY-55											134.95					
STORY-54											134.95					
STORY-53											134.96					
STORY-52											134.95					
STORY-51											134.95					
STORY-50											134.96					
STORY-49											134.95					
STORY-48											134.96					
STORY-47											134.95					
STORY-46	C8	TDEADLOAD	0	-625.84	-24.28	-0	4	0	19	-5	STORY-47	C8	Column	3166.25	0.4	134.95
STORY-45	C8	TDEADLOAD	0	-650.12	-24.28	-0	4	0	19	-5	STORY-46	C8	Column	3301.2	0.4	134.95
STORY-44	C8	TDEADLOAD	0	-674.4	-24.28	-0	4	0	19	-5	STORY-45	C8	Column	3436.15	0.4	134.95
STORY-43	C8	TDEADLOAD	0	-698.67	-24.27	-0	4	0	19	-5	STORY-44	C8	Column	3571.11	0.4	134.96
STORY-42	C8	TDEADLOAD	0	-722.95	-24.28	-0	4	0	18	-5	STORY-43	C8	Column	3706.06	0.4	134.95
STORY-41	C8	TDEADLOAD	0	-747.23	-24.28	-0	4	0	19	-5	STORY-42	C8	Column	3841.01	0.4	134.95
STORY-40	C8	TDEADLOAD	0	-771.51	-24.28	-0	4	0	17	-5	STORY-41	C8	Column	3975.96	0.4	134.95
STORY-39	C8	TDEADLOAD	0	-795.79	-24.28	-0	5	0	25	-4	STORY-40	C8	Column	4110.91	0.4	134.95
STORY-38	C8	TDEADLOAD	0	-820.07	-24.28	-1	1	0	-8	-9	STORY-39	C8	Column	4245.86	0.4	134.95
MECH2	C8	TDEADLOAD	0	-297.47	522.6	-2	-3	0	-5	##	STORY-38	C8	Column	4380.81	0.4	134.95
STORY-36	C8	TDEADLOAD	0	-1324.54	-1027.07	-2	5	1	22	-8	MECH2	C8	Column	1604.77	0.4	-2776.04
STORY-35	C8	TDEADLOAD	0	-1354.51	-29.97	-0	3	2	18	-5	STORY-36	C8	Column	7385.1	0.4	5780.33
STORY-34	C8	TDEADLOAD	0	-1384.49	-29.98	-1	4	2	19	-6	STORY-35	C8	Column	7520.09	0.4	134.99
STORY-33	C8	TDEADLOAD	0	-1414.47	-29.98	-1	4	2	18	-6	STORY-34	C8	Column	7655.07	0.4	134.98
STORY-32	C8	TDEADLOAD	0	-1444.45	-29.98	-1	4	2	18	-6	STORY-33	C8	Column	7790.06	0.4	134.99
STORY-31	C8	TDEADLOAD	0	-1474.43	-29.98	-1	4	2	18	-6	STORY-32	C8	Column	7925.05	0.4	134.99
STORY-30	C8	TDEADLOAD	0	-1504.41	-29.98	-1	4	2	19	-6	STORY-31	C8	Column	8060.04	0.4	134.99
STORY-29	C8	TDEADLOAD	0	-1534.39	-29.98	-1	4	3	18	-6	STORY-30	C8	Column	8195.03	0.4	134.99
STORY-28	C8	TDEADLOAD	0	-1564.37	-29.98	-1	4	3	18	-7	STORY-29	C8	Column	8330.02	0.4	134.99
STORY-27	C8	TDEADLOAD	0	-1594.35	-29.98	-1	4	3	18	-7	STORY-28	C8	Column	8465.01	0.4	134.99
STORY-26	C8	TDEADLOAD	0	-1624.32	-29.97	-1	4	3	17	-7	STORY-27	C8	Column	8600.01	0.4	135
STORY-25	C8	TDEADLOAD	0	-1654.31	-29.99	-1	4	3	17	-8	STORY-26	C8	Column	8735	0.4	134.99
STORY-24	C8	TDEADLOAD	0	-1684.29	-29.98	-0	4	3	17	-8	STORY-25	C8	Column	8870	0.4	135
STORY-23	C8	TDEADLOAD	0	-1714.27	-29.98	-0	4	2	17	-8	STORY-24	C8	Column	9005.01	0.4	135.01
STORY-22	C8	TDEADLOAD	0	-1744.25	-29.98	-0	4	2	17	-8	STORY-23	C8	Column	9140.02	0.4	135.01
STORY-21	C8	TDEADLOAD	0	-1774.23	-29.98	-0	4	2	17	-8	STORY-22	C8	Column	9275.03	0.4	135.01
STORY-20	C8	TDEADLOAD	0	-1804.21	-29.98	-0	4	2	17	-8	STORY-21	C8	Column	9410.04	0.4	135.01
STORY-19	C8	TDEADLOAD	0	-1834.19	-29.98	-0	4	2	17	-8	STORY-20	C8	Column	9545.05	0.4	135.01
STORY-18	C8	TDEADLOAD	0	-1864.18	-29.99	-0	4	2	17	-8	STORY-19	C8	Column	9680.06	0.4	135.01
STORY-17	C8	TDEADLOAD	0	-1894.16	-29.98	-0	4	2	17	-8	STORY-18	C8	Column	9815.07	0.4	135.01
STORY-16	C8	TDEADLOAD	0	-1924.14	-29.98	-0	4	1	16	-8	STORY-17	C8	Column	9950.09	0.4	135.02
STORY-15	C8	TDEADLOAD	0	-1954.12	-29.98	-1	4	1	17	-9	STORY-16	C8	Column	10085.1	0.4	135.01
STORY-14	C8	TDEADLOAD	0	-1984.1	-29.98	-1	4	1	17	-9	STORY-15	C8	Column	10220.11	0.4	135.01
STORY-13	C8	TDEADLOAD	0	-2014.08	-29.98	-1	4	1	17	-9	STORY-14	C8	Column	10355.13	0.4	135.02
STORY-12	C8	TDEADLOAD	0	-2044.07	-29.99	-1	4	1	17	-9	STORY-13	C8	Column	10490.14	0.4	135.01
STORY-11	C8	TDEADLOAD	0	-2074.05	-29.98	-1	4	0	16	-9	STORY-12	C8	Column	10625.15	0.4	135.01
STORY-10	C8	TDEADLOAD	0	-2104.03	-29.98	-0	4	0	18	-8	STORY-11	C8	Column	10760.17	0.4	135.02
STORY-9	C8	TDEADLOAD	0	-2134.01	-29.98	-1	3	-0	9	##	STORY-10	C8	Column	10895.18	0.4	135.01
STORY-8	C8	TDEADLOAD	0	-2163.99	-29.98	-0	8	-1	48	-8	STORY-9	C8	Column	11030.21	0.4	135.03
STORY-7	C8	TDEADLOAD	0	-2193.96	-29.97	-2	##	-1	##	##	STORY-8	C8	Column	11165.18	0.4	134.97
STORY-6	C8	TDEADLOAD	0	-2253.54	-59.58	-1	##	-0	##	##	STORY-7	C8	Column	11300.13	0.4	134.95
STORY-5	C8	TDEADLOAD	0	-2322.85	-69.31	-2	##	-0	##	##	STORY-6	C8	Column	11532.02	0.4	231.89
STORY-4	C8	TDEADLOAD	0	-2395.53	-72.68	-2	##	-1	##	##	STORY-5	C8	Column	11763.93	0.4	231.91
STORY-3	C8	TDEADLOAD	0	-2466.87	-71.34	-2	##	-1	##	##	STORY-4	C8	Column	11995.82	0.4	231.89
STORY-2	C8	TDEADLOAD	0	-2536.19	-69.32	-3	##	0	##	##	STORY-3	C8	Column	12227.71	0.4	231.89
GROUND	C8	TDEADLOAD	0	-2605.41	-69.22	-2	##	1	##	##	STORY-2	C8	Column	12459.61	0.4	231.9
CELLAR	C8	TDEADLOAD	0	-2667.48	-62.07	-2	##	0	0	0	GROUND	C8	Column	12691.51	0.4	231.9

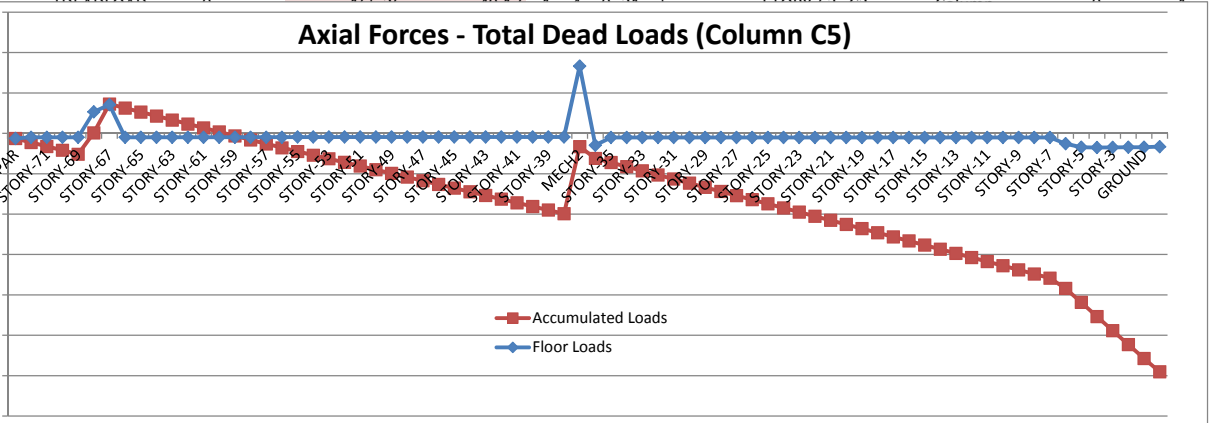


**C5 (C2) - Column Load**

Story	Column	Load	Loc	Accumulated						
				Loads	Floor Loads	V2	V3	T	M2	M3
TOPAR	C2	TDEADLOAD	0	-62.77	-62.77	-0	2	-0	23	-5
ROOF	C2	TDEADLOAD	0	-111.94	-49.17	-1	4	0	21	-5
STORY-71	C2	TDEADLOAD	0	-161.12	-49.18	-1	4	0	20	-5
STORY-70	C2	TDEADLOAD	0	-210.29	-49.17	-1	5	0	26	-5
STORY-69	C2	TDEADLOAD	0	-259.46	-49.17	-1	1	0	-2	-7
MECH3	C2	TDEADLOAD	0	6.51	265.97	-0	-1	0	-9	-4
STORY-67	C2	TDEADLOAD	0	361.96	355.45	-1	1	0	15	-5
STORY-66	C2	TDEADLOAD	0	312.78	-49.18	-1	5	0	8	-5
STORY-65	C2	TDEADLOAD	0	263.61	-49.17	-1	4	0	8	-5
STORY-64	C2	TDEADLOAD	0	214.43	-49.18	-1	4	0	21	-5
STORY-63	C2	TDEADLOAD	0	165.26	-49.17	-1	4	0	21	-5
STORY-62	C2	TDEADLOAD	0	116.09	-49.17	-1	4	0	21	-5
STORY-61	C2	TDEADLOAD	0	66.92	-49.17	-1	4	0	21	-5
STORY-60	C2	TDEADLOAD	0	17.75	-49.17	-1	4	0	21	-5
STORY-59	C2	TDEADLOAD	0	-31.42	-49.17	-1	4	0	21	-5
STORY-58	C2	TDEADLOAD	0	-80.59	-49.17	-1	4	0	21	-5
STORY-57	C2	TDEADLOAD	0	-129.76	-49.17	-1	4	0	21	-5
STORY-56	C2	TDEADLOAD	0	-178.93	-49.17	-1	4	0	21	-5
STORY-55	C2	TDEADLOAD	0	-228.10	-49.17	-1	4	0	21	-5
STORY-54	C2	TDEADLOAD	0	-277.27	-49.17	-1	4	0	21	-5
STORY-53	C2	TDEADLOAD	0	-326.44	-49.17	-1	4	0	21	-5
STORY-52	C2	TDEADLOAD	0	-375.61	-49.17	-1	4	0	21	-5
STORY-51	C2	TDEADLOAD	0	-424.78	-49.17	-1	4	0	21	-5
STORY-50	C2	TDEADLOAD	0	-473.95	-49.17	-1	4	0	21	-5
STORY-49	C2	TDEADLOAD	0	-523.12	-49.17	-1	4	0	21	-5
STORY-48	C2	TDEADLOAD	0	-572.29	-49.17	-1	4	0	21	-5
STORY-47	C2	TDEADLOAD	0	-621.46	-49.17	-1	4	0	21	-5
STORY-46	C2	TDEADLOAD	0	-670.63	-49.17	-1	4	0	21	-5
STORY-45	C2	TDEADLOAD	0	-719.80	-49.17	-1	4	0	21	-5
STORY-44	C2	TDEADLOAD	0	-768.97	-49.17	-1	4	0	21	-5
STORY-43	C2	TDEADLOAD	0	-818.14	-49.17	-1	4	0	21	-5
STORY-42	C2	TDEADLOAD	0	-867.31	-49.17	-1	4	0	21	-5
STORY-41	C2	TDEADLOAD	0	-916.48	-49.17	-1	4	0	21	-5
STORY-40	24	TDEADLOAD	0	-965.65	-49.17	-1	4	0	21	-5
STORY-39	30	TDEADLOAD	0	-1014.82	-49.17	-1	4	0	21	-5
STORY-38	C2	TDEADLOAD	0	-1063.99	-49.17	-1	1	0	-8	-9
MECH2	C2	TDEADLOAD	0	-1113.16	832.41	-2	-3	0	-5	##
STORY-36	C2	TDEADLOAD	0	-1162.33	-147.29	-2	5	1	22	-8
STORY-35	C2	TDEADLOAD	0	-1211.50	-51.08	-0	3	2	18	-5
STORY-34	C2	TDEADLOAD	0	-1260.67	-51.09	-1	4	2	19	-6
STORY-33	C2	TDEADLOAD	0	-1309.84	-51.08	-1	4	2	18	-6
STORY-32	C2	TDEADLOAD	0	-1359.01	-51.08	-1	4	2	18	-6
STORY-31	C2	TDEADLOAD	0	-1408.18	-51.08	-1	4	2	18	-6
STORY-30	C2	TDEADLOAD	0	-1457.35	-51.08	-1	4	2	19	-6
STORY-29	36	TDEADLOAD	0	-1506.52	-51.08	-1	4	3	18	-6
STORY-28	36	TDEADLOAD	0	-1555.69	-51.08	-1	4	3	18	-7
STORY-27	36	TDEADLOAD	0	-1604.86	-51.09	-1	4	3	18	-7
STORY-26	36	TDEADLOAD	0	-1654.03	-51.08	-1	4	3	17	-7
STORY-25	36	TDEADLOAD	0	-1703.20	-51.08	-1	4	3	17	-8
STORY-24	36	TDEADLOAD	0	-1752.37	-51.08	-0	4	3	17	-8
STORY-23	36	TDEADLOAD	0	-1801.54	-51.09	-0	4	2	17	-8
STORY-22	C2	TDEADLOAD	0	-1850.71	-51.08	-0	4	2	17	-8
STORY-21	C2	TDEADLOAD	0	-1899.88	-51.08	-0	4	2	17	-8
STORY-20	C2	TDEADLOAD	0	-1949.05	-51.08	-0	4	2	17	-8
STORY-19	C2	TDEADLOAD	0	-1998.22	-51.08	-0	4	2	17	-8
STORY-18	C2	TDEADLOAD	0	-2047.39	-51.08	-0	4	2	17	-8
STORY-17	C2	TDEADLOAD	0	-2096.56	-51.08	-0	4	2	17	-8
STORY-16	C2	TDEADLOAD	0	-2145.73	-51.08	-0	4	1	16	-8
STORY-15	C2	TDEADLOAD	0	-2194.90	-51.09	-1	4	1	17	-9
STORY-14	C2	TDEADLOAD	0	-2244.07	-51.08	-1	4	1	17	-9
STORY-13	C2	TDEADLOAD	0	-2293.24	-51.08	-1	4	1	17	-9
STORY-12	C2	TDEADLOAD	0	-2342.41	-51.08	-1	4	1	17	-9
STORY-11	C2	TDEADLOAD	0	-2391.58	-51.08	-1	4	0	16	-9
STORY-10	C2	TDEADLOAD	0	-2440.75	-51.08	-0	4	0	18	-8
STORY-9	C2	TDEADLOAD	0	-2489.92	-51.08	-1	3	-0	9	##
STORY-8	C2	TDEADLOAD	0	-2539.09	-51.08	-0	8	-1	48	-8
STORY-7	C2	TDEADLOAD	0	-2588.26	-51.08	-2	##	-1	##	##
STORY-6	C2	TDEADLOAD	0	-2637.43	-128.53	-1	##	-0	##	##
STORY-5	C2	TDEADLOAD	0	-2686.60	-172.25	-2	##	-0	##	##
STORY-4	C2	TDEADLOAD	0	-2735.77	-175.61	-2	##	-1	##	##
STORY-3	C2	TDEADLOAD	0	-2784.94	-174.28	-2	##	-1	##	##
STORY-2	C2	TDEADLOAD	0	-2834.11	-172.25	-3	##	0	##	##
GROUND	C2	TDEADLOAD	0	-2883.28	-172.17	-2	##	1	##	##
CELLAR	C2	TDEADLOAD	0	-2932.45	-165.01	-2	##	0	0	0

**Tributary Area**

Story	ObjectLabel	ObjectType	TribArea	RLLF	Tributary A
TOPAR	C2	Column	303.41	0.8773	303.41
ROOF	C2	Column	606.77	0.6346	303.36
STORY-71	C2	Column	910.1	0.4	303.33
STORY-70	C2	Column	1213.47	0.4	303.37
STORY-69	C2	Column	1516.8	0.4	303.33
MECH3	C2	Column	0	1	-1516.8
STORY-67	C2	Column	0	1	0
STORY-66	C2	Column	0	1	0
STORY-65	C2	Column	0	1	0
STORY-64	C2	Column	0	1	0
STORY-63	C2	Column	0	1	0
STORY-62	C2	Column	0	1	0
STORY-61	C2	Column	0	1	0
STORY-60	C2	Column	0	1	0
STORY-59	C2	Column	0	1	0
STORY-58	C2	Column	0	1	0
STORY-57	C2	Column	0	1	0
STORY-56	C2	Column	0	1	0
STORY-55	C2	Column	0	1	0
STORY-54	C2	Column	0	1	0
STORY-53	C2	Column	0	1	0
STORY-52	C2	Column	0	1	0
STORY-51	C2	Column	0	1	0
STORY-50	C2	Column	0	1	0
STORY-49	C2	Column	0	1	0
STORY-48	C2	Column	0	1	0
STORY-47	C2	Column	0	1	0
STORY-46	C2	Column	0	1	0
STORY-45	C2	Column	0	1	0
STORY-44	C2	Column	0	1	0
STORY-43	C2	Column	0	1	0
STORY-42	C2	Column	0	1	0
STORY-41	C2	Column	0	1	0
STORY-40	C2	Column	0	1	0
STORY-39	C2	Column	0	1	0
STORY-38	C2	Column	0	1	0
MECH2	C2	Column	624.21	0.6206	-5249.63
STORY-36	C2	Column	0	1	-624.21
STORY-35	C2	Column	0	1	0
STORY-34	C2	Column	0	1	0
STORY-33	C2	Column	257.44	0.914	257.44
STORY-32	C2	Column	560.85	0.6713	303.41
STORY-31	C2	Column	864.25	0.4286	303.4
STORY-30	C2	Column	1167.66	0.4	303.41
STORY-29	C2	Column	1471.06	0.4	303.4
STORY-28	C2	Column	1774.46	0.4	303.4
STORY-27	C2	Column	2077.86	0.4	303.42
STORY-26	C2	Column	2381.29	0.4	303.41
STORY-25	C2	Column	2684.71	0.4	303.42
STORY-24	C2	Column	2988.11	0.4	303.4
STORY-23	C2	Column	3291.52	0.4	303.41
STORY-22	C2	Column	3594.92	0.4	303.4
STORY-21	C2	Column	3898.33	0.4	303.41
STORY-20	C2	Column	4201.73	0.4	303.4
STORY-19	C2	Column	4505.13	0.4	303.4
STORY-18	C2	Column	4808.53	0.4	303.4
STORY-17	C2	Column	5111.93	0.4	303.4
STORY-16	C2	Column	5415.33	0.4	303.4
STORY-15	C2	Column	5718.73	0.4	303.4
STORY-14	C2	Column	6022.13	0.4	303.4
STORY-13	C2	Column	6325.53	0.4	303.4
STORY-12	C2	Column	6628.93	0.4	303.4
STORY-11	C2	Column	6932.32	0.4	303.39
STORY-10	C2	Column	7235.72	0.4	303.4
STORY-9	C2	Column	7539.11	0.4	303.39
STORY-8	C2	Column	7842.52	0.4	303.41
STORY-7	C2	Column	8145.9	0.4	303.38
STORY-6	C2	Column	8881.08	0.4	735.18
STORY-5	C2	Column	9616.25	0.4	735.17
STORY-4	C2	Column	10351.43	0.4	735.18
STORY-3	C2	Column	11086.6	0.4	735.17
STORY-2	C2	Column	11821.77	0.4	735.17
GROUND	C2	Column	12556.95	0.4	735.18
CELLAR	C2	Column	13292.12	0.4	735.17



Column Axial Load - Schematic

Project : 22 Thames Street

Column C5 (c2)-Exterior

Tributary area (Schematic) From Etabs

FL	STORY HEIGHT (ft)	EQUIV SECTION AREA (in <sup>2</sup> )		SLAB THK. (in)	TRIBUTARY AREA		Accum. Trib. (ft <sup>2</sup> )	ADD LOADS		K Element Factor	DISTRB. LOAD		DEAD LOAD		LIVE L. REDUCTION		WITH LIVE LOAD REDUCTION								factored Stress (ks)	Con. C (ksi)	Ratio													
		(B)	(D)		(ft <sup>2</sup> )	(m <sup>2</sup> )		DEAD (kips)	LIVE (kips)		SDL (lb/ft <sup>2</sup> )	LL (lb/ft <sup>2</sup> )	COLMN (kips)	SLAB (kips)	RED. F.	RED L.L.(kips)	FLOOR LOAD				SUMMATION LOAD																			
		(kips)	(kips)		(kips)	(kips)		(kips)	(kips)		(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)																
TOPAR	38.5	18	15.95	15.95	9	303	28.1	303.0	8	0	4	20	40	10.00	48.15	0.681	8.25	10.0	0.0	10.0	0.0	10.0	0.0	10.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8					
ROOF	9.67	18	15.95	15.95	9	303	28.1	606.0	8	0	4	20	400	2.36	48.15	1.000	121.20	50.5	8.3	58.8	73.8	60.5	8.3	68.8	85.8	0.3	8							8	4.2%					
STORY-71	9.67	18	15.95	15.95	9	303	28.1	909.0	8	0	4	20	40	2.36	48.15	0.499	6.04	50.5	121.2	171.7	254.5	111.0	129.5	240.5	340.4	1.3	8								8	16.7%				
STORY-70	9.67	18	15.95	15.95	9	303	28.1	1212.0	8	0	4	20	40	2.36	48.15	0.465	5.64	50.5	6.0	56.6	70.3	161.5	135.5	297.0	410.6	1.6	8								8	20.2%				
STORY-69	9.67	18	15.95	15.95	9	303	28.1	1515.0	8	0	4	20	40	2.36	48.15	0.443	5.37	50.5	5.6	56.2	69.6	212.0	141.1	353.2	480.3	1.9	8									8	23.6%			
MECH3	1.6	18	15.95	15.95	9	303	28.1	1818.0	8	0	4	20	40	4.04	48.15	0.426	5.16	52.2	5.4	57.6	71.2	264.2	146.5	410.7	551.5	2.2	8									8	27.1%			
STORY-67	10.92	18	15.95	15.95	12	303	28.1	2121.0	8	0	4	20	150	2.63	59.51	1.000	45.45	50.8	5.2	55.9	69.2	315.0	151.7	466.7	620.7	2.4	8									8	30.5%			
STORY-66	9.67	24	21.26	21.26	9	303	28.1	2424.0	8	0	4	20	40	4.20	48.15	0.402	4.88	63.7	45.5	109.2	149.2	378.7	197.1	575.8	769.8	1.7	8									8	21.3%			
STORY-65	9.67	24	21.26	21.26	9	303	28.1	2727.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.9	57.2	70.6	431.1	202.0	633.1	840.5	1.9	8									8	23.2%			
STORY-64	9.67	24	21.26	21.26	9	303	28.1	3030.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	483.4	206.8	690.3	911.0	2.0	8									8	25.2%			
STORY-63	9.67	24	21.26	21.26	9	303	28.1	3333.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	535.8	211.7	747.5	981.6	2.2	8									8	27.1%			
STORY-62	9.67	24	21.26	21.26	9	303	28.1	3636.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	588.1	216.5	804.7	1052.2	2.3	8										8	29.1%		
STORY-61	9.67	24	21.26	21.26	9	303	28.1	3939.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	640.5	221.4	861.8	1122.8	2.5	8										8	31.0%		
STORY-60	9.67	24	21.26	21.26	9	303	28.1	4242.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	692.8	226.2	919.0	1193.3	2.6	8										8	33.0%		
STORY-59	9.67	24	21.26	21.26	9	303	28.1	4545.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	745.2	231.1	976.2	1263.9	2.8	8										8	34.9%		
STORY-58	9.67	24	21.26	21.26	9	303	28.1	4848.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	797.5	235.9	1033.4	1334.5	3.0	8										8	36.9%		
STORY-57	9.67	24	21.26	21.26	9	303	28.1	5151.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	849.9	240.8	1090.6	1405.1	3.1	8										8	38.8%		
STORY-56	9.67	24	21.26	21.26	9	303	28.1	5454.0	8	0	4	20	40	4.20	48.15	0.400	4.85	52.3	4.8	57.2	70.6	902.2	245.6	1147.8	1475.6	3.3	8										8	40.8%		
STORY-55	9.67	24	21.26	21.26	8	303	28.1	5757.0	8	0	4	20	40	4.24	44.36	0.400	4.85	52.4	4.8	57.2	70.6	954.6	250.5	1205.1	1546.3	3.4	10										10	34.2%		
STORY-54	9.67	24	21.26	21.26	8	303	28.1	6060.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1003.2	255.3	1258.5	1612.3	3.6	10										10	35.7%		
STORY-53	9.67	24	21.26	21.26	8	303	28.1	6363.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1051.8	260.2	1312.0	1678.4	3.7	10										10	37.1%		
STORY-52	9.67	24	21.26	21.26	8	303	28.1	6666.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1100.4	265.0	1365.4	1744.5	3.9	10										10	38.6%		
STORY-51	9.67	24	21.26	21.26	8	303	28.1	6969.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1149.0	269.9	1418.9	1810.6	4.0	10										10	40.0%		
STORY-50	9.67	24	21.26	21.26	8	303	28.1	7272.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1197.6	274.7	1472.3	1876.7	4.2	10											10	41.5%	
STORY-49	9.67	24	21.26	21.26	8	303	28.1	7575.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1246.2	279.6	1525.8	1942.7	4.3	10											10	43.0%	
STORY-48	9.67	24	21.26	21.26	8	303	28.1	7878.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1294.8	284.4	1579.2	2009.8	4.4	10												10	44.4%
STORY-47	9.67	24	21.26	21.26	8	303	28.1	8181.0	8	0	4	20	40	4.24	44.36	0.400	4.85	48.6	4.8	53.4	66.1	1343.4	289.3	1632.7	2074.9	4.6	10											10	45.9%	
STORY-46	9.67	30	26.58	26.58	8	303	28.1	8484.0	8	0	4	20	40	6.63	44.36	0.400	4.85	51.0	4.8	55.8	68.9	1394.4	294.1	1688.5	2143.8	3.0	10											10	30.3%	
STORY-45	9.67	30	26.58	26.58	8	303	28.1	8787.0	8	0	4	20	40	6.63	44.36	0.400	4.85	51.0	4.8	55.8	68.9	1445.4	299.0	1743.3	2212.8	3.1	10											10	31.3%	
STORY-44	9.67	30	26.58	26.58	8	303	28.1	9090.0	8	0	4	20	40	6.63	44.36	0.400	4.85	51.0	4.8	55.8	68.9	1496.4	303.8	1800.2	2281.7	3.2	10											10	32.3%	
STORY-43	9.67	30	26.58	26.58	8	303	28.1	9393.0	8	0	4	20	40	6.63	44.36	0.400	4.85	51.0	4.8	55.8	68.9	1547.3	308.6	1856.0	2350.6	3.3	10											10	33.3%	
STORY-42	9.67	30	26.58	26.58	8	303	28.1	9696.0	8	0	4	20	40	6.63	44.36	0.400	4.85	51.0	4.8	55.8	68.9	1598.3	313.5	1911.8	2419.6	3.4	10											10	34.2%	
STORY-41	9.67	30	26.58	26.58	8	303	28.1	9999.0	8	0	4	20	40	6.63	44.36	0.400	4.85	51.0	4.8	55.8	68.9	1649.3	318.3	1967.7	2488.5	3.5	10											10	35.2%	
STORY-40	9.67	30	26.58	26.58	8	303	28.1	10302.0	8	0	4	20	40	6.63	44.36	0.400	4.85	51.0	4.8	55.8	68.9	1700.3	323.2	2023.5	2557.5	3.6	10											10	36.2%	
STORY-39	9.67	30	26.58	26.58	8	303	28.1	10605																																

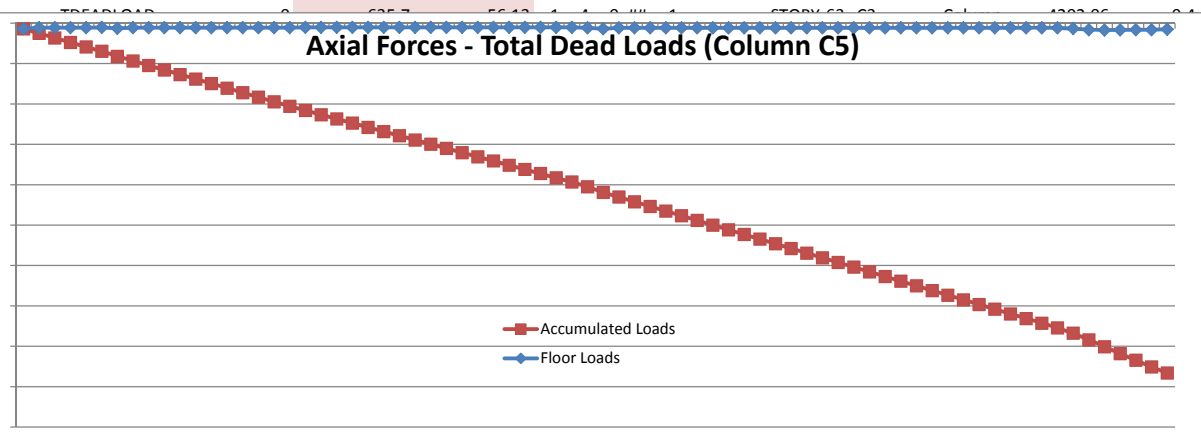


C6 - Column Load

Story	Column	Load	Loc	Accumulated						
				Loads	Floor Loads	V2	V3	T	M2	M3
TOPAR	C3	TDEADLOAD	0	-69.73	-69.73	0	-2	0	##	2
ROOF	C3	TDEADLOAD	0	-125.84	-56.11	0	-4	0	##	1
STORY-71	C3	TDEADLOAD	0	-181.99	-56.15	1	-4	0	##	2
STORY-70	C3	TDEADLOAD	0	-238.11	-56.12	0	-4	0	##	0
STORY-69	C3	TDEADLOAD	0	-294.26	-56.15	1	-3	0	##	5
MECH3	C3	TDEADLOAD	0	-347.39	-53.13	1	-1	0	-6	7
STORY-67	C3	TDEADLOAD	0	-411.18	-63.79	1	-3	0	##	3
STORY-66	C3	TDEADLOAD	0	-467.3	-56.12	1	-4	0	##	1
STORY-65	C3	TDEADLOAD	0	-523.43	-56.13	1	-4	0	##	2
STORY-64	C3	TDEADLOAD	0	-579.57	-56.14	1	-4	0	##	1
STORY-63	C3	TDEADLOAD	0	-635.7	-56.13	1	-4	0	##	1
STORY-62	C3	TDEADLOAD	0	-691.84	-56.13	1	-4	0	##	1
STORY-61	C3	TDEADLOAD	0	-747.97	-56.13	1	-4	0	##	1
STORY-60	C3	TDEADLOAD	0	-804.1	-56.13	1	-4	0	##	1
STORY-59	C3	TDEADLOAD	0	-860.23	-56.13	1	-4	0	##	1
STORY-58	C3	TDEADLOAD	0	-916.36	-56.13	1	-4	0	##	1
STORY-57	C3	TDEADLOAD	0	-972.49	-56.13	1	-4	0	##	1
STORY-56	C3	TDEADLOAD	0	-1028.62	-56.13	1	-4	0	##	1
STORY-55	C3	TDEADLOAD	0	-1084.75	-56.13	1	-4	0	##	1
STORY-54	C3	TDEADLOAD	0	-1140.88	-56.13	1	-4	0	##	1
STORY-53	C3	TDEADLOAD	0	-1197.01	-56.13	1	-4	0	##	1
STORY-52	C3	TDEADLOAD	0	-1253.14	-56.13	1	-4	0	##	1
STORY-51	C3	TDEADLOAD	0	-1309.27	-56.13	1	-4	0	##	1
STORY-50	C3	TDEADLOAD	0	-1365.4	-56.13	1	-4	0	##	1
STORY-49	C3	TDEADLOAD	0	-1421.53	-56.13	1	-4	0	##	1
STORY-48	C3	TDEADLOAD	0	-1477.66	-56.13	1	-4	0	##	1
STORY-47	C3	TDEADLOAD	0	-1533.79	-56.13	1	-4	0	##	1
STORY-46	C3	TDEADLOAD	0	-1589.92	-56.13	1	-4	0	##	1
STORY-45	C3	TDEADLOAD	0	-1646.05	-56.13	1	-4	0	##	1
STORY-44	C3	TDEADLOAD	0	-1702.18	-56.13	1	-4	0	##	1
STORY-43	C3	TDEADLOAD	0	-1758.31	-56.13	1	-4	0	##	1
STORY-42	C3	TDEADLOAD	0	-1814.44	-56.13	1	-4	0	##	1
STORY-41	C3	TDEADLOAD	0	-1870.57	-56.13	1	-4	0	##	1
STORY-40	C3	TDEADLOAD	0	-1926.7	-56.13	1	-4	0	##	1
STORY-39	C3	TDEADLOAD	0	-1982.83	-56.13	1	-4	0	##	1
STORY-38	C3	TDEADLOAD	0	-2038.96	-56.13	1	-4	0	##	1
MECH2	C3	TDEADLOAD	0	-2095.09	-58.34	2	-2	0	-6	8
STORY-36	C3	TDEADLOAD	0	-2151.22	-70.17	2	-2	1	##	1
STORY-35	C3	TDEADLOAD	0	-2207.35	-57.84	2	-3	2	##	0
STORY-34	C3	TDEADLOAD	0	-2263.48	-57.84	2	-3	2	##	0
STORY-33	C3	TDEADLOAD	0	-2319.61	-57.84	2	-3	2	##	0
STORY-32	C3	TDEADLOAD	0	-2375.74	-57.83	2	-3	2	##	0
STORY-31	C3	TDEADLOAD	0	-2431.87	-57.84	2	-3	2	##	-0
STORY-30	C3	TDEADLOAD	0	-2488.0	-57.84	2	-3	2	##	-0
STORY-29	C3	TDEADLOAD	0	-2544.13	-57.84	2	-3	3	##	-0
STORY-28	C3	TDEADLOAD	0	-2600.26	-57.84	2	-3	3	##	-0
STORY-27	C3	TDEADLOAD	0	-2656.39	-57.84	2	-3	3	##	-0
STORY-26	C3	TDEADLOAD	0	-2712.52	-57.83	2	-3	3	##	-1
STORY-25	C3	TDEADLOAD	0	-2768.65	-57.84	2	-3	3	##	-1
STORY-24	C3	TDEADLOAD	0	-2824.78	-57.83	2	-3	3	##	-2
STORY-23	C3	TDEADLOAD	0	-2880.91	-57.84	2	-3	2	##	-2
STORY-22	C3	TDEADLOAD	0	-2937.04	-57.83	2	-3	2	##	-2
STORY-21	C3	TDEADLOAD	0	-2993.17	-57.83	2	-3	2	##	-2
STORY-20	C3	TDEADLOAD	0	-3049.3	-57.84	2	-3	2	##	-2
STORY-19	C3	TDEADLOAD	0	-3105.43	-57.83	2	-3	2	##	-2
STORY-18	C3	TDEADLOAD	0	-3161.56	-57.83	2	-3	2	##	-2
STORY-17	C3	TDEADLOAD	0	-3217.69	-57.84	1	-3	1	##	-2
STORY-16	C3	TDEADLOAD	0	-3273.82	-57.83	1	-3	1	##	-2
STORY-15	C3	TDEADLOAD	0	-3329.95	-57.84	1	-3	1	##	-2
STORY-14	C3	TDEADLOAD	0	-3386.08	-57.83	1	-3	1	##	-2
STORY-13	C3	TDEADLOAD	0	-3442.21	-57.83	1	-3	1	##	-2
STORY-12	C3	TDEADLOAD	0	-3498.34	-57.84	1	-3	1	##	-2
STORY-11	C3	TDEADLOAD	0	-3554.47	-57.83	1	-3	0	##	-3
STORY-10	C3	TDEADLOAD	0	-3610.6	-57.84	1	-3	0	##	-1
STORY-9	C3	TDEADLOAD	0	-3666.73	-57.83	1	-3	-0	##	-4
STORY-8	C3	TDEADLOAD	0	-3722.86	-57.84	1	-4	-1	##	-3
STORY-7	C3	TDEADLOAD	0	-3778.99	-57.83	1	-2	-1	-9	-1
STORY-6	C3	TDEADLOAD	0	-3835.12	-65.87	0	-1	-0	##	-5
STORY-5	C3	TDEADLOAD	0	-3891.25	-82.28	0	-2	-0	##	-2
STORY-4	C3	TDEADLOAD	0	-3947.38	-85.64	0	-1	-1	##	-4
STORY-3	C3	TDEADLOAD	0	-4003.51	-84.32	0	-1	-1	##	2
STORY-2	C3	TDEADLOAD	0	-4059.64	-82.28	0	-2	0	##	-3
GROUND	C3	TDEADLOAD	0	-4255.4	-82.21	0	-2	1	##	-1
CELLAR	C3	TDEADLOAD	0	-4330.44	-75.04	0	-1	0	0	0

Tributary Area

Story	ObjectLab	ObjectType	TribArea	RLLF	Tributary A
TOPAR	C3	Column	390.53	0.8076	390.53
ROOF	C3	Column	780.75	0.4954	390.22
STORY-71	C3	Column	1171.28	0.4	390.53
STORY-70	C3	Column	1561.66	0.4	390.38
STORY-69	C3	Column	1952.18	0.4	390.52
MECH3	C3	Column	2295.92	0.4	343.74
STORY-67	C3	Column	2640.46	0.4	344.54
STORY-66	C3	Column	3030.82	0.4	390.36
STORY-65	C3	Column	3421.24	0.4	390.42
STORY-64	C3	Column	3811.64	0.4	390.4
STORY-63	C3	Column	4202.06	0.4	390.42
STORY-62	C3	Column	4592.48	0.4	390.41
STORY-61	C3	Column	4982.9	0.4	390.41
STORY-60	C3	Column	5373.32	0.4	390.41
STORY-59	C3	Column	5763.74	0.4	390.42
STORY-58	C3	Column	6154.16	0.4	390.41
STORY-57	C3	Column	6544.58	0.4	390.42
STORY-56	C3	Column	6935.0	0.4	390.41
STORY-55	C3	Column	7325.42	0.4	390.42
STORY-54	C3	Column	7715.84	0.4	390.41
STORY-53	C3	Column	8106.26	0.4	390.42
STORY-52	C3	Column	8496.68	0.4	390.41
STORY-51	C3	Column	8887.1	0.4	390.42
STORY-50	C3	Column	9277.52	0.4	390.41
STORY-49	C3	Column	9667.94	0.4	390.42
STORY-48	C3	Column	10058.36	0.4	390.41
STORY-47	C3	Column	10448.78	0.4	390.42
STORY-46	C3	Column	10839.2	0.4	390.41
STORY-45	C3	Column	11229.62	0.4	390.42
STORY-44	C3	Column	11620.04	0.4	390.41
STORY-43	C3	Column	12010.46	0.4	390.42
STORY-42	C3	Column	12400.88	0.4	390.41
STORY-41	C3	Column	12791.3	0.4	390.42
STORY-40	C3	Column	13181.72	0.4	390.41
STORY-39	C3	Column	13572.14	0.4	390.42
STORY-38	C3	Column	13962.56	0.4	390.41
MECH2	C3	Column	14440.4	0.4	344.52
STORY-36	C3	Column	14784.71	0.4	344.31
STORY-35	C3	Column	15182.6	0.4	397.89
STORY-34	C3	Column	15580.49	0.4	397.89
STORY-33	C3	Column	15978.39	0.4	397.9
STORY-32	C3	Column	16376.28	0.4	397.89
STORY-31	C3	Column	16774.18	0.4	397.9
STORY-30	C3	Column	17172.07	0.4	397.89
STORY-29	C3	Column	17569.96	0.4	397.89
STORY-28	C3	Column	17967.86	0.4	397.9
STORY-27	C3	Column	18365.75	0.4	397.89
STORY-26	C3	Column	18763.64	0.4	397.89
STORY-25	C3	Column	19161.51	0.4	397.87
STORY-24	C3	Column	19559.37	0.4	397.86
STORY-23	C3	Column	19957.22	0.4	397.85
STORY-22	C3	Column	20355.08	0.4	397.86
STORY-21	C3	Column	20752.94	0.4	397.86
STORY-20	C3	Column	21150.79	0.4	397.85
STORY-19	C3	Column	21548.65	0.4	397.86
STORY-18	C3	Column	21946.5	0.4	397.85
STORY-17	C3	Column	22344.36	0.4	397.86
STORY-16	C3	Column	22742.21	0.4	397.85
STORY-15	C3	Column	23140.07	0.4	397.86
STORY-14	C3	Column	23537.93	0.4	397.86
STORY-13	C3	Column	23935.79	0.4	397.86
STORY-12	C3	Column	24333.65	0.4	397.86
STORY-11	C3	Column	24731.51	0.4	397.86
STORY-10	C3	Column	25129.37	0.4	397.86
STORY-9	C3	Column	25527.25	0.4	397.88
STORY-8	C3	Column	25925.11	0.4	397.86
STORY-7	C3	Column	26322.96	0.4	397.85
STORY-6	C3	Column	26653.8	0.4	330.84
STORY-5	C3	Column	26984.56	0.4	330.76
STORY-4	C3	Column	27315.36	0.4	330.8
STORY-3	C3	Column	27646.16	0.4	330.8
STORY-2	C3	Column	27976.99	0.4	330.83
GROUND	C3	Column	28307.83	0.4	330.84
CELLAR	C3	Column	28638.68	0.4	330.85



Column Axial Load - Schematic

Project : 22 Thames Street

Column C6 (C3)-Exterior

Tributary area (Schematic) From Etabs

B.H	FL	STORY HEIGHT (ft)	EQUIV SECTION AREA (sq ft)		SLAB THK. (in)	TRIBUTARY AREA		Accum. Trib. (ft2)	ADD LOADS		K Element Factor	DSTRB. LOAD		DEAD LOAD		LIVE L. REDUCTION		WITH LIVE LOAD REDUCTION								factored Stress (ks)	Con. C (ksi)	Ratio		
			(B)	(D)		(ft2)	(m2)		DEAD (kips)	LIVE (kips)		SDL (lb/ft2)	LL (lb/ft2)	COLMN (kips)	SLAB (kips)	RED. F.	RED L.L.(kips)	FLOOR LOAD				SUMMATION LOAD								
																	DL (kips)	LL (kips)	SERV.L (kips)	FACT. L (kips)	DL (kips)	LL (kips)	SERV.L (kips)	FACT. L (kips)						
TOPAR		38.5	18	15.95	15.95	9	397.89	37.0	397.9	0	0	4	20	40	10.00	52.72	0.626	9.96	10.0	0.0	0.0	0.0	12.0	10.0	0.0	10.0	12.0	0.0	8	
ROOF		9.67	18	15.95	15.95	9	397.89	37.0	795.8	0	0	4	20	400	2.36	52.72	1.000	159.16	55.1	10.0	65.0	82.0	66.1	102.0	75.0	94.0	0.4	8	4.6%	
STORY-71		9.67	18	15.95	15.95	9	397.89	37.0	1193.7	0	0	4	20	40	2.36	52.72	0.467	7.43	55.1	159.2	214.2	320.8	120.2	169.1	289.3	414.8	1.6	8	20.4%	
STORY-70		9.67	18	15.95	15.95	9	397.89	37.0	1591.6	0	0	4	20	40	2.36	52.72	0.438	6.97	55.1	7.4	62.5	78.0	175.3	176.6	351.8	482.8	1.9	8	24.2%	
STORY-69		9.67	18	15.95	15.95	9	397.89	37.0	1989.5	0	0	4	20	40	2.36	52.72	0.418	6.66	55.1	7.0	62.1	77.3	230.3	183.5	413.9	570.0	2.2	8	28.0%	
MECH3		16	18	15.95	15.95	9	397.89	37.0	2387.3	0	0	4	20	40	4.04	52.72	0.403	6.42	56.8	6.7	63.4	78.8	287.1	190.2	477.3	648.8	2.6	8	31.9%	
STORY-67		10.92	18	15.95	15.95	12	397.89	37.0	2785.2	0	0	4	20	150	2.63	67.64	1.000	59.68	55.3	6.4	61.8	76.7	342.4	196.6	539.0	725.5	2.9	8	35.7%	
STORY-66		9.67	24	21.26	21.26	9	397.89	37.0	3183.1	0	0	4	20	40	4.20	52.72	0.400	6.37	71.8	59.7	131.5	181.7	414.3	256.3	670.6	907.2	2.0	8	25.1%	
STORY-65		9.67	24	21.26	21.26	9	397.89	37.0	3581.0	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	471.2	262.7	733.9	985.7	2.2	8	27.2%	
STORY-64		9.67	24	21.26	21.26	9	397.89	37.0	3978.9	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	528.1	269.0	797.1	1064.2	2.4	8	29.4%	
STORY-63		9.67	24	21.26	21.26	9	397.89	37.0	4376.8	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	585.1	275.4	860.4	1142.7	2.5	8	31.6%	
STORY-62		9.67	24	21.26	21.26	9	397.89	37.0	4774.7	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	642.0	281.7	923.7	1221.2	2.7	8	33.8%	
STORY-61		9.67	24	21.26	21.26	9	397.89	37.0	5172.6	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	698.9	288.1	987.0	1299.7	2.9	8	35.9%	
STORY-60		9.67	24	21.26	21.26	9	397.89	37.0	5570.5	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	755.8	294.5	1050.3	1378.2	3.0	8	38.1%	
STORY-59		9.67	24	21.26	21.26	9	397.89	37.0	5968.4	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	812.7	300.8	1113.6	1456.6	3.2	8	40.3%	
STORY-58		9.67	24	21.26	21.26	9	397.89	37.0	6366.2	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	869.7	307.2	1176.9	1535.1	3.4	8	42.4%	
STORY-57		9.67	24	21.26	21.26	9	397.89	37.0	6764.1	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	926.6	313.6	1240.2	1613.6	3.6	8	44.6%	
STORY-56		9.67	24	21.26	21.26	9	397.89	37.0	7162.0	0	0	4	20	40	4.20	52.72	0.400	6.37	56.9	6.4	63.3	78.5	983.5	319.9	1303.5	1692.1	3.7	8	46.8%	
STORY-55		9.67	24	21.26	21.26	8	397.89	37.0	7559.9	0	0	4	20	40	4.24	47.75	0.400	6.37	57.0	6.4	63.3	78.5	1040.5	326.3	1366.8	1770.7	3.9	10	39.2%	
STORY-54		9.67	24	21.26	21.26	8	397.89	37.0	7957.8	0	0	4	20	40	4.24	47.75	0.400	6.37	57.0	6.4	63.3	78.5	1092.5	332.7	1425.1	1843.2	4.1	10	40.8%	
STORY-53		9.67	24	21.26	21.26	8	397.89	37.0	8355.7	0	0	4	20	40	4.24	47.75	0.400	6.37	57.0	6.4	63.3	78.5	1144.4	339.0	1483.5	1915.8	4.2	10	42.4%	
STORY-52		9.67	24	21.26	21.26	8	397.89	37.0	8753.6	0	0	4	20	40	4.24	47.75	0.400	6.37	57.0	6.4	63.3	78.5	1196.4	345.4	1541.8	1988.4	4.4	10	44.0%	
STORY-51		9.67	24	21.26	21.26	8	397.89	37.0	9151.5	0	0	4	20	40	4.24	47.75	0.400	6.37	57.0	6.4	63.3	78.5	1248.4	351.8	1600.2	2060.9	4.6	10	45.6%	
STORY-50		9.67	30	26.58	26.58	8	397.89	37.0	9549.4	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1302.8	358.1	1660.9	2136.4	3.0	10	30.2%	
STORY-49		9.67	30	26.58	26.58	8	397.89	37.0	9947.3	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1357.2	364.5	1721.7	2211.8	3.1	10	31.3%	
STORY-48		9.67	30	26.58	26.58	8	397.89	37.0	10345.1	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1411.5	370.9	1782.4	2287.2	3.2	10	32.4%	
STORY-47		9.67	30	26.58	26.58	8	397.89	37.0	10743.0	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1465.9	377.2	1843.1	2362.7	3.3	10	33.4%	
STORY-46		9.67	30	26.58	26.58	8	397.89	37.0	11140.9	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1520.3	383.6	1903.9	2438.1	3.5	10	34.5%	
STORY-45		9.67	30	26.58	26.58	8	397.89	37.0	11538.8	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1574.7	390.0	1964.6	2513.5	3.6	10	35.6%	
STORY-44		9.67	30	26.58	26.58	8	397.89	37.0	11936.7	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1629.0	396.3	2025.4	2589.0	3.7	10	36.6%	
STORY-43		9.67	30	26.58	26.58	8	397.89	37.0	12334.6	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1683.4	402.7	2086.1	2664.4	3.8	10	37.7%	
STORY-42		9.67	30	26.58	26.58	8	397.89	37.0	12732.5	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1737.8	409.1	2146.8	2739.8	3.9	10	38.8%	
STORY-41		9.67	30	26.58	26.58	8	397.89	37.0	13130.4	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1792.1	415.4	2207.6	2815.3	4.0	10	39.8%	
STORY-40		9.67	30	26.58	26.58	8	397.89	37.0	13528.3	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1846.5	421.8	2268.3	2890.7	4.1	10	40.9%	
STORY-39		9.67	30	26.58	26.58	8	397.89	37.0	13926.2	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1900.9	428.2	2329.1	2966.1	4.2	10	42.0%	
STORY-38		9.67	30	26.58	26.58	8	397.89	37.0	14324.1	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	1955.3	434.5	2389.8	3041.6	4.3	10	43.1%	
MECH2		16	30	26.58	26.58	8	397.89	37.0	14722.0	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2014.3	440.9	2455.2	3122.6	4.4	12	36.8%	
STORY-36		10.92	30	26.58	26.58	12	397.89	37.0	15119.9	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2069.3	447.3	2516.6	3198.8	4.5	12	37.7%	
STORY-35		9.67	30	26.58	26.58	8	397.89	37.0	15517.8	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2123.7	453.7	2577.9	3274.9	4.6	12	38.6%	
STORY-34		9.67	30	26.58	26.58	8	397.89	37.0	15915.7	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2178.1	460.1	2639.1	3351.0	4.7	12	39.5%	
STORY-33		9.67	30	26.58	26.58	8	397.89	37.0	16313.6	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2232.5	466.5	2700.3	3427.1	4.8	12	40.4%	
STORY-32		9.67	30	26.58	26.58	8	397.89	37.0	16711.5	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2286.9	472.9	2761.5	3503.2	4.9	12	41.3%	
STORY-31		9.67	30	26.58	26.58	8	397.89	37.0	17109.4	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2341.3	479.3	2822.9	3579.3	5.0	12	42.2%	
STORY-30		9.67	30	26.58	26.58	8	397.89	37.0	17507.3	0	0	4	20	40	6.63	47.75	0.400	6.37	54.4	6.4	60.7	75.4	2395.7	485.7	2884.7	3655.5	5.1	12	43.1%	
STORY-29		9.67	36	31.90	31.90	8	397.89	37.0																						

C7 (C4) - Column Load

Story	Column	Load	Loc	Accumulated							
				Loads	Floor Loads	V2	V3	T	M2	M3	
TOPAR	C4	TDEADLOAD		0	-72.31	-72.31	-0	2	-0	23	-5
ROOF	C4	TDEADLOAD		0	-131.04	-58.73	-1	4	0	21	-5
STORY-71	C4	TDEADLOAD		0	-189.77	-58.73	-1	4	0	20	-5
STORY-70	C4	TDEADLOAD		0	-248.5	-58.73	-1	5	0	26	-5
STORY-69	C4	TDEADLOAD		0	-307.22	-58.72	-1	1	0	-2	-7
MECH3	C4	TDEADLOAD		0	15.58	322.8	-0	-1	0	-9	-4
STORY-67	C4	TDEADLOAD		0	510.15	494.57	-1	1	0	15	-5
STORY-66	C4	TDEADLOAD		0	451.42	-58.73	-1	5	0	8	-5

Tributary Area

Story	ObjectLabel	ObjectType	TribArea	RLLF	Tributary A
BASE	3727	Point	12203.69	0.4	12203.69
TOPAR	C4	Column	376.98	0.8184	-11826.7
ROOF	C4	Column	754.04	0.5168	377.06
STORY-71	C4	Column	1131.02	0.4	376.98
STORY-70	C4	Column	1508.05	0.4	377.03
STORY-69	C4	Column	1885.06	0.4	377.01
MECH3	C4	Column	0	1	-1885.06
STORY-67	C4	Column	0	1	0

**Axial Forces - Total Dead Load (Column C7)**

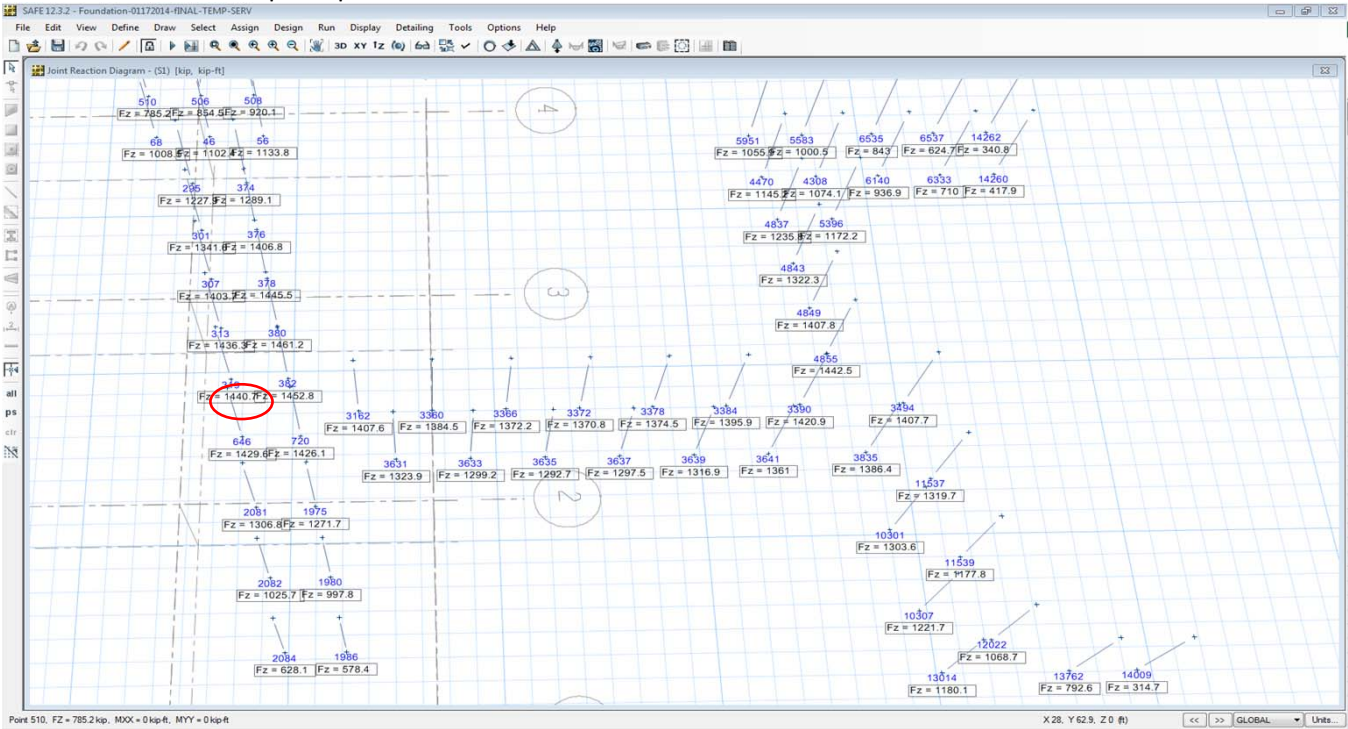
The chart displays axial forces for Column C7 across various levels. The Y-axis represents axial force from -3000 to 1500. The X-axis shows levels from TOPAR to GROUND. Two data series are plotted: Accumulated Loads (red squares) and Floor Loads (blue diamonds). A significant peak in floor load is observed at the MECH3 level, reaching approximately 1000. Accumulated loads show a steady downward trend from the top levels, reaching about -2658.83 at the GROUND level.

Story	Column	Load	Loc	Accumulated Loads	Floor Loads	Tributary Area	RLLF	Tributary A			
STORY-47	C4	TDEADLOAD		0	-614.04	STORY-48	C4	Column	3063.26	0.4	369.57
STORY-46	C4	TDEADLOAD		0	-667.16	STORY-47	C4	Column	3432.83	0.4	369.57
STORY-45	C4	TDEADLOAD		0	-720.28	STORY-46	C4	Column	3802.41	0.4	369.58
STORY-44	C4	TDEADLOAD		0	-773.4	STORY-45	C4	Column	4171.98	0.4	369.57
STORY-43	C4	TDEADLOAD		0	-826.52	STORY-44	C4	Column	4541.55	0.4	369.57
STORY-42	C4	TDEADLOAD		0	-879.64	STORY-43	C4	Column	4911.12	0.4	369.57
STORY-41	C4	TDEADLOAD		0	-932.76	STORY-42	C4	Column	5280.69	0.4	369.57
STORY-40	C4	TDEADLOAD		0	-985.88	STORY-41	C4	Column	5650.26	0.4	369.57
STORY-39	C4	TDEADLOAD		0	-1039	STORY-40	C4	Column	6019.82	0.4	369.56
STORY-38	C4	TDEADLOAD		0	-1092.11	STORY-39	C4	Column	6389.41	0.4	369.59
MECH2	C4	TDEADLOAD		0	-175.79	STORY-38	C4	Column	6758.87	0.4	369.46
STORY-36	C4	TDEADLOAD		0	-302.15	MECH2	C4	Column	685.14	0.5719	-6073.73
STORY-35	C4	TDEADLOAD		0	-360.97	STORY-36	C4	Column	0	1	-685.14
STORY-34	C4	TDEADLOAD		0	-419.79	STORY-35	C4	Column	0	1	0
STORY-33	C4	TDEADLOAD		0	-478.61	STORY-34	C4	Column	0	1	0
STORY-32	C4	TDEADLOAD		0	-537.43	STORY-33	C4	Column	7.43	1	7.43
STORY-31	C4	TDEADLOAD		0	-596.25	STORY-32	C4	Column	377.03	0.8184	369.6
STORY-30	C4	TDEADLOAD		0	-655.07	STORY-31	C4	Column	746.63	0.5227	369.6
STORY-29	C4	TDEADLOAD		0	-713.89	STORY-30	C4	Column	1116.23	0.4	369.6
STORY-28	C4	TDEADLOAD		0	-772.71	STORY-29	C4	Column	1485.83	0.4	369.6
STORY-27	C4	TDEADLOAD		0	-831.53	STORY-28	C4	Column	1855.42	0.4	369.59
STORY-26	C4	TDEADLOAD		0	-890.35	STORY-27	C4	Column	2225.02	0.4	369.6
STORY-25	C4	TDEADLOAD		0	-949.16	STORY-26	C4	Column	2594.62	0.4	369.6
STORY-24	C4	TDEADLOAD		0	-1007.98	STORY-25	C4	Column	2964.22	0.4	369.6
STORY-23	C4	TDEADLOAD		0	-1066.8	STORY-24	C4	Column	3333.82	0.4	369.6
STORY-22	C4	TDEADLOAD		0	-1125.62	STORY-23	C4	Column	3703.42	0.4	369.6
STORY-21	C4	TDEADLOAD		0	-1184.44	STORY-22	C4	Column	4073.02	0.4	369.6
STORY-20	C4	TDEADLOAD		0	-1243.26	STORY-21	C4	Column	4442.62	0.4	369.6
STORY-19	C4	TDEADLOAD		0	-1302.08	STORY-20	C4	Column	4812.22	0.4	369.6
STORY-18	C4	TDEADLOAD		0	-1360.9	STORY-19	C4	Column	5181.82	0.4	369.6
STORY-17	C4	TDEADLOAD		0	-1419.72	STORY-18	C4	Column	5551.42	0.4	369.6
STORY-16	C4	TDEADLOAD		0	-1478.54	STORY-17	C4	Column	5921.02	0.4	369.6
STORY-15	C4	TDEADLOAD		0	-1537.36	STORY-16	C4	Column	6290.62	0.4	369.6
STORY-14	C4	TDEADLOAD		0	-1596.18	STORY-15	C4	Column	6660.22	0.4	369.6
STORY-13	C4	TDEADLOAD		0	-1655	STORY-14	C4	Column	7029.82	0.4	369.6
STORY-12	C4	TDEADLOAD		0	-1713.82	STORY-13	C4	Column	7399.42	0.4	369.6
STORY-11	C4	TDEADLOAD		0	-1772.64	STORY-12	C4	Column	7769.02	0.4	369.6
STORY-10	C4	TDEADLOAD		0	-1831.46	STORY-11	C4	Column	8138.62	0.4	369.6
STORY-9	C4	TDEADLOAD		0	-1890.28	STORY-10	C4	Column	8508.22	0.4	369.6
STORY-8	C4	TDEADLOAD		0	-1949.09	STORY-9	C4	Column	8877.81	0.4	369.59
STORY-7	C4	TDEADLOAD		0	-2007.91	STORY-8	C4	Column	9247.39	0.4	369.58
STORY-6	C4	TDEADLOAD		0	-2084.85	STORY-7	C4	Column	9616.94	0.4	369.55
STORY-5	C4	TDEADLOAD		0	-2180.84	STORY-6	C4	Column	9986.44	0.4	369.5
STORY-4	C4	TDEADLOAD		0	-2280.18	STORY-5	C4	Column	10356	0.4	369.56
STORY-3	C4	TDEADLOAD		0	-2378.2	STORY-4	C4	Column	10725.52	0.4	369.52
STORY-2	C4	TDEADLOAD		0	-2474.19	STORY-3	C4	Column	11095.06	0.4	369.54
GROUND	C4	TDEADLOAD		0	-2570.09	STORY-2	C4	Column	11464.6	0.4	369.54
CELLAR	C4	TDEADLOAD		0	-2658.83	GROUND	C4	Column	11834.16	0.4	369.56

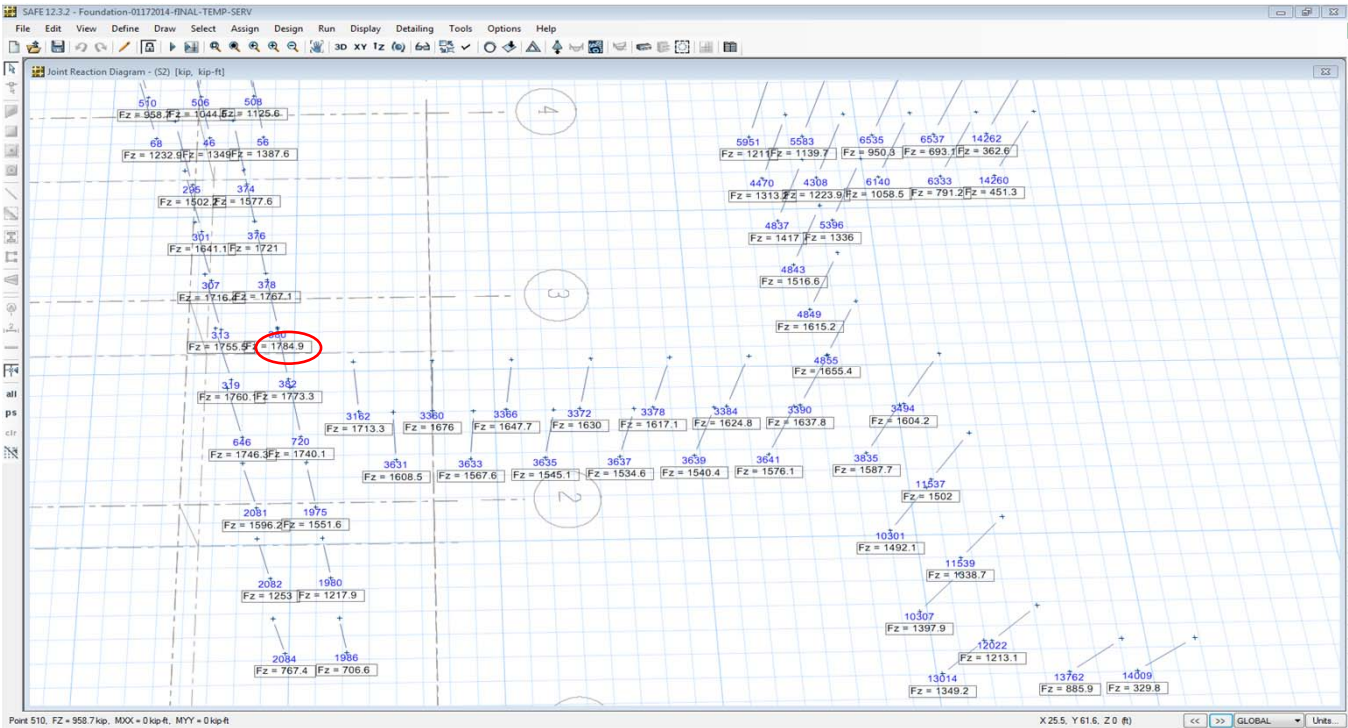


## 22 Thames Street (Vertical loads at caissons underneath of shear walls)

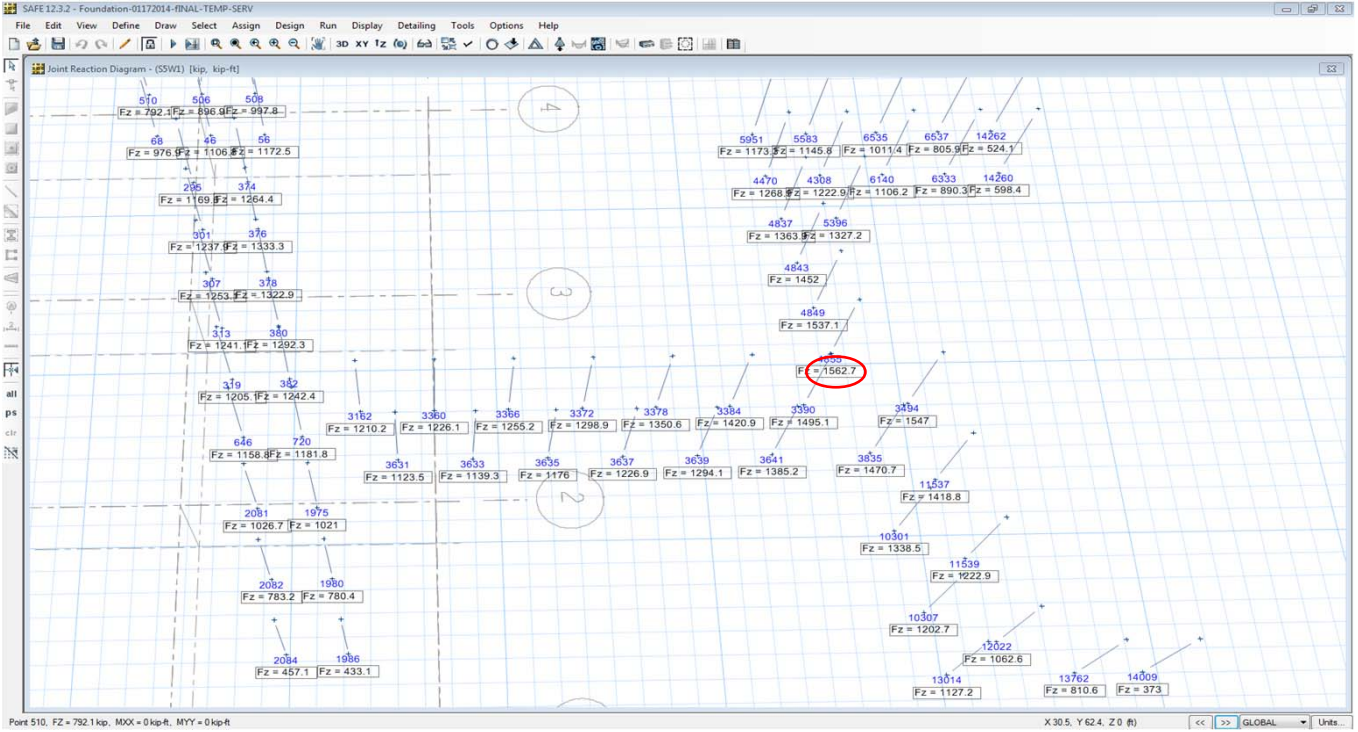
### 1. S1: Dead Loads + Superimposed Dead Loads



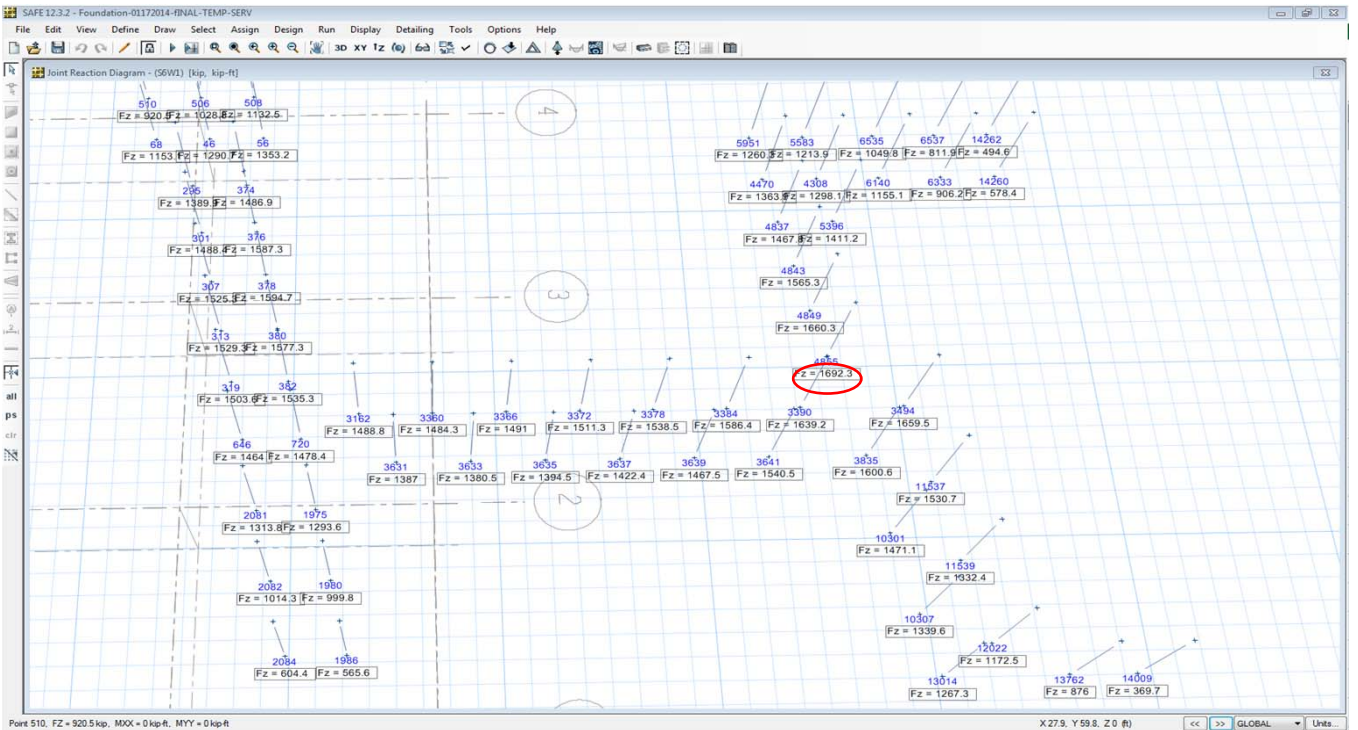
### 2. S2: DL + LL



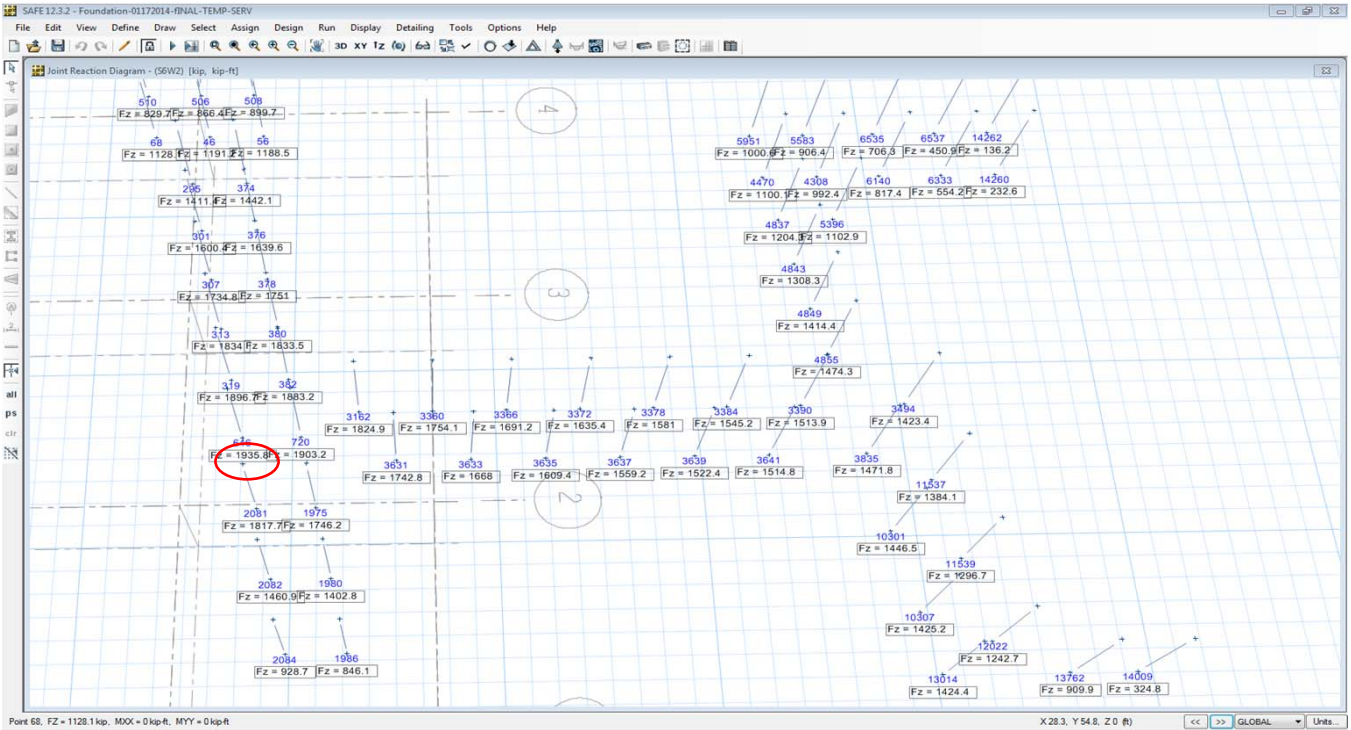
### 3. S3: DL + Roof Live



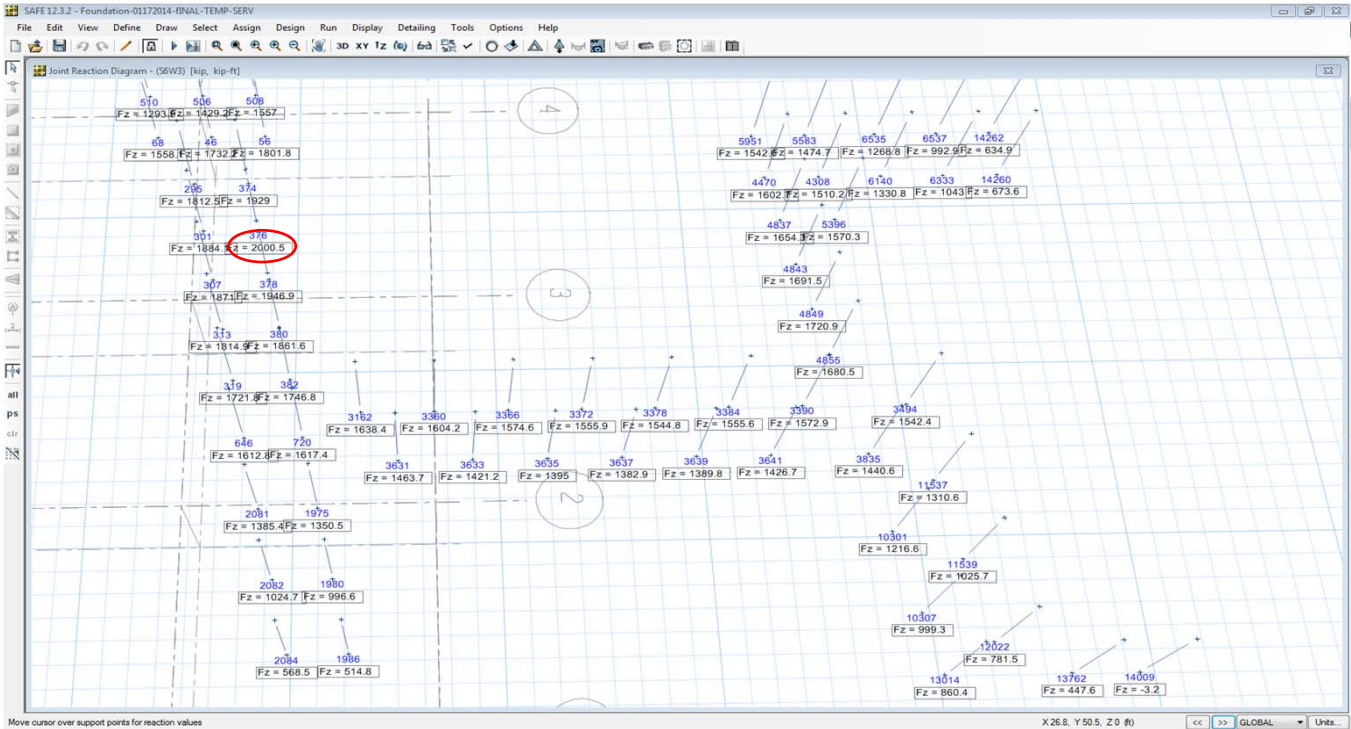
### 4. S6W1: DL + 0.75L + 0.75W Wind W1



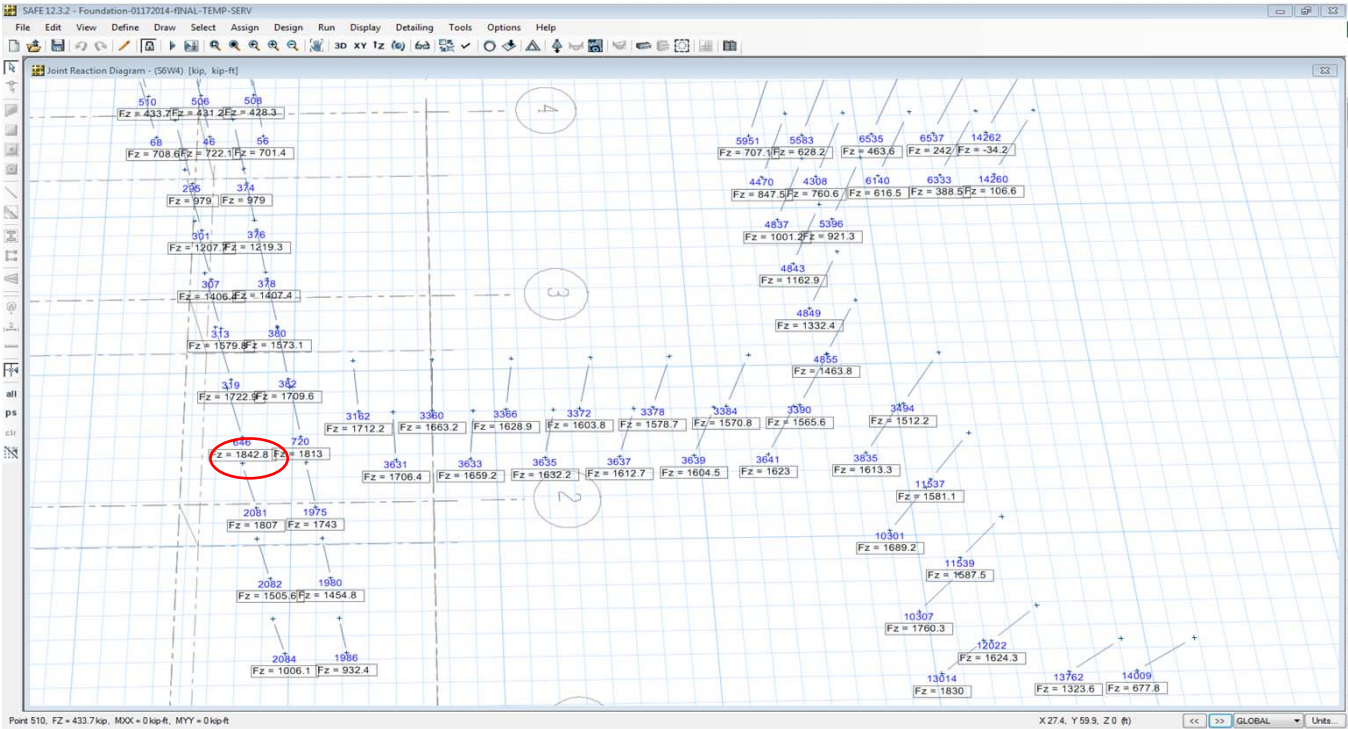
### 5. S6W2: DL + 0.75L + 0.75Wind W2



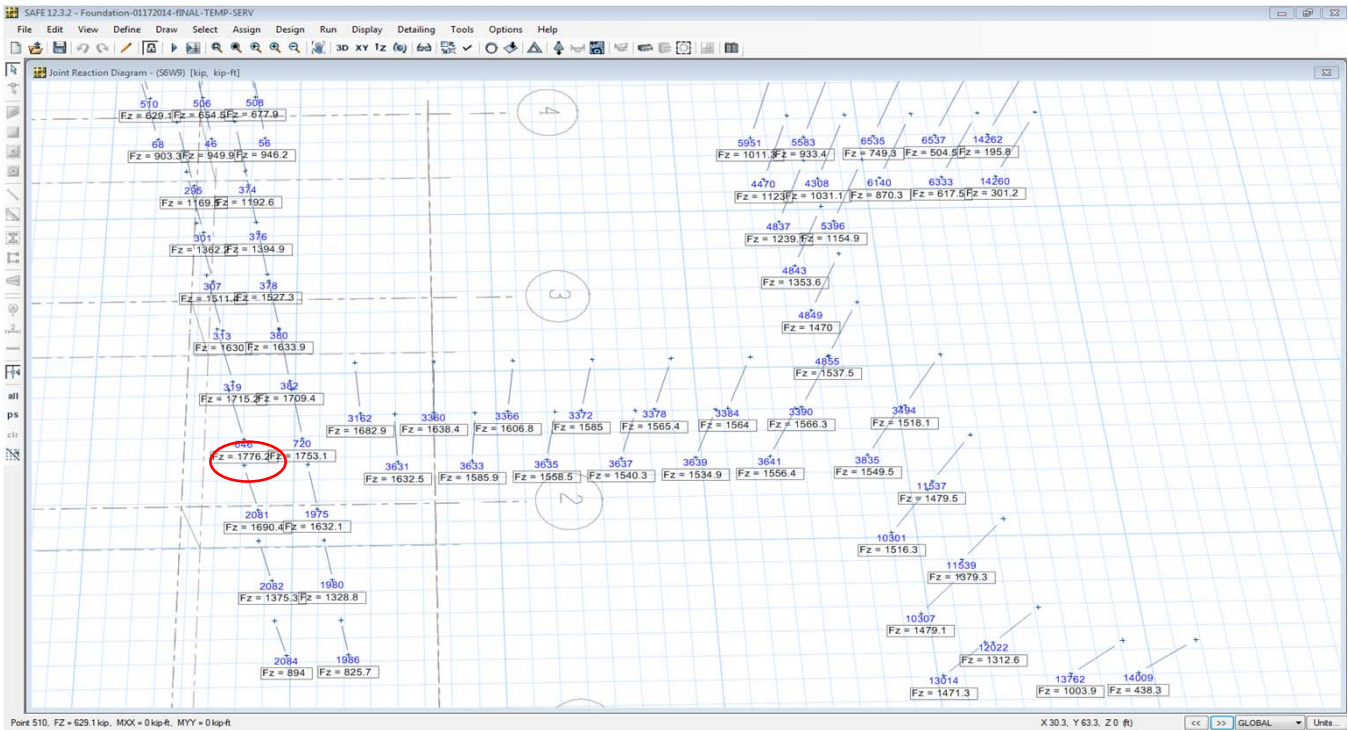
### 6. S6W3: DL + 0.75L + 0.75Wind W3



### 7. S6W4: DL + 0.75L + 0.75Wind W4

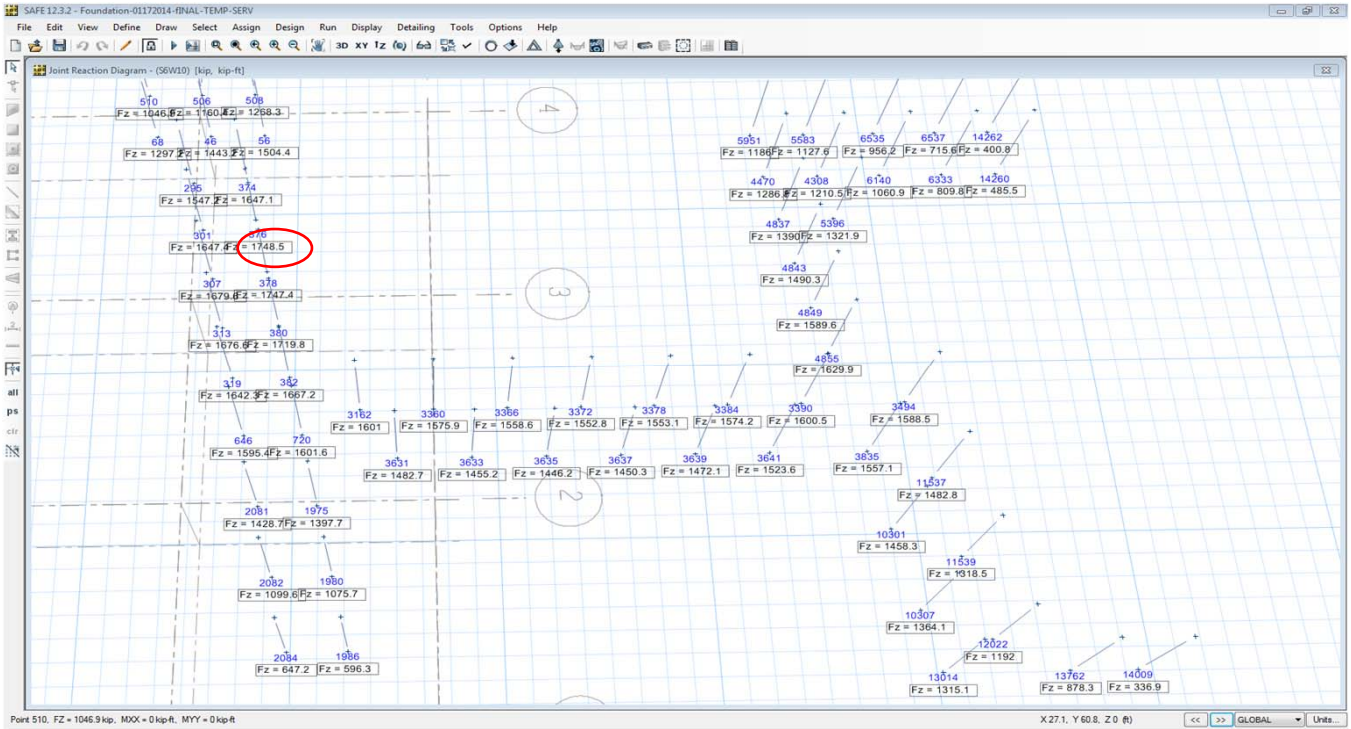


### 8. S6W9: DL + 0.75L + 0.75Wind W9

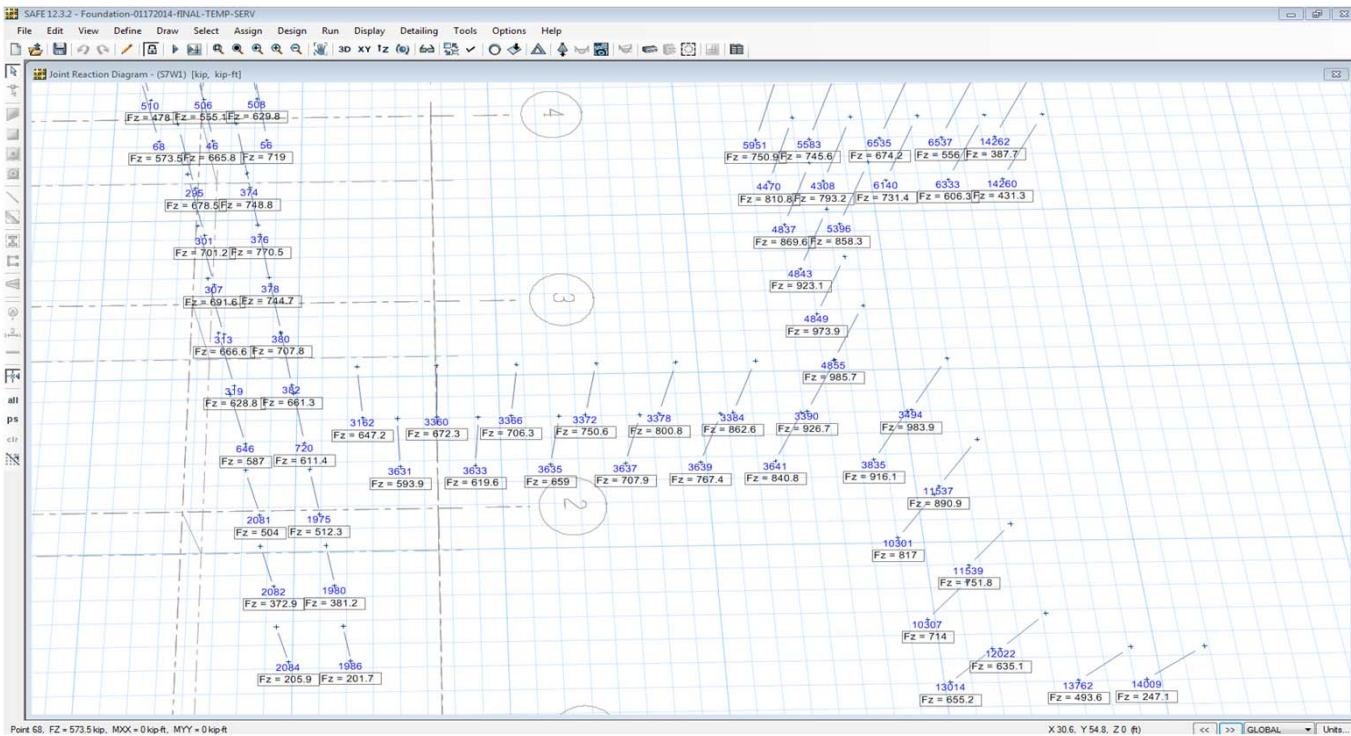




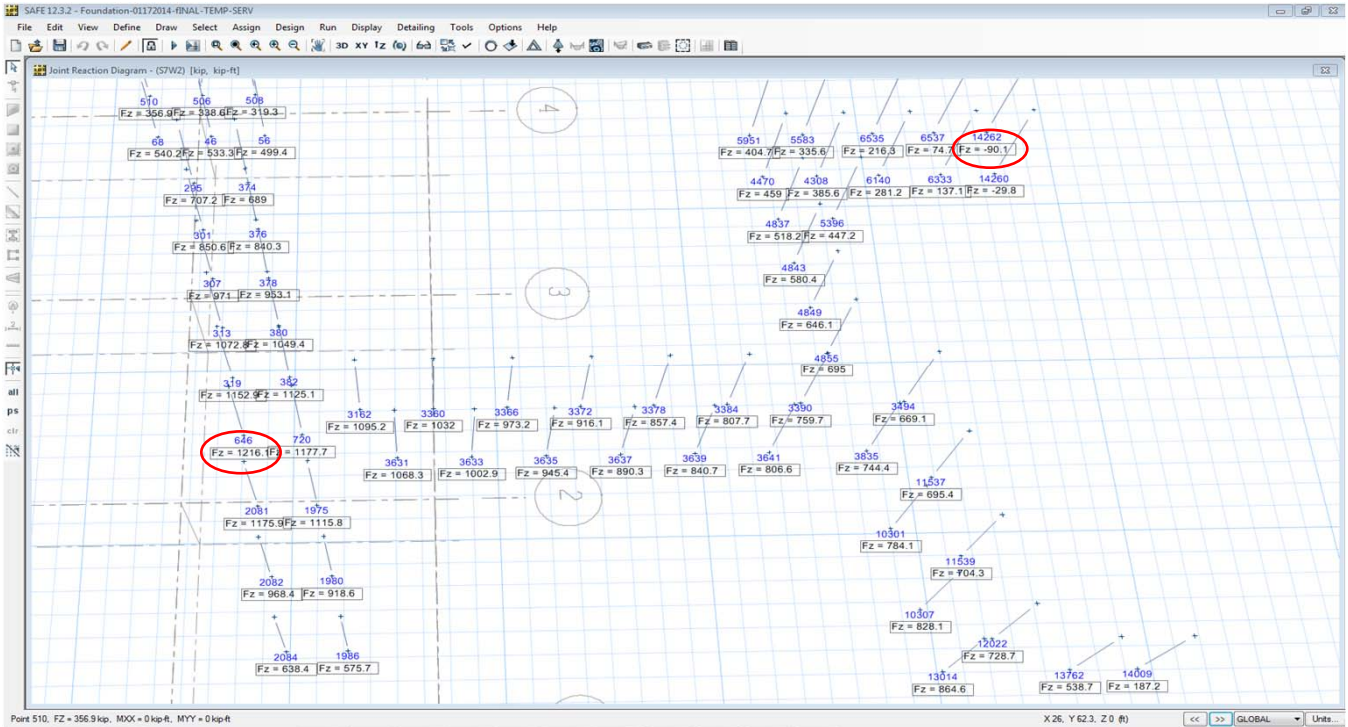
### 9. S6W10: DL + 0.75L + 0.75Wind W10



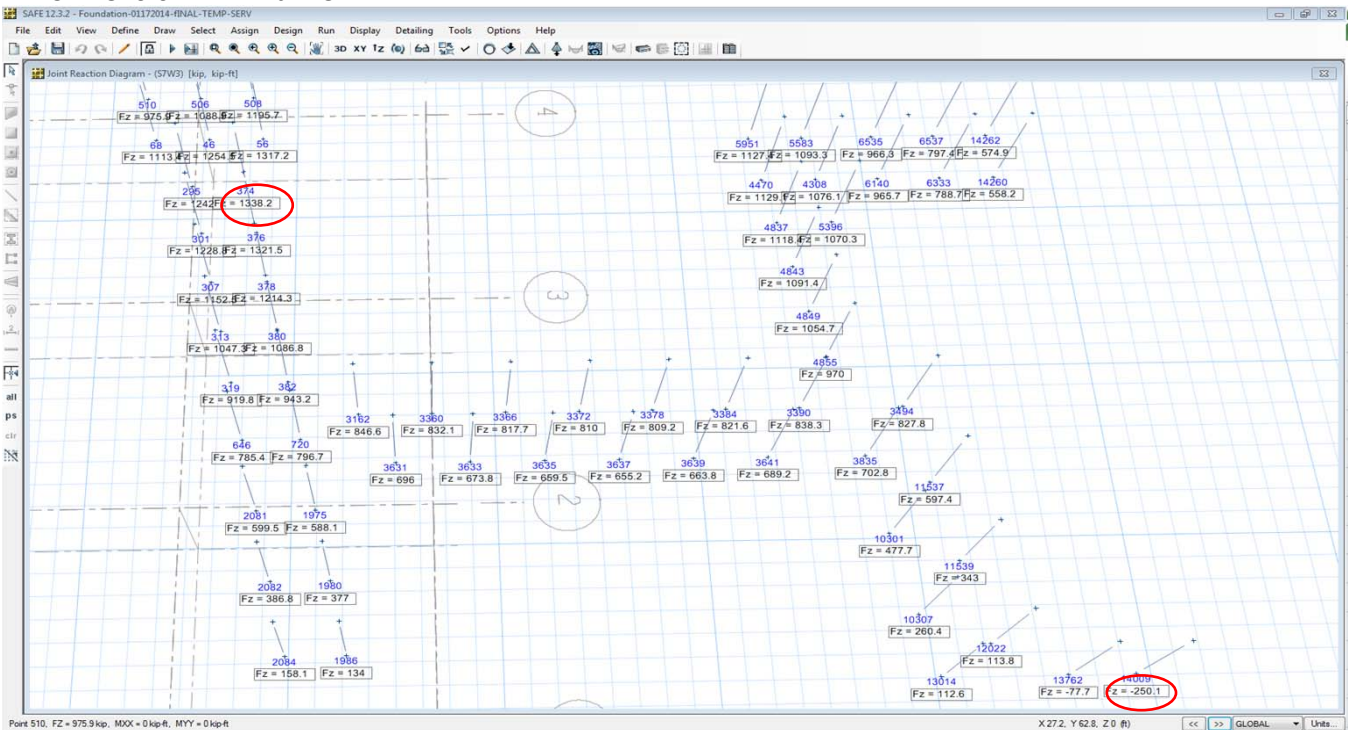
### 10. S7W1: 0.6DL + Wind W1



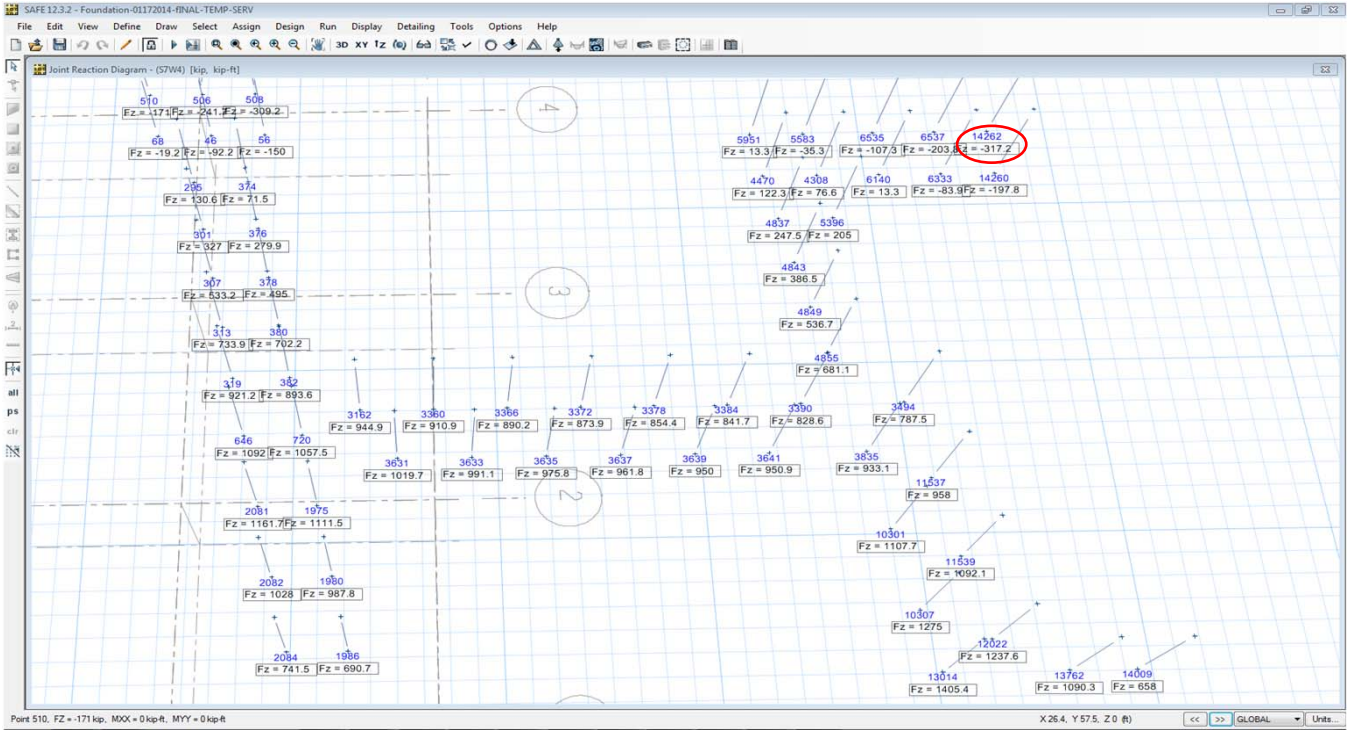
### 11. S7W2: 0.6DL + Wind W2



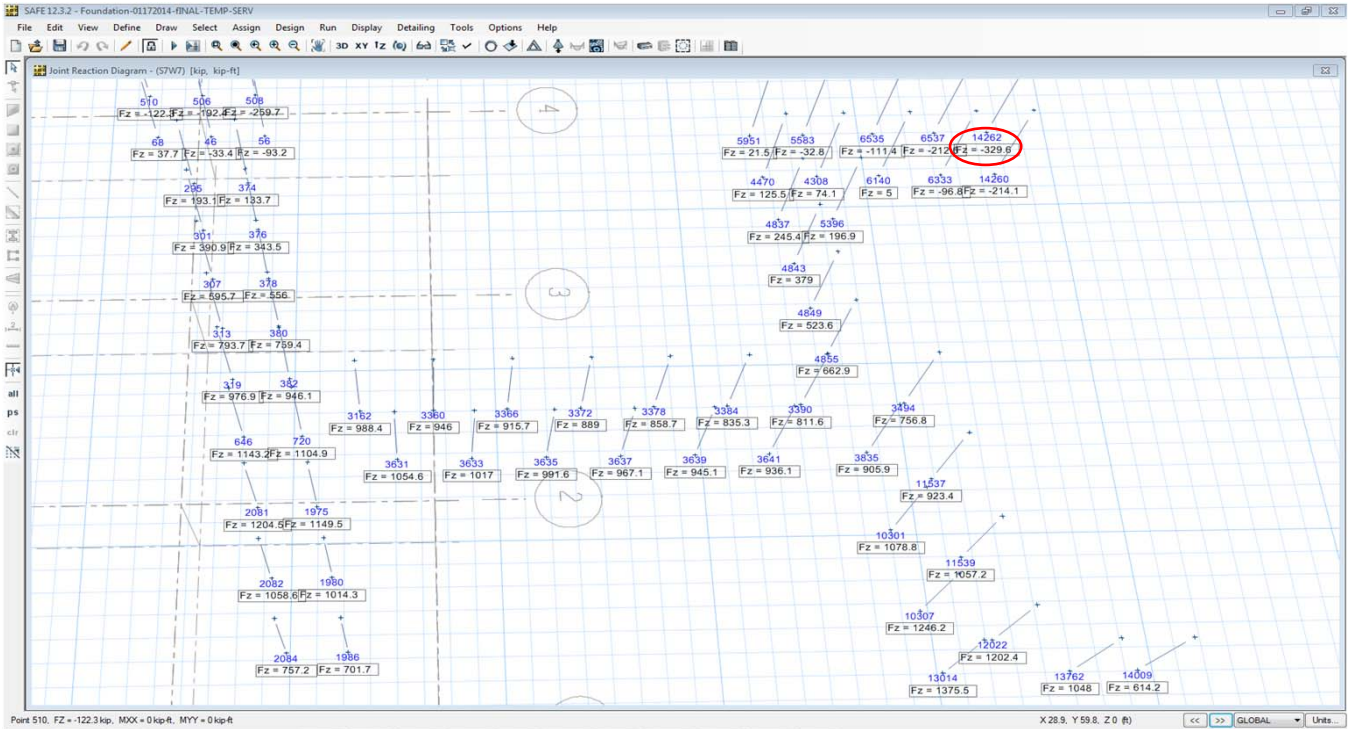
### 12. S7W3: 0.6DL + Wind W3



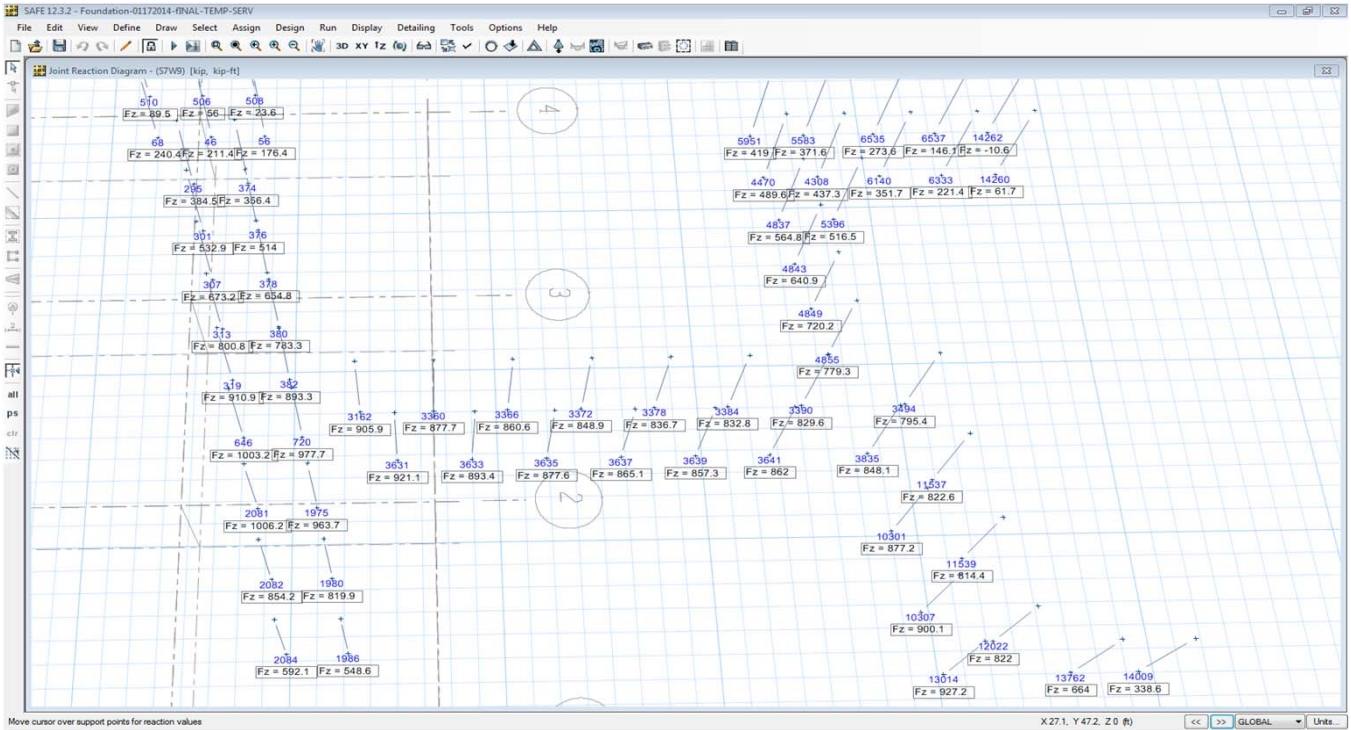
### 13. S7W4: 0.6DL + Wind W4



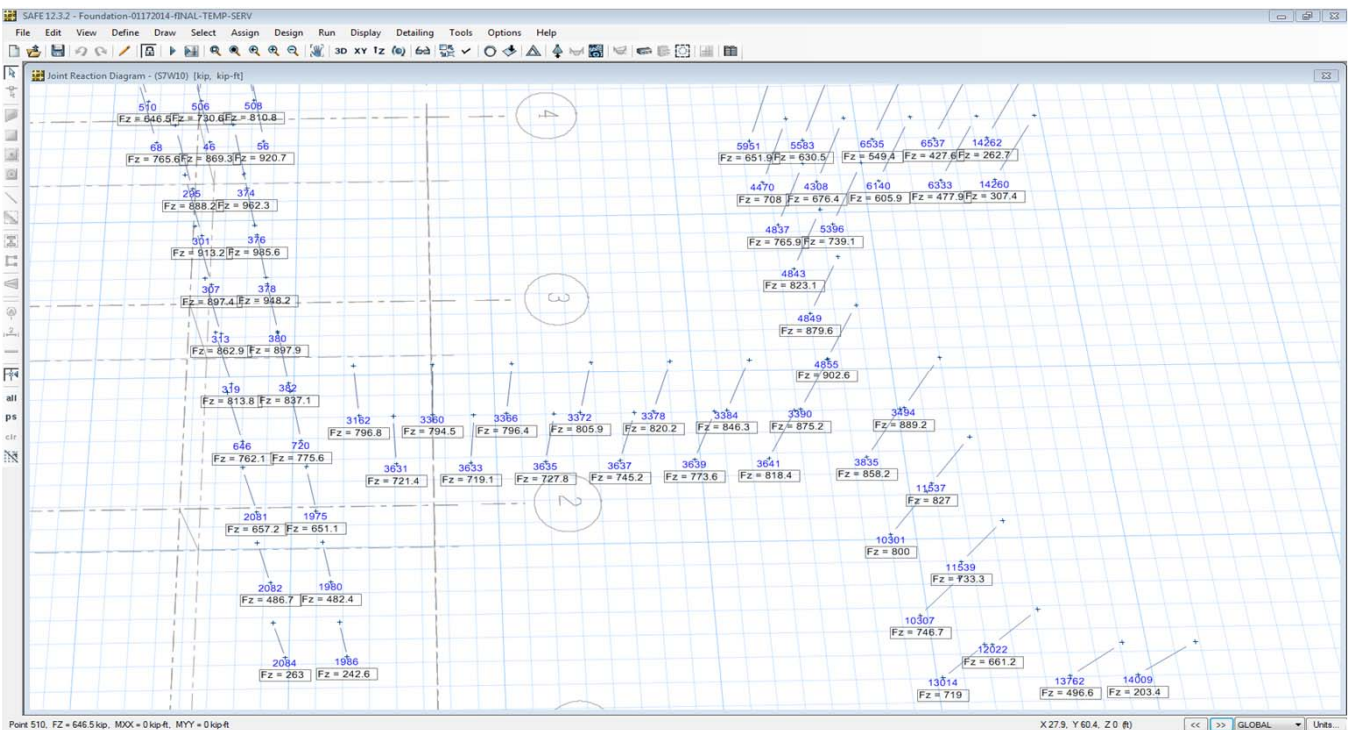
### 14. S7W7: 0.6DL + Wind W7



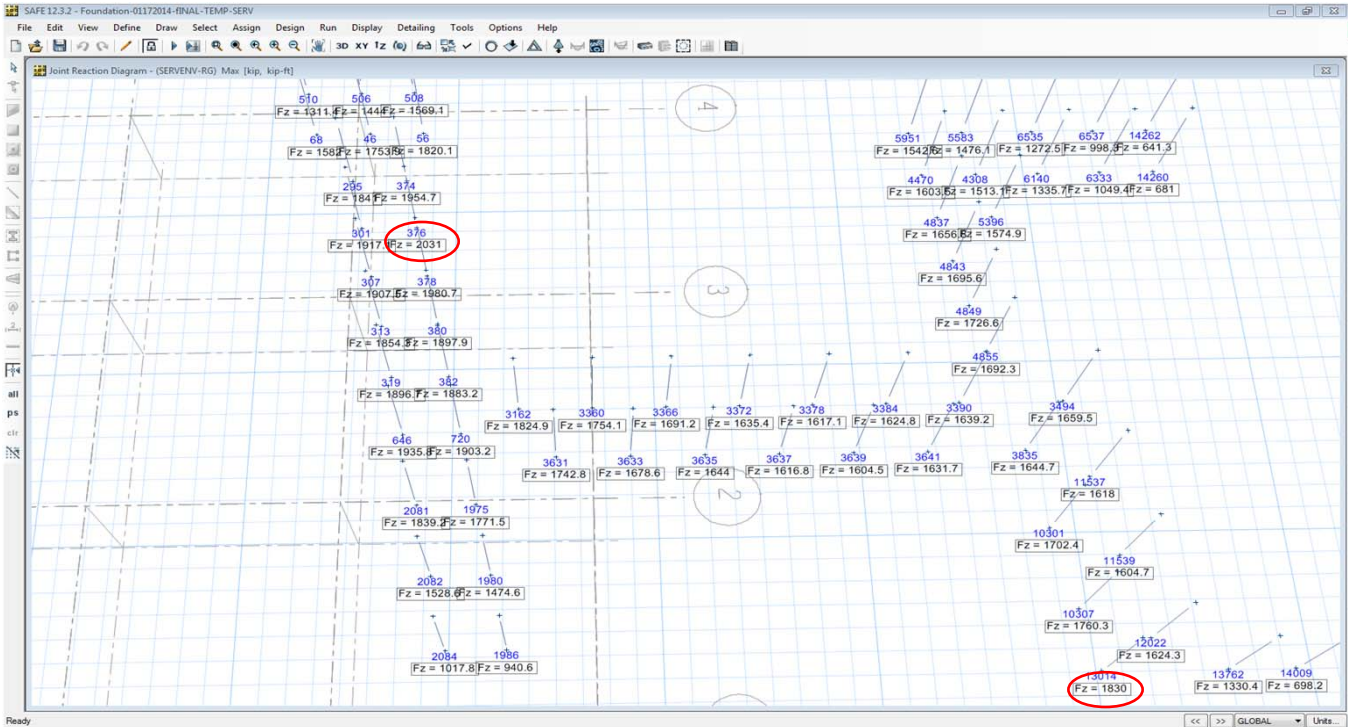
### 15. S7W9: 0.6DL + Wind W9



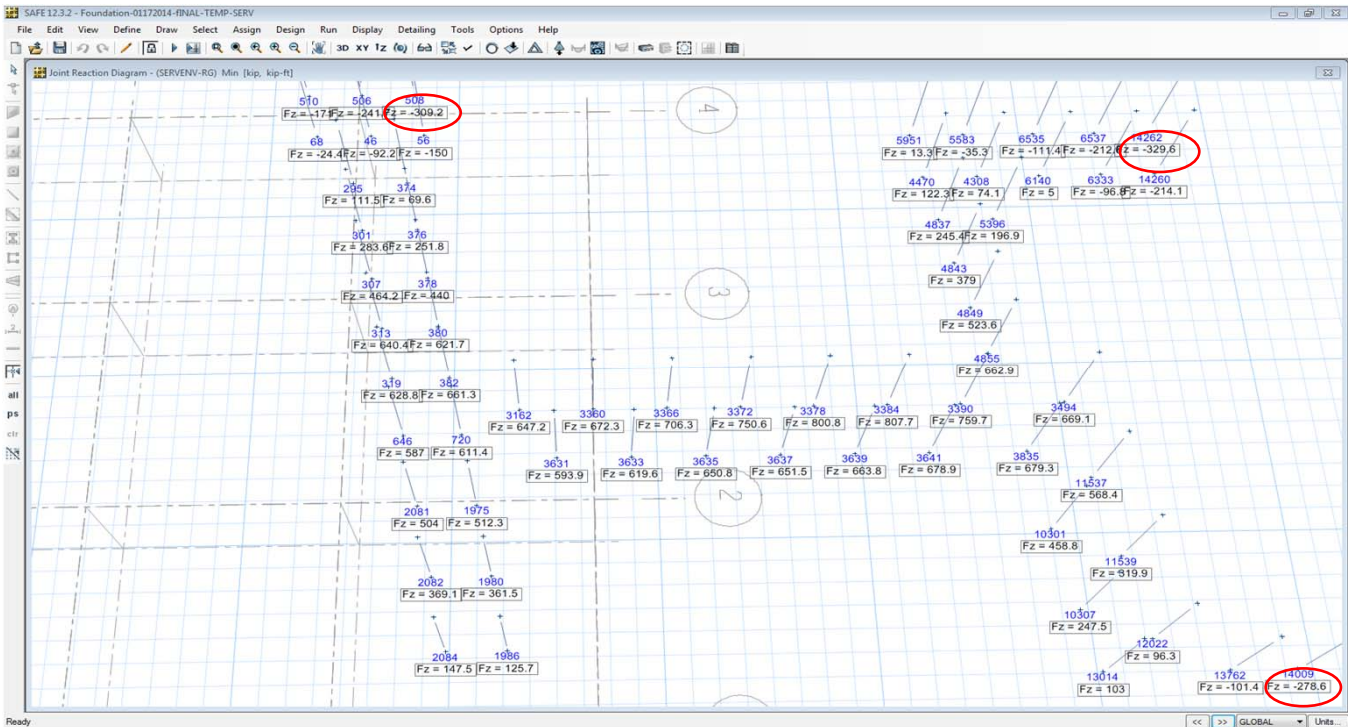
### 16. S7W10: 0.6DL + Wind W10



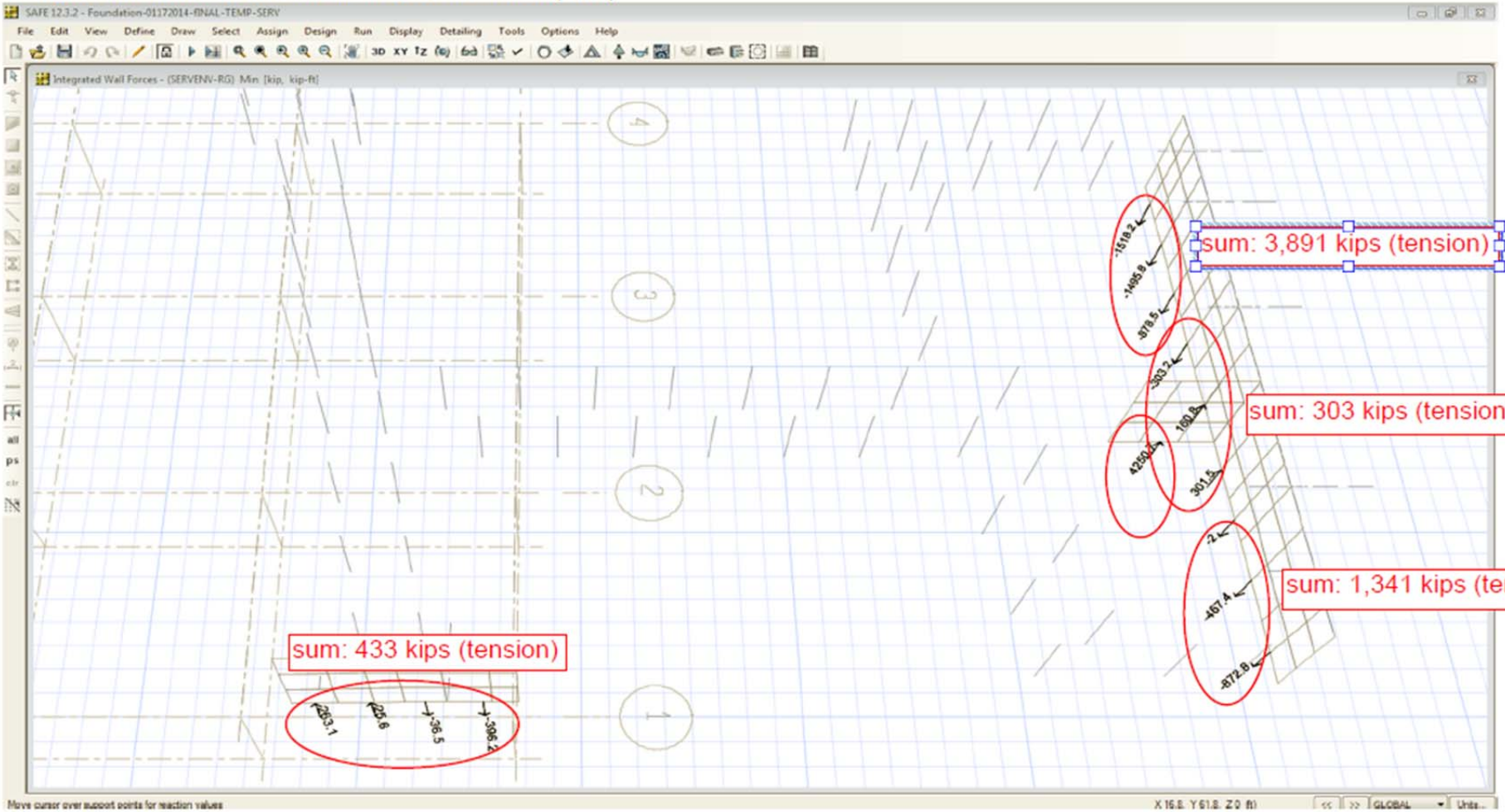
## 17. SERVICE LOAD :ENVELOP (MAX)



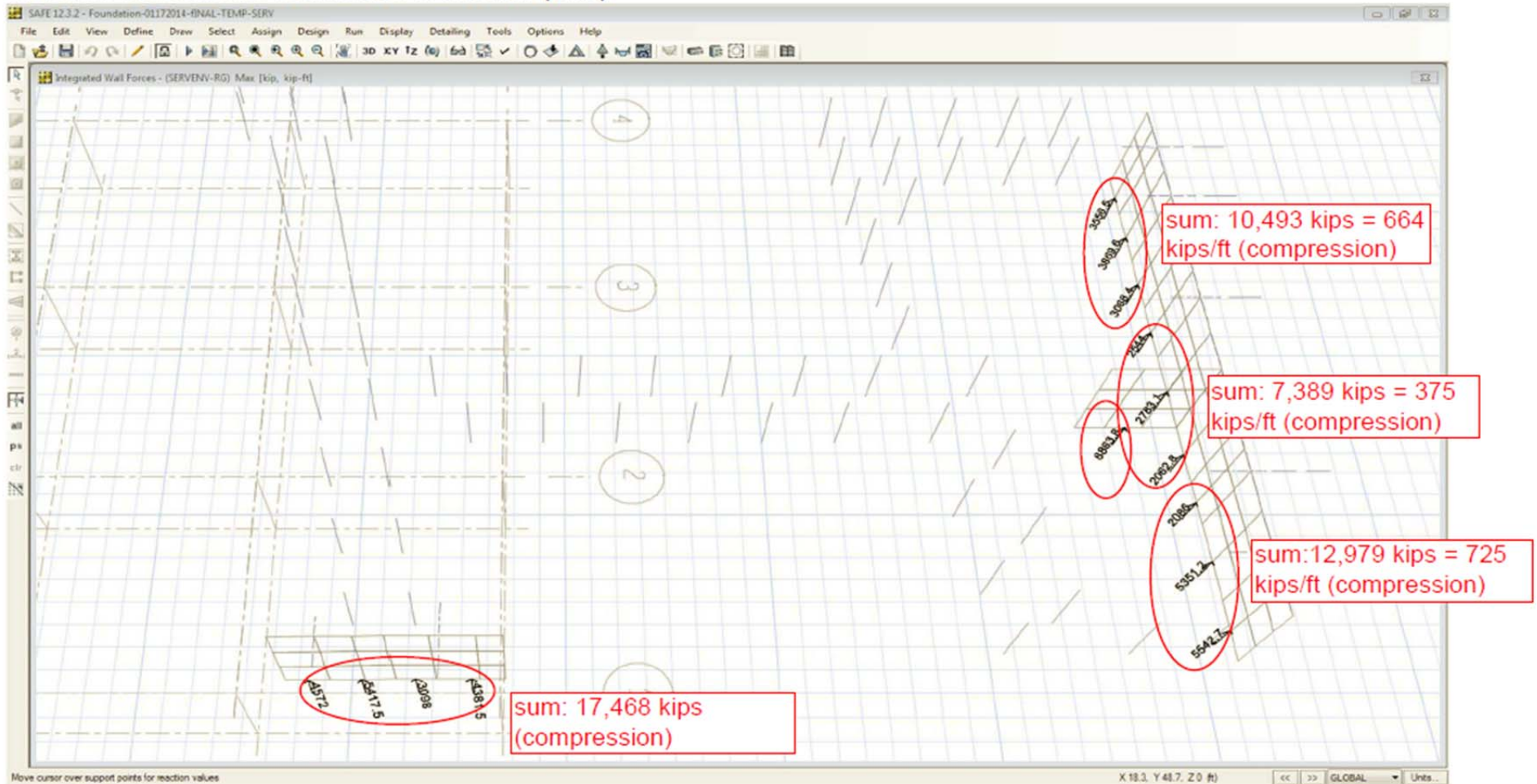
## 18. SERVICE LOAD :ENVELOP (MIN)



# Reactions at Secant Wall : SERVICE LOAD-ENVELOP (MIN)



## Reactions at Secant Wall : SERVICE LOAD-ENVELOP (MAX)



MEMBER NAME : TYPE A

1. General Information

Design Code	Unit System	F'c	Fy	Fys
ACI318-08	lbf, in	8,000psi	60,000psi	60,000psi

2. Section

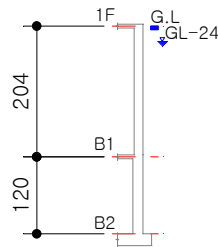
Basewall Type	Cover	Basewall Width
1 Way	1.500in	-

-	Name	H(ft)	THK.(in)
1	B1	17.00	14.00
2	B2	10.00	16.00

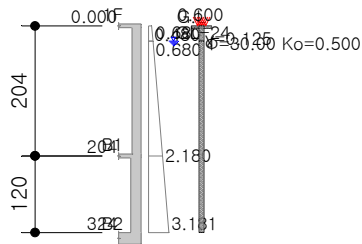
3. Boundary Condition

Top	Bottom	Left	Right
Pin(0.000)	Pin(0.000)	-	-

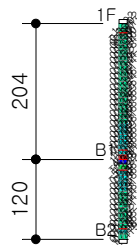


4. Load

Surcharge	1st Floor Level	Water Level	Soil Factor	Water Factor
0.600kip/ft <sup>2</sup>	GL+0.000ft	GL-2.000ft	1.600	1.600



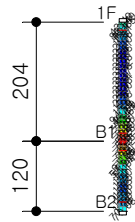
5. Moment Diagram



6. Shear Force Diagram



MEMBER NAME : TYPE A



7. Check Moment & Shear Capacity

(1) Story : B1

Rebar	Top	Center	Bottom	Min.
<b>M<sub>u</sub> (kip.in/ft)</b>	<b>43.49</b>	<b>317</b>	<b>-552</b>	<b>ρ = 0.00180</b>
#5	@18.00	@7.620	@4.320	@18.00(11.25)
#5+6	@18.00	@9.169	@5.197	@18.00(11.25)
#6	@18.00	@10.76	@6.098	@18.00(11.25)
#6+7	@18.00	@12.65	@7.167	@18.00(11.25)
#7	@18.00	@14.59	@8.270	@18.00(11.25)

-	Top	Bottom
V <sub>u</sub> (kip)	-6.448	17.79
V <sub>u,critic</sub> (kip)	-5.825	13.99
V <sub>s</sub> (kip)	0.000	0.000
∅V <sub>c</sub> (kip)	19.02	19.02
∅V <sub>s</sub> (kip)	0.000	0.000
∅V <sub>n</sub> (kip)	19.02	19.02
V <sub>u,critic</sub> / ∅V <sub>n</sub>	0.306	0.736
Rebar (in)	-	-

(2) Story : B2

Rebar	Top	Center	Bottom	Min.
<b>M<sub>u</sub> (kip.in/ft)</b>	<b>-543</b>	<b>185</b>	<b>70.08</b>	<b>ρ = 0.00180</b>
#5	@5.147	@15.29	@18.00	@18.00(11.25)
#5+6	@6.197	@18.00	@18.00	@18.00(11.25)
#6	@7.272	@18.00	@18.00	@18.00(11.25)
#6+7	@8.554	@18.00	@18.00	@18.00(11.25)
#7	@9.870	@18.00	@18.00	@18.00(11.25)

-	Top	Bottom
V <sub>u</sub> (kip)	-17.44	9.063
V <sub>u,critic</sub> (kip)	-13.86	4.800
V <sub>s</sub> (kip)	0.000	0.000
∅V <sub>c</sub> (kip)	22.24	22.24
∅V <sub>s</sub> (kip)	0.000	0.000
∅V <sub>n</sub> (kip)	22.24	22.24
V <sub>u,critic</sub> / ∅V <sub>n</sub>	0.623	0.216
Rebar (in)	-	-