STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

February 20, 2024

Carolyn Seeley
Smartlink
6 Jasmine Rd
Oxford, MA 01540
carolyn.seeley@smartlinkgroup.com

RE: **EM-ATT-109-240116** – AT&T Mobility, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 548 Green Hollow Road, Plainfield, Connecticut. **Second Notice of Incomplete Request.**

Dear Carolyn Seeley:

The Connecticut Siting Council (Council) received notice of intent to modify the above-referenced facility on January 16, 2024.

On February 16, 2024, the Council issued a letter (enclosed) stating that the request for exempt modification was incomplete because the request did not provide a Mount Analysis (MA) that was consistent with the construction drawings provided with the request and was lacking documentation of the original facility approval. The Council recommended that AT&T provide a mount analysis for the proposed equipment that is stamped and signed by a professional engineer duly licensed in the State of Connecticut and, if applicable, an updated Structural Analysis Report accounting for any required antenna mount modifications, and documentation showing the original facility approval with conditions if any or correspondence with the Town stating that there are no records of the original facility approval.

On February 16, 2024, the Council received an electronic mail with a MA dated June 28, 2023. Council staff reviewed the response to the incomplete request and identified a remaining deficiency. The exempt modification request still lacks documentation of the original facility approval and any conditions of such approval or correspondence with the Town of Plainfield stating that the Town no longer retains records of its decision.

Therefore, the exempt modification request remains incomplete at this time. The Council recommends that AT&T provide documentation showing the original facility approval with conditions if any or correspondence with the Town stating that there are no records of the original facility approval on or before March 20, 2024. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to March 20, 2024. **Please provide an electronic version and one hard copy of the requested information for the incomplete exempt modification to be rendered complete and processed. Please include the Council's exempt modification identification number referenced above with the submittal.**

This notice of incompletion shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

Melanie Bachman
Executive Director

MAB/ANM/laf

From: Carolyn Seeley <carolyn.seeley@smartlinkgroup.com>
Sent: Friday, February 16, 2024 11:27 AM
To: Fontaine, Lisa <Lisa.Fontaine@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: RE: Council Incomplete Letter - EM-ATT-109-240116 - ATT/Green Hollow Rd., Plainfield

Good Morning,

Attached is the requested Mount Analysis dated June 28, 2003 (rev3).

Thanks,

smartlink
10 Church Circle
Annapolis, MD, 21401

Carolyn Seeley
Real Estate Specialist
Carolyn.Seeley@smartlinkgroup.com
c. 978-760-5577
www.smartlinkgroup.com

Link with us.

October 21, 2022
November 16, 2022 (Rev.1)
February 6, 2023 (Rev.2)
June 28, 2023 (Rev.3)

Smartlink, LLC
1997 Annapolis Exchange Pkwy, Suite 200
Annapolis, MD 21401

RE:		
	Site Number:	CT2059
	FA Number:	10035255
	PACE Number:	MRCTB066196
	PT Number:	2051A16NXA
	TEP Project Number:	324711.858774
	Site Name:	PLAINFIELD NORTH
	Site Address:	548 Green Hollow Road Plainfield, CT 06374

To Whom It May Concern:

TEP Northeast (TEP NE) has been authorized by Smartlink, LLC to perform a mount analysis on the existing AT&T antenna/RRH mount to determine its capability of supporting the following additional loading (based on RFDS V3.00 dated 5/19/2023):

- (1) DC6-48-60-18-8F Surge Arrestor (31.4"x10.2"Ø – Wt. = 29 lbs. /each)
- **(2) OPA65R-BU4DA Antennas (48.0"x20.7"x7.7"– Wt. = 46 lbs. /each)**
- **(4) OPA65R-BU8DA Antennas (96.0"x21.0"x7.8" – Wt. = 77 lbs. /each)**
- **(3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each) (Separate Mount)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each) (Separate Mount)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. TEP NE conducted a survey climb and mapping of the existing AT&T antenna mount on October 12, 2022.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2021 with 2022 Connecticut State Building Code, and AT&T Mount Technical Directive – R22.
- TEP NE considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix P of the Connecticut State Building Code, the max basic wind speed for this site is equal to 135 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.17 in was used for this analysis.
- TEP NE considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- TEP NE considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- TEP NE considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.191 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.055.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mounts and threaded rods. TEP NE considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the existing mount **IS CAPABLE** of supporting the proposed installation with the following modifications:

- **Install proposed 2" std. (2.38" O.D.) horizontal pipe secured to the existing pipe masts (typ. of 1 per sector, total of 3).**
- **Install proposed sector frame stabilizer, SitePro1 P/N PRK-SFS (or approved equal) secured to proposed horizontal pipe and tower leg (typ. of 1 per sector, total of 3).**
- **Install proposed sector frame stabilizer, SitePro1 P/N PRK-1245 (or approved equal) secured to existing mount standoff and tower leg (typ. of 1 per sector, total of 3).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	16	LC3	152%	**FAIL**
Modified Mount Rating	45	LC4	69%	**PASS**

This determination was based on the following limitations and assumptions:

1. TEP NE is not responsible for any modifications completed prior to and hereafter which TEP NE was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. TEP NE performed a localized analysis on the mount itself and not on the supporting tower structure.

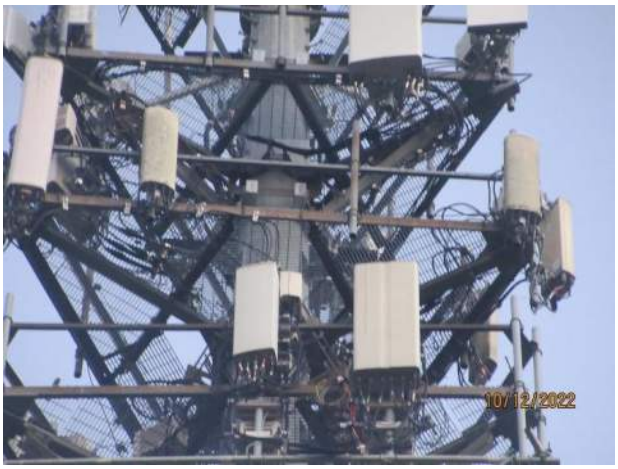
Please feel free to contact our office should you have any questions.

Respectfully Submitted,
TEP Northeast

Michael Cabral
Director

Daniel P. Hamm, PE
Vice President

FIELD PHOTOS:




10/12/2022


10/12/2022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10/12/2022


10/12/2022


10/12/2022

Wind & Ice
Calculations

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM **Checked By:** MSC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\ (z/z_g)^{2/\alpha}$

z=	155	(ft)
z_g=	900	(ft)
α=	9.5	

K_z= 1.388

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}= 1

K_h=	1	
K_c=	1.0	(from Table 2-4)
K_t=		(from Table 2-5)
f=		(from Table 2-5)
z=	155	
z_s=	308	(Mean elevation of base of structure above sea level)
H=		(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	0.99	(from 2.6.8)

(If Category 1 then K_{zt}=1.0)

Category= **1**

2.6.10 Design Ice Thickness

Max Ice Thickness = t_i =	1.00	in
Importance Factor = I=	1.00	(from Table 2-3)
K_{iz} =	1.17	(from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$

t_{iz} = 1.17 in

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM Checked By: MSC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	178	G_h=	0.85
2.6.9.2 Guyed Masts		G_h=	0.85
2.6.9.3 Pole Structures		G_h=	1.1
2.6.9 Appurtenances		G_h=	1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

		K_z=	1.388	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**60.84**	K_e=	0.99	(from 2.6.8)
$q_{z\ (ice)}$=	**8.35**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**3.00**	V_{max}=	135	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM Checked By: MSC

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		$1.2 - 2.8(r_s) \geq 0.85$	$1.4 - 4.0(r_s) \geq 0.90$	$2.0 - 6.0(r_s) \geq 1.25$
Round	**C < 39** (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{-1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.17** in | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.32	1.20	**504**	**81**	**25**
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	4.57	1.29	**1100**	**172**	**54**
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.36	1.20	**120**	**22**	**6**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	**100**	**19**	**5**
DC6 Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	**95**	**17**	**5**
C 6x2-1/2	6.0	12.0	-	0.50	0.50	2.00	**61**		
L 3x3 Angle	3.0	12.0	-	0.25	0.25	2.00	**30**		
L 2-1/2x2-1/2 Angle	2.5	12.0	-	0.21	0.21	2.00	**25**		
HSS 4x4	4.0	12.0	-	0.33	0.33	1.25	**25**		
2" Pipe	2.4	12.0	-	0.20	0.20	1.20	**14**		

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM Checked By: MSC

WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.17 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	504	213	431
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	1100	499	950
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	120	85	111
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	100	82	95

WIND LOADS WITH ICE:

OPA65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.51	2.19	5.02	1.20	1.31	81	38	70
OPA65R-BU8DA Antenna	98.3	23.3	10.1	15.93	6.92	4.21	9.70	1.28	1.49	170	86	149
B5/B12 4449 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.72	1.20	1.20	22	17	21
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	19	16	18

WIND LOADS AT 30 MPH:

OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	25	11	21
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	54	25	47
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM Checked By: MSC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.17	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**504**	**213**	**286**
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	**1100**	**499**	**649**
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	**120**	**85**	**94**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	**100**	**82**	**87**

WIND LOADS WITH ICE:

OPA65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.51	2.19	5.02	1.20	1.31	**81**	**38**	**49**
OPA65R-BU8DA Antenna	98.3	23.3	10.1	15.93	6.92	4.21	9.70	1.28	1.49	**170**	**86**	**107**
B5/B12 4449 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.72	1.20	1.20	**22**	**17**	**18**
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	**19**	**16**	**17**

WIND LOADS AT 30 MPH:

OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	**25**	**11**	**14**
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	**54**	**25**	**32**
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	**6**	**4**	**5**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	**5**	**4**	**4**

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM Checked By: MSC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.17	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	504	213	213
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	1100	499	499
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	120	85	85
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	100	82	82

WIND LOADS WITH ICE:

OPA65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.51	2.19	5.02	1.20	1.31	81	38	38
OPA65R-BU8DA Antenna	98.3	23.3	10.1	15.93	6.92	4.21	9.70	1.28	1.49	170	86	86
B5/B12 4449 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.72	1.20	1.20	22	17	17
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	19	16	16

WIND LOADS AT 30 MPH:

OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	25	11	11
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	54	25	25
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM Checked By: MSC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.17	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	504	213	286
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	1100	499	649
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	120	85	94
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	100	82	87

WIND LOADS WITH ICE:

OPA65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.51	2.19	5.02	1.20	1.31	81	38	49
OPA65R-BU8DA Antenna	98.3	23.3	10.1	15.93	6.92	4.21	9.70	1.28	1.49	170	86	107
B5/B12 4449 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.72	1.20	1.20	22	17	18
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	19	16	17

WIND LOADS AT 30 MPH:

OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	25	11	14
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	54	25	32
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM Checked By: MSC

WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.17 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	504	213	431
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	1100	499	950
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	120	85	111
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	100	82	95

WIND LOADS WITH ICE:

OPA65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.51	2.19	5.02	1.20	1.31	81	38	70
OPA65R-BU8DA Antenna	98.3	23.3	10.1	15.93	6.92	4.21	9.70	1.28	1.49	170	86	149
B5/B12 4449 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.72	1.20	1.20	22	17	21
B2/B66A 8843 RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	19	16	18

WIND LOADS AT 30 MPH:

OPA65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	25	11	21
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	54	25	47
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5

Date: 6/28/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM **Checked By:** MSC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.17 in.
Density of ice: 56 pcf

OPA65R-BU4DA Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		133 lbs
Weight of object:	46.0 lbs	
Combined weight of ice and object:		179 lbs

OPA65R-BU8DA Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	21.0	
Depth (in):	7.8	
Total weight of ice on object:		270 lbs
Weight of object:	77.0 lbs	
Combined weight of ice and object:		347 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	17.9	
Width (in):	13.2	
Depth (in):	9.4	
Total weight of ice on object:		37 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		110 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		32 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		104 lbs

DC6 Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	31.4	
Diameter(in):	10.2	
Total weight of ice on object:		43 lbs
Weight of object:	29 lbs	
Combined weight of ice and object:		72 lbs

C 6x2-1/2

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	2.5	
Per foot weight of ice on object:		11 plf

HSS 4x4

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		10 plf

L 3x3 Angles

Weight of ice based on total radial SF area:

Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		8 plf

L 2-1/2x2-1/2 Angles

Weight of ice based on total radial SF area:

Height (in):	2.5	
Width (in):	2.5	
Per foot weight of ice on object:		7 plf

2" Pipe

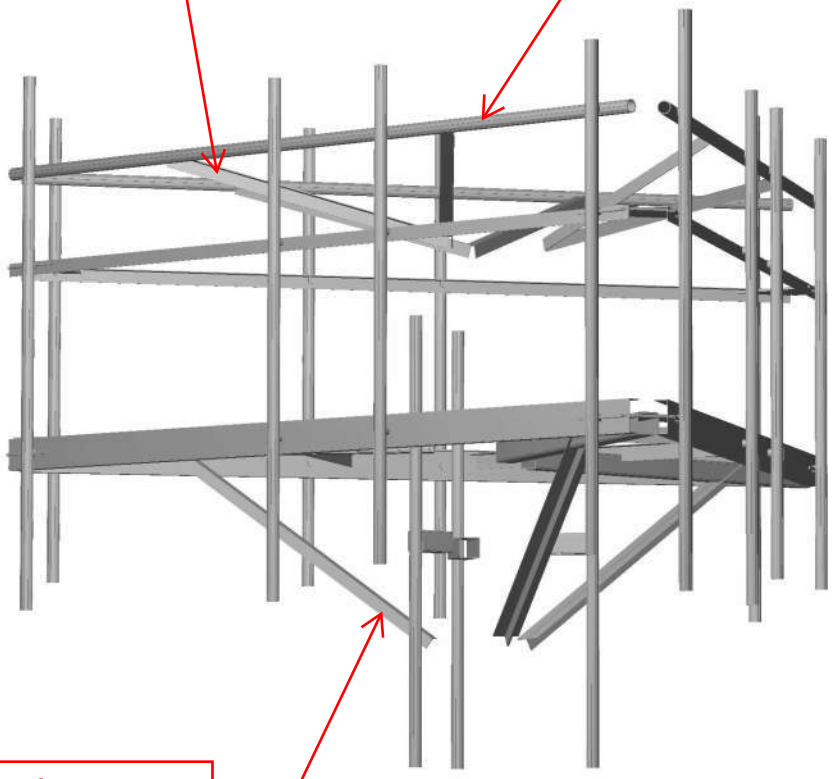
Per foot weight of ice:

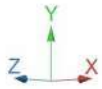
diameter (in):	2.38	
Per foot weight of ice on object:		5 plf

Mount Calculations
(Modified Conditions)

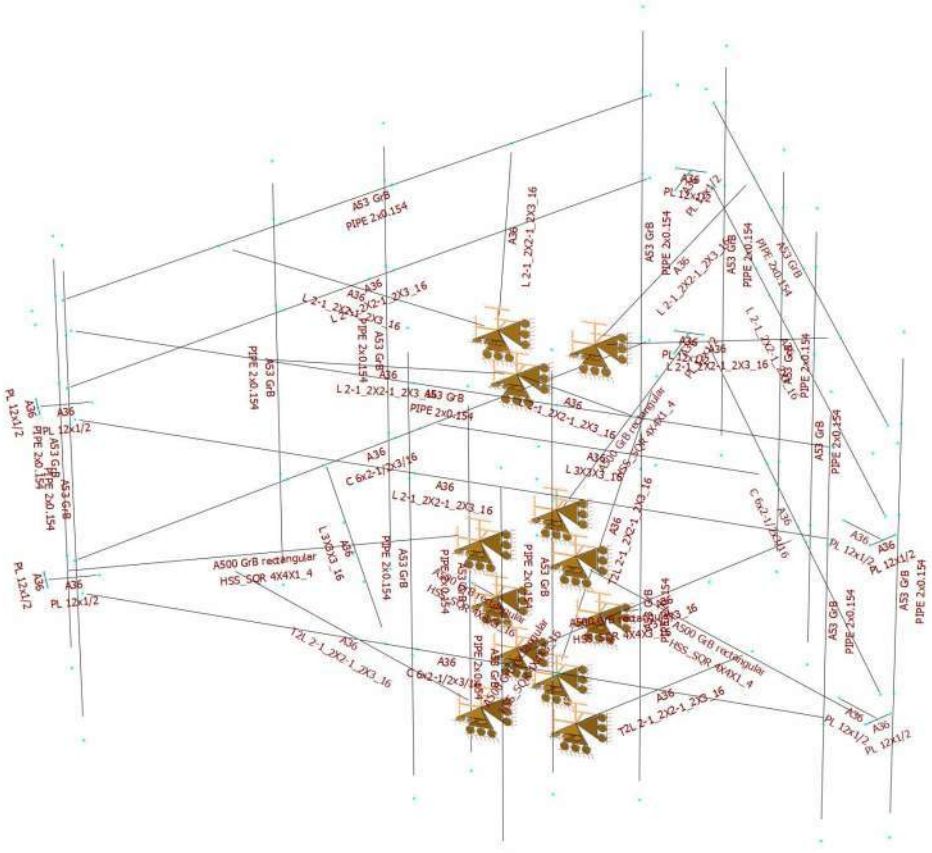
Install proposed sector frame stabilizer, SitePro1 P/N PRK-SFS (or approved equal) secured to proposed horizontal pipe and tower leg (typ. of 1 per sector, total of 3).

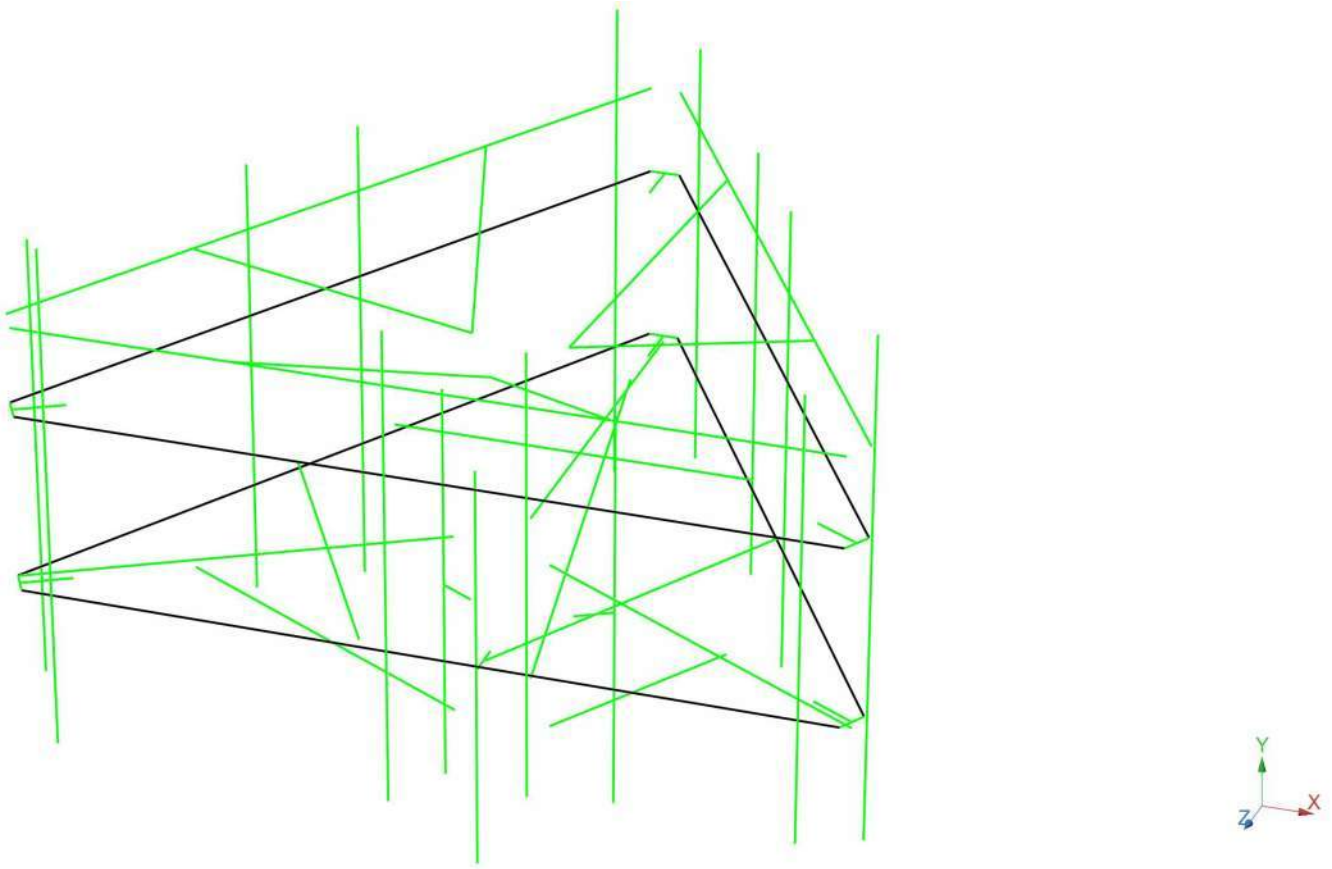
Install proposed 2” std. (2.38” O.D.) horizontal pipe secured to the existing pipe masts (typ. of 1 per sector, total of 3).

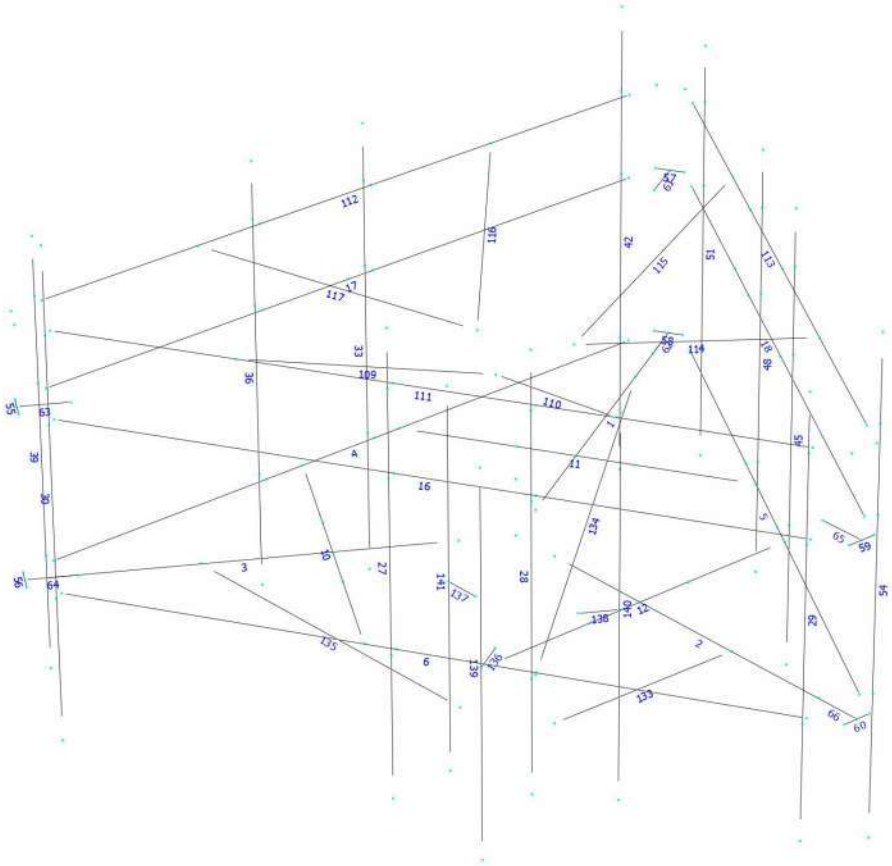




Install proposed sector frame stabilizer, SitePro1 P/N PRK-1245 (or approved equal) secured to existing mount standoff and tower leg (typ. of 1 per sector, total of 3).


A53 GrB
PIPE 2x0.154
A36
L 2-1_2X2-1_2X3_16
PL 12x1/2
A500 GrB rectangular
HSS_SQR 4X4X1_4
C 6x2-1/2x3/16
T2L 2-1_2X2-1_2X3_16
L 3X2X3_16
Y
X
Z


Design status
Not designed
Error on design
Design O.K.
With warnings
Y
X
Z


Y
X
Z

RAM® Elements
CONNECT Edition

Current Date: 6/29/2023 10:05 AM
Units system: English

Load data

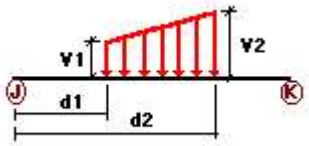
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL
LLa4	500 lb Live Load Antenna 4	No	LL

Distributed force on members

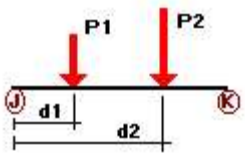


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	4	y	-0.01	-0.01	0.00	No	100.00	Yes
	5	y	-0.01	-0.01	0.00	No	100.00	Yes
	6	y	-0.01	-0.01	0.00	No	100.00	Yes
	10	y	-0.01	-0.01	0.00	No	100.00	Yes
	11	y	-0.01	-0.01	0.00	No	100.00	Yes
	12	y	-0.01	-0.01	0.00	No	100.00	Yes
W0	2	z	-0.025	-0.025	0.00	No	100.00	Yes
	3	z	-0.025	-0.025	0.00	No	100.00	Yes
	4	z	-0.061	-0.061	0.00	No	100.00	Yes
	5	z	-0.061	-0.061	0.00	No	100.00	Yes
	6	z	-0.061	-0.061	0.00	No	100.00	Yes
	10	z	-0.03	-0.03	0.00	No	100.00	Yes
	11	z	-0.03	-0.03	0.00	No	100.00	Yes
	12	z	-0.03	-0.03	0.00	No	100.00	Yes
	16	z	-0.025	-0.025	0.00	No	100.00	Yes
	17	z	-0.025	-0.025	0.00	No	100.00	Yes

	18	z	-0.025	-0.025	0.00	No	100.00	Yes
	28	z	-0.014	-0.014	0.00	No	100.00	Yes
	29	z	-0.014	-0.014	0.00	No	100.00	Yes
	33	z	-0.014	-0.014	0.00	No	100.00	Yes
	36	z	-0.014	-0.014	0.00	No	100.00	Yes
	39	z	-0.014	-0.014	0.00	No	100.00	Yes
	42	z	-0.014	-0.014	0.00	No	100.00	Yes
	45	z	-0.014	-0.014	0.00	No	100.00	Yes
	48	z	-0.014	-0.014	0.00	No	100.00	Yes
	51	z	-0.014	-0.014	0.00	No	100.00	Yes
	54	z	-0.014	-0.014	0.00	No	100.00	Yes
	109	z	-0.025	-0.025	0.00	No	100.00	Yes
	110	z	-0.025	-0.025	0.00	No	100.00	Yes
	111	z	-0.014	-0.014	0.00	No	100.00	Yes
	112	z	-0.014	-0.014	0.00	No	100.00	Yes
	113	z	-0.014	-0.014	0.00	No	100.00	Yes
	114	z	-0.025	-0.025	0.00	No	100.00	Yes
	115	z	-0.025	-0.025	0.00	No	100.00	Yes
	116	z	-0.025	-0.025	0.00	No	100.00	Yes
	117	z	-0.025	-0.025	0.00	No	100.00	Yes
	133	z	-0.025	-0.025	0.00	No	100.00	Yes
	134	z	-0.025	-0.025	0.00	No	100.00	Yes
	135	z	-0.025	-0.025	0.00	No	100.00	Yes
	136	z	-0.025	-0.025	0.00	No	100.00	Yes
	137	z	-0.025	-0.025	0.00	No	100.00	Yes
	138	z	-0.025	-0.025	0.00	No	100.00	Yes
	139	z	-0.014	-0.014	0.00	No	100.00	Yes
	140	z	-0.014	-0.014	0.00	No	100.00	Yes
	141	z	-0.014	-0.014	0.00	No	100.00	Yes
W30	1	x	-0.025	-0.025	0.00	No	100.00	Yes
	2	x	-0.025	-0.025	0.00	No	100.00	Yes
	3	x	-0.025	-0.025	0.00	No	100.00	Yes
	4	x	-0.061	-0.061	0.00	No	100.00	Yes
	5	x	-0.061	-0.061	0.00	No	100.00	Yes
	6	x	-0.061	-0.061	0.00	No	100.00	Yes
	10	x	-0.03	-0.03	0.00	No	100.00	Yes
	12	x	-0.03	-0.03	0.00	No	100.00	Yes
	16	x	-0.025	-0.025	0.00	No	100.00	Yes
	17	x	-0.025	-0.025	0.00	No	100.00	Yes
	18	x	-0.025	-0.025	0.00	No	100.00	Yes
	27	x	-0.014	-0.014	0.00	No	100.00	Yes
	28	x	-0.014	-0.014	0.00	No	100.00	Yes
	29	x	-0.014	-0.014	0.00	No	100.00	Yes
	30	x	-0.014	-0.014	0.00	No	100.00	Yes
	33	x	-0.014	-0.014	0.00	No	100.00	Yes
	36	x	-0.014	-0.014	0.00	No	100.00	Yes
	39	x	-0.014	-0.014	0.00	No	100.00	Yes
	42	x	-0.014	-0.014	0.00	No	100.00	Yes
	48	x	-0.014	-0.014	0.00	No	100.00	Yes
	51	x	-0.014	-0.014	0.00	No	100.00	Yes
	109	x	-0.025	-0.025	0.00	No	100.00	Yes
	110	x	-0.025	-0.025	0.00	No	100.00	Yes
	111	x	-0.014	-0.014	0.00	No	100.00	Yes
	112	x	-0.014	-0.014	0.00	No	100.00	Yes
	113	x	-0.014	-0.014	0.00	No	100.00	Yes
	114	x	-0.025	-0.025	0.00	No	100.00	Yes
	115	x	-0.025	-0.025	0.00	No	100.00	Yes
	116	x	-0.025	-0.025	0.00	No	100.00	Yes
	117	x	-0.025	-0.025	0.00	No	100.00	Yes
	133	x	-0.025	-0.025	0.00	No	100.00	Yes

	134	x	-0.025	-0.025	0.00	No	100.00	Yes
	135	x	-0.025	-0.025	0.00	No	100.00	Yes
	136	x	-0.025	-0.025	0.00	No	100.00	Yes
	137	x	-0.025	-0.025	0.00	No	100.00	Yes
	138	x	-0.025	-0.025	0.00	No	100.00	Yes
	139	x	-0.014	-0.014	0.00	No	100.00	Yes
	140	x	-0.014	-0.014	0.00	No	100.00	Yes
	141	x	-0.014	-0.014	0.00	No	100.00	Yes
Di	1	y	-0.01	-0.01	0.00	No	100.00	Yes
	2	y	-0.01	-0.01	0.00	No	100.00	Yes
	3	y	-0.01	-0.01	0.00	No	100.00	Yes
	4	y	-0.011	-0.011	0.00	No	100.00	Yes
	5	y	-0.011	-0.011	0.00	No	100.00	Yes
	6	y	-0.011	-0.011	0.00	No	100.00	Yes
	10	y	-0.008	-0.008	0.00	No	100.00	Yes
	11	y	-0.008	-0.008	0.00	No	100.00	Yes
	12	y	-0.008	-0.008	0.00	No	100.00	Yes
	16	y	-0.007	-0.007	0.00	No	100.00	Yes
	17	y	-0.007	-0.007	0.00	No	100.00	Yes
	18	y	-0.007	-0.007	0.00	No	100.00	Yes
	27	y	-0.005	-0.005	0.00	No	100.00	Yes
	28	y	-0.005	-0.005	0.00	No	100.00	Yes
	29	y	-0.005	-0.005	0.00	No	100.00	Yes
	30	y	-0.005	-0.005	0.00	No	100.00	Yes
	33	y	-0.005	-0.005	0.00	No	100.00	Yes
	36	y	-0.005	-0.005	0.00	No	100.00	Yes
	39	y	-0.005	-0.005	0.00	No	100.00	Yes
	42	y	-0.005	-0.005	0.00	No	100.00	Yes
	45	y	-0.005	-0.005	0.00	No	100.00	Yes
	48	y	-0.005	-0.005	0.00	No	100.00	Yes
	51	y	-0.005	-0.005	0.00	No	100.00	Yes
	54	y	-0.005	-0.005	0.00	No	100.00	Yes
	109	y	-0.007	-0.007	0.00	No	100.00	Yes
	110	y	-0.007	-0.007	0.00	No	100.00	Yes
	111	y	-0.005	-0.005	0.00	No	100.00	Yes
	112	y	-0.005	-0.005	0.00	No	100.00	Yes
	113	y	-0.005	-0.005	0.00	No	100.00	Yes
	114	y	-0.007	-0.007	0.00	No	100.00	Yes
	115	y	-0.007	-0.007	0.00	No	100.00	Yes
	116	y	-0.007	-0.007	0.00	No	100.00	Yes
	117	y	-0.007	-0.007	0.00	No	100.00	Yes
	133	y	-0.007	-0.007	0.00	No	100.00	Yes
	134	y	-0.007	-0.007	0.00	No	100.00	Yes
	135	y	-0.007	-0.007	0.00	No	100.00	Yes
	136	y	-0.01	-0.01	0.00	No	100.00	Yes
	137	y	-0.01	-0.01	0.00	No	100.00	Yes
	138	y	-0.01	-0.01	0.00	No	100.00	Yes
	139	y	-0.005	-0.005	0.00	No	100.00	Yes
	140	y	-0.005	-0.005	0.00	No	100.00	Yes
	141	y	-0.005	-0.005	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	27	y	-0.039	0.50	No
		y	-0.039	7.50	No
	30	y	-0.039	0.50	No
		y	-0.039	8.00	No
	33	y	-0.023	2.00	No
		y	-0.023	5.00	No
	42	y	-0.023	2.00	No
		y	-0.023	5.00	No
	45	y	-0.039	0.50	No
		y	-0.039	7.50	No
	54	y	-0.039	0.50	No
		y	-0.039	7.50	No
	139	y	-0.073	1.50	No
		y	-0.072	1.50	No
		y	-0.029	5.00	No
	140	y	-0.073	1.50	No
		y	-0.072	1.50	No
	141	y	-0.073	1.50	No
		y	-0.072	1.50	No
W0	27	z	-0.55	0.50	No
		z	-0.55	7.50	No
	30	z	-0.55	0.50	No
		z	-0.55	8.00	No
	33	z	-0.143	2.00	No
		z	-0.143	5.00	No
	42	z	-0.143	2.00	No
		z	-0.143	5.00	No
	45	z	-0.325	0.50	No
		z	-0.325	7.50	No
	54	z	-0.325	0.50	No
		z	-0.325	7.50	No
	139	z	-0.12	1.50	No
		z	-0.095	5.00	No
	140	z	-0.094	1.50	No
	141	z	-0.094	1.50	No
W30	27	x	-0.25	0.50	No
		x	-0.25	7.50	No
	30	x	-0.25	0.50	No
		x	-0.25	8.00	No
	33	x	-0.216	2.00	No
		x	-0.216	5.00	No
	42	x	-0.216	2.00	No
		x	-0.216	5.00	No
	45	x	-0.475	0.50	No
		x	-0.475	7.50	No
	54	x	-0.475	0.50	No
		x	-0.475	7.50	No
	139	x	-0.085	1.50	No
		x	-0.082	1.50	No
		x	-0.095	5.00	No
	140	x	-0.111	1.50	No
	141	x	-0.111	1.50	No
Di	27	y	-0.135	0.50	No
		y	-0.135	7.50	No

	30	y	-0.135	0.50	No
		y	-0.135	7.50	No
	33	y	-0.067	2.00	No
		y	-0.067	5.00	No
	42	y	-0.067	2.00	No
		y	-0.067	5.00	No
	45	y	-0.135	0.50	No
		y	-0.135	7.50	No
	54	y	-0.135	0.50	No
		y	-0.135	7.50	No
	139	y	-0.037	1.50	No
		y	-0.032	1.50	No
		y	-0.043	5.00	No
	140	y	-0.037	1.50	No
		y	-0.032	1.50	No
	141	y	-0.037	1.50	No
		y	-0.032	1.50	No
Wi0	27	z	-0.086	0.50	No
		z	-0.086	7.50	No
	30	z	-0.086	0.50	No
		z	-0.086	8.00	No
	33	z	-0.025	2.00	No
		z	-0.025	5.00	No
	42	z	-0.025	2.00	No
		z	-0.025	5.00	No
	45	z	-0.054	0.50	No
		z	-0.054	7.50	No
	54	z	-0.054	0.50	No
		z	-0.054	7.50	No
	139	z	-0.022	1.50	No
		z	-0.017	5.00	No
	140	z	-0.018	1.50	No
	141	z	-0.018	1.50	No
Wi30	27	x	-0.043	0.50	No
		x	-0.043	7.50	No
	30	x	-0.043	0.50	No
		x	-0.043	8.00	No
	33	x	-0.035	2.00	No
		x	-0.035	5.00	No
	42	x	-0.035	2.00	No
		x	-0.035	5.00	No
	45	x	-0.075	0.50	No
		x	-0.075	7.50	No
	54	x	-0.075	0.50	No
		x	-0.075	7.50	No
	139	x	-0.017	1.50	No
		x	-0.016	1.50	No
		x	-0.017	5.00	No
	140	x	-0.021	1.50	No
	141	x	-0.021	1.50	No
WL0	27	z	-0.027	0.50	No
		z	-0.027	7.50	No
	30	z	-0.027	0.50	No
		z	-0.027	8.00	No
	33	z	-0.007	2.00	No
		z	-0.007	5.00	No
	42	z	-0.007	2.00	No
		z	-0.007	5.00	No
	45	z	-0.016	0.50	No
		z	-0.016	7.50	No

	54	z	-0.016	0.50	No
		z	-0.016	7.50	No
	139	z	-0.006	1.50	No
		z	-0.005	5.00	No
	140	z	-0.005	1.50	No
	141	z	-0.005	1.50	No
WL30	27	x	-0.013	0.50	No
		x	-0.013	7.50	No
	30	x	-0.013	0.50	No
		x	-0.013	8.00	No
	33	x	-0.011	2.00	No
		x	-0.011	5.00	No
	42	x	-0.011	2.00	No
		x	-0.011	5.00	No
	45	x	-0.024	0.50	No
		x	-0.024	7.50	No
	54	x	-0.024	0.50	No
		x	-0.024	7.50	No
	139	x	-0.004	1.50	No
		x	-0.004	1.50	No
		x	-0.005	5.00	No
	140	x	-0.005	1.50	No
	141	x	-0.005	1.50	No
LL1	6	y	-0.25	50.00	Yes
LL2	6	y	-0.25	0.00	Yes
LLa1	29	y	-0.50	50.00	Yes
LLa2	28	y	-0.50	50.00	Yes
LLa3	27	y	-0.50	50.00	Yes
LLa4	30	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

RAM® Elements
CONNECT Edition

Current Date: 6/29/2023 10:05 AM
Units system: English

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.4DL
LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 6x2-1/2x3/16	**4**	LC2 at 36.61%	0.13	With warnings	
		5	LC4 at 53.57%	0.21	With warnings	
		6	LC3 at 58.04%	**0.25**	**With warnings**	
	HSS_SQR 4X4X1_4	**1**	LC4 at 0.00%	0.14	OK	
		2	LC18 at 59.38%	0.18	OK	
		3	LC28 at 60.94%	**0.18**	**OK**	
	HSS_SQR 4X4X3_16	**136**	LC2 at 0.00%	0.03	OK	
		137	LC2 at 0.00%	**0.03**	**OK**	
		138	LC4 at 0.00%	0.03	OK	
	L 2-1_2X2-1_2X3_16	**16**	LC7 at 53.75%	0.31	With warnings	
		17	LC6 at 37.50%	0.28	With warnings	
		18	LC8 at 53.13%	**0.49**	**With warnings**	
		109	LC9 at 100.00%	0.29	OK	
		110	LC22 at 0.00%	0.31	OK	
		114	LC3 at 100.00%	0.41	OK	
		115	LC1 at 0.00%	0.35	OK	

	116	LC1 at 100.00%	0.31	OK
	117	LC2 at 0.00%	0.33	OK
L 3X3X3_16	**10**	LC11 at 50.00%	0.63	OK
	11	LC12 at 51.56%	0.52	OK
	12	LC11 at 51.56%	**0.65**	**OK**
PIPE 2x0.154	**27**	LC3 at 68.75%	0.59	OK
	28	LC23 at 71.88%	0.10	OK
	29	LC18 at 71.88%	0.12	OK
	30	LC1 at 70.31%	0.60	OK
	33	LC4 at 31.25%	0.16	OK
	36	LC4 at 34.38%	0.16	OK
	39	LC4 at 34.38%	0.15	OK
	42	LC1 at 70.31%	0.15	OK
	45	LC4 at 68.75%	**0.69**	**OK**
	48	LC1 at 14.06%	0.13	OK
	51	LC1 at 34.38%	0.14	OK
	54	LC4 at 71.88%	0.48	OK
	111	LC7 at 72.32%	0.56	OK
	112	LC3 at 73.21%	0.32	OK
	113	LC6 at 73.21%	0.57	OK
	139	LC2 at 46.88%	0.21	OK
	140	LC4 at 46.88%	0.15	OK
	141	LC2 at 46.88%	0.15	OK
PL 12x1/2	**55**	LC1 at 100.00%	0.22	OK
	56	LC28 at 50.00%	**0.66**	**OK**
	57	LC2 at 100.00%	0.16	OK
	58	LC1 at 46.88%	0.45	OK
	59	LC2 at 100.00%	0.18	OK
	60	LC18 at 46.88%	0.65	OK
	61	LC13 at 0.00%	0.01	OK
	62	LC7 at 0.00%	0.02	OK
	63	LC13 at 0.00%	0.01	OK
	64	LC1 at 0.00%	0.02	OK
	65	LC13 at 0.00%	0.01	OK
	66	LC4 at 0.00%	0.02	OK
T2L 2-1_2X2-1_2X3_16	**133**	LC18 at 100.00%	**0.26**	**OK**
	134	LC9 at 0.00%	0.21	OK
	135	LC30 at 0.00%	0.24	OK

RAM® Elements
CONNECT Edition

Current Date: 6/29/2023 10:06 AM
Units system: English

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
2	0.00	0.00	-0.9209	0
3	0.00	1.00	0.00	0
4	-0.7975	0.00	0.4604	0
5	0.7975	0.00	0.4604	0
6	0.00	0.00	-7.7542	0
7	-6.7154	0.00	3.8771	0
8	6.7154	0.00	3.8771	0
9	-0.25	0.00	-7.7542	0
10	0.25	0.00	-7.7542	0
11	0.00	0.00	-2.9209	0
12	-6.8404	0.00	3.6606	0
13	6.5904	0.00	4.0936	0
14	-6.5904	0.00	4.0936	0
15	6.8404	0.00	3.6606	0
17	3.0395	0.00	-2.9227	0
18	-3.0395	0.00	-2.9227	0
23	-2.5296	0.00	1.4604	0
24	2.5296	0.00	1.4604	0
25	-1.0114	0.00	4.0936	0
26	4.0509	0.00	-1.1709	0
27	-4.0509	0.00	-1.1709	0
28	1.0114	0.00	4.0936	0

29	1.00	0.00	-2.9209	0
30	-1.00	0.00	-2.9209	0
31	-2.0296	0.00	2.3265	0
32	3.0296	0.00	0.5944	0
33	-3.0296	0.00	0.5944	0
34	2.0296	0.00	2.3265	0
35	0.00	3.00	-7.7542	0
36	-0.25	3.00	-7.7542	0
37	0.25	3.00	-7.7542	0
39	-6.7154	3.00	3.8771	0
40	-6.8404	3.00	3.6606	0
41	-6.5904	3.00	4.0936	0
43	6.7154	3.00	3.8771	0
44	6.5904	3.00	4.0936	0
45	6.8404	3.00	3.6606	0
47	6.00	3.00	4.0936	0
48	6.00	0.00	4.0936	0
49	1.75	3.00	4.0936	0
50	1.75	0.00	4.0936	0
51	6.00	3.00	4.2936	0
52	6.00	0.00	4.2936	0
53	1.75	3.00	4.2936	0
54	1.75	0.00	4.2936	0
55	-6.00	3.00	4.0936	0
56	-6.00	0.00	4.0936	0
57	-6.00	3.00	4.2936	0
58	-6.00	0.00	4.2936	0
59	-0.50	3.00	4.0936	0
60	-0.50	0.00	4.0936	0
61	-0.50	3.00	4.2936	0
62	-0.50	0.00	4.2936	0
63	-0.50	5.50	4.2936	0
64	-0.50	-2.50	4.2936	0
65	1.75	5.50	4.2936	0
66	1.75	-2.00	4.2936	0
67	6.00	5.50	4.2936	0
68	6.00	-2.00	4.2936	0
69	-6.00	6.00	4.2936	0
70	-6.00	-2.50	4.2936	0
75	-3.4684	5.50	-2.5798	0
76	-3.4684	-2.50	-2.5798	0
77	-4.4202	3.00	-0.5313	0
78	-4.4202	0.00	-0.5313	0
79	-4.5934	3.00	-0.6313	0
80	-4.5934	0.00	-0.6313	0
81	-4.5934	5.50	-0.6313	0
82	-4.5934	-2.00	-0.6313	0
83	-6.5452	3.00	3.1493	0
84	-6.5452	0.00	3.1493	0
85	-6.7184	3.00	3.0493	0
86	-6.7184	0.00	3.0493	0
87	-6.7184	5.50	3.0493	0
88	-6.7184	-2.00	3.0493	0
89	-0.5452	3.00	-7.243	0
90	-0.5452	0.00	-7.243	0
91	-0.7184	3.00	-7.343	0
92	-0.7184	0.00	-7.343	0
93	-0.7184	6.00	-7.343	0
94	-0.7184	-2.50	-7.343	0
95	3.7952	3.00	-1.6138	0

96	3.7952	0.00	-1.6138	0
97	3.9684	3.00	-1.7138	0
98	3.9684	0.00	-1.7138	0
99	3.9684	5.50	-1.7138	0
100	3.9684	-2.50	-1.7138	0
101	2.6702	3.00	-3.5624	0
102	2.6702	0.00	-3.5624	0
103	2.8434	3.00	-3.6624	0
104	2.8434	0.00	-3.6624	0
105	2.8434	5.50	-3.6624	0
106	2.8434	-2.00	-3.6624	0
107	0.5452	3.00	-7.243	0
108	0.5452	0.00	-7.243	0
109	0.7184	3.00	-7.343	0
110	0.7184	0.00	-7.343	0
111	0.7184	5.50	-7.343	0
112	0.7184	-2.00	-7.343	0
113	6.5452	3.00	3.1493	0
114	6.5452	0.00	3.1493	0
115	6.7184	3.00	3.0493	0
116	6.7184	0.00	3.0493	0
117	6.7184	6.00	3.0493	0
118	6.7184	-2.50	3.0493	0
119	0.00	0.00	-6.9209	0
120	0.00	3.00	-6.9209	0
121	-5.9937	0.00	3.4605	0
122	5.9937	0.00	3.4605	0
123	-5.9937	3.00	3.4605	0
124	5.9937	3.00	3.4605	0
129	-3.2952	3.00	-2.4798	0
130	-3.2952	0.00	-2.4798	0
131	-3.4684	3.00	-2.5798	0
132	-3.4684	0.00	-2.5798	0
136	0.00	0.00	-6.00	0
137	-4.3301	0.00	2.50	0
138	4.3301	0.00	2.50	0
139	-3.5452	3.00	-2.0468	0
170	2.1702	3.00	-4.4284	0
184	0.7975	3.25	-0.4604	0
185	-0.7975	3.25	-0.4604	0
186	0.00	3.25	0.9209	0
187	-0.5452	4.50	-7.243	0
188	-0.7184	4.50	-7.343	0
189	0.5452	4.50	-7.243	0
190	0.7184	4.50	-7.343	0
191	2.6702	4.50	-3.5624	0
192	2.8434	4.50	-3.6624	0
193	3.7952	4.50	-1.6138	0
194	3.9684	4.50	-1.7138	0
195	6.5452	4.50	3.1493	0
196	6.7184	4.50	3.0493	0
197	6.00	4.50	4.0936	0
198	6.00	4.50	4.2936	0
199	1.75	4.50	4.0936	0
200	1.75	4.50	4.2936	0
201	-0.50	4.50	4.0936	0
202	-0.50	4.50	4.2936	0
203	-6.00	4.50	4.0936	0
204	-6.00	4.50	4.2936	0
205	-6.5452	4.50	3.1493	0

206	-6.7184	4.50	3.0493	0
207	-3.2952	4.50	-2.4798	0
208	-3.4684	4.50	-2.5798	0
209	-4.4202	4.50	-0.5313	0
210	-4.5934	4.50	-0.6313	0
211	3.00	4.50	4.0936	0
212	-3.00	4.50	4.0936	0
213	6.5904	4.50	4.0936	0
214	-6.5904	4.50	4.0936	0
215	-6.8404	4.50	3.6606	0
216	-0.25	4.50	-7.7542	0
217	0.25	4.50	-7.7542	0
218	6.8404	4.50	3.6606	0
219	5.0452	4.50	0.5513	0
220	2.0452	4.50	-4.6449	0
221	-2.0452	4.50	-4.6449	0
222	-5.0452	4.50	0.5513	0
253	0.7975	-3.00	0.4604	0
254	-0.7975	-3.00	0.4604	0
255	0.00	-3.00	-0.9209	0
256	0.00	-1.50	1.00	0
257	0.866	-1.50	-0.50	0
258	-0.866	-1.50	-0.50	0
259	0.00	-1.50	1.6667	0
260	1.4434	-1.50	-0.8333	0
261	-1.4434	-1.50	-0.8333	0
262	0.00	-5.00	1.6667	0
263	-1.4434	-5.00	-0.8333	0
264	1.4434	-5.00	-0.8333	0
265	0.00	2.00	1.6667	0
266	-1.4434	2.00	-0.8333	0
267	1.4434	2.00	-0.8333	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
2	1	1	1	1	1	1
4	1	1	1	1	1	1
5	1	1	1	1	1	1
184	1	1	1	1	1	1
185	1	1	1	1	1	1
186	1	1	1	1	1	1
253	1	1	1	1	1	1
254	1	1	1	1	1	1
255	1	1	1	1	1	1
256	1	1	1	1	1	1
257	1	1	1	1	1	1
258	1	1	1	1	1	1

Members

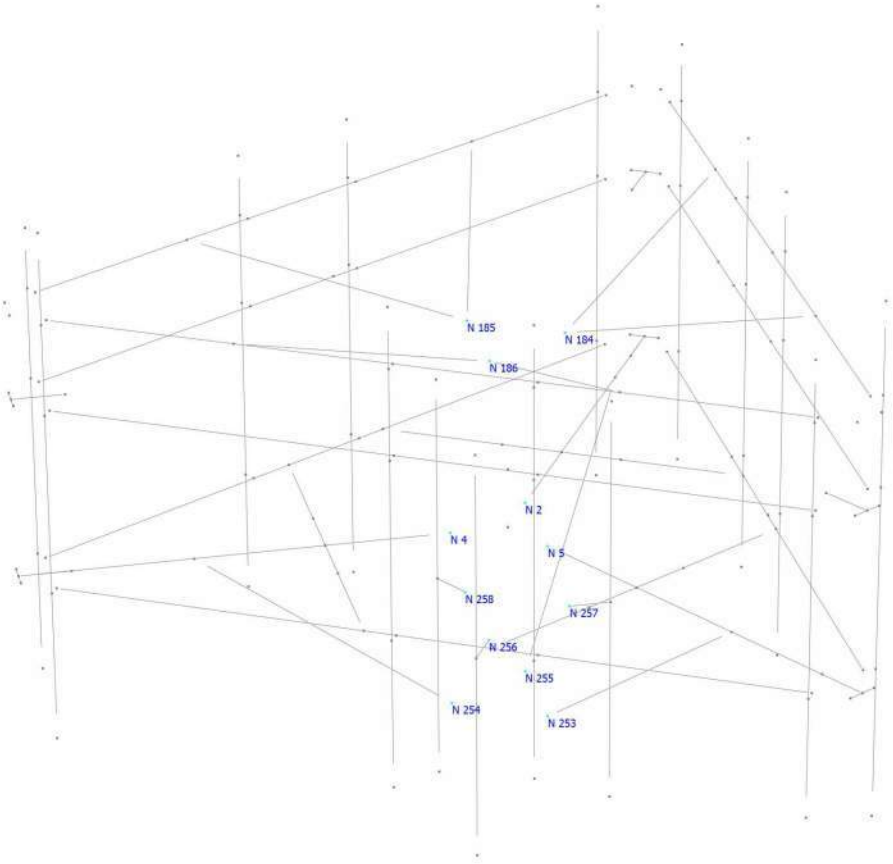
Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	2	6		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
2	5	8		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
3	4	7		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
4	12	9		C 6x2-1/2x3/16	A36	0.00	0.00	0.00
5	10	15		C 6x2-1/2x3/16	A36	0.00	0.00	0.00
6	13	14		C 6x2-1/2x3/16	A36	0.00	0.00	0.00
10	25	27		L 3X3X3_16	A36	0.00	0.00	0.00
11	18	17		L 3X3X3_16	A36	0.00	0.00	0.00
12	26	28		L 3X3X3_16	A36	0.00	0.00	0.00
16	44	41		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
17	40	36		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
18	37	45		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
27	63	64		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	65	66		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	67	68		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
30	69	70		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
33	75	76		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
36	81	82		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
39	87	88		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
42	93	94		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
45	99	100		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
48	105	106		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
51	111	112		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
54	117	118		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
55	40	41		PL 12x1/2	A36	2.00	2.00	0.00
56	12	14		PL 12x1/2	A36	2.00	2.00	0.00
57	36	37		PL 12x1/2	A36	2.00	2.00	0.00
58	9	10		PL 12x1/2	A36	2.00	2.00	0.00
59	44	45		PL 12x1/2	A36	2.00	2.00	0.00
60	13	15		PL 12x1/2	A36	2.00	2.00	0.00
61	35	120		PL 12x1/2	A36	10.00	20.00	0.00
62	6	119		PL 12x1/2	A36	10.00	20.00	0.00
63	39	123		PL 12x1/2	A36	10.00	20.00	0.00
64	7	121		PL 12x1/2	A36	10.00	20.00	0.00
65	43	124		PL 12x1/2	A36	10.00	20.00	0.00
66	8	122		PL 12x1/2	A36	10.00	20.00	0.00
109	212	186		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
110	186	211		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
111	213	214		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
112	215	216		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
113	217	218		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
114	219	184		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
115	184	220		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
116	221	185		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
117	185	222		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
133	253	138		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
134	255	136		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
135	137	254		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
136	256	259		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
137	258	261		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
138	257	260		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
139	265	262		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
140	267	264		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
141	266	263		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
10	90.00	0	0.00	0.00	0.00
11	90.00	0	0.00	0.00	0.00
12	90.00	0	0.00	0.00	0.00
16	90.00	0	0.00	0.00	0.00
17	90.00	0	0.00	0.00	0.00
18	90.00	0	0.00	0.00	0.00
33	0.00	2	-0.50	0.00	0.866
36	0.00	2	-0.50	0.00	0.866
39	0.00	2	-0.50	0.00	0.866
42	0.00	2	-0.50	0.00	0.866
45	0.00	2	-0.50	0.00	-0.866
48	0.00	2	-0.50	0.00	-0.866
51	0.00	2	-0.50	0.00	-0.866
54	0.00	2	-0.50	0.00	-0.866
55	90.00	0	0.00	0.00	0.00
56	90.00	0	0.00	0.00	0.00
57	90.00	0	0.00	0.00	0.00
58	90.00	0	0.00	0.00	0.00
59	90.00	0	0.00	0.00	0.00
60	90.00	0	0.00	0.00	0.00
61	90.00	0	0.00	0.00	0.00
62	90.00	0	0.00	0.00	0.00
63	90.00	0	0.00	0.00	0.00
64	90.00	0	0.00	0.00	0.00
65	90.00	0	0.00	0.00	0.00
66	90.00	0	0.00	0.00	0.00
109	90.00	0	0.00	0.00	0.00
110	90.00	0	0.00	0.00	0.00
111	90.00	0	0.00	0.00	0.00
112	90.00	0	0.00	0.00	0.00
113	90.00	0	0.00	0.00	0.00
114	90.00	0	0.00	0.00	0.00
115	90.00	0	0.00	0.00	0.00
116	90.00	0	0.00	0.00	0.00
117	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
1	0.00	-1.25	0.00	0.00	-1.25	0.00
2	0.00	-1.25	0.00	0.00	-1.25	0.00
3	0.00	1.50	0.00	0.00	1.50	0.00
10	0.00	1.50	0.00	0.00	1.50	0.00
11	0.00	1.50	0.00	0.00	1.50	0.00
12	0.00	1.50	0.00	0.00	1.50	0.00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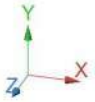
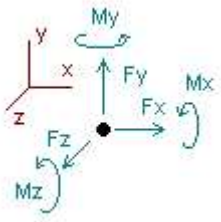

Y
X
Z

RAM® Elements
CONNECT Edition

Current Date: 6/29/2023 10:06 AM
Units system: English

Analysis result

Reactions



Direction of positive forces and moments

	Forces [Kip]			Moments [Kip*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **LC1=1.2DL+W0**						
2	-0.01750	-0.05849	4.63159	-0.57179	0.06289	-0.01568
4	-0.15931	-0.14991	1.57193	0.58936	1.79211	0.05848
5	0.37035	-0.04904	1.31527	0.21876	-1.29302	0.15672
184	-0.04230	-0.08278	0.78464	0.44344	-0.60627	-0.09125
185	0.10189	-0.03185	0.68418	0.34515	0.42923	-0.04288
186	-0.19622	0.64060	1.38392	-0.12865	0.15987	-0.18865
253	0.79312	0.67515	0.53041	0.07104	-0.08787	0.00672
254	-0.84803	0.71860	0.57954	0.10161	0.12349	-0.00604
255	-0.00201	1.32501	-2.24178	-0.02051	0.00849	0.00499
256	0.00000	0.24418	0.31300	-0.06206	0.00000	0.00000
257	0.00000	0.20938	0.20643	0.25738	-0.11502	0.11887
258	0.00000	0.20938	0.20643	0.25738	0.11502	-0.11887
SUM	0.00000	3.65024	9.96556	1.50111	0.58892	-0.11760
Condition **LC2=1.2DL+W30**						
2	1.27921	0.00616	1.44336	-0.16463	-2.00583	-0.30260
4	3.66233	-0.11626	-2.01884	-0.14911	-0.14621	-0.34401
5	1.64584	-0.02832	0.52805	-0.27156	0.19368	-0.02464
184	1.28639	0.50941	0.01075	0.23262	-0.41939	-0.02377
185	0.90098	-0.15323	0.08510	-0.11828	-0.43049	-0.35432
186	0.62881	0.08931	-0.03006	-0.16613	0.40648	-0.27732
253	0.66740	0.53683	0.37718	0.02851	-0.02256	-0.01683
254	-1.58529	1.35665	0.93639	0.00125	-0.01568	0.02495
255	0.10896	0.78675	-1.33192	-0.01125	-0.19295	-0.11417
256	0.37667	0.24418	0.00000	-0.16048	0.24556	-0.19268
257	0.21733	0.20938	0.00000	0.06865	-0.07106	-0.10394
258	0.21733	0.20938	0.00000	0.06862	-0.07105	-0.34170
SUM	9.40596	3.65024	0.00000	-0.64180	-2.52952	-2.07104
Condition **LC3=1.2DL-W0**						
2	-0.04805	0.16434	-2.48282	0.42716	0.05339	0.04677
4	2.09382	-0.06864	-2.70388	-0.62887	-1.80212	0.03097
5	-2.35168	-0.27203	-2.38094	0.07336	1.16168	-0.67524
184	0.03220	0.26569	-0.83778	-0.34614	0.67022	0.36929
185	-0.11990	0.20535	-0.71293	-0.24787	-0.45977	-0.20398
186	0.17453	-0.44326	-1.37938	-0.19790	-0.17832	0.20696
253	1.80901	1.48710	0.97486	-0.02722	0.07876	-0.06920

254	-1.59043	1.31904	0.84033	-0.05722	-0.10972	0.06279
255	0.00050	0.32970	-0.55716	-0.00049	-0.00036	-0.00019
256	0.00000	0.24418	-0.31300	-0.25888	0.00000	0.00000
257	0.00000	0.20938	-0.20643	-0.12011	0.11502	0.11889
258	0.00000	0.20938	-0.20643	-0.12011	-0.11502	-0.11889
SUM	0.00000	3.65024	-9.96556	-1.50428	-0.58623	-0.23183

Condition **LC4=1.2DL-W30**

2	-1.34275	0.09834	0.70981	0.01680	2.11935	0.33274
4	-1.72560	-0.10445	0.88378	0.10934	0.13001	0.43602
5	-3.62653	-0.29119	-1.59301	0.56097	-0.32440	-0.49312
184	-1.30113	-0.32521	-0.06553	-0.13466	0.48307	0.30363
185	-0.91788	0.32784	-0.11637	0.21552	0.39794	0.10723
186	-0.64679	0.10456	0.03535	-0.15753	-0.42130	0.29648
253	1.93405	1.62492	1.12766	0.01537	0.01331	-0.04555
254	-0.85755	0.68436	0.48565	0.04296	0.02894	0.03222
255	-0.11044	0.86812	-1.46733	-0.00961	0.20093	0.11889
256	-0.37667	0.24418	0.00000	-0.16048	-0.24556	0.19268
257	-0.21733	0.20938	0.00000	0.06862	0.07105	0.34170
258	-0.21733	0.20938	0.00000	0.06865	0.07106	0.10394
SUM	-9.40596	3.65024	0.00000	0.63595	2.52440	1.72687

Condition **LC5=0.9DL+W0**

2	-0.00935	-0.07196	4.36341	-0.55400	0.04848	-0.01951
4	-0.40381	-0.12115	1.71525	0.59408	1.79442	0.04582
5	0.62062	-0.00779	1.44974	0.18188	-1.27643	0.22322
184	-0.04079	-0.10577	0.79130	0.43130	-0.61450	-0.12611
185	0.10403	-0.05366	0.68805	0.33307	0.43322	-0.01189
186	-0.19364	0.61677	1.38285	-0.08799	0.16172	-0.19106
253	0.46561	0.40314	0.34111	0.06551	-0.08675	0.01466
254	-0.54082	0.46207	0.40093	0.09606	0.12192	-0.01336
255	-0.00184	1.11881	-1.89294	-0.01777	0.00749	0.00440
256	0.00000	0.18314	0.31300	-0.02216	0.00000	0.00000
257	0.00000	0.15704	0.20643	0.24003	-0.11502	0.08915
258	0.00000	0.15704	0.20643	0.24003	0.11502	-0.08915
SUM	0.00000	2.73768	9.96556	1.50004	0.58956	-0.07384

Condition **LC6=0.9DL+W30**

2	1.28706	-0.00675	1.17576	-0.14613	-2.01999	-0.30684
4	3.42229	-0.08923	-1.87809	-0.14365	-0.14416	-0.35525
5	1.89468	0.01333	0.66158	-0.30914	0.21029	0.04179
184	1.28762	0.48689	0.01751	0.22048	-0.42767	-0.05871
185	0.90320	-0.17514	0.08885	-0.13035	-0.42659	-0.32345
186	0.63147	0.06500	-0.03080	-0.12560	0.40858	-0.27990
253	0.33966	0.26464	0.18774	0.02301	-0.02149	-0.00887
254	-1.28074	1.10210	0.75899	-0.00433	-0.01743	0.01784
255	0.10940	0.57964	-0.98154	-0.00857	-0.19409	-0.11484
256	0.37667	0.18314	0.00000	-0.12035	0.24556	-0.19239
257	0.21733	0.15704	0.00000	0.05148	-0.07106	-0.13346
258	0.21733	0.15704	0.00000	0.05146	-0.07105	-0.31177
SUM	9.40596	2.73768	0.00000	-0.64169	-2.52911	-2.02585

Condition **LC7=0.9DL-W0**

2	-0.04006	0.15211	-2.75273	0.44688	0.03923	0.04283
4	1.85304	-0.04155	-2.56301	-0.62390	-1.80049	0.01999
5	-2.10448	-0.23179	-2.24821	0.03665	1.17820	-0.61050
184	0.03345	0.24295	-0.83119	-0.35826	0.66208	0.33446
185	-0.11757	0.18384	-0.70917	-0.25999	-0.45588	-0.17311
186	0.17704	-0.46800	-1.37977	-0.15749	-0.17622	0.20437
253	1.48374	1.21683	0.78665	-0.03278	0.07991	-0.06127
254	-1.28584	1.06445	0.66285	-0.06280	-0.11147	0.05566
255	0.00069	0.12163	-0.20512	0.00216	-0.00134	-0.00077
256	0.00000	0.18314	-0.31300	-0.21853	0.00000	0.00000
257	0.00000	0.15704	-0.20643	-0.13708	0.11502	0.08917
258	0.00000	0.15704	-0.20643	-0.13708	-0.11502	-0.08917
SUM	0.00000	2.73768	-9.96556	-1.50224	-0.58598	-0.18834

Condition **LC8=0.9DL-W30**

2	-1.33446	0.08556	0.43930	0.03580	2.10495	0.32922
4	-1.97083	-0.07563	1.02721	0.11356	0.13187	0.42362
5	-3.37791	-0.25134	-1.45935	0.52496	-0.30791	-0.42832
184	-1.29960	-0.34842	-0.05905	-0.14678	0.47499	0.26887
185	-0.91564	0.30643	-0.11250	0.20338	0.40192	0.13823
186	-0.64438	0.08029	0.03463	-0.11699	-0.41945	0.29405
253	1.60901	1.35483	0.93960	0.00979	0.01450	-0.03764
254	-0.55031	0.42781	0.30697	0.03740	0.02737	0.02489
255	-0.11052	0.66094	-1.11682	-0.00691	0.20008	0.11838
256	-0.37667	0.18314	0.00000	-0.12035	-0.24556	0.19239
257	-0.21733	0.15704	0.00000	0.05146	0.07105	0.31177
258	-0.21733	0.15704	0.00000	0.05148	0.07106	0.13346
SUM	-9.40596	2.73768	0.00000	0.63681	2.52488	1.76892

Condition **LC9=1.2DL+Di+Wi0**

2	-0.06542	0.08329	2.24085	-0.17848	0.11869	0.05627
4	1.89317	-0.27324	-0.97348	-0.00452	0.15734	0.15837
5	-1.97171	-0.36656	-1.00578	0.34658	-0.18418	-0.53930
184	-0.01674	0.18912	0.00100	0.13337	0.01932	0.27963
185	-0.00971	0.17751	0.00584	0.11177	-0.01458	-0.24581
186	-0.06012	0.27627	0.11723	-0.36228	0.01027	-0.01283
253	2.64909	2.19207	1.52691	0.04463	-0.00383	-0.07154
254	-2.41802	2.01729	1.41849	0.05960	0.03198	0.05635
255	-0.00054	1.57596	-2.67106	-0.02353	0.00751	0.00444
256	0.00000	0.36285	0.03900	-0.21871	0.00000	0.00000
257	0.00000	0.28505	0.01800	0.12889	-0.01039	0.16065
258	0.00000	0.28505	0.01800	0.12889	0.01039	-0.16065
SUM	0.00000	6.80466	0.73500	0.16620	0.14253	-0.31443

Condition **LC10=1.2DL+Di+Wi30**

2	-0.03102	0.08757	2.02456	-0.14956	0.07875	0.03595
4	2.17266	-0.26687	-1.24286	-0.07480	0.03584	0.13284
5	-1.84680	-0.36776	-1.09335	0.29301	0.00618	-0.56500
184	0.10073	0.25044	-0.04375	0.10283	0.06003	0.30829
185	0.03045	0.17158	-0.03170	0.08374	-0.06108	-0.26249
186	0.03406	0.21746	-0.00649	-0.35541	0.02697	-0.01227
253	2.63628	2.18175	1.52023	0.04136	0.00101	-0.07311
254	-2.48339	2.07177	1.45616	0.05826	0.02923	0.05812
255	-0.00096	1.52577	-2.58279	-0.02088	0.00802	0.00473
256	0.05000	0.36285	0.00000	-0.23738	0.03333	-0.04075
257	0.02100	0.28505	0.00000	0.09276	-0.00700	0.11850

258	0.02100	0.28505	0.00000	0.09275	-0.00700	-0.20281
SUM	0.70400	6.80466	0.00000	-0.07331	0.20428	-0.49801

Condition **LC11=1.2DL+Di-Wi0**

2	-0.06514	0.10278	1.73304	-0.10090	0.09799	0.06443
4	2.04137	-0.25858	-1.34015	-0.12677	-0.19534	0.16247
5	-2.19643	-0.38918	-1.24427	0.33109	-0.07765	-0.61252
184	-0.02136	0.22241	-0.11830	0.06289	0.13335	0.33444
185	-0.02627	0.19344	-0.08785	0.07028	-0.07101	-0.25434
186	0.00704	0.16069	-0.11766	-0.34490	-0.05637	0.05826
253	2.74734	2.27218	1.58590	0.04789	-0.00526	-0.07519
254	-2.48679	2.07387	1.45540	0.05078	0.01771	0.06217
255	0.00024	1.49409	-2.52611	-0.01847	0.00372	0.00221
256	0.00000	0.36285	-0.03900	-0.25604	0.00000	0.00000
257	0.00000	0.28505	-0.01800	0.05662	0.01039	0.16066
258	0.00000	0.28505	-0.01800	0.05662	-0.01039	-0.16066
SUM	0.00000	6.80466	-0.73500	-0.17092	-0.15285	-0.25806

Condition **LC12=1.2DL+Di-Wi30**

2	-0.09952	0.09849	1.94934	-0.12984	0.13792	0.08474
4	1.76194	-0.26499	-1.07079	-0.05649	-0.07387	0.18804
5	-2.32136	-0.38796	-1.15672	0.38463	-0.26797	-0.58681
184	-0.13890	0.16109	-0.07353	0.09343	0.09262	0.30582
185	-0.06642	0.19937	-0.05033	0.09831	-0.02451	-0.23766
186	-0.08707	0.21948	0.00607	-0.35173	-0.07299	0.05771
253	2.76016	2.28251	1.59257	0.05115	-0.01010	-0.07362
254	-2.42148	2.01943	1.41775	0.05212	0.02045	0.06040
255	0.00066	1.54428	-2.61436	-0.02112	0.00321	0.00193
256	-0.05000	0.36285	0.00000	-0.23738	-0.03333	0.04075
257	-0.02100	0.28505	0.00000	0.09275	0.00700	0.20281
258	-0.02100	0.28505	0.00000	0.09276	0.00700	-0.11850
SUM	-0.70400	6.80466	0.00000	0.06859	-0.21458	-0.07440

Condition **LC13=1.4DL**

2	-0.03759	0.06025	1.25528	-0.08705	0.06653	0.01808
4	1.13205	-0.12991	-0.66296	-0.02278	-0.00918	0.05473
5	-1.16036	-0.18950	-0.62332	0.17131	-0.07715	-0.30551
184	-0.00642	0.10670	-0.03089	0.05662	0.03814	0.16254
185	-0.01041	0.10110	-0.01777	0.05649	-0.01836	-0.14431
186	-0.01183	0.11333	0.00342	-0.18907	-0.00918	0.01164
253	1.52236	1.26476	0.88042	0.02571	-0.00530	-0.03672
254	-1.42692	1.19210	0.83052	0.02586	0.00772	0.03351
255	-0.00088	0.96634	-1.63470	-0.01230	0.00465	0.00275
256	0.00000	0.28488	0.00000	-0.18722	0.00000	0.00000
257	0.00000	0.24428	0.00000	0.08008	0.00000	0.13870
258	0.00000	0.24428	0.00000	0.08008	0.00000	-0.13870
SUM	0.00000	4.25862	0.00000	-0.00229	-0.00213	-0.20330

Condition **LC14=1.2DL+1.6LL1**

2	-0.03874	0.05886	1.05044	-0.06196	0.07192	0.01644
4	1.20428	-0.11920	-0.71821	-0.14258	-0.00202	0.09567
5	-1.25780	-0.18882	-0.68144	0.06582	-0.09821	-0.37581
184	-0.00557	0.09452	-0.03977	0.03659	0.05034	0.14905
185	-0.00812	0.08890	-0.02697	0.04013	-0.02745	-0.13031
186	-0.00276	0.14132	-0.00210	-0.24584	-0.00366	0.01214
253	1.55752	1.29618	0.91689	0.03989	-0.02492	-0.03261
254	-1.44773	1.21213	0.85851	0.04004	0.02809	0.02826
255	-0.00107	0.80341	-1.35735	-0.00903	0.00545	0.00322
256	0.00000	0.24418	0.00000	-0.16048	0.00000	0.00000
257	0.00000	0.20938	0.00000	0.06864	0.00000	0.11888
258	0.00000	0.20938	0.00000	0.06864	0.00000	-0.11888
SUM	0.00000	4.05024	0.00000	-0.26014	-0.00047	-0.23395

Condition **LC15=1.2DL+1.6LL2**

2	-0.04209	0.06943	0.78193	-0.02277	0.07582	0.03859
4	0.73880	-0.10003	-0.44832	-0.03770	-0.02149	0.08392
5	-1.46701	-0.39896	-0.81238	0.27076	-0.05560	-0.56093
184	-0.02314	0.10055	-0.05329	0.02660	0.07279	0.17813
185	-0.01804	0.08802	-0.02078	0.04475	-0.01732	-0.12019
186	-0.04344	0.11040	-0.00050	-0.19347	-0.05006	0.05144
253	2.06539	1.70080	1.20340	0.04866	-0.01510	-0.06219
254	-1.21053	1.01272	0.70778	0.02415	0.01000	0.02721
255	0.00005	0.80437	-1.35785	-0.00831	0.00403	0.00239
256	0.00000	0.24418	0.00000	-0.16048	0.00000	0.00000
257	0.00000	0.20938	0.00000	0.06864	0.00000	0.11888
258	0.00000	0.20938	0.00000	0.06864	0.00000	-0.11888
SUM	0.00000	4.05024	0.00000	0.12947	0.00308	-0.36162

Condition **LC16=1.2DL+WL0+1.6LLa1**

2	-0.05080	0.08421	0.62341	0.01196	0.09410	0.05656
4	0.56669	-0.08943	-0.31932	-0.06421	0.02302	0.12056
5	-1.86362	-0.58416	-1.02236	0.34602	-0.08605	-0.80948
184	-0.03791	0.10563	-0.07598	0.00337	0.11387	0.20991
185	-0.02260	0.08759	-0.01931	0.04789	-0.00876	-0.11512
186	-0.07774	0.15023	0.02580	-0.24658	-0.06856	0.07637
253	2.70839	2.22425	1.58640	0.07454	-0.02985	-0.08546
254	-1.22300	1.02547	0.72173	0.03057	0.01958	0.02428
255	0.00059	0.78351	-1.32036	-0.00654	0.00455	0.00270
256	0.00000	0.24418	0.01100	-0.15594	0.00000	0.00000
257	0.00000	0.20938	0.00500	0.07866	-0.00289	0.11888
258	0.00000	0.20938	0.00500	0.07866	0.00289	-0.11888
SUM	0.00000	4.45024	0.22100	0.19841	0.06189	-0.51968

Condition **LC17=1.2DL+WL30+1.6LLa1**

2	-0.03797	0.08536	0.55922	0.02042	0.07751	0.04988
4	0.65189	-0.08754	-0.40409	-0.08612	-0.01839	0.11297
5	-1.82385	-0.58447	-1.04742	0.32923	-0.03010	-0.81727
184	-0.00051	0.12482	-0.08870	-0.00527	0.12507	0.21835
185	-0.00978	0.08552	-0.03005	0.03928	-0.02323	-0.12040
186	-0.04891	0.13181	-0.01266	-0.24434	-0.06421	0.07713
253	2.70409	2.22082	1.58424	0.07372	-0.02866	-0.08582
254	-1.24350	1.04249	0.73341	0.02993	0.01837	0.02497
255	0.00054	0.76848	-1.29395	-0.00577	0.00436	0.00258
256	0.01300	0.24418	0.00000	-0.16048	0.00867	-0.00854
257	0.00500	0.20938	0.00000	0.06864	-0.00167	0.10886

258	0.00500	0.20938	0.00000	0.06864	-0.00167	-0.12891
SUM	0.21500	4.45024	0.00000	0.12787	0.06606	-0.56620

Condition **LC18=1.2DL-WL0+1.6LLa1**

2	-0.04819	0.09001	0.47125	0.03518	0.08254	0.05882
4	0.60939	-0.08491	-0.43396	-0.10229	-0.09141	0.12237
5	-1.93274	-0.59101	-1.09274	0.34126	-0.05860	-0.83171
184	-0.03942	0.11545	-0.11108	-0.01707	0.14690	0.22598
185	-0.02737	0.09219	-0.04647	0.03546	-0.02583	-0.11776
186	-0.05703	0.11405	-0.04719	-0.24097	-0.09015	0.09911
253	2.73884	2.24913	1.60482	0.07585	-0.03076	-0.08642
254	-1.24442	1.04300	0.73301	0.02752	0.01466	0.02627
255	0.00095	0.75937	-1.27762	-0.00507	0.00291	0.00173
256	0.00000	0.24418	-0.01100	-0.16501	0.00000	0.00000
257	0.00000	0.20938	-0.00500	0.05861	0.00289	0.11888
258	0.00000	0.20938	-0.00500	0.05861	-0.00289	-0.11888
SUM	0.00000	4.45024	-0.22100	0.10208	-0.04973	-0.50160

Condition **LC19=1.2DL-WL30+1.6LLa1**

2	-0.06102	0.08886	0.53543	0.02672	0.09913	0.06550
4	0.52419	-0.08680	-0.34919	-0.08038	-0.05000	0.12996
5	-1.97252	-0.59070	-1.06768	0.35806	-0.11455	-0.82391
184	-0.07682	0.09626	-0.09837	-0.00842	0.13571	0.21755
185	-0.04019	0.09426	-0.03574	0.04406	-0.01136	-0.11248
186	-0.08586	0.13247	-0.00874	-0.24320	-0.09449	0.09836
253	2.74314	2.25257	1.60698	0.07667	-0.03195	-0.08605
254	-1.22393	1.02598	0.72134	0.02816	0.01587	0.02558
255	0.00101	0.77439	-1.30403	-0.00584	0.00309	0.00185
256	-0.01300	0.24418	0.00000	-0.16048	-0.00867	0.00854
257	-0.00500	0.20938	0.00000	0.06864	0.00167	0.12891
258	-0.00500	0.20938	0.00000	0.06864	0.00167	-0.10886
SUM	-0.21500	4.45024	0.00000	0.17262	-0.05389	-0.45506

Condition **LC20=1.2DL+WL0+1.6LLa2**

2	-0.05685	0.06691	0.97829	-0.04437	0.11162	0.02731
4	1.17278	-0.10090	-0.65964	-0.21903	0.07355	0.12830
5	-1.57474	-0.29182	-0.82591	0.04189	-0.15227	-0.56236
184	-0.01058	0.09565	-0.04348	0.02675	0.06699	0.16417
185	-0.01164	0.08769	-0.01955	0.04335	-0.01976	-0.12686
186	-0.03267	0.19272	-0.00838	-0.33822	-0.02325	0.04503
253	2.02386	1.68056	1.20350	0.06407	-0.04583	-0.04390
254	-1.50877	1.26751	0.90678	0.05300	0.04719	0.02271
255	-0.00140	0.78897	-1.33160	-0.00796	0.00858	0.00507
256	0.00000	0.24418	0.01100	-0.15594	0.00000	0.00000
257	0.00000	0.20938	0.00500	0.07866	-0.00289	0.11888
258	0.00000	0.20938	0.00500	0.07866	0.00289	-0.11888
SUM	0.00000	4.45024	0.22100	-0.37914	0.06682	-0.34052

Condition **LC21=1.2DL+WL30+1.6LLa2**

2	-0.04399	0.06805	0.91407	-0.03592	0.09499	0.02062
4	1.25784	-0.09892	-0.74434	-0.24100	0.03212	0.12064
5	-1.53485	-0.29208	-0.85092	0.02505	-0.09633	-0.57009
184	0.02682	0.11486	-0.05619	0.01811	0.07817	0.17260
185	0.00118	0.08562	-0.03028	0.03475	-0.03423	-0.13213
186	-0.00383	0.17435	-0.04683	-0.33598	-0.01891	0.04579
253	2.01946	1.67704	1.20127	0.06324	-0.04463	-0.04425
254	-1.52915	1.28444	0.91839	0.05236	0.04599	0.02339
255	-0.00146	0.77393	-1.30517	-0.00719	0.00840	0.00495
256	0.01300	0.24418	0.00000	-0.16048	0.00867	-0.00854
257	0.00500	0.20938	0.00000	0.06864	-0.00167	0.10886
258	0.00500	0.20938	0.00000	0.06864	-0.00167	-0.12891
SUM	0.21500	4.45024	0.00000	-0.44978	0.07090	-0.38708

Condition **LC22=1.2DL-WL0+1.6LLa2**

2	-0.05419	0.07270	0.82606	-0.02117	0.09999	0.02958
4	1.21523	-0.09623	-0.77416	-0.25719	-0.04091	0.12999
5	-1.64370	-0.29864	-0.89621	0.03712	-0.12483	-0.58454
184	-0.01209	0.10548	-0.07857	0.00632	0.10000	0.18023
185	-0.01642	0.09228	-0.04670	0.03092	-0.03683	-0.12950
186	-0.01194	0.15663	-0.08135	-0.33261	-0.04488	0.06779
253	2.05417	1.70534	1.22184	0.06536	-0.04673	-0.04484
254	-1.53001	1.28490	0.91796	0.04995	0.04228	0.02468
255	-0.00104	0.76483	-1.28887	-0.00649	0.00694	0.00410
256	0.00000	0.24418	-0.01100	-0.16501	0.00000	0.00000
257	0.00000	0.20938	-0.00500	0.05861	0.00289	0.11888
258	0.00000	0.20938	-0.00500	0.05861	-0.00289	-0.11888
SUM	0.00000	4.45024	-0.22100	-0.47557	-0.04498	-0.32251

Condition **LC23=1.2DL-WL30+1.6LLa2**

2	-0.06705	0.07156	0.89029	-0.02961	0.11661	0.03626
4	1.13017	-0.09821	-0.68946	-0.23522	0.00052	0.13766
5	-1.68359	-0.29838	-0.87122	0.05396	-0.18077	-0.57681
184	-0.04949	0.08627	-0.06586	0.01496	0.08883	0.17180
185	-0.02924	0.09436	-0.03597	0.03953	-0.02236	-0.12422
186	-0.04078	0.17500	-0.04290	-0.33484	-0.04921	0.06703
253	2.05858	1.70886	1.22407	0.06619	-0.04793	-0.04448
254	-1.50963	1.26797	0.90635	0.05059	0.04348	0.02400
255	-0.00099	0.77986	-1.31529	-0.00726	0.00712	0.00422
256	-0.01300	0.24418	0.00000	-0.16048	-0.00867	0.00854
257	-0.00500	0.20938	0.00000	0.06864	0.00167	0.12891
258	-0.00500	0.20938	0.00000	0.06864	0.00167	-0.10886
SUM	-0.21500	4.45024	0.00000	-0.40492	-0.04905	-0.27594

Condition **LC24=1.2DL+WL0+1.6LLa3**

2	-0.04257	0.06322	1.14033	-0.06469	0.08473	0.01317
4	1.51181	-0.15172	-0.84317	-0.23716	0.08205	0.15537
5	-1.48736	-0.20273	-0.77706	-0.01237	-0.16666	-0.46551
184	-0.00192	0.09244	-0.03201	0.03768	0.04640	0.14774
185	-0.00423	0.08985	-0.02629	0.03622	-0.03457	-0.13923
186	0.00051	0.19489	-0.01090	-0.34252	0.02691	-0.01450
253	1.75357	1.46217	1.04577	0.05653	-0.04539	-0.03146
254	-1.72827	1.44798	1.03935	0.06243	0.05380	0.02937
255	-0.00154	0.79118	-1.33602	-0.00837	0.00724	0.00427
256	0.00000	0.24418	0.01100	-0.15594	0.00000	0.00000
257	0.00000	0.20938	0.00500	0.07866	-0.00289	0.11888

258	0.00000	0.20938	0.00500	0.07866	0.00289	-0.11888
SUM	0.00000	4.45024	0.22100	-0.47086	0.05451	-0.30078

Condition **LC25=1.2DL+WL30+1.6LLa3**

2	-0.02971	0.06436	1.07609	-0.05625	0.06810	0.00648
4	1.59682	-0.14971	-0.92787	-0.25915	0.04060	0.14768
5	-1.44743	-0.20297	-0.80203	-0.02922	-0.11072	-0.47322
184	0.03547	0.11165	-0.04472	0.02904	0.05757	0.15617
185	0.00859	0.08778	-0.03703	0.02762	-0.04904	-0.14450
186	0.02936	0.17653	-0.04933	-0.34028	0.03125	-0.01375
253	1.74913	1.45862	1.04351	0.05570	-0.04419	-0.03182
254	-1.74862	1.46489	1.05095	0.06179	0.05260	0.03005
255	-0.00160	0.77614	-1.30958	-0.00759	0.00705	0.00416
256	0.01300	0.24418	0.00000	-0.16048	0.00867	-0.00854
257	0.00500	0.20938	0.00000	0.06864	-0.00167	0.10886
258	0.00500	0.20938	0.00000	0.06864	-0.00167	-0.12891
SUM	0.21500	4.45024	0.00000	-0.54154	0.05855	-0.34736

Condition **LC26=1.2DL-WL0+1.6LLa3**

2	-0.03991	0.06902	0.98809	-0.04150	0.07309	0.01543
4	1.55419	-0.14701	-0.95770	-0.27535	-0.03244	0.15702
5	-1.55627	-0.20954	-0.84732	-0.01713	-0.13922	-0.48768
184	-0.00344	0.10227	-0.06710	0.01725	0.07941	0.16380
185	-0.00901	0.09445	-0.05345	0.02379	-0.05164	-0.14187
186	0.02124	0.15882	-0.08384	-0.33690	0.00528	0.00824
253	1.78384	1.48691	1.06408	0.05782	-0.04629	-0.03240
254	-1.74946	1.46535	1.05052	0.05938	0.04889	0.03135
255	-0.00118	0.76704	-1.29328	-0.00689	0.00559	0.00330
256	0.00000	0.24418	-0.01100	-0.16501	0.00000	0.00000
257	0.00000	0.20938	-0.00500	0.05861	0.00289	0.11888
258	0.00000	0.20938	-0.00500	0.05861	-0.00289	-0.11888
SUM	0.00000	4.45024	-0.22100	-0.56731	-0.05734	-0.28280

Condition **LC27=1.2DL-WL30+1.6LLa3**

2	-0.05277	0.06788	1.05232	-0.04994	0.08972	0.02213
4	1.46919	-0.14902	-0.87301	-0.25336	0.00901	0.16472
5	-1.59620	-0.20930	-0.82235	-0.00029	-0.19516	-0.47997
184	-0.04083	0.08305	-0.05439	0.02590	0.06824	0.15537
185	-0.02182	0.09652	-0.04272	0.03240	-0.03717	-0.13659
186	-0.00760	0.17717	-0.04541	-0.33914	0.00095	0.00749
253	1.78828	1.49046	1.06634	0.05865	-0.04750	-0.03204
254	-1.72912	1.44845	1.03893	0.06002	0.05009	0.03067
255	-0.00113	0.78209	-1.31972	-0.00766	0.00578	0.00342
256	-0.01300	0.24418	0.00000	-0.16048	-0.00867	0.00854
257	-0.00500	0.20938	0.00000	0.06864	0.00167	0.12891
258	-0.00500	0.20938	0.00000	0.06864	0.00167	-0.10886
SUM	-0.21500	4.45024	0.00000	-0.49663	-0.06138	-0.23622

Condition **LC28=1.2DL+WL0+1.6LLa4**

2	-0.06628	0.06944	1.53491	-0.09474	0.12930	-0.02008
4	2.64574	-0.47418	-1.49729	0.01036	0.04519	0.27132
5	-1.35389	-0.13249	-0.70023	0.09140	-0.13448	-0.29682
184	0.00819	0.09036	-0.02452	0.05630	0.01442	0.12576
185	0.02092	0.10323	-0.05926	0.00882	-0.09187	-0.19303
186	0.01658	0.14560	0.02977	-0.23553	0.05749	-0.06117
253	1.29069	1.07691	0.75569	0.02910	-0.01761	-0.02456
254	-2.55765	2.11193	1.50665	0.07676	0.03855	0.07656
255	-0.00431	0.79650	-1.34571	-0.00849	0.01313	0.00774
256	0.00000	0.24418	0.01100	-0.15594	0.00000	0.00000
257	0.00000	0.20938	0.00500	0.07866	-0.00289	0.11888
258	0.00000	0.20938	0.00500	0.07866	0.00289	-0.11888
SUM	0.00000	4.45024	0.22100	-0.06464	0.05410	-0.11428

Condition **LC29=1.2DL+WL30+1.6LLa4**

2	-0.05342	0.07057	1.47065	-0.08631	0.11267	-0.02678
4	2.73076	-0.47219	-1.58201	-0.01164	0.00374	0.26363
5	-1.31395	-0.13275	-0.72519	0.07457	-0.07855	-0.30454
184	0.04558	0.10957	-0.03723	0.04766	0.02559	0.13419
185	0.03374	0.10116	-0.06998	0.00021	-0.10632	-0.19830
186	0.04543	0.12720	-0.00870	-0.23329	0.06183	-0.06042
253	1.28628	1.07339	0.75344	0.02826	-0.01640	-0.02492
254	-2.57805	2.12889	1.51829	0.07613	0.03735	0.07724
255	-0.00436	0.78145	-1.31926	-0.00771	0.01294	0.00762
256	0.01300	0.24418	0.00000	-0.16048	0.00867	-0.00854
257	0.00500	0.20938	0.00000	0.06864	-0.00167	0.10886
258	0.00500	0.20938	0.00000	0.06864	-0.00167	-0.12891
SUM	0.21500	4.45024	0.00000	-0.13531	0.05818	-0.16089

Condition **LC30=1.2DL-WL0+1.6LLa4**

2	-0.06364	0.07522	1.38268	-0.07156	0.11769	-0.01782
4	2.68824	-0.46957	-1.61193	-0.02779	-0.06928	0.27304
5	-1.42289	-0.13936	-0.77053	0.08668	-0.10707	-0.31905
184	0.00668	0.10019	-0.05961	0.03587	0.04744	0.14182
185	0.01614	0.10781	-0.08640	-0.00361	-0.10892	-0.19567
186	0.03731	0.10944	-0.04324	-0.22992	0.03587	-0.03845
253	1.32109	1.10176	0.77408	0.03038	-0.01851	-0.02550
254	-2.57899	2.12943	1.51796	0.07374	0.03367	0.07853
255	-0.00395	0.77237	-1.30300	-0.00701	0.01148	0.00677
256	0.00000	0.24418	-0.01100	-0.16501	0.00000	0.00000
257	0.00000	0.20938	-0.00500	0.05861	0.00289	0.11888
258	0.00000	0.20938	-0.00500	0.05861	-0.00289	-0.11888
SUM	0.00000	4.45024	-0.22100	-0.16101	-0.05762	-0.09631

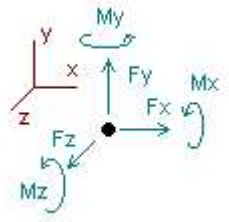
Condition **LC31=1.2DL-WL30+1.6LLa4**

2	-0.07649	0.07409	1.44694	-0.08000	0.13432	-0.01113
4	2.60322	-0.47157	-1.52721	-0.00579	-0.02784	0.28075
5	-1.46282	-0.13910	-0.74557	0.10351	-0.16299	-0.31133
184	-0.03071	0.08097	-0.04690	0.04451	0.03626	0.13340
185	0.00332	0.10988	-0.07568	0.00500	-0.09446	-0.19040
186	0.00847	0.12784	-0.00477	-0.23215	0.03154	-0.03919
253	1.32550	1.10529	0.77633	0.03122	-0.01972	-0.02513
254	-2.55859	2.11247	1.50631	0.07437	0.03486	0.07785
255	-0.00389	0.78742	-1.32945	-0.00779	0.01167	0.00689
256	-0.01300	0.24418	0.00000	-0.16048	-0.00867	0.00854
257	-0.00500	0.20938	0.00000	0.06864	0.00167	0.12891

258	-0.00500	0.20938	0.00000	0.06864	0.00167	-0.10886
SUM	-0.21500	4.45024	0.00000	-0.09033	-0.06169	-0.04970

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.4DL
LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

Node		Forces						Moments					
		Fx [Kip]	lc	Fy [Kip]	lc	Fz [Kip]	lc	Mx [Kip*ft]	lc	My [Kip*ft]	lc	Mz [Kip*ft]	lc
2	Max	1.287	LC6	0.164	LC3	4.632	LC1	0.44688	LC7	2.11935	LC4	0.33274	LC4
	Min	-1.343	LC4	-0.072	LC5	-2.753	LC7	-0.57179	LC1	-2.01999	LC6	-0.30684	LC6
4	Max	3.662	LC2	-0.042	LC7	1.715	LC5	0.59408	LC5	1.79442	LC5	0.43602	LC4
	Min	-1.971	LC8	-0.474	LC28	-2.704	LC3	-0.62887	LC3	-1.80212	LC3	-0.35525	LC6
5	Max	1.895	LC6	0.013	LC6	1.450	LC5	0.56097	LC4	1.17820	LC7	0.22322	LC5
	Min	-3.627	LC4	-0.591	LC18	-2.381	LC3	-0.30914	LC6	-1.29302	LC1	-0.83171	LC18
184	Max	1.288	LC6	0.509	LC2	0.791	LC5	0.44344	LC1	0.67022	LC3	0.36929	LC3
	Min	-1.301	LC4	-0.348	LC8	-0.838	LC3	-0.35826	LC7	-0.61450	LC5	-0.12611	LC5
185	Max	0.903	LC6	0.328	LC4	0.688	LC5	0.34515	LC1	0.43322	LC5	0.13823	LC8
	Min	-0.918	LC4	-0.175	LC6	-0.713	LC3	-0.25999	LC7	-0.45977	LC3	-0.35432	LC2
186	Max	0.631	LC6	0.641	LC1	1.384	LC1	-0.08799	LC5	0.40858	LC6	0.29648	LC4
	Min	-0.647	LC4	-0.468	LC7	-1.380	LC7	-0.36228	LC9	-0.42130	LC4	-0.27990	LC6
253	Max	2.760	LC12	2.283	LC12	1.607	LC19	0.07667	LC19	0.07991	LC7	0.01466	LC5
	Min	0.340	LC6	0.265	LC6	0.188	LC6	-0.03278	LC7	-0.08787	LC1	-0.08642	LC18
254	Max	-0.541	LC5	2.129	LC30	1.518	LC29	0.10161	LC1	0.12349	LC1	0.07853	LC30
	Min	-2.579	LC30	0.428	LC8	0.307	LC8	-0.06280	LC7	-0.11147	LC7	-0.01336	LC5
255	Max	0.109	LC6	1.576	LC9	-0.205	LC7	0.00216	LC7	0.20093	LC4	0.11889	LC4
	Min	-0.111	LC8	0.122	LC7	-2.671	LC9	-0.02353	LC9	-0.19409	LC6	-0.11484	LC6
256	Max	0.377	LC2	0.363	LC10	0.313	LC1	-0.02216	LC5	0.24556	LC2	0.19268	LC4
	Min	-0.377	LC4	0.183	LC5	-0.313	LC3	-0.25888	LC3	-0.24556	LC4	-0.19268	LC2
257	Max	0.217	LC6	0.285	LC12	0.206	LC1	0.25738	LC1	0.11502	LC3	0.34170	LC4
	Min	-0.217	LC4	0.157	LC8	-0.206	LC3	-0.13708	LC7	-0.11502	LC1	-0.13346	LC6
258	Max	0.217	LC6	0.285	LC9	0.206	LC5	0.25738	LC1	0.11502	LC1	0.13346	LC8
	Min	-0.217	LC4	0.157	LC7	-0.206	LC3	-0.13708	LC7	-0.11502	LC3	-0.34170	LC2

Date: 6/29/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM **Checked By:** MSC

CHECK CONNECTION CAPACITY (Worst Case) → EXISTING CONDITIONS (NODE 4)

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 1/2" Threaded Rod

Allowable Tensile Load =

F_{Tall} = 4271 lbs.

Allowable Shear Load =

F_{vall} = 2562 lbs.

TENSILE FORCES

Reaction **F =** 2704 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 3662 lbs. (See Bentley Output)
Reactions in Y direction: 474 lbs. (See Bentley Output)

Resultant: 3693 lbs.

No. of Supports = 1
No. of Bolts / Support = 3

Tension Design Load /Bolts =

f_t= 901.33 lbs. < 4271 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 1230.85 lbs. < 2562 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.211	+	0.480	=	0.691	<	1.0	**Therefore, OK !**

Date: 6/29/2023
Project Name: PLAINFIELD NORTH
Project No.: CT2059
Designed By: KM **Checked By:** MSC

CHECK CONNECTION CAPACITY (Worst Case) → PROPOSED CONDITIONS (NODE 253)

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 5/8" Threaded Rod

Allowable Tensile Load =

F_{Tall} = 6673 lbs.

Allowable Shear Load =

F_{vall} = 4004 lbs.

TENSILE FORCES

Reaction **F =** 1607 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 2760 lbs. (See Bentley Output)
Reactions in Y direction: 2283 lbs. (See Bentley Output)

Resultant: 3582 lbs.

No. of Supports = 1
No. of Bolts / Support = 3

Tension Design Load /Bolts =

f_t= 535.67 lbs. < 6673 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 1193.95 lbs. < 4004 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.080	+	0.298	=	0.378	<	1.0	**Therefore, OK !**