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

www.ct.gov/csc

VIA ELECTRONIC MAIL

July 30, 2019

Aaron Meyers
Site Acquisition
Centerline Communications, LLC
750 W. Center Street, Floor 3
West Bridgewater, MA 02379

RE: **EM-CING-097-190703 –** New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 151 Berkshire Road, Newtown, Connecticut.

Dear Mr. Meyers:

The Connecticut Siting Council (Council) is in receipt of your correspondence of July 24, 2019 submitted in response to the Council's July 19, 2019 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

c: David Ford, Centerline Communications

Robidoux, Evan

From: David Ford <dford@clinellc.com>
Sent: Wednesday, July 24, 2019 2:19 PM
To: Robidoux, Evan
Cc: CSC-DL Siting Council; Aaron Meyers; David Ford
Subject: RE: Council Incomplete Letter for EM-CING-097-190703-BerkshireRd-Newtown
Attachments: em-cing-097-190703_incompleteltr_BerkshireRd.pdf; CT5432 (2C-3C-4C) Mount Analysis Rev1 07232019.pdf

Evan,

In response to the CSC memo dated 7/19/19, attached please find the revised mount analysis.

We'll also submit a hard copy to your attention.

Thanks

David Ford
Centerline Communications
(508) 821-6509

From: Aaron Meyers
Sent: Monday, July 22, 2019 10:29 AM
To: David Ford <dford@clinellc.com>
Subject: FW: Council Incomplete Letter for EM-CING-097-190703-BerkshireRd-Newtown

CT5432

From: Robidoux, Evan <Evan.Robidoux@ct.gov>
Sent: Monday, July 22, 2019 9:49 AM
To: Aaron Meyers <ameyers@clinellc.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council Incomplete Letter for EM-CING-097-190703-BerkshireRd-Newtown

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

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

www.ct.gov/csc

July 19, 2019

Aaron Meyers
Site Acquisition
Centerline Communications, LLC
750 W. Center Street, Floor 3
West Bridgewater, MA 02379

RE: **EM-CING-097-190703 –** New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 151 Berkshire Road, Newtown, Connecticut.

Dear Mr. Meyers:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on July 18, 2015.

According to Section 16-50j-71 of the Regulations of Connecticut State Agencies, "...any modification, as defined in Section 16-50j-2a of the Regulations of Connecticut State Agencies, to an existing tower site, except as specified in Sections 16-50j-72 and 16-50j-88 of the Regulations of Connecticut State Agencies, may have a substantial adverse environmental effect."

Staff has reviewed this exempt modification request for completeness and has identified an inconsistency between the Structural Analysis Report (SA) prepared by Tower Engineering Solutions and dated June 14, 2019, and the Mount Analysis (MA) prepared by Hudson Design Group and dated April 22, 2019. The proposed final configuration as shown on page 4 of the SA indicates that 6 tower mounted amplifiers (TMA) would be part of the equipment loading, however, the MA does not show any TMA's on its equipment listing as indicated on page 1.

Therefore, the exempt modification request is incomplete at this time. The Council recommends that Centerline Communications provide a MA that accounts for all AT&T's proposed and existing equipment and is consistent with the SA, on or before August 19, 2019. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to August 19, 2019. **Please provide an electronic version and one hard copy of the response for the incomplete request to be rendered complete and processed.**

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/IN/emr

c: The Honorable Daniel C. Rosenthal, First Selectman, Town of Newtown
George Benson, Director of Planning and Land Use, Town of Newtown
Wes Thompson, Chairman, Economic Development Commission, Town of Newtown

April 22, 2019
July 23, 2019 (Rev. 1)

CENTERLINE COMMUNICATIONS at&t

Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE:		
	Site Number:	CT5432 (LTE 2C/3C/4C)
	FA Number:	10071168
	PACE Number:	MRCTB037970
	PT Number:	-
	Site Name:	NEWTOWN EAST CENTRAL
	Site Address:	151 Berkshire Road Sandy Hook, CT 06482

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the existing AT&T antenna/RRH mount to determine their capability of supporting the following additional loading:

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)
- **(6) 800-10965 Antennas (78.7"x20.0"x6.9"– Wt. = 109 lbs. /each)**
- **(3) B5/B12 4449 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mount. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mount on April 16, 2019.

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 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R12.
- HDG 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 N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 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 1.13 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 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 2.
- 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 mount. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mount **IS NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Install new handrail kit, SitePro1 P/N HRK12 (or approved equal).**
- **Remove existing pipe mast and install new 2-1/2" std. (2.88" O.D.) pipe mast behind new 800-10965 antennas secured to existing mount (typ. of 1 per sector, total of 3).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 2C/3C/4C) Mount Rating	29	LC3	103%	**FAIL**
Modified (LTE 2C/3C/4C) Mount Rating	12	LC1	96%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG 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. HDG 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.

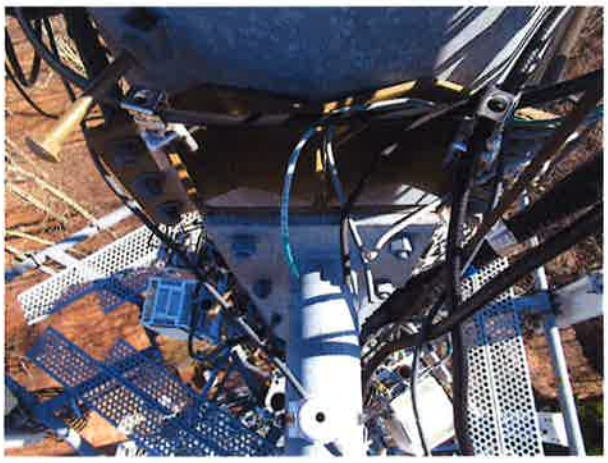
Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Structural Dept. Head

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:

p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473



p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	120 (ft)
	z_g=	1200 (ft)
K_z= 1.041	α=	7.0

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}= #DIV/0!

K_h=	#DIV/0!	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	120	
z_s=	1500	(Mean elevation of base of structure above se
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	0.95	(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=	1.0 (from Table 2-3)
	K_{Iz} =	1.14 (from Sec. 2.6.10)

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

t_{iz} = 1.14 in

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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=	149	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=	1.041	(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=	**34.53**	K_e=	0.95	(from 2.6.8)
$q_{z\ (ice)}$=	**6.00**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**2.16**	V_{max}=	120	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: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 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 = **1.14** 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)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	**190**	**42**	**12**
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	**477**	**95**	**30**
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.43	1.20	**45**	**11**	**3**
B5/B12 4449 RRH (Shielded)	14.9	6.6	13.2	0.68	2.26	1.20	**28**	**8**	**2**
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.20	**47**	**11**	**3**
B2/B66A 8843 RRH (Shielded)	14.9	6.6	13.2	0.68	2.26	1.20	**28**	**8**	**2**
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.20	**45**	**11**	**3**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**39**	**9**	**2**
2" Pipe	2.4	12.0		0.20	0.20	1.20	**8**	**3**	**1**
3" Pipe	3.5	12.0		0.29	0.29	1.20	**12**	**4**	**1**
2x2 Angle	2.0	12.0		0.17	0.17	2.00	**12**	**5**	**1**
3-1/2x3 Channel	3.5	12.0		0.29	0.29	2.00	**20**	**7**	**1**
6x3/8 Plate	6.0	12.0		0.50	0.50	2.00	**35**	**10**	**2**

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.14	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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	190	101	168
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	477	201	408
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	45	57	48
B5/B12 4449 RRH (Shielc	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	23	57	31
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	47	57	49
B2/B66A 8843 RRH (Shie	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	24	57	32
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	45	55	48

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.28	2.89	4.31	7.87	1.28	1.43	41	25	37
800-10965 Antenna	81.0	22.3	9.2	12.53	5.16	3.64	8.83	1.25	1.46	94	45	82
B5/B12 4449 RRH	17.2	12.7	15.5	1.51	1.85	1.36	1.11	1.20	1.20	11	13	11
B5/B12 4449 RRH (Shielc	17.2	6.3	15.5	0.76	1.85	2.71	1.11	1.21	1.20	5	13	7
B2/B66A 8843 RRH	17.2	13.2	15.5	1.57	1.85	1.30	1.11	1.20	1.20	11	13	12
B2/B66A 8843 RRH (Shie	17.2	6.6	15.5	0.79	1.85	2.61	1.11	1.20	1.20	6	13	8
LGP21401 TMA	16.7	13.2	15.5	1.53	1.79	1.27	1.08	1.20	1.20	11	13	11

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	10
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	30	13	26
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
B5/B12 4449 RRH (Shielc	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	1	4	2
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shie	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	1	4	2
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	3	3	3

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.14	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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	190	101	123
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	477	201	270
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	45	57	54
B5/B12 4449 RRH (Shielc	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	33	57	51
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	47	57	54
B2/B66A 8843 RRH (Shie	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	35	57	51
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	45	55	52

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.28	2.89	4.31	7.87	1.28	1.43	41	25	29
800-10965 Antenna	81.0	22.3	9.2	12.53	5.16	3.64	8.83	1.25	1.46	94	45	57
B5/B12 4449 RRH	17.2	12.7	15.5	1.51	1.85	1.36	1.11	1.20	1.20	11	13	13
B5/B12 4449 RRH (Shielc	17.2	9.5	15.5	1.13	1.85	1.81	1.11	1.20	1.20	8	13	12
B2/B66A 8843 RRH	17.2	13.2	15.5	1.57	1.85	1.30	1.11	1.20	1.20	11	13	13
B2/B66A 8843 RRH (Shie	17.2	9.9	15.5	1.18	1.85	1.74	1.11	1.20	1.20	8	13	12
LGP21401 TMA	16.7	13.2	15.5	1.53	1.79	1.27	1.08	1.20	1.20	11	13	12

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	8
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	30	13	17
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
B5/B12 4449 RRH (Shielc	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	2	4	3
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shie	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	2	4	3
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	3	3	3

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.14	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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	190	101	101
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	477	201	201
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	45	57	57
B5/B12 4449 RRH (Shielc	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	28	57	57
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	47	57	57
B2/B66A 8843 RRH (Shie	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	28	57	57
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	45	55	55

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.28	2.89	4.31	7.87	1.28	1.43	41	25	25
800-10965 Antenna	81.0	22.3	9.2	12.53	5.16	3.64	8.83	1.25	1.46	94	45	45
B5/B12 4449 RRH	17.2	12.7	15.5	1.51	1.85	1.36	1.11	1.20	1.20	11	13	13
B5/B12 4449 RRH (Shielc	17.2	8.9	15.5	1.06	1.85	1.94	1.11	1.20	1.20	8	13	13
B2/B66A 8843 RRH	17.2	13.2	15.5	1.57	1.85	1.30	1.11	1.20	1.20	11	13	13
B2/B66A 8843 RRH (Shie	17.2	8.9	15.5	1.06	1.85	1.94	1.11	1.20	1.20	8	13	13
LGP21401 TMA	16.7	13.2	15.5	1.53	1.79	1.27	1.08	1.20	1.20	11	13	13

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	6
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	30	13	13
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4
B5/B12 4449 RRH (Shielc	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	4
B2/B66A 8843 RRH (Shie	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	4
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	3	3	3

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 120 (deg) | Ice Thickness = 1.14 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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	190	101	123
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	477	201	270
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	45	57	54
B5/B12 4449 RRH (Shield	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	33	57	51
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	47	57	54
B2/B66A 8843 RRH (Shie	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	35	57	51
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	45	55	52

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.28	2.89	4.31	7.87	1.28	1.43	41	25	29
800-10965 Antenna	81.0	22.3	9.2	12.53	5.16	3.64	8.83	1.25	1.46	94	45	57
B5/B12 4449 RRH	17.2	12.7	15.5	1.51	1.85	1.36	1.11	1.20	1.20	11	13	13
B5/B12 4449 RRH (Shield	17.2	9.5	15.5	1.13	1.85	1.81	1.11	1.20	1.20	8	13	12
B2/B66A 8843 RRH	17.2	13.2	15.5	1.57	1.85	1.30	1.11	1.20	1.20	11	13	13
B2/B66A 8843 RRH (Shie	17.2	9.9	15.5	1.18	1.85	1.74	1.11	1.20	1.20	8	13	12
LGP21401 TMA	16.7	13.2	15.5	1.53	1.79	1.27	1.08	1.20	1.20	11	13	12

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	8
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	30	13	17
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
B5/B12 4449 RRH (Shield	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	2	4	3
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shie	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	2	4	3
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	3	3	3

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.14	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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	190	101	168
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	477	201	408
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	45	57	48
B5/B12 4449 RRH (Shield	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	23	57	31
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	47	57	49
B2/B66A 8843 RRH (Shiel	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	24	57	32
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	45	55	48

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.28	2.89	4.31	7.87	1.28	1.43	41	25	37
800-10965 Antenna	81.0	22.3	9.2	12.53	5.16	3.64	8.83	1.25	1.46	94	45	82
B5/B12 4449 RRH	17.2	12.7	15.5	1.51	1.85	1.36	1.11	1.20	1.20	11	13	11
B5/B12 4449 RRH (Shield	17.2	6.3	15.5	0.76	1.85	2.71	1.11	1.21	1.20	5	13	7
B2/B66A 8843 RRH	17.2	13.2	15.5	1.57	1.85	1.30	1.11	1.20	1.20	11	13	12
B2/B66A 8843 RRH (Shiel	17.2	6.6	15.5	0.79	1.85	2.61	1.11	1.20	1.20	6	13	8
LGP21401 TMA	16.7	13.2	15.5	1.53	1.79	1.27	1.08	1.20	1.20	11	13	11

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	10
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	30	13	26
B5/B12 4449 RRH	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
B5/B12 4449 RRH (Shield	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	1	4	2
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shiel	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	1	4	2
LGP21401 TMA	14.4	10.9	13.2	1.09	1.32	1.32	1.09	1.20	1.20	3	3	3

Date: 7/23/2019
Project Name: NEWTOWN EAST CENTRAL
Project No.: CT5432
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.14 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		84 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		119 lbs

800-10965 Antenna

Weight of ice based on total radial SF area:

Height (in):	78.7	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		204 lbs
Weight of object:	109.0 lbs	
Combined weight of ice and object:		313 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.4	
Total weight of ice on object:		31 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		104 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

LGP21401 TMA

Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	2.7	
Depth (in):	9.0	
Total weight of ice on object:		18 lbs
Weight of object:	19.0 lbs	
Combined weight of ice and object:		37 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		30 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		63 lbs

L 2x2 Angles

Weight of ice based on total radial SF area:

Height (in):	2	
Width (in):	2	
Per foot weight of ice on object:		6 plf

2" pipe

Per foot weight of ice:

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

PL 6x3/8

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	0.375	
Per foot weight of ice on object:		10 plf

3" Pipe

Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		6 plf

C 3-1/2x2

Weight of ice based on total radial SF area:

Height (in):	3.5	
Width (in):	2	
Per foot weight of ice on object:		7 plf

HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)

Bentley

Current Date: 7/23/2019 9:06 AM
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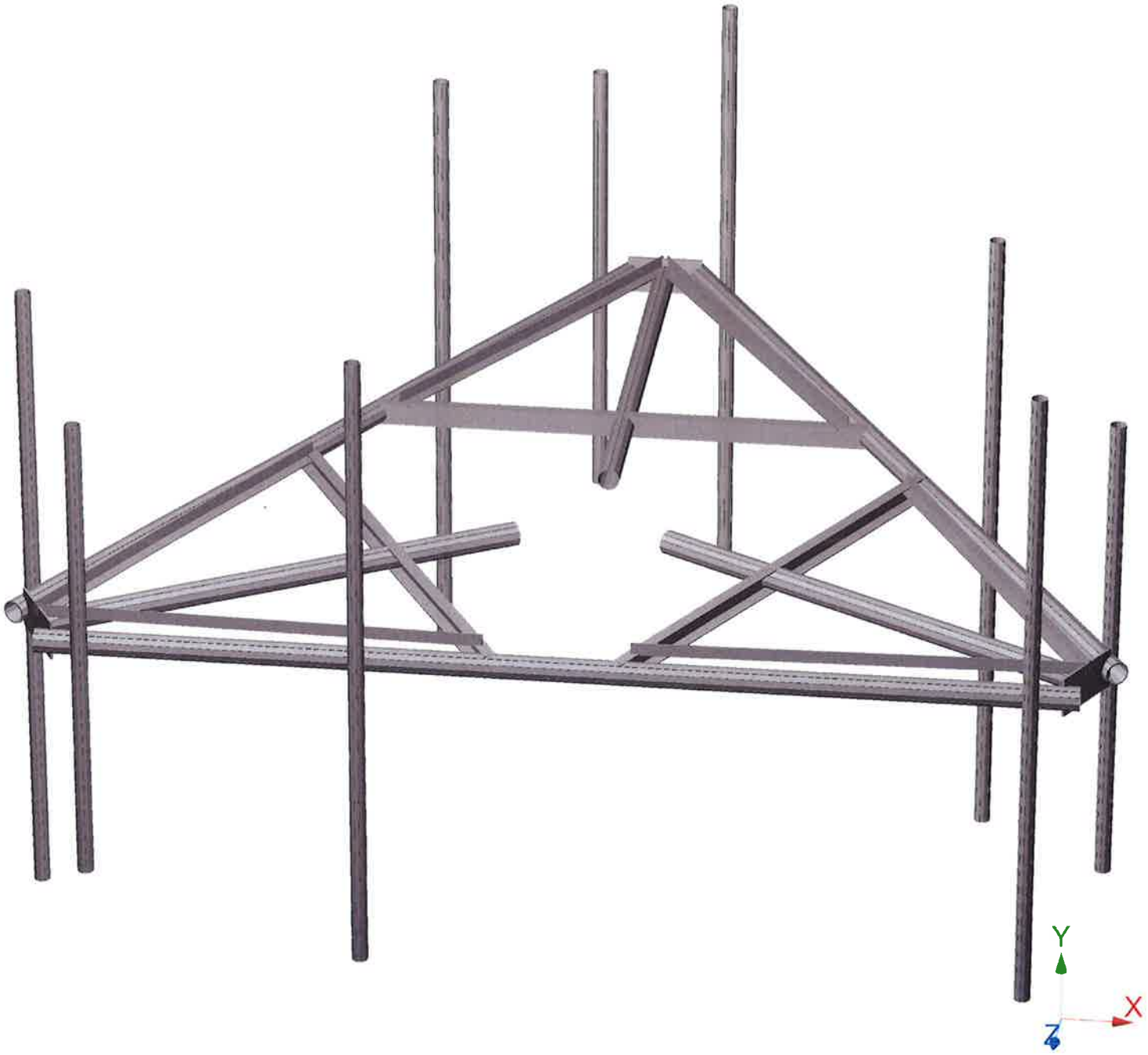

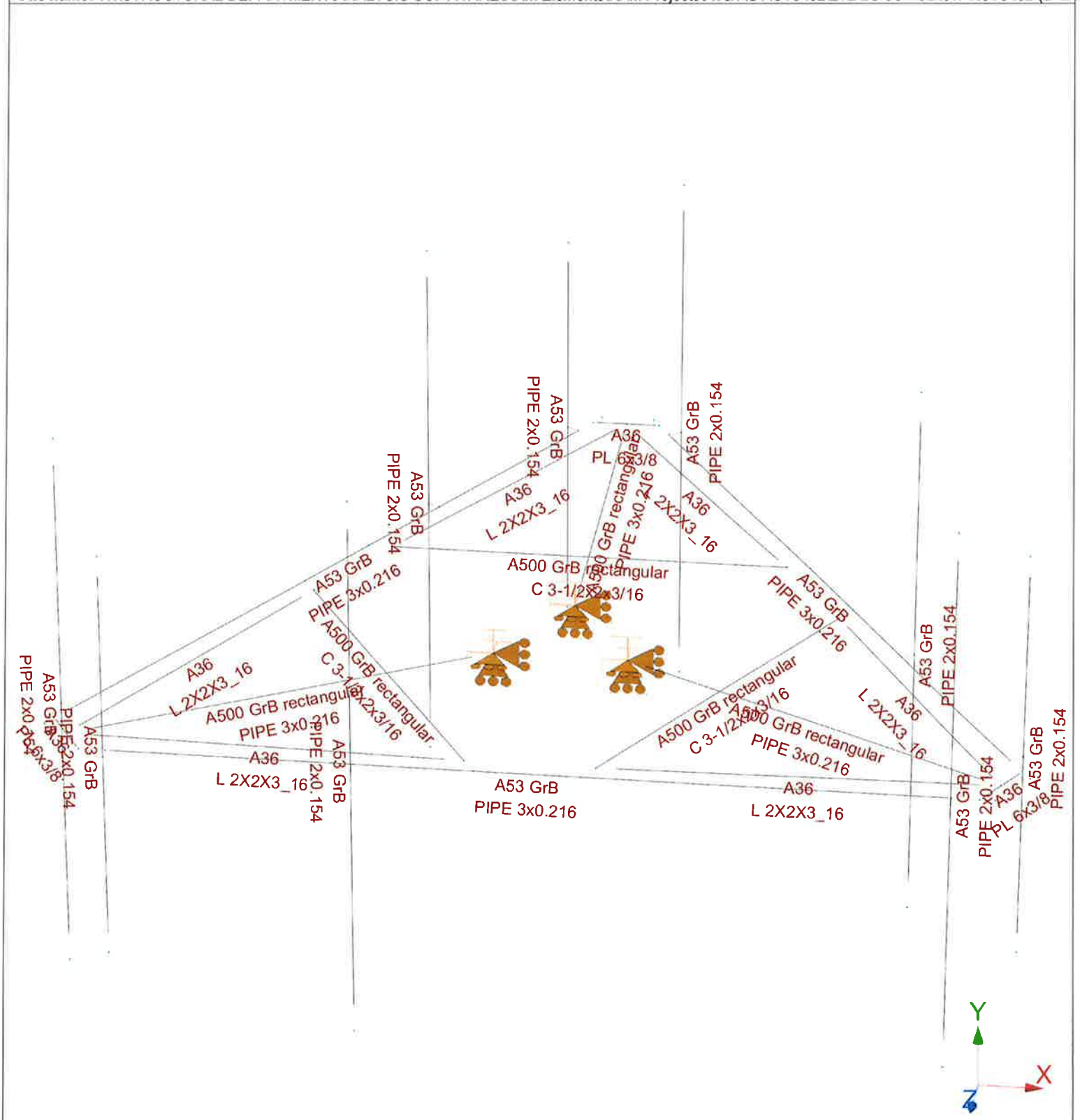
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A36
L 2X2X3_16
A500 GrB rectangular
C 3-1/2x3/16
A53 GrB
PIPE 3x0.216
A36
PL 6x3/8
A500 GrB rectangular
PIPE 3x0.216
A36
L 2X2X3_16
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A36
L 2X2X3_16
A500 GrB rectangular
C 3-1/2x3/16
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 3x0.216
A36
L 2X2X3_16
A500 GrB rectangular
C 3-1/2x3/16
A500 GrB rectangular
PIPE 3x0.216
A53 GrB
PIPE 2x0.154
A36
L 2X2X3_16
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A36
L 6x3/8
A53 GrB
PIPE 2x0.154
Y
X
Z

Bentley

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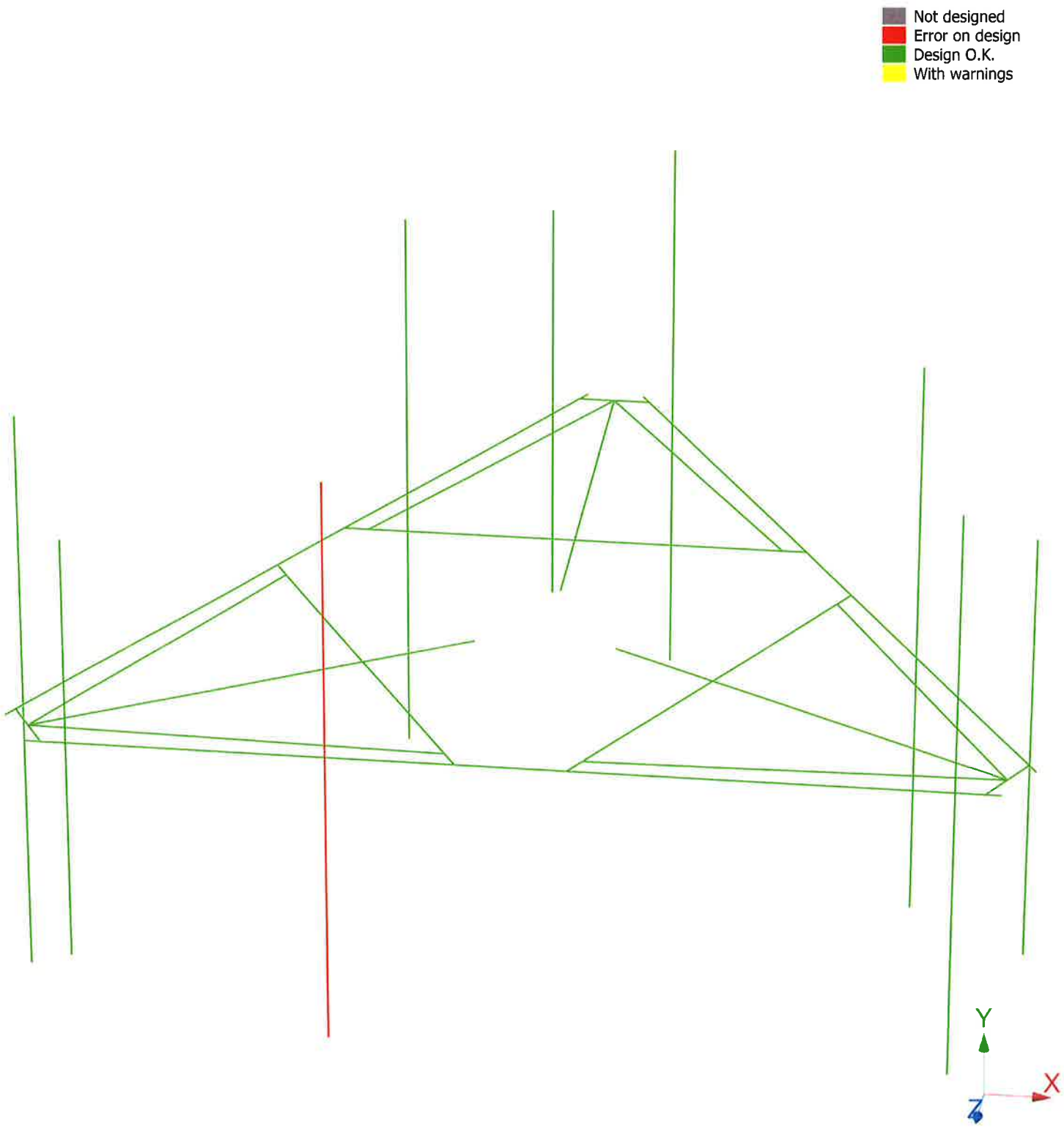

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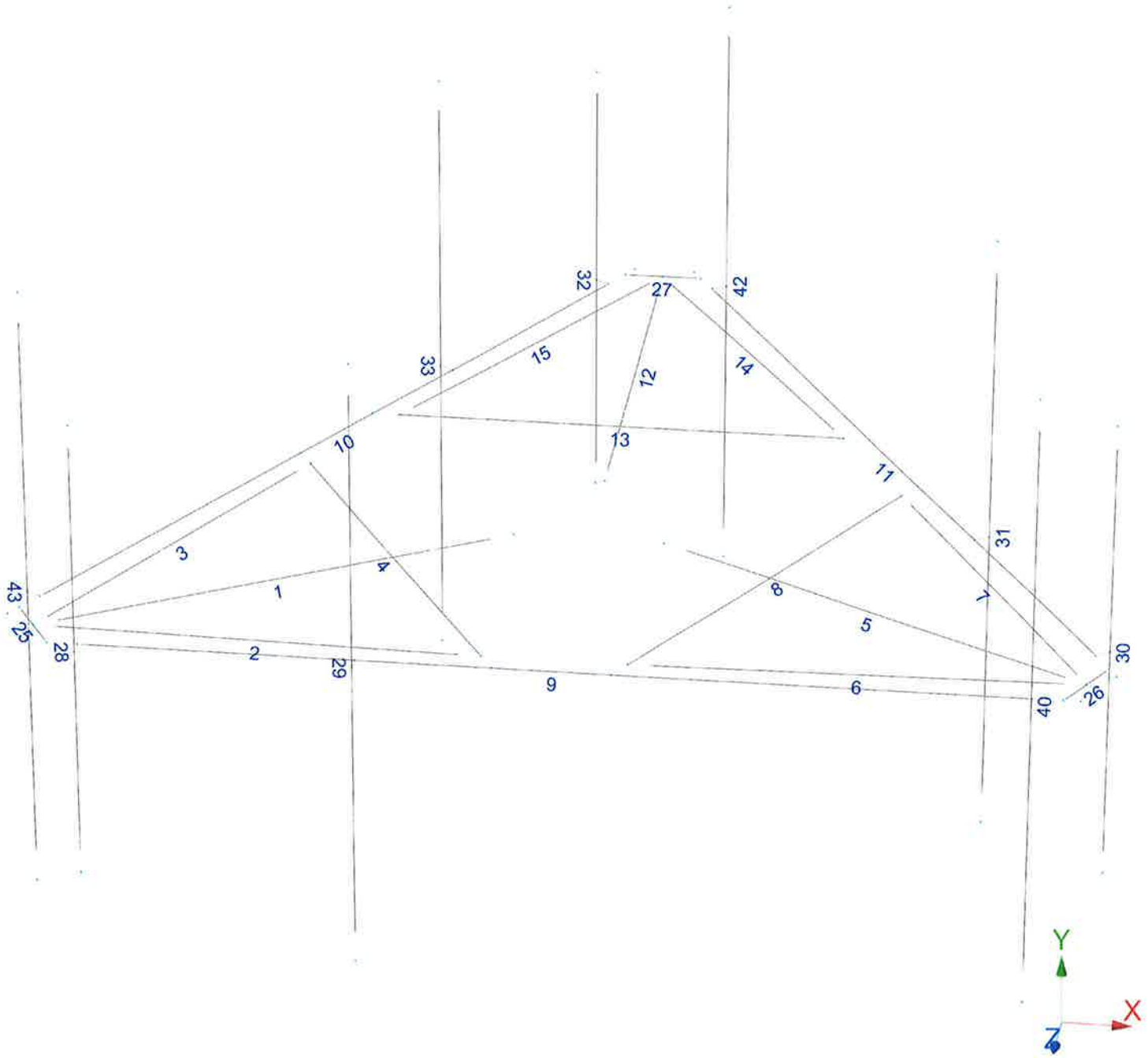

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Load data

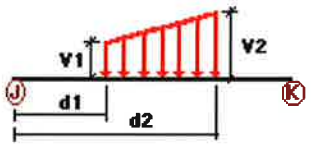
GLOSSARY

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	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL

Distributed force on members

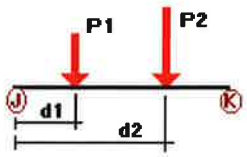


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	2	y	-0.01	0.00	0.00	No	0.00	No
	3	y	-0.01	0.00	0.00	No	0.00	No
	4	y	-0.01	0.00	0.00	No	0.00	No
	6	y	-0.01	0.00	0.00	No	0.00	No
	7	y	-0.01	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	13	y	-0.01	0.00	0.00	No	0.00	No
	14	y	-0.01	0.00	0.00	No	0.00	No
	15	y	-0.01	0.00	0.00	No	0.00	No
W0	1	z	-0.012	0.00	0.00	No	0.00	No
	2	z	-0.011	0.00	0.00	No	0.00	No
	3	z	-0.011	0.00	0.00	No	0.00	No
	4	z	-0.02	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	6	z	-0.011	0.00	0.00	No	0.00	No

	7	z	-0.011	0.00	0.00	No	0.00	No
	8	z	-0.02	0.00	0.00	No	0.00	No
	9	z	-0.012	0.00	0.00	No	0.00	No
	10	z	-0.012	0.00	0.00	No	0.00	No
	11	z	-0.012	0.00	0.00	No	0.00	No
	12	z	-0.012	0.00	0.00	No	0.00	No
	13	z	-0.02	0.00	0.00	No	0.00	No
	14	z	-0.011	0.00	0.00	No	0.00	No
	15	z	-0.011	0.00	0.00	No	0.00	No
	25	z	-0.034	0.00	0.00	No	0.00	No
	26	z	-0.034	0.00	0.00	No	0.00	No
	27	z	-0.034	0.00	0.00	No	0.00	No
W30	1	x	-0.012	0.00	0.00	No	0.00	No
	2	x	-0.011	0.00	0.00	No	0.00	No
	3	x	-0.011	0.00	0.00	No	0.00	No
	4	x	-0.02	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.011	0.00	0.00	No	0.00	No
	7	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.02	0.00	0.00	No	0.00	No
	9	x	-0.012	0.00	0.00	No	0.00	No
	10	x	-0.012	0.00	0.00	No	0.00	No
	11	x	-0.012	0.00	0.00	No	0.00	No
	12	x	-0.012	0.00	0.00	No	0.00	No
	13	x	-0.02	0.00	0.00	No	0.00	No
	14	x	-0.011	0.00	0.00	No	0.00	No
	15	x	-0.011	0.00	0.00	No	0.00	No
	25	x	-0.034	0.00	0.00	No	0.00	No
	26	x	-0.034	0.00	0.00	No	0.00	No
	27	x	-0.034	0.00	0.00	No	0.00	No
	28	x	-0.008	0.00	0.00	No	0.00	No
	29	x	-0.008	0.00	0.00	No	0.00	No
	30	x	-0.008	0.00	0.00	No	0.00	No
	31	x	-0.008	0.00	0.00	No	0.00	No
	32	x	-0.008	0.00	0.00	No	0.00	No
	33	x	-0.008	0.00	0.00	No	0.00	No
	40	x	-0.008	0.00	0.00	No	0.00	No
	42	x	-0.008	0.00	0.00	No	0.00	No
	43	x	-0.008	0.00	0.00	No	0.00	No
Di	1	y	-0.006	0.00	0.00	No	0.00	No
	2	y	-0.005	0.00	0.00	No	0.00	No
	3	y	-0.005	0.00	0.00	No	0.00	No
	4	y	-0.007	0.00	0.00	No	0.00	No
	5	y	-0.006	0.00	0.00	No	0.00	No
	6	y	-0.005	0.00	0.00	No	0.00	No
	7	y	-0.005	0.00	0.00	No	0.00	No
	8	y	-0.007	0.00	0.00	No	0.00	No
	9	y	-0.006	0.00	0.00	No	0.00	No
	10	y	-0.006	0.00	0.00	No	0.00	No
	11	y	-0.006	0.00	0.00	No	0.00	No
	12	y	-0.006	0.00	0.00	No	0.00	No
	13	y	-0.007	0.00	0.00	No	0.00	No
	14	y	-0.005	0.00	0.00	No	0.00	No
	15	y	-0.005	0.00	0.00	No	0.00	No
	25	y	-0.01	0.00	0.00	No	0.00	No
	26	y	-0.01	0.00	0.00	No	0.00	No
	27	y	-0.01	0.00	0.00	No	0.00	No
	28	y	-0.005	0.00	0.00	No	0.00	No
	29	y	-0.005	0.00	0.00	No	0.00	No
	30	y	-0.005	0.00	0.00	No	0.00	No

31	y	-0.005	0.00	0.00	No	0.00	No
32	y	-0.005	0.00	0.00	No	0.00	No
33	y	-0.005	0.00	0.00	No	0.00	No
40	y	-0.005	0.00	0.00	No	0.00	No
42	y	-0.005	0.00	0.00	No	0.00	No
43	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	28	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.038	2.00	No
	29	y	-0.055	0.50	No
		y	-0.055	7.50	No
		y	-0.145	1.50	No
	30	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.038	2.00	No
	31	y	-0.055	0.50	No
		y	-0.055	7.50	No
		y	-0.145	1.50	No
	32	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.038	2.00	No
	33	y	-0.055	0.50	No
		y	-0.055	7.50	No
		y	-0.145	1.50	No
	40	y	-0.055	0.50	No
		y	-0.055	7.50	No
	42	y	-0.055	0.50	No
		y	-0.055	7.50	No
	43	y	-0.055	0.50	No
		y	-0.055	7.50	No
W0	28	z	-0.095	0.50	No
		z	-0.095	4.50	No
		z	-0.09	2.00	No
	29	z	-0.237	0.50	No
		z	-0.237	7.50	No
		z	-0.056	1.50	No
	30	z	-0.062	0.50	No
		z	-0.062	4.50	No
		z	-0.104	2.00	No
	31	z	-0.134	0.50	No
		z	-0.134	7.50	No
		z	-0.051	1.50	No
	32	z	-0.062	0.50	No
		z	-0.062	4.50	No
		z	-0.104	2.00	No

	33	z	-0.134	0.50	No
		z	-0.134	7.50	No
		z	-0.051	1.50	No
	40	z	-0.237	0.50	No
		z	-0.237	7.50	No
	42	z	-0.134	0.50	No
		z	-0.134	7.50	No
	43	z	-0.134	0.50	No
		z	-0.134	7.50	No
W30	28	x	-0.051	0.50	No
		x	-0.051	4.50	No
		x	-0.11	2.00	No
	29	x	-0.10	0.50	No
		x	-0.10	7.50	No
		x	-0.056	1.50	No
	30	x	-0.084	0.50	No
		x	-0.084	4.50	No
		x	-0.096	2.00	No
	31	x	-0.203	0.50	No
		x	-0.203	7.50	No
		x	-0.032	1.50	No
	32	x	-0.084	0.50	No
		x	-0.084	4.50	No
		x	-0.096	2.00	No
	33	x	-0.203	0.50	No
		x	-0.203	7.50	No
		x	-0.032	1.50	No
	40	x	-0.10	0.50	No
		x	-0.10	7.50	No
	42	x	-0.203	0.50	No
		x	-0.203	7.50	No
	43	x	-0.203	0.50	No
		x	-0.203	7.50	No
Di	28	y	-0.042	0.50	No
		y	-0.042	4.50	No
		y	-0.036	2.00	No
	29	y	-0.101	0.50	No
		y	-0.101	7.50	No
		y	-0.062	1.50	No
	30	y	-0.042	0.50	No
		y	-0.042	4.50	No
		y	-0.036	2.00	No
	31	y	-0.101	0.50	No
		y	-0.101	7.50	No
		y	-0.062	1.50	No
	32	y	-0.042	0.50	No
		y	-0.042	4.50	No
		y	-0.036	2.00	No
	33	y	-0.101	0.50	No
		y	-0.101	7.50	No
		y	-0.062	1.50	No
	40	y	-0.101	0.50	No
		y	-0.101	7.50	No
	42	y	-0.101	0.50	No
		y	-0.101	7.50	No
	43	y	-0.101	0.50	No
		y	-0.101	7.50	No
Wi0	28	z	-0.021	0.50	No
		z	-0.021	4.50	No
		z	-0.022	2.00	No

	29	z	-0.047	0.50	No
		z	-0.047	7.50	No
		z	-0.016	1.50	No
	30	z	-0.015	0.50	No
		z	-0.015	4.50	No
		z	-0.024	2.00	No
	31	z	-0.029	0.50	No
		z	-0.029	7.50	No
		z	-0.012	1.50	No
	32	z	-0.015	0.50	No
		z	-0.015	4.50	No
		z	-0.024	2.00	No
	33	z	-0.029	0.50	No
		z	-0.029	7.50	No
		z	-0.012	1.50	No
	40	z	-0.047	0.50	No
		z	-0.047	7.50	No
	42	z	-0.029	0.50	No
		z	-0.029	7.50	No
	43	z	-0.029	0.50	No
		z	-0.029	7.50	No
Wi30	28	x	-0.013	0.50	No
		x	-0.013	4.50	No
		x	-0.026	2.00	No
	29	x	-0.023	0.50	No
		x	-0.023	7.50	No
		x	-0.013	1.50	No
	30	x	-0.019	0.50	No
		x	-0.019	4.50	No
		x	-0.022	2.00	No
	31	x	-0.041	0.50	No
		x	-0.041	7.50	No
		x	-0.007	1.50	No
	32	x	-0.019	0.50	No
		x	-0.019	4.50	No
		x	-0.022	2.00	No
	33	x	-0.041	0.50	No
		x	-0.041	7.50	No
		x	-0.007	1.50	No
	40	x	-0.023	0.50	No
		x	-0.023	7.50	No
	42	x	-0.041	0.50	No
		x	-0.041	7.50	No
	43	x	-0.041	0.50	No
		x	-0.041	7.50	No
WL0	28	z	-0.006	0.50	No
		z	-0.006	4.50	No
		z	-0.006	2.00	No
	29	z	-0.015	0.50	No
		z	-0.015	7.50	No
		z	-0.004	1.50	No
	30	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.006	2.00	No
	31	z	-0.009	0.50	No
		z	-0.009	7.50	No
		z	-0.003	1.50	No
	32	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.006	2.00	No

	33	z	-0.009	0.50	No
		z	-0.009	7.50	No
		z	-0.003	1.50	No
	40	z	-0.015	0.50	No
		z	-0.015	7.50	No
	42	z	-0.009	0.50	No
		z	-0.009	7.50	No
	43	z	-0.009	0.50	No
		z	-0.009	7.50	No
WL30	28	x	-0.004	0.50	No
		x	-0.004	4.50	No
		x	-0.006	2.00	No
	29	x	-0.007	0.50	No
		x	-0.007	7.50	No
		x	-0.004	1.50	No
	30	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.006	2.00	No
	31	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.002	1.50	No
	32	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.006	2.00	No
	33	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.002	1.50	No
	40	x	-0.007	0.50	No
		x	-0.007	7.50	No
	42	x	-0.013	0.50	No
		x	-0.013	7.50	No
	43	x	-0.013	0.50	No
		x	-0.013	7.50	No
LL1	9	y	-0.25	6.29	No
LL2	9	y	-0.25	0.00	No
LLa1	40	y	-0.25	4.00	No
LLa2	29	y	-0.25	3.00	No
LLa3	28	y	-0.25	3.00	No

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	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00

LLa3	250 lb Live Load Antenna 3	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

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Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5432\LTE 2C-3C-4C\Rev. 1\CT5432 (LTE 2C-3C-4C)(Rev. 1).retx\

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=1.2DL
LC15=1.2DL+1.5LL1
LC16=1.2DL+1.5LL2
LC17=1.2DL+WL0+1.5LLa1
LC18=1.2DL+WL30+1.5LLa1
LC19=1.2DL-WL0+1.5LLa1
LC20=1.2DL-WL30+1.5LLa1
LC21=1.2DL+WL0+1.5LLa2
LC22=1.2DL+WL30+1.5LLa2
LC23=1.2DL-WL0+1.5LLa2
LC24=1.2DL-WL30+1.5LLa2
LC25=1.2DL+WL0+1.5LLa3
LC26=1.2DL+WL30+1.5LLa3
LC27=1.2DL-WL0+1.5LLa3
LC28=1.2DL-WL30+1.5LLa3

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 3-1/2x2x3/16	**4**	LC11 at 50.00%	**0.56**	**OK**	Eq. H1-1b
		8	LC11 at 50.00%	0.54	OK	Eq. H1-1b
		13	LC9 at 50.00%	0.54	OK	Eq. H1-1b
	L 2X2X3_16	**2**	LC7 at 100.00%	0.46	OK	Eq. H2-1
		3	LC12 at 0.00%	0.46	OK	Eq. H2-1
		6	LC9 at 0.00%	0.47	OK	Eq. H2-1
		7	LC8 at 100.00%	**0.50**	**OK**	Eq. H2-1
		14	LC10 at 100.00%	0.46	OK	Eq. H2-1
		15	LC12 at 100.00%	0.44	OK	Eq. H2-1
	PIPE 2x0.154	**28**	LC1 at 46.88%	0.34	OK	Eq. H1-1b
		29	LC1 at 46.88%	**1.03**	**N.G.**	Eq. H1-1b
		30	LC2 at 46.88%	0.35	OK	Eq. H1-1b
		31	LC2 at 46.88%	0.91	OK	Eq. H1-1b
		32	LC2 at 46.88%	0.35	OK	Eq. H1-1b
		33	LC2 at 46.88%	0.91	OK	Eq. H1-1b
		40	LC1 at 50.00%	0.94	OK	Eq. H1-1b
		42	LC2 at 50.00%	0.62	OK	Eq. H1-1b
		43	LC2 at 50.00%	0.62	OK	Eq. H1-1b

PIPE 3x0.216	**1**	LC11 at 100.00%	0.91	OK	Eq. H1-1b
	5	LC11 at 100.00%	0.91	OK	Eq. H1-1b
	9	LC11 at 55.47%	0.55	OK	Eq. H1-1b
	10	LC10 at 44.53%	0.54	OK	Eq. H1-1b
	11	LC12 at 44.53%	0.55	OK	Eq. H1-1b
	12	LC12 at 0.00%	**0.92**	**OK**	Eq. H1-1b
PL 6x3/8	**25**	LC2 at 0.00%	0.35	OK	Eq. H1-1b
	26	LC4 at 50.00%	**0.36**	**OK**	Eq. H1-1b
	27	LC1 at 50.00%	0.30	OK	Eq. H1-1b

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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
2	-0.7253	0.00	4.0896	0
3	-6.0833	0.00	4.0896	0
4	-6.292	0.00	4.0896	0
5	-6.3333	0.00	3.6566	0
6	-6.5833	0.00	3.2236	0
7	-3.7376	0.00	-1.128	0
8	-3.9043	0.00	-1.4166	0
9	-0.892	0.00	3.8009	0
10	-6.6877	0.00	3.4042	0
11	-3.179	0.00	-2.6729	0
12	-2.8457	0.00	-2.6729	0
13	-0.50	0.00	-7.3131	0
14	-0.3957	0.00	-7.4938	0
17	0.7253	0.00	4.0896	0
18	6.0833	0.00	4.0896	0
19	6.292	0.00	4.0896	0
20	6.3333	0.00	3.6566	0
21	6.5833	0.00	3.2236	0
22	3.7376	0.00	-1.128	0
23	3.9043	0.00	-1.4166	0
24	0.892	0.00	3.8009	0

25	6.6877	0.00	3.4042	0
26	3.179	0.00	-2.6729	0
27	2.8457	0.00	-2.6729	0
28	0.50	0.00	-7.3131	0
29	0.3957	0.00	-7.4938	0
32	0.00	0.00	-7.3131	0
69	0.9427	0.00	0.5443	0
70	0.00	0.00	-1.0885	0
71	-0.9427	0.00	0.5443	0
76	-5.709	-3.00	4.2896	0
77	-2.355	-4.00	4.2896	0
78	-5.709	3.00	4.2896	0
79	-2.355	4.00	4.2896	0
84	-0.8604	-3.00	-7.0889	0
85	-2.5374	-4.00	-4.1843	0
86	-0.8604	3.00	-7.0889	0
87	-2.5374	4.00	-4.1843	0
92	6.5694	-3.00	2.7994	0
93	4.8924	-4.00	-0.1053	0
94	6.5694	3.00	2.7994	0
95	4.8924	4.00	-0.1053	0
98	5.712	-4.00	4.2896	0
99	5.712	4.00	4.2896	0
102	-6.5709	-4.00	2.802	0
103	-6.5709	4.00	2.802	0
106	0.8589	-4.00	-7.0915	0
107	0.8589	4.00	-7.0915	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
69	1	1	1	1	1	1
70	1	1	1	1	1	1
71	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	5	71		PIPE 3x0.216	A500 GrB rectangular	0.00	0.00	0.00
2	5	9		L 2X2X3_16	A36	0.00	0.00	0.00
3	5	7		L 2X2X3_16	A36	0.00	0.00	0.00
4	8	2		C 3-1/2x2x3/16	A500 GrB rectangular	0.00	0.00	0.00
5	20	69		PIPE 3x0.216	A500 GrB rectangular	0.00	0.00	0.00
6	20	24		L 2X2X3_16	A36	0.00	0.00	0.00
7	20	22		L 2X2X3_16	A36	0.00	0.00	0.00
8	23	17		C 3-1/2x2x3/16	A500 GrB rectangular	0.00	0.00	0.00
9	4	19		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
10	10	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
11	29	25		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
12	70	32		PIPE 3x0.216	A500 GrB rectangular	0.00	0.00	0.00

13	11	26	C 3-1/2x2x3/16	A500 GrB rectangular	0.00	0.00	0.00
14	27	32	L 2X2X3_16	A36	0.00	0.00	0.00
15	12	32	L 2X2X3_16	A36	0.00	0.00	0.00
25	6	3	PL 6x3/8	A36	0.00	0.00	0.00
26	18	21	PL 6x3/8	A36	0.00	0.00	0.00
27	28	13	PL 6x3/8	A36	0.00	0.00	0.00
28	78	76	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	79	77	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
30	94	92	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	95	93	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
32	86	84	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
33	87	85	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
40	99	98	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
42	107	106	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
43	103	102	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
2	270.00	0	0.00	0.00	0.00
7	270.00	0	0.00	0.00	0.00
8	180.00	0	0.00	0.00	0.00
13	180.00	0	0.00	0.00	0.00
14	270.00	0	0.00	0.00	0.00
28	0.00	2	0.7071	0.00	-0.7071
29	0.00	2	0.7071	0.00	-0.7071
30	0.00	2	0.7071	0.00	-0.7071
31	0.00	2	0.7071	0.00	-0.7071
32	0.00	2	0.7071	0.00	-0.7071
33	0.00	2	0.7071	0.00	-0.7071
40	0.00	2	0.7071	0.00	-0.7071

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
2	0.00	2.00	0.00	0.00	2.00	0.00
3	0.00	2.00	0.00	0.00	2.00	0.00
6	0.00	2.00	0.00	0.00	2.00	0.00
7	0.00	2.00	0.00	0.00	2.00	0.00
14	0.00	2.00	0.00	0.00	2.00	0.00
15	0.00	2.00	0.00	0.00	2.00	0.00

HUDSON
Design Group LLC

Mount Calculations
(Modified Conditions)

Bentley

Current Date: 7/22/2019 5:02 PM
Units system: English
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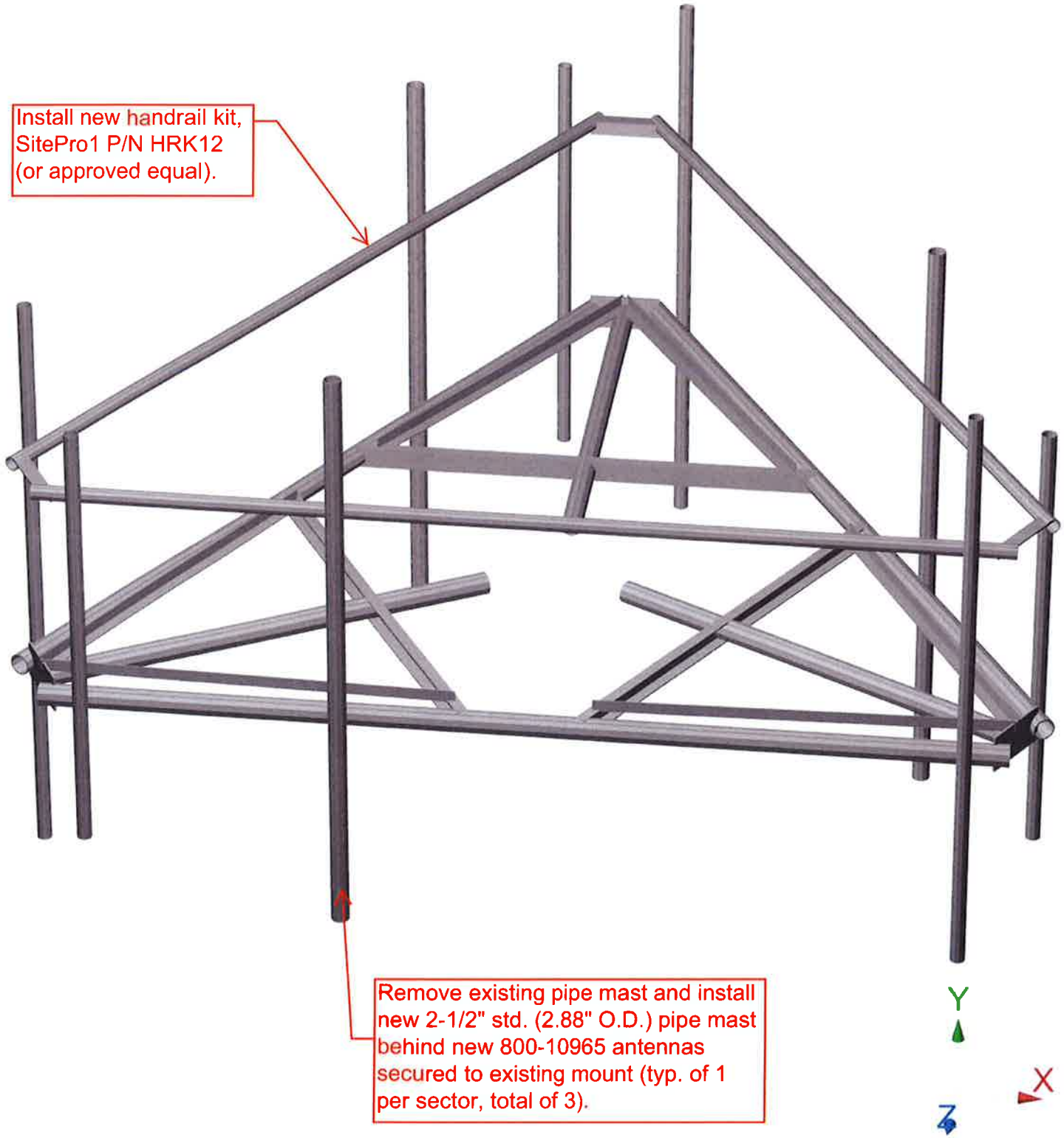

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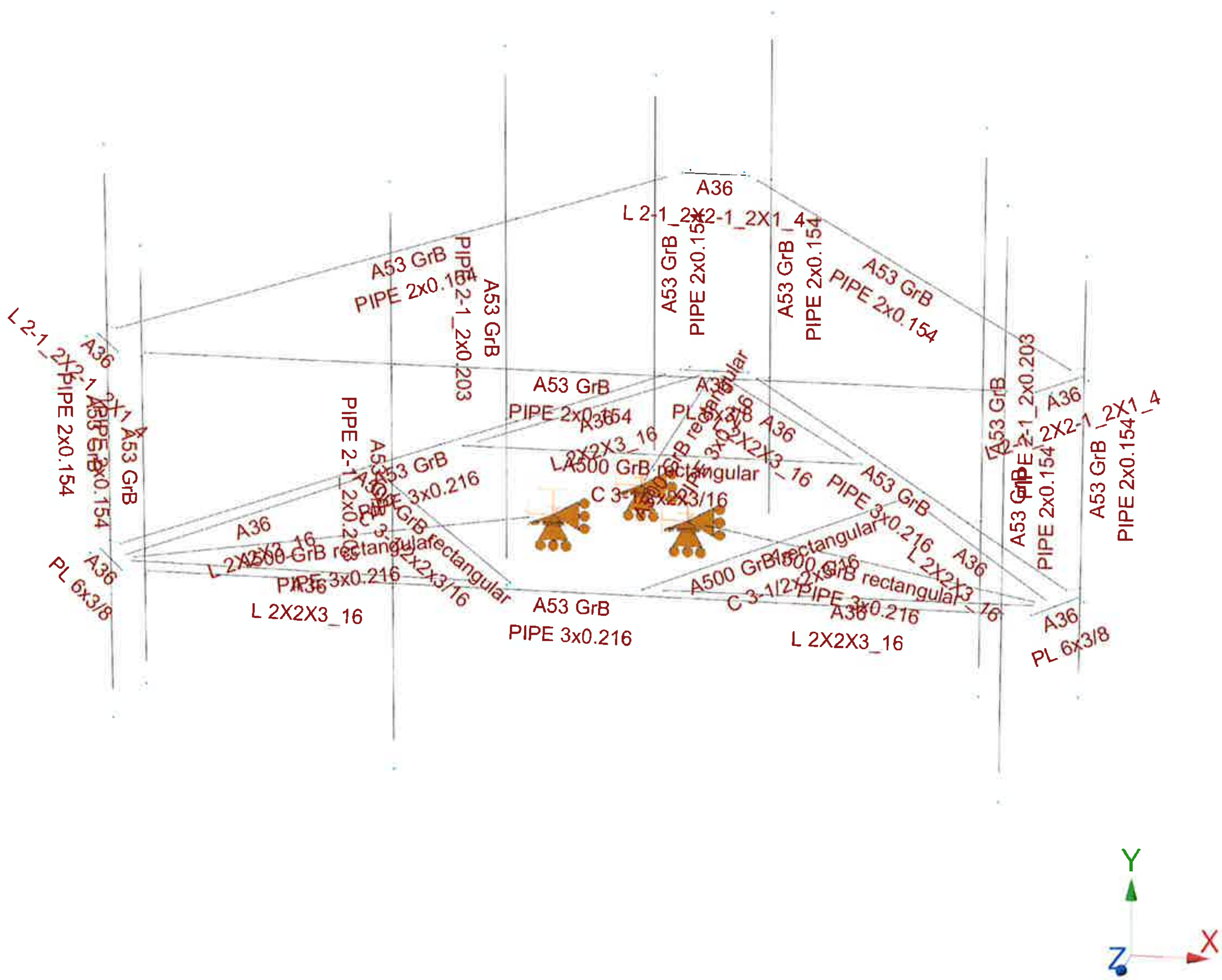
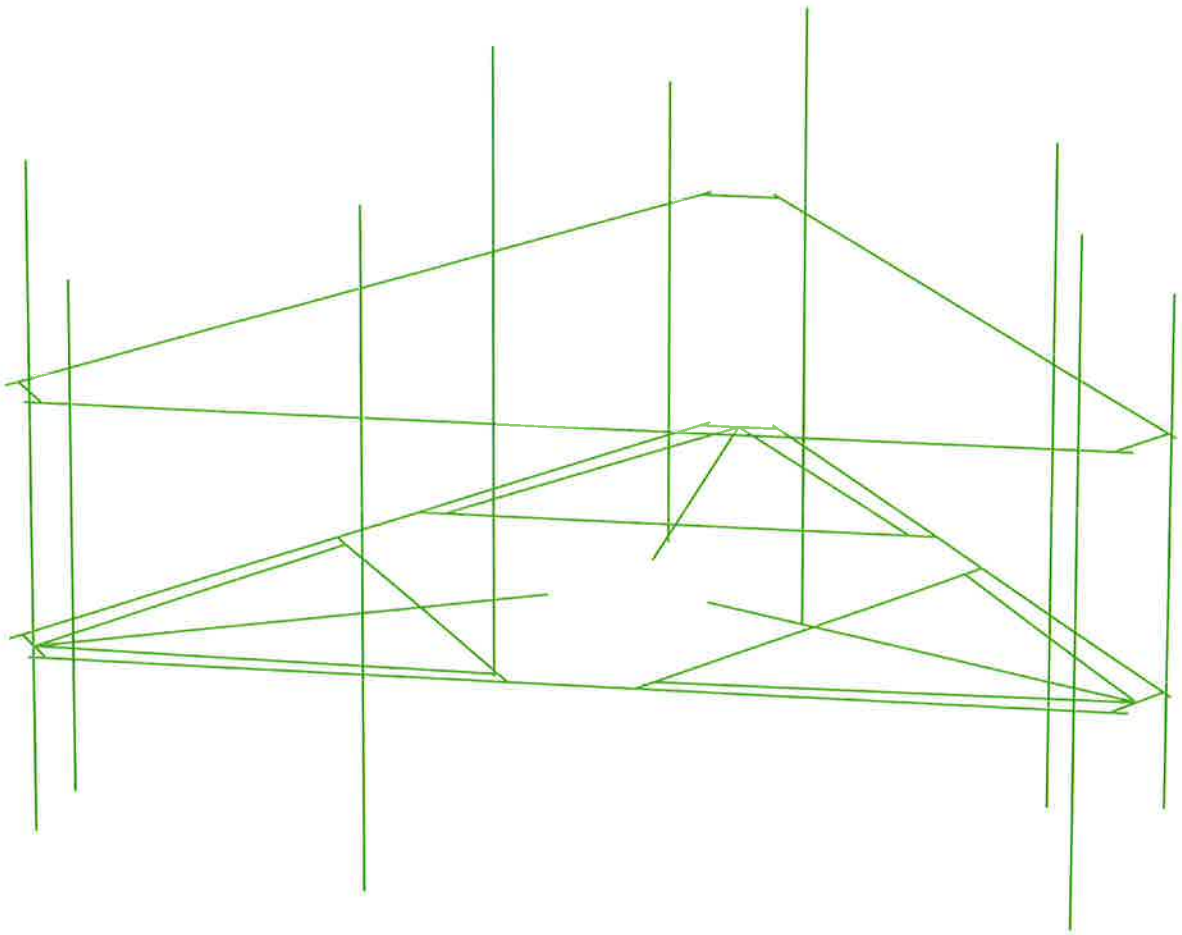
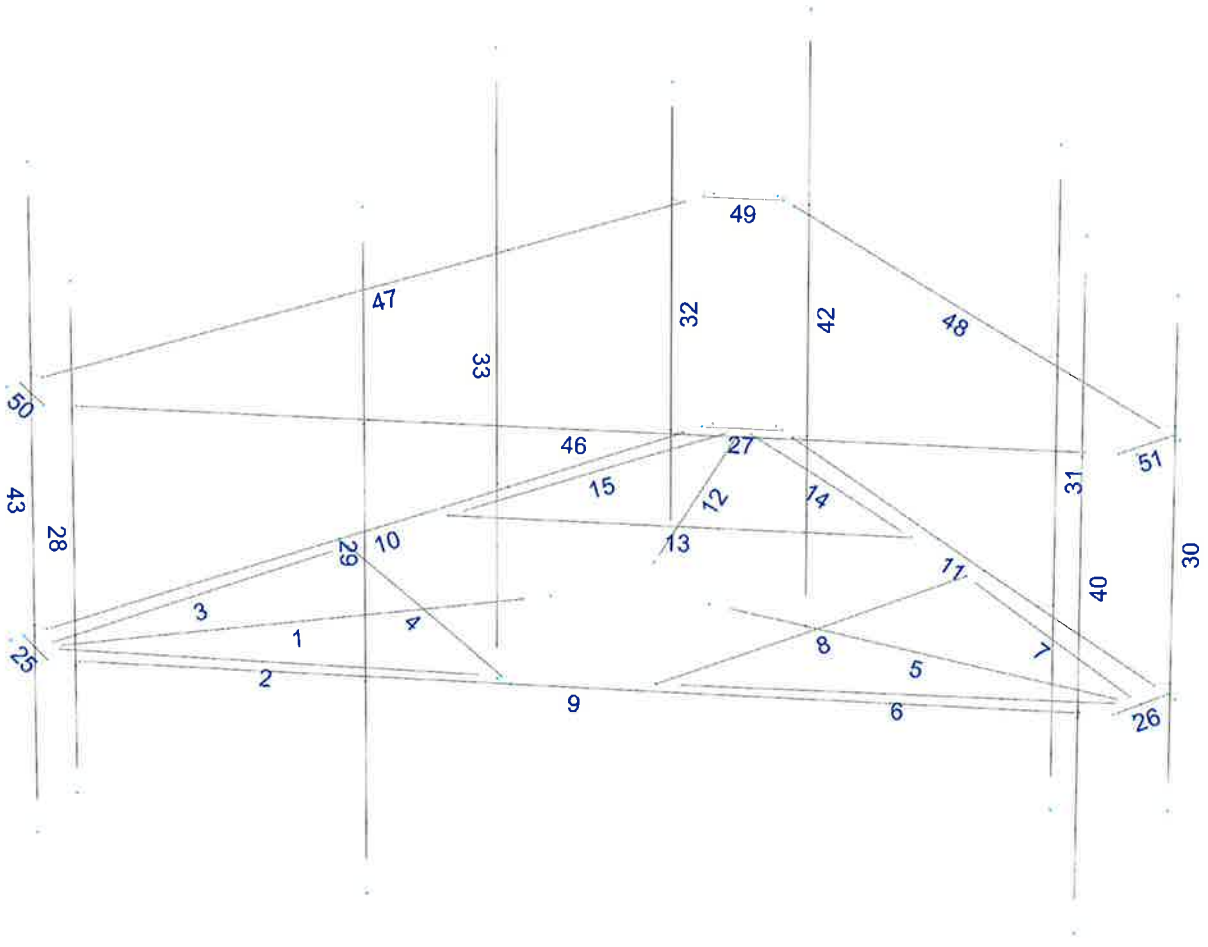



Y
X
Z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Y
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X

Bentley

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Load data

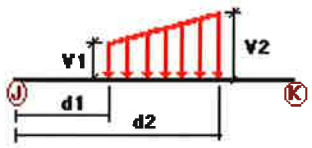
GLOSSARY

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	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL

Distributed force on members

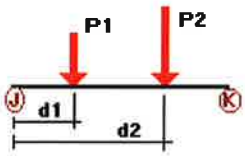


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	2	y	-0.01	0.00	0.00	No	0.00	No
	3	y	-0.01	0.00	0.00	No	0.00	No
	4	y	-0.01	0.00	0.00	No	0.00	No
	6	y	-0.01	0.00	0.00	No	0.00	No
	7	y	-0.01	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	13	y	-0.01	0.00	0.00	No	0.00	No
	14	y	-0.01	0.00	0.00	No	0.00	No
	15	y	-0.01	0.00	0.00	No	0.00	No
W0	1	z	-0.012	0.00	0.00	No	0.00	No
	2	z	-0.011	0.00	0.00	No	0.00	No
	3	z	-0.011	0.00	0.00	No	0.00	No
	4	z	-0.02	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	6	z	-0.011	0.00	0.00	No	0.00	No

	7	z	-0.011	0.00	0.00	No	0.00	No
	8	z	-0.02	0.00	0.00	No	0.00	No
	9	z	-0.012	0.00	0.00	No	0.00	No
	10	z	-0.012	0.00	0.00	No	0.00	No
	11	z	-0.012	0.00	0.00	No	0.00	No
	12	z	-0.012	0.00	0.00	No	0.00	No
	13	z	-0.02	0.00	0.00	No	0.00	No
	14	z	-0.011	0.00	0.00	No	0.00	No
	15	z	-0.011	0.00	0.00	No	0.00	No
	25	z	-0.034	0.00	0.00	No	0.00	No
	26	z	-0.034	0.00	0.00	No	0.00	No
	27	z	-0.034	0.00	0.00	No	0.00	No
	46	z	-0.012	0.00	0.00	No	0.00	No
	47	z	-0.012	0.00	0.00	No	0.00	No
	48	z	-0.012	0.00	0.00	No	0.00	No
	49	z	-0.034	0.00	0.00	No	0.00	No
	50	z	-0.034	0.00	0.00	No	0.00	No
	51	z	-0.034	0.00	0.00	No	0.00	No
W30	1	x	-0.012	0.00	0.00	No	0.00	No
	2	x	-0.011	0.00	0.00	No	0.00	No
	3	x	-0.011	0.00	0.00	No	0.00	No
	4	x	-0.02	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.011	0.00	0.00	No	0.00	No
	7	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.02	0.00	0.00	No	0.00	No
	9	x	-0.012	0.00	0.00	No	0.00	No
	10	x	-0.012	0.00	0.00	No	0.00	No
	11	x	-0.012	0.00	0.00	No	0.00	No
	12	x	-0.012	0.00	0.00	No	0.00	No
	13	x	-0.02	0.00	0.00	No	0.00	No
	14	x	-0.011	0.00	0.00	No	0.00	No
	15	x	-0.011	0.00	0.00	No	0.00	No
	25	x	-0.034	0.00	0.00	No	0.00	No
	26	x	-0.034	0.00	0.00	No	0.00	No
	27	x	-0.034	0.00	0.00	No	0.00	No
	28	x	-0.008	0.00	0.00	No	0.00	No
	29	x	-0.008	0.00	0.00	No	0.00	No
	30	x	-0.008	0.00	0.00	No	0.00	No
	31	x	-0.008	0.00	0.00	No	0.00	No
	32	x	-0.008	0.00	0.00	No	0.00	No
	33	x	-0.008	0.00	0.00	No	0.00	No
	40	x	-0.008	0.00	0.00	No	0.00	No
	42	x	-0.008	0.00	0.00	No	0.00	No
	43	x	-0.008	0.00	0.00	No	0.00	No
	46	x	-0.012	0.00	0.00	No	0.00	No
	47	x	-0.012	0.00	0.00	No	0.00	No
	48	x	-0.012	0.00	0.00	No	0.00	No
	49	x	-0.034	0.00	0.00	No	0.00	No
	50	x	-0.034	0.00	0.00	No	0.00	No
	51	x	-0.034	0.00	0.00	No	0.00	No
Di	1	y	-0.006	0.00	0.00	No	0.00	No
	2	y	-0.005	0.00	0.00	No	0.00	No
	3	y	-0.005	0.00	0.00	No	0.00	No
	4	y	-0.007	0.00	0.00	No	0.00	No
	5	y	-0.006	0.00	0.00	No	0.00	No
	6	y	-0.005	0.00	0.00	No	0.00	No
	7	y	-0.005	0.00	0.00	No	0.00	No
	8	y	-0.007	0.00	0.00	No	0.00	No
	9	y	-0.006	0.00	0.00	No	0.00	No

10	y	-0.006	0.00	0.00	No	0.00	No
11	y	-0.006	0.00	0.00	No	0.00	No
12	y	-0.006	0.00	0.00	No	0.00	No
13	y	-0.007	0.00	0.00	No	0.00	No
14	y	-0.005	0.00	0.00	No	0.00	No
15	y	-0.005	0.00	0.00	No	0.00	No
25	y	-0.01	0.00	0.00	No	0.00	No
26	y	-0.01	0.00	0.00	No	0.00	No
27	y	-0.01	0.00	0.00	No	0.00	No
28	y	-0.005	0.00	0.00	No	0.00	No
29	y	-0.005	0.00	0.00	No	0.00	No
30	y	-0.005	0.00	0.00	No	0.00	No
31	y	-0.005	0.00	0.00	No	0.00	No
32	y	-0.005	0.00	0.00	No	0.00	No
33	y	-0.005	0.00	0.00	No	0.00	No
40	y	-0.005	0.00	0.00	No	0.00	No
42	y	-0.005	0.00	0.00	No	0.00	No
43	y	-0.005	0.00	0.00	No	0.00	No
46	y	-0.006	0.00	0.00	No	0.00	No
47	y	-0.006	0.00	0.00	No	0.00	No
48	y	-0.006	0.00	0.00	No	0.00	No
49	y	-0.01	0.00	0.00	No	0.00	No
50	y	-0.01	0.00	0.00	No	0.00	No
51	y	-0.01	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	28	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.038	2.00	No
	29	y	-0.055	0.50	No
		y	-0.055	7.50	No
		y	-0.145	1.50	No
	30	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.038	2.00	No
	31	y	-0.055	0.50	No
		y	-0.055	7.50	No
		y	-0.145	1.50	No
	32	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.038	2.00	No
	33	y	-0.055	0.50	No
		y	-0.055	7.50	No
		y	-0.145	1.50	No
	40	y	-0.055	0.50	No
		y	-0.055	7.50	No
	42	y	-0.055	0.50	No

		y	-0.055	7.50	No
	43	y	-0.055	0.50	No
		y	-0.055	7.50	No
W0	28	z	-0.095	0.50	No
		z	-0.095	4.50	No
		z	-0.09	2.00	No
	29	z	-0.237	0.50	No
		z	-0.237	7.50	No
		z	-0.056	1.50	No
	30	z	-0.062	0.50	No
		z	-0.062	4.50	No
		z	-0.104	2.00	No
	31	z	-0.134	0.50	No
		z	-0.134	7.50	No
		z	-0.051	1.50	No
	32	z	-0.062	0.50	No
		z	-0.062	4.50	No
		z	-0.104	2.00	No
	33	z	-0.134	0.50	No
		z	-0.134	7.50	No
		z	-0.051	1.50	No
	40	z	-0.237	0.50	No
		z	-0.237	7.50	No
	42	z	-0.134	0.50	No
		z	-0.134	7.50	No
	43	z	-0.134	0.50	No
		z	-0.134	7.50	No
W30	28	x	-0.051	0.50	No
		x	-0.051	4.50	No
		x	-0.11	2.00	No
	29	x	-0.10	0.50	No
		x	-0.10	7.50	No
		x	-0.056	1.50	No
	30	x	-0.084	0.50	No
		x	-0.084	4.50	No
		x	-0.096	2.00	No
	31	x	-0.203	0.50	No
		x	-0.203	7.50	No
		x	-0.032	1.50	No
	32	x	-0.084	0.50	No
		x	-0.084	4.50	No
		x	-0.096	2.00	No
	33	x	-0.203	0.50	No
		x	-0.203	7.50	No
		x	-0.032	1.50	No
	40	x	-0.10	0.50	No
		x	-0.10	7.50	No
	42	x	-0.203	0.50	No
		x	-0.203	7.50	No
	43	x	-0.203	0.50	No
		x	-0.203	7.50	No
Di	28	y	-0.042	0.50	No
		y	-0.042	4.50	No
		y	-0.036	2.00	No
	29	y	-0.101	0.50	No
		y	-0.101	7.50	No
		y	-0.062	1.50	No
	30	y	-0.042	0.50	No
		y	-0.042	4.50	No
		y	-0.036	2.00	No

	31	y	-0.101	0.50	No
		y	-0.101	7.50	No
		y	-0.062	1.50	No
	32	y	-0.042	0.50	No
		y	-0.042	4.50	No
		y	-0.036	2.00	No
	33	y	-0.101	0.50	No
		y	-0.101	7.50	No
		y	-0.062	1.50	No
	40	y	-0.101	0.50	No
		y	-0.101	7.50	No
	42	y	-0.101	0.50	No
		y	-0.101	7.50	No
	43	y	-0.101	0.50	No
		y	-0.101	7.50	No
Wi0	28	z	-0.021	0.50	No
		z	-0.021	4.50	No
		z	-0.022	2.00	No
	29	z	-0.047	0.50	No
		z	-0.047	7.50	No
		z	-0.016	1.50	No
	30	z	-0.015	0.50	No
		z	-0.015	4.50	No
		z	-0.024	2.00	No
	31	z	-0.029	0.50	No
		z	-0.029	7.50	No
		z	-0.012	1.50	No
	32	z	-0.015	0.50	No
		z	-0.015	4.50	No
		z	-0.024	2.00	No
	33	z	-0.029	0.50	No
		z	-0.029	7.50	No
		z	-0.012	1.50	No
	40	z	-0.047	0.50	No
		z	-0.047	7.50	No
	42	z	-0.029	0.50	No
		z	-0.029	7.50	No
	43	z	-0.029	0.50	No
		z	-0.029	7.50	No
Wi30	28	x	-0.013	0.50	No
		x	-0.013	4.50	No
		x	-0.026	2.00	No
	29	x	-0.023	0.50	No
		x	-0.023	7.50	No
		x	-0.013	1.50	No
	30	x	-0.019	0.50	No
		x	-0.019	4.50	No
		x	-0.022	2.00	No
	31	x	-0.041	0.50	No
		x	-0.041	7.50	No
		x	-0.007	1.50	No
	32	x	-0.019	0.50	No
		x	-0.019	4.50	No
		x	-0.022	2.00	No
	33	x	-0.041	0.50	No
		x	-0.041	7.50	No
		x	-0.007	1.50	No
	40	x	-0.023	0.50	No
		x	-0.023	7.50	No
	42	x	-0.041	0.50	No

		x	-0.041	7.50	No
	43	x	-0.041	0.50	No
		x	-0.041	7.50	No
WL0	28	z	-0.006	0.50	No
		z	-0.006	4.50	No
		z	-0.006	2.00	No
	29	z	-0.015	0.50	No
		z	-0.015	7.50	No
		z	-0.004	1.50	No
	30	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.006	2.00	No
	31	z	-0.009	0.50	No
		z	-0.009	7.50	No
		z	-0.003	1.50	No
	32	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.006	2.00	No
	33	z	-0.009	0.50	No
		z	-0.009	7.50	No
		z	-0.003	1.50	No
	40	z	-0.015	0.50	No
		z	-0.015	7.50	No
	42	z	-0.009	0.50	No
		z	-0.009	7.50	No
	43	z	-0.009	0.50	No
		z	-0.009	7.50	No
WL30	28	x	-0.004	0.50	No
		x	-0.004	4.50	No
		x	-0.006	2.00	No
	29	x	-0.007	0.50	No
		x	-0.007	7.50	No
		x	-0.004	1.50	No
	30	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.006	2.00	No
	31	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.002	1.50	No
	32	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.006	2.00	No
	33	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.002	1.50	No
	40	x	-0.007	0.50	No
		x	-0.007	7.50	No
	42	x	-0.013	0.50	No
		x	-0.013	7.50	No
	43	x	-0.013	0.50	No
		x	-0.013	7.50	No
LL1	9	y	-0.25	6.29	No
LL2	9	y	-0.25	0.00	No
LLa1	40	y	-0.25	4.00	No
LLa2	29	y	-0.25	4.00	No
LLa3	28	y	-0.25	3.00	No

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	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	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

Bentley

Current Date: 7/23/2019 9:08 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5432\LTE 2C-3C-4C\Rev. 1\CT5432 (LTE 2C-3C-4C)(Rev. 1)(MODS).retx\

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=1.2DL
LC15=1.2DL+1.5LL1
LC16=1.2DL+1.5LL2
LC17=1.2DL+WL0+1.5LLa1
LC18=1.2DL+WL30+1.5LLa1
LC19=1.2DL-WL0+1.5LLa1
LC20=1.2DL-WL30+1.5LLa1
LC21=1.2DL+WL0+1.5LLa2
LC22=1.2DL+WL30+1.5LLa2
LC23=1.2DL-WL0+1.5LLa2
LC24=1.2DL-WL30+1.5LLa2
LC25=1.2DL+WL0+1.5LLa3
LC26=1.2DL+WL30+1.5LLa3
LC27=1.2DL-WL0+1.5LLa3
LC28=1.2DL-WL30+1.5LLa3

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 3-1/2x2x3/16	**4**	LC11 at 50.00%	0.63	OK	Eq. H1-1b
		8	LC4 at 48.44%	**0.67**	**OK**	Eq. H1-1b
		13	LC1 at 50.00%	0.63	OK	Eq. H1-1b
	L 2-1_2X2-1_2X1_4	**49**	LC4 at 0.00%	0.44	OK	Eq. H2-1
		50	LC1 at 100.00%	0.41	OK	Eq. H2-1
		51	LC3 at 0.00%	**0.50**	**OK**	Eq. H2-1
	L 2X2X3_16	**2**	LC7 at 100.00%	0.50	OK	Eq. H2-1
		3	LC3 at 0.00%	0.46	OK	Eq. H2-1
		6	LC3 at 100.00%	0.43	OK	Eq. H2-1
		7	LC8 at 100.00%	0.50	OK	Eq. H2-1
		14	LC2 at 100.00%	0.48	OK	Eq. H2-1
		15	LC4 at 100.00%	**0.55**	**OK**	Eq. H2-1
	PIPE 2-1_2x0.203	**29**	LC1 at 66.67%	**0.75**	**OK**	Eq. H1-1b
		31	LC2 at 66.67%	0.75	OK	Eq. H1-1b
		33	LC4 at 66.67%	0.67	OK	Eq. H1-1b
	PIPE 2x0.154	**28**	LC4 at 72.92%	0.56	OK	Eq. H1-1b
		30	LC1 at 72.92%	0.51	OK	Eq. H1-1b

	32	LC3 at 72.92%	0.52	OK	Eq. H1-1b
	40	LC2 at 66.67%	**0.78**	**OK**	Eq. H1-1b
	42	LC4 at 66.67%	0.78	OK	Eq. H1-1b
	43	LC1 at 66.67%	0.75	OK	Eq. H1-1b
	46	LC12 at 31.25%	0.54	OK	Eq. H1-1b
	47	LC10 at 68.75%	0.55	OK	Eq. H1-1b
	48	LC9 at 68.75%	0.55	OK	Eq. H1-1b
PIPE 3x0.216	**1**	LC2 at 100.00%	0.92	OK	Eq. H1-1b
	5	LC4 at 100.00%	0.90	OK	Eq. H1-1b
	9	LC10 at 43.75%	0.43	OK	Eq. H1-1b
	10	LC12 at 56.25%	0.43	OK	Eq. H1-1b
	11	LC11 at 56.25%	0.43	OK	Eq. H1-1b
	12	LC1 at 0.00%	**0.96**	**OK**	Eq. H1-1b
PL 6x3/8	**25**	LC2 at 46.88%	0.36	OK	Eq. H1-1b
	26	LC4 at 0.00%	**0.41**	**OK**	Eq. H1-1b
	27	LC1 at 0.00%	0.40	OK	Eq. H1-1b

Bentley

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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
2	-0.7253	0.00	4.0896	0
3	-6.0833	0.00	4.0896	0
4	-6.292	0.00	4.0896	0
5	-6.3333	0.00	3.6566	0
6	-6.5833	0.00	3.2236	0
7	-3.7376	0.00	-1.128	0
8	-3.9043	0.00	-1.4166	0
9	-0.892	0.00	3.8009	0
10	-6.6877	0.00	3.4042	0
11	-3.179	0.00	-2.6729	0
12	-2.8457	0.00	-2.6729	0
13	-0.50	0.00	-7.3131	0
14	-0.3957	0.00	-7.4938	0
17	0.7253	0.00	4.0896	0
18	6.0833	0.00	4.0896	0
19	6.292	0.00	4.0896	0
20	6.3333	0.00	3.6566	0
21	6.5833	0.00	3.2236	0
22	3.7376	0.00	-1.128	0
23	3.9043	0.00	-1.4166	0
24	0.892	0.00	3.8009	0

25	6.6877	0.00	3.4042	0
26	3.179	0.00	-2.6729	0
27	2.8457	0.00	-2.6729	0
28	0.50	0.00	-7.3131	0
29	0.3957	0.00	-7.4938	0
32	0.00	0.00	-7.3131	0
69	0.9427	0.00	0.5443	0
70	0.00	0.00	-1.0885	0
71	-0.9427	0.00	0.5443	0
76	-5.709	-1.50	4.2896	0
77	-2.355	-2.50	4.2896	0
79	-2.355	5.50	4.2896	0
84	-0.8604	-1.50	-7.0889	0
85	-2.5374	-2.50	-4.1843	0
87	-2.5374	5.50	-4.1843	0
92	6.5694	-1.50	2.7994	0
93	4.8924	-2.50	-0.1053	0
95	4.8924	5.50	-0.1053	0
98	5.712	-2.50	4.2896	0
99	5.712	5.50	4.2896	0
102	-6.5709	-2.50	2.802	0
103	-6.5709	5.50	2.802	0
106	0.8589	-2.50	-7.0915	0
107	0.8589	5.50	-7.0915	0
123	-6.292	3.00	4.0896	0
124	6.292	3.00	4.0896	0
125	-6.6877	3.00	3.4042	0
126	-0.3957	3.00	-7.4938	0
127	0.3957	3.00	-7.4938	0
128	6.6877	3.00	3.4042	0
129	0.50	3.00	-7.3131	0
130	-0.50	3.00	-7.3131	0
131	-6.5833	3.00	3.2236	0
132	-6.0833	3.00	4.0896	0
133	6.0833	3.00	4.0896	0
134	6.5833	3.00	3.2236	0
135	-5.709	4.50	4.2896	0
136	-0.8604	4.50	-7.0889	0
137	6.5694	4.50	2.7994	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
69	1	1	1	1	1	1
70	1	1	1	1	1	1
71	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	5	71		PIPE 3x0.216	A500 GrB rectangular	0.00	0.00	0.00
2	5	9		L 2X2X3_16	A36	0.00	0.00	0.00
3	5	7		L 2X2X3_16	A36	0.00	0.00	0.00
4	8	2		C 3-1/2x2x3/16	A500 GrB rectangular	0.00	0.00	0.00
5	20	69		PIPE 3x0.216	A500 GrB rectangular	0.00	0.00	0.00
6	20	24		L 2X2X3_16	A36	0.00	0.00	0.00
7	20	22		L 2X2X3_16	A36	0.00	0.00	0.00
8	23	17		C 3-1/2x2x3/16	A500 GrB rectangular	0.00	0.00	0.00
9	4	19		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
10	10	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
11	29	25		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
12	70	32		PIPE 3x0.216	A500 GrB rectangular	0.00	0.00	0.00
13	11	26		C 3-1/2x2x3/16	A500 GrB rectangular	0.00	0.00	0.00
14	27	32		L 2X2X3_16	A36	0.00	0.00	0.00
15	12	32		L 2X2X3_16	A36	0.00	0.00	0.00
25	6	3		PL 6x3/8	A36	0.00	0.00	0.00
26	18	21		PL 6x3/8	A36	0.00	0.00	0.00
27	28	13		PL 6x3/8	A36	0.00	0.00	0.00
28	135	76		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	79	77		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
30	137	92		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	95	93		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
32	136	84		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
33	87	85		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
40	99	98		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
42	107	106		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
43	103	102		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
46	123	124		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
47	125	126		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
48	127	128		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
49	129	130		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
50	131	132		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
51	133	134		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
2	270.00	0	0.00	0.00	0.00
7	270.00	0	0.00	0.00	0.00
8	180.00	0	0.00	0.00	0.00
13	180.00	0	0.00	0.00	0.00
14	270.00	0	0.00	0.00	0.00
28	0.00	2	0.7071	0.00	-0.7071
29	0.00	2	0.7071	0.00	-0.7071
30	0.00	2	0.7071	0.00	-0.7071
31	0.00	2	0.7071	0.00	-0.7071
32	0.00	2	0.7071	0.00	-0.7071
33	0.00	2	0.7071	0.00	-0.7071
40	0.00	2	0.7071	0.00	-0.7071
49	90.00	0	0.00	0.00	0.00
50	90.00	0	0.00	0.00	0.00
51	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]
2	0.00	2.00	0.00	0.00	2.00	0.00
3	0.00	2.00	0.00	0.00	2.00	0.00
6	0.00	2.00	0.00	0.00	2.00	0.00
7	0.00	2.00	0.00	0.00	2.00	0.00
14	0.00	2.00	0.00	0.00	2.00	0.00
15	0.00	2.00	0.00	0.00	2.00	0.00