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 10, 2019

Aidan Griffin
Site Acquisition Consultant
Centerline Communications, LLC
750 W Center Street, Suite 301
West Bridgewater, MA 02379

RE: **EM-CING-053-190619 –** New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located 5 Tyler Drive, Franklin, Connecticut.

Dear Mr. Griffin:

The Connecticut Siting Council (Council) is in receipt of your correspondence of June 25, 2019, and July 8, 2019 submitted in response to the Council's June 21, 2019 and June 26, 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

Robidoux, Evan

From: David Ford <dford@clinellc.com>
Sent: Tuesday, June 25, 2019 9:57 AM
To: Robidoux, Evan
Cc: CSC-DL Siting Council; Aidan Griffin; David Ford
Subject: RE: Council Incomplete Letter for EM-CING-053-190619-TylerDr-Franklin - CT1264
Attachments: CT1264_LTE 2C_3C_4C_5C_CD Rev1_06.12.19.pdf; CT1264_LTE 2C_3C_4C_5C_MOUNT MOD CD Rev1_06.12.19.pdf

Hi Evan,

In response to the Council's memo, attached please find the revised materials.

Aidan – please mail in 1 hard copy of each

Thanks

From: Robidoux, Evan <Evan.Robidoux@ct.gov>
Sent: Monday, June 24, 2019 2:01 PM
To: Aidan Griffin <agriffin@clinellc.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council Incomplete Letter for EM-CING-053-190619-TylerDr-Franklin

Please see the attached correspondence.

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

March 29, 2019
June 10, 2019 (Rev. 1)

CENTERLINE COMMUNICATIONS at&t

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

RE:		
	Site Number:	CT1264 (LTE 2C)
	FA Number:	10065727
	PACE Number:	MRCTB037987
	PT Number:	2101A0MCKQ
	Site Name:	FRANKLIN CT TYLER DR
	Site Address:	5 Tyler Drive North Franklin, CT 06254

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 mounts to determine their capability of supporting the following additional loading:

- (1) 7750 Antennas (57"x11"x5" - Wt. = 35 lbs. /each)
- (2) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (3) TT08-19DB111-001 TMA's (14.2"x6.7"x5.4" - Wt. = 22 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)
- **(2) 800-10965 Antennas (78.7"x20.0"x6.9"– Wt. = 109 lbs. /each)**
- **(1) 800-10966 Antennas (96.0"x20.0"x6.9"– Wt. = 115 lbs. /each)**
- **(2) HPA65R-BU6AA Antennas (71.2"x11.7"x8.4" – Wt. = 43 lbs. /each)**
- **(1) HPA65R-BU8AA Antennas (96.0"x11.7"x7.6" – Wt. = 54 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) (Tower Mount)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on March 27, 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 130 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 1.18 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- 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 1.
- 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 tower with clamps and threaded rods. The connection is considered OK by visual inspection.

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

- **Install new 2" std. (2.38" O.D.) pipe brace secured to the mount and tower (typ. of 1 per sector, total of 3).**
- **Install new 2-1/2" std. (2.88" O.D.) pipe mast behind new 800-10966 Antenna and 800-10965 Antennas (typ. of 1 per sector, total of 3).**
- **Install new sector frame stabilizer, SitePro1 P/N SFS-V-L (or approved equal) and new 2" std. (2.38" O.D.) horizontal pipe secured to existing antenna pipes and tower leg (typ. of 1 per sector, total of 3).**
- **Reinforce existing horizontal angles with new L3x3x1/4 steel angles (typ. of 1 per sector, total of 3).**
- **Reinforce existing standoff steel angles with new L3x3x1/4 steel angles (typ. of 2 per sector, total of 6).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 2C) Mount Rating	8	LC13	466%	**FAIL**
Modified (LTE 2C) Mount Rating	1	LC10	84%	**PASS**

Reference Documents:

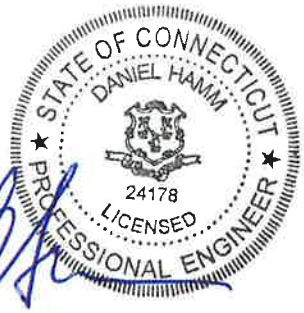
- Mount mapping report prepared by ProVertic LLC.

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

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
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=	169 (ft)
		z_g=	900 (ft)
K_z=	**1.413**	α=	9.5

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)
(If Category 1 then K_{zt} =1.0)		K_t=	0 (from Table 2-5)
		f=	0 (from Table 2-5)
Category=	1	z=	169
		z_s=	430 (Mean elevation of base of structure above sea level)
		H=	0 (Ht. of the crest above surrounding terrain)
		K_{zt}=	1.00 (from 2.6.6.2.1)
		K_e=	0.98 (from 2.6.8)

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} =	1.18 (from Sec. 2.6.10)

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

t_{iz} = 1.18 in

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
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=	180	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=	1.413	(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=	**51.18**	K_e=	0.98	(from 2.6.8)
$q_{z\,(ice)}$=	**7.57**	K_d=	0.85	(from Table 2-2)
$q_{z\,(30)}$=	**2.73**	V_{max}=	130	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: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
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 = **1.18 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)
7750 Antenna	57.0	11.0	5.0	4.35	5.18	1.32	294	55	16
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	282	53	15
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	707	120	38
800-10966 Antenna	96.0	20.0	6.9	13.33	4.80	1.30	889	151	47
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	6.09	1.36	402	74	21
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	8.21	1.44	575	105	31
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.13	1.20	84	17	4
B5/B12 44490 RRH (Shielded)	14.9	0.0	10.4	0.00	0.00	1.20	0	3	0
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	84	17	4
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	0.00	1.20	0	3	0
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	2.63	1.21	33	8	2
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	58	12	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	12	4	1
3x3 Angle	3.0	12.0		0.25	0.25	2.00	26	8	1
3/4" Roundbar	0.8	12.0		0.06	0.06	1.25	4	3	0

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.18	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)	Force (lbs)	Force (lbs)
7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	294	157	260
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	282	150	249
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	707	299	605
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	889	384	762
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	402	308	379
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	575	412	534
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	84	66	79
B5/B12 44490 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	42	66	48
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	80
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	42	69	49
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	33	41	35

WIND LOADS WITH ICE:

7750 Antenna	59.4	13.4	7.4	5.50	3.03	4.44	8.07	1.29	1.44	54	33	48
7770 Antenna	57.4	13.4	7.4	5.32	2.93	4.29	7.80	1.28	1.43	52	32	47
800-10965 Antenna	81.1	22.4	9.3	12.58	5.21	3.63	8.76	1.25	1.46	119	58	104
800-10966 Antenna	98.4	22.4	9.3	15.27	6.32	4.40	10.63	1.28	1.52	148	73	130
HPA65R-BU6AA Antenna	73.6	14.1	10.8	7.18	5.49	5.23	6.84	1.32	1.39	72	58	68
HPA65R-BU8AA Antenna	98.4	14.1	10.0	9.60	6.80	7.00	9.88	1.40	1.50	102	77	96
B5/B12 4449 RRH	17.3	15.6	12.8	1.86	1.53	1.11	1.35	1.20	1.20	17	14	16
B5/B12 44490 RRH (Shielded)	17.3	7.8	12.8	0.93	1.53	2.22	1.35	1.20	1.20	8	14	10
B2/B66A 8843 RRH	17.3	15.6	13.3	1.86	1.59	1.11	1.30	1.20	1.20	17	14	16
B2/B66A 8843 RRH (Shielded)	17.3	7.8	13.3	0.93	1.59	2.22	1.30	1.20	1.20	8	14	10
TT08-19DB111-001 TMA	16.6	7.8	9.1	0.89	1.04	2.13	1.83	1.20	1.20	8	9	8

WIND LOADS AT 30 MPH:

7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	16	8	14
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	13
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	32
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	47	20	41
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	21	16	20
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	31	22	28
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	4	4
B5/B12 44490 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	4	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.18	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)	Force (lbs)	Force (lbs)
7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	294	157	191
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	282	150	183
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	707	299	401
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	889	384	510
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	402	308	332
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	575	412	452
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	84	66	71
B5/B12 44490 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	63	66	65
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	73
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	63	69	68
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	33	41	39

WIND LOADS WITH ICE:

7750 Antenna	59.4	13.4	7.4	5.50	3.03	4.44	8.07	1.29	1.44	54	33	38
7770 Antenna	57.4	13.4	7.4	5.32	2.93	4.29	7.80	1.28	1.43	52	32	37
800-10965 Antenna	81.1	22.4	9.3	12.58	5.21	3.63	8.76	1.25	1.46	119	58	73
800-10966 Antenna	98.4	22.4	9.3	15.27	6.32	4.40	10.63	1.28	1.52	148	73	92
HPA65R-BU6AA Antenna	73.6	14.1	10.8	7.18	5.49	5.23	6.84	1.32	1.39	72	58	61
HPA65R-BU8AA Antenna	98.4	14.1	10.0	9.60	6.80	7.00	9.88	1.40	1.50	102	77	83
B5/B12 4449 RRH	17.3	15.6	12.8	1.86	1.53	1.11	1.35	1.20	1.20	17	14	15
B5/B12 44490 RRH (Shielded)	17.3	11.7	12.8	1.40	1.53	1.48	1.35	1.20	1.20	13	14	14
B2/B66A 8843 RRH	17.3	15.6	13.3	1.86	1.59	1.11	1.30	1.20	1.20	17	14	15
B2/B66A 8843 RRH (Shielded)	17.3	11.7	13.3	1.40	1.59	1.48	1.30	1.20	1.20	13	14	14
TT08-19DB111-001 TMA	16.6	7.8	9.1	0.89	1.04	2.13	1.83	1.20	1.20	8	9	9

WIND LOADS AT 30 MPH:

7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	16	8	10
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	10
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	21
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	47	20	27
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	21	16	18
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	31	22	24
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	4	4
B5/B12 44490 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	3	4	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	4	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	4	4
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.18	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)	Force (lbs)	Force (lbs)
7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	294	157	157
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	282	150	150
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	707	299	299
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	889	384	384
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	402	308	308
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	575	412	412
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	84	66	66
B5/B12 44490 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	66	66
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	69
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	69	69
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	33	41	41

WIND LOADS WITH ICE:

7750 Antenna	59.4	13.4	7.4	5.50	3.03	4.44	8.07	1.29	1.44	54	33	33
7770 Antenna	57.4	13.4	7.4	5.32	2.93	4.29	7.80	1.28	1.43	52	32	32
800-10965 Antenna	81.1	22.4	9.3	12.58	5.21	3.63	8.76	1.25	1.46	119	58	58
800-10966 Antenna	98.4	22.4	9.3	15.27	6.32	4.40	10.63	1.28	1.52	148	73	73
HPA65R-BU6AA Antenna	73.6	14.1	10.8	7.18	5.49	5.23	6.84	1.32	1.39	72	58	58
HPA65R-BU8AA Antenna	98.4	14.1	10.0	9.60	6.80	7.00	9.88	1.40	1.50	102	77	77
B5/B12 4449 RRH	17.3	15.6	12.8	1.86	1.53	1.11	1.35	1.20	1.20	17	14	14
B5/B12 44490 RRH (Shielded)	17.3	2.4	12.8	0.28	1.53	7.33	1.35	1.41	1.20	3	14	14
B2/B66A 8843 RRH	17.3	15.6	13.3	1.86	1.59	1.11	1.30	1.20	1.20	17	14	14
B2/B66A 8843 RRH (Shielded)	17.3	2.4	13.3	0.28	1.59	7.33	1.30	1.41	1.20	3	14	14
TT08-19DB111-001 TMA	16.6	7.8	9.1	0.89	1.04	2.13	1.83	1.20	1.20	8	9	9

WIND LOADS AT 30 MPH:

7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	16	8	8
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	8
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	16
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	47	20	20
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	21	16	16
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	31	22	22
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	4	4
B5/B12 44490 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	4	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	4	4
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	4	4
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.18	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)	Force (lbs)	Force (lbs)
7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	294	157	191
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	282	150	183
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	707	299	401
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	889	384	510
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	402	308	332
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	575	412	452
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	84	66	71
B5/B12 44490 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	63	66	65
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	73
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	63	69	68
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	33	41	39

WIND LOADS WITH ICE:

7750 Antenna	59.4	13.4	7.4	5.50	3.03	4.44	8.07	1.29	1.44	54	33	38
7770 Antenna	57.4	13.4	7.4	5.32	2.93	4.29	7.80	1.28	1.43	52	32	37
800-10965 Antenna	81.1	22.4	9.3	12.58	5.21	3.63	8.76	1.25	1.46	119	58	73
800-10966 Antenna	98.4	22.4	9.3	15.27	6.32	4.40	10.63	1.28	1.52	148	73	92
HPA65R-BU6AA Antenna	73.6	14.1	10.8	7.18	5.49	5.23	6.84	1.32	1.39	72	58	61
HPA65R-BU8AA Antenna	98.4	14.1	10.0	9.60	6.80	7.00	9.88	1.40	1.50	102	77	83
B5/B12 4449 RRH	17.3	15.6	12.8	1.86	1.53	1.11	1.35	1.20	1.20	17	14	15
B5/B12 44490 RRH (Shielded)	17.3	11.7	12.8	1.40	1.53	1.48	1.35	1.20	1.20	13	14	14
B2/B66A 8843 RRH	17.3	15.6	13.3	1.86	1.59	1.11	1.30	1.20	1.20	17	14	15
B2/B66A 8843 RRH (Shielded)	17.3	11.7	13.3	1.40	1.59	1.48	1.30	1.20	1.20	13	14	14
TT08-19DB111-001 TMA	16.6	7.8	9.1	0.89	1.04	2.13	1.83	1.20	1.20	8	9	9

WIND LOADS AT 30 MPH:

7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	16	8	10
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	10
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	21
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	47	20	27
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	21	16	18
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	31	22	24
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	4	4
B5/B12 44490 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	3	4	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	4	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	4	4
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.18	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)	Force (lbs)	Force (lbs)
7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	294	157	260
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	282	150	249
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	707	299	605
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	889	384	762
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	402	308	379
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	575	412	534
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	84	66	79
B5/B12 44490 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	42	66	48
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	80
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	42	69	49
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	33	41	35

WIND LOADS WITH ICE:

7750 Antenna	59.4	13.4	7.4	5.50	3.03	4.44	8.07	1.29	1.44	54	33	48
7770 Antenna	57.4	13.4	7.4	5.32	2.93	4.29	7.80	1.28	1.43	52	32	47
800-10965 Antenna	81.1	22.4	9.3	12.58	5.21	3.63	8.76	1.25	1.46	119	58	104
800-10966 Antenna	98.4	22.4	9.3	15.27	6.32	4.40	10.63	1.28	1.52	148	73	130
HPA65R-BU6AA Antenna	73.6	14.1	10.8	7.18	5.49	5.23	6.84	1.32	1.39	72	58	68
HPA65R-BU8AA Antenna	98.4	14.1	10.0	9.60	6.80	7.00	9.88	1.40	1.50	102	77	96
B5/B12 4449 RRH	17.3	15.6	12.8	1.86	1.53	1.11	1.35	1.20	1.20	17	14	16
B5/B12 44490 RRH (Shielded)	17.3	7.8	12.8	0.93	1.53	2.22	1.35	1.20	1.20	8	14	10
B2/B66A 8843 RRH	17.3	15.6	13.3	1.86	1.59	1.11	1.30	1.20	1.20	17	14	16
B2/B66A 8843 RRH (Shielded)	17.3	7.8	13.3	0.93	1.59	2.22	1.30	1.20	1.20	8	14	10
TT08-19DB111-001 TMA	16.6	7.8	9.1	0.89	1.04	2.13	1.83	1.20	1.20	8	9	8

WIND LOADS AT 30 MPH:

7750 Antenna	57.0	11.0	5.0	4.35	1.98	5.18	11.40	1.32	1.55	16	8	14
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	13
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	32
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	47	20	41
HPA65R-BU6AA Antenna	71.2	11.7	8.4	5.79	4.15	6.09	8.48	1.36	1.45	21	16	20
HPA65R-BU8AA Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	31	22	28
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	4	4
B5/B12 44490 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	4	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 3/29/2019
Project Name: FRANKLIN CT TYLER DR
Project No.: CT1264
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.18 in.
Density of ice: 56 pcf

7750 Antenna

Weight of ice based on total radial SF area:

Height (in):	57.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		91 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		126 lbs

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:		88 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		123 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:		211 lbs
Weight of object:	109.0 lbs	
Combined weight of ice and object:		320 lbs

800-10966 Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		258 lbs
Weight of object:	115.0 lbs	
Combined weight of ice and object:		373 lbs

HPA65R-BU6AA Antenna

Weight of ice based on total radial SF area:

Height (in):	71.2	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		191 lbs
Weight of object:	109.0 lbs	
Combined weight of ice and object:		300 lbs

HPA65R-BU8AA Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	11.7	
Depth (in):	7.6	
Total weight of ice on object:		175 lbs
Weight of object:	54.0 lbs	
Combined weight of ice and object:		229 lbs

RRUS-11 RRH

Weight of ice based on total radial SF area:

Height (in):	19.7	
Width (in):	17.0	
Depth (in):	7.2	
Total weight of ice on object:		46 lbs
Weight of object:	51.0 lbs	
Combined weight of ice and object:		97 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:		32 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		105 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:		33 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		105 lbs

TT08-19DB111-001 TMA

Weight of ice based on total radial SF area:

Height (in):	14.2	
Width (in):	5.4	
Depth (in):	6.7	
Total weight of ice on object:		17 lbs
Weight of object:	22.0 lbs	
Combined weight of ice and object:		39 lbs

2" pipe

Per foot weight of ice:

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

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:		31 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		64 lbs

3/4" Round Bar

Per foot weight of ice:

diameter (in):	0.75	
Per foot weight of ice on object:		3 plf

L 3x3 Angles

Weight of ice based on total radial SF area:

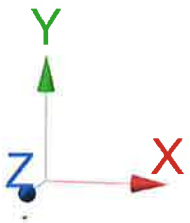
Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		8 plf

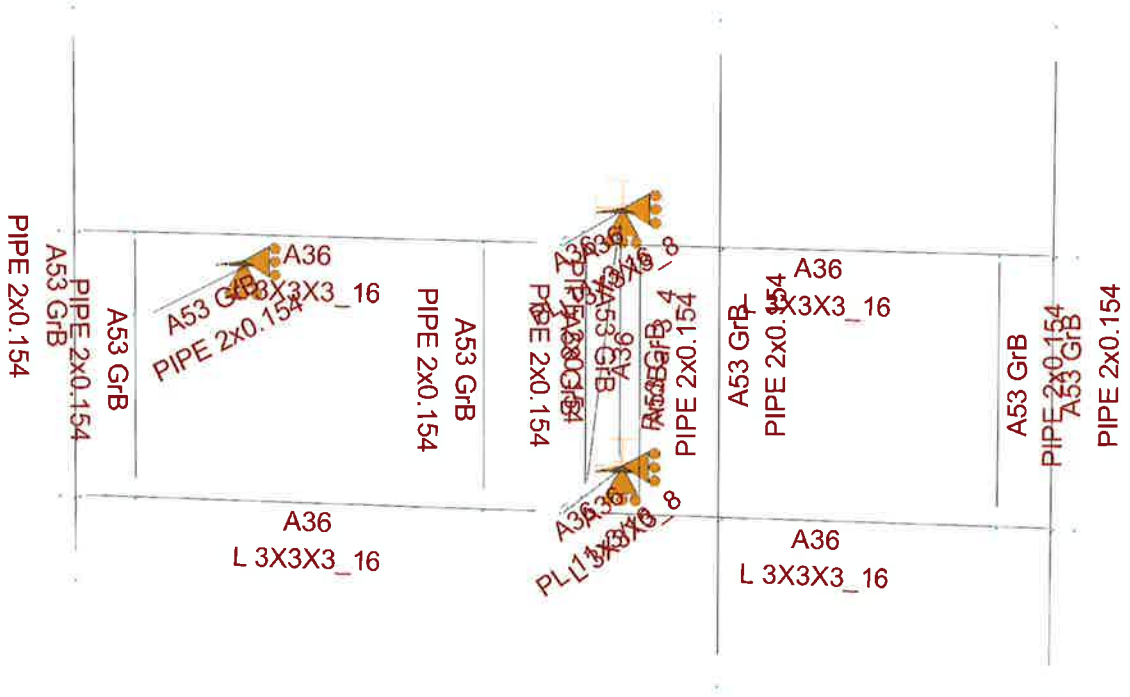
HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)

Bentley

Current Date: 3/29/2019 11:51 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C\CT1264 (LTE 2C).etz\



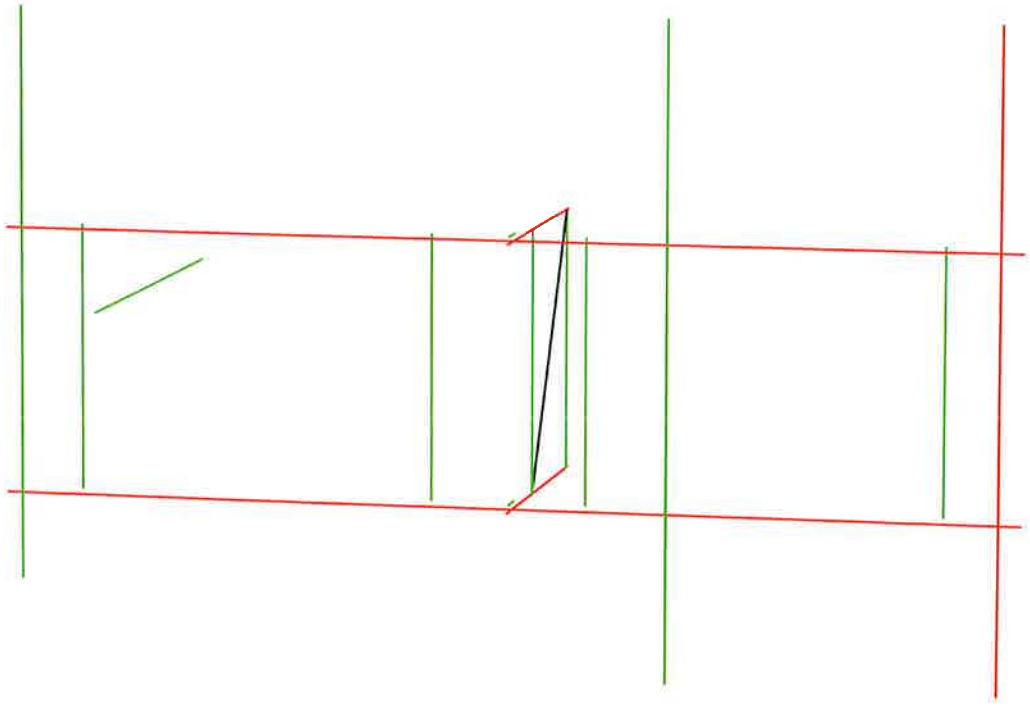

A36
L 3X3X3_16
A53 GrB
PIPE 2x0.154
A36
L 3X3X3_16
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A36
L 3X3X3_16
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A36
L 3X3X3_16
Y
Z
X

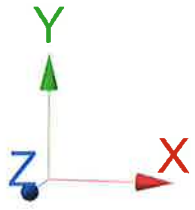
Bentley

Current Date: 3/29/2019 11:51 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C\CT1264 (LTE 2C).etz\

Design status

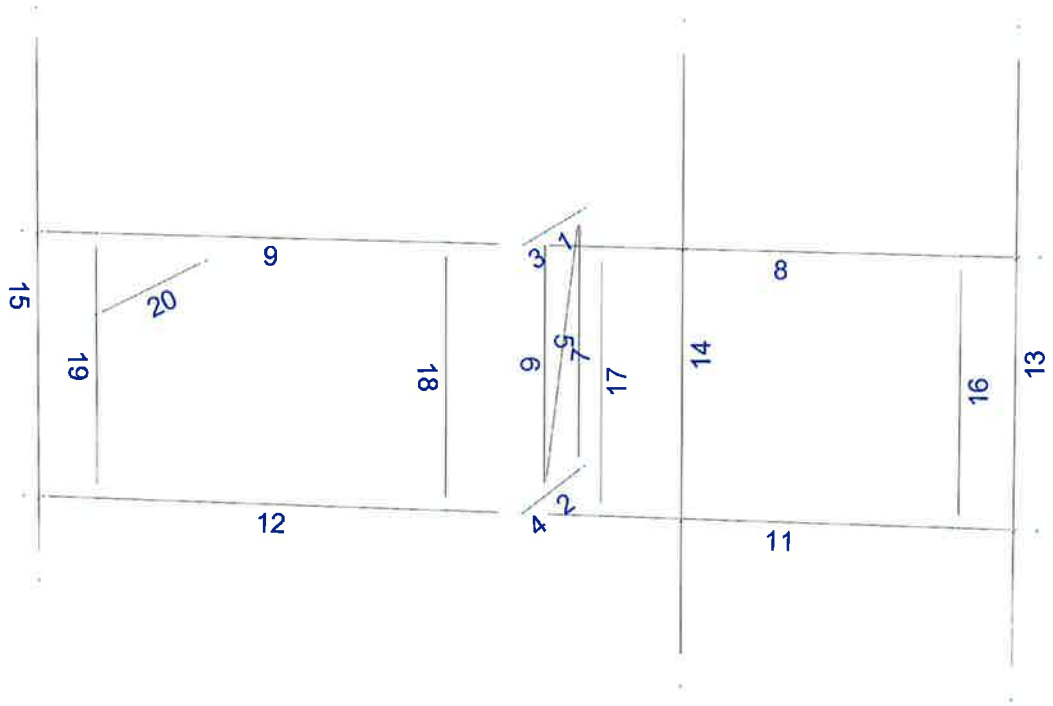
- Not designed
- Error on design
- Design O.K.
- With warnings

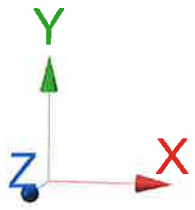




Bentley

Current Date: 3/29/2019 11:51 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C\CT1264 (LTE 2C).etz\





Bentley

Current Date: 3/29/2019 11:51 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C\CT1264 (LTE 2C).etz\

Load data

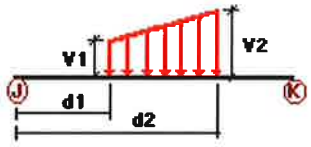
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load Right End of Mount	No	LL
LL3	250 lb Live Load Left 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

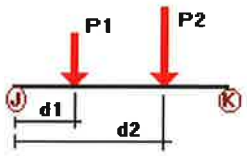
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.026	0.00	0.00	No	0.00	No
	2	z	-0.026	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	6	z	-0.012	0.00	0.00	No	0.00	No
	7	z	-0.004	0.00	0.00	No	0.00	No
	8	z	-0.026	0.00	0.00	No	0.00	No
	9	z	-0.026	0.00	0.00	No	0.00	No
	11	z	-0.026	0.00	0.00	No	0.00	No
	12	z	-0.026	0.00	0.00	No	0.00	No
	16	z	-0.012	0.00	0.00	No	0.00	No
	17	z	-0.012	0.00	0.00	No	0.00	No
	18	z	-0.012	0.00	0.00	No	0.00	No
	19	z	-0.012	0.00	0.00	No	0.00	No
	20	z	-0.012	0.00	0.00	No	0.00	No
W30	1	z	-0.026	0.00	0.00	No	0.00	No
	2	z	-0.026	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	6	z	-0.012	0.00	0.00	No	0.00	No
	7	z	-0.004	0.00	0.00	No	0.00	No
	8	z	-0.026	0.00	0.00	No	0.00	No
	9	z	-0.026	0.00	0.00	No	0.00	No
	11	z	-0.026	0.00	0.00	No	0.00	No
	12	z	-0.026	0.00	0.00	No	0.00	No
	16	z	-0.012	0.00	0.00	No	0.00	No
	17	z	-0.012	0.00	0.00	No	0.00	No
	18	z	-0.012	0.00	0.00	No	0.00	No
	19	z	-0.012	0.00	0.00	No	0.00	No
	20	z	-0.012	0.00	0.00	No	0.00	No
W60	1	x	-0.026	0.00	0.00	No	0.00	No
	2	x	-0.026	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.012	0.00	0.00	No	0.00	No
	7	x	-0.004	0.00	0.00	No	0.00	No
	8	x	-0.026	0.00	0.00	No	0.00	No
	9	x	-0.026	0.00	0.00	No	0.00	No
	11	x	-0.026	0.00	0.00	No	0.00	No
	12	x	-0.026	0.00	0.00	No	0.00	No
	13	x	-0.012	0.00	0.00	No	0.00	No
	14	x	-0.012	0.00	0.00	No	0.00	No
	15	x	-0.012	0.00	0.00	No	0.00	No
	16	x	-0.012	0.00	0.00	No	0.00	No
	17	x	-0.012	0.00	0.00	No	0.00	No
	18	x	-0.012	0.00	0.00	No	0.00	No
	19	x	-0.012	0.00	0.00	No	0.00	No
	20	x	-0.012	0.00	0.00	No	0.00	No
W90	1	x	-0.026	0.00	0.00	No	0.00	No
	2	x	-0.026	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.012	0.00	0.00	No	0.00	No
	7	x	-0.004	0.00	0.00	No	0.00	No
	8	x	-0.026	0.00	0.00	No	0.00	No
	9	x	-0.026	0.00	0.00	No	0.00	No
	11	x	-0.026	0.00	0.00	No	0.00	No
	12	x	-0.026	0.00	0.00	No	0.00	No
	13	x	-0.012	0.00	0.00	No	0.00	No
	14	x	-0.012	0.00	0.00	No	0.00	No
	15	x	-0.012	0.00	0.00	No	0.00	No
	16	x	-0.012	0.00	0.00	No	0.00	No
	17	x	-0.012	0.00	0.00	No	0.00	No
	18	x	-0.012	0.00	0.00	No	0.00	No

	19	x	-0.012	0.00	0.00	No	0.00	No
	20	x	-0.012	0.00	0.00	No	0.00	No
W120	1	x	-0.026	0.00	0.00	No	0.00	No
	2	x	-0.026	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.012	0.00	0.00	No	0.00	No
	7	x	-0.004	0.00	0.00	No	0.00	No
	8	x	-0.026	0.00	0.00	No	0.00	No
	9	x	-0.026	0.00	0.00	No	0.00	No
	11	x	-0.026	0.00	0.00	No	0.00	No
	12	x	-0.026	0.00	0.00	No	0.00	No
	13	x	-0.012	0.00	0.00	No	0.00	No
	14	x	-0.012	0.00	0.00	No	0.00	No
	15	x	-0.012	0.00	0.00	No	0.00	No
	16	x	-0.012	0.00	0.00	No	0.00	No
	17	x	-0.012	0.00	0.00	No	0.00	No
	18	x	-0.012	0.00	0.00	No	0.00	No
	19	x	-0.012	0.00	0.00	No	0.00	No
	20	x	-0.012	0.00	0.00	No	0.00	No
W150	1	z	0.026	0.00	0.00	No	0.00	No
	2	z	0.026	0.00	0.00	No	0.00	No
	5	z	0.012	0.00	0.00	No	0.00	No
	6	z	0.012	0.00	0.00	No	0.00	No
	7	z	0.004	0.00	0.00	No	0.00	No
	8	z	0.026	0.00	0.00	No	0.00	No
	9	z	0.026	0.00	0.00	No	0.00	No
	11	z	0.026	0.00	0.00	No	0.00	No
	12	z	0.026	0.00	0.00	No	0.00	No
	16	z	0.012	0.00	0.00	No	0.00	No
	17	z	0.012	0.00	0.00	No	0.00	No
	18	z	0.012	0.00	0.00	No	0.00	No
	19	z	0.012	0.00	0.00	No	0.00	No
	20	z	0.012	0.00	0.00	No	0.00	No
Di	1	y	0.00	0.00	0.00	No	0.00	No
	2	y	0.00	0.00	0.00	No	0.00	No
	5	y	-0.005	0.00	0.00	No	0.00	No
	6	y	-0.005	0.00	0.00	No	0.00	No
	7	y	-0.003	0.00	0.00	No	0.00	No
	8	y	-0.008	0.00	0.00	No	0.00	No
	9	y	-0.008	0.00	0.00	No	0.00	No
	11	y	-0.008	0.00	0.00	No	0.00	No
	12	y	-0.008	0.00	0.00	No	0.00	No
	13	y	-0.005	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
	16	y	-0.005	0.00	0.00	No	0.00	No
	17	y	-0.005	0.00	0.00	No	0.00	No
	18	y	-0.005	0.00	0.00	No	0.00	No
	19	y	-0.005	0.00	0.00	No	0.00	No
	20	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	13	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.073	2.00	No
	14	y	-0.054	0.50	No
		y	-0.054	7.50	No
		y	-0.072	2.00	No
	15	y	-0.018	0.50	No
		y	-0.018	5.00	No
		y	-0.022	2.00	No
Wo	13	z	-0.445	0.50	No
		z	-0.445	7.50	No
	14	z	-0.288	0.50	No
		z	-0.288	7.50	No
	15	z	-0.141	0.50	No
		z	-0.141	5.00	No
		z	-0.033	2.00	No
W30	13	3	-0.382	0.50	No
		3	-0.382	7.50	No
		3	-0.048	2.00	No
	14	3	-0.268	0.50	No
		3	-0.268	7.50	No
		3	-0.049	2.00	No
	15	3	-0.125	0.50	No
		3	-0.125	5.00	No
		3	-0.035	2.00	No
W60	13	3	-0.256	0.50	No
		3	-0.256	7.50	No
		3	-0.065	2.00	No
	14	3	-0.227	0.50	No
		3	-0.227	7.50	No
		3	-0.068	2.00	No
	15	3	-0.092	0.50	No
		3	-0.092	5.00	No
		3	-0.039	2.00	No
W90	13	x	-0.192	0.50	No
		x	-0.192	7.50	No
		x	-0.066	2.00	No
	14	x	-0.206	0.50	No
		x	-0.206	7.50	No
		x	-0.069	2.00	No
	15	x	-0.075	0.50	No
		x	-0.075	5.00	No
		x	-0.041	2.00	No
W120	13	2	-0.256	0.50	No
		2	-0.256	7.50	No
		2	-0.065	2.00	No
	14	2	-0.227	0.50	No
		2	-0.227	7.50	No
		2	-0.068	2.00	No
	15	2	-0.092	0.50	No
		2	-0.092	5.00	No
		2	-0.039	2.00	No
W150	13	2	-0.382	0.50	No
		2	-0.382	7.50	No

		2	-0.048	2.00	No
	14	2	-0.268	0.50	No
		2	-0.268	7.50	No
		2	-0.049	2.00	No
	15	2	-0.125	0.50	No
		2	-0.125	5.00	No
		2	-0.035	2.00	No
Di	13	y	-0.129	0.50	No
		y	-0.129	7.50	No
		y	-0.032	2.00	No
	14	y	-0.088	0.50	No
		y	-0.088	7.50	No
		y	-0.033	2.00	No
	15	y	-0.044	0.50	No
		y	-0.044	5.00	No
		y	-0.017	2.00	No
WI0	13	z	-0.076	0.50	No
		z	-0.076	7.50	No
		z	-0.003	2.00	No
	14	z	-0.053	0.50	No
		z	-0.053	7.50	No
		z	-0.003	2.00	No
	15	z	-0.027	0.50	No
		z	-0.027	5.00	No
		z	-0.008	2.00	No
WI30	13	3	-0.065	0.50	No
		3	-0.065	7.50	No
		3	-0.01	2.00	No
	14	3	-0.048	0.50	No
		3	-0.048	7.50	No
		3	-0.01	2.00	No
	15	3	-0.024	0.50	No
		3	-0.024	5.00	No
		3	-0.008	2.00	No
WI60	13	3	-0.046	0.50	No
		3	-0.046	7.50	No
		3	-0.014	2.00	No
	14	3	-0.042	0.50	No
		3	-0.042	7.50	No
		3	-0.014	2.00	No
	15	3	-0.019	0.50	No
		3	-0.019	5.00	No
		3	-0.009	2.00	No
WI90	13	x	-0.037	0.50	No
		x	-0.037	7.50	No
		x	-0.014	2.00	No
	14	x	-0.039	0.50	No
		x	-0.039	7.50	No
		x	-0.014	2.00	No
	15	x	-0.016	0.50	No
		x	-0.016	5.00	No
		x	-0.009	2.00	No
WI120	13	2	-0.046	0.50	No
		2	-0.046	7.50	No
		2	-0.014	2.00	No
	14	2	-0.042	0.50	No
		2	-0.042	7.50	No
		2	-0.014	2.00	No
	15	2	-0.019	0.50	No
		2	-0.019	5.00	No

		2	-0.009	2.00	No
WI150	13	2	-0.065	0.50	No
		2	-0.065	7.50	No
		2	-0.01	2.00	No
	14	2	-0.048	0.50	No
		2	-0.048	7.50	No
		2	-0.01	2.00	No
	15	2	-0.024	0.50	No
		2	-0.024	5.00	No
		2	-0.008	2.00	No
WL0	13	z	-0.024	0.50	No
		z	-0.024	7.50	No
	14	z	-0.016	0.50	No
		z	-0.016	7.50	No
	15	z	-0.008	0.50	No
		z	-0.008	5.00	No
		z	-0.002	2.00	No
WL30	13	3	-0.021	0.50	No
		3	-0.021	7.50	No
		3	-0.003	2.00	No
	14	3	-0.015	0.50	No
		3	-0.015	7.50	No
		3	-0.003	2.00	No
	15	3	-0.007	0.50	No
		3	-0.007	5.00	No
		3	-0.002	2.00	No
WL60	13	3	-0.014	0.50	No
		3	-0.014	7.50	No
		3	-0.003	2.00	No
	14	3	-0.013	0.50	No
		3	-0.013	7.50	No
		3	-0.004	2.00	No
	15	3	-0.005	0.50	No
		3	-0.005	5.00	No
		3	-0.002	2.00	No
WL90	13	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.004	2.00	No
	14	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.004	2.00	No
	15	x	-0.004	0.50	No
		x	-0.004	5.00	No
		x	-0.002	2.00	No
WL120	13	2	-0.014	0.50	No
		2	-0.014	7.50	No
		2	-0.003	2.00	No
	14	2	-0.013	0.50	No
		2	-0.013	7.50	No
		2	-0.004	2.00	No
	15	2	-0.005	0.50	No
		2	-0.005	5.00	No
		2	-0.002	2.00	No
WL150	13	2	-0.021	0.50	No
		2	-0.021	7.50	No
		2	-0.003	2.00	No
	14	2	-0.015	0.50	No
		2	-0.015	7.50	No
		2	-0.003	2.00	No
	15	2	-0.007	0.50	No

		2	-0.007	5.00	No
		2	-0.002	2.00	No
LL1	11	y	-0.25	6.23	No
LL2	12	y	-0.25	6.23	No
LL3	11	y	-0.25	0.00	No
LLa1	13	y	-0.25	4.00	No
LLa2	14	y	-0.25	4.00	No
LLa3	15	y	-0.25	3.50	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	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 Right End of Mount	No	0.00	0.00	0.00
LL3	250 lb Live Load Left 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. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	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
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	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: 3/29/2019 11:51 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C\CT1264 (LTE 2C).etz\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC38=1.2D+1.5LL1
LC39=1.2D+1.5LL2
LC40=1.2D+1.5LL3
LC41=1.2D+WL0+1.5LLa1
LC42=1.2D+WL30+1.5LLa1
LC43=1.2D+WL60+1.5LLa1
LC44=1.2D+WL90+1.5LLa1
LC45=1.2D+WL120+1.5LLa1
LC46=1.2D+WL150+1.5LLa1
LC47=1.2D-WL0+1.5LLa1
LC48=1.2D-WL30+1.5LLa1
LC49=1.2D-WL60+1.5LLa1
LC50=1.2D-WL90+1.5LLa1
LC51=1.2D-WL120+1.5LLa1
LC52=1.2D-WL150+1.5LLa1
LC53=1.2D+WL0+1.5LLa2
LC54=1.2D+WL30+1.5LLa2

LC55=1.2D+WL60+1.5LLa2
LC56=1.2D+WL90+1.5LLa2
LC57=1.2D+WL120+1.5LLa2
LC58=1.2D+WL150+1.5LLa2
LC59=1.2D-WL0+1.5LLa2
LC60=1.2D-WL30+1.5LLa2
LC61=1.2D-WL60+1.5LLa2
LC62=1.2D-WL90+1.5LLa2
LC63=1.2D-WL120+1.5LLa2
LC64=1.2D-WL150+1.5LLa2
LC65=1.2D+WL0+1.5LLa3
LC66=1.2D+WL30+1.5LLa3
LC67=1.2D+WL60+1.5LLa3
LC68=1.2D+WL90+1.5LLa3
LC69=1.2D+WL120+1.5LLa3
LC70=1.2D+WL150+1.5LLa3
LC71=1.2D-WL0+1.5LLa3
LC72=1.2D-WL30+1.5LLa3
LC73=1.2D-WL60+1.5LLa3
LC74=1.2D-WL90+1.5LLa3
LC75=1.2D-WL120+1.5LLa3
LC76=1.2D-WL150+1.5LLa3

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	L 3X3X3_16	**8**	LC13 at 100.00%	**4.66**	**N.G.**	Sec. F1
		9	LC12 at 0.00%	3.20	N.G.	Sec. F1
		11	LC1 at 100.00%	4.50	N.G.	Sec. F1
		12	LC7 at 0.00%	2.16	N.G.	Sec. F1
	L 3X3X3_8	**1**	LC11 at 0.00%	**2.29**	**N.G.**	Sec. F1
		2	LC5 at 0.00%	1.57	N.G.	Sec. F1
	PIPE 2x0.154	**5**	LC8 at 0.00%	0.10	OK	Eq. H1-1b
		6	LC12 at 100.00%	0.65	OK	Eq. H3-6
		13	LC7 at 33.33%	**1.10**	**N.G.**	Eq. H1-1b
		14	LC12 at 35.42%	0.83	OK	Eq. H1-1b
		15	LC1 at 37.50%	0.37	OK	Eq. H1-1b
		16	LC1 at 100.00%	0.80	OK	Eq. H1-1b
		17	LC36 at 0.00%	0.56	OK	Eq. H1-1b
		18	LC1 at 0.00%	0.72	OK	Eq. H1-1b
		19	LC12 at 0.00%	0.70	OK	Eq. H3-6
		20	LC7 at 0.00%	0.89	OK	Eq. H1-1b
	PL 11x3/16	**3**	LC8 at 100.00%	**0.32**	**OK**	Eq. H1-1b
		4	LC1 at 100.00%	0.30	OK	Eq. H1-1b
	RndBar 3_4	**7**	LC36 at 0.00%	**0.46**	**With warnings**	Eq. H1-1a

Bentley

Current Date: 3/29/2019 11:52 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C\CT1264 (LTE 2C).etz\

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	3.25	0.00	0
3	0.00	0.00	0.33	0
4	0.00	3.25	0.33	0
5	0.00	0.00	2.3717	0
6	0.00	3.25	2.3717	0
7	0.00	0.00	3.1842	0
8	0.00	3.25	3.1842	0
9	0.00	0.00	3.6012	0
10	0.00	3.25	3.6012	0
11	6.23	0.00	3.6012	0
12	6.23	3.25	3.6012	0
27	5.9783	-2.00	3.8012	0
28	1.9783	-2.00	3.8012	0
29	-5.98	-1.00	3.8012	0
30	5.9783	6.00	3.8012	0
31	1.9783	6.00	3.8012	0
32	-5.98	6.00	3.8012	0
33	-5.2925	3.25	3.6012	0
34	-5.2925	0.00	3.6012	0
35	-0.9625	3.25	3.6012	0
36	-0.9625	0.00	3.6012	0

37	5.2925	0.00	3.6012	0
38	5.2925	3.25	3.6012	0
39	0.9625	0.00	3.6012	0
40	0.9625	3.25	3.6012	0
41	-5.2925	2.25	3.6012	0
42	-5.2925	2.25	-1.5446	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1
2	1	1	1	1	1	1
42	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	2	10		L 3X3X3_8	A36	0.00	0.00	0.00
2	1	9		L 3X3X3_8	A36	0.00	0.00	0.00
3	8	10		PL 11x3/16	A36	0.00	0.00	0.00
4	7	9		PL 11x3/16	A36	0.00	0.00	0.00
5	4	3		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
6	6	5		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	5	4		RndBar 3_4	A36	0.00	0.00	0.00
8	12	10		L 3X3X3_16	A36	0.00	0.00	0.00
9	10	14		L 3X3X3_16	A36	0.00	0.00	0.00
11	11	9		L 3X3X3_16	A36	0.00	0.00	0.00
12	9	13		L 3X3X3_16	A36	0.00	0.00	0.00
13	30	27		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
14	31	28		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
15	32	29		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
16	37	38		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
17	39	40		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
18	35	36		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
19	33	34		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
20	41	42		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	180.00	0	0.00	0.00	0.00
2	180.00	0	0.00	0.00	0.00
3	90.00	0	0.00	0.00	0.00
4	90.00	0	0.00	0.00	0.00
8	90.00	0	0.00	0.00	0.00

9	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
13	315.00	0	0.00	0.00	0.00
14	315.00	0	0.00	0.00	0.00
15	315.00	0	0.00	0.00	0.00

Rigid end offsets

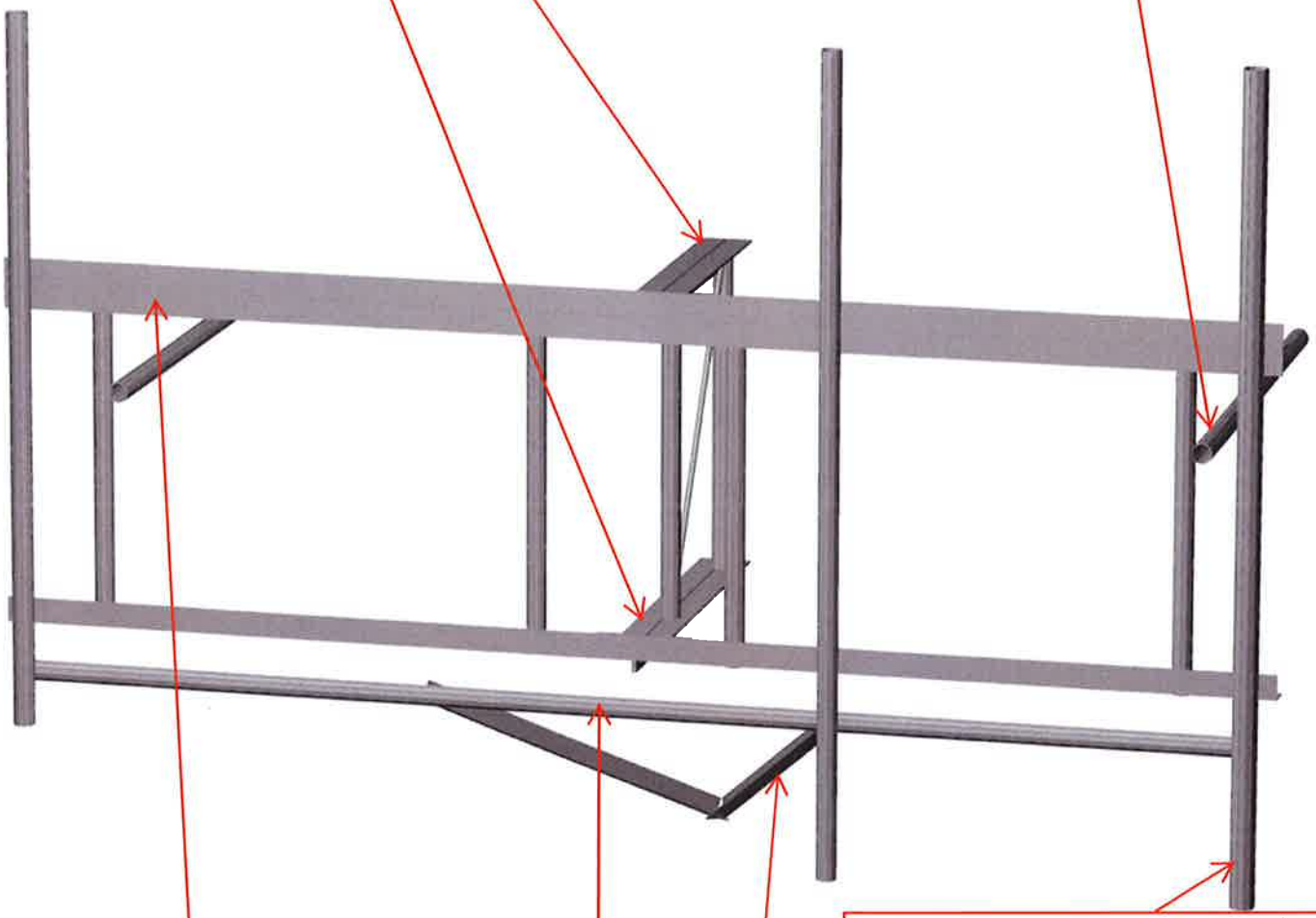
Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
1	0.00	-0.25	0.00	0.00	-0.25	1.00
2	0.00	-0.25	0.00	0.00	-0.25	1.00
3	0.00	0.75	0.00	0.00	0.75	0.00
4	0.00	0.75	0.00	0.00	0.75	0.00
5	0.50	0.00	0.00	0.50	0.00	0.00
6	0.50	0.00	0.00	0.50	0.00	0.00
7	0.50	0.00	0.00	0.50	0.00	0.00
8	0.00	0.25	0.00	0.00	0.25	0.00
9	0.00	0.25	0.00	0.00	0.25	0.00
11	0.00	0.25	0.00	0.00	0.25	0.00
12	0.00	0.25	0.00	0.00	0.25	0.00
16	0.00	1.00	-0.50	0.00	1.00	-0.50
17	0.00	1.00	-0.50	0.00	1.00	-0.50
18	0.00	1.00	-0.50	0.00	1.00	-0.50
19	0.00	1.00	-0.50	0.00	1.00	-0.50
20	2.00	0.00	0.00	2.00	0.00	0.00

HUDSON
Design Group LLC

Mount Calculations
(Modified Conditions)

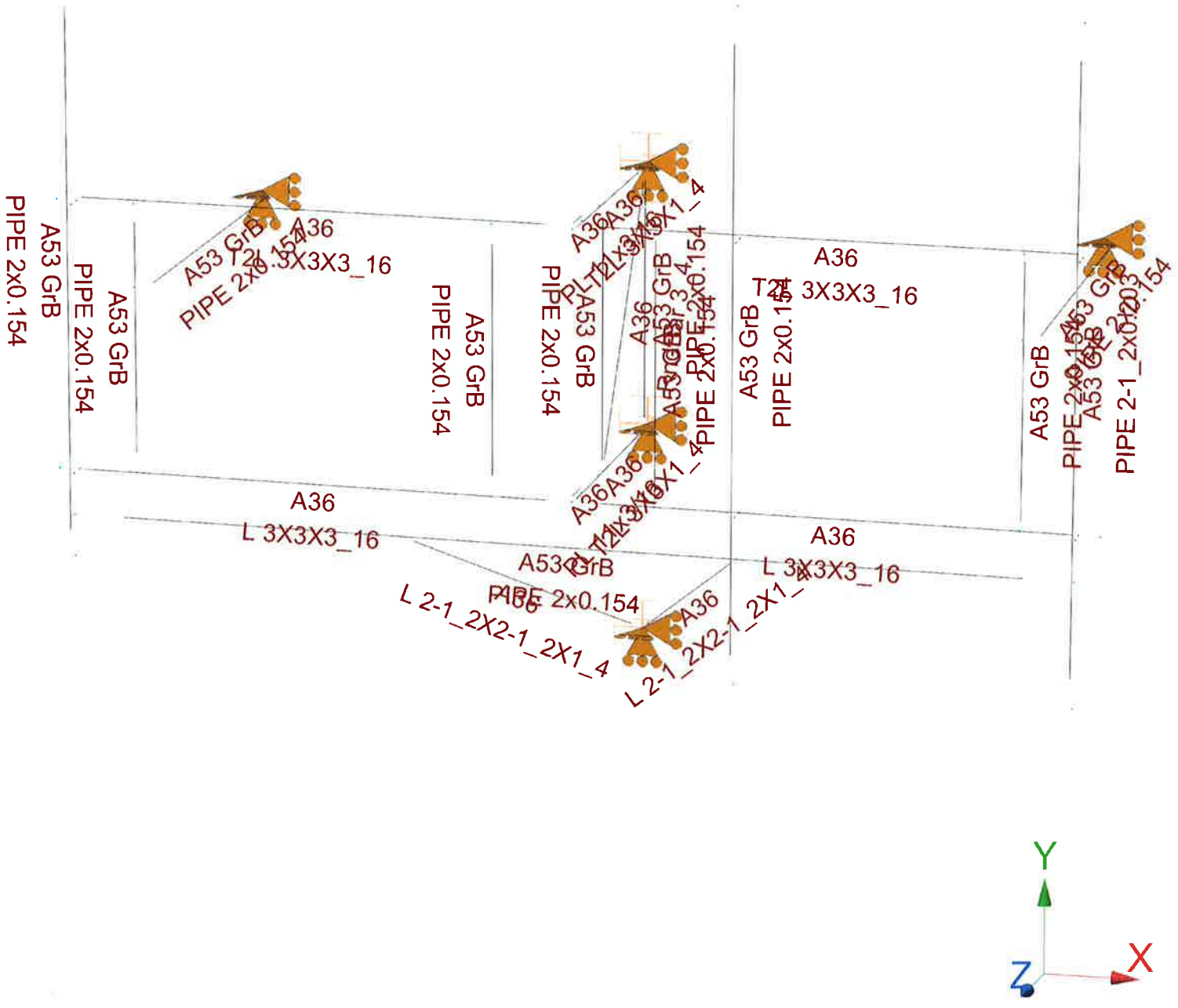
Bentley

Current Date: 6/10/2019 4:16 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C 3C 4C 5C\Rev. 1\CT1264 (LTE 2C 3C 4C



Bentley

Current Date: 6/10/2019 4:02 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C 3C 4C 5C\Rev. 1\CT1264 (LT

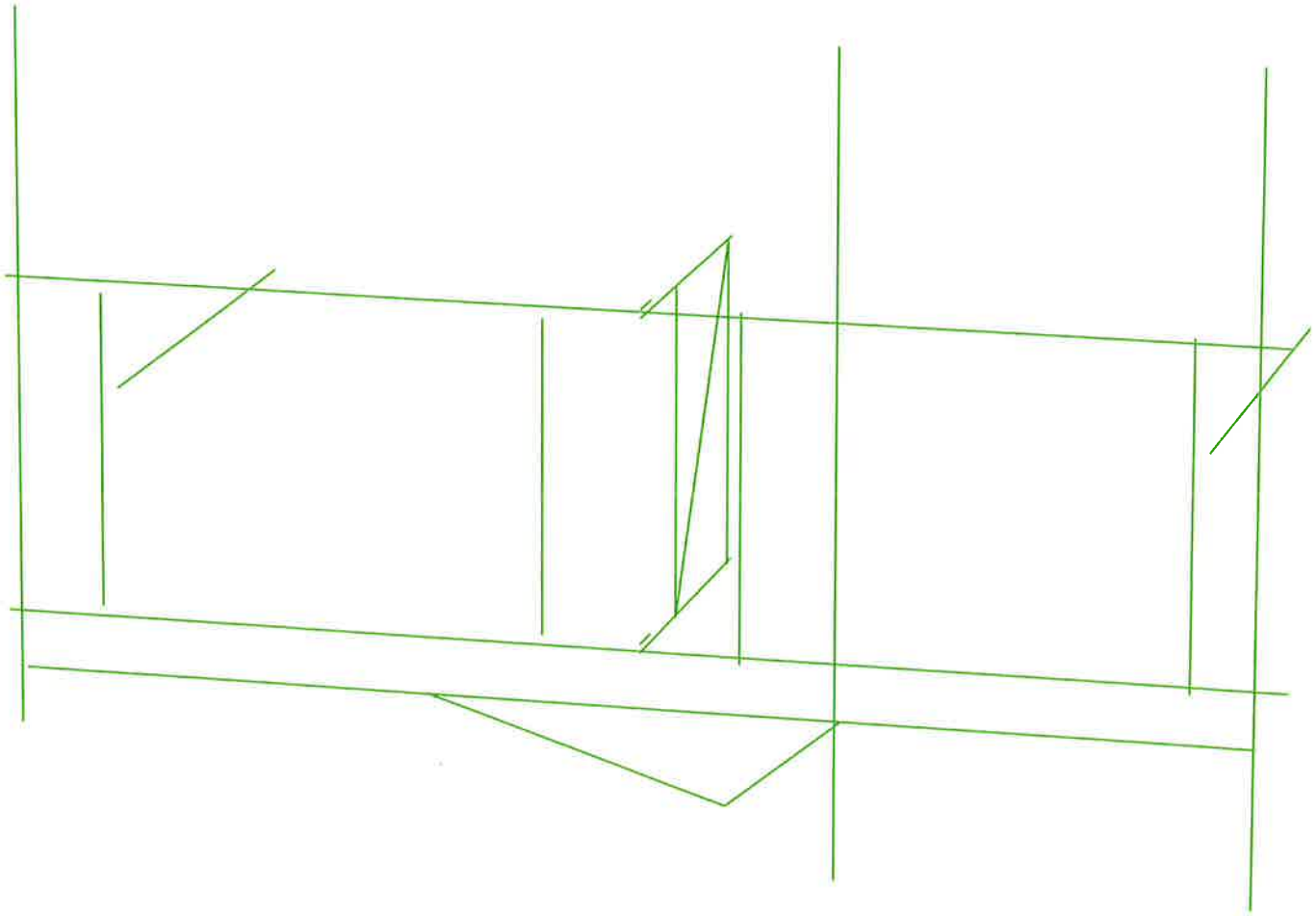


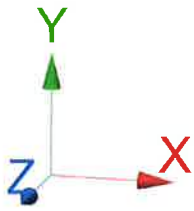
Bentley

Current Date: 6/10/2019 4:02 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C 3C 4C 5C\Rev. 1\CT1264 (LT

Design status

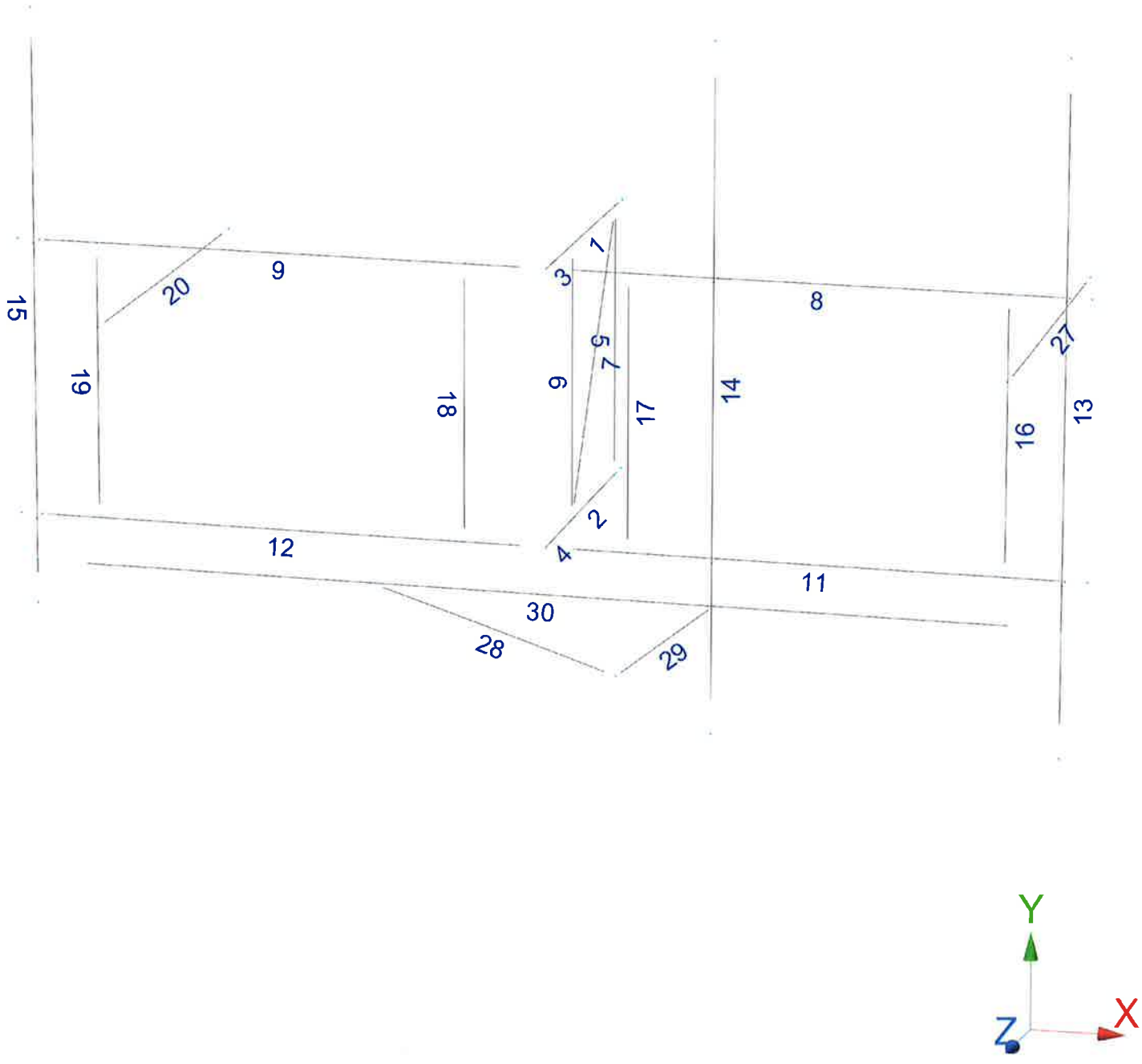
- Not designed
- Error on design
- Design O.K.
- With warnings





Bentley

Current Date: 6/10/2019 4:02 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C 3C 4C 5C\Rev. 1\CT1264 (LT



Bentley

Current Date: 6/10/2019 8:34 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C 3C 4C 5C\Rev. 1\CT12 (LTE 2C 3C 4C 5C)(MODS)(Rev. 1).etz\

Load data

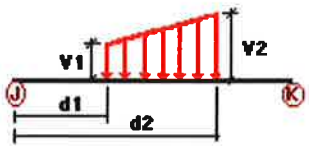
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load Right End of Mount	No	LL
LL3	250 lb Live Load Left 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
LLa4	250 lb Live Load Antenna 4	No	LL

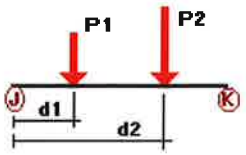
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.026	0.00	0.00	No	0.00	No
	2	z	-0.026	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	6	z	-0.012	0.00	0.00	No	0.00	No
	7	z	-0.004	0.00	0.00	No	0.00	No
	8	z	-0.026	0.00	0.00	No	0.00	No
	9	z	-0.026	0.00	0.00	No	0.00	No
	11	z	-0.026	0.00	0.00	No	0.00	No
	12	z	-0.026	0.00	0.00	No	0.00	No
	16	z	-0.012	0.00	0.00	No	0.00	No
	17	z	-0.012	0.00	0.00	No	0.00	No
	18	z	-0.012	0.00	0.00	No	0.00	No
	19	z	-0.012	0.00	0.00	No	0.00	No
	20	z	-0.012	0.00	0.00	No	0.00	No
	27	z	-0.012	0.00	0.00	No	0.00	No
W30	1	z	-0.026	0.00	0.00	No	0.00	No
	2	z	-0.026	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	6	z	-0.012	0.00	0.00	No	0.00	No
	7	z	-0.004	0.00	0.00	No	0.00	No
	8	z	-0.026	0.00	0.00	No	0.00	No
	9	z	-0.026	0.00	0.00	No	0.00	No
	11	z	-0.026	0.00	0.00	No	0.00	No
	12	z	-0.026	0.00	0.00	No	0.00	No
	16	z	-0.012	0.00	0.00	No	0.00	No
	17	z	-0.012	0.00	0.00	No	0.00	No
	18	z	-0.012	0.00	0.00	No	0.00	No
	19	z	-0.012	0.00	0.00	No	0.00	No
	20	z	-0.012	0.00	0.00	No	0.00	No
	27	z	-0.012	0.00	0.00	No	0.00	No
W60	1	x	-0.026	0.00	0.00	No	0.00	No
	2	x	-0.026	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.012	0.00	0.00	No	0.00	No
	7	x	-0.004	0.00	0.00	No	0.00	No
	8	x	-0.026	0.00	0.00	No	0.00	No
	9	x	-0.026	0.00	0.00	No	0.00	No
	11	x	-0.026	0.00	0.00	No	0.00	No
	12	x	-0.026	0.00	0.00	No	0.00	No
	13	x	-0.012	0.00	0.00	No	0.00	No
	14	x	-0.012	0.00	0.00	No	0.00	No
	15	x	-0.012	0.00	0.00	No	0.00	No
	16	x	-0.012	0.00	0.00	No	0.00	No
	17	x	-0.012	0.00	0.00	No	0.00	No
	18	x	-0.012	0.00	0.00	No	0.00	No
	19	x	-0.012	0.00	0.00	No	0.00	No
	20	x	-0.012	0.00	0.00	No	0.00	No
	27	x	-0.012	0.00	0.00	No	0.00	No
W90	1	x	-0.026	0.00	0.00	No	0.00	No
	2	x	-0.026	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.012	0.00	0.00	No	0.00	No
	7	x	-0.004	0.00	0.00	No	0.00	No
	8	x	-0.026	0.00	0.00	No	0.00	No
	9	x	-0.026	0.00	0.00	No	0.00	No
	11	x	-0.026	0.00	0.00	No	0.00	No
	12	x	-0.026	0.00	0.00	No	0.00	No
	13	x	-0.012	0.00	0.00	No	0.00	No
	14	x	-0.012	0.00	0.00	No	0.00	No
	15	x	-0.012	0.00	0.00	No	0.00	No

	16	x	-0.012	0.00	0.00	No	0.00	No
	17	x	-0.012	0.00	0.00	No	0.00	No
	18	x	-0.012	0.00	0.00	No	0.00	No
	19	x	-0.012	0.00	0.00	No	0.00	No
	20	x	-0.012	0.00	0.00	No	0.00	No
	27	x	-0.012	0.00	0.00	No	0.00	No
W120	1	x	-0.026	0.00	0.00	No	0.00	No
	2	x	-0.026	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.012	0.00	0.00	No	0.00	No
	7	x	-0.004	0.00	0.00	No	0.00	No
	8	x	-0.026	0.00	0.00	No	0.00	No
	9	x	-0.026	0.00	0.00	No	0.00	No
	11	x	-0.026	0.00	0.00	No	0.00	No
	12	x	-0.026	0.00	0.00	No	0.00	No
	13	x	-0.012	0.00	0.00	No	0.00	No
	14	x	-0.012	0.00	0.00	No	0.00	No
	15	x	-0.012	0.00	0.00	No	0.00	No
	16	x	-0.012	0.00	0.00	No	0.00	No
	17	x	-0.012	0.00	0.00	No	0.00	No
	18	x	-0.012	0.00	0.00	No	0.00	No
	19	x	-0.012	0.00	0.00	No	0.00	No
	20	x	-0.012	0.00	0.00	No	0.00	No
	27	x	-0.012	0.00	0.00	No	0.00	No
W150	1	z	0.026	0.00	0.00	No	0.00	No
	2	z	0.026	0.00	0.00	No	0.00	No
	5	z	0.012	0.00	0.00	No	0.00	No
	6	z	0.012	0.00	0.00	No	0.00	No
	7	z	0.004	0.00	0.00	No	0.00	No
	8	z	0.026	0.00	0.00	No	0.00	No
	9	z	0.026	0.00	0.00	No	0.00	No
	11	z	0.026	0.00	0.00	No	0.00	No
	12	z	0.026	0.00	0.00	No	0.00	No
	16	z	0.012	0.00	0.00	No	0.00	No
	17	z	0.012	0.00	0.00	No	0.00	No
	18	z	0.012	0.00	0.00	No	0.00	No
	19	z	0.012	0.00	0.00	No	0.00	No
	20	z	0.012	0.00	0.00	No	0.00	No
	27	z	0.012	0.00	0.00	No	0.00	No
Di	1	y	0.00	0.00	0.00	No	0.00	No
	2	y	0.00	0.00	0.00	No	0.00	No
	5	y	-0.005	0.00	0.00	No	0.00	No
	6	y	-0.005	0.00	0.00	No	0.00	No
	7	y	-0.003	0.00	0.00	No	0.00	No
	8	y	-0.008	0.00	0.00	No	0.00	No
	9	y	-0.008	0.00	0.00	No	0.00	No
	11	y	-0.008	0.00	0.00	No	0.00	No
	12	y	-0.008	0.00	0.00	No	0.00	No
	13	y	-0.005	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
	16	y	-0.005	0.00	0.00	No	0.00	No
	17	y	-0.005	0.00	0.00	No	0.00	No
	18	y	-0.005	0.00	0.00	No	0.00	No
	19	y	-0.005	0.00	0.00	No	0.00	No
	20	y	-0.005	0.00	0.00	No	0.00	No
	27	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	13	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.073	2.00	No
	14	y	-0.054	0.50	No
		y	-0.054	7.50	No
		y	-0.072	2.00	No
	15	y	-0.018	0.50	No
		y	-0.018	5.00	No
		y	-0.022	2.00	No
Wo	13	z	-0.445	0.50	No
		z	-0.445	7.50	No
	14	z	-0.288	0.50	No
		z	-0.288	7.50	No
	15	z	-0.141	0.50	No
		z	-0.141	5.00	No
		z	-0.033	2.00	No
W30	13	3	-0.382	0.50	No
		3	-0.382	7.50	No
		3	-0.048	2.00	No
	14	3	-0.268	0.50	No
		3	-0.268	7.50	No
		3	-0.049	2.00	No
	15	3	-0.125	0.50	No
		3	-0.125	5.00	No
		3	-0.035	2.00	No
W60	13	3	-0.256	0.50	No
		3	-0.256	7.50	No
		3	-0.065	2.00	No
	14	3	-0.227	0.50	No
		3	-0.227	7.50	No
		3	-0.068	2.00	No
	15	3	-0.092	0.50	No
		3	-0.092	5.00	No
		3	-0.039	2.00	No
W90	13	x	-0.192	0.50	No
		x	-0.192	7.50	No
		x	-0.066	2.00	No
	14	x	-0.206	0.50	No
		x	-0.206	7.50	No
		x	-0.069	2.00	No
	15	x	-0.075	0.50	No
		x	-0.075	5.00	No
		x	-0.041	2.00	No
W120	13	2	-0.256	0.50	No
		2	-0.256	7.50	No
		2	-0.065	2.00	No
	14	2	-0.227	0.50	No
		2	-0.227	7.50	No
		2	-0.068	2.00	No
	15	2	-0.092	0.50	No
		2	-0.092	5.00	No
		2	-0.039	2.00	No
W150	13	2	-0.382	0.50	No
		2	-0.382	7.50	No

		2	-0.048	2.00	No
	14	2	-0.268	0.50	No
		2	-0.268	7.50	No
		2	-0.049	2.00	No
	15	2	-0.125	0.50	No
		2	-0.125	5.00	No
		2	-0.035	2.00	No
Di	13	y	-0.129	0.50	No
		y	-0.129	7.50	No
		y	-0.032	2.00	No
	14	y	-0.088	0.50	No
		y	-0.088	7.50	No
		y	-0.033	2.00	No
	15	y	-0.044	0.50	No
		y	-0.044	5.00	No
		y	-0.017	2.00	No
WI0	13	z	-0.076	0.50	No
		z	-0.076	7.50	No
		z	-0.003	2.00	No
	14	z	-0.053	0.50	No
		z	-0.053	7.50	No
		z	-0.003	2.00	No
	15	z	-0.027	0.50	No
		z	-0.027	5.00	No
		z	-0.008	2.00	No
WI30	13	3	-0.065	0.50	No
		3	-0.065	7.50	No
		3	-0.01	2.00	No
	14	3	-0.048	0.50	No
		3	-0.048	7.50	No
		3	-0.01	2.00	No
	15	3	-0.024	0.50	No
		3	-0.024	5.00	No
		3	-0.008	2.00	No
WI60	13	3	-0.046	0.50	No
		3	-0.046	7.50	No
		3	-0.014	2.00	No
	14	3	-0.042	0.50	No
		3	-0.042	7.50	No
		3	-0.014	2.00	No
	15	3	-0.019	0.50	No
		3	-0.019	5.00	No
		3	-0.009	2.00	No
WI90	13	x	-0.037	0.50	No
		x	-0.037	7.50	No
		x	-0.014	2.00	No
	14	x	-0.039	0.50	No
		x	-0.039	7.50	No
		x	-0.014	2.00	No
	15	x	-0.016	0.50	No
		x	-0.016	5.00	No
		x	-0.009	2.00	No
WI120	13	2	-0.046	0.50	No
		2	-0.046	7.50	No
		2	-0.014	2.00	No
	14	2	-0.042	0.50	No
		2	-0.042	7.50	No
		2	-0.014	2.00	No
	15	2	-0.019	0.50	No
		2	-0.019	5.00	No

		2	-0.009	2.00	No
WI150	13	2	-0.065	0.50	No
		2	-0.065	7.50	No
		2	-0.01	2.00	No
	14	2	-0.048	0.50	No
		2	-0.048	7.50	No
		2	-0.01	2.00	No
	15	2	-0.024	0.50	No
		2	-0.024	5.00	No
		2	-0.008	2.00	No
WL0	13	z	-0.024	0.50	No
		z	-0.024	7.50	No
	14	z	-0.016	0.50	No
		z	-0.016	7.50	No
	15	z	-0.008	0.50	No
		z	-0.008	5.00	No
		z	-0.002	2.00	No
WL30	13	3	-0.021	0.50	No
		3	-0.021	7.50	No
		3	-0.003	2.00	No
	14	3	-0.015	0.50	No
		3	-0.015	7.50	No
		3	-0.003	2.00	No
	15	3	-0.007	0.50	No
		3	-0.007	5.00	No
		3	-0.002	2.00	No
WL60	13	3	-0.014	0.50	No
		3	-0.014	7.50	No
		3	-0.003	2.00	No
	14	3	-0.013	0.50	No
		3	-0.013	7.50	No
		3	-0.004	2.00	No
	15	3	-0.005	0.50	No
		3	-0.005	5.00	No
		3	-0.002	2.00	No
WL90	13	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.004	2.00	No
	14	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.004	2.00	No
	15	x	-0.004	0.50	No
		x	-0.004	5.00	No
		x	-0.002	2.00	No
WL120	13	2	-0.014	0.50	No
		2	-0.014	7.50	No
		2	-0.003	2.00	No
	14	2	-0.013	0.50	No
		2	-0.013	7.50	No
		2	-0.004	2.00	No
	15	2	-0.005	0.50	No
		2	-0.005	5.00	No
		2	-0.002	2.00	No
WL150	13	2	-0.021	0.50	No
		2	-0.021	7.50	No
		2	-0.003	2.00	No
	14	2	-0.015	0.50	No
		2	-0.015	7.50	No
		2	-0.003	2.00	No
	15	2	-0.007	0.50	No

		2	-0.007	5.00	No
		2	-0.002	2.00	No
LL1	11	y	-0.25	6.23	No
LL2	12	y	-0.25	6.23	No
LL3	11	y	-0.25	0.00	No
LLa1	13	y	-0.25	4.00	No
LLa2	14	y	-0.25	4.00	No
LLa3	15	y	-0.25	3.50	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	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 Right End of Mount	No	0.00	0.00	0.00
LL3	250 lb Live Load Left 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
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00

W150	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
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	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

Bentley

Current Date: 6/10/2019 4:18 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C 3C 4C 5C\Rev. 1\CT12 (LTE 2C 3C 4C 5C)(MODS)(Rev. 1).etz\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC38=1.2D+1.5LL1
LC39=1.2D+1.5LL2
LC40=1.2D+1.5LL3
LC41=1.2D+WL0+1.5LLa1
LC42=1.2D+WL30+1.5LLa1
LC43=1.2D+WL60+1.5LLa1
LC44=1.2D+WL90+1.5LLa1
LC45=1.2D+WL120+1.5LLa1
LC46=1.2D+WL150+1.5LLa1
LC47=1.2D-WL0+1.5LLa1
LC48=1.2D-WL30+1.5LLa1
LC49=1.2D-WL60+1.5LLa1
LC50=1.2D-WL90+1.5LLa1
LC51=1.2D-WL120+1.5LLa1
LC52=1.2D-WL150+1.5LLa1
LC53=1.2D+WL0+1.5LLa2

LC54=1.2D+WL30+1.5LLa2
LC55=1.2D+WL60+1.5LLa2
LC56=1.2D+WL90+1.5LLa2
LC57=1.2D+WL120+1.5LLa2
LC58=1.2D+WL150+1.5LLa2
LC59=1.2D-WL0+1.5LLa2
LC60=1.2D-WL30+1.5LLa2
LC61=1.2D-WL60+1.5LLa2
LC62=1.2D-WL90+1.5LLa2
LC63=1.2D-WL120+1.5LLa2
LC64=1.2D-WL150+1.5LLa2
LC65=1.2D+WL0+1.5LLa3
LC66=1.2D+WL30+1.5LLa3
LC67=1.2D+WL60+1.5LLa3
LC68=1.2D+WL90+1.5LLa3
LC69=1.2D+WL120+1.5LLa3
LC70=1.2D+WL150+1.5LLa3
LC71=1.2D-WL0+1.5LLa3
LC72=1.2D-WL30+1.5LLa3
LC73=1.2D-WL60+1.5LLa3
LC74=1.2D-WL90+1.5LLa3
LC75=1.2D-WL120+1.5LLa3
LC76=1.2D-WL150+1.5LLa3

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	L 2-1_2X2-1_2X1_4	**28**	LC39 at 100.00%	0.26	OK	Sec. F1
		29	LC31 at 0.00%	**0.52**	**OK**	Sec. F1
	L 3X3X3_16	**11**	LC36 at 68.75%	**0.71**	**OK**	Eq. H3-8
		12	LC24 at 0.00%	0.33	OK	Eq. H2-1
	PIPE 2-1_2x0.203	**13**	LC1 at 32.81%	**0.56**	**OK**	Eq. H1-1b
	PIPE 2x0.154	**5**	LC31 at 0.00%	0.05	OK	Eq. H1-1b
		6	LC31 at 0.00%	0.23	OK	Eq. H1-1b
		14	LC1 at 32.81%	0.70	OK	Eq. H1-1b
		15	LC1 at 39.06%	0.39	OK	Eq. H1-1b
		16	LC7 at 68.75%	**0.80**	**OK**	Eq. H1-1b
		17	LC31 at 0.00%	0.29	OK	Eq. H1-1b
		18	LC72 at 0.00%	0.23	OK	Eq. H1-1b
		19	LC2 at 28.13%	0.37	OK	Eq. H1-1b
		20	LC1 at 0.00%	0.21	OK	Eq. H1-1b
		27	LC40 at 0.00%	0.32	OK	Eq. H1-1b
		30	LC50 at 67.19%	0.44	OK	Eq. H1-1b
	PL 11x3/16	**3**	LC10 at 100.00%	**0.18**	**OK**	Eq. H1-1b
		4	LC36 at 100.00%	0.07	OK	Eq. H1-1b
	RndBar 3_4	**7**	LC31 at 100.00%	**0.20**	**OK**	Eq. Sec. D2
	T2L 3X3X1_4	**1**	LC10 at 0.00%	**0.84**	**OK**	Eq. H2-1
		2	LC30 at 67.19%	0.40	OK	Eq. H2-1
	T2L 3X3X3_16	**8**	LC2 at 100.00%	0.62	OK	Eq. H2-1
		9	LC11 at 0.00%	**0.73**	**OK**	Eq. H2-1

Bentley

Current Date: 6/10/2019 8:34 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1264\LTE 2C 3C 4C 5C\Rev. 1\CT12 (LTE 2C 3C 4C 5C)(MODS)(Rev. 1).etz\

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	3.25	0.00	0
3	0.00	0.00	0.33	0
4	0.00	3.25	0.33	0
5	0.00	0.00	2.3717	0
6	0.00	3.25	2.3717	0
7	0.00	0.00	3.1842	0
8	0.00	3.25	3.1842	0
9	0.00	0.00	3.6012	0
10	0.00	3.25	3.6012	0
11	6.23	0.00	3.6012	0
12	6.23	3.25	3.6012	0
13	-6.23	0.00	3.6012	0
14	-6.23	3.25	3.6012	0
27	5.9783	-2.00	3.8012	0
28	1.9783	-2.00	3.8012	0
29	-5.98	-1.00	3.8012	0
30	5.9783	6.00	3.8012	0
31	1.9783	6.00	3.8012	0
32	-5.98	6.00	3.8012	0
33	-5.2925	3.25	3.6012	0

34	-5.2925	0.00	3.6012	0
35	-0.9625	3.25	3.6012	0
36	-0.9625	0.00	3.6012	0
37	5.2925	0.00	3.6012	0
38	5.2925	3.25	3.6012	0
39	0.9625	0.00	3.6012	0
40	0.9625	3.25	3.6012	0
41	-5.2925	2.25	3.6012	0
42	-5.2925	2.25	-1.5446	0
43	5.2925	2.25	3.6012	0
44	5.2925	2.25	-1.5446	0
45	-2.00	0.00	3.6012	0
47	0.00	-2.00	0.0012	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1
2	1	1	1	1	1	1
42	1	1	1	0	0	0
44	1	1	1	0	0	0
47	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	2	10		T2L 3X3X1_4	A36	0.00	0.00	0.00
2	1	9		T2L 3X3X1_4	A36	0.00	0.00	0.00
3	8	10		PL 11x3/16	A36	0.00	0.00	0.00
4	7	9		PL 11x3/16	A36	0.00	0.00	0.00
5	4	3		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
6	6	5		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	5	4		RndBar 3_4	A36	0.00	0.00	0.00
8	12	10		T2L 3X3X3_16	A36	0.00	0.00	0.00
9	10	14		T2L 3X3X3_16	A36	0.00	0.00	0.00
11	11	9		L 3X3X3_16	A36	0.00	0.00	0.00
12	9	13		L 3X3X3_16	A36	0.00	0.00	0.00
13	30	27		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
14	31	28		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
15	32	29		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
16	37	38		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
17	39	40		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
18	35	36		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
19	33	34		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
20	41	42		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
27	43	44		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	45	47		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
29	47	46		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
3	90.00	0	0.00	0.00	0.00
4	90.00	0	0.00	0.00	0.00
13	315.00	0	0.00	0.00	0.00
14	315.00	0	0.00	0.00	0.00
15	315.00	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	-0.25	0.00	0.00	-0.25	0.00
2	0.00	-0.25	0.00	0.00	-0.25	0.00
3	0.00	0.75	0.00	0.00	0.75	0.00
4	0.00	0.75	0.00	0.00	0.75	0.00
5	0.50	0.00	0.00	0.50	0.00	0.00
6	0.50	0.00	0.00	0.50	0.00	0.00
7	0.50	0.00	0.00	0.50	0.00	0.00
8	0.00	0.50	0.00	0.00	0.50	0.00
9	0.00	0.50	0.00	0.00	0.50	0.00
13	0.00	0.00	2.00	0.00	0.00	2.00
14	0.00	0.00	2.00	0.00	0.00	2.00
15	0.00	0.00	2.00	0.00	0.00	2.00
16	0.00	-1.00	-0.50	0.00	1.00	-0.50
17	0.00	-1.00	-0.50	0.00	1.00	-0.50
18	0.00	-1.00	-0.50	0.00	1.00	-0.50
19	0.00	-1.00	-0.50	0.00	1.00	-0.50
20	2.00	0.00	0.00	2.00	0.00	0.00
27	2.00	0.00	0.00	2.00	0.00	0.00