COHEN and WOLF P.C.
ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

Please Reply To: Bridgeport
Writer's Direct Dial: (203) 337-4110
E-Mail: rschwartzman@cohenandwolf.com

August 22, 2014

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Re: Notice of Exempt Modification
Town of East Hartford/T-Mobile co-location
T-Mobile Site ID CT11737C
100 Sunset Ridge Road, East Hartford, CT

Dear Attorney Bachman:

This office represents T-Mobile Northeast LLC ("T-Mobile"), and has been retained to file exempt modification filings with the Connecticut Siting Council on its behalf.

In this case, the town of East Hartford owns the existing lattice telecommunications tower and related facility at 100 Sunset Ridge Road, East Hartford, CT (41.7718/-72.5903). T-Mobile intends to install 3 new antennas and related equipment at this existing telecommunications facility in East Hartford ["East Hartford Facility"). Please accept this letter as notification, pursuant to R.C.S.A. §16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R. C.S.A. § 16-50j-73, a copy of this letter is being sent to the Mayor, Marcia Leclerc, and the property owner, the town of East Hartford.

The existing East Hartford Facility consists of a 140 foot lattice tower.[1] T-Mobile plans to install 3 new antennas on sector frames at a centerline of 120 feet. (See the plans revised to July 31, 2014 attached hereto as **Exhibit A**). T-Mobile will also install remote radio units, reuse existing hybrid cables, and reuse existing coax cables. The existing East Hartford Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated August 6, 2014, and attached hereto as **Exhibit B**.

The planned modifications to the East Hartford Facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

[1] While the online docket for the Connecticut Siting Council does not provide a docket or petition number for approval of this structure, it does reference this structure in connection with a notices of intent captioned TS-T-MOBILE-043-060621, EM-T-MOBILE-043-090226, EM-POCKET-043-090618, EM-T-MOBILE-043-120614, EM-METROPCS-043-130226MA.

COHEN and WOLF P.C. ATTORNEYS AT LAW

1. The proposed modification will not increase the height of the tower. T-Mobile's existing antennas are at a centerline of 120 feet; the replacement antennas will be installed at the same 120 foot level. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2. The proposed modifications will not require an extension on the site boundaries or lease area, as depicted on Sheet 1 of Exhibit A. T-Mobile's equipment will be located entirely within the existing compound area.

3. The proposed modification to the Facility will not increase the noise levels at the existing facility by six decibels or more.

4. The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated August 13, 2014. T-Mobile's operations would add 8.40% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 35.21% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as **Exhibit C.**

For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and equipment at the East Hartford Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Upon acknowledgement of this exempt modification, T-Mobile shall commence construction approximately sixty days from the receipt of the Council's decision.

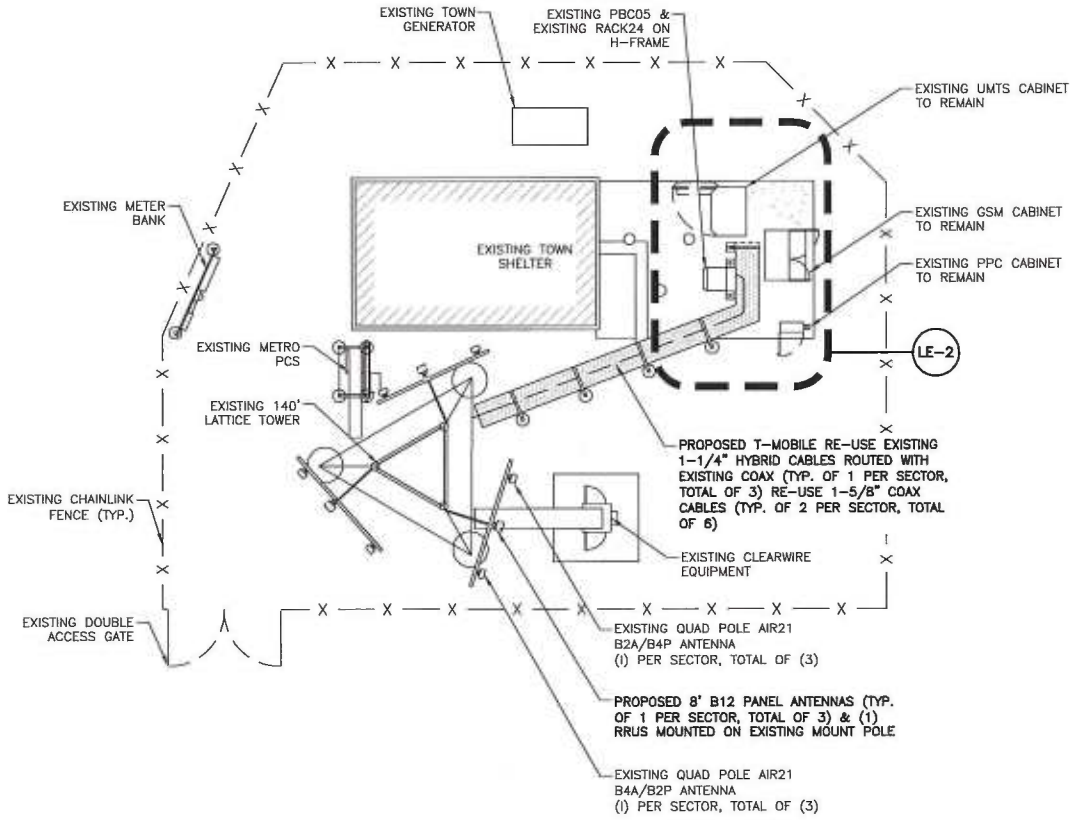
Sincerely,

Rachel Schwartzman

Rachel A. Schwartzman, Esq.

cc: Town of East Hartford, Mayor Marcia Lelcerc
Town of East Hartford
Jamie Ford, EBI Consulting

EXHIBIT A



CONFIGURATION

702CU

APPROX. NORTH

NOTE:
ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE STRUCTURAL AND RF ENGINEERS.

SITE PLAN

SCALE: 1/16" = 1'-0"

PREPARED BY:

EBI Consulting
environmental | engineering | due diligence
21 B Street | Burlington, MA 01803
Tel: (781) 273-2500 | Fax: (781) 273-3311
www.ebiconsulting.com

EBI JOB NO.: 81140819

CLIENT:

T-Mobile Northeast, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860.692.7100

SITE INFO:

CT11737C
CT737/E
HARTFORD TOWN SST
100 SUNSET RIDGE ROAD
EAST HARTFORD

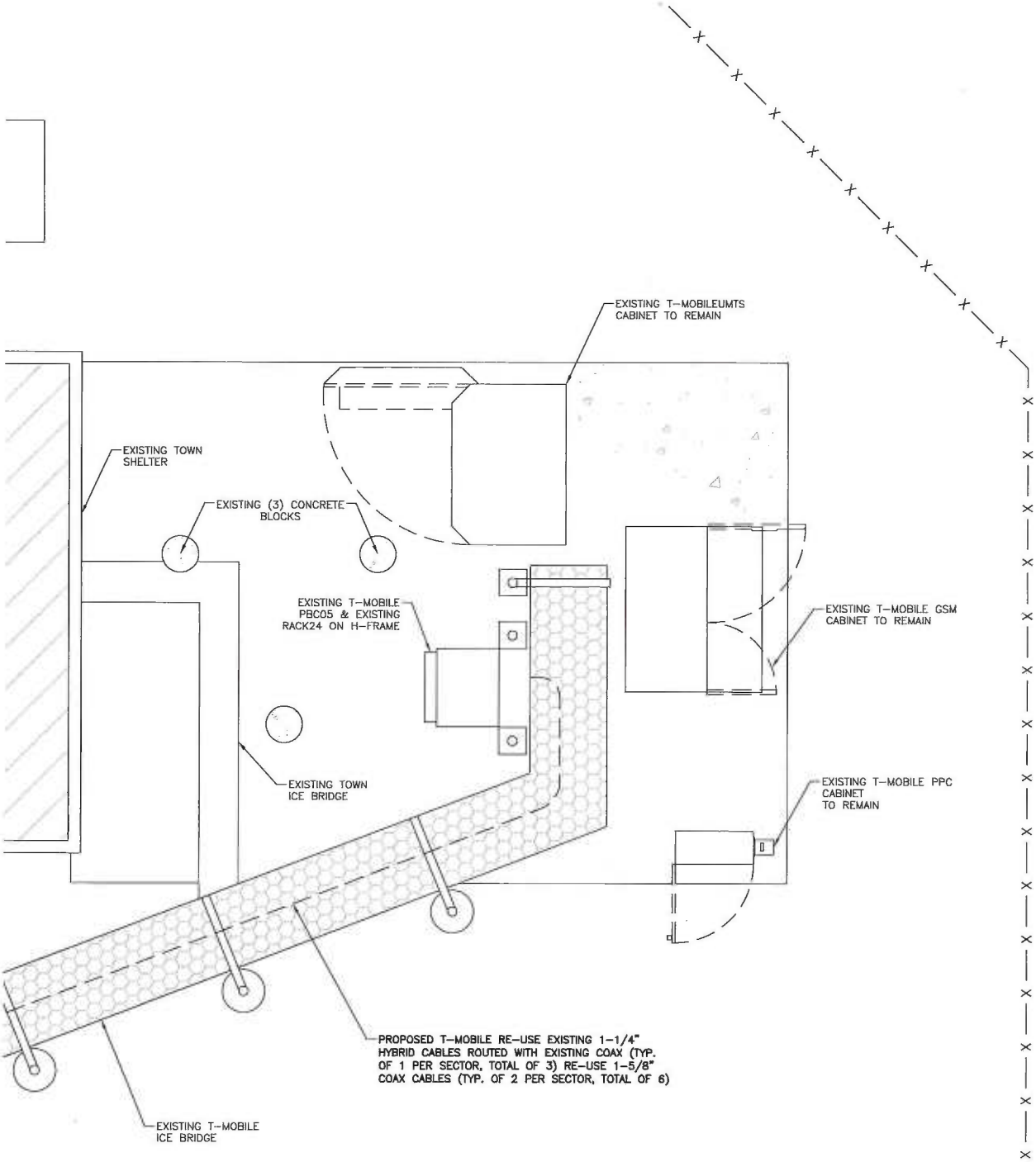
SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	07/31/14	LE REV.	MK

DRAWN BY: MK

CHECKED BY: PM

DATE: 07/31/14

SHEET NO: LE-1



CONFIGURATION

702CU

APPROX. NORTH

NOTE:
ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE STRUCTURAL AND RF ENGINEERS.

EQUIPMENT PLAN

SCALE: 1/4" = 1'-0"

PREPARED BY:
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CLIENT:
T-Mobile Northeast, LLC
35 GRIFFIN ROAD SOUTH
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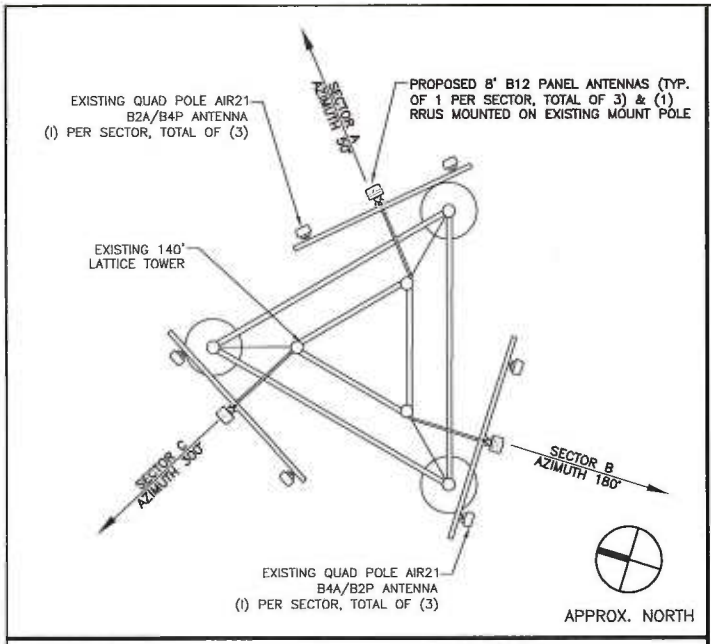
860.692.7100

SITE INFO:
CT11737C
CT737/E
HARTFORD TOWN SST
100 SUNSET RIDGE ROAD
EAST HARTFORD

SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	07/31/14	LE REV.	MK

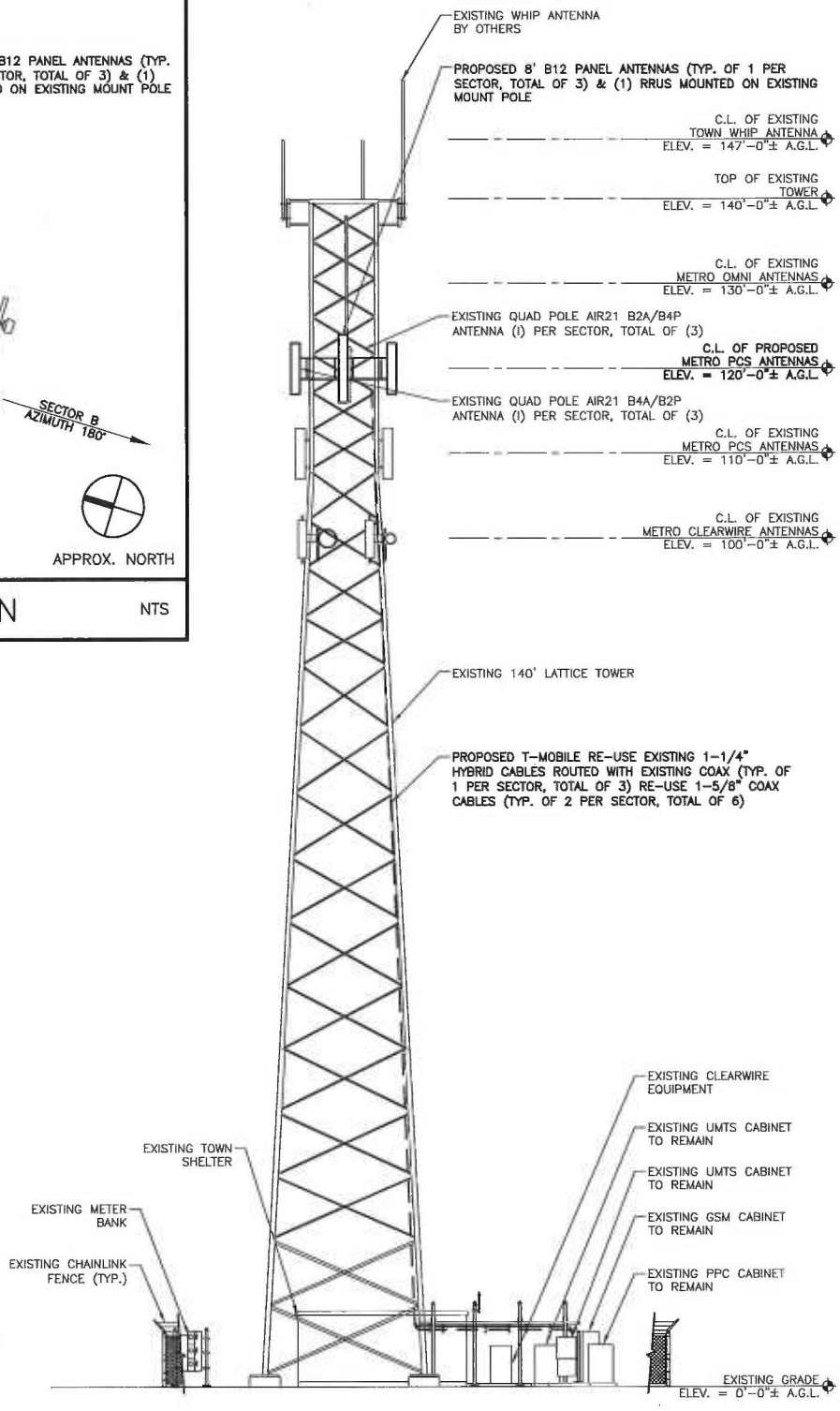
DRAWN BY: MK
CHECKED BY: PM
DATE: 07/31/14

SHEET NO: LE-2



ANTENNA CONFIGURATION

NTS



CONFIGURATION

702CU

NOTE:
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TOWER ELEVATION

SCALE: 1:20

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www.ebiconsulting.com
EBI JOB NO.: B1140819

CLIENT:
T-Mobile Northeast, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860.692.7100

SITE INFO:
CT11737C
CT737/E
HARTFORD TOWN
SST
100 SUNSET RIDGE ROAD
EAST HARTFORD

SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	07/31/14	LE REV.	MK

DRAWN BY: MK
CHECKED BY: PM
DATE: 07/31/14

SHEET NO: LE-3

EXHIBIT B

EBI Consulting
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TOWER STRUCTURAL ANALYSIS REPORT

August 6, 2014

T-Mobile, USA
35 Griffin Road South
Bloomfield, CT 06002
Attention: Mark Richard

Subject: 700 MHz Upgrade Project
Site #: CT11737C
EBI Reference #: 81140819
Site Name: Hartford Town SST
Address: 100 Sunset Ridge Road, East Hartford, CT

Dear Mr. Richard,

This letter is to confirm EBI's structural analysis of the existing self-supporting tower at the above listed site for supporting the proposed T-Mobile equipment upgrade. The intent of this review is to determine if the proposed modification of antennas will exceed the structural capacity of the existing tower.

EBI Consulting has prepared this structural analysis report for the 140.0 foot self-supporting tower for the additional loads imposed by the proposed antenna configuration by T-Mobile. This analysis has been performed in accordance with the 2005 CT State Building Code (including 2009. 2011, and 2013 Amendments) and ANSI/TIA/EIA-222 Revision F, with an 80 mph fastest-mile wind speed and no ice, a 69.3 mph fastest-mile wind speed with 0.5" radial ice, and for a seismic Ss value of 0.238 g. Information from the following sources was utilized in our analysis:

- Existing tower analysis by URS Corporation, dated March 18, 2009
- Existing tower assessment letter by Atlantis Group, dated May 4, 2012
- Photographs taken by EBI personnel on a site visit on July 25, 2014

By engineering analysis, the existing tower is capable of supporting the existing and proposed equipment listed herein, with a maximum usage of approximately 53.1%. This analysis did not provide for any future equipment or tower extensions.

The analysis provided herein by EBI Consulting includes the following existing and proposed equipment:

Proposed equipment configuration:

Carrier	Elevation	Manufacturer	Model	Quantity	Mount type	Coax
Town	143	-	7' whip antennas	3	standoff	1"
	130	-	20' whip antenna	3	T-mobile sector frame	
	135	-	1' nominal backhaul antenna	1	standoff	

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Carrier	Elevation	Manufacturer	Model	Quantity	Mount type	Coax
T-Mobile	120	Ericsson	AIR 21 panel antenna	6	10' sector frame	(6) 1-5/8" (4) 1-1/4" hybrid
		Ericsson	**KRC 118 048/1 panel antenna**	**3**		
		Ericsson	TMA	3		
		Ericsson	**RRUS11 B12 remote radio units**	**3**		
Clearwire	100	-	panel antenna	3	4' T-arm	(3) 3" rigid conduit
		-	RRHs	3		
		-	2' nominal bakchaul dish	1		
		-	1' nominal backhaul antenna	1	standoff	
	95	-	1' nominal backhaul antenna	2	standoff	

Note: Proposed equipment shown in bold.

Summary of Results: (Refer to attached TNX Tower Analysis for detailed analysis results)

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	140 - 120	Leg	2 1/4	1	-5298.64	69560.47	7.6	Pass
		Diagonal	L1 3/4x1 3/4x1/8	8	-1265.11	3305.69	38.3	Pass
		Top Girt	L3x3x3/8	4	-112.95	16466.42	0.7	Pass
T2	120 - 100	Leg	2 1/4	31	-24959.30	69560.47	35.9	Pass
		Diagonal	L1 3/4x1 3/4x1/4	39	-3222.36	6167.80	52.2	Pass
T3	100 - 80	Leg	2 3/4	58	-55963.40	138703.98	40.3	Pass
		Diagonal	L2 1/2x2 1/2x5/16	66	-4976.26	22071.55	22.5	Pass
T4	80 - 60	Leg	3	85	-81262.80	178891.26	45.4	Pass
		Diagonal	L2 1/2x2 1/2x5/16	92	-3616.58	16075.45	22.5	Pass
T5	60 - 40	Leg	3 1/4	112	-103862.00	223278.82	46.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	119	-4038.20	11878.99	34.0	Pass
T6	40 - 20	Leg	Pirod 105218	139	-126269.00	258238.08	48.9	Pass
		Diagonal	L3x3x5/16	146	-4845.93	17842.74	27.2	Pass
T7	20 - 0	Leg	Pirod 105219	166	-142580.00	343622.06	53.1	Pass
		Diagonal	L3x3x5/16	179	-7309.69	14656.47	49.9	Pass
							Summary	
						Leg (T7)	53.1	Pass
						Diagonal (T2)	52.2	Pass
						Top Girt (T1)	0.7	Pass
						Bolt Checks	38.1	Pass
						RATING =	**53.1**	**Pass**

The maximum stress under the proposed conditions and configurations is **53.1%** of the tower capacity, governed by stresses in the tower legs. Therefore **the tower has adequate structural capacity** for the proposed equipment configurations.

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Foundation:
The foundation reactions are summarized below:

Load	Current analysis loads (TIA-222-F)
Moment (k-ft)	1935.8
Shear (k)	25.8
Axial (k)	38.6

All reactions are within the allowable capacity of the pad & pier foundation, with dimensions as reported in the existing structural analysis by others, as calculated within this analysis. Therefore, the existing foundation is structurally adequate for supporting the tower under the proposed loading configuration.

Local antenna support:
The proposed antennas are to be mounted to proposed 2-7/8" O.D. mast pipes mounted in the central position on the faces of the existing sector frames, with one antenna on each frame. The proposed RRUs are to be mounted behind the proposed panel antennas. The existing sector frames are industry-standard frames, designed to support three or four panel antennas each, with horizontal face members consisting of 2-3/8" minimum O.D. pipes. Based on the information available to us, it is our opinion that the existing sector frames are structurally adequate to support the proposed equipment configuration.

Limitations and Assumptions:
This report is based on the following assumptions:

1. Tower is properly installed and maintained.
2. All members are as specified in the original design documents and are in good condition.
3. All required members are in place.
4. All bolts are in place and are tightly fastened.
5. Tower is in plumb condition.
6. All member protective coatings are in good condition.
7. All tower members were properly designed, detailed, fabricated, and installed, and have been properly maintained since erection.
8. Foundations were properly designed, constructed, and analyzed to support original and previous analysis design loads.

EBI is not responsible for any modifications prior to or hereafter in which EBI is not or was not directly involved. Modifications include but are not limited to:

1. Adding antennas
2. Removing/replacing antennas
3. Adding coaxial cables
4. Extending the height of the tower

EBI hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon information contained and set forth herein. If you are aware of any

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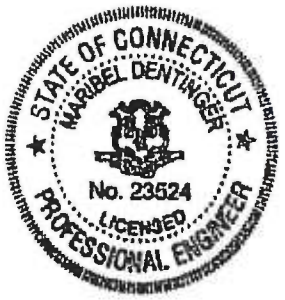
information which conflicts with that which is contained herein, you should disregard this report and immediately contact EBI. EBI disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

Please contact us at 781-273-2500 if you have any questions.

Sincerely yours,
EBI Consulting

Kelly Shanahan, E.I.T.

Maribel Dentinger, P.E.
Professional Engineer



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PHOTOGRAPH/ DOCUMENT LOG

Photo 1: Overall view of the existing lattice tower.	
Photo 2: Close-up of the top of the stealth tower where antennas by T-Mobile and others are located.	
Photo 3: Close-up of the existing T-Mobile sector frames and existing T-Mobile antenna array.	

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STRUCTURAL DESIGN PARAMETERS

BUILDING CODES:

2005 Connecticut State Building Code (with 2009, 2011, and 2013 Amendments)
International Building Code 2003
TIA/EIA-222 Revision F

OCCUPANCY CATEGORY:	II
LIVE LOADS:	
Roofs:	N/A
SNOW LOADS:	
Ground Snow Load, Pg:	30 psf
WIND LOADS:	
Fastest-mile wind speed, V:	80 mph
Importance Factor, I:	1.0
Radial Ice:	0.5 in (not escalating)
SEISMIC LOADS:	
Component Importance Factor, I_P:	1.0
Occupancy Category for component:	II
Spectral Acceleration Short Period, S_S=	0.238
Spectral Acceleration 1-Second Period, S_1 =	0.064
Site class	D
Seismic design category	B

Screenshot excerpt from Google Earth, included for showing surrounding terrain.

USGS Design Maps Summary Report

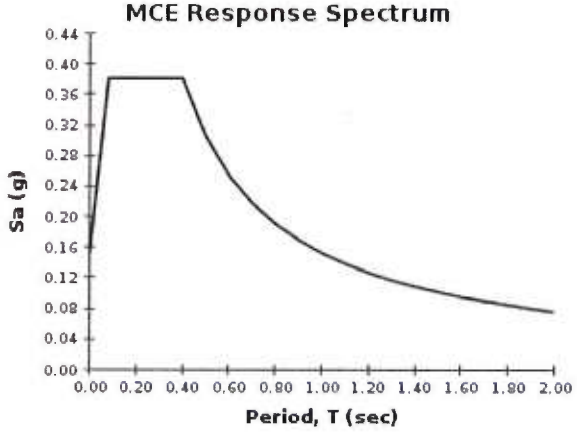
User-Specified Input

Report Title	CT11737C Wed August 6, 2014 22:01:53 UTC
Building Code Reference Document	ASCE 7-05 Standard (which utilizes USGS hazard data available in 2002)
Site Coordinates	41.77201°N, 72.59038°W
Site Soil Classification	Site Class D – "Stiff Soil"
Occupancy Category	I/II/III

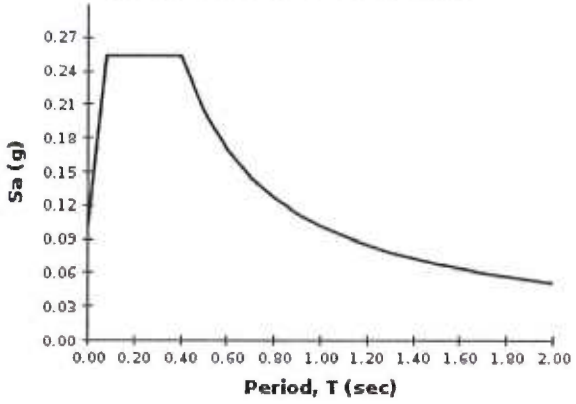
USGS-Provided Output

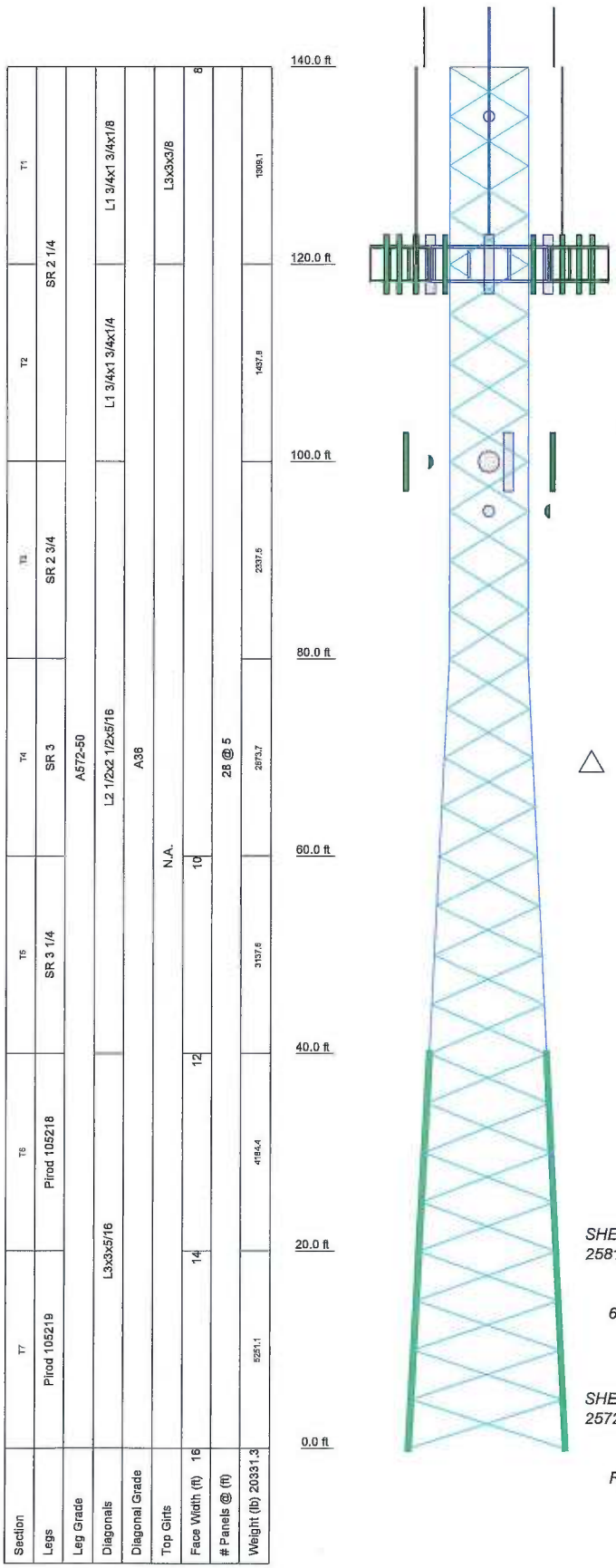
S_S =	0.238 g	S_{MS} =	0.381 g	S_{DS} =	0.254 g
S_1 =	0.064 g	S_{M1} =	0.153 g	S_{D1} =	0.102 g

MCE Response Spectrum



Design Response Spectrum





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
7' Whip (Town)	138	AIR 21 B2A/B4P antenna w/ pipe mount (T-Mobile)	120
7' Whip (Town)	138	AIR 21 B2A/B4P antenna w/ pipe mount (T-Mobile)	120
7' Whip (Town)	138	AIR 21 B2A/B4P antenna w/ pipe mount (T-Mobile)	120
3' standoff arm (Town)	138	AIR 21 B2A/B4P antenna w/ pipe mount (T-Mobile)	120
3' standoff arm (Town)	138	AIR 21 B2A/B4P antenna w/ pipe mount (T-Mobile)	120
3' standoff arm (Town)	138	Clearwire panel antenna w/ pipe mount (Clearwire)	100
Lightning Rod 2"x15'	138	Clearwire RRH (Clearwire)	100
3' standoff arm (dish)	135	Clearwire RRH (Clearwire)	100
VHLP1-23	135	Clearwire RRH (Clearwire)	100
3" Dia 20' Omni (Town)	130	Side Arm Mount [SO 101-1] (Clearwire)	100
3" Dia 20' Omni (Town)	130	Side Arm Mount [SO 101-1] (Clearwire)	100
3" Dia 20' Omni (Town)	130	Side Arm Mount [SO 101-1] (Clearwire)	100
AIR 21 B2A/B4P antenna w/ pipe mount (T-Mobile)	120	Clearwire panel antenna w/ pipe mount (Clearwire)	100
TMA (T-Mobile)	120	Clearwire panel antenna w/ pipe mount (Clearwire)	100
TMA (T-Mobile)	120	VHLP2-11	100
TMA (T-Mobile)	120	VHLP1-23	100
KRC 118 048/1 antenna (96") w/ pipe mount (T-Mobile)	120	VHLP1-23	95
KRC 118 048/1 antenna (96") w/ pipe mount (T-Mobile)	120	VHLP1-23	95
KRC 118 048/1 antenna (96") w/ pipe mount (T-Mobile)	120		
RRUS11 B12 remote radio unit (T-Mobile)	120		
RRUS11 B12 remote radio unit (T-Mobile)	120		
RRUS11 B12 remote radio unit (T-Mobile)	120		
Sector Mount [SM 402-1] (T-Mobile)	120		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60 mph wind.
5. Weld together tower sections have flange connections.
6. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
7. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
8. Welds are fabricated with ER-70S-6 electrodes.

MAX. CORNER REACTIONS AT BASE:
DOWN: 152553 lb
SHEAR: 4987 lb

UPLIFT: -119981 lb
SHEAR: 13791 lb

AXIAL
38558 lb

SHEAR
25815 lb

MOMENT
1935772 lb-ft

TORQUE 20550 lb-ft
69 mph WIND - 0.5000 in ICE

AXIAL
25770 lb

SHEAR
25726 lb

MOMENT
1902066 lb-ft

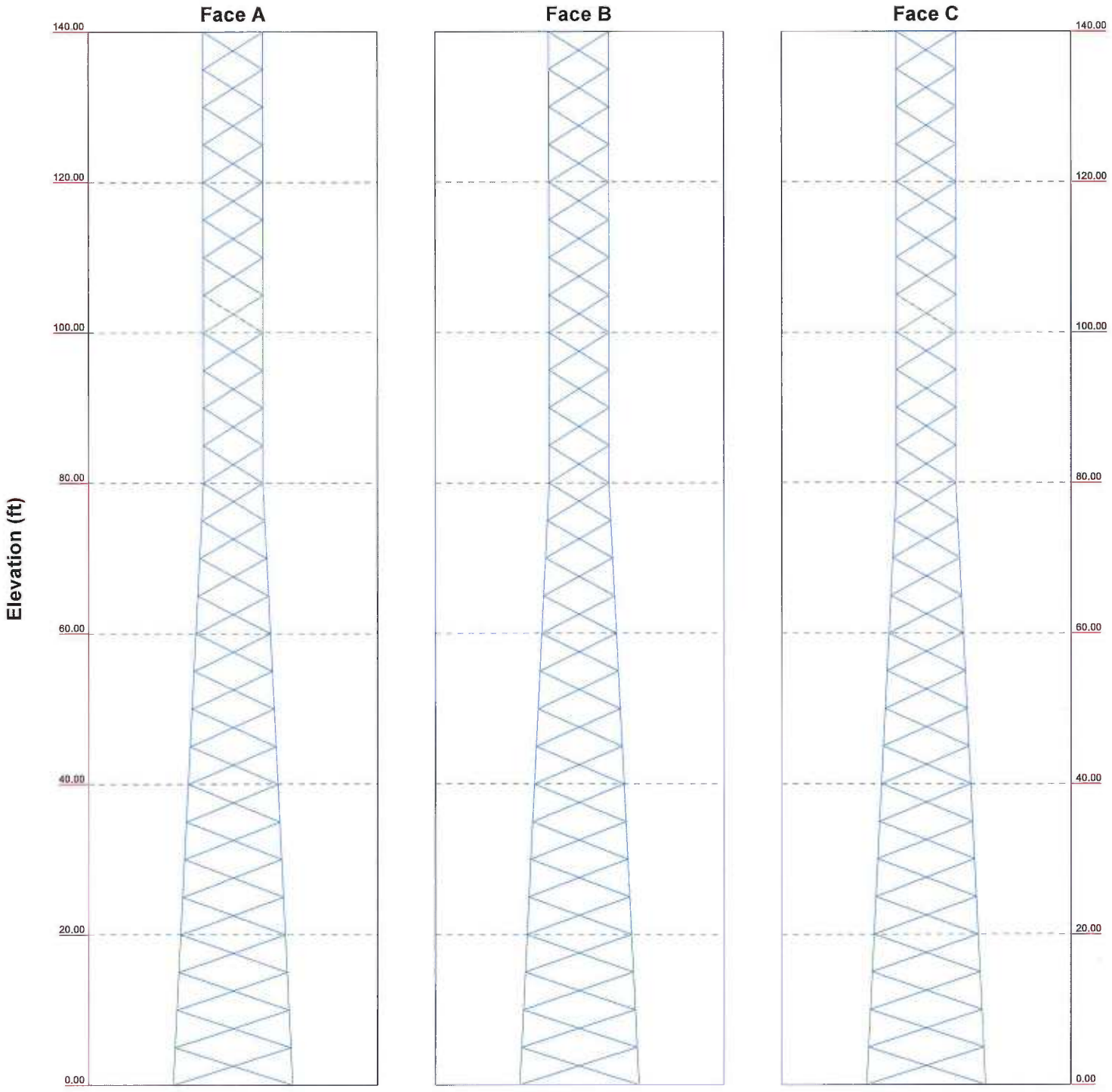
TORQUE 19377 lb-ft
REACTIONS - 80 mph WIND

EBI Consulting
21 B Street
Burlington, MA 01803
Phone: (781) 425-5100
FAX: (781) 425-5141

Job: *CT11737C tower analysis*			
Project: *81140819*			
Client: T-Mobile	Drawn by: Kelly Shanahan		App'd:
Code: TIA/EIA-222-F	Date: 08/08/14		Scale: NTS
Path: S:\Active Projects\Turnkey T-Mobile (CT\CT11737C\Structural\Calculations\CT11-737C tower analysis.dwg			Dwg No. E-1

Stress Distribution Chart
0' - 140'

> 100% 90%-100% 75%-90% 50%-75% < 50% Overstress



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Burlington, MA 01803
Phone: (781) 425-5100
FAX: (781) 425-5141

Job: CT11737C tower analysis			
Project: 81140819			
Client: T-Mobile	Drawn by: Kelly Shanahan		App'd:
Code: TIA/EIA-222-F	Date: 08/08/14		Scale: NTS
Path: S:\Active Projects\Turnkey\T-Mobile\CT\A&E\Site folder\CT11737C\Structural\Calculations\CT 11-737C tower analysis.eri			Dwg No. E-8

tnxTower	Job	Page
	CT11737C tower analysis	1 of 27
EBI Consulting 21 B Street Burlington, MA 01803 Phone: (781) 425-5100 FAX: (781) 425-5141	Project 81140819	Date 14:15:04 08/08/14
	Client T-Mobile	Designed by Kelly Shanahan

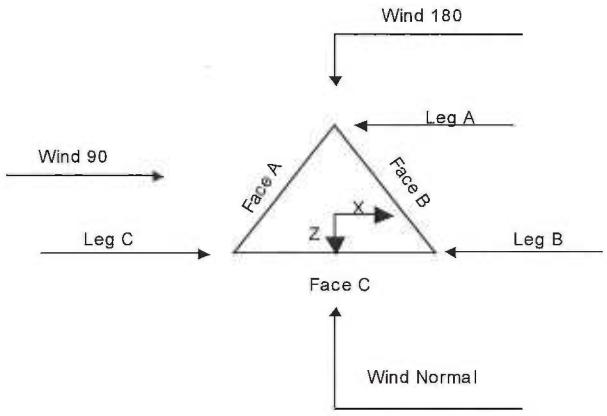
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 140.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 8.00 ft at the top and 16.00 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 69 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	√ Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	Use Clear Spans For Wind Area	√ Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	√ Include Angle Block Shear Check
Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Poles
√ Leg Bolts Are At Top Of Section	√ SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination	Use TIA-222-G Tension Splice Capacity Exemption	



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	140.00-120.00			8.00	1	20.00
T2	120.00-100.00			8.00	1	20.00
T3	100.00-80.00			8.00	1	20.00
T4	80.00-60.00			8.00	1	20.00
T5	60.00-40.00			10.00	1	20.00
T6	40.00-20.00			12.00	1	20.00
T7	20.00-0.00			14.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	140.00-120.00	5.00	X Brace	No	No	0.0000	0.0000
T2	120.00-100.00	5.00	X Brace	No	No	0.0000	0.0000
T3	100.00-80.00	5.00	X Brace	No	No	0.0000	0.0000
T4	80.00-60.00	5.00	X Brace	No	No	0.0000	0.0000
T5	60.00-40.00	5.00	X Brace	No	No	0.0000	0.0000
T6	40.00-20.00	5.00	X Brace	No	No	0.0000	0.0000
T7	20.00-0.00	5.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 140.00-120.00	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x1/8	A36 (36 ksi)
T2 120.00-100.00	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x1/4	A36 (36 ksi)
T3 100.00-80.00	Solid Round	2 3/4	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)
T4 80.00-60.00	Solid Round	3	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)
T5 60.00-40.00	Solid Round	3 1/4	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)
T6 40.00-20.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)
T7 20.00-0.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 140.00-120.00	Equal Angle	L3x3x3/8	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 140.00-120.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T2 120.00-100.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T3 100.00-80.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T4 80.00-60.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T5 60.00-40.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T6 40.00-20.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T7 20.00-0.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T6 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Factors[1] Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1	1	1	1	1	1
T5	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1	1	1	1	1	1
T6	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1	1	1	1	1	1
T7 20.00-0.00	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T6 40.00-20.00	1	0.5	0.85	1	0.5	0.85

	Truss-Leg K Factors					
	Truss-Legs Used As Leg Members			Truss-Legs Used As Inner Members		
Tower Elevation ft	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T6 40.00-20.00	1	0.5	0.85	1	0.5	0.85
T7 20.00-0.00	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 140.00-120.00	Flange	0.6250 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 120.00-100.00	Flange	0.6250 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 100.00-80.00	Flange	0.7500 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 80.00-60.00	Flange	0.8750 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 60.00-40.00	Flange	1.0000 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 40.00-20.00	Flange	1.0000 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 20.00-0.00	Flange	1.0000 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Feedline Ladder (Af)	C	No	Af (CfAe)	120.00 - 6.00	0.0000	0.45	1	1	3.0000	3.0000	12.0000	8.40

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
LDF7-50A(1-5/8") (T-Mobile)	C	No	CaAa (In Face)	130.00 - 6.00	0.0000	0.45	6	No Ice	0.20	0.82
								1/2" Ice	0.30	2.33
1-1/4" hybrid (T-Mobile)	C	No	CaAa (In Face)	130.00 - 6.00	0.0000	0.45	3	No Ice	0.16	0.66
								1/2" Ice	0.25	1.91
3" rigid conduit (Clearwire)	C	No	CaAa (In Face)	100.00 - 6.00	0.0000	0.45	3	No Ice	0.31	2.22
								1/2" Ice	0.41	4.44
VXL5-50 (7/8 FOAM) (Town)	C	No	CaAa (In Face)	140.00 - 6.00	0.0000	0.45	7	No Ice	0.11	0.29
								1/2" Ice	0.21	1.26

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	140.00-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	31.650	0.000	109.60
T2	120.00-100.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	5.000	48.180	0.000	346.60
T3	100.00-80.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	5.000	66.960	0.000	479.80
T4	80.00-60.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	5.000	66.960	0.000	479.80
T5	60.00-40.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	5.000	66.960	0.000	479.80
T6	40.00-20.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	5.000	66.960	0.000	479.80
T7	20.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	3.500	46.872	0.000	335.86

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	140.00-120.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	54.649	0.000	373.19
T2	120.00-100.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	6.111	80.179	0.000	792.68
T3	100.00-80.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	6.111	104.959	0.000	1058.93
T4	80.00-60.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	6.111	104.959	0.000	1058.93
T5	60.00-40.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	6.111	104.959	0.000	1058.93
T6	40.00-20.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	6.111	104.959	0.000	1058.93
T7	20.00-0.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	4.278	73.471	0.000	741.25

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	140.00-120.00	-7.2682	4.6625	-7.5915	4.8700
T2	120.00-100.00	-9.0720	5.8493	-9.0652	5.8376
T3	100.00-80.00	-8.9456	5.7602	-9.0621	5.8306
T4	80.00-60.00	-9.8684	6.3517	-10.0313	6.4521
T5	60.00-40.00	-11.6843	7.5160	-11.9279	7.6683
T6	40.00-20.00	-11.6089	7.4644	-11.7116	7.5268
T7	20.00-0.00	-10.7837	6.9319	-10.9860	7.0590

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
7' Whip (Town)	A	From Leg	3.00 0.00 5.00	0.0000	138.00	No Ice 1/2" Ice	1.74 2.60	1.74 2.60	37.30 53.68
7' Whip (Town)	B	From Leg	3.00 0.00 5.00	0.0000	138.00	No Ice 1/2" Ice	1.74 2.60	1.74 2.60	37.30 53.68
7' Whip (Town)	C	From Leg	3.00 0.00 5.00	0.0000	138.00	No Ice 1/2" Ice	1.74 2.60	1.74 2.60	37.30 53.68

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
3' standoff arm	A	From Leg	0.00	0.0000	138.00	No Ice	0.94	1.41	30.00
(Town)			0.00			1/2" Ice	1.48	2.17	43.27
			0.00						
3' standoff arm	B	From Leg	0.00	0.0000	138.00	No Ice	0.94	1.41	30.00
(Town)			0.00			1/2" Ice	1.48	2.17	43.27
			0.00						
3' standoff arm	C	From Leg	0.00	0.0000	138.00	No Ice	0.94	1.41	30.00
(Town)			0.00			1/2" Ice	1.48	2.17	43.27
			0.00						
Lightning Rod 2"x15'	B	From Leg	0.50	0.0000	138.00	No Ice	3.00	3.00	80.00
			0.00			1/2" Ice	4.53	4.53	103.14
			7.50						
AIR 21 B2A/B4P antenna w/	A	From Leg	4.00	0.0000	120.00	No Ice	6.34	5.40	110.02
pipe mount			-6.00			1/2" Ice	6.79	6.10	165.20
(T-Mobile)			0.00						
AIR 21 B2A/B4P antenna w/	A	From Leg	4.00	0.0000	120.00	No Ice	6.34	5.40	110.02
pipe mount			6.00			1/2" Ice	6.79	6.10	165.20
(T-Mobile)			0.00						
AIR 21 B2A/B4P antenna w/	B	From Leg	4.00	0.0000	120.00	No Ice	6.34	5.40	110.02
pipe mount			-6.00			1/2" Ice	6.79	6.10	165.20
(T-Mobile)			0.00						
AIR 21 B2A/B4P antenna w/	B	From Leg	4.00	0.0000	120.00	No Ice	6.34	5.40	110.02
pipe mount			6.00			1/2" Ice	6.79	6.10	165.20
(T-Mobile)			0.00						
AIR 21 B2A/B4P antenna w/	C	From Leg	4.00	0.0000	120.00	No Ice	6.34	5.40	110.02
pipe mount			-6.00			1/2" Ice	6.79	6.10	165.20
(T-Mobile)			0.00						
AIR 21 B2A/B4P antenna w/	C	From Leg	4.00	0.0000	120.00	No Ice	6.34	5.40	110.02
pipe mount			6.00			1/2" Ice	6.79	6.10	165.20
(T-Mobile)			0.00						
TMA	A	From Leg	4.00	0.0000	120.00	No Ice	0.47	0.17	11.00
(T-Mobile)			6.00			1/2" Ice	0.56	0.24	14.50
			0.00						
TMA	B	From Leg	4.00	0.0000	120.00	No Ice	0.47	0.17	11.00
(T-Mobile)			6.00			1/2" Ice	0.56	0.24	14.50
			0.00						
TMA	C	From Leg	4.00	0.0000	120.00	No Ice	0.47	0.17	11.00
(T-Mobile)			6.00			1/2" Ice	0.56	0.24	14.50
			0.00						
KRC 118 048/1 antenna (96")	A	From Leg	4.00	0.0000	120.00	No Ice	11.54	11.20	172.32
w/ pipe mount			0.00			1/2" Ice	12.16	12.63	269.13
(T-Mobile)			0.00						
KRC 118 048/1 antenna (96")	B	From Leg	4.00	0.0000	120.00	No Ice	11.54	11.20	172.32
w/ pipe mount			0.00			1/2" Ice	12.16	12.63	269.13
(T-Mobile)			0.00						
KRC 118 048/1 antenna (96")	C	From Leg	4.00	0.0000	120.00	No Ice	11.54	11.20	172.32
w/ pipe mount			0.00			1/2" Ice	12.16	12.63	269.13
(T-Mobile)			0.00						
RRUS11 B12 remote radio	A	From Leg	4.00	0.0000	120.00	No Ice	3.31	1.36	51.00
unit			0.00			1/2" Ice	3.55	1.54	71.87
(T-Mobile)			0.00						
RRUS11 B12 remote radio	B	From Leg	4.00	0.0000	120.00	No Ice	3.31	1.36	51.00
unit			0.00			1/2" Ice	3.55	1.54	71.87
(T-Mobile)			0.00						
RRUS11 B12 remote radio	C	From Leg	4.00	0.0000	120.00	No Ice	3.31	1.36	51.00
unit			0.00			1/2" Ice	3.55	1.54	71.87
(T-Mobile)			0.00						
Sector Mount [SM 402-1]	A	From Leg	0.00	0.0000	120.00	No Ice	9.76	7.05	283.56

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(T-Mobile)			0.00 0.00			1/2" Ice	13.67	10.13	411.05
3" Dia 20' Omni (Town)	A	From Leg	4.00 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice	4.00 6.00	4.00 6.00	55.00 100.00
3" Dia 20' Omni (Town)	B	From Leg	4.00 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice	4.00 6.00	4.00 6.00	55.00 100.00
3" Dia 20' Omni (Town)	C	From Leg	4.00 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice	4.00 6.00	4.00 6.00	55.00 100.00
Clearwire panel antenna w/ pipe mount (Clearwire)	A	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 1/2" Ice	4.98 5.37	2.92 3.44	53.16 91.76
Clearwire panel antenna w/ pipe mount (Clearwire)	B	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 1/2" Ice	4.98 5.37	2.92 3.44	53.16 91.76
Clearwire panel antenna w/ pipe mount (Clearwire)	C	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 1/2" Ice	4.98 5.37	2.92 3.44	53.16 91.76
Clearwire RRH (Clearwire)	A	From Leg	4.00 2.00 2.00	0.0000	100.00	No Ice 1/2" Ice	1.82 2.00	0.83 0.97	35.00 46.91
Clearwire RRH (Clearwire)	B	From Leg	4.00 2.00 2.00	0.0000	100.00	No Ice 1/2" Ice	1.82 2.00	0.83 0.97	35.00 46.91
Clearwire RRH (Clearwire)	C	From Leg	4.00 2.00 2.00	0.0000	100.00	No Ice 1/2" Ice	1.82 2.00	0.83 0.97	35.00 46.91
Side Arm Mount [SO 101-1] (Clearwire)	A	From Leg	0.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	3.75 4.45	1.28 1.39	84.00 111.00
Side Arm Mount [SO 101-1] (Clearwire)	B	From Leg	0.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	3.75 4.45	1.28 1.39	84.00 111.00
Side Arm Mount [SO 101-1] (Clearwire)	C	From Leg	0.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	3.75 4.45	1.28 1.39	84.00 111.00
3' standoff arm (dish)	A	From Leg	0.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice	0.94 1.48	1.41 2.17	30.00 43.27

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
VHLP1-23	A	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 0.00	0.0000		135.00	1.27	No Ice 1/2" Ice	1.28 1.45	14.00 21.00

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight lb
VHLP2-11	A	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 0.00	0.0000		100.00	2.17	No Ice 1/2" Ice	3.72 4.01	31.00 52.00
VHLP1-23	A	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	0.0000		95.00	1.27	No Ice 1/2" Ice	1.28 1.45	14.00 21.00
VHLP1-23	B	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	0.0000		95.00	1.27	No Ice 1/2" Ice	1.28 1.45	14.00 21.00
VHLP1-23	C	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	0.0000		100.00	1.27	No Ice 1/2" Ice	1.28 1.45	14.00 21.00

Truss-Leg Properties

Section Designation	Area in²	Area Ice in²	Self Weight lb	Ice Weight lb	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in²
Pirod 105218	2263.4687	3690.8612	718.59	458.46	7.8593	12.8155	7.2158
Pirod 105219	2441.8688	3942.2854	944.27	485.72	8.4787	13.6885	9.4248

Tower Pressures - No Ice

$G_H = 1.138$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg % %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 140.00-120.00	130.00	1.48	24	163.750	A	13.006	7.500	7.500	36.57	0.000	0.000
					B	13.006	7.500		36.57	0.000	0.000
					C	13.006	7.500		36.57	31.650	0.000
T2 120.00-100.00	110.00	1.411	23	163.750	A	11.006	7.500	7.500	40.53	0.000	0.000
					B	11.006	7.500		40.53	0.000	0.000
					C	16.006	7.500		31.91	48.180	0.000
T3 100.00-80.00	90.00	1.332	22	164.583	A	15.723	9.167	9.167	36.83	0.000	0.000
					B	15.723	9.167		36.83	0.000	0.000
					C	20.723	9.167		30.67	66.960	0.000
T4 80.00-60.00	70.00	1.24	20	185.006	A	17.167	10.017	10.017	36.85	0.000	0.000
					B	17.167	10.017		36.85	0.000	0.000
					C	22.167	10.017		31.12	66.960	0.000
T5 60.00-40.00	50.00	1.126	18	225.423	A	20.144	10.851	10.851	35.01	0.000	0.000
					B	20.144	10.851		35.01	0.000	0.000
					C	25.144	10.851		30.15	66.960	0.000
T6 40.00-20.00	30.00	1	16	282.945	A	27.861	26.241	26.241	48.50	0.000	0.000
					B	27.861	26.241		48.50	0.000	0.000
					C	32.861	26.241		44.40	66.960	0.000
T7 20.00-0.00	10.00	1	16	323.362	A	31.626	28.309	28.309	47.23	0.000	0.000
					B	31.626	28.309		47.23	0.000	0.000
					C	35.126	28.309		44.63	46.872	0.000

Tower Pressure - With Ice

$G_H = 1.138$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 140.00-120.00	130.00	1.48	18	0.5000	165.417	A	13.006	17.789	10.833	35.18	0.000	0.000
						B	13.006	17.789		35.18	0.000	0.000
						C	13.006	17.789		35.18	54.649	0.000
T2 120.00-100.00	110.00	1.411	17	0.5000	165.417	A	11.006	17.123	10.833	38.51	0.000	0.000
						B	11.006	17.123		38.51	0.000	0.000
						C	17.117	17.123		31.64	80.179	0.000
T3 100.00-80.00	90.00	1.332	16	0.5000	166.250	A	15.723	18.789	12.500	36.22	0.000	0.000
						B	15.723	18.789		36.22	0.000	0.000
						C	21.834	18.789		30.77	104.959	0.000
T4 80.00-60.00	70.00	1.24	15	0.5000	186.675	A	17.167	20.222	13.356	35.72	0.000	0.000
						B	17.167	20.222		35.72	0.000	0.000
						C	23.278	20.222		30.70	104.959	0.000
T5 60.00-40.00	50.00	1.126	14	0.5000	227.092	A	20.144	22.248	14.190	33.47	0.000	0.000
						B	20.144	22.248		33.47	0.000	0.000
						C	26.255	22.248		29.26	104.959	0.000
T6 40.00-20.00	30.00	1	12	0.5000	284.614	A	27.861	52.076	42.789	53.53	0.000	0.000
						B	27.861	52.076		53.53	0.000	0.000
						C	33.972	52.076		49.73	104.959	0.000
T7 20.00-0.00	10.00	1	12	0.5000	325.031	A	31.626	56.246	45.704	52.01	0.000	0.000
						B	31.626	56.246		52.01	0.000	0.000
						C	35.904	56.246		49.60	73.471	0.000

Tower Pressure - Service

$G_H = 1.138$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 140.00-120.00	130.00	1.48	14	163.750	A	13.006	7.500	7.500	36.57	0.000	0.000
					B	13.006	7.500		36.57	0.000	0.000
					C	13.006	7.500		36.57	31.650	0.000
T2 120.00-100.00	110.00	1.411	13	163.750	A	11.006	7.500	7.500	40.53	0.000	0.000
					B	11.006	7.500		40.53	0.000	0.000
					C	16.006	7.500		31.91	48.180	0.000
T3 100.00-80.00	90.00	1.332	12	164.583	A	15.723	9.167	9.167	36.83	0.000	0.000
					B	15.723	9.167		36.83	0.000	0.000
					C	20.723	9.167		30.67	66.960	0.000
T4 80.00-60.00	70.00	1.24	11	185.006	A	17.167	10.017	10.017	36.85	0.000	0.000
					B	17.167	10.017		36.85	0.000	0.000
					C	22.167	10.017		31.12	66.960	0.000
T5 60.00-40.00	50.00	1.126	10	225.423	A	20.144	10.851	10.851	35.01	0.000	0.000
					B	20.144	10.851		35.01	0.000	0.000
					C	25.144	10.851		30.15	66.960	0.000
T6 40.00-20.00	30.00	1	9	282.945	A	27.861	26.241	26.241	48.50	0.000	0.000
					B	27.861	26.241		48.50	0.000	0.000
					C	32.861	26.241		44.40	66.960	0.000
T7 20.00-0.00	10.00	1	9	323.362	A	31.626	28.309	28.309	47.23	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					B	31.626	28.309		47.23	0.000	0.000
					C	35.126	28.309		44.63	46.872	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	109.60	1309.13	A	0.125	2.865	0.578	1	1	17.341	2243.67	112.18	C
140.00-120.00			B	0.125	2.865	0.578	1	1	17.341			
			C	0.125	2.865	0.578	1	1	17.341			
T2	346.60	1437.77	A	0.113	2.912	0.577	1	1	15.330	2764.18	138.21	C
120.00-100.00			B	0.113	2.912	0.577	1	1	15.330			
			C	0.144	2.795	0.581	1	1	20.360			
T3	479.80	2337.51	A	0.151	2.767	0.582	1	1	21.055	3386.56	169.33	C
100.00-80.00			B	0.151	2.767	0.582	1	1	21.055			
			C	0.182	2.659	0.587	1	1	26.102			
T4	479.80	2673.71	A	0.147	2.783	0.581	1	1	22.987	3287.75	164.39	C
80.00-60.00			B	0.147	2.783	0.581	1	1	22.987			
			C	0.174	2.685	0.585	1	1	28.031			
T5	479.80	3137.62	A	0.137	2.818	0.58	1	1	26.433	3213.94	160.70	C
60.00-40.00			B	0.137	2.818	0.58	1	1	26.433			
			C	0.16	2.736	0.583	1	1	31.470			
T6	479.80	4184.39	A	0.191	2.626	0.589	1	1	43.308	3564.99	178.25	C
40.00-20.00			B	0.191	2.626	0.589	1	1	43.308			
			C	0.209	2.567	0.592	1	1	48.403			
T7 20.00-0.00	335.86	5251.14	A	0.185	2.646	0.588	1	1	48.258	3394.68	169.73	C
			B	0.185	2.646	0.588	1	1	48.258			
			C	0.196	2.609	0.59	1	1	51.818			
Sum Weight:	2711.26	20331.28						OTM	1432263.6 0 lb-ft	21855.77		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	109.60	1309.13	A	0.125	2.865	0.578	0.8	1	14.740	2038.08	101.90	C
140.00-120.00			B	0.125	2.865	0.578	0.8	1	14.740			
			C	0.125	2.865	0.578	0.8	1	14.740			
T2	346.60	1437.77	A	0.113	2.912	0.577	0.8	1	13.129	2528.82	126.44	C
120.00-100.00			B	0.113	2.912	0.577	0.8	1	13.129			
			C	0.144	2.795	0.581	0.8	1	17.159			
T3	479.80	2337.51	A	0.151	2.767	0.582	0.8	1	17.911	3112.90	155.64	C
100.00-80.00			B	0.151	2.767	0.582	0.8	1	17.911			
			C	0.182	2.659	0.587	0.8	1	21.958			
T4	479.80	2673.71	A	0.147	2.783	0.581	0.8	1	19.553	3012.56	150.63	C
80.00-60.00			B	0.147	2.783	0.581	0.8	1	19.553			
			C	0.174	2.685	0.585	0.8	1	23.598			
T5	479.80	3137.62	A	0.137	2.818	0.58	0.8	1	22.405	2925.03	146.25	C
60.00-40.00			B	0.137	2.818	0.58	0.8	1	22.405			
			C	0.16	2.736	0.583	0.8	1	26.441			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T6	479.80	4184.39	A	0.191	2.626	0.589	0.8	1	37.736	3250.46	162.52	C
40.00-20.00			B	0.191	2.626	0.589	0.8	1	37.736			
			C	0.209	2.567	0.592	0.8	1	41.830			
T7 20.00-0.00	335.86	5251.14	A	0.185	2.646	0.588	0.8	1	41.933	3052.94	152.65	C
			B	0.185	2.646	0.588	0.8	1	41.933			
			C	0.196	2.609	0.59	0.8	1	44.793			
Sum Weight:	2711.26	20331.28						OTM	1308455.2 9 lb-ft	19920.79		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	109.60	1309.13	A	0.125	2.865	0.578	0.85	1	15.390	2089.48	104.47	C
140.00-120.00			B	0.125	2.865	0.578	0.85	1	15.390			
			C	0.125	2.865	0.578	0.85	1	15.390			
T2	346.60	1437.77	A	0.113	2.912	0.577	0.85	1	13.679	2587.66	129.38	C
120.00-100.00			B	0.113	2.912	0.577	0.85	1	13.679			
			C	0.144	2.795	0.581	0.85	1	17.959			
T3	479.80	2337.51	A	0.151	2.767	0.582	0.85	1	18.697	3181.31	159.07	C
100.00-80.00			B	0.151	2.767	0.582	0.85	1	18.697			
			C	0.182	2.659	0.587	0.85	1	22.994			
T4	479.80	2673.71	A	0.147	2.783	0.581	0.85	1	20.412	3081.36	154.07	C
80.00-60.00			B	0.147	2.783	0.581	0.85	1	20.412			
			C	0.174	2.685	0.585	0.85	1	24.706			
T5	479.80	3137.62	A	0.137	2.818	0.58	0.85	1	23.412	2997.26	149.86	C
60.00-40.00			B	0.137	2.818	0.58	0.85	1	23.412			
			C	0.16	2.736	0.583	0.85	1	27.698			
T6	479.80	4184.39	A	0.191	2.626	0.589	0.85	1	39.129	3329.09	166.45	C
40.00-20.00			B	0.191	2.626	0.589	0.85	1	39.129			
			C	0.209	2.567	0.592	0.85	1	43.473			
T7 20.00-0.00	335.86	5251.14	A	0.185	2.646	0.588	0.85	1	43.515	3138.38	156.92	C
			B	0.185	2.646	0.588	0.85	1	43.515			
			C	0.196	2.609	0.59	0.85	1	46.549			
Sum Weight:	2711.26	20331.28						OTM	1339407.3 7 lb-ft	20404.53		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	373.19	1869.71	A	0.186	2.643	0.588	1	1	23.461	2413.62	120.68	C
140.00-120.00			B	0.186	2.643	0.588	1	1	23.461			
			C	0.186	2.643	0.588	1	1	23.461			
T2	792.68	1933.18	A	0.17	2.699	0.585	1	1	21.019	2964.72	148.24	C
120.00-100.00			B	0.17	2.699	0.585	1	1	21.019			
			C	0.207	2.573	0.592	1	1	27.251			
T3	1058.93	2983.33	A	0.208	2.571	0.592	1	1	26.846	3469.23	173.46	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
100.00-80.00			B	0.208	2.571	0.592	1	1	26.846			
			C	0.244	2.455	0.6	1	1	33.116			
T4	1058.93	3377.26	A	0.2	2.595	0.59	1	1	29.108	3345.90	167.30	C
80.00-60.00			B	0.2	2.595	0.59	1	1	29.108			
			C	0.233	2.489	0.598	1	1	35.365			
T5	1058.93	3950.05	A	0.187	2.641	0.588	1	1	33.220	3237.94	161.90	C
60.00-40.00			B	0.187	2.641	0.588	1	1	33.220			
			C	0.214	2.551	0.593	1	1	39.453			
T6	1058.93	6469.81	A	0.281	2.348	0.61	1	1	59.640	3583.98	179.20	C
40.00-20.00			B	0.281	2.348	0.61	1	1	59.640			
			C	0.302	2.29	0.617	1	1	66.084			
T7 20.00-0.00	741.25	7741.15	A	0.27	2.378	0.607	1	1	65.783	3327.78	166.39	C
			B	0.27	2.378	0.607	1	1	65.783			
			C	0.284	2.341	0.611	1	1	70.270			
Sum Weight:	6142.84	28324.50						OTM	1489027.7 7 lb-ft	22343.17		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	373.19	1869.71	A	0.186	2.643	0.588	0.8	1	20.859	2271.38	113.57	C
140.00-120.00			B	0.186	2.643	0.588	0.8	1	20.859			
			C	0.186	2.643	0.588	0.8	1	20.859			
T2	792.68	1933.18	A	0.17	2.699	0.585	0.8	1	18.817	2790.97	139.55	C
120.00-100.00			B	0.17	2.699	0.585	0.8	1	18.817			
			C	0.207	2.573	0.592	0.8	1	23.828			
T3	1058.93	2983.33	A	0.208	2.571	0.592	0.8	1	23.702	3269.57	163.48	C
100.00-80.00			B	0.208	2.571	0.592	0.8	1	23.702			
			C	0.244	2.455	0.6	0.8	1	28.750			
T4	1058.93	3377.26	A	0.2	2.595	0.59	0.8	1	25.674	3144.98	157.25	C
80.00-60.00			B	0.2	2.595	0.59	0.8	1	25.674			
			C	0.233	2.489	0.598	0.8	1	30.709			
T5	1058.93	3950.05	A	0.187	2.641	0.588	0.8	1	29.191	3026.98	151.35	C
60.00-40.00			B	0.187	2.641	0.588	0.8	1	29.191			
			C	0.214	2.551	0.593	0.8	1	34.202			
T6	1058.93	6469.81	A	0.281	2.348	0.61	0.8	1	54.068	3366.40	168.32	C
40.00-20.00			B	0.281	2.348	0.61	0.8	1	54.068			
			C	0.302	2.29	0.617	0.8	1	59.289			
T7 20.00-0.00	741.25	7741.15	A	0.27	2.378	0.607	0.8	1	59.458	3092.72	154.64	C
			B	0.27	2.378	0.607	0.8	1	59.458			
			C	0.284	2.341	0.611	0.8	1	63.089			
Sum Weight:	6142.84	28324.50						OTM	1399963.4 3 lb-ft	20962.99		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	373.19	1869.71	A	0.186	2.643	0.588	0.85	1	21.510	2306.94	115.35	C
140.00-120.00			B	0.186	2.643	0.588	0.85	1	21.510			
			C	0.186	2.643	0.588	0.85	1	21.510			
T2	792.68	1933.18	A	0.17	2.699	0.585	0.85	1	19.368	2834.41	141.72	C
120.00-100.00			B	0.17	2.699	0.585	0.85	1	19.368			
			C	0.207	2.573	0.592	0.85	1	24.684			
T3	1058.93	2983.33	A	0.208	2.571	0.592	0.85	1	24.488	3319.48	165.97	C
100.00-80.00			B	0.208	2.571	0.592	0.85	1	24.488			
			C	0.244	2.455	0.6	0.85	1	29.841			
T4	1058.93	3377.26	A	0.2	2.595	0.59	0.85	1	26.532	3195.21	159.76	C
80.00-60.00			B	0.2	2.595	0.59	0.85	1	26.532			
			C	0.233	2.489	0.598	0.85	1	31.873			
T5	1058.93	3950.05	A	0.187	2.641	0.588	0.85	1	30.199	3079.72	153.99	C
60.00-40.00			B	0.187	2.641	0.588	0.85	1	30.199			
			C	0.214	2.551	0.593	0.85	1	35.515			
T6	1058.93	6469.81	A	0.281	2.348	0.61	0.85	1	55.461	3420.79	171.04	C
40.00-20.00			B	0.281	2.348	0.61	0.85	1	55.461			
			C	0.302	2.29	0.617	0.85	1	60.988			
T7 20.00-0.00	741.25	7741.15	A	0.27	2.378	0.607	0.85	1	61.039	3151.48	157.57	C
			B	0.27	2.378	0.607	0.85	1	61.039			
			C	0.284	2.341	0.611	0.85	1	64.884			
Sum Weight:	6142.84	28324.50						OTM	1422229.5 lb-ft	21308.03		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	109.60	1309.13	A	0.125	2.865	0.578	1	1	17.341	1262.06	63.10	C
140.00-120.00			B	0.125	2.865	0.578	1	1	17.341			
			C	0.125	2.865	0.578	1	1	17.341			
T2	346.60	1437.77	A	0.113	2.912	0.577	1	1	15.330	1554.85	77.74	C
120.00-100.00			B	0.113	2.912	0.577	1	1	15.330			
			C	0.144	2.795	0.581	1	1	20.360			
T3	479.80	2337.51	A	0.151	2.767	0.582	1	1	21.055	1904.94	95.25	C
100.00-80.00			B	0.151	2.767	0.582	1	1	21.055			
			C	0.182	2.659	0.587	1	1	26.102			
T4	479.80	2673.71	A	0.147	2.783	0.581	1	1	22.987	1849.36	92.47	C
80.00-60.00			B	0.147	2.783	0.581	1	1	22.987			
			C	0.174	2.685	0.585	1	1	28.031			
T5	479.80	3137.62	A	0.137	2.818	0.58	1	1	26.433	1807.84	90.39	C
60.00-40.00			B	0.137	2.818	0.58	1	1	26.433			
			C	0.16	2.736	0.583	1	1	31.470			
T6	479.80	4184.39	A	0.191	2.626	0.589	1	1	43.308	2005.31	100.27	C
40.00-20.00			B	0.191	2.626	0.589	1	1	43.308			
			C	0.209	2.567	0.592	1	1	48.403			
T7 20.00-0.00	335.86	5251.14	A	0.185	2.646	0.588	1	1	48.258	1909.51	95.48	C
			B	0.185	2.646	0.588	1	1	48.258			
			C	0.196	2.609	0.59	1	1	51.818			
Sum Weight:	2711.26	20331.28						OTM	805648.27 lb-ft	12293.87		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	109.60	1309.13	A	0.125	2.865	0.578	0.8	1	14.740	1146.42	57.32	C
140.00-120.00			B	0.125	2.865	0.578	0.8	1	14.740			
			C	0.125	2.865	0.578	0.8	1	14.740			
T2	346.60	1437.77	A	0.113	2.912	0.577	0.8	1	13.129	1422.46	71.12	C
120.00-100.00			B	0.113	2.912	0.577	0.8	1	13.129			
			C	0.144	2.795	0.581	0.8	1	17.159			
T3	479.80	2337.51	A	0.151	2.767	0.582	0.8	1	17.911	1751.00	87.55	C
100.00-80.00			B	0.151	2.767	0.582	0.8	1	17.911			
			C	0.182	2.659	0.587	0.8	1	21.958			
T4	479.80	2673.71	A	0.147	2.783	0.581	0.8	1	19.553	1694.56	84.73	C
80.00-60.00			B	0.147	2.783	0.581	0.8	1	19.553			
			C	0.174	2.685	0.585	0.8	1	23.598			
T5	479.80	3137.62	A	0.137	2.818	0.58	0.8	1	22.405	1645.33	82.27	C
60.00-40.00			B	0.137	2.818	0.58	0.8	1	22.405			
			C	0.16	2.736	0.583	0.8	1	26.441			
T6	479.80	4184.39	A	0.191	2.626	0.589	0.8	1	37.736	1828.38	91.42	C
40.00-20.00			B	0.191	2.626	0.589	0.8	1	37.736			
			C	0.209	2.567	0.592	0.8	1	41.830			
T7 20.00-0.00	335.86	5251.14	A	0.185	2.646	0.588	0.8	1	41.933	1717.28	85.86	C
			B	0.185	2.646	0.588	0.8	1	41.933			
			C	0.196	2.609	0.59	0.8	1	44.793			
Sum Weight:	2711.26	20331.28						OTM	736006.10 lb-ft	11205.44		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	109.60	1309.13	A	0.125	2.865	0.578	0.85	1	15.390	1175.33	58.77	C
140.00-120.00			B	0.125	2.865	0.578	0.85	1	15.390			
			C	0.125	2.865	0.578	0.85	1	15.390			
T2	346.60	1437.77	A	0.113	2.912	0.577	0.85	1	13.679	1455.56	72.78	C
120.00-100.00			B	0.113	2.912	0.577	0.85	1	13.679			
			C	0.144	2.795	0.581	0.85	1	17.959			
T3	479.80	2337.51	A	0.151	2.767	0.582	0.85	1	18.697	1789.49	89.47	C
100.00-80.00			B	0.151	2.767	0.582	0.85	1	18.697			
			C	0.182	2.659	0.587	0.85	1	22.994			
T4	479.80	2673.71	A	0.147	2.783	0.581	0.85	1	20.412	1733.26	86.66	C
80.00-60.00			B	0.147	2.783	0.581	0.85	1	20.412			
			C	0.174	2.685	0.585	0.85	1	24.706			
T5	479.80	3137.62	A	0.137	2.818	0.58	0.85	1	23.412	1685.96	84.30	C
60.00-40.00			B	0.137	2.818	0.58	0.85	1	23.412			
			C	0.16	2.736	0.583	0.85	1	27.698			
T6	479.80	4184.39	A	0.191	2.626	0.589	0.85	1	39.129	1872.61	93.63	C
40.00-20.00			B	0.191	2.626	0.589	0.85	1	39.129			
			C	0.209	2.567	0.592	0.85	1	43.473			
T7 20.00-0.00	335.86	5251.14	A	0.185	2.646	0.588	0.85	1	43.515	1765.34	88.27	C
			B	0.185	2.646	0.588	0.85	1	43.515			
			C	0.196	2.609	0.59	0.85	1	46.549			
Sum Weight:	2711.26	20331.28						OTM	753416.64 lb-ft	11477.55		

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	10975.23					
Bracing Weight	9356.05					
Total Member Self-Weight	20331.28			6673.87	12361.70	
Total Weight	25769.56			6673.87	12361.70	
Wind 0 deg - No Ice		0.62	-25726.73	-1885657.05	12088.53	-17927.57
Wind 30 deg - No Ice		12076.75	-21004.57	-1550071.83	-880436.44	-9595.58
Wind 60 deg - No Ice		20485.63	-11917.37	-880058.70	-1506058.15	-74.39
Wind 90 deg - No Ice		24145.70	-39.49	2582.59	-1772786.12	9466.58
Wind 120 deg - No Ice		22161.30	12920.10	958876.64	-1613172.46	18048.74
Wind 150 deg - No Ice		12040.92	21062.38	1569321.87	-876947.40	19310.94
Wind 180 deg - No Ice		-0.08	23813.33	1777648.62	12396.68	16302.93
Wind 210 deg - No Ice		-12041.07	21062.58	1569410.00	901736.21	9630.22
Wind 240 deg - No Ice		-22161.00	12920.64	959115.38	1637763.03	-121.17
Wind 270 deg - No Ice		-24145.48	-39.08	2760.91	1797412.16	-9468.01
Wind 300 deg - No Ice		-20485.28	-11917.08	-879931.56	1530631.29	-16228.54
Wind 330 deg - No Ice		-12076.19	-21004.35	-1549975.97	904913.12	-19344.15
Member Ice	7993.22					
Total Weight Ice	38558.36			16107.70	28180.53	
Wind 0 deg - Ice		0.53	-25815.68	-1889071.82	27948.44	-18518.33
Wind 30 deg - Ice		12336.65	-21444.46	-1574549.14	-884896.64	-10084.73
Wind 60 deg - Ice		21057.33	-12235.22	-893969.93	-1533006.25	37.28
Wind 90 deg - Ice		24665.60	-33.12	12674.56	-1797485.68	10145.23
Wind 120 deg - Ice		22252.82	12954.33	973655.43	-1610075.01	18706.39
Wind 150 deg - Ice		12305.98	21492.58	1611679.73	-881909.37	20433.32
Wind 180 deg - Ice		-0.07	24452.88	1834209.83	28210.25	17341.79
Wind 210 deg - Ice		-12306.10	21492.75	1611754.59	938326.00	10113.15
Wind 240 deg - Ice		-22252.56	12954.79	973858.27	1666323.21	-188.06
Wind 270 deg - Ice		-24665.41	-32.77	12826.06	1853764.02	-10146.44
Wind 300 deg - Ice		-21057.04	-12234.97	-893861.90	1589239.64	-17379.07
Wind 330 deg - Ice		-12336.17	-21444.28	-1574467.70	941048.08	-20460.53
Total Weight	25769.56			6673.87	12361.70	
Wind 0 deg - Service		0.35	-14471.28	-1066039.51	-508.30	-10084.26
Wind 30 deg - Service		6793.17	-11815.07	-877272.82	-502553.59	-5397.52
Wind 60 deg - Service		11523.16	-6703.52	-500390.44	-854465.81	-41.84
Wind 90 deg - Service		13581.96	-22.21	-3904.71	-1004500.29	5324.95
Wind 120 deg - Service		12465.73	7267.55	534010.69	-914717.61	10152.42
Wind 150 deg - Service		6773.02	11847.59	877386.14	-500591.01	10862.40
Wind 180 deg - Service		-0.04	13395.00	994569.93	-334.97	9170.40
Wind 210 deg - Service		-6773.10	11847.70	877435.70	499918.52	5417.00
Wind 240 deg - Service		-12465.56	7267.86	534144.98	913933.60	-68.16
Wind 270 deg - Service		-13581.83	-21.98	-3804.41	1003736.24	-5325.75
Wind 300 deg - Service		-11522.97	-6703.36	-500318.92	853672.00	-9128.56
Wind 330 deg - Service		-6792.86	-11814.95	-877218.90	501705.53	-10881.09

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice

Comb. No.	Description
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	140 - 120	Leg	Max Tension	21	3259.57	8.84	-13.15
			Max. Compression	23	-5298.64	58.63	-30.06
			Max. Mx	18	-727.93	172.19	24.29
			Max. My	21	-584.61	10.93	172.81
			Max. Vy	24	159.71	13.18	-19.58
			Max. Vx	15	163.87	-13.80	25.30
		Diagonal	Max Tension	24	1203.28	0.00	0.00
			Max. Compression	19	-1265.11	0.00	0.00
			Max. Mx	21	-346.13	10.25	0.09
			Max. My	7	-941.95	3.22	-2.16
			Max. Vy	21	8.53	10.25	0.09
			Max. Vx	7	0.46	3.22	-2.16
		Top Girt	Max Tension	2	84.04	0.00	0.00
			Max. Compression	21	-112.95	0.00	0.00
			Max. Mx	14	-19.69	-79.16	0.00
			Max. My	26	-19.76	0.00	0.00
			Max. Vy	14	39.58	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T2	120 - 100	Leg	Max Tension	25	18867.79	24.22	-3.42
			Max. Compression	23	-24959.28	89.27	-48.38
			Max. Mx	5	-1422.43	-109.82	-6.20
			Max. My	13	-1250.82	63.68	122.18
			Max. Vy	11	813.89	-68.43	4.96
			Max. Vx	2	837.45	-13.56	65.03
		Diagonal	Max Tension	22	3176.60	0.00	0.00
			Max. Compression	22	-3222.36	0.00	0.00
			Max. Mx	22	1239.93	17.53	-0.65
			Max. My	9	-2214.97	5.52	-4.53
			Max. Vy	22	-12.75	17.53	-0.65
			Max. Vx	9	0.96	5.52	-4.53
T3	100 - 80	Leg	Max Tension	21	45402.45	18.92	-31.38
			Max. Compression	23	-55963.41	166.44	-93.87
			Max. Mx	24	-3671.74	201.96	-29.39
			Max. My	26	-4780.31	89.85	213.84
			Max. Vy	5	-267.30	-67.08	-48.29
			Max. Vx	2	307.63	-16.93	97.63
		Diagonal	Max Tension	22	4833.60	0.00	0.00
			Max. Compression	22	-4976.26	0.00	0.00
			Max. Mx	22	1552.13	52.64	-4.50
			Max. My	26	-4072.59	4.88	12.66
			Max. Vy	22	-25.77	52.64	-4.50
			Max. Vx	26	-2.69	4.88	12.66
T4	80 - 60	Leg	Max Tension	21	66505.95	-70.66	-18.93
			Max. Compression	23	-81262.79	112.92	1.11
			Max. Mx	23	-63112.32	191.08	1.92
			Max. My	26	-5913.75	-41.08	249.17
			Max. Vy	15	81.98	190.97	29.35
			Max. Vx	26	-124.02	-41.08	249.17
		Diagonal	Max Tension	16	3644.39	0.00	0.00
			Max. Compression	15	-3647.76	0.00	0.00
			Max. Mx	22	1486.91	47.01	-5.38
			Max. My	21	-2788.10	11.84	-13.06
			Max. Vy	23	-25.78	45.03	-3.88
			Max. Vx	21	3.29	0.00	0.00
T5	60 - 40	Leg	Max Tension	21	84735.58	-74.13	-13.22
			Max. Compression	23	-103862.27	197.03	-0.74
			Max. Mx	15	-101549.08	200.44	20.78
			Max. My	20	-9906.07	1.20	-290.77
			Max. Vy	17	68.02	-186.57	0.70
			Max. Vx	20	111.21	1.20	-290.77
		Diagonal	Max Tension	16	4016.43	0.00	0.00
			Max. Compression	16	-4038.20	0.00	0.00
			Max. Mx	21	2374.89	48.05	-5.62
			Max. My	21	-3660.20	28.80	-8.17
			Max. Vy	21	29.26	48.05	-5.62
			Max. Vx	21	1.96	0.00	0.00
T6	40 - 20	Leg	Max Tension	21	101303.53	-2368.69	-15.35
			Max. Compression	23	-126269.49	2854.67	-14.69
			Max. Mx	23	-126269.49	2854.67	-14.69
			Max. My	22	-8703.85	-177.55	2445.56
			Max. Vy	23	-562.13	2704.41	-13.28
			Max. Vx	20	431.37	58.59	-1983.33
		Diagonal	Max Tension	16	4566.77	0.00	0.00
			Max. Compression	16	-4845.93	0.00	0.00
			Max. Mx	23	3569.29	80.33	-6.56
			Max. My	26	-2841.94	53.64	11.04
			Max. Vy	21	41.15	77.87	-9.24
			Max. Vx	20	2.45	0.00	0.00
T7	20 - 0	Leg	Max Tension	8	117774.52	-2089.84	13.59
			Max. Compression	23	-152915.84	0.00	-0.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	23	-142579.72	14732.65	-19.30
			Max. My	22	-10230.94	12501.28	3005.68
			Max. Vy	17	-3324.66	-5784.53	12.26
			Max. Vx	20	-658.14	12564.93	-2886.98
		Diagonal	Max Tension	16	11215.66	0.00	0.00
			Max. Compression	16	-7309.69	0.00	0.00
			Max. Mx	21	754.43	97.36	-12.35
			Max. My	26	-5254.83	80.37	14.53
			Max. Vy	21	47.09	97.36	-12.35
			Max. Vx	26	-2.87	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	23	152553.11	4322.08	-2487.58
	Max. H_x	10	145857.01	14151.05	-8165.71
	Max. H_z	16	-99603.58	-20029.50	12819.40
	Min. Vert	4	-117569.84	-11838.40	6837.59
	Min. H_x	17	-115600.55	-22142.22	12782.08
	Min. H_z	10	145857.01	14151.05	-8165.71
Leg B	Max. Vert	19	149020.33	-4611.06	-1840.35
	Max. H_x	25	-119122.94	22503.79	12305.28
	Max. H_z	25	-119122.94	22503.79	12305.28
	Min. Vert	25	-119122.94	22503.79	12305.28
	Min. H_x	6	144308.43	-14452.62	-7579.95
	Min. H_z	6	144308.43	-14452.62	-7579.95
Leg A	Max. Vert	15	149591.65	-704.95	4958.64
	Max. H_x	10	-60778.89	1310.62	-7098.61
	Max. H_z	2	144972.26	-658.01	16356.91
	Min. Vert	8	-119981.10	578.12	-13778.89
	Min. H_x	17	77562.65	-1209.15	-3269.95
	Min. H_z	21	-119915.83	593.75	-25708.35

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	25769.56	-0.00	0.00	6673.89	12361.74	0.00
Dead+Wind 0 deg - No Ice	25769.56	0.63	-25726.01	-1889770.03	12143.52	-17966.10
Dead+Wind 30 deg - No Ice	25769.56	12076.38	-21003.96	-1553468.69	-882339.63	-9626.59
Dead+Wind 60 deg - No Ice	25769.56	20485.00	-11917.00	-881984.61	-1509341.00	-78.91
Dead+Wind 90 deg - No Ice	25769.56	24145.00	-39.46	2601.69	-1776651.98	9489.54
Dead+Wind 120 deg - No Ice	25769.56	22160.69	12919.73	960990.04	-1616669.41	18082.45
Dead+Wind 150 deg - No Ice	25769.56	12040.60	21061.74	1572763.96	-878840.76	19346.46
Dead+Wind 180 deg - No Ice	25769.56	-0.07	23812.59	1781531.42	12444.73	16337.34
Dead+Wind 210 deg - No Ice	25769.56	-12040.73	21061.94	1572827.72	903715.00	9661.44
Dead+Wind 240 deg - No Ice	25769.56	-22160.38	12920.27	961201.55	1641324.61	-116.01
Dead+Wind 270 deg - No Ice	25769.56	-24144.77	-39.05	2775.46	1801331.50	-9491.01
Dead+Wind 300 deg - No Ice	25769.56	-20484.65	-11916.71	-881841.80	1533980.98	-16258.42
Dead+Wind 330 deg - No Ice	25769.56	-12075.80	-21003.74	-1553355.69	906907.60	-19377.07
Dead+Ice+Temp	38558.36	0.11	-0.05	16115.24	28198.00	-0.01

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 0 deg+Ice+Temp	38558.35	0.53	-25815.43	-1894709.29	28070.35	-18600.53
Dead+Wind 30 deg+Ice+Temp	38558.35	12336.52	-21444.25	-1579266.61	-887511.77	-10133.61
Dead+Wind 60 deg+Ice+Temp	38558.35	21057.12	-12235.09	-896646.24	-1537574.38	31.38
Dead+Wind 90 deg+Ice+Temp	38558.35	24665.35	-33.12	12728.16	-1802842.26	10183.78
Dead+Wind 120 deg+Ice+Temp	38558.35	22252.61	12954.20	976586.80	-1614848.00	18782.63
Dead+Wind 150 deg+Ice+Temp	38558.35	12305.86	21492.36	1616514.38	-884514.67	20522.62
Dead+Wind 180 deg+Ice+Temp	38558.35	-0.06	24452.62	1839695.84	28317.14	17421.62
Dead+Wind 210 deg+Ice+Temp	38558.35	-12305.98	21492.53	1616559.37	941135.24	10162.33
Dead+Wind 240 deg+Ice+Temp	38558.35	-22252.34	12954.66	976752.08	1671277.17	-181.52
Dead+Wind 270 deg+Ice+Temp	38558.35	-24665.16	-32.77	12866.25	1859295.01	-10185.22
Dead+Wind 300 deg+Ice+Temp	38558.35	-21056.82	-12234.84	-896527.65	1594001.19	-17453.02
Dead+Wind 330 deg+Ice+Temp	38558.35	-12336.03	-21444.06	-1579169.12	943888.68	-20549.70
Dead+Wind 0 deg - Service	25769.56	0.36	-14470.87	-1060073.83	12243.85	-10106.12
Dead+Wind 30 deg - Service	25769.56	6792.97	-11814.73	-870902.30	-490901.34	-5414.15
Dead+Wind 60 deg - Service	25769.56	11522.82	-6703.32	-493193.16	-843587.96	-44.42
Dead+Wind 90 deg - Service	25769.56	13581.56	-22.20	4384.94	-993950.25	5337.04
Dead+Wind 120 deg - Service	25769.56	12465.38	7267.34	543477.72	-903962.52	10171.58
Dead+Wind 150 deg - Service	25769.56	6772.83	11847.23	887604.38	-488934.10	10881.28
Dead+Wind 180 deg - Service	25769.56	-0.04	13394.59	1005040.83	12414.13	9189.52
Dead+Wind 210 deg - Service	25769.56	-6772.90	11847.34	887645.99	513758.07	5433.72
Dead+Wind 240 deg - Service	25769.56	-12465.20	7267.65	543602.75	928667.85	-65.29
Dead+Wind 270 deg - Service	25769.56	-13581.43	-21.98	4482.68	1018672.80	-5337.86
Dead+Wind 300 deg - Service	25769.56	-11522.62	-6703.15	-493118.15	868285.21	-9145.11
Dead+Wind 330 deg - Service	25769.56	-6792.64	-11814.60	-870843.16	515553.17	-10899.97

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	-0.00	-25769.56	0.00	0.00	25769.56	-0.00	0.000%
2	0.62	-25769.56	-25726.73	-0.63	25769.56	25726.01	0.002%
3	12076.75	-25769.56	-21004.57	-12076.38	25769.56	21003.96	0.002%
4	20485.63	-25769.56	-11917.37	-20485.00	25769.56	11917.00	0.002%
5	24145.70	-25769.56	-39.49	-24145.00	25769.56	39.46	0.002%
6	22161.30	-25769.56	12920.10	-22160.69	25769.56	-12919.73	0.002%
7	12040.92	-25769.56	21062.38	-12040.60	25769.56	-21061.74	0.002%
8	-0.08	-25769.56	23813.33	0.07	25769.56	-23812.59	0.002%
9	-12041.07	-25769.56	21062.58	12040.73	25769.56	-21061.94	0.002%
10	-22161.00	-25769.56	12920.64	22160.38	25769.56	-12920.27	0.002%
11	-24145.48	-25769.56	-39.08	24144.77	25769.56	39.05	0.002%
12	-20485.28	-25769.56	-11917.08	20484.65	25769.56	11916.71	0.002%
13	-12076.19	-25769.56	-21004.35	12075.80	25769.56	21003.74	0.002%
14	-0.00	-38558.36	0.00	-0.11	38558.36	0.05	0.000%
15	0.53	-38558.36	-25815.68	-0.53	38558.35	25815.43	0.001%
16	12336.65	-38558.36	-21444.46	-12336.52	38558.35	21444.25	0.001%
17	21057.33	-38558.36	-12235.22	-21057.12	38558.35	12235.09	0.001%
18	24665.60	-38558.36	-33.12	-24665.35	38558.35	33.12	0.001%
19	22252.82	-38558.36	12954.33	-22252.61	38558.35	-12954.20	0.001%
20	12305.98	-38558.36	21492.58	-12305.86	38558.35	-21492.36	0.001%
21	-0.07	-38558.36	24452.88	0.06	38558.35	-24452.62	0.001%
22	-12306.10	-38558.36	21492.75	12305.98	38558.35	-21492.53	0.001%
23	-22252.56	-38558.36	12954.79	22252.34	38558.35	-12954.66	0.001%
24	-24665.41	-38558.36	-32.77	24665.16	38558.35	32.77	0.001%
25	-21057.04	-38558.36	-12234.97	21056.82	38558.35	12234.84	0.001%
26	-12336.17	-38558.36	-21444.28	12336.03	38558.35	21444.06	0.001%
27	0.35	-25769.56	-14471.28	-0.36	25769.56	14470.87	0.001%
28	6793.17	-25769.56	-11815.07	-6792.97	25769.56	11814.73	0.001%
29	11523.16	-25769.56	-6703.52	-11522.82	25769.56	6703.32	0.001%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
30	13581.96	-25769.56	-22.21	-13581.56	25769.56	22.20	0.001%
31	12465.73	-25769.56	7267.55	-12465.38	25769.56	-7267.34	0.001%
32	6773.02	-25769.56	11847.59	-6772.83	25769.56	-11847.23	0.001%
33	-0.04	-25769.56	13395.00	0.04	25769.56	-13394.59	0.001%
34	-6773.10	-25769.56	11847.70	6772.90	25769.56	-11847.34	0.001%
35	-12465.56	-25769.56	7267.86	12465.20	25769.56	-7267.65	0.001%
36	-13581.83	-25769.56	-21.98	13581.43	25769.56	21.98	0.001%
37	-11522.97	-25769.56	-6703.36	11522.62	25769.56	6703.15	0.001%
38	-6792.86	-25769.56	-11814.95	6792.64	25769.56	11814.60	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	8	0.00000001	0.00012425
3	Yes	8	0.00000001	0.00012930
4	Yes	8	0.00000001	0.00013403
5	Yes	8	0.00000001	0.00012930
6	Yes	8	0.00000001	0.00012417
7	Yes	8	0.00000001	0.00012975
8	Yes	8	0.00000001	0.00013426
9	Yes	8	0.00000001	0.00012942
10	Yes	8	0.00000001	0.00012401
11	Yes	8	0.00000001	0.00012932
12	Yes	8	0.00000001	0.00013420
13	Yes	8	0.00000001	0.00012959
14	Yes	6	0.00000001	0.00007508
15	Yes	9	0.00000001	0.00005507
16	Yes	9	0.00000001	0.00005650
17	Yes	9	0.00000001	0.00005795
18	Yes	9	0.00000001	0.00005647
19	Yes	9	0.00000001	0.00005501
20	Yes	9	0.00000001	0.00005680
21	Yes	9	0.00000001	0.00005819
22	Yes	9	0.00000001	0.00005660
23	Yes	9	0.00000001	0.00005492
24	Yes	9	0.00000001	0.00005657
25	Yes	9	0.00000001	0.00005818
26	Yes	9	0.00000001	0.00005680
27	Yes	8	0.00000001	0.00012568
28	Yes	8	0.00000001	0.00012833
29	Yes	8	0.00000001	0.00013091
30	Yes	8	0.00000001	0.00012825
31	Yes	8	0.00000001	0.00012552
32	Yes	8	0.00000001	0.00012864
33	Yes	8	0.00000001	0.00013115
34	Yes	8	0.00000001	0.00012839
35	Yes	8	0.00000001	0.00012541
36	Yes	8	0.00000001	0.00012834
37	Yes	8	0.00000001	0.00013115
38	Yes	8	0.00000001	0.00012866

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	140 - 120	3.811	35	0.2018	0.0399
T2	120 - 100	2.954	35	0.1996	0.0380
T3	100 - 80	2.111	35	0.1828	0.0338
T4	80 - 60	1.374	35	0.1512	0.0284
T5	60 - 40	0.797	35	0.1122	0.0212
T6	40 - 20	0.371	35	0.0766	0.0135
T7	20 - 0	0.110	35	0.0335	0.0069

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.00	7' Whip	35	3.725	0.2019	0.0398	Inf
135.00	VHLP1-23	35	3.597	0.2020	0.0395	Inf
130.00	3" Dia 20' Omni	35	3.383	0.2018	0.0392	852024
120.00	AIR 21 B2A/B4P antenna w/ pipe mount	35	2.954	0.1996	0.0380	853965
100.00	VHLP2-11	35	2.111	0.1828	0.0338	41255
95.00	VHLP1-23	35	1.913	0.1761	0.0326	36153

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	140 - 120	6.884	23	0.3661	0.0779
T2	120 - 100	5.329	23	0.3617	0.0738
T3	100 - 80	3.804	23	0.3303	0.0653
T4	80 - 60	2.475	23	0.2728	0.0546
T5	60 - 40	1.434	23	0.2024	0.0405
T6	40 - 20	0.667	23	0.1380	0.0258
T7	20 - 0	0.197	23	0.0605	0.0130

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.00	7' Whip	23	6.729	0.3662	0.0776	976014
135.00	VHLP1-23	23	6.495	0.3663	0.0771	976014
130.00	3" Dia 20' Omni	23	6.107	0.3660	0.0763	488009
120.00	AIR 21 B2A/B4P antenna w/ pipe mount	23	5.329	0.3617	0.0738	497746
100.00	VHLP2-11	23	3.804	0.3303	0.0653	22839
95.00	VHLP1-23	23	3.448	0.3181	0.0628	19967

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	140	Leg	A325N	0.6250	6	25.98	13499.00	0.002 ✓	1.333	Bolt Tension
T2	120	Leg	A325N	0.6250	6	1008.72	13496.70	0.075 ✓	1.333	Bolt Tension
T3	100	Leg	A325N	0.7500	6	4082.98	19438.40	0.210 ✓	1.333	Bolt Tension
T4	80	Leg	A325N	0.8750	6	8653.25	26458.10	0.327 ✓	1.333	Bolt Tension
T5	60	Leg	A325N	1.0000	6	11854.40	34557.50	0.343 ✓	1.333	Bolt Tension
T6	40	Leg	A325N	1.0000	6	14807.90	34557.00	0.429 ✓	1.333	Bolt Tension
T7	20	Leg	A325N	1.0000	6	17557.50	34557.30	0.508 ✓	1.333	Bolt Tension

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T1	140 - 120	2 1/4	20.00	5.00	106.7 K=1.00	13.124	3.9761	-5298.64	52183.40	0.102 ✓
T2	120 - 100	2 1/4	20.00	5.00	106.7 K=1.00	13.124	3.9761	-24959.30	52183.40	0.478 ✓
T3	100 - 80	2 3/4	20.00	5.00	87.3 K=1.00	17.519	5.9396	-55963.40	104054.00	0.538 ✓
T4	80 - 60	3	20.03	5.01	80.1 K=1.00	18.986	7.0686	-81262.80	134202.00	0.606 ✓
T5	60 - 40	3 1/4	20.03	5.01	74.0 K=1.00	20.191	8.2958	-103862.00	167501.00	0.620 ✓
T6	40 - 20	Pirod 105218	20.03	5.01	32.4 K=1.00	26.848	7.2158	-126269.00	193727.00	0.652 ✓
T7	20 - 0	Pirod 105219	20.03	5.01	28.4 K=1.00	27.351	9.4248	-152916.00	257781.00	0.593 ✓

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V lb	Allow. V_a lb	Stress Ratio
T6	40 - 20	0.5	1.46	119.0	10.423	0.1963	562.14	2290.46	0.245

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V lb	Allow. V_a lb	Stress Ratio
T7	20 - 0	0.625	1.45	94.4	13.671	0.3068	3324.66	4694.36	0.708

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	140 - 120	L1 3/4x1 3/4x1/8	9.43	4.61	159.4 K=1.00	5.878	0.4219	-1265.11	2479.89	0.510
T2	120 - 100	L1 3/4x1 3/4x1/4	9.43	4.61	161.9 K=1.00	5.695	0.8125	-3222.36	4627.01	0.696
T3	100 - 80	L2 1/2x2 1/2x5/16	9.43	4.58	112.4 K=1.00	11.341	1.4600	-4976.26	16557.80	0.301
T4	80 - 60	L2 1/2x2 1/2x5/16	10.96	5.48	134.5 K=1.00	8.260	1.4600	-3616.58	12059.60	0.300
T5	60 - 40	L2 1/2x2 1/2x5/16	12.77	6.37	156.4 K=1.00	6.104	1.4600	-4038.20	8911.47	0.453
T6	40 - 20	L3x3x5/16	14.63	6.92	140.9 K=1.00	7.520	1.7800	-4845.93	13385.40	0.362
T7	20 - 0	L3x3x5/16	16.05	7.63	155.5 K=1.00	6.177	1.7800	-7309.69	10995.10	0.665

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	140 - 120	L3x3x3/8	8.00	7.81	159.7 K=1.00	5.854	2.1100	-112.95	12352.90	0.009

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	140 - 120	2 1/4	20.00	5.00	106.7	30.000	3.9761	3259.57	119282.00	0.027
T2	120 - 100	2 1/4	20.00	5.00	106.7	30.000	3.9761	18867.80	119282.00	0.158
T3	100 - 80	2 3/4	20.00	5.00	87.3	30.000	5.9396	45402.50	178187.00	0.255

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T4	80 - 60	3	20.03	5.01	80.1	30.000	7.0686	66506.00	212058.00	0.314
T5	60 - 40	3 1/4	20.03	5.01	74.0	30.000	8.2958	84735.60	248873.00	0.340
T6	40 - 20	Pirod 105218	20.03	5.01	32.4	30.000	7.2158	101304.00	216475.00	0.468
T7	20 - 0	Pirod 105219	20.03	5.01	28.4	30.000	9.4248	117775.00	282743.00	0.417

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V lb	Allow. V_a lb	Stress Ratio
T6	40 - 20	0.5	1.46	119.0	10.423	0.1963	562.14	2290.46	0.245
T7	20 - 0	0.625	1.45	94.4	13.671	0.3068	3324.66	4694.36	0.708

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	140 - 120	L1 3/4x1 3/4x1/8	9.43	4.61	101.3	21.600	0.4219	1203.28	9112.50	0.132
T2	120 - 100	L1 3/4x1 3/4x1/4	9.43	4.61	104.5	21.600	0.8125	3176.60	17550.00	0.181
T3	100 - 80	L2 1/2x2 1/2x5/16	9.43	4.58	72.3	21.600	1.4600	4833.60	31536.00	0.153
T4	80 - 60	L2 1/2x2 1/2x5/16	10.96	5.48	86.4	21.600	1.4600	3644.39	31536.00	0.116
T5	60 - 40	L2 1/2x2 1/2x5/16	12.77	6.37	100.5	21.600	1.4600	4016.43	31536.00	0.127
T6	40 - 20	L3x3x5/16	14.63	6.92	90.0	21.600	1.7800	4566.77	38448.00	0.119
T7	20 - 0	L3x3x5/16	16.53	7.87	102.4	21.600	1.7800	11215.70	38448.00	0.292

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	140 - 120	L3x3x3/8	8.00	7.81	102.7	21.600	2.1100	84.04	45576.00	0.002 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	140 - 120	Leg	2 1/4	1	-5298.64	69560.47	7.6	Pass
		Diagonal	L1 3/4x1 3/4x1/8	8	-1265.11	3305.69	38.3	Pass
		Top Girt	L3x3x3/8	4	-112.95	16466.42	0.7	Pass
T2	120 - 100	Leg	2 1/4	31	-24959.30	69560.47	35.9	Pass
		Diagonal	L1 3/4x1 3/4x1/4	39	-3222.36	6167.80	52.2	Pass
T3	100 - 80	Leg	2 3/4	58	-55963.40	138703.98	40.3	Pass
		Diagonal	L2 1/2x2 1/2x5/16	66	-4976.26	22071.55	22.5	Pass
T4	80 - 60	Leg	3	85	-81262.80	178891.26	45.4	Pass
		Diagonal	L2 1/2x2 1/2x5/16	92	-3616.58	16075.45	22.5	Pass
T5	60 - 40	Leg	3 1/4	112	-103862.00	223278.82	46.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	119	-4038.20	11878.99	34.0	Pass
T6	40 - 20	Leg	Pirod 105218	139	-126269.00	258238.08	48.9	Pass
		Diagonal	L3x3x5/16	146	-4845.93	17842.74	27.2	Pass
T7	20 - 0	Leg	Pirod 105219	166	-142580.00	343622.06	53.1	Pass
		Diagonal	L3x3x5/16	179	-7309.69	14656.47	49.9	Pass
							Summary	
						Leg (T7)	53.1	Pass
						Diagonal (T2)	52.2	Pass
						Top Girt (T1)	0.7	Pass
						Bolt Checks	38.1	Pass
						RATING =	**53.1**	**Pass**

EBI Consulting
environmental | engineering | due diligence

EnviroBusiness, Inc.
21 B Street
Burlington, MA 01803
800.786.2346

Carrier: T-Mobile
Site ID: CT11737C

This spreadsheet calculates the input loads for the Enercalc check of the foundation:

Calculate loading to foundation piers for input into Enercalc:

Maximum moment, from TNX Tower output =	1935.8	k-ft (envelope, using highest moment value)	
Tower face width at base =	16	ft	
Distance betweeen tower legs in elevation =	13.86	ft	*Dist = √(tower face width² + 1/2*tower face width²)*
Uplift / down load at footings =	**139.7**	**kips**	*F = M / distance between tower legs*
Total shear at base, from TNX Tower output =	25.8	kips (envelope - using highest shear value)	
Number of equivalent piers taking shear =	2	piers, taking equal load	
Shear per pier =	**12.9**	**kips**	
Total axial load to base, from TNX Tower =	25.8	kips (envelope - using lowest axial value)	
Number of piers taking axial =	3	piers, taking equal load	
Axial load to pier representing single leg =	**8.6**	**kips** (min)	
Axial load to pier representing two legs =	**17.2**	**kips** (min)	
Maximum axial load to base (for pier check) =	38.6	kips, from TNX Tower output	
Number of piers taking axial =	3	piers, taking equal load	
Axial load to pier representing single leg =	**12.9**	**kips** (max)	
Axial load to pier representing two legs =	**25.7**	**kips** (max)	

Calculate factor of safety of existing foundations:

Required factor of safety =	2	for 1.0D + 1.0W load combinations
	1.2	for 0.6D + 1.0W load combinations

Refer to design summary of foundation interaction with soil below.

DESIGN SUMMARY — Design OK

	Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.2738	Soil Bearing	1.643 ksf	6.0 ksf	+D+W+H
PASS	1.791	Overturning	2,967.0 k-ft	5,314.46 k-ft	0.6D+W
PASS	4.833	Sliding	20.80 k	100.525 k	0.6D+W
PASS	3.428	Uplift	138.0 k	473.085 k	0.6D+W

Soil bearing < 1.0 ratio of applied loads divided by capacity loads - okay
Overturning, sliding, and uplift all have factor of safety > 1.2 for 0.6D + 1.0W load combinations - okay
Note: 1.2 = 2.0 F.S. x 0.6 DL factor

Combined Footing

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ENERCALC, INC. 1983-2014, Build:6.14.1.26, Ver:6.14.1.26

Lic. # : KW-06008663 — Licensee : ENVIROBUSINESS, INC.

Description : Refer to hand calculations for input loads.

Code References

Calculations per ACI 318-05, IBC 2006, CBC 2007, ASCE 7-05
Load Combinations Used : ASCE 7-05

General Information

Material Properties

f'c : Concrete 28 day strength		3 ksi
fy : Rebar Yield		60 ksi
Ec : Concrete Elastic Modulus		3122 ksi
Concrete Density		160.0 pcf
ϕ : Phi Values	Flexure :	0.9
	Shear :	0.75

Analysis/Design Settings

Calculate footing weight as dead load ?	Yes
Calculate Pedestal weight as dead load ?	Yes
Min Steel % Bending Reinf (based on 'd')	
Min Allow % Temp Reinf (based on thick)	0.0018
Min. Overturning Safety Factor	1.20 : 1
Min. Sliding Safety Factor	1.20 : 1

Soil Information

Allowable Soil Bearing	6.0 ksf
Increase Bearing By Footing Weight	No
Soil Passive Sliding Resistance	500.0 pcf
(Uses entry for "Footing base depth below soil surface" for force)	
Coefficient of Soil/Concrete Friction	0.3

Soil Bearing Increase

Footing base depth below soil surface	ft
Increases based on footing Depth	
Allowable pressure increase per foot	ksf
when base of footing is below	ft
Increases based on footing Width . . .	
Allowable pressure increase per foot	ksf
when maximum length or width is greater than	ft
Maximum Allowed Bearing Pressure	10 ksf
(A value of zero implies no limit)	
Adjusted Allowable Soil Bearing	6.0 ksf
(Allowable Soil Bearing adjusted for footing weight and depth & width increases as specified by user.)	

Dimensions & Reinforcing

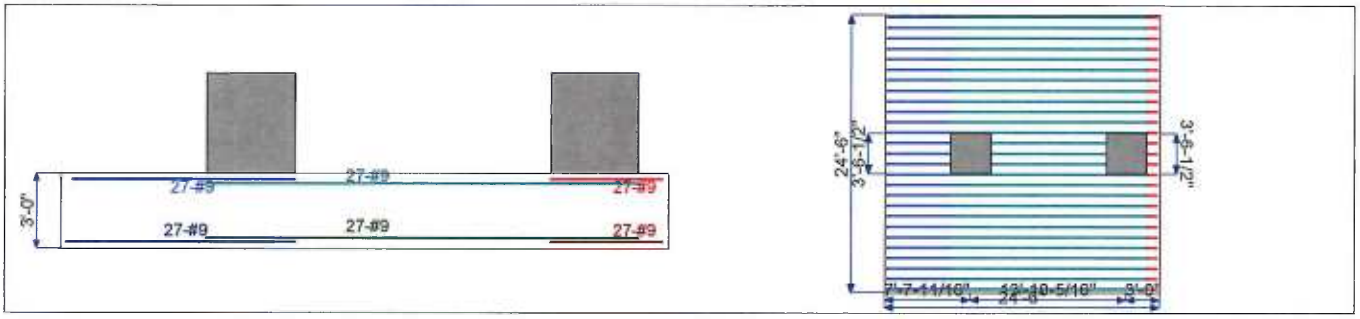
Distance Left of Column #1	=	7.640 ft
Between Columns	=	13.860 ft
Distance Right of Column #2	=	3.0 ft
Total Footing Length	=	24.50 ft
Footing Width	=	24.50 ft
Footing Thickness	=	36.0 in
Rebar Center to Concrete Edge @ Top	=	3 in
Rebar Center to Concrete Edge @ Bottom	=	3 in

Pedestal dimensions...		Col #1	Col #2
Sq. Dim.	=	42.530	42.530 in
Height	=	48.0	48.0 in

	Count	Size #	As Actual	As Req'd
Bars left of Col #1				
Bottom Bars	27.0	9	27.0	19.051 in^2
Top Bars	27.0	9	27.0	0.0 in^2
Bars Btwn Cols				
Bottom Bars	27.0	9	27.0	19.051 in^2
Top Bars	27.0	9	27.0	19.051 in^2
Bars Right of Col #2				
Bottom Bars	27.0	9	27.0	19.051 in^2
Top Bars	27.0	9	27.0	19.051 in^2

Applied Loads

		D	Lr	L	S	W	E	H
Applied @ Left Column								
Axial Load Downward	=	25.70				138.0		k
Moment (+CW)	=							k-ft
Shear (+X)	=					12.20		k
Applied @ Right Column								
Axial Load Downward	=	12.90				-138.0		k
Moment (+CW)	=							k-ft
Shear (+X)	=					8.60		k
Overburden	=	0.3750						



Combined Footing

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ENERCALC, INC. 1983-2014, Build:6.14.1.26, Ver:6.14.1.26

Lic. # : KW-06008663 — Licensee : ENVIROBUSINESS, INC.

Description : Refer to hand calculations for input loads.

DESIGN SUMMARY

Design OK

	Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.2738	Soil Bearing	1.643 ksf	6.0 ksf	+D+W+H
PASS	1.791	Overturning	2,967.0 k-ft	5,314.46 k-ft	0.6D+W
PASS	4.833	Sliding	20.80 k	100.525 k	0.6D+W
PASS	3.428	Uplift	138.0 k	473.085 k	0.6D+W
PASS	0.1082	1-way Shear - Col #1	8.886 psi	82.158 psi	+0.90D+1.60W+1.60H
PASS	0.09497	1-way Shear - Col #2	7.803 psi	82.158 psi	+0.90D+1.60W+1.60H
PASS	0.1328	2-way Punching - Col #1	21.826 psi	164.317 psi	+1.20D+0.50Lr+0.50L+1.60W
PASS	0.1643	2-way Punching - Col #2	27.004 psi	164.317 psi	+1.20D+0.50Lr+0.50L+1.60W
PASS	No Bending	Flexure - Left of Col #1 - Top	0.0 k-ft	0.0 k-ft	N/A
PASS	0.1162	Flexure - Left of Col #1 - Bottom	450.514 k-ft	3,878.23 k-ft	+0.90D+1.60W+1.60H
PASS	0.006512	Flexure - Between Cols - Top	-25.256 k-ft	3,878.23 k-ft	+1.40D
PASS	0.1915	Flexure - Between Cols - Bottom	742.71 k-ft	3,878.23 k-ft	+0.90D+1.60W+1.60H
PASS	0.004790	Flexure - Right of Col #2 - Top	-18.577 k-ft	3,878.23 k-ft	+1.20D+0.50Lr+0.50L+1.60W
PASS	0.000543	Flexure - Right of Col #2 - Bottom	2.106 k-ft	3,878.23 k-ft	+1.40D

Soil Bearing

Load Combination...	Total Bearing	Eccentricity from Ftg CL	Actual Soil Bearing Stress @ Left Edge	@ Right Edge	Allowable	Actual / Allow Ratio
D Only	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+L+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+Lr+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+S+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+0.750Lr+0.750L+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+0.750L+0.750S+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+W+H	558.47 k	-3.135 ft	1.64 ksf	0.22 ksf	6.00 ksf	0.274
+D+0.70E+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+0.750Lr+0.750L+0.750W+H	558.47 k	-2.344 ft	1.46 ksf	0.40 ksf	6.00 ksf	0.244
+D+0.750L+0.750S+0.750W+H	558.47 k	-2.344 ft	1.46 ksf	0.40 ksf	6.00 ksf	0.244
+D+0.750Lr+0.750L+0.5250E+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+D+0.750L+0.750S+0.5250E+H	558.47 k	0.029 ft	0.92 ksf	0.94 ksf	6.00 ksf	0.156
+0.60D+W+H	335.08 k	-5.244 ft	1.30 ksf	0.00 ksf	6.00 ksf	0.217
+0.60D+0.70E+H	335.08 k	0.029 ft	0.55 ksf	0.56 ksf	6.00 ksf	0.094

Overturning Stability

	Moments about Left Edge k-ft			Moments about Right Edge k-ft		
Load Combination...	Overturning	Resisting	Ratio	Overturning	Resisting	Ratio
D	0.00	0.00	999.000	0.00	0.00	999.000
0.6D+W	2,967.00	5,314.46	1.791	559.60	6,466.43	11.555

Sliding Stability

Load Combination...	Sliding Force	Resisting Force	Sliding SafetyRatio
D	0.00 k	167.54 k	999
0.6D+W	20.80 k	100.52 k	4.833

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
0.6D+W	0.000	0.000	0	0.000	0	0.000	0.000	0.000
+0.90D+1.60W+1.60H	0.059	0.061	Bottom	19.051	Min Temp %	27.000	3,878.227	0.000
+0.90D+1.60W+1.60H	0.236	0.123	Bottom	19.051	Min Temp %	27.000	3,878.227	0.000
+0.90D+1.60W+1.60H	0.529	0.184	Bottom	19.051	Min Temp %	27.000	3,878.227	0.000
+0.90D+1.60W+1.60H	0.939	0.245	Bottom	19.051	Min Temp %	27.000	3,878.227	0.000
+0.90D+1.60W+1.60H	1.465	0.306	Bottom	19.051	Min Temp %	27.000	3,878.227	0.000
+0.90D+1.60W+1.60H	2.107	0.368	Bottom	19.051	Min Temp %	27.000	3,878.227	0.001
+0.90D+1.60W+1.60H	2.863	0.429	Bottom	19.051	Min Temp %	27.000	3,878.227	0.001
+0.90D+1.60W+1.60H	3.733	0.490	Bottom	19.051	Min Temp %	27.000	3,878.227	0.001
+0.90D+1.60W+1.60H	4.716	0.551	Bottom	19.051	Min Temp %	27.000	3,878.227	0.001
+0.90D+1.60W+1.60H	5.813	0.613	Bottom	19.051	Min Temp %	27.000	3,878.227	0.001
+0.90D+1.60W+1.60H	7.022	0.674	Bottom	19.051	Min Temp %	27.000	3,878.227	0.002
+0.90D+1.60W+1.60H	8.343	0.735	Bottom	19.051	Min Temp %	27.000	3,878.227	0.002

Combined Footing

Description : Refer to hand calculations for input loads.

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
+0.90D+1.60W+1.60H	9.775	0.796	Bottom	19.051	Min Temp %	27.000	3,878.227	0.003
+0.90D+1.60W+1.60H	11.318	0.858	Bottom	19.051	Min Temp %	27.000	3,878.227	0.003
+0.90D+1.60W+1.60H	12.971	0.919	Bottom	19.051	Min Temp %	27.000	3,878.227	0.003
+0.90D+1.60W+1.60H	14.733	0.980	Bottom	19.051	Min Temp %	27.000	3,878.227	0.004
+0.90D+1.60W+1.60H	16.604	1.041	Bottom	19.051	Min Temp %	27.000	3,878.227	0.004
+0.90D+1.60W+1.60H	18.584	1.103	Bottom	19.051	Min Temp %	27.000	3,878.227	0.005
+0.90D+1.60W+1.60H	20.671	1.164	Bottom	19.051	Min Temp %	27.000	3,878.227	0.005
+0.90D+1.60W+1.60H	22.866	1.225	Bottom	19.051	Min Temp %	27.000	3,878.227	0.006
+0.90D+1.60W+1.60H	25.167	1.286	Bottom	19.051	Min Temp %	27.000	3,878.227	0.006
+0.90D+1.60W+1.60H	27.574	1.348	Bottom	19.051	Min Temp %	27.000	3,878.227	0.007
+0.90D+1.60W+1.60H	30.086	1.409	Bottom	19.051	Min Temp %	27.000	3,878.227	0.008
+0.90D+1.60W+1.60H	32.704	1.470	Bottom	19.051	Min Temp %	27.000	3,878.227	0.008
+0.90D+1.60W+1.60H	35.426	1.531	Bottom	19.051	Min Temp %	27.000	3,878.227	0.009
+0.90D+1.60W+1.60H	38.251	1.593	Bottom	19.051	Min Temp %	27.000	3,878.227	0.010
+0.90D+1.60W+1.60H	41.180	1.654	Bottom	19.051	Min Temp %	27.000	3,878.227	0.011
+0.90D+1.60W+1.60H	44.211	1.715	Bottom	19.051	Min Temp %	27.000	3,878.227	0.011
+0.90D+1.60W+1.60H	47.344	1.776	Bottom	19.051	Min Temp %	27.000	3,878.227	0.012
+0.90D+1.60W+1.60H	50.578	1.838	Bottom	19.051	Min Temp %	27.000	3,878.227	0.013
+0.90D+1.60W+1.60H	53.913	1.899	Bottom	19.051	Min Temp %	27.000	3,878.227	0.014
+0.90D+1.60W+1.60H	57.349	1.960	Bottom	19.051	Min Temp %	27.000	3,878.227	0.015
+0.90D+1.60W+1.60H	60.884	2.021	Bottom	19.051	Min Temp %	27.000	3,878.227	0.016
+0.90D+1.60W+1.60H	64.518	2.083	Bottom	19.051	Min Temp %	27.000	3,878.227	0.017
+0.90D+1.60W+1.60H	68.251	2.144	Bottom	19.051	Min Temp %	27.000	3,878.227	0.018
+0.90D+1.60W+1.60H	72.081	2.205	Bottom	19.051	Min Temp %	27.000	3,878.227	0.019
+0.90D+1.60W+1.60H	76.009	2.266	Bottom	19.051	Min Temp %	27.000	3,878.227	0.020
+0.90D+1.60W+1.60H	80.034	2.328	Bottom	19.051	Min Temp %	27.000	3,878.227	0.021
+0.90D+1.60W+1.60H	84.155	2.389	Bottom	19.051	Min Temp %	27.000	3,878.227	0.022
+0.90D+1.60W+1.60H	88.371	2.450	Bottom	19.051	Min Temp %	27.000	3,878.227	0.023
+0.90D+1.60W+1.60H	92.682	2.511	Bottom	19.051	Min Temp %	27.000	3,878.227	0.024
+0.90D+1.60W+1.60H	97.088	2.573	Bottom	19.051	Min Temp %	27.000	3,878.227	0.025
+0.90D+1.60W+1.60H	101.588	2.634	Bottom	19.051	Min Temp %	27.000	3,878.227	0.026
+0.90D+1.60W+1.60H	106.181	2.695	Bottom	19.051	Min Temp %	27.000	3,878.227	0.027
+0.90D+1.60W+1.60H	110.866	2.756	Bottom	19.051	Min Temp %	27.000	3,878.227	0.029
+0.90D+1.60W+1.60H	115.644	2.818	Bottom	19.051	Min Temp %	27.000	3,878.227	0.030
+0.90D+1.60W+1.60H	120.513	2.879	Bottom	19.051	Min Temp %	27.000	3,878.227	0.031
+0.90D+1.60W+1.60H	125.474	2.940	Bottom	19.051	Min Temp %	27.000	3,878.227	0.032
+0.90D+1.60W+1.60H	130.524	3.001	Bottom	19.051	Min Temp %	27.000	3,878.227	0.034
+0.90D+1.60W+1.60H	135.665	3.063	Bottom	19.051	Min Temp %	27.000	3,878.227	0.035
+0.90D+1.60W+1.60H	140.894	3.124	Bottom	19.051	Min Temp %	27.000	3,878.227	0.036
+0.90D+1.60W+1.60H	146.212	3.185	Bottom	19.051	Min Temp %	27.000	3,878.227	0.038
+0.90D+1.60W+1.60H	151.619	3.246	Bottom	19.051	Min Temp %	27.000	3,878.227	0.039
+0.90D+1.60W+1.60H	157.112	3.308	Bottom	19.051	Min Temp %	27.000	3,878.227	0.041
+0.90D+1.60W+1.60H	162.693	3.369	Bottom	19.051	Min Temp %	27.000	3,878.227	0.042
+0.90D+1.60W+1.60H	168.360	3.430	Bottom	19.051	Min Temp %	27.000	3,878.227	0.043
+0.90D+1.60W+1.60H	174.113	3.491	Bottom	19.051	Min Temp %	27.000	3,878.227	0.045
+0.90D+1.60W+1.60H	179.950	3.553	Bottom	19.051	Min Temp %	27.000	3,878.227	0.046
+0.90D+1.60W+1.60H	185.873	3.614	Bottom	19.051	Min Temp %	27.000	3,878.227	0.048
+0.90D+1.60W+1.60H	191.879	3.675	Bottom	19.051	Min Temp %	27.000	3,878.227	0.049
+0.90D+1.60W+1.60H	197.969	3.736	Bottom	19.051	Min Temp %	27.000	3,878.227	0.051
+0.90D+1.60W+1.60H	204.141	3.798	Bottom	19.051	Min Temp %	27.000	3,878.227	0.053
+0.90D+1.60W+1.60H	210.396	3.859	Bottom	19.051	Min Temp %	27.000	3,878.227	0.054
+0.90D+1.60W+1.60H	216.733	3.920	Bottom	19.051	Min Temp %	27.000	3,878.227	0.056
+0.90D+1.60W+1.60H	223.151	3.981	Bottom	19.051	Min Temp %	27.000	3,878.227	0.058
+0.90D+1.60W+1.60H	229.649	4.043	Bottom	19.051	Min Temp %	27.000	3,878.227	0.059
+0.90D+1.60W+1.60H	236.227	4.104	Bottom	19.051	Min Temp %	27.000	3,878.227	0.061
+0.90D+1.60W+1.60H	242.884	4.165	Bottom	19.051	Min Temp %	27.000	3,878.227	0.063
+0.90D+1.60W+1.60H	249.620	4.226	Bottom	19.051	Min Temp %	27.000	3,878.227	0.064
+0.90D+1.60W+1.60H	256.435	4.288	Bottom	19.051	Min Temp %	27.000	3,878.227	0.066
+0.90D+1.60W+1.60H	263.327	4.349	Bottom	19.051	Min Temp %	27.000	3,878.227	0.068
+0.90D+1.60W+1.60H	270.296	4.410	Bottom	19.051	Min Temp %	27.000	3,878.227	0.070
+0.90D+1.60W+1.60H	277.342	4.471	Bottom	19.051	Min Temp %	27.000	3,878.227	0.072
+0.90D+1.60W+1.60H	284.463	4.533	Bottom	19.051	Min Temp %	27.000	3,878.227	0.073
+0.90D+1.60W+1.60H	291.660	4.594	Bottom	19.051	Min Temp %	27.000	3,878.227	0.075
+0.90D+1.60W+1.60H	298.931	4.655	Bottom	19.051	Min Temp %	27.000	3,878.227	0.077

Combined Footing

Description : Refer to hand calculations for input loads.

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
+0.90D+1.60W+1.60H	306.277	4.716	Bottom	19.051	Min Temp %	27.000	3,878.227	0.079
+0.90D+1.60W+1.60H	313.696	4.778	Bottom	19.051	Min Temp %	27.000	3,878.227	0.081
+0.90D+1.60W+1.60H	321.188	4.839	Bottom	19.051	Min Temp %	27.000	3,878.227	0.083
+0.90D+1.60W+1.60H	328.752	4.900	Bottom	19.051	Min Temp %	27.000	3,878.227	0.085
+0.90D+1.60W+1.60H	336.389	4.961	Bottom	19.051	Min Temp %	27.000	3,878.227	0.087
+0.90D+1.60W+1.60H	344.096	5.023	Bottom	19.051	Min Temp %	27.000	3,878.227	0.089
+0.90D+1.60W+1.60H	351.874	5.084	Bottom	19.051	Min Temp %	27.000	3,878.227	0.091
+0.90D+1.60W+1.60H	359.723	5.145	Bottom	19.051	Min Temp %	27.000	3,878.227	0.093
+0.90D+1.60W+1.60H	367.641	5.206	Bottom	19.051	Min Temp %	27.000	3,878.227	0.095
+0.90D+1.60W+1.60H	375.627	5.268	Bottom	19.051	Min Temp %	27.000	3,878.227	0.097
+0.90D+1.60W+1.60H	383.682	5.329	Bottom	19.051	Min Temp %	27.000	3,878.227	0.099
+0.90D+1.60W+1.60H	391.805	5.390	Bottom	19.051	Min Temp %	27.000	3,878.227	0.101
+0.90D+1.60W+1.60H	399.995	5.451	Bottom	19.051	Min Temp %	27.000	3,878.227	0.103
+0.90D+1.60W+1.60H	408.252	5.513	Bottom	19.051	Min Temp %	27.000	3,878.227	0.105
+0.90D+1.60W+1.60H	416.574	5.574	Bottom	19.051	Min Temp %	27.000	3,878.227	0.107
+0.90D+1.60W+1.60H	424.963	5.635	Bottom	19.051	Min Temp %	27.000	3,878.227	0.110
+0.90D+1.60W+1.60H	433.415	5.696	Bottom	19.051	Min Temp %	27.000	3,878.227	0.112
+0.90D+1.60W+1.60H	441.933	5.758	Bottom	19.051	Min Temp %	27.000	3,878.227	0.114
+0.90D+1.60W+1.60H	450.514	5.819	Bottom	19.051	Min Temp %	27.000	3,878.227	0.116
+0.90D+1.60W+1.60H	459.153	5.880	Bottom	19.051	Min Temp %	27.000	3,878.227	0.118
+0.90D+1.60W+1.60H	467.677	5.941	Bottom	19.051	Min Temp %	27.000	3,878.227	0.121
+0.90D+1.60W+1.60H	476.002	6.003	Bottom	19.051	Min Temp %	27.000	3,878.227	0.123
+0.90D+1.60W+1.60H	484.127	6.064	Bottom	19.051	Min Temp %	27.000	3,878.227	0.125
+0.90D+1.60W+1.60H	492.051	6.125	Bottom	19.051	Min Temp %	27.000	3,878.227	0.127
+0.90D+1.60W+1.60H	499.774	6.186	Bottom	19.051	Min Temp %	27.000	3,878.227	0.129
+0.90D+1.60W+1.60H	507.296	6.248	Bottom	19.051	Min Temp %	27.000	3,878.227	0.131
+0.90D+1.60W+1.60H	514.615	6.309	Bottom	19.051	Min Temp %	27.000	3,878.227	0.133
+0.90D+1.60W+1.60H	521.731	6.370	Bottom	19.051	Min Temp %	27.000	3,878.227	0.135
+0.90D+1.60W+1.60H	528.644	6.431	Bottom	19.051	Min Temp %	27.000	3,878.227	0.136
+0.90D+1.60W+1.60H	535.353	6.493	Bottom	19.051	Min Temp %	27.000	3,878.227	0.138
+0.90D+1.60W+1.60H	541.857	6.554	Bottom	19.051	Min Temp %	27.000	3,878.227	0.140
+0.90D+1.60W+1.60H	548.156	6.615	Bottom	19.051	Min Temp %	27.000	3,878.227	0.141
+0.90D+1.60W+1.60H	554.249	6.676	Bottom	19.051	Min Temp %	27.000	3,878.227	0.143
+0.90D+1.60W+1.60H	560.136	6.738	Bottom	19.051	Min Temp %	27.000	3,878.227	0.144
+0.90D+1.60W+1.60H	565.816	6.799	Bottom	19.051	Min Temp %	27.000	3,878.227	0.146
+0.90D+1.60W+1.60H	571.288	6.860	Bottom	19.051	Min Temp %	27.000	3,878.227	0.147
+0.90D+1.60W+1.60H	576.553	6.921	Bottom	19.051	Min Temp %	27.000	3,878.227	0.149
+0.90D+1.60W+1.60H	581.608	6.983	Bottom	19.051	Min Temp %	27.000	3,878.227	0.150
+0.90D+1.60W+1.60H	586.454	7.044	Bottom	19.051	Min Temp %	27.000	3,878.227	0.151
+0.90D+1.60W+1.60H	591.091	7.105	Bottom	19.051	Min Temp %	27.000	3,878.227	0.152
+0.90D+1.60W+1.60H	595.517	7.166	Bottom	19.051	Min Temp %	27.000	3,878.227	0.154
+0.90D+1.60W+1.60H	599.732	7.228	Bottom	19.051	Min Temp %	27.000	3,878.227	0.155
+0.90D+1.60W+1.60H	603.735	7.289	Bottom	19.051	Min Temp %	27.000	3,878.227	0.156
+0.90D+1.60W+1.60H	607.527	7.350	Bottom	19.051	Min Temp %	27.000	3,878.227	0.157
+0.90D+1.60W+1.60H	611.105	7.411	Bottom	19.051	Min Temp %	27.000	3,878.227	0.158
+0.90D+1.60W+1.60H	614.470	7.473	Bottom	19.051	Min Temp %	27.000	3,878.227	0.158
+0.90D+1.60W+1.60H	617.622	7.534	Bottom	19.051	Min Temp %	27.000	3,878.227	0.159
+0.90D+1.60W+1.60H	620.558	7.595	Bottom	19.051	Min Temp %	27.000	3,878.227	0.160
+0.90D+1.60W+1.60H	759.920	7.656	Bottom	19.051	Min Temp %	27.000	3,878.227	0.196
+0.90D+1.60W+1.60H	762.426	7.718	Bottom	19.051	Min Temp %	27.000	3,878.227	0.197
+0.90D+1.60W+1.60H	764.716	7.779	Bottom	19.051	Min Temp %	27.000	3,878.227	0.197
+0.90D+1.60W+1.60H	766.789	7.840	Bottom	19.051	Min Temp %	27.000	3,878.227	0.198
+0.90D+1.60W+1.60H	768.645	7.901	Bottom	19.051	Min Temp %	27.000	3,878.227	0.198
+0.90D+1.60W+1.60H	770.283	7.963	Bottom	19.051	Min Temp %	27.000	3,878.227	0.199
+0.90D+1.60W+1.60H	771.702	8.024	Bottom	19.051	Min Temp %	27.000	3,878.227	0.199
+0.90D+1.60W+1.60H	772.902	8.085	Bottom	19.051	Min Temp %	27.000	3,878.227	0.199
+0.90D+1.60W+1.60H	773.883	8.146	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	774.643	8.208	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	775.182	8.269	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	775.500	8.330	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	775.596	8.391	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	775.469	8.452	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	775.119	8.514	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	774.545	8.575	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200

Combined Footing

Description : Refer to hand calculations for input loads.

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
+0.90D+1.60W+1.60H	773.747	8.636	Bottom	19.051	Min Temp %	27.000	3,878.227	0.200
+0.90D+1.60W+1.60H	772.724	8.698	Bottom	19.051	Min Temp %	27.000	3,878.227	0.199
+0.90D+1.60W+1.60H	771.476	8.759	Bottom	19.051	Min Temp %	27.000	3,878.227	0.199
+0.90D+1.60W+1.60H	770.001	8.820	Bottom	19.051	Min Temp %	27.000	3,878.227	0.199
+0.90D+1.60W+1.60H	768.300	8.881	Bottom	19.051	Min Temp %	27.000	3,878.227	0.198
+0.90D+1.60W+1.60H	766.372	8.942	Bottom	19.051	Min Temp %	27.000	3,878.227	0.198
+0.90D+1.60W+1.60H	764.215	9.004	Bottom	19.051	Min Temp %	27.000	3,878.227	0.197
+0.90D+1.60W+1.60H	761.831	9.065	Bottom	19.051	Min Temp %	27.000	3,878.227	0.196
+0.90D+1.60W+1.60H	759.217	9.126	Bottom	19.051	Min Temp %	27.000	3,878.227	0.196
+0.90D+1.60W+1.60H	756.374	9.187	Bottom	19.051	Min Temp %	27.000	3,878.227	0.195
+0.90D+1.60W+1.60H	753.301	9.249	Bottom	19.051	Min Temp %	27.000	3,878.227	0.194
+0.90D+1.60W+1.60H	749.997	9.310	Bottom	19.051	Min Temp %	27.000	3,878.227	0.193
+0.90D+1.60W+1.60H	746.461	9.371	Bottom	19.051	Min Temp %	27.000	3,878.227	0.192
+0.90D+1.60W+1.60H	742.709	9.432	Bottom	19.051	Min Temp %	27.000	3,878.227	0.192
+0.90D+1.60W+1.60H	738.927	9.494	Bottom	19.051	Min Temp %	27.000	3,878.227	0.191
+0.90D+1.60W+1.60H	735.173	9.555	Bottom	19.051	Min Temp %	27.000	3,878.227	0.190
+0.90D+1.60W+1.60H	731.448	9.616	Bottom	19.051	Min Temp %	27.000	3,878.227	0.189
+0.90D+1.60W+1.60H	727.749	9.677	Bottom	19.051	Min Temp %	27.000	3,878.227	0.188
+0.90D+1.60W+1.60H	724.077	9.739	Bottom	19.051	Min Temp %	27.000	3,878.227	0.187
+0.90D+1.60W+1.60H	720.432	9.800	Bottom	19.051	Min Temp %	27.000	3,878.227	0.186
+0.90D+1.60W+1.60H	716.811	9.861	Bottom	19.051	Min Temp %	27.000	3,878.227	0.185
+0.90D+1.60W+1.60H	713.216	9.922	Bottom	19.051	Min Temp %	27.000	3,878.227	0.184
+0.90D+1.60W+1.60H	709.644	9.984	Bottom	19.051	Min Temp %	27.000	3,878.227	0.183
+0.90D+1.60W+1.60H	706.097	10.045	Bottom	19.051	Min Temp %	27.000	3,878.227	0.182
+0.90D+1.60W+1.60H	702.572	10.106	Bottom	19.051	Min Temp %	27.000	3,878.227	0.181
+0.90D+1.60W+1.60H	699.070	10.168	Bottom	19.051	Min Temp %	27.000	3,878.227	0.180
+0.90D+1.60W+1.60H	695.590	10.229	Bottom	19.051	Min Temp %	27.000	3,878.227	0.179
+0.90D+1.60W+1.60H	692.132	10.290	Bottom	19.051	Min Temp %	27.000	3,878.227	0.178
+0.90D+1.60W+1.60H	688.694	10.351	Bottom	19.051	Min Temp %	27.000	3,878.227	0.178
+0.90D+1.60W+1.60H	685.277	10.413	Bottom	19.051	Min Temp %	27.000	3,878.227	0.177
+0.90D+1.60W+1.60H	681.879	10.474	Bottom	19.051	Min Temp %	27.000	3,878.227	0.176
+0.90D+1.60W+1.60H	678.500	10.535	Bottom	19.051	Min Temp %	27.000	3,878.227	0.175
+0.90D+1.60W+1.60H	675.140	10.596	Bottom	19.051	Min Temp %	27.000	3,878.227	0.174
+0.90D+1.60W+1.60H	671.797	10.658	Bottom	19.051	Min Temp %	27.000	3,878.227	0.173
+0.90D+1.60W+1.60H	668.472	10.719	Bottom	19.051	Min Temp %	27.000	3,878.227	0.172
+0.90D+1.60W+1.60H	665.164	10.780	Bottom	19.051	Min Temp %	27.000	3,878.227	0.172
+0.90D+1.60W+1.60H	661.872	10.841	Bottom	19.051	Min Temp %	27.000	3,878.227	0.171
+0.90D+1.60W+1.60H	658.595	10.903	Bottom	19.051	Min Temp %	27.000	3,878.227	0.170
+0.90D+1.60W+1.60H	655.334	10.964	Bottom	19.051	Min Temp %	27.000	3,878.227	0.169
+0.90D+1.60W+1.60H	652.087	11.025	Bottom	19.051	Min Temp %	27.000	3,878.227	0.168
+0.90D+1.60W+1.60H	648.854	11.086	Bottom	19.051	Min Temp %	27.000	3,878.227	0.167
+0.90D+1.60W+1.60H	645.634	11.148	Bottom	19.051	Min Temp %	27.000	3,878.227	0.166
+0.90D+1.60W+1.60H	642.426	11.209	Bottom	19.051	Min Temp %	27.000	3,878.227	0.166
+0.90D+1.60W+1.60H	639.231	11.270	Bottom	19.051	Min Temp %	27.000	3,878.227	0.165
+0.90D+1.60W+1.60H	636.048	11.331	Bottom	19.051	Min Temp %	27.000	3,878.227	0.164
+0.90D+1.60W+1.60H	632.875	11.393	Bottom	19.051	Min Temp %	27.000	3,878.227	0.163
+0.90D+1.60W+1.60H	629.713	11.454	Bottom	19.051	Min Temp %	27.000	3,878.227	0.162
+0.90D+1.60W+1.60H	626.560	11.515	Bottom	19.051	Min Temp %	27.000	3,878.227	0.162
+0.90D+1.60W+1.60H	623.417	11.576	Bottom	19.051	Min Temp %	27.000	3,878.227	0.161
+0.90D+1.60W+1.60H	620.282	11.638	Bottom	19.051	Min Temp %	27.000	3,878.227	0.160
+0.90D+1.60W+1.60H	617.156	11.699	Bottom	19.051	Min Temp %	27.000	3,878.227	0.159
+0.90D+1.60W+1.60H	614.037	11.760	Bottom	19.051	Min Temp %	27.000	3,878.227	0.158
+0.90D+1.60W+1.60H	610.925	11.821	Bottom	19.051	Min Temp %	27.000	3,878.227	0.158
+0.90D+1.60W+1.60H	607.819	11.883	Bottom	19.051	Min Temp %	27.000	3,878.227	0.157
+0.90D+1.60W+1.60H	604.718	11.944	Bottom	19.051	Min Temp %	27.000	3,878.227	0.156
+0.90D+1.60W+1.60H	601.623	12.005	Bottom	19.051	Min Temp %	27.000	3,878.227	0.155
+0.90D+1.60W+1.60H	598.533	12.066	Bottom	19.051	Min Temp %	27.000	3,878.227	0.154
+0.90D+1.60W+1.60H	595.447	12.128	Bottom	19.051	Min Temp %	27.000	3,878.227	0.154
+0.90D+1.60W+1.60H	592.364	12.189	Bottom	19.051	Min Temp %	27.000	3,878.227	0.153
+0.90D+1.60W+1.60H	589.284	12.250	Bottom	19.051	Min Temp %	27.000	3,878.227	0.152
+0.90D+1.60W+1.60H	586.206	12.311	Bottom	19.051	Min Temp %	27.000	3,878.227	0.151
+0.90D+1.60W+1.60H	583.129	12.373	Bottom	19.051	Min Temp %	27.000	3,878.227	0.150
+0.90D+1.60W+1.60H	580.054	12.434	Bottom	19.051	Min Temp %	27.000	3,878.227	0.150
+0.90D+1.60W+1.60H	576.980	12.495	Bottom	19.051	Min Temp %	27.000	3,878.227	0.149

Combined Footing

Description : Refer to hand calculations for input loads.

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
+0.90D+1.60W+1.60H	573.905	12.556	Bottom	19.051	Min Temp %	27.000	3,878.227	0.148
+0.90D+1.60W+1.60H	570.830	12.618	Bottom	19.051	Min Temp %	27.000	3,878.227	0.147
+0.90D+1.60W+1.60H	567.753	12.679	Bottom	19.051	Min Temp %	27.000	3,878.227	0.146
+0.90D+1.60W+1.60H	564.675	12.740	Bottom	19.051	Min Temp %	27.000	3,878.227	0.146
+0.90D+1.60W+1.60H	561.594	12.801	Bottom	19.051	Min Temp %	27.000	3,878.227	0.145
+0.90D+1.60W+1.60H	558.511	12.863	Bottom	19.051	Min Temp %	27.000	3,878.227	0.144
+0.90D+1.60W+1.60H	555.423	12.924	Bottom	19.051	Min Temp %	27.000	3,878.227	0.143
+0.90D+1.60W+1.60H	552.332	12.985	Bottom	19.051	Min Temp %	27.000	3,878.227	0.142
+0.90D+1.60W+1.60H	549.236	13.046	Bottom	19.051	Min Temp %	27.000	3,878.227	0.142
+0.90D+1.60W+1.60H	546.135	13.108	Bottom	19.051	Min Temp %	27.000	3,878.227	0.141
+0.90D+1.60W+1.60H	543.028	13.169	Bottom	19.051	Min Temp %	27.000	3,878.227	0.140
+0.90D+1.60W+1.60H	539.914	13.230	Bottom	19.051	Min Temp %	27.000	3,878.227	0.139
+0.90D+1.60W+1.60H	536.794	13.291	Bottom	19.051	Min Temp %	27.000	3,878.227	0.138
+0.90D+1.60W+1.60H	533.666	13.353	Bottom	19.051	Min Temp %	27.000	3,878.227	0.138
+0.90D+1.60W+1.60H	530.529	13.414	Bottom	19.051	Min Temp %	27.000	3,878.227	0.137
+0.90D+1.60W+1.60H	527.384	13.475	Bottom	19.051	Min Temp %	27.000	3,878.227	0.136
+0.90D+1.60W+1.60H	524.230	13.536	Bottom	19.051	Min Temp %	27.000	3,878.227	0.135
+0.90D+1.60W+1.60H	521.065	13.598	Bottom	19.051	Min Temp %	27.000	3,878.227	0.134
+0.90D+1.60W+1.60H	517.890	13.659	Bottom	19.051	Min Temp %	27.000	3,878.227	0.134
+0.90D+1.60W+1.60H	514.705	13.720	Bottom	19.051	Min Temp %	27.000	3,878.227	0.133
+0.90D+1.60W+1.60H	511.507	13.781	Bottom	19.051	Min Temp %	27.000	3,878.227	0.132
+0.90D+1.60W+1.60H	508.297	13.843	Bottom	19.051	Min Temp %	27.000	3,878.227	0.131
+0.90D+1.60W+1.60H	505.075	13.904	Bottom	19.051	Min Temp %	27.000	3,878.227	0.130
+0.90D+1.60W+1.60H	501.839	13.965	Bottom	19.051	Min Temp %	27.000	3,878.227	0.129
+0.90D+1.60W+1.60H	498.589	14.026	Bottom	19.051	Min Temp %	27.000	3,878.227	0.129
+0.90D+1.60W+1.60H	495.324	14.088	Bottom	19.051	Min Temp %	27.000	3,878.227	0.128
+0.90D+1.60W+1.60H	492.045	14.149	Bottom	19.051	Min Temp %	27.000	3,878.227	0.127
+0.90D+1.60W+1.60H	488.749	14.210	Bottom	19.051	Min Temp %	27.000	3,878.227	0.126
+0.90D+1.60W+1.60H	485.438	14.271	Bottom	19.051	Min Temp %	27.000	3,878.227	0.125
+0.90D+1.60W+1.60H	482.109	14.333	Bottom	19.051	Min Temp %	27.000	3,878.227	0.124
+0.90D+1.60W+1.60H	478.763	14.394	Bottom	19.051	Min Temp %	27.000	3,878.227	0.123
+0.90D+1.60W+1.60H	475.399	14.455	Bottom	19.051	Min Temp %	27.000	3,878.227	0.123
+0.90D+1.60W+1.60H	472.016	14.516	Bottom	19.051	Min Temp %	27.000	3,878.227	0.122
+0.90D+1.60W+1.60H	468.615	14.578	Bottom	19.051	Min Temp %	27.000	3,878.227	0.121
+0.90D+1.60W+1.60H	465.193	14.639	Bottom	19.051	Min Temp %	27.000	3,878.227	0.120
+0.90D+1.60W+1.60H	461.751	14.700	Bottom	19.051	Min Temp %	27.000	3,878.227	0.119
+0.90D+1.60W+1.60H	458.288	14.761	Bottom	19.051	Min Temp %	27.000	3,878.227	0.118
+0.90D+1.60W+1.60H	454.804	14.823	Bottom	19.051	Min Temp %	27.000	3,878.227	0.117
+0.90D+1.60W+1.60H	451.298	14.884	Bottom	19.051	Min Temp %	27.000	3,878.227	0.116
+0.90D+1.60W+1.60H	447.769	14.945	Bottom	19.051	Min Temp %	27.000	3,878.227	0.115
+0.90D+1.60W+1.60H	444.216	15.006	Bottom	19.051	Min Temp %	27.000	3,878.227	0.115
+0.90D+1.60W+1.60H	440.640	15.068	Bottom	19.051	Min Temp %	27.000	3,878.227	0.114
+0.90D+1.60W+1.60H	437.039	15.129	Bottom	19.051	Min Temp %	27.000	3,878.227	0.113
+0.90D+1.60W+1.60H	433.414	15.190	Bottom	19.051	Min Temp %	27.000	3,878.227	0.112
+0.90D+1.60W+1.60H	429.763	15.251	Bottom	19.051	Min Temp %	27.000	3,878.227	0.111
+0.90D+1.60W+1.60H	426.086	15.313	Bottom	19.051	Min Temp %	27.000	3,878.227	0.110
+0.90D+1.60W+1.60H	422.382	15.374	Bottom	19.051	Min Temp %	27.000	3,878.227	0.109
+0.90D+1.60W+1.60H	418.650	15.435	Bottom	19.051	Min Temp %	27.000	3,878.227	0.108
+0.90D+1.60W+1.60H	414.891	15.496	Bottom	19.051	Min Temp %	27.000	3,878.227	0.107
+0.90D+1.60W+1.60H	411.104	15.558	Bottom	19.051	Min Temp %	27.000	3,878.227	0.106
+0.90D+1.60W+1.60H	407.287	15.619	Bottom	19.051	Min Temp %	27.000	3,878.227	0.105
+0.90D+1.60W+1.60H	403.441	15.680	Bottom	19.051	Min Temp %	27.000	3,878.227	0.104
+0.90D+1.60W+1.60H	399.564	15.741	Bottom	19.051	Min Temp %	27.000	3,878.227	0.103
+0.90D+1.60W+1.60H	395.657	15.803	Bottom	19.051	Min Temp %	27.000	3,878.227	0.102
+0.90D+1.60W+1.60H	391.718	15.864	Bottom	19.051	Min Temp %	27.000	3,878.227	0.101
+0.90D+1.60W+1.60H	387.748	15.925	Bottom	19.051	Min Temp %	27.000	3,878.227	0.100
+0.90D+1.60W+1.60H	383.744	15.986	Bottom	19.051	Min Temp %	27.000	3,878.227	0.099
+0.90D+1.60W+1.60H	379.708	16.048	Bottom	19.051	Min Temp %	27.000	3,878.227	0.098
+0.90D+1.60W+1.60H	375.638	16.109	Bottom	19.051	Min Temp %	27.000	3,878.227	0.097
+0.90D+1.60W+1.60H	371.534	16.170	Bottom	19.051	Min Temp %	27.000	3,878.227	0.096
+0.90D+1.60W+1.60H	367.395	16.231	Bottom	19.051	Min Temp %	27.000	3,878.227	0.095
+0.90D+1.60W+1.60H	363.221	16.293	Bottom	19.051	Min Temp %	27.000	3,878.227	0.094
+0.90D+1.60W+1.60H	359.011	16.354	Bottom	19.051	Min Temp %	27.000	3,878.227	0.093
+0.90D+1.60W+1.60H	354.764	16.415	Bottom	19.051	Min Temp %	27.000	3,878.227	0.091

Combined Footing

Description : Refer to hand calculations for input loads.

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
+0.90D+1.60W+1.60H	350.479	16.476	Bottom	19.051	Min Temp %	27.000	3,878.227	0.090
+0.90D+1.60W+1.60H	346.158	16.538	Bottom	19.051	Min Temp %	27.000	3,878.227	0.089
+0.90D+1.60W+1.60H	341.797	16.599	Bottom	19.051	Min Temp %	27.000	3,878.227	0.088
+0.90D+1.60W+1.60H	337.398	16.660	Bottom	19.051	Min Temp %	27.000	3,878.227	0.087
+0.90D+1.60W+1.60H	332.960	16.721	Bottom	19.051	Min Temp %	27.000	3,878.227	0.086
+0.90D+1.60W+1.60H	328.481	16.783	Bottom	19.051	Min Temp %	27.000	3,878.227	0.085
+0.90D+1.60W+1.60H	323.962	16.844	Bottom	19.051	Min Temp %	27.000	3,878.227	0.084
+0.90D+1.60W+1.60H	319.401	16.905	Bottom	19.051	Min Temp %	27.000	3,878.227	0.082
+0.90D+1.60W+1.60H	314.799	16.966	Bottom	19.051	Min Temp %	27.000	3,878.227	0.081
+0.90D+1.60W+1.60H	310.155	17.028	Bottom	19.051	Min Temp %	27.000	3,878.227	0.080
+0.90D+1.60W+1.60H	305.467	17.089	Bottom	19.051	Min Temp %	27.000	3,878.227	0.079
+0.90D+1.60W+1.60H	300.736	17.150	Bottom	19.051	Min Temp %	27.000	3,878.227	0.078
+0.90D+1.60W+1.60H	295.961	17.211	Bottom	19.051	Min Temp %	27.000	3,878.227	0.076
+0.90D+1.60W+1.60H	291.141	17.273	Bottom	19.051	Min Temp %	27.000	3,878.227	0.075
+0.90D+1.60W+1.60H	286.276	17.334	Bottom	19.051	Min Temp %	27.000	3,878.227	0.074
+0.90D+1.60W+1.60H	281.364	17.395	Bottom	19.051	Min Temp %	27.000	3,878.227	0.073
+0.90D+1.60W+1.60H	276.407	17.456	Bottom	19.051	Min Temp %	27.000	3,878.227	0.071
+0.90D+1.60W+1.60H	271.403	17.518	Bottom	19.051	Min Temp %	27.000	3,878.227	0.070
+0.90D+1.60W+1.60H	266.350	17.579	Bottom	19.051	Min Temp %	27.000	3,878.227	0.069
+0.90D+1.60W+1.60H	261.250	17.640	Bottom	19.051	Min Temp %	27.000	3,878.227	0.067
+0.90D+1.60W+1.60H	256.101	17.701	Bottom	19.051	Min Temp %	27.000	3,878.227	0.066
+0.90D+1.60W+1.60H	250.903	17.763	Bottom	19.051	Min Temp %	27.000	3,878.227	0.065
+0.90D+1.60W+1.60H	245.655	17.824	Bottom	19.051	Min Temp %	27.000	3,878.227	0.063
+0.90D+1.60W+1.60H	240.356	17.885	Bottom	19.051	Min Temp %	27.000	3,878.227	0.062
+0.90D+1.60W+1.60H	235.006	17.946	Bottom	19.051	Min Temp %	27.000	3,878.227	0.061
+0.90D+1.60W+1.60H	229.605	18.008	Bottom	19.051	Min Temp %	27.000	3,878.227	0.059
+0.90D+1.60W+1.60H	224.151	18.069	Bottom	19.051	Min Temp %	27.000	3,878.227	0.058
+0.90D+1.60W+1.60H	218.644	18.130	Bottom	19.051	Min Temp %	27.000	3,878.227	0.056
+0.90D+1.60W+1.60H	213.085	18.191	Bottom	19.051	Min Temp %	27.000	3,878.227	0.055
+0.90D+1.60W+1.60H	207.471	18.253	Bottom	19.051	Min Temp %	27.000	3,878.227	0.053
+0.90D+1.60W+1.60H	201.802	18.314	Bottom	19.051	Min Temp %	27.000	3,878.227	0.052
+0.90D+1.60W+1.60H	196.079	18.375	Bottom	19.051	Min Temp %	27.000	3,878.227	0.051
+0.90D+1.60W+1.60H	190.300	18.436	Bottom	19.051	Min Temp %	27.000	3,878.227	0.049
+0.90D+1.60W+1.60H	184.464	18.498	Bottom	19.051	Min Temp %	27.000	3,878.227	0.048
+0.90D+1.60W+1.60H	178.572	18.559	Bottom	19.051	Min Temp %	27.000	3,878.227	0.046
+0.90D+1.60W+1.60H	172.622	18.620	Bottom	19.051	Min Temp %	27.000	3,878.227	0.045
+0.90D+1.60W+1.60H	166.614	18.681	Bottom	19.051	Min Temp %	27.000	3,878.227	0.043
+0.90D+1.60W+1.60H	160.547	18.743	Bottom	19.051	Min Temp %	27.000	3,878.227	0.041
+0.90D+1.60W+1.60H	154.422	18.804	Bottom	19.051	Min Temp %	27.000	3,878.227	0.040
+0.90D+1.60W+1.60H	148.236	18.865	Bottom	19.051	Min Temp %	27.000	3,878.227	0.038
+0.90D+1.60W+1.60H	141.991	18.926	Bottom	19.051	Min Temp %	27.000	3,878.227	0.037
+0.90D+1.60W+1.60H	135.684	18.988	Bottom	19.051	Min Temp %	27.000	3,878.227	0.035
+0.90D+1.60W+1.60H	129.316	19.049	Bottom	19.051	Min Temp %	27.000	3,878.227	0.033
+0.90D+1.60W+1.60H	122.886	19.110	Bottom	19.051	Min Temp %	27.000	3,878.227	0.032
+0.90D+1.60W+1.60H	116.393	19.171	Bottom	19.051	Min Temp %	27.000	3,878.227	0.030
+0.90D+1.60W+1.60H	109.836	19.233	Bottom	19.051	Min Temp %	27.000	3,878.227	0.028
+0.90D+1.60W+1.60H	103.216	19.294	Bottom	19.051	Min Temp %	27.000	3,878.227	0.027
+0.90D+1.60W+1.60H	96.532	19.355	Bottom	19.051	Min Temp %	27.000	3,878.227	0.025
+0.90D+1.60W+1.60H	89.783	19.416	Bottom	19.051	Min Temp %	27.000	3,878.227	0.023
+0.90D+1.60W+1.60H	82.968	19.478	Bottom	19.051	Min Temp %	27.000	3,878.227	0.021
+0.90D+1.60W+1.60H	76.087	19.539	Bottom	19.051	Min Temp %	27.000	3,878.227	0.020
+0.90D+1.60W+1.60H	69.139	19.600	Bottom	19.051	Min Temp %	27.000	3,878.227	0.018
+0.90D+1.60W+1.60H	62.124	19.661	Bottom	19.051	Min Temp %	27.000	3,878.227	0.016
+0.90D+1.60W+1.60H	55.041	19.723	Bottom	19.051	Min Temp %	27.000	3,878.227	0.014
+0.90D+1.60W+1.60H	47.980	19.784	Bottom	19.051	Min Temp %	27.000	3,878.227	0.012
+0.90D+1.60W+1.60H	41.068	19.845	Bottom	19.051	Min Temp %	27.000	3,878.227	0.011
+0.90D+1.60W+1.60H	34.304	19.906	Bottom	19.051	Min Temp %	27.000	3,878.227	0.009
+0.90D+1.60W+1.60H	27.688	19.968	Bottom	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-21.470	20.029	Top	19.051	Min Temp %	27.000	3,878.227	0.006
+1.20D+0.50Lr+0.50L+1.60W	-27.004	20.090	Top	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-32.383	20.151	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-37.609	20.213	Top	19.051	Min Temp %	27.000	3,878.227	0.010
+1.20D+0.50Lr+0.50L+1.60W	-42.682	20.274	Top	19.051	Min Temp %	27.000	3,878.227	0.011
+1.20D+0.50Lr+0.50L+1.60W	-47.603	20.335	Top	19.051	Min Temp %	27.000	3,878.227	0.012

Combined Footing

Description : Refer to hand calculations for input loads.

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
+1.20D+0.50Lr+0.50L+1.60W	-52.372	20.396	Top	19.051	Min Temp %	27.000	3,878.227	0.014
+1.20D+0.50Lr+0.50L+1.60W	-56.990	20.458	Top	19.051	Min Temp %	27.000	3,878.227	0.015
+1.20D+0.50Lr+0.50L+1.60W	-61.456	20.519	Top	19.051	Min Temp %	27.000	3,878.227	0.016
+1.20D+0.50Lr+0.50L+1.60W	-65.773	20.580	Top	19.051	Min Temp %	27.000	3,878.227	0.017
+1.20D+0.50Lr+0.50L+1.60W	-69.939	20.641	Top	19.051	Min Temp %	27.000	3,878.227	0.018
+1.20D+0.50Lr+0.50L+1.60W	-73.957	20.703	Top	19.051	Min Temp %	27.000	3,878.227	0.019
+1.20D+0.50Lr+0.50L+1.60W	-77.825	20.764	Top	19.051	Min Temp %	27.000	3,878.227	0.020
+1.20D+0.50Lr+0.50L+1.60W	-81.546	20.825	Top	19.051	Min Temp %	27.000	3,878.227	0.021
+1.20D+0.50Lr+0.50L+1.60W	-85.119	20.886	Top	19.051	Min Temp %	27.000	3,878.227	0.022
+1.20D+0.50Lr+0.50L+1.60W	-88.544	20.948	Top	19.051	Min Temp %	27.000	3,878.227	0.023
+1.20D+0.50Lr+0.50L+1.60W	-91.824	21.009	Top	19.051	Min Temp %	27.000	3,878.227	0.024
+1.20D+0.50Lr+0.50L+1.60W	-94.957	21.070	Top	19.051	Min Temp %	27.000	3,878.227	0.024
+1.20D+0.50Lr+0.50L+1.60W	-97.944	21.131	Top	19.051	Min Temp %	27.000	3,878.227	0.025
+1.20D+0.50Lr+0.50L+1.60W	-100.786	21.193	Top	19.051	Min Temp %	27.000	3,878.227	0.026
+1.20D+0.50Lr+0.50L+1.60W	-103.484	21.254	Top	19.051	Min Temp %	27.000	3,878.227	0.027
+1.20D+0.50Lr+0.50L+1.60W	-106.038	21.315	Top	19.051	Min Temp %	27.000	3,878.227	0.027
+1.20D+0.50Lr+0.50L+1.60W	-108.449	21.376	Top	19.051	Min Temp %	27.000	3,878.227	0.028
+1.20D+0.50Lr+0.50L+1.60W	-110.716	21.438	Top	19.051	Min Temp %	27.000	3,878.227	0.029
+1.20D+0.50Lr+0.50L+1.60W	-112.841	21.499	Top	19.051	Min Temp %	27.000	3,878.227	0.029
+1.20D+0.50Lr+0.50L+1.60W	-18.505	21.560	Top	19.051	Min Temp %	27.000	3,878.227	0.005
+1.20D+0.50Lr+0.50L+1.60W	-20.347	21.621	Top	19.051	Min Temp %	27.000	3,878.227	0.005
+1.20D+0.50Lr+0.50L+1.60W	-22.048	21.683	Top	19.051	Min Temp %	27.000	3,878.227	0.006
+1.20D+0.50Lr+0.50L+1.60W	-23.609	21.744	Top	19.051	Min Temp %	27.000	3,878.227	0.006
+1.20D+0.50Lr+0.50L+1.60W	-25.030	21.805	Top	19.051	Min Temp %	27.000	3,878.227	0.006
+1.20D+0.50Lr+0.50L+1.60W	-26.312	21.866	Top	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-27.455	21.928	Top	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-28.460	21.989	Top	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-29.327	22.050	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-30.057	22.111	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-30.651	22.173	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-31.108	22.234	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-31.430	22.295	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-31.617	22.356	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-31.670	22.418	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-31.588	22.479	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-31.373	22.540	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-31.025	22.601	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-30.545	22.663	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-29.933	22.724	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-29.189	22.785	Top	19.051	Min Temp %	27.000	3,878.227	0.008
+1.20D+0.50Lr+0.50L+1.60W	-28.315	22.846	Top	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-27.310	22.908	Top	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-26.176	22.969	Top	19.051	Min Temp %	27.000	3,878.227	0.007
+1.20D+0.50Lr+0.50L+1.60W	-24.912	23.030	Top	19.051	Min Temp %	27.000	3,878.227	0.006
+1.20D+0.50Lr+0.50L+1.60W	-23.520	23.091	Top	19.051	Min Temp %	27.000	3,878.227	0.006
+1.20D+0.50Lr+0.50L+1.60W	-22.000	23.153	Top	19.051	Min Temp %	27.000	3,878.227	0.006
+1.20D+0.50Lr+0.50L+1.60W	-20.352	23.214	Top	19.051	Min Temp %	27.000	3,878.227	0.005
+1.20D+0.50Lr+0.50L+1.60W	-18.577	23.275	Top	19.051	Min Temp %	27.000	3,878.227	0.005
+1.20D+0.50Lr+0.50L+1.60W	-16.792	23.336	Top	19.051	Min Temp %	27.000	3,878.227	0.004
+1.20D+0.50Lr+0.50L+1.60W	-15.094	23.398	Top	19.051	Min Temp %	27.000	3,878.227	0.004
+1.20D+0.50Lr+0.50L+1.60W	-13.483	23.459	Top	19.051	Min Temp %	27.000	3,878.227	0.003
+1.20D+0.50Lr+0.50L+1.60W	-11.961	23.520	Top	19.051	Min Temp %	27.000	3,878.227	0.003
+1.20D+0.50Lr+0.50L+1.60W	-10.527	23.581	Top	19.051	Min Temp %	27.000	3,878.227	0.003
+1.20D+0.50Lr+0.50L+1.60W	-9.182	23.643	Top	19.051	Min Temp %	27.000	3,878.227	0.002
+1.20D+0.50Lr+0.50L+1.60W	-7.927	23.704	Top	19.051	Min Temp %	27.000	3,878.227	0.002
+1.20D+0.50Lr+0.50L+1.60W	-6.762	23.765	Top	19.051	Min Temp %	27.000	3,878.227	0.002
+1.20D+0.50Lr+0.50L+1.60W	-5.688	23.826	Top	19.051	Min Temp %	27.000	3,878.227	0.001
+1.20D+0.50Lr+0.50L+1.60W	-4.706	23.888	Top	19.051	Min Temp %	27.000	3,878.227	0.001
+1.20D+0.50Lr+0.50L+1.60W	-3.815	23.949	Top	19.051	Min Temp %	27.000	3,878.227	0.001
+1.20D+0.50Lr+0.50L+1.60W	-3.016	24.010	Top	19.051	Min Temp %	27.000	3,878.227	0.001
+1.20D+0.50Lr+0.50L+1.60W	-2.310	24.071	Top	19.051	Min Temp %	27.000	3,878.227	0.001
+1.20D+0.50Lr+0.50L+1.60W	-1.698	24.133	Top	19.051	Min Temp %	27.000	3,878.227	0.000
+1.20D+0.50Lr+0.50L+1.60W	-1.179	24.194	Top	19.051	Min Temp %	27.000	3,878.227	0.000
+1.20D+0.50Lr+0.50L+1.60W	-0.755	24.255	Top	19.051	Min Temp %	27.000	3,878.227	0.000

Combined Footing

Description : Refer to hand calculations for input loads.

Footing Flexure - Maximum Values for Load Combination

Load Combination...	Mu	Distance from left	Tension Side	As Req'd	Governed by	Actual As	Phi*Mn	Mu / PhiMn
+1.20D+0.50Lr+0.50L+1.60W	-0.424	24.316	Top	19.051	Min Temp %	27.000	3,878.227	0.000
+1.20D+0.50Lr+0.50L+1.60W	-0.189	24.378	Top	19.051	Min Temp %	27.000	3,878.227	0.000
+1.20D+0.50Lr+0.50L+1.60W	-0.047	24.439	Top	19.051	Min Temp %	27.000	3,878.227	0.000
+1.20D+0.50Lr+0.50L+1.60W	0.000	24.500	0	0.000	0	0.000	0.000	0.000

	One Way Shear			Punching Shear		
Load Combination...	Phi Vn	vu @ Col #1	vu @ Col #2	Phi Vn	vu @ Col #1	vu @ Col #2
+1.40D	82.16 psi	1.00 psi	0.18 psi	164.32 psi	1.65 psi	1.76 psi
+1.20D+0.50Lr+1.60L+1.60H	82.16 psi	0.86 psi	0.15 psi	164.32 psi	1.42 psi	1.51 psi
+1.20D+1.60L+0.50S+1.60H	82.16 psi	0.86 psi	0.15 psi	164.32 psi	1.42 psi	1.51 psi
+1.20D+1.60Lr+0.50L	82.16 psi	0.86 psi	0.15 psi	164.32 psi	1.42 psi	1.51 psi
+1.20D+1.60Lr+0.80W	82.16 psi	4.64 psi	3.63 psi	164.32 psi	11.62 psi	14.26 psi
+1.20D+0.50L+1.60S	82.16 psi	0.86 psi	0.15 psi	164.32 psi	1.42 psi	1.51 psi
+1.20D+1.60S+0.80W	82.16 psi	4.64 psi	3.63 psi	164.32 psi	11.62 psi	14.26 psi
+1.20D+0.50Lr+0.50L+1.60W	82.16 psi	8.62 psi	7.41 psi	164.32 psi	21.83 psi	27.00 psi
+1.20D+0.50L+0.50S+1.60W	82.16 psi	8.62 psi	7.41 psi	164.32 psi	21.83 psi	27.00 psi
+1.20D+0.50L+0.20S+E	82.16 psi	0.86 psi	0.15 psi	164.32 psi	1.42 psi	1.51 psi
+0.90D+1.60W+1.60H	82.16 psi	8.89 psi	7.80 psi	164.32 psi	21.47 psi	26.46 psi
+0.90D+E+1.60H	82.16 psi	0.64 psi	0.11 psi	164.32 psi	1.06 psi	1.13 psi

Concrete Column

Description : Check concrete pier part of foundation - worst case reactions are from loading with maximum ice & no wind

Code References

Calculations per ACI 318-05, IBC 2006, CBC 2007, ASCE 7-05
Load Combinations Used : ASCE 7-05

General Information

f'c : Concrete 28 day strength	=	3.0 ksi
E =	=	3,122.0 ksi
Density	=	145.0 pcf
β	=	0.850
fy - Main Rebar	=	60.0 ksi
E - Main Rebar	=	29,000.0 ksi
Allow. Reinforcing Limits		*ASTM A615 Bars Used*
Min. Reinf.	=	1.0 %
Max. Reinf.	=	8.0 %

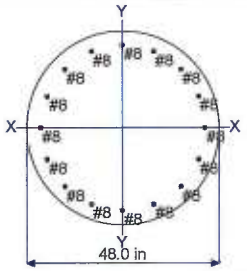
Load Combination : ASCE 7-05

Overall Column Height = 4.0 ft
End Fixity Top Free, Bottom Fixed
Brace condition for deflection (buckling) along columns :
X-X (width) axis :
Unbraced Length for X-X Axis buckling = 4.0 ft, K = 0.80
Y-Y (depth) axis :
Unbraced Length for X-X Axis buckling = 4.0 ft, K = 0.80

Column Cross Section

Column Dimensions : 48.0in Diameter, Column Edge to Rebar Edge Cover = 3.0in

Column Reinforcing : 16.0 - #8 bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included : 7,288.50 lbs * Dead Load Factor
AXIAL LOADS . . .
Axial Load at 4.0 ft above base, D = 12.90, W = 138.0 k
BENDING LOADS . . .
Lat. Point Load at 0.0 ft creating Mx-x, W = 12.90 k

DESIGN SUMMARY

Load Combination +1.20D+0.50Lr+0.50L+1.60W
Location of max.above base 3.973 ft

Maximum Stress Ratio **0.077 : 1**
Ratio = (Pu^2+Mu^2)^.5 / (PhiPn^2+PhiMn^2)^.5

Pu =	245.026 k	φ * Pn =	3,177.62 k
Mu-x =	0.0 k-ft	φ * Mn-x =	0.0 k-ft
Mu-y =	0.0 k-ft	φ * Mn-y =	0.0 k-ft
Mu Angle =	0.0 deg		
Mu at Angle =	0.0 k-ft	φMn at Angle =	0.0 k-ft

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Column Capacities . . .

Pnmax : Nominal Max. Compressive Axial Capacity	5,340.54 k
Pnmin : Nominal Min. Tension Axial Capacity	-758.40 k
φ Pn, max : Usable Compressive Axial Capacity	3,177.62 k
φ Pn, min : Usable Tension Axial Capacity	-530.88 k

Maximum SERVICE Load Reactions . .

Top along Y-Y	0.0 k	Bottom along Y-Y	0.0 k
Top along X-X	0.0 k	Bottom along X-X	0.0 k

Maximum SERVICE Load Deflections . . .

Along Y-Y 0.0 in at 0.0 ft above base
for load combination :
Along X-X 0.0 in at 0.0 ft above base
for load combination :

General Section Information . φ = 0.70 β = 0.850 θ = 0.850

ρ : % Reinforcing	0.6985 % Rebar < Min of 1.0 %
Reinforcing Area	12.640 in^2
Concrete Area	1,809.56 in^2

Concrete Column

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ENERCALC, INC. 1983-2014, Build:6.14.1.26, Ver:6.14.1.26

Lic. # : KW-06008663 — Licensee : ENVIROBUSINESS, INC.

Description : Check concrete pier part of foundation - worst case reactions are from loading with maximum ice & no wind

Governing Load Combination Results

Governing Factored Load Combination	Moment Source X-X	Moment Source Y-Y	Dist. from base ft	Axial Load k Pu	φ*Pn	δx	δx*Mux	δy	δy*Muy	Bending Analysis k-ft Alpha (deg)	δ Mu	φ Mn	Utilization Ratio
+1.40D			3.97	28.26	3,177.62					0.000			0.009
+1.20D+0.50Lr+1.60L+1.60H			3.97	24.23	3,177.62					0.000			0.008
+1.20D+1.60L+0.50S+1.60H			3.97	24.23	3,177.62					0.000			0.008
+1.20D+1.60Lr+0.50L			3.97	24.23	3,177.62					0.000			0.008
+1.20D+1.60Lr+0.80W			3.97	134.63	3,177.62					0.000			0.042
+1.20D+0.50L+1.60S			3.97	24.23	3,177.62					0.000			0.008
+1.20D+1.60S+0.80W			3.97	134.63	3,177.62					0.000			0.042
+1.20D+0.50Lr+0.50L+1.60W			3.97	245.03	3,177.62					0.000			0.077
+1.20D+0.50L+0.50S+1.60W			3.97	245.03	3,177.62					0.000			0.077
+1.20D+0.50L+0.20S+E			3.97	24.23	3,177.62					0.000			0.008
+0.90D+1.60W+1.60H			3.97	238.97	3,177.62					0.000			0.075
+0.90D+E+1.60H			3.97	18.17	3,177.62					0.000			0.006

Maximum Reactions - Unfactored

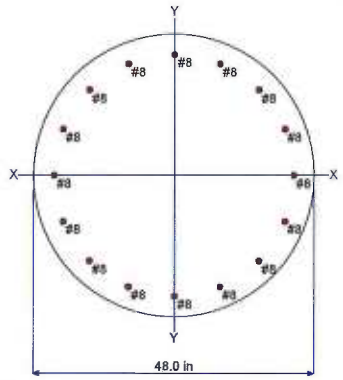
Note: Only non-zero reactions are listed.

Load Combination	Reaction along X-X Axis @ Base	Reaction along X-X Axis @ Top	Reaction along Y-Y Axis @ Base	Reaction along Y-Y Axis @ Top	Axial Reaction @ Base
D Only	k		k		20.188 k
W Only	k		k		138.000 k
D+W	k		k		158.188 k

Maximum Deflections for Load Combinations - Unfactored Loads

Load Combination	Max. X-X Deflection		Distance		Max. Y-Y Deflection		Distance	
D Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
W Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
D+W	0.0000	in	0.000	ft	0.000	in	0.000	ft

Sketches



Looking along X-X Axis

Looking along Y-Y Axis

Interaction Diagrams

Concrete Column

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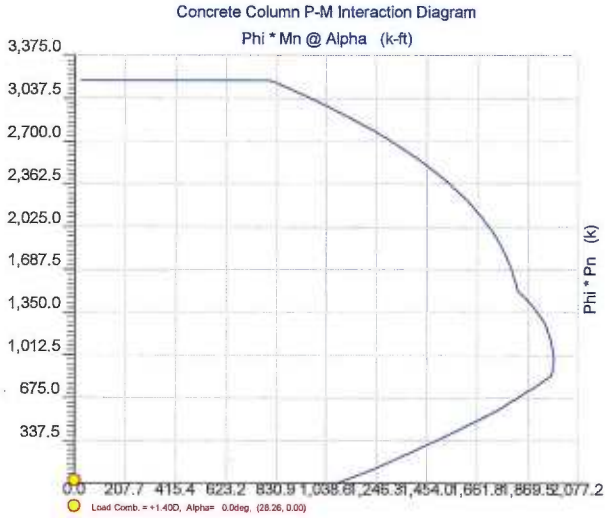
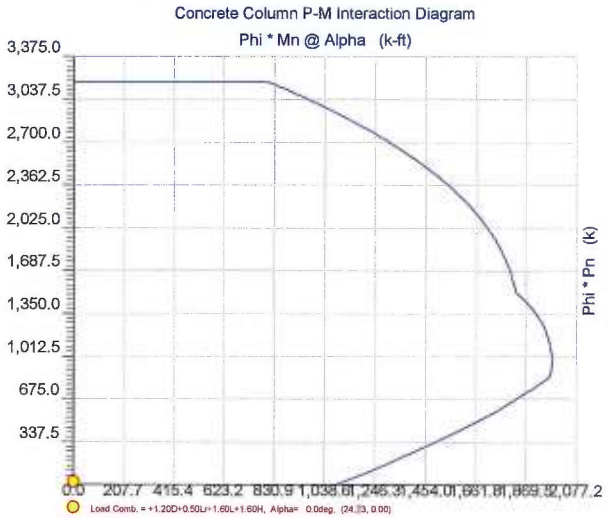
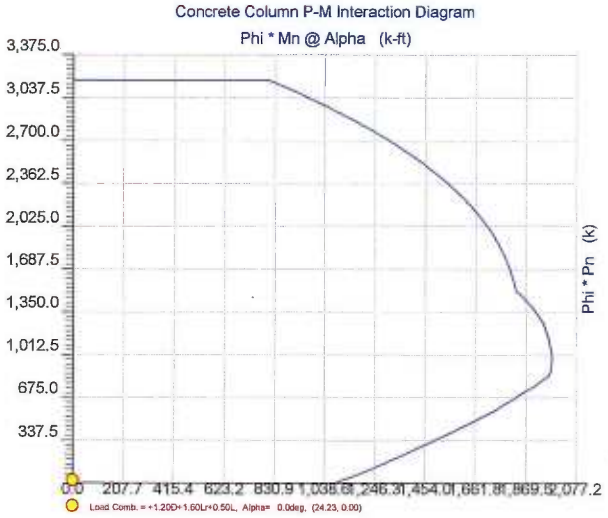
ENERCALC, INC. 1983-2014, Build:6.14.1.26, Ver:6.14.1.26

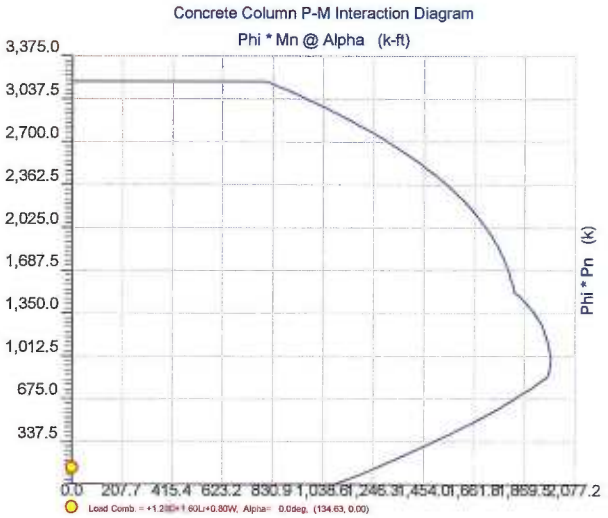
Lic. # : KW-06008663 — Licensee : ENVIROBUSINESS, INC.

Description : Check concrete pier part of foundation - worst case reactions are from loading with maximum ice & no wind









Concrete Column

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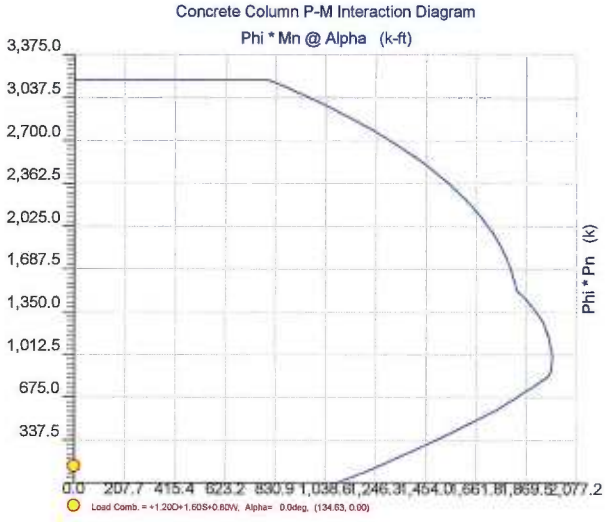
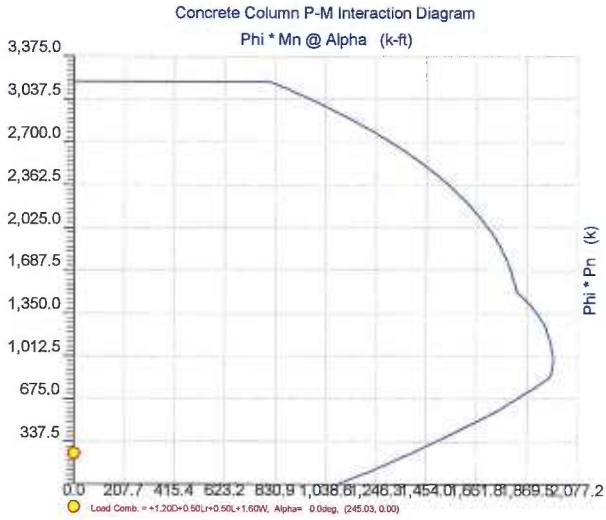
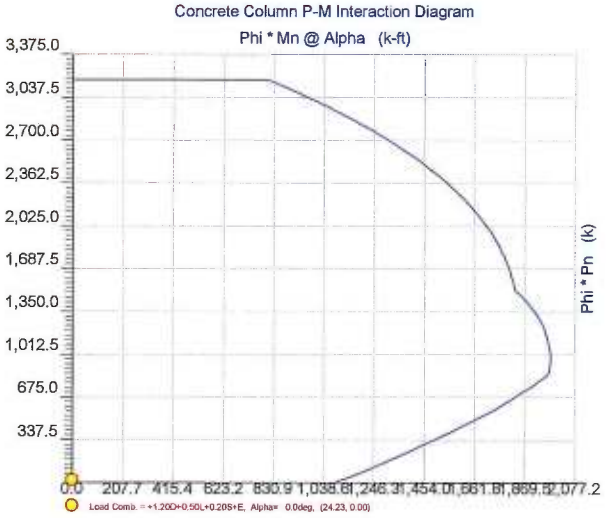
ENERCALC, INC. 1983-2014, Build:6.14.1.26, Ver:6.14.1.26

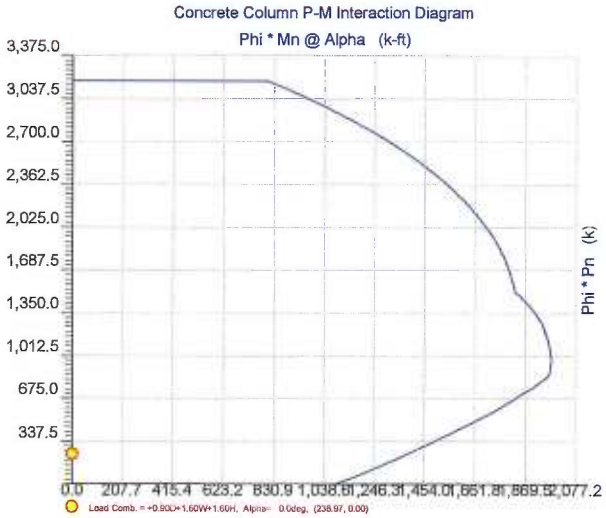
Lic. # : KW-06008663 — Licensee : ENVIROBUSINESS, INC.

Description : Check concrete pier part of foundation - worst case reactions are from loading with maximum ice & no wind









EBI Consulting
environmental | engineering | due diligence

EnviroBusiness, Inc.
21 B Street
Burlington, MA 01803
800.786.2346

Carrier: T-Mobile
Site ID: CT11319C

This spreadsheet calculates the wind and ice forces on proposed equipment. Shaded fields indicated user data entry.

Determine the wind loads on new equipment using TIA222 - Rev F design code:

sustained V=	80	mph (see structural criteria page)
Height above grade =	120	ft, center of antennas
Kz=	1.45	
Wind importance factor, I =	1.00	
qz=	23.7	psf, formula is $I*0.00256*Kz*V^2$
Gh for lattice structure formula	1.15	see table below for occurrence - use value only when not at a cantilever or on a monopole
Wind with ice / Wind ratio	0.75	
Ice thickness	0.50	
Ice density	56	pcf

Calculate wind at face of proposed equipment using the TIA-222-F code revision:

Description	Weight (lbs)	Height (in)	Width (in)	Depth (in)	Front Aspect ratio	Front C_a (TIA222F Table 3)	Side Aspect ratio	Side C_a (TIA222F Table 3)	Cant-ilever or mono-pole?	Sheilding factor, Ka	Wind force on face, no ice (lb)	Wind at face, with ice (lb)	Wind force on side, no ice (lb)	Wind at side, with ice (lb or plf)	Ice Load (lb or plf)
Flat Appurtenances															
Pr. Antenna	80	96	11.9	7.1	8.07	1.44	13.52	1.62	N	1.15	**310**	243.5	**208.4**	149.3	70.1
Ex. Antenna	115	62	12	7	5.17	1.40	8.86	1.46	N	1.15	**197**	155.1	**119.9**	93.0	45.4
Round Appurtenances															
Sector frame - 1 side	47	144.0	2.4	2.4	-	1.20	60.00	1.20	N	1.15	**78**	71.3	-	71.3	28.5
E. 2-3/8" O.D. pipe	22	72.0	2.4	2.4	-	1.20	30.00	1.20	N	1.15	**39**	35.8	**39.2**	35.8	14.3
Standoff arm	160	48.0	8.0	8.0		1.20	6.00	1.20	N	1.15	**87**	70.1	**87.1**	70.1	28.9

Check Existing sector frame horizontal (front loads from 1 ex. Antenna and 2 horizontal pipes)

Pipe qty	2	pipes
Size	2-3/8" od sched 40	
Available Flexural Strength, ASD	1250	ft-lbs per AISC Table 3-13
Total wind force	314	lbs
Total wind force with ice	262.1	lbs
Total dead load, not incl. ice	183	lbs
Total ice load	88	lbs
Approx. distance to centroid	5.5	feet
Distance includes both standoff arm and small tube standoff		
Total wind +dead moment	2738.4	
Total dead +ice moment + 75% wind moment	2935.5	
Worst case stress ratio	117%	
Divided by Rev F stress increase	1.33	
Worst case adjusted stress ratio	**88% OK**	

EXHIBIT C

EBI Consulting
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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11737C

CT737 / East Hartford Town SST
100 Sunset Ridge Road
East Hartford, CT 06118

August 13, 2014

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	35.21 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

August 13, 2014

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11737C – CT737 / East Hartford Town SST**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **100 Sunset Ridge Road, East Hartford, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μW/cm2). The general population exposure limit for the 700 MHz Band is 567 μW/cm2, and the general population exposure limit for the PCS and AWS bands is 1000 μW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **100 Sunset Ridge Road, East Hartford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, the actual antenna pattern gain value in the direction of the sample area was used. For this report the sample point is a 6 foot person standing at the base of the tower

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (PCS Band - 1900 MHz)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel

2) **2** UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channels (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.

7) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope SBNHH-1D65C** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** has a maximum gain of **15.6 dBd** at its main lobe. The **Commscope SBNHH-1D65C** has a maximum gain of **13.4 dBd** at its main lobe. The actual antenna gain in the direction of the analysis point at the base of the tower was used based upon the manufacturer's supplied specifications.

8) The antenna mounting height centerline of the proposed antennas is **120 feet** above ground level (AGL).

9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.6 dBd	Gain:	15.6 dBd	Gain:	15.6 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	60	Total TX Power:	60	# AWS Channels:	60
ERP (W):	1,888.44	ERP (W):	1,888.44	ERP (W):	1,888.44
Antenna A1 MPE%	1.21	Antenna B1 MPE%	1.21	Antenna C1 MPE%	1.21
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.6 dBd	Gain:	15.6 dBd	Gain:	15.6 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	60	Total TX Power:	60	Total TX Power:	60
ERP (W):	1,888.44	ERP (W):	1,888.44	ERP (W):	1,888.44
Antenna A2 MPE%	1.21	Antenna B2 MPE%	1.21	Antenna C2 MPE%	1.21
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope SBNHH-1D65C	Make / Model:	Commscope SBNHH-1D65C	Make / Model:	Commscope SBNHH-1D65C
Gain:	13.4 dBd	Gain:	13.4 dBd	Gain:	13.4 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
Frequency Bands	700 Mhz	Frequency Bands	700 Mhz	Frequency Bands	700 Mhz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	396.59	ERP (W):	396.59	ERP (W):	396.59
Antenna A3 MPE%	0.18	Antenna B3 MPE%	0.18	Antenna C3 MPE%	0.18

T-Mobile Sector 1 Total:	2.80 %
T-Mobile Sector 2 Total:	2.80 %
T-Mobile Sector 3 Total:	2.80 %
Site Total:	35.21 %

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile	**8.40**
Clearwire	1.86 %
AT&T	21.79 %
Public Works	0.62 %
Fire	0.41 %
Fire Admin	0.41 %
Police Ch 1&2	1.06 %
Parks & Rec	0.17 %
Health	0.25 %
800	0.24 %
Site Total MPE %:	**35.21 %**

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Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector 1:	2.80 %
Sector 2:	2.80 %
Sector 3 :	2.80 %
T-Mobile Total:	8.40 %
Site Total:	35.21 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **35.21%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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