

From: Kristina Cottone <kristina.cottone@smartlinkgroup.com>
Sent: Thursday, October 13, 2022 10:38 AM
To: CSC-DL Siting Council <Siting.Council@ct.gov>
Cc: Robidoux, Evan <Evan.Robidoux@ct.gov>
Subject: RE: Council Revised Incomplete Letter for EM-AT&T-124-220908 (6 Progress Avenue, Seymour)
Importance: High

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hello,

Please see attached revised SA, as requested that accounts for Verizon's equipment. Please note below, yesterday I requested more time for this SA to come in.

Please let me know if there's any questions.

Thank you,

Kristina Cottone
Real Estate Project Manager
Smartlink
c. 978-551-8627

From: Kristina Cottone
Sent: Wednesday, October 12, 2022 4:22 PM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: RE: Council Revised Incomplete Letter for EM-AT&T-124-220908 (6 Progress Avenue, Seymour)
Importance: High

Hi Evan,

My firm need more time for this SA, please accept this as an extension request.

Thank you,

Kristina Cottone
Real Estate Project Manager
Smartlink
c. 978-551-8627

STRUCTURAL ANALYSIS REPORT

STRUCTURE: SELF-SUPPORT TOWER

PREPARED FOR: SMLINK

CARRIER: AT&T

SITE NUMBER: CTL05633

FA NUMBER: 10099965

SITE LOCATION:

6 Progress Avenue

Seymour, CT 06483

N41.3914919, W73.0532989

DATE: October 12, 2022

REV. 2: UPDATED TOWER LOADING

RESULTS

PASS (MAX STRESS RATIO: 81.0%)

Barbara T. Kotecki, P.E.



Fullerton Engineering, P.C.
1100 E. Woodfield Road, Suite 500
Schaumburg, IL 60173
Tel: 847.908.8400
www.fullertonengineering.com

Project Number: 2021.0215.0018

Summary

A structural analysis was performed by Fullerton, as requested by the client, to determine the adequacy of the existing structure with the proposed appurtenance and equipment addition on the abovementioned structure. The analysis considers the tower properties, existing and proposed appurtenances, and the required loading criteria.

Conclusion

Component	% Capacity	Pass / Fail
Tower	66.5%	PASS
Anchor Rod	27.4%	PASS
Foundation	81.0%	PASS
Structural Rating (max from all components) = 81.0%		PASS

Analysis Criteria

Reference Standard:	TIA-222-H Standard	
Wind Parameters:	Basic Wind Speed:	118 mph (3-Sec gust)
	Ice Wind Speed:	50 mph (3-Sec gust)
	Design Ice Thickness:	1 in.
	Risk Category	II
	Exposure Category:	B
	Topographic Category:	1

Sources

The following documents for the existing structure were made available for our structural analysis.

Reference Document	Date
Structural Analysis Report by Maser Consulting	05/01/2019
Structural Analysis Report by NB+C Engineering Services, LLC	05/18/2022
RFDS Ver. 3.00 provided by AT&T	03/01/2022
Site Visit Photos	02/09/2022

Final Proposed Appurtenance Loading Schedule

ANTENNA/EQUIPMENT				COAXIAL	
Elev. (Ft)	QT Y.	MANUFACTURER/MODEL	MOUNT TYPE	QTY.	SIZE/TYPE.
160'-0"	3	(N) CCI TPA65R-BU6DA	(E) Sector Frames	3	(N) Fiber
	3	(N) AIR6449 B77D + AIR6419 B77G Stacked		3	(N) DC Cable
	3	(N) CCI DMP65R-BU6DA		6	(E) DC Cable
	3	(E) Ericsson RRUS 4478 B14		6	(E) 1-5/8"
	3	(E) Ericsson RRUS 4426 B66			
	3	(N) Ericsson RRUS 4449 B5/12			
	3	(E) Ericsson RRUS-32 B2			
	3	(N) Raycap DC9-48-60-24-8C-EV			
	3	(E) Ericsson RRUS-32 B30			

(E) denotes existing loading

(N) denotes proposed loading

Results

Tower

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	280 - 270	Leg	1 3/4	3	-9.293	81.929	11.3	Pass
		Diagonal	7/8	17	-1.619	7.868	20.6	Pass
		Horizontal	7/8	36	-0.177	3.910	4.5	Pass
		Top Girt	1	4	-0.576	6.670	8.6	Pass
		Bottom Girt	1	7	-0.644	6.670	9.7	Pass
T2	270 - 250	Mid Girt	1	11	0.110	35.343	0.3	Pass
		Leg	2	45	-28.696	111.479	25.7	Pass
		Diagonal	7/8	59	-2.241	7.786	28.8	Pass
		Horizontal	7/8	62	-0.497	3.944	12.6	Pass
		Top Girt	1	48	-0.584	6.728	8.7	Pass
T3	250 - 230	Bottom Girt	1	49	-0.885	6.728	13.1	Pass
		Mid Girt	1	52	-0.178	6.728	2.6	Pass
		Leg	2 1/2	123	-79.352	189.738	41.8	Pass
		Diagonal	1	135	-5.764	13.514	42.7	Pass
		Horizontal	7/8	137	-1.374	4.012	34.3	Pass
T4	230 - 220	Top Girt	1 1/4	125	-1.374	16.712	8.2	Pass
		Bottom Girt	1 1/4	127	-1.582	16.712	9.5	Pass
		Leg	Pirod 105245	201	-82.689	214.859	38.5	Pass
		Diagonal	L3x3x5/16	207	-8.246	41.111	20.1 34.4 (b)	Pass
		Leg	Pirod 105218	210	-117.404	300.681	39.0	Pass
T5	220 - 200	Diagonal	L3x3x3/16	216	-6.911	22.519	30.7 53.0 (b)	Pass
		Leg	Pirod 105218	225	-144.498	300.681	48.1	Pass
		Diagonal	L3x3x5/16	237	-9.554	30.261	31.6 38.9 (b)	Pass
		Top Girt	L3x3x3/16	226	-4.010	17.316	23.2 38.4 (b)	Pass
		Mid Girt	L3x3x3/16	229	-5.502	14.785	37.2	Pass
T7	180 - 160	Leg	Pirod 105219	246	-177.935	399.868	44.5	Pass
		Diagonal	L3x3x5/16	258	-11.044	24.402	45.3	Pass
		Top Girt	L4x4x1/4	247	-5.697	32.919	17.3 32.6 (b)	Pass
		Mid Girt	L4x4x1/4	250	-4.506	28.726	15.7	Pass
		Leg	Pirod 105220	267	-228.425	512.375	44.6	Pass
T8	160 - 140	Diagonal	L3 1/2x3 1/2x5/16	276	-13.193	31.751	41.6 49.3 (b)	Pass
		Top Girt	L3 1/2x3 1/2x5/16	269	-3.961	17.588	22.5	Pass
		Leg	Pirod 105220	285	-286.371	512.375	55.9	Pass
		Diagonal	L3 1/2x3 1/2x5/16	291	-14.493	25.959	55.8	Pass
		Leg	Pirod 112743	300	-323.540	613.145	52.8	Pass
T10	120 - 100	Diagonal	2L3 1/2x3 1/2x5/16x3/8	306	-21.874	66.615	32.8	Pass
		Leg	Pirod 112743	307	-381.957	613.145	62.3	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	314	-22.708	61.156	37.1	Pass
		Leg	Pirod 112744	316	-436.472	741.993	58.8	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	323	-22.675	56.126	40.4	Pass
T13	60 - 40	Leg	Pirod 112744	325	-487.910	741.993	65.8	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	332	-23.830	51.525	46.2	Pass
		Leg	Pirod 112745	334	-543.000	883.145	61.5	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	341	-22.698	47.338	47.9	Pass
		Leg	Pirod 112740	343	-587.254	883.145	66.5	Pass
T15	20 - 0	Diagonal	2L3 1/2x3 1/2x5/16x3/8	350	-25.995	43.542	59.7	Pass

Results (cont.)

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
							Summary	
						Leg (T15)	66.5	Pass
						Diagonal (T15)	59.7	Pass
						Horizontal (T3)	34.3	Pass
						Top Girt (T6)	38.4	Pass
						Bottom Girt (T2)	13.1	Pass
						Mid Girt (T6)	37.2	Pass
						Bolt Checks	55.7	Pass
						RATING =	66.5	Pass

Foundation

Components	%Capacity	PASS/FAIL
ANCHOR RODS	27.4%	PASS
FOUNDATION	81.0%	PASS

Assumptions

This analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. The analysis is based solely on the information supplied, and the results, in turn, are only as accurate as data extracted from this information. Fullerton has been instructed by the client to assume the information supplied is accurate, and Fullerton has made no independent determination of its accuracy. The exception to the previous statement is if Fullerton has been contracted by the client to provide an independent structural mapping report of the tower and related appurtenances, in which case Fullerton has made an independent determination of the accuracy of the information resulting from the mapping report.

- The tower member sizes and geometry are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and stated in the materials section.
- The existing tower is assumed to have been properly maintained in accordance with the TIA/EIA standard and/or its original manufacturer's recommendations. The existing tower is assumed to be in good condition with no structural defects and with no deterioration to its member capacities.
- The antenna configuration is as supplied and/or stated in the analysis section. It is assumed to be complete and accurate. All antennas, mounts, remote radios, cables, and cable supports are assumed to be properly installed and supported as per the manufacturer's requirements.
- The antennas, mounts, remote radios, cables, and cable supports, and lines stated in the appurtenance loading schedule represent Fullerton's understanding of the overall antenna configuration. If the actual configuration is different than above, then this analysis is invalid. Please refer to this report for the projected wind areas used in the calculations for antennas and mounts. If variations or discrepancies are identified, please inform Fullerton.
- Some assumptions are made regarding antenna and mount sizes and their projected areas based on a best interpretation of the data supplied and a best knowledge of antenna type and industry practice.
- The existing foundation is assumed to be in good condition with no structural defects and with no deterioration to its member capacities.
- The soil parameters are as per data supplied, or as assumed, and stated in the calculations.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
- All prior structural modifications, if any, are assumed to be as per data supplied/ available, to be properly installed and to be fully effective.

Scope and Limitations

The engineering services rendered by Fullerton Engineering, P.C. (Fullerton) in connection with this structural analysis are limited to an analysis of the structure, size, and capacity of its members. Fullerton does not analyze the fabrication, including welding and connection capacities, except as included in this report.

The information and conclusions contained in this report were determined by application of the current engineering standards and analysis procedures and formulae, and Fullerton assumes no obligation to revise any of the information or conclusions contained in this report in the event such engineering and analysis procedures and formulae are hereafter modified or revised.

Fullerton makes no warranties, expressed, or implied in connection with this report and disclaims any liability arising from original design, material, fabrication, and erection deficiencies or the “as-built” condition of this tower.

Installation procedures are not within the scope of this report and should be performed and evaluated by a competent tower erection contractor.

Structural Calculations

Tower Analysis Summary Form

General Info

Site Name	SEYMOUR EAST
Site Number	CTL05633
FA Number	10099965
Date of Analysis	10/11/2022
Company Performing Evaluation	Fullerton Engineering, P.C.

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (GT, SST, MP)	SST	N/A
Tower Height (Top of Steel)	280 ft	N/A
Tower Manufacturer	N/A	N/A
Tower Model	N/A	N/A
Tower Design	N/A	N/A
Foundation Design	N/A	N/A
Geotech Report	N/A	N/A
No Climb Site Visit	N/A	N/A
Previous Structural Analysis	NB+C Engineering Services	5/18/2022
Foundation Mapping	N/A	N/A

Design Parameters	
Design Code Used	REV H & ASCE 7-16
Location of Tower (County, State)	NEW HAVEN COUNTY, CT
Basic Wind Speed (mph)	118
Ice Thickness (in)	1
Structure Classification (I, II, III)	II
Exposure Category (B, C, D)	B
Topographic Category (1 to 5)	1

Analysis Results (% Maximum Usage)

Existing/Reserved + Proposed Condition	
Tower (%)	66.6%
Connection (%)	27.4%
Foundation (%)	81.0%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Solid Rounds	A572-50
Anchor Bolts	F1554-105

Note: Material grade assumed based on preferred material specifications.

Existing / Reserved Loading

Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Antenna					Mount			Transmission Line			
				Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External	
UNKNOWN	280	280	2	DIPOLE	DECIBEL	DB420-A		1	UNKNOWN	FRAME		2		1-5/8"	EXTERNAL
								1				1		1"	EXTERNAL
UNKNOWN	250	250	3	ANTENNA	RFS	APXV18-206516L-C		3	UNKNOWN	FRAME		12		1-5/8"	EXTERNAL
	250	250	3	ANTENNA	RFS	APXVAARR24_43-U-NA20		2				2		HCS 6X12	EXTERNAL
	250	250	6	TMA	RFS	ATMAP1412D-1A20									
	250	250	1	DIPLEXER		DIPLEXER									
	250	250	3	RRH	ERICSSON	RRUS-4449 B71+B12									
UNKNOWN	235	245	1	DIPOLE	DECIBEL	DB420-A		1	UNKNOWN	FRAME		1		1-5/8"	EXTERNAL
	235	235	1	DIPOLE	DECIBEL	DB2252-F		1				1		1-5/8"	EXTERNAL
UNKNOWN	170	170	3	ANTENNA	RFS	APXVSP18-C-AS20		3	UNKNOWN	FRAME		6		1-5/8"	EXTERNAL
	170	170	3	ANTENNA	RFS	APXVTM14-ALU-120									
	170	170	3	RRH	ALU	RRH2X50									
	170	170	3	RRH	ALU	RRH4X45									
	170	170	3	RRH	ALU	RRH8X20									
AT&T	160	160	3	RRH	ERICSSON	RRUS 4478 B14		3	UNKNOWN	FRAME		6		1-5/8"	EXTERNAL
	160	160	3	RRH	ERICSSON	RRUS-32 B2		6				6		DC POWER	EXTERNAL
	160	160	3	RRH	ERICSSON	RRUS-4426 B66									
	160	160	3	RRH	ERICSSON	RRUS-32 B30									
UNKNOWN	150	150	3	ANTENNA	COMMSCOPE	APXV18-206517S		3	UNKNOWN	FRAME		3		1-5/8"	EXTERNAL
	150	150	6	ANTENNA	COMMSCOPE	HBXX-6517DS-A2M									
	150	150	6	ANTENNA	COMMSCOPE	LNX-6514DS-A1M									
	150	150	6	DIPLEXER		DIPLEXER									
	150	150	3	RRH	ALU	RRH2-60-AWS									
	150	150	3	RRH	ALU	RRH2-60									
	150	150	3	DISTRIBUTION BOX		DB-T1-6Z-8AB-0Z									
VERIZON	140	140	6	ANTENNA	JMA	MX06FRO660-03		3	SITE PRO 1	VFA12-HD		12		1-5/8"	EXTERNAL
	140	140	3	ANTENNA	SAMSUNG	MT6407-77A		2				2		HCS 6X12	EXTERNAL
	140	140	6	RRH	ANTEL	LPA-50063/5CF									
	140	140	3	RRH	SAMSUNG	B2/B66A RRH-BR049 RFV01U-D1A									
	140	140	3	RRH	SAMSUNG	B5/B13 RRH-BR04C RFV01U-D2A									
	140	140	2	SQUID	RAYCAP	RRFDC-3315-PF-48									

Note: The existing loading shall be re-used, in addition to the proposed loading.

Proposed Loading

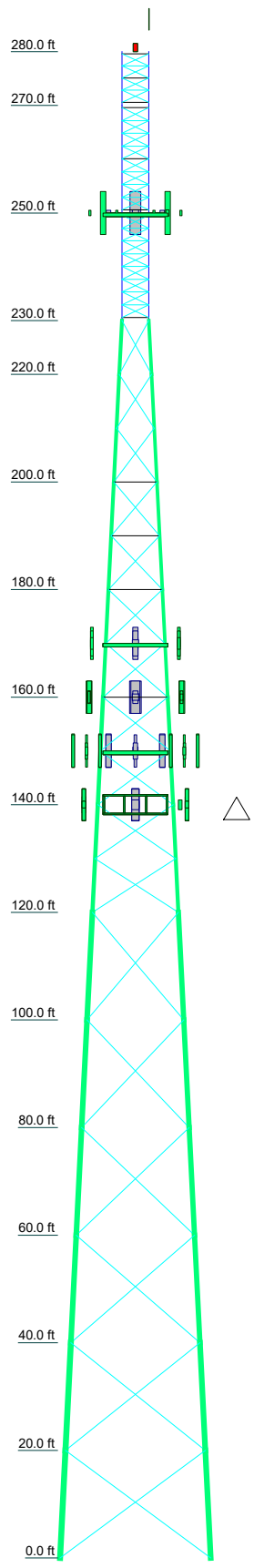
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Antenna					Mount			Transmission Line			
				Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External	
AT&T	160	160	3	ANTENNA	CCI	TPA65R-BU6DA-K		3				3		DC POWER	EXTERNAL
	160	160	3	ANTENNA	ERICSSON	AIR6449 B77D						3		FIBER	EXTERNAL
	160	160	3	ANTENNA	ERICSSON	AIR6419 B77G									
	160	160	3	ANTENNA	CCI	DMP65R-BU6DA									
	160	160	3	RRH	ERICSSON	RRUS-4449 B5B12									
	160	160	3	SQUID	RAYCAP	DC9-48-6D-24-8C-EV									

Note: The proposed equipment shall be installed in addition to the existing/reserved loading at the same elevation.

Future Loading

Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Antenna					Mount			Transmission Line			
				Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External	

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15
Legs	SR 1 3/4	SR 2	SR 2 1/2	A		Pirol 105218	Pirol 105219		Pirol 105220	Pirol 112743	Pirol 112745	Pirol 112744		Pirol 112740	Pirol 112740
Leg Grade									A572-50						
Diagonals	SR 7/8		SR 1	B	L3x3x3/16	L3x3x5/16	L3x3x3/16	L3x3x3/16	L3 1/2x3 1/2x5/16	A36	2L3 1/2x3 1/2x5/16x3/8				
Diagonal Grade		A572-50													
Top Girts	SR 1		SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L4x4x1/4	C							
Mid Girts	SR 1		SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L4x4x1/4								
Bottom Girts	SR 1		SR 1 1/4												
Horizontals		SR 7/8													
Face Width (ft)	5			6		8	10	12	14	16	18	20	22	24	26
# Panels @ (ft)	4 @ 2.25		16 @ 2.375				11 @ 10					6 @ 20			
Weight (K)	0.7	1.6	2.2	1.5	2.8	3.5	4.4	5.1	5.0	7.4	7.5	8.3	8.5	9.5	9.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Flash Beacon Lighting	280	RRUS-4426 B66 (ATI)	160
Lightning Rod	280	RRUS-32 B30 (ATI)	160
DB420-A	280	RRUS-4449 B5/B12 (ATI)	160
DB420-A	280	Raycap DC9-48-60-24-8C-EV (ATI)	160
SECTOR MOUNT	280	Commscope SF-QV12-B (ATI)	160
PIROD 15' T-FRAME SECTOR	250	CCI TPA65R-BU6D (ATI)	160
RFS APXV18-206516L-C	250	Ericsson Air6449 B77D (ATI)	160
RFS APXVAARR24_43-U-NA20	250	Ericsson Air6419 B77G (ATI)	160
(2) RFS ATMAP1412D-1A20 - TMA	250	CCI DMP65R-BU6DA (ATI)	160
Diplexer	250	RRUS-4478 B14 (ATI)	160
RRUS-4449 B71+B12	250	RRUS-32 B2 (ATI)	160
PIROD 15' T-FRAME SECTOR	250	RRUS-4426 B66 (ATI)	160
RFS APXV18-206516L-C	250	RRUS-32 B30 (ATI)	160
RFS APXVAARR24_43-U-NA20	250	RRUS-4449 B5/B12 (ATI)	160
(2) RFS ATMAP1412D-1A20 - TMA	250	Raycap DC9-48-60-24-8C-EV (ATI)	160
Diplexer	250	PIROD 15' T-FRAME SECTOR	150
RRUS-4449 B71+B12	250	RFS APXV18-206517S	150
PIROD 15' T-FRAME SECTOR	250	(2) Commscope HBXX-6517DS-A2M	150
RFS APXV18-206516L-C	250	(2) Commscope LNX-6514DS-A1M	150
RFS APXVAARR24_43-U-NA20	250	(2) Diplexer	150
(2) RFS ATMAP1412D-1A20 - TMA	250	ALU RRH2x60-AWS	150
Diplexer	250	ALU RRH2x60	150
RRUS-4449 B71+B12	250	DB-T1-6Z-8AB-OZ	150
DB420-A	245	PIROD 15' T-FRAME SECTOR	150
DB2252-F	235	RFS APXV18-206517S	150
SECTOR MOUNT	235	(2) Commscope HBXX-6517DS-A2M	150
PIROD 15' T-FRAME SECTOR	170	(2) Commscope LNX-6514DS-A1M	150
RFS APXVSP18-C-A20	170	(2) Diplexer	150
RFS APXVTM14-ALU-I20	170	ALU RRH2x60-AWS	150
ALU RRH2x50-800	170	ALU RRH2x60	150
ALU RRH4x45-1900	170	DB-T1-6Z-8AB-OZ	150
ALU TD-RRH8x20-25	170	PIROD 15' T-FRAME SECTOR	150
PIROD 15' T-FRAME SECTOR	170	RFS APXV18-206517S	150
RFS APXVSP18-C-A20	170	(2) Commscope HBXX-6517DS-A2M	150
RFS APXVTM14-ALU-I20	170	(2) Commscope LNX-6514DS-A1M	150
ALU RRH2x50-800	170	(2) Diplexer	150
ALU RRH4x45-1900	170	ALU RRH2x60-AWS	150
ALU TD-RRH8x20-25	170	ALU RRH2x60	150
PIROD 15' T-FRAME SECTOR	170	DB-T1-6Z-8AB-OZ	150
RFS APXVSP18-C-A20	170	SitePro1 VFA12-HD Sector Frame	140
RFS APXVTM14-ALU-I20	170	JMA MX06FRO660-03 w/ Mount Pipe	140
ALU RRH2x50-800	170	JMA MX06FRO660-03	140
ALU RRH4x45-1900	170	Samsung MT6407-77A w/ Mount Pipe	140
ALU TD-RRH8x20-25	170	Antel LPA-80063/6CF w/ Mount Pipe	140
Commscope SF-QV12-B (ATI)	160	Samsung B2/B66A RRHBR049	140
CCI TPA65R-BU6D (ATI)	160	Samsung B5/B13 RRHBR04C	140
Ericsson Air6449 B77D (ATI)	160	Raycap RRFDC-3315-PF-48	140
Ericsson Air6419 B77G (ATI)	160	SitePro1 VFA12-HD Sector Frame	140
CCI DMP65R-BU6DA (ATI)	160	JMA MX06FRO660-03 w/ Mount Pipe	140
RRUS-4478 B14 (ATI)	160	JMA MX06FRO660-03	140
RRUS-32 B2 (ATI)	160	Samsung MT6407-77A w/ Mount Pipe	140
RRUS-4426 B66 (ATI)	160	Antel LPA-80063/6CF w/ Mount Pipe	140
RRUS-32 B30 (ATI)	160	Samsung B2/B66A RRHBR049	140
RRUS-4449 B5/B12 (ATI)	160	Samsung B5/B13 RRHBR04C	140
Raycap DC9-48-60-24-8C-EV (ATI)	160	Raycap RRFDC-3315-PF-48	140
Commscope SF-QV12-B (ATI)	160	SitePro1 VFA12-HD Sector Frame	140
CCI TPA65R-BU6D (ATI)	160	JMA MX06FRO660-03 w/ Mount Pipe	140
Ericsson Air6449 B77D (ATI)	160	JMA MX06FRO660-03	140
Ericsson Air6419 B77G (ATI)	160	Samsung MT6407-77A w/ Mount Pipe	140
CCI DMP65R-BU6DA (ATI)	160	Antel LPA-80063/6CF w/ Mount Pipe	140
RRUS-4478 B14 (ATI)	160	Samsung B2/B66A RRHBR049	140
RRUS-32 B2 (ATI)	160	Samsung B5/B13 RRHBR04C	140

SYMBOL LIST

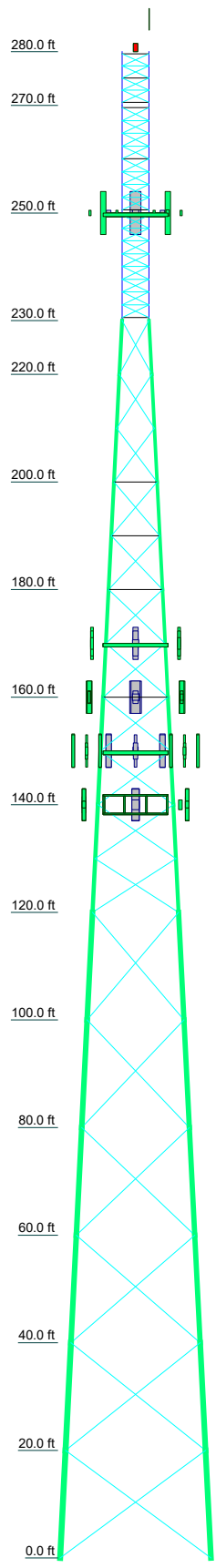
MARK	SIZE	MARK	SIZE
A	Pirol 105245	C	L3 1/2x3 1/2x5/16
B	L3x3x5/16		

Fullerton Engineering Consultants, LLC
 1100 E. Woodfield Road. Suite 500
 Schaumburg, IL 60173
 Phone: 847-908-8400
 FAX:

Job: CTL05633 - SEYMOUR EAST
 Project: 280' SELF-SUPPORT TOWER
 Client: SMARTLINK - AT&T
 Code: TIA-222-H
 Path:

Drawn by: GO
 Date: 10/11/22
 Scale: NTS
 App'd: [Signature]
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 DWG No. E-1

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	
Legs	SR 1 3/4	SR 2	SR 2 1/2	A		Pirolod 105218	Pirolod 105219		Pirolod 105220	Pirolod 112743	Pirolod 112744	Pirolod 112745	Pirolod 112746	Pirolod 112747	Pirolod 112748	
Leg Grade									A572-50							
Diagonals	SR 7/8		SR 1	B		L3x3x3/16	L3x3x5/16		L3 1/2x3 1/2x5/16			2L3 1/2x3 1/2x5/16x3/8				
Diagonal Grade									A36							
Top Girts	SR 1		SR 1 1/4			L3x3x3/16	L4x4x1/4		C							
Mid Girts	SR 1			N.A.		L3x3x3/16	L4x4x1/4									
Bottom Girts	SR 1		SR 1 1/4						N.A.							
Horizontals									N.A.							
Face Width (ft)	5			6		8	10	12	14	16	18	20	22	24	26	
# Panels @ (ft)	4 @ 2.25		16 @ 2.375			11 @ 10			6 @ 20							
Weight (K)	0.7	1.6	2.2	1.5	2.8	3.5	4.4	5.1	5.0	7.4	7.5	8.3	8.5	9.5	9.6	77.6



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirolod 105245	C	L3 1/2x3 1/2x5/16
B	L3x3x5/16		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

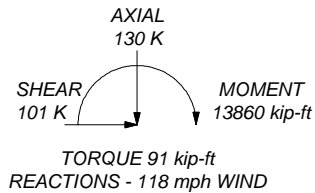
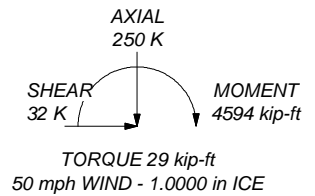
1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 66.5%

ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 615 K
SHEAR: 67 K

UPLIFT: -526 K
SHEAR: 59 K



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Job: CTL05633 - SEYMOUR EAST		
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Client: SMARTLINK - AT&T	Drawn by: GO	App'd:
Code: TIA-222-H	Date: 10/11/22	Scale: NTS
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Dwg No. E-1		

P:\020400\SM\NICK\SM-NICK-AT-NEWEN\CTL05633\Structural\Structural Analysis\22-Updated Loadings\Analysis\TNY\CTL05633.dwg

<p>tnxTower</p> <p>Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:</p>	Job CTL05633 - SEYMOUR EAST	Page 1 of 56
	Project 280' SELF-SUPPORT TOWER	Date 15:05:36 10/11/22
	Client SMARTLINK - AT&T	Designed by GO

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 280.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 5.000 ft at the top and 28.000 ft at the base.
This tower is designed using the TIA-222-H standard.

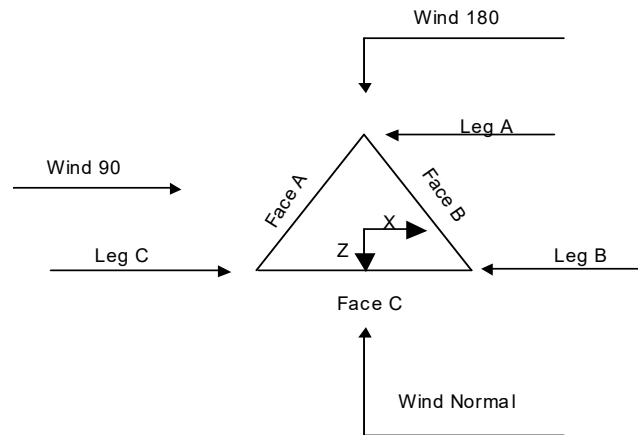
The following design criteria apply:

- Tower is located in New Haven County, Connecticut.
- Tower base elevation above sea level: 474.000 ft.
- Basic wind speed of 118 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component √ Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

tnxTower Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:	Job CTL05633 - SEYMOUR EAST	Page 2 of 56
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	Client SMARTLINK - AT&T	Designed by GO



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	280.000-270.000			5.000	1	10.000
T2	270.000-250.000			5.000	1	20.000
T3	250.000-230.000			5.000	1	20.000
T4	230.000-220.000			5.000	1	10.000
T5	220.000-200.000			6.000	1	20.000
T6	200.000-180.000			8.000	1	20.000
T7	180.000-160.000			10.000	1	20.000
T8	160.000-140.000			12.000	1	20.000
T9	140.000-120.000			14.000	1	20.000
T10	120.000-100.000			16.000	1	20.000
T11	100.000-80.000			18.000	1	20.000
T12	80.000-60.000			20.000	1	20.000
T13	60.000-40.000			22.000	1	20.000
T14	40.000-20.000			24.000	1	20.000
T15	20.000-0.000			26.000	1	20.000

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
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:</p>	Job	CTL05633 - SEYMOUR EAST	Page	3 of 56
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Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	280.000-270.000	2.250	X Brace	No	Yes	5.5000	6.5000
T2	270.000-250.000	2.375	X Brace	No	Yes	5.5000	6.5000
T3	250.000-230.000	2.375	X Brace	No	Yes	5.5000	6.5000
T4	230.000-220.000	10.000	X Brace	No	No	0.0000	0.0000
T5	220.000-200.000	10.000	X Brace	No	No	0.0000	0.0000
T6	200.000-180.000	10.000	X Brace	No	No	0.0000	0.0000
T7	180.000-160.000	10.000	X Brace	No	No	0.0000	0.0000
T8	160.000-140.000	10.000	X Brace	No	No	0.0000	0.0000
T9	140.000-120.000	10.000	X Brace	No	No	0.0000	0.0000
T10	120.000-100.000	20.000	X Brace	No	No	0.0000	0.0000
T11	100.000-80.000	20.000	X Brace	No	No	0.0000	0.0000
T12	80.000-60.000	20.000	X Brace	No	No	0.0000	0.0000
T13	60.000-40.000	20.000	X Brace	No	No	0.0000	0.0000
T14	40.000-20.000	20.000	X Brace	No	No	0.0000	0.0000
T15	20.000-0.000	20.000	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
280.000-270.000	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
270.000-250.000	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
250.000-230.000	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
230.000-220.000	Truss Leg	Pirod 105245	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
220.000-200.000	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
200.000-180.000	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
180.000-160.000	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
160.000-140.000	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
140.000-120.000	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
120.000-100.000	Truss Leg	Pirod 112743	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
100.000-80.000	Truss Leg	Pirod 112743	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
80.000-60.000	Truss Leg	Pirod 112744	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
60.000-40.000	Truss Leg	Pirod 112744	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
40.000-20.000	Truss Leg	Pirod 112745	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T15 20.000-0.000	Truss Leg	Pirod 112740	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)

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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 280.000-270.000	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T2 270.000-250.000	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T3 250.000-230.000	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	1 1/4	A572-50 (50 ksi)
T6 200.000-180.000	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T7 180.000-160.000	Equal Angle	L4x4x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T8 160.000-140.000	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 280.000-270.000	1	Solid Round	1	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 270.000-250.000	1	Solid Round	1	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 250.000-230.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T6 200.000-180.000	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T7 180.000-160.000	1	Equal Angle	L4x4x1/4	A36 (36 ksi)	Solid Round		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	Double Angle Stitch Bolt Spacing Redundants in
T1 280.000-270.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T2 270.000-250.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T3 250.000-230.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T4 230.000-220.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	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	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
00									
T5 220.000-200.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
00									
T6 200.000-180.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
00									
T7 180.000-160.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
00									
T8 160.000-140.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
00									
T9 140.000-120.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
00									
T10 120.000-100.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
00									
T11 100.000-80.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
0									
T12 80.000-60.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T13 60.000-40.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T14 40.000-20.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T15 20.000-0.000	0.000	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	<i>K Factors¹</i>						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
ft				X	X	X	X	X	X	X
T1 280.000-270.000	No	Yes	1	1	1	1	1	1	1	1
00				1	1	1	1	1	1	1
T2 270.000-250.000	No	Yes	1	1	1	1	1	1	1	1
00				1	1	1	1	1	1	1
T3 250.000-230.000	No	Yes	1	1	1	1	1	1	1	1
00				1	1	1	1	1	1	1
T4 230.000-220.000	Yes	No	1	1	1	1	1	1	1	1
00				1	1	1	1	1	1	1
T5 220.000-200.000	Yes	No	1	1	1	1	1	1	1	1
00				1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1

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Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹								
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace	
				X Y	X Y	X Y	X Y	X Y	X Y	X Y	
200.000-180.000				1	1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1	1
180.000-160.000				1	1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1	1
160.000-140.000				1	1	1	1	1	1	1	1
T9	Yes	No	1	1	1	1	1	1	1	1	1
140.000-120.000				1	1	1	1	1	1	1	1
T10	Yes	No	1	1	1	1	1	1	1	1	1
120.000-100.000				1	1	1	1	1	1	1	1
T11	Yes	No	1	1	1	1	1	1	1	1	1
100.000-80.000				1	1	1	1	1	1	1	1
T12	Yes	No	1	1	1	1	1	1	1	1	1
80.000-60.000				1	1	1	1	1	1	1	1
T13	Yes	No	1	1	1	1	1	1	1	1	1
60.000-40.000				1	1	1	1	1	1	1	1
T14	Yes	No	1	1	1	1	1	1	1	1	1
40.000-20.000				1	1	1	1	1	1	1	1
T15	Yes	No	1	1	1	1	1	1	1	1	1
20.000-0.000				1	1	1	1	1	1	1	1

¹Note: 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			Truss-Legs Used As Inner Members		
	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
230.000-220.000	1	0.5	0.85	1	0.5	0.85
T4						
T5	1	0.5	0.85	1	0.5	0.85
220.000-200.000						
T6	1	0.5	0.85	1	0.5	0.85
200.000-180.000						
T7	1	0.5	0.85	1	0.5	0.85
180.000-160.000						
T8	1	0.5	0.85	1	0.5	0.85
160.000-140.000						
T9	1	0.5	0.85	1	0.5	0.85
140.000-120.000						

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T10	1	0.5	0.85	1	0.5	0.85
120.000-100.000						
T11	1	0.5	0.85	1	0.5	0.85
100.000-80.000						
T12	1	0.5	0.85	1	0.5	0.85
80.000-60.000						
T13	1	0.5	0.85	1	0.5	0.85
60.000-40.000						
T14	1	0.5	0.85	1	0.5	0.85
40.000-20.000						
T15	1	0.5	0.85	1	0.5	0.85
20.000-0.000						

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 280.000-270.000	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 270.000-250.000	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 250.000-230.000	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 230.000-220.000	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 220.000-200.000	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 200.000-180.000	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 180.000-160.000	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
T8 160.000-140.000	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
T9 140.000-120.000	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
T10 120.000-100.000	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
T11 100.000-80.000	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
T12 80.000-60.000	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

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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
T13 60.000-40.000	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
T14 40.000-20.000	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
T15 20.000-0.000	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 Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	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 280.000-270.000	0.0000	0.75	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 270.000-250.000	0.0000	0.75	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 250.000-230.000	0.0000	0.75	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 230.000-220.000	0.0000	0.75	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 220.000-200.000	0.0000	0.75	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 200.000-180.000	0.0000	0.75	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 180.000-160.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.000-140.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.000-120.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.000-100.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.000-80.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.000-60.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.000-40.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.000-20.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	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
T15 20.000-0.000	0.0000	0.75	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 Bolt Size in	Leg No.	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.
T1 280.000-270.000	Sleeve DS	0.6250 A325N	5	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 270.000-250.000	Sleeve DS	0.7500 A325N	5	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 250.000-230.000	Flange	1.0000 A325N	6	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 230.000-220.000	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 220.000-200.000	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 200.000-180.000	Flange	1.0000 A325N	6	1.0000 A325N	1	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 180.000-160.000	Flange	1.2500 A325N	6	1.2500 A325N	1	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 160.000-140.000	Flange	1.2500 A325N	6	1.2500 A325N	1	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 140.000-120.000	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 120.000-100.000	Flange	1.2500 A325N	12	1.0000 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 100.000-80.000	Flange	1.2500 A325N	12	1.0000 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T12 80.000-60.000	Flange	1.2500 A325N	12	1.0000 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T13 60.000-40.000	Flange	1.2500 A325N	12	1.0000 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T14 40.000-20.000	Flange	1.2500 A325N	12	1.0000 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T15 20.000-0.000	Flange	1.2500 A325N	0	1.0000 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

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	Client	SMARTLINK - AT&T	Designed by	GO

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	280.000 - 6.000	-6.0000	0.45	2	2	1.9800	1.9800		0.001
LDF7-50A (1-5/8 FOAM)	A	No	No	Ar (CaAa)	250.000 - 6.000	-6.0000	0.45	12	6	1.9800	1.9800		0.001
HCS 6x12 Cable	A	No	No	Ar (CaAa)	250.000 - 6.000	-6.0000	0.41	2	2	1.6250	1.6250		0.002
* LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	245.000 - 6.000	-6.0000	0.45	1	1	1.9800	1.9800		0.001
* LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	235.000 - 6.000	-6.0000	0.45	1	1	1.9800	1.9800		0.001
* LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	170.000 - 6.000	-6.0000	0.45	6	3	1.9800	1.9800		0.001
* LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	150.000 - 6.000	-6.0000	0.45	3	3	1.9800	1.9800		0.001
* 1" OD	C	No	No	Ar (CaAa)	280.000 - 6.000	-6.0000	0.45	1	1	1.0000	1.0000		0.000
* DC Cable (1") (AT&T)	B	No	No	Ar (CaAa)	160.000 - 6.000	-6.0000	0.45	3	3	0.9900	0.9900		0.000
Fiber Trunk (AT&T)	B	No	No	Ar (CaAa)	160.000 - 6.000	-6.0000	0.45	3	3	1.0000	1.0000		0.001
DC Cable (1") (AT&T)	B	No	No	Ar (CaAa)	160.000 - 6.000	-6.0000	0.45	6	6	0.9900	0.9900		0.000
* LDF7-50A (1-5/8 FOAM) (AT&T)	B	No	No	Ar (CaAa)	160.000 - 6.000	-6.0000	0.45	6	3	1.9800	1.9800		0.001
* LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	140.000 - 6.000	-6.0000	0.45	12	6	1.9800	1.9800		0.001
HCS 6x12 Cable	C	No	No	Ar (CaAa)	140.000 - 6.000	-6.0000	0.41	2	2	1.6250	1.6250		0.002

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T1	280.000-270.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	4.960	0.000	0.018
T2	270.000-250.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	9.920	0.000	0.037
T3	250.000-230.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	13.880	0.000	0.053

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Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T4	230.000-220.000	A	0.000	0.000	27.010	0.000	0.146
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	8.920	0.000	0.035
T5	220.000-200.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	17.840	0.000	0.070
T6	200.000-180.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	17.840	0.000	0.070
T7	180.000-160.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	29.720	0.000	0.119
T8	160.000-140.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	47.580	0.000	0.214
		C	0.000	0.000	47.540	0.000	0.193
T9	140.000-120.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	47.580	0.000	0.214
		C	0.000	0.000	107.500	0.000	0.510
T10	120.000-100.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	47.580	0.000	0.214
		C	0.000	0.000	107.500	0.000	0.510
T11	100.000-80.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	47.580	0.000	0.214
		C	0.000	0.000	107.500	0.000	0.510
T12	80.000-60.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	47.580	0.000	0.214
		C	0.000	0.000	107.500	0.000	0.510
T13	60.000-40.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	47.580	0.000	0.214
		C	0.000	0.000	107.500	0.000	0.510
T14	40.000-20.000	A	0.000	0.000	54.020	0.000	0.293
		B	0.000	0.000	47.580	0.000	0.214
		C	0.000	0.000	107.500	0.000	0.510
T15	20.000-0.000	A	0.000	0.000	37.814	0.000	0.205
		B	0.000	0.000	33.306	0.000	0.150
		C	0.000	0.000	75.250	0.000	0.357

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T1	280.000-270.000	A	1.236	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	15.370	0.000	0.157
T2	270.000-250.000	A	1.229	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	30.665	0.000	0.313
T3	250.000-230.000	A	1.219	0.000	0.000	84.986	0.000	1.723
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	39.398	0.000	0.422
T4	230.000-220.000	A	1.212	0.000	0.000	42.442	0.000	0.859
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	24.044	0.000	0.265
T5	220.000-200.000	A	1.203	0.000	0.000	84.774	0.000	1.712
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	47.932	0.000	0.526
T6	200.000-180.000	A	1.191	0.000	0.000	84.616	0.000	1.705

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	Client	SMARTLINK - AT&T	Designed by	GO

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	47.707	0.000	0.521
T7	180.000-160.000	A	1.178	0.000	0.000	84.443	0.000	1.697
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	65.961	0.000	0.872
T8	160.000-140.000	A	1.163	0.000	0.000	84.250	0.000	1.688
		B		0.000	0.000	111.076	0.000	1.417
		C		0.000	0.000	100.289	0.000	1.396
T9	140.000-120.000	A	1.147	0.000	0.000	84.033	0.000	1.677
		B		0.000	0.000	110.642	0.000	1.403
		C		0.000	0.000	199.996	0.000	3.235
T10	120.000-100.000	A	1.128	0.000	0.000	83.783	0.000	1.666
		B		0.000	0.000	110.144	0.000	1.388
		C		0.000	0.000	199.137	0.000	3.205
T11	100.000-80.000	A	1.106	0.000	0.000	83.489	0.000	1.652
		B		0.000	0.000	109.557	0.000	1.370
		C		0.000	0.000	198.125	0.000	3.169
T12	80.000-60.000	A	1.078	0.000	0.000	83.129	0.000	1.635
		B		0.000	0.000	108.839	0.000	1.348
		C		0.000	0.000	196.887	0.000	3.126
T13	60.000-40.000	A	1.042	0.000	0.000	82.662	0.000	1.613
		B		0.000	0.000	107.906	0.000	1.320
		C		0.000	0.000	195.277	0.000	3.071
T14	40.000-20.000	A	0.991	0.000	0.000	81.983	0.000	1.581
		B		0.000	0.000	106.552	0.000	1.279
		C		0.000	0.000	192.938	0.000	2.991
T15	20.000-0.000	A	0.887	0.000	0.000	76.153	0.000	0.814
		B		0.000	0.000	79.763	0.000	0.728
		C		0.000	0.000	148.377	0.000	1.561

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
T1	280.000-270.000	-7.7000	2.9743	-8.4765	3.2779
T2	270.000-250.000	-7.5988	2.9352	-8.5538	3.3078
T3	250.000-230.000	-2.2687	-14.8291	-4.2159	-10.5414
T4	230.000-220.000	-2.9452	-12.0919	-4.7138	-8.4836
T5	220.000-200.000	-4.0633	-14.7565	-6.3235	-10.5542
T6	200.000-180.000	-5.1751	-17.3499	-8.0717	-12.7871
T7	180.000-160.000	-9.8374	-15.6930	-12.8784	-11.7957
T8	160.000-140.000	-0.2045	-2.0622	1.2632	4.0770
T9	140.000-120.000	-15.6420	7.3001	-13.0199	12.2169
T10	120.000-100.000	-17.6449	8.3147	-14.2718	13.5025
T11	100.000-80.000	-19.4757	9.3131	-15.7800	15.0695
T12	80.000-60.000	-21.1328	10.2249	-17.1837	16.5181
T13	60.000-40.000	-22.8737	11.1786	-18.6630	18.0162
T14	40.000-20.000	-24.3568	12.0013	-19.9871	19.3149
T15	20.000-0.000	-22.1355	11.0412	-19.8540	13.7258

tnxTower Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:	Job CTL05633 - SEYMOUR EAST	Page 13 of 56
	Project 280' SELF-SUPPORT TOWER	Date 15:05:36 10/11/22
	Client SMARTLINK - AT&T	Designed by GO

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	LDF7-50A (1-5/8 FOAM)	270.00 - 280.00	1.0000	1.0000
T1	13	1" OD	270.00 - 280.00	1.0000	1.0000
T2	1	LDF7-50A (1-5/8 FOAM)	250.00 - 270.00	1.0000	1.0000
T2	13	1" OD	250.00 - 270.00	1.0000	1.0000
T3	1	LDF7-50A (1-5/8 FOAM)	230.00 - 250.00	1.0000	1.0000
T3	2	LDF7-50A (1-5/8 FOAM)	230.00 - 250.00	1.0000	1.0000
T3	3	HCS 6x12 Cable	230.00 - 250.00	1.0000	1.0000
T3	5	LDF7-50A (1-5/8 FOAM)	230.00 - 245.00	1.0000	1.0000
T3	6	LDF7-50A (1-5/8 FOAM)	230.00 - 235.00	1.0000	1.0000
T3	13	1" OD	230.00 - 250.00	1.0000	1.0000
T4	1	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	1.0000	1.0000
T4	2	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	1.0000	1.0000
T4	3	HCS 6x12 Cable	220.00 - 230.00	1.0000	1.0000
T4	5	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	1.0000	1.0000
T4	6	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	1.0000	1.0000
T4	13	1" OD	220.00 - 230.00	1.0000	1.0000
T5	1	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	1.0000	1.0000
T5	2	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	1.0000	1.0000
T5	3	HCS 6x12 Cable	200.00 - 220.00	1.0000	1.0000
T5	5	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	1.0000	1.0000
T5	6	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	1.0000	1.0000
T5	13	1" OD	200.00 - 220.00	1.0000	1.0000
T6	1	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	1.0000	1.0000
T6	2	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	1.0000	1.0000
T6	3	HCS 6x12 Cable	180.00 - 200.00	1.0000	1.0000
T6	5	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	1.0000	1.0000
T6	6	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	1.0000	1.0000
T6	13	1" OD	180.00 - 200.00	1.0000	1.0000
T7	1	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	1.0000	1.0000
T7	2	LDF7-50A (1-5/8 FOAM)	160.00 -	1.0000	1.0000

<p style="text-align: center;"><i>tnxTower</i></p> <p style="text-align: center;">Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:</p>	Job	CTL05633 - SEYMOUR EAST	Page	14 of 56
	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	3	HCS 6x12 Cable	180.00 - 160.00	1.0000	1.0000
T7	5	LDF7-50A (1-5/8 FOAM)	180.00 - 160.00	1.0000	1.0000
T7	6	LDF7-50A (1-5/8 FOAM)	180.00 - 160.00	1.0000	1.0000
T7	9	LDF7-50A (1-5/8 FOAM)	180.00 - 170.00	1.0000	1.0000
T7	13	1" OD	160.00 - 180.00	1.0000	1.0000
T8	1	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	1.0000	1.0000
T8	2	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	1.0000	1.0000
T8	3	HCS 6x12 Cable	140.00 - 160.00	1.0000	1.0000
T8	5	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	1.0000	1.0000
T8	6	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	1.0000	1.0000
T8	9	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	1.0000	1.0000
T8	11	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	1.0000	1.0000
T8	13	1" OD	140.00 - 160.00	1.0000	1.0000
T8	15	DC Cable (1")	140.00 - 160.00	1.0000	1.0000
T8	16	Fiber Trunk	140.00 - 160.00	1.0000	1.0000
T8	17	DC Cable (1")	140.00 - 160.00	1.0000	1.0000
T8	18	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	1.0000	1.0000
T9	1	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	2	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	3	HCS 6x12 Cable	120.00 - 140.00	1.0000	1.0000
T9	5	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	6	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	9	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	11	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	13	1" OD	120.00 - 140.00	1.0000	1.0000
T9	15	DC Cable (1")	120.00 - 140.00	1.0000	1.0000
T9	16	Fiber Trunk	120.00 - 140.00	1.0000	1.0000
T9	17	DC Cable (1")	120.00 - 140.00	1.0000	1.0000
T9	18	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	20	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T9	21	HCS 6x12 Cable	120.00 -	1.0000	1.0000

<p style="text-align: center;"><i>tnxTower</i></p> <p style="text-align: center;">Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:</p>	<p>Job</p> <p style="text-align: center;">CTL05633 - SEYMOUR EAST</p>	<p>Page</p> <p style="text-align: center;">15 of 56</p>
	<p>Project</p> <p style="text-align: center;">280' SELF-SUPPORT TOWER</p>	<p>Date</p> <p style="text-align: center;">15:05:36 10/11/22</p>
	<p>Client</p> <p style="text-align: center;">SMARTLINK - AT&T</p>	<p>Designed by</p> <p style="text-align: center;">GO</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T10	1	LDF7-50A (1-5/8 FOAM)	140.00 - 100.00	1.0000	1.0000
T10	2	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	1.0000	1.0000
T10	3	HCS 6x12 Cable	120.00 - 100.00	1.0000	1.0000
T10	5	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	1.0000	1.0000
T10	6	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	1.0000	1.0000
T10	9	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	1.0000	1.0000
T10	11	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	1.0000	1.0000
T10	13	1" OD	120.00 - 100.00	1.0000	1.0000
T10	15	DC Cable (1")	120.00 - 100.00	1.0000	1.0000
T10	16	Fiber Trunk	120.00 - 100.00	1.0000	1.0000
T10	17	DC Cable (1")	120.00 - 100.00	1.0000	1.0000
T10	18	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	1.0000	1.0000
T10	20	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	1.0000	1.0000
T10	21	HCS 6x12 Cable	120.00 - 100.00	1.0000	1.0000
T11	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	2	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	3	HCS 6x12 Cable	80.00 - 100.00	1.0000	1.0000
T11	5	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	6	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	9	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	11	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	13	1" OD	80.00 - 100.00	1.0000	1.0000
T11	15	DC Cable (1")	80.00 - 100.00	1.0000	1.0000
T11	16	Fiber Trunk	80.00 - 100.00	1.0000	1.0000
T11	17	DC Cable (1")	80.00 - 100.00	1.0000	1.0000
T11	18	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	20	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T11	21	HCS 6x12 Cable	80.00 - 100.00	1.0000	1.0000
T12	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	2	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	3	HCS 6x12 Cable	60.00 - 80.00	1.0000	1.0000
T12	5	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	6	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	9	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	11	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	13	1" OD	60.00 - 80.00	1.0000	1.0000
T12	15	DC Cable (1")	60.00 - 80.00	1.0000	1.0000
T12	16	Fiber Trunk	60.00 - 80.00	1.0000	1.0000
T12	17	DC Cable (1")	60.00 - 80.00	1.0000	1.0000
T12	18	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	20	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T12	21	HCS 6x12 Cable	60.00 - 80.00	1.0000	1.0000
T13	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T13	2	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T13	3	HCS 6x12 Cable	40.00 - 60.00	1.0000	1.0000
T13	5	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T13	6	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:</p>	<p>Job</p> <p style="text-align: center;">CTL05633 - SEYMOUR EAST</p>	<p>Page</p> <p style="text-align: center;">16 of 56</p>
	<p>Project</p> <p style="text-align: center;">280' SELF-SUPPORT TOWER</p>	<p>Date</p> <p style="text-align: center;">15:05:36 10/11/22</p>
	<p>Client</p> <p style="text-align: center;">SMARTLINK - AT&T</p>	<p>Designed by</p> <p style="text-align: center;">GO</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T13	9	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T13	11	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T13	13	1" OD	40.00 - 60.00	1.0000	1.0000
T13	15	DC Cable (1")	40.00 - 60.00	1.0000	1.0000
T13	16	Fiber Trunk	40.00 - 60.00	1.0000	1.0000
T13	17	DC Cable (1")	40.00 - 60.00	1.0000	1.0000
T13	18	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T13	20	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T13	21	HCS 6x12 Cable	40.00 - 60.00	1.0000	1.0000
T14	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	2	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	3	HCS 6x12 Cable	20.00 - 40.00	1.0000	1.0000
T14	5	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	6	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	9	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	11	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	13	1" OD	20.00 - 40.00	1.0000	1.0000
T14	15	DC Cable (1")	20.00 - 40.00	1.0000	1.0000
T14	16	Fiber Trunk	20.00 - 40.00	1.0000	1.0000
T14	17	DC Cable (1")	20.00 - 40.00	1.0000	1.0000
T14	18	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	20	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T14	21	HCS 6x12 Cable	20.00 - 40.00	1.0000	1.0000
T15	1	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	2	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	3	HCS 6x12 Cable	6.00 - 20.00	1.0000	1.0000
T15	5	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	6	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	9	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	11	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	13	1" OD	6.00 - 20.00	1.0000	1.0000
T15	15	DC Cable (1")	6.00 - 20.00	1.0000	1.0000
T15	16	Fiber Trunk	6.00 - 20.00	1.0000	1.0000
T15	17	DC Cable (1")	6.00 - 20.00	1.0000	1.0000
T15	18	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	20	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	1.0000	1.0000
T15	21	HCS 6x12 Cable	6.00 - 20.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight
			ft ft ft	°	ft	ft ²	ft ²	K
Flash Beacon Lighting	B	None		0.0000	280.000	No Ice 1/2" Ice 1" Ice	2.700 3.100 3.500	0.050 0.070 0.090
Lightning Rod	B	From Leg	0.000 0.000 6.000	0.0000	280.000	No Ice 1/2" Ice 1" Ice	3.000 4.530 6.060	0.080 0.100 0.120
* DB420-A	B	From	8.000	0.0000	280.000	No Ice	3.330	0.030

tnxTower Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:	Job	CTL05633 - SEYMOUR EAST	Page	17 of 56
	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight	
			Horz	Lateral Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
DB420-A	A	Centroid-Fa	0.000			1/2" Ice	5.990	5.990	0.040	
		ce	9.500			1" Ice	8.650	8.650	0.050	
		From	8.000	0.0000	280.000	No Ice	3.330	3.330	0.030	
SECTOR MOUNT	C	Centroid-Fa	0.000			1/2" Ice	5.990	5.990	0.040	
		ce	3.000			1" Ice	8.650	8.650	0.050	
		None		0.0000	280.000	No Ice	70.470	70.470	3.080	
						1/2" Ice	100.140	100.140	4.500	
						1" Ice	129.810	129.810	5.920	
* PIROD 15' T-FRAME SECTOR	A	None			0.0000	250.000	No Ice	15.000	15.000	0.500
							1/2" Ice	20.600	20.600	0.650
							1" Ice	26.200	26.200	0.800
RFS APXV18-206516L-C	A	From Leg	4.000	0.0000	250.000	No Ice	3.644	3.190	0.048	
			0.000				1/2" Ice	4.022	3.822	0.081
			0.000				1" Ice	4.402	4.464	0.120
RFS APXVAARR24_43-U-NA20	A	From Leg	4.000	0.0000	250.000	No Ice	20.243	8.889	0.070	
			0.000				1/2" Ice	20.890	9.487	0.182
			0.000				1" Ice	21.544	10.092	0.303
(2) RFS ATMAP1412D-1A20 - TMA	A	From Leg	4.000	0.0000	250.000	No Ice	1.000	0.407	0.013	
			0.000				1/2" Ice	1.126	0.497	0.021
			0.000				1" Ice	1.259	0.593	0.030
Diplexer	A	From Leg	4.000	0.0000	250.000	No Ice	0.518	0.142	0.004	
			0.000				1/2" Ice	0.617	0.207	0.008
			0.000				1" Ice	0.725	0.280	0.012
RRUS-4449 B71+B12	A	From Leg	4.000	0.0000	250.000	No Ice	1.639	1.155	0.066	
			0.000				1/2" Ice	1.799	1.293	0.082
			0.000				1" Ice	1.966	1.438	0.101
PIROD 15' T-FRAME SECTOR	B	None			0.0000	250.000	No Ice	15.000	15.000	0.500
							1/2" Ice	20.600	20.600	0.650
							1" Ice	26.200	26.200	0.800
RFS APXV18-206516L-C	B	From Leg	4.000	0.0000	250.000	No Ice	3.644	3.190	0.048	
			0.000				1/2" Ice	4.022	3.822	0.081
			0.000				1" Ice	4.402	4.464	0.120
RFS APXVAARR24_43-U-NA20	B	From Leg	4.000	0.0000	250.000	No Ice	20.243	8.889	0.070	
			0.000				1/2" Ice	20.890	9.487	0.182
			0.000				1" Ice	21.544	10.092	0.303
(2) RFS ATMAP1412D-1A20 - TMA	B	From Leg	4.000	0.0000	250.000	No Ice	1.000	0.407	0.013	
			0.000				1/2" Ice	1.126	0.497	0.021
			0.000				1" Ice	1.259	0.593	0.030
Diplexer	B	From Leg	4.000	0.0000	250.000	No Ice	0.518	0.142	0.004	
			0.000				1/2" Ice	0.617	0.207	0.008
			0.000				1" Ice	0.725	0.280	0.012
RRUS-4449 B71+B12	B	From Leg	4.000	0.0000	250.000	No Ice	1.639	1.155	0.066	
			0.000				1/2" Ice	1.799	1.293	0.082
			0.000				1" Ice	1.966	1.438	0.101
PIROD 15' T-FRAME SECTOR	C	None			0.0000	250.000	No Ice	15.000	15.000	0.500
							1/2" Ice	20.600	20.600	0.650
							1" Ice	26.200	26.200	0.800
RFS APXV18-206516L-C	C	From Leg	4.000	0.0000	250.000	No Ice	3.644	3.190	0.048	
			0.000				1/2" Ice	4.022	3.822	0.081
			0.000				1" Ice	4.402	4.464	0.120
RFS APXVAARR24_43-U-NA20	C	From Leg	4.000	0.0000	250.000	No Ice	20.243	8.889	0.070	
			0.000				1/2" Ice	20.890	9.487	0.182
			0.000				1" Ice	21.544	10.092	0.303
(2) RFS ATMAP1412D-1A20 - TMA	C	From Leg	4.000	0.0000	250.000	No Ice	1.000	0.407	0.013	
			0.000				1/2" Ice	1.126	0.497	0.021
			0.000				1" Ice	1.259	0.593	0.030

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front ft ²	CAAA Side ft ²	Weight K
Diplexer	C	From Leg	4.000 0.000 0.000	0.0000	250.000	No Ice 0.518 1/2" Ice 0.617 1" Ice 0.725	0.142 0.207 0.280	0.004 0.008 0.012
RRUS-4449 B71+B12	C	From Leg	4.000 0.000 0.000	0.0000	250.000	No Ice 1.639 1/2" Ice 1.799 1" Ice 1.966	1.155 1.293 1.438	0.066 0.082 0.101
* DB420-A	B	From Centroid-Face	8.000 0.000 9.000	0.0000	245.000	No Ice 3.330 1/2" Ice 5.990 1" Ice 8.650	3.330 5.990 8.650	0.030 0.040 0.050
DB2252-F	A	From Centroid-Face	8.000 0.000 0.000	0.0000	235.000	No Ice 1.360 1/2" Ice 2.450 1" Ice 3.540	1.360 2.450 3.540	0.050 0.070 0.090
SECTOR MOUNT	C	None		0.0000	235.000	No Ice 70.470 1/2" Ice 100.140 1" Ice 129.810	70.470 100.140 129.810	3.080 4.500 5.920
* * * *								
PIROD 15' T-FRAME SECTOR	A	None		0.0000	170.000	No Ice 15.000 1/2" Ice 20.600 1" Ice 26.200	15.000 20.600 26.200	0.500 0.650 0.800
RFS APXVSP18-C-A20	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 8.024 1/2" Ice 8.480 1" Ice 8.943	5.283 5.736 6.196	0.065 0.114 0.170
RFS APXVTM14-ALU-I20	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 6.653 1/2" Ice 7.136 1" Ice 7.598	5.032 5.892 6.627	0.059 0.114 0.176
ALU RRH2x50-800	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1.706 1/2" Ice 1.870 1" Ice 2.041	1.293 1.439 1.592	0.053 0.070 0.090
ALU RRH4x45-1900	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 2.600 1/2" Ice 2.815 1" Ice 3.037	2.817 3.037 3.265	0.060 0.088 0.119
ALU TD-RRH8x20-25	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 4.720 1/2" Ice 5.010 1" Ice 5.300	1.700 1.920 2.140	0.070 0.097 0.124
PIROD 15' T-FRAME SECTOR	B	None		0.0000	170.000	No Ice 15.000 1/2" Ice 20.600 1" Ice 26.200	15.000 20.600 26.200	0.500 0.650 0.800
RFS APXVSP18-C-A20	B	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 8.024 1/2" Ice 8.480 1" Ice 8.943	5.283 5.736 6.196	0.065 0.114 0.170
RFS APXVTM14-ALU-I20	B	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 6.653 1/2" Ice 7.136 1" Ice 7.598	5.032 5.892 6.627	0.059 0.114 0.176
ALU RRH2x50-800	B	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1.706 1/2" Ice 1.870 1" Ice 2.041	1.293 1.439 1.592	0.053 0.070 0.090
ALU RRH4x45-1900	B	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 2.600 1/2" Ice 2.815 1" Ice 3.037	2.817 3.037 3.265	0.060 0.088 0.119
ALU TD-RRH8x20-25	B	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 4.720 1/2" Ice 5.010 1" Ice 5.300	1.700 1.920 2.140	0.070 0.097 0.124
PIROD 15' T-FRAME	C	None		0.0000	170.000	No Ice 15.000	15.000	0.500

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front ft ²	CAAA Side ft ²	Weight K
SECTOR						1/2" Ice 20.600	20.600	0.650
RFS APXVSPP18-C-A20	C	From Leg	3.000 0.000 0.000	0.0000	170.000	1" Ice 26.200 No Ice 8.024	26.200 5.283	0.800 0.065
RFS APXVTM14-ALU-I20	C	From Leg	3.000 0.000 0.000	0.0000	170.000	1/2" Ice 8.480 1" Ice 8.943 No Ice 6.653	5.736 6.196 5.032	0.114 0.170 0.059
ALU RRH2x50-800	C	From Leg	3.000 0.000 0.000	0.0000	170.000	1/2" Ice 7.136 1" Ice 7.598 No Ice 1.706	5.892 6.627 1.293	0.114 0.176 0.053
ALU RRH4x45-1900	C	From Leg	3.000 0.000 0.000	0.0000	170.000	1/2" Ice 1.870 1" Ice 2.041 No Ice 2.600	1.439 1.592 2.817	0.070 0.090 0.060
ALU TD-RRH8x20-25	C	From Leg	3.000 0.000 0.000	0.0000	170.000	1/2" Ice 2.815 1" Ice 3.037 No Ice 4.720	3.037 3.265 1.700	0.088 0.119 0.070
*						1/2" Ice 5.010 1" Ice 5.300	1.920 2.140	0.097 0.124
Commscope SF-QV12-B (AT&T)	A	None		0.0000	160.000	No Ice 15.350 1/2" Ice 21.290 1" Ice 27.230	15.350 21.290 27.230	0.417 0.542 0.667
CCI TPA65R-BU6D (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 15.525 1/2" Ice 16.157 1" Ice 16.750	7.211 8.389 9.282	0.124 0.229 0.342
Ericsson Air6449 B77D (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 4.028 1/2" Ice 4.289 1" Ice 4.557	2.147 2.357 2.574	0.082 0.111 0.145
Ericsson Air6419 B77G (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 3.797 1/2" Ice 4.047 1" Ice 4.305	1.938 2.135 2.340	0.077 0.105 0.136
CCI DMP65R-BU6DA (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 12.709 1/2" Ice 13.206 1" Ice 13.709	5.615 6.067 6.526	0.079 0.153 0.234
RRUS-4478 B14 (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 1.843 1/2" Ice 2.012 1" Ice 2.190	1.059 1.197 1.342	0.060 0.076 0.094
RRUS-32 B2 (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 2.743 1/2" Ice 2.965 1" Ice 3.194	1.668 1.855 2.049	0.060 0.081 0.105
RRUS-4426 B66 (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 1.644 1/2" Ice 1.804 1" Ice 1.972	0.725 0.842 0.969	0.048 0.061 0.076
RRUS-32 B30 (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 2.743 1/2" Ice 2.965 1" Ice 3.194	1.668 1.855 2.049	0.060 0.081 0.105
RRUS-4449 B5/B12 (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 1.644 1/2" Ice 1.804 1" Ice 1.972	1.300 1.445 1.597	0.073 0.090 0.110
Raycap DC9-48-60-24-8C-EV (AT&T)	A	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 0.929 1/2" Ice 1.479 1" Ice 1.670	0.929 1.479 1.670	0.026 0.044 0.064
Commscope SF-QV12-B (AT&T)	B	None		0.0000	160.000	No Ice 15.350 1/2" Ice 21.290 1" Ice 27.230	15.350 21.290 27.230	0.417 0.542 0.667
CCI TPA65R-BU6D (AT&T)	B	From Leg	3.000 0.000 0.000	0.0000	160.000	No Ice 15.525 1/2" Ice 16.157 1" Ice 16.750	7.211 8.389 9.282	0.124 0.229 0.342

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:</p>	Job	CTL05633 - SEYMOUR EAST	Page	20 of 56
	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
Ericsson Air6449 B77D (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	4.028	2.147	0.082
			0.000	0.000			1/2" Ice	4.289	2.357	0.111
			0.000	0.000			1" Ice	4.557	2.574	0.145
Ericsson Air6419 B77G (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	3.797	1.938	0.077
			0.000	0.000			1/2" Ice	4.047	2.135	0.105
			0.000	0.000			1" Ice	4.305	2.340	0.136
CCI DMP65R-BU6DA (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	12.709	5.615	0.079
			0.000	0.000			1/2" Ice	13.206	6.067	0.153
			0.000	0.000			1" Ice	13.709	6.526	0.234
RRUS-4478 B14 (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	1.843	1.059	0.060
			0.000	0.000			1/2" Ice	2.012	1.197	0.076
			0.000	0.000			1" Ice	2.190	1.342	0.094
RRUS-32 B2 (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	2.743	1.668	0.060
			0.000	0.000			1/2" Ice	2.965	1.855	0.081
			0.000	0.000			1" Ice	3.194	2.049	0.105
RRUS-4426 B66 (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	1.644	0.725	0.048
			0.000	0.000			1/2" Ice	1.804	0.842	0.061
			0.000	0.000			1" Ice	1.972	0.969	0.076
RRUS-32 B30 (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	2.743	1.668	0.060
			0.000	0.000			1/2" Ice	2.965	1.855	0.081
			0.000	0.000			1" Ice	3.194	2.049	0.105
RRUS-4449 B5/B12 (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	1.644	1.300	0.073
			0.000	0.000			1/2" Ice	1.804	1.445	0.090
			0.000	0.000			1" Ice	1.972	1.597	0.110
Raycap DC9-48-60-24-8C-EV (AT&T)	B	From Leg	3.000	0.000	0.0000	160.000	No Ice	0.929	0.929	0.026
			0.000	0.000			1/2" Ice	1.479	1.479	0.044
			0.000	0.000			1" Ice	1.670	1.670	0.064
Commscope SF-QV12-B (AT&T)	C	None			0.0000	160.000	No Ice	15.350	15.350	0.417
							1/2" Ice	21.290	21.290	0.542
							1" Ice	27.230	27.230	0.667
CCI TPA65R-BU6D (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	15.525	7.211	0.124
			0.000	0.000			1/2" Ice	16.157	8.389	0.229
			0.000	0.000			1" Ice	16.750	9.282	0.342
Ericsson Air6449 B77D (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	4.028	2.147	0.082
			0.000	0.000			1/2" Ice	4.289	2.357	0.111
			0.000	0.000			1" Ice	4.557	2.574	0.145
Ericsson Air6419 B77G (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	3.797	1.938	0.077
			0.000	0.000			1/2" Ice	4.047	2.135	0.105
			0.000	0.000			1" Ice	4.305	2.340	0.136
CCI DMP65R-BU6DA (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	12.709	5.615	0.079
			0.000	0.000			1/2" Ice	13.206	6.067	0.153
			0.000	0.000			1" Ice	13.709	6.526	0.234
RRUS-4478 B14 (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	1.843	1.059	0.060
			0.000	0.000			1/2" Ice	2.012	1.197	0.076
			0.000	0.000			1" Ice	2.190	1.342	0.094
RRUS-32 B2 (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	2.743	1.668	0.060
			0.000	0.000			1/2" Ice	2.965	1.855	0.081
			0.000	0.000			1" Ice	3.194	2.049	0.105
RRUS-4426 B66 (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	1.644	0.725	0.048
			0.000	0.000			1/2" Ice	1.804	0.842	0.061
			0.000	0.000			1" Ice	1.972	0.969	0.076
RRUS-32 B30 (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	2.743	1.668	0.060
			0.000	0.000			1/2" Ice	2.965	1.855	0.081
			0.000	0.000			1" Ice	3.194	2.049	0.105
RRUS-4449 B5/B12 (AT&T)	C	From Leg	3.000	0.000	0.0000	160.000	No Ice	1.644	1.300	0.073
			0.000	0.000			1/2" Ice	1.804	1.445	0.090
			0.000	0.000			1" Ice	1.972	1.597	0.110

tnxTower Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:	Job	CTL05633 - SEYMOUR EAST	Page	21 of 56
	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
Raycap	C	From Leg	3.000		0.0000	160.000	No Ice 0.929	0.929	0.026
DC9-48-60-24-8C-EV (AT&T)			0.000				1/2" Ice 1.479	1.479	0.044
			0.000				1" Ice 1.670	1.670	0.064
PIROD 15' T-FRAME SECTOR	A	None			0.0000	150.000	No Ice 15.000	15.000	0.500
							1/2" Ice 20.600	20.600	0.650
							1" Ice 26.200	26.200	0.800
RFS APXV18-206517S	A	From Leg	3.000		0.0000	150.000	No Ice 5.167	4.463	0.057
			0.000				1/2" Ice 5.618	5.394	0.099
			0.000				1" Ice 6.077	6.203	0.149
(2) Commscope HBXX-6517DS-A2M	A	From Leg	3.000		0.0000	150.000	No Ice 8.720	6.914	0.081
			0.000				1/2" Ice 9.271	8.109	0.150
			0.000				1" Ice 9.797	9.018	0.227
(2) Commscope LNX-6514DS-A1M	A	From Leg	3.000		0.0000	150.000	No Ice 8.397	7.068	0.079
			0.000				1/2" Ice 8.955	8.253	0.148
			0.000				1" Ice 9.480	9.152	0.225
(2) Diplexer	A	From Leg	3.000		0.0000	150.000	No Ice 0.518	0.142	0.044
			0.000				1/2" Ice 0.617	0.207	0.076
			0.000				1" Ice 0.725	0.280	0.108
ALU RRH2x60-AWS	A	From Leg	3.000		0.0000	150.000	No Ice 3.347	2.005	0.055
			0.000				1/2" Ice 3.604	2.237	0.078
			0.000				1" Ice 3.867	2.476	0.105
ALU RRH2x60	A	From Leg	3.000		0.0000	150.000	No Ice 1.811	1.418	0.050
			0.000				1/2" Ice 1.984	1.576	0.067
			0.000				1" Ice 2.164	1.742	0.087
DB-T1-6Z-8AB-0Z	A	From Leg	3.000		0.0000	150.000	No Ice 5.600	2.330	0.040
			0.000				1/2" Ice 5.600	2.330	0.080
			0.000				1" Ice 5.600	2.330	0.120
PIROD 15' T-FRAME SECTOR	B	None			0.0000	150.000	No Ice 15.000	15.000	0.500
							1/2" Ice 20.600	20.600	0.650
							1" Ice 26.200	26.200	0.800
RFS APXV18-206517S	B	From Leg	3.000		0.0000	150.000	No Ice 5.167	4.463	0.057
			0.000				1/2" Ice 5.618	5.394	0.099
			0.000				1" Ice 6.077	6.203	0.149
(2) Commscope HBXX-6517DS-A2M	B	From Leg	3.000		0.0000	150.000	No Ice 8.720	6.914	0.081
			0.000				1/2" Ice 9.271	8.109	0.150
			0.000				1" Ice 9.797	9.018	0.227
(2) Commscope LNX-6514DS-A1M	B	From Leg	3.000		0.0000	150.000	No Ice 8.397	7.068	0.079
			0.000				1/2" Ice 8.955	8.253	0.148
			0.000				1" Ice 9.480	9.152	0.225
(2) Diplexer	B	From Leg	3.000		0.0000	150.000	No Ice 0.518	0.142	0.044
			0.000				1/2" Ice 0.617	0.207	0.076
			0.000				1" Ice 0.725	0.280	0.108
ALU RRH2x60-AWS	B	From Leg	3.000		0.0000	150.000	No Ice 3.347	2.005	0.055
			0.000				1/2" Ice 3.604	2.237	0.078
			0.000				1" Ice 3.867	2.476	0.105
ALU RRH2x60	B	From Leg	3.000		0.0000	150.000	No Ice 1.811	1.418	0.050
			0.000				1/2" Ice 1.984	1.576	0.067
			0.000				1" Ice 2.164	1.742	0.087
DB-T1-6Z-8AB-0Z	B	From Leg	3.000		0.0000	150.000	No Ice 5.600	2.330	0.040
			0.000				1/2" Ice 5.600	2.330	0.080
			0.000				1" Ice 5.600	2.330	0.120
PIROD 15' T-FRAME SECTOR	C	None			0.0000	150.000	No Ice 15.000	15.000	0.500
							1/2" Ice 20.600	20.600	0.650
							1" Ice 26.200	26.200	0.800
RFS APXV18-206517S	C	From Leg	3.000		0.0000	150.000	No Ice 5.167	4.463	0.057
			0.000				1/2" Ice 5.618	5.394	0.099

tnxTower Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:	Job	CTL05633 - SEYMOUR EAST	Page	22 of 56
	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
(2) Commscope HBXX-6517DS-A2M	C	From Leg	0.000		0.0000	150.000	1" Ice	6.077	6.203	0.149
			3.000				No Ice	8.720	6.914	0.081
			0.000				1/2" Ice	9.271	8.109	0.150
			0.000				1" Ice	9.797	9.018	0.227
(2) Commscope LNX-6514DS-A1M	C	From Leg	3.000		0.0000	150.000	No Ice	8.397	7.068	0.079
			0.000				1/2" Ice	8.955	8.253	0.148
			0.000				1" Ice	9.480	9.152	0.225
			0.000				No Ice	0.518	0.142	0.044
(2) Diplexer	C	From Leg	3.000		0.0000	150.000	1/2" Ice	0.617	0.207	0.076
			0.000				1" Ice	0.725	0.280	0.108
			0.000				No Ice	3.347	2.005	0.055
			0.000				1/2" Ice	3.604	2.237	0.078
ALU RRH2x60-AWS	C	From Leg	3.000		0.0000	150.000	1" Ice	3.867	2.476	0.105
			0.000				No Ice	1.811	1.418	0.050
			0.000				1/2" Ice	1.984	1.576	0.067
ALU RRH2x60	C	From Leg	3.000		0.0000	150.000	1" Ice	2.164	1.742	0.087
			0.000				No Ice	5.600	2.330	0.040
			0.000				1/2" Ice	5.600	2.330	0.080
DB-T1-6Z-8AB-0Z	C	From Leg	3.000		0.0000	150.000	1" Ice	5.600	2.330	0.120
			0.000				No Ice	13.200	9.200	0.658
			0.000				1/2" Ice	19.500	14.600	0.804
*										
SitePro1 VFA12-HD Sector Frame	A	None			0.0000	140.000	1" Ice	25.800	19.500	1.015
							No Ice	10.361	9.238	0.107
							1/2" Ice	11.044	10.512	0.197
JMA MX06FRO660-03 w/ Mount Pipe	A	From Leg	3.000		0.0000	140.000	1" Ice	11.694	11.638	0.296
			0.000				No Ice	9.872	7.338	0.078
			0.000				1/2" Ice	10.342	7.784	0.147
JMA MX06FRO660-03	A	From Leg	3.000		0.0000	140.000	1" Ice	10.819	8.237	0.222
			0.000				No Ice	5.905	3.744	0.116
			0.000				1/2" Ice	6.718	4.795	0.167
Samsung MT6407-77A w/ Mount Pipe	A	From Leg	3.000		0.0000	140.000	1" Ice	7.440	5.697	0.223
			0.000				No Ice	10.090	10.475	0.056
			0.000				1/2" Ice	10.772	11.759	0.151
Antel LPA-80063/6CF w/ Mount Pipe	A	From Leg	3.000		0.0000	140.000	1" Ice	11.421	12.895	0.255
			0.000				No Ice	1.875	1.250	0.084
			0.000				1/2" Ice	2.045	1.393	0.103
Samsung B2/B66A RRHBR049	A	From Leg	3.000		0.0000	140.000	1" Ice	2.223	1.543	0.124
			0.000				No Ice	1.875	1.013	0.070
			0.000				1/2" Ice	2.045	1.145	0.087
Samsung B5/B13 RRHBR04C	A	From Leg	3.000		0.0000	140.000	1" Ice	2.223	1.284	0.106
			0.000				No Ice	3.012	1.963	0.032
			0.000				1/2" Ice	3.231	2.151	0.058
Raycap RRFDC-3315-PF-48	A	From Leg	1.500		0.0000	140.000	1" Ice	3.457	2.347	0.088
			0.000				No Ice	13.200	9.200	0.658
			0.000				1/2" Ice	19.500	14.600	0.804
SitePro1 VFA12-HD Sector Frame	B	None			0.0000	140.000	1" Ice	25.800	19.500	1.015
							No Ice	10.361	9.238	0.107
							1/2" Ice	11.044	10.512	0.197
JMA MX06FRO660-03 w/ Mount Pipe	B	From Leg	3.000		0.0000	140.000	1" Ice	11.694	11.638	0.296
			0.000				No Ice	9.872	7.338	0.078
			0.000				1/2" Ice	10.342	7.784	0.147
JMA MX06FRO660-03	B	From Leg	3.000		0.0000	140.000	1" Ice	10.819	8.237	0.222
			0.000				No Ice	5.905	3.744	0.116
			0.000				1/2" Ice	6.718	4.795	0.167
Samsung MT6407-77A w/ Mount Pipe	B	From Leg	3.000		0.0000	140.000	1" Ice	7.440	5.697	0.223
			0.000				No Ice	10.090	10.475	0.056
			0.000				1/2" Ice	10.772	11.759	0.151
Antel LPA-80063/6CF w/	B	From Leg	3.000		0.0000	140.000	1" Ice	11.421	12.895	0.255
			0.000				No Ice	1.875	1.250	0.084
			0.000				1/2" Ice	2.045	1.393	0.103

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
Mount Pipe			0.000			1/2" Ice	10.772	11.759	0.151
			0.000			1" Ice	11.421	12.895	0.255
Samsung B2/B66A RRHBR049	B	From Leg	3.000	0.0000	140.000	No Ice	1.875	1.250	0.084
			0.000			1/2" Ice	2.045	1.393	0.103
			0.000			1" Ice	2.223	1.543	0.124
Samsung B5/B13 RRHBR04C	B	From Leg	3.000	0.0000	140.000	No Ice	1.875	1.013	0.070
			0.000			1/2" Ice	2.045	1.145	0.087
			0.000			1" Ice	2.223	1.284	0.106
Raycap RRFDC-3315-PF-48	B	From Leg	1.500	0.0000	140.000	No Ice	3.012	1.963	0.032
			0.000			1/2" Ice	3.231	2.151	0.058
			0.000			1" Ice	3.457	2.347	0.088
SitePro1 VFA12-HD Sector Frame	C	None		0.0000	140.000	No Ice	13.200	9.200	0.658
						1/2" Ice	19.500	14.600	0.804
						1" Ice	25.800	19.500	1.015
JMA MX06FRO660-03 w/ Mount Pipe	C	From Leg	3.000	0.0000	140.000	No Ice	10.361	9.238	0.107
			0.000			1/2" Ice	11.044	10.512	0.197
			0.000			1" Ice	11.694	11.638	0.296
JMA MX06FRO660-03	C	From Leg	3.000	0.0000	140.000	No Ice	9.872	7.338	0.078
			0.000			1/2" Ice	10.342	7.784	0.147
			0.000			1" Ice	10.819	8.237	0.222
Samsung MT6407-77A w/ Mount Pipe	C	From Leg	3.000	0.0000	140.000	No Ice	5.905	3.744	0.116
			0.000			1/2" Ice	6.718	4.795	0.167
			0.000			1" Ice	7.440	5.697	0.223
Antel LPA-80063/6CF w/ Mount Pipe	C	From Leg	3.000	0.0000	140.000	No Ice	10.090	10.475	0.056
			0.000			1/2" Ice	10.772	11.759	0.151
			0.000			1" Ice	11.421	12.895	0.255
Samsung B2/B66A RRHBR049	C	From Leg	3.000	0.0000	140.000	No Ice	1.875	1.250	0.084
			0.000			1/2" Ice	2.045	1.393	0.103
			0.000			1" Ice	2.223	1.543	0.124
Samsung B5/B13 RRHBR04C	C	From Leg	3.000	0.0000	140.000	No Ice	1.875	1.013	0.070
			0.000			1/2" Ice	2.045	1.145	0.087
			0.000			1" Ice	2.223	1.284	0.106

Truss-Leg Properties

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in ²	in ²	K	K	in	in	in ²
Pirod 105245	1090.3344	2961.8666	0.677	0.350	7.5718	20.5685	5.3014
Pirod 105218	2263.4687	6168.7540	0.755	0.686	7.8593	21.4193	7.2158
Pirod 105218	2263.4687	6158.1611	0.755	0.676	7.8593	21.3825	7.2158
Pirod 105219	2441.8688	6218.5127	0.944	0.698	8.4787	21.5921	9.4248
Pirod 105220	2578.8005	6277.5586	1.121	0.701	8.9542	21.7971	11.9282
Pirod 105220	2578.8005	6262.9453	1.121	0.687	8.9542	21.7463	11.9282
Pirod 112743	3466.5160	8441.0592	1.689	0.925	12.0365	29.3092	14.7262
Pirod 112743	3466.5160	8278.4068	1.689	0.899	12.0365	28.7445	14.7262
Pirod 112744	3599.5585	8320.2582	1.904	0.882	12.4985	28.8898	17.8187
Pirod 112744	3599.5585	8071.5473	1.904	0.841	12.4985	28.0262	17.8187
Pirod 112745	3789.3331	8102.3364	2.194	0.812	13.1574	28.1331	21.2058
Pirod 112740	3789.3331	7438.8962	2.194	0.699	13.1574	25.8295	21.2058

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	Client	SMARTLINK - AT&T	Designed by	GO

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
T1	275.000	1.319	0.039	51.458	A	0.000	7.943	2.917	36.72	0.000	0.000
280.000-270.000					B	0.000	7.943		36.72	0.000	0.000
					C	0.000	7.943		36.72	4.960	0.000
T2	260.000	1.298	0.039	103.333	A	0.000	16.232	6.667	41.07	0.000	0.000
270.000-250.000					B	0.000	16.232		41.07	0.000	0.000
					C	0.000	16.232		41.07	9.920	0.000
T3	240.000	1.269	0.038	104.167	A	0.000	18.850	8.333	44.21	54.020	0.000
250.000-230.000					B	0.000	18.850		44.21	0.000	0.000
					C	0.000	18.850		44.21	13.880	0.000
T4	225.000	1.246	0.037	66.264	A	4.672	12.641	12.641	73.01	27.010	0.000
230.000-220.000					B	4.672	12.641		73.01	0.000	0.000
					C	4.672	12.641		73.01	8.920	0.000
T5	210.000	1.222	0.036	162.945	A	10.467	26.241	26.241	71.49	54.020	0.000
220.000-200.000					B	10.467	26.241		71.49	0.000	0.000
					C	10.467	26.241		71.49	17.840	0.000
T6	190.000	1.187	0.035	202.945	A	15.714	26.241	26.241	62.55	54.020	0.000
200.000-180.000					B	15.714	26.241		62.55	0.000	0.000
					C	15.714	26.241		62.55	17.840	0.000
T7	170.000	1.15	0.034	243.362	A	19.853	28.309	28.309	58.78	54.020	0.000
180.000-160.000					B	19.853	28.309		58.78	0.000	0.000
					C	19.853	28.309		58.78	29.720	0.000
T8	150.000	1.11	0.033	283.780	A	20.877	29.897	29.897	58.88	54.020	0.000
160.000-140.000					B	20.877	29.897		58.88	47.580	0.000
					C	20.877	29.897		58.88	47.540	0.000
T9	130.000	1.065	0.032	323.780	A	19.635	29.897	29.897	60.36	54.020	0.000
140.000-120.000					B	19.635	29.897		60.36	47.580	0.000
					C	19.635	29.897		60.36	107.500	0.000
T10	110.000	1.016	0.030	374.209	A	13.965	40.189	40.189	74.21	54.020	0.000
120.000-100.000					B	13.965	40.189		74.21	47.580	0.000
					C	13.965	40.189		74.21	107.500	0.000
T11	90.000	0.959	0.029	414.209	A	14.825	40.189	40.189	73.05	54.020	0.000
100.000-80.000					B	14.825	40.189		73.05	47.580	0.000
					C	14.825	40.189		73.05	107.500	0.000
T12	70.000	0.892	0.027	454.627	A	15.712	41.731	41.731	72.65	54.020	0.000
80.000-60.000					B	15.712	41.731		72.65	47.580	0.000
					C	15.712	41.731		72.65	107.500	0.000
T13	50.000	0.811	0.024	494.627	A	16.624	41.731	41.731	71.51	54.020	0.000
60.000-40.000					B	16.624	41.731		71.51	47.580	0.000
					C	16.624	41.731		71.51	107.500	0.000
T14	30.000	0.701	0.021	535.044	A	17.558	43.931	43.931	71.44	54.020	0.000
40.000-20.000					B	17.558	43.931		71.44	47.580	0.000
					C	17.558	43.931		71.44	107.500	0.000
T15	10.000	0.7	0.021	575.044	A	18.514	43.931	43.931	70.35	37.814	0.000
20.000-0.000					B	18.514	43.931		70.35	33.306	0.000
					C	18.514	43.931		70.35	75.250	0.000

Tower Pressure - With Ice

$G_H = 0.850$

tnxTower Fullerton Engineering Consultants, LLC 1100 E. Woodfield Road. Suite 500 Schauamburg, IL 60173 Phone: 847-908-8400 FAX:	Job	CTL05633 - SEYMOUR EAST	Page	25 of 56
	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		ksf	in	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
T1 280.000-270.000	275.000	1.319	0.007	1.2362	53.519	A	0.000	25.838	7.037	27.24	0.000	0.000
						B	0.000	25.838		27.24	0.000	0.000
						C	0.000	25.838		27.24	15.370	0.000
T2 270.000-250.000	260.000	1.298	0.007	1.2293	107.431	A	0.000	50.880	14.862	29.21	0.000	0.000
						B	0.000	50.880		29.21	0.000	0.000
						C	0.000	50.880		29.21	30.665	0.000
T3 250.000-230.000	240.000	1.269	0.007	1.2195	108.232	A	0.000	52.996	16.463	31.07	84.986	0.000
						B	0.000	52.996		31.07	0.000	0.000
						C	0.000	52.996		31.07	39.398	0.000
T4 230.000-220.000	225.000	1.246	0.007	1.2116	68.286	A	4.672	38.112	34.338	80.26	42.442	0.000
						B	4.672	38.112		80.26	0.000	0.000
						C	4.672	38.112		80.26	24.044	0.000
T5 220.000-200.000	210.000	1.222	0.007	1.2033	166.961	A	10.467	79.913	71.517	79.13	84.774	0.000
						B	10.467	79.913		79.13	0.000	0.000
						C	10.467	79.913		79.13	47.932	0.000
T6 200.000-180.000	190.000	1.187	0.006	1.1913	206.921	A	15.714	83.874	71.394	71.69	84.616	0.000
						B	15.714	83.874		71.69	0.000	0.000
						C	15.714	83.874		71.69	47.707	0.000
T7 180.000-160.000	170.000	1.15	0.006	1.1781	247.294	A	19.853	86.443	72.093	67.82	84.443	0.000
						B	19.853	86.443		67.82	0.000	0.000
						C	19.853	86.443		67.82	65.961	0.000
T8 160.000-140.000	150.000	1.11	0.006	1.1635	287.663	A	20.877	86.658	72.778	67.68	84.250	0.000
						B	20.877	86.658		67.68	111.076	0.000
						C	20.877	86.658		67.68	100.289	0.000
T9 140.000-120.000	130.000	1.065	0.006	1.1469	327.608	A	19.635	85.477	72.609	69.08	84.033	0.000
						B	19.635	85.477		69.08	110.642	0.000
						C	19.635	85.477		69.08	199.996	0.000
T10 120.000-100.000	110.000	1.016	0.005	1.1279	377.974	A	13.965	106.861	97.860	80.99	83.783	0.000
						B	13.965	106.861		80.99	110.144	0.000
						C	13.965	106.861		80.99	199.137	0.000
T11 100.000-80.000	90.000	0.959	0.005	1.1055	417.899	A	14.825	105.340	95.974	79.87	83.489	0.000
						B	14.825	105.340		79.87	109.557	0.000
						C	14.825	105.340		79.87	198.125	0.000
T12 80.000-60.000	70.000	0.892	0.005	1.0781	458.225	A	15.712	106.139	96.460	79.16	83.129	0.000
						B	15.712	106.139		79.16	108.839	0.000
						C	15.712	106.139		79.16	196.887	0.000
T13 60.000-40.000	50.000	0.811	0.004	1.0424	498.106	A	16.624	103.478	93.576	77.91	82.662	0.000
						B	16.624	103.478		77.91	107.906	0.000
						C	16.624	103.478		77.91	195.277	0.000
T14 40.000-20.000	30.000	0.701	0.004	0.9905	538.350	A	17.558	103.871	93.933	77.36	81.983	0.000
						B	17.558	103.871		77.36	106.552	0.000
						C	17.558	103.871		77.36	192.938	0.000
T15 20.000-0.000	10.000	0.7	0.004	0.8875	578.006	A	18.514	95.631	86.242	75.55	76.153	0.000
						B	18.514	95.631		75.55	79.763	0.000
						C	18.514	95.631		75.55	148.377	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		ksf	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²

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	Project 280' SELF-SUPPORT TOWER	Date 15:05:36 10/11/22
	Client SMARTLINK - AT&T	Designed by GO

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F _a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
T1	275.000	1.319	0.010	51.458	A	0.000	7.943	2.917	36.72	0.000	0.000
280.000-270.0					B	0.000	7.943		36.72	0.000	0.000
00					C	0.000	7.943		36.72	4.960	0.000
T2	260.000	1.298	0.010	103.333	A	0.000	16.232	6.667	41.07	0.000	0.000
270.000-250.0					B	0.000	16.232		41.07	0.000	0.000
00					C	0.000	16.232		41.07	9.920	0.000
T3	240.000	1.269	0.010	104.167	A	0.000	18.850	8.333	44.21	54.020	0.000
250.000-230.0					B	0.000	18.850		44.21	0.000	0.000
00					C	0.000	18.850		44.21	13.880	0.000
T4	225.000	1.246	0.010	66.264	A	4.672	12.641	12.641	73.01	27.010	0.000
230.000-220.0					B	4.672	12.641		73.01	0.000	0.000
00					C	4.672	12.641		73.01	8.920	0.000
T5	210.000	1.222	0.009	162.945	A	10.467	26.241	26.241	71.49	54.020	0.000
220.000-200.0					B	10.467	26.241		71.49	0.000	0.000
00					C	10.467	26.241		71.49	17.840	0.000
T6	190.000	1.187	0.009	202.945	A	15.714	26.241	26.241	62.55	54.020	0.000
200.000-180.0					B	15.714	26.241		62.55	0.000	0.000
00					C	15.714	26.241		62.55	17.840	0.000
T7	170.000	1.15	0.009	243.362	A	19.853	28.309	28.309	58.78	54.020	0.000
180.000-160.0					B	19.853	28.309		58.78	0.000	0.000
00					C	19.853	28.309		58.78	29.720	0.000
T8	150.000	1.11	0.009	283.780	A	20.877	29.897	29.897	58.88	54.020	0.000
160.000-140.0					B	20.877	29.897		58.88	47.580	0.000
00					C	20.877	29.897		58.88	47.540	0.000
T9	130.000	1.065	0.008	323.780	A	19.635	29.897	29.897	60.36	54.020	0.000
140.000-120.0					B	19.635	29.897		60.36	47.580	0.000
00					C	19.635	29.897		60.36	107.500	0.000
T10	110.000	1.016	0.008	374.209	A	13.965	40.189	40.189	74.21	54.020	0.000
120.000-100.0					B	13.965	40.189		74.21	47.580	0.000
00					C	13.965	40.189		74.21	107.500	0.000
T11	90.000	0.959	0.007	414.209	A	14.825	40.189	40.189	73.05	54.020	0.000
100.000-80.0					B	14.825	40.189		73.05	47.580	0.000
0					C	14.825	40.189		73.05	107.500	0.000
T12	70.000	0.892	0.007	454.627	A	15.712	41.731	41.731	72.65	54.020	0.000
80.000-60.000					B	15.712	41.731		72.65	47.580	0.000
00					C	15.712	41.731		72.65	107.500	0.000
T13	50.000	0.811	0.006	494.627	A	16.624	41.731	41.731	71.51	54.020	0.000
60.000-40.000					B	16.624	41.731		71.51	47.580	0.000
00					C	16.624	41.731		71.51	107.500	0.000
T14	30.000	0.701	0.005	535.044	A	17.558	43.931	43.931	71.44	54.020	0.000
40.000-20.000					B	17.558	43.931		71.44	47.580	0.000
00					C	17.558	43.931		71.44	107.500	0.000
T15	10.000	0.7	0.005	575.044	A	18.514	43.931	43.931	70.35	37.814	0.000
20.000-0.000					B	18.514	43.931		70.35	33.306	0.000
00					C	18.514	43.931		70.35	75.250	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F _a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
T1	0.018	0.731	A	0.154	2.756	0.039	1	1	4.512	0.581	0.058	C
280.000-270.0			B	0.154	2.756		1	1	4.512			
00			C	0.154	2.756		1	1	4.512			
T2	0.037	1.564	A	0.157	2.746	0.039	1	1	9.225	1.159	0.058	C
270.000-250.0			B	0.157	2.746		1	1	9.225			

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	Project 280' SELF-SUPPORT TOWER	Date 15:05:36 10/11/22
	Client SMARTLINK - AT&T	Designed by GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.157	2.746		1	1	9.225			
T3	0.346	2.155	A	0.181	2.661	0.038	1	1	10.771	3.102	0.155	C
250.000-230.0			B	0.181	2.661		1	1	10.771			
00			C	0.181	2.661		1	1	10.771			
T4	0.181	1.453	A	0.261	2.404	0.037	1	1	12.102	2.051	0.205	C
230.000-220.0			B	0.261	2.404		1	1	12.102			
00			C	0.261	2.404		1	1	12.102			
T5	0.362	2.838	A	0.225	2.514	0.036	1	1	25.670	4.218	0.211	C
220.000-200.0			B	0.225	2.514		1	1	25.670			
00			C	0.225	2.514		1	1	25.670			
T6	0.362	3.493	A	0.207	2.574	0.035	1	1	30.821	4.544	0.227	C
200.000-180.0			B	0.207	2.574		1	1	30.821			
00			C	0.207	2.574		1	1	30.821			
T7	0.412	4.409	A	0.198	2.603	0.034	1	1	36.106	5.174	0.259	C
180.000-160.0			B	0.198	2.603		1	1	36.106			
00			C	0.198	2.603		1	1	36.106			
T8	0.700	5.108	A	0.179	2.668	0.033	1	1	37.951	7.034	0.352	C
160.000-140.0			B	0.179	2.668		1	1	37.951			
00			C	0.179	2.668		1	1	37.951			
T9	1.017	4.985	A	0.153	2.761	0.032	1	1	36.612	8.364	0.418	C
140.000-120.0			B	0.153	2.761		1	1	36.612			
00			C	0.153	2.761		1	1	36.612			
T10	1.017	7.429	A	0.145	2.791	0.030	1	1	36.753	8.013	0.401	C
120.000-100.0			B	0.145	2.791		1	1	36.753			
00			C	0.145	2.791		1	1	36.753			
T11	1.017	7.549	A	0.133	2.836	0.029	1	1	37.573	7.663	0.383	C
100.000-80.0			B	0.133	2.836		1	1	37.573			
0			C	0.133	2.836		1	1	37.573			
T12	1.017	8.322	A	0.126	2.86	0.027	1	1	39.313	7.265	0.363	C
80.000-60.000			B	0.126	2.86		1	1	39.313			
00			C	0.126	2.86		1	1	39.313			
T13	1.017	8.454	A	0.118	2.893	0.024	1	1	40.204	6.678	0.334	C
60.000-40.000			B	0.118	2.893		1	1	40.204			
00			C	0.118	2.893		1	1	40.204			
T14	1.017	9.462	A	0.115	2.905	0.021	1	1	42.375	5.892	0.295	C
40.000-20.000			B	0.115	2.905		1	1	42.375			
00			C	0.115	2.905		1	1	42.375			
T15	0.712	9.604	A	0.109	2.93	0.021	1	1	43.319	4.843	0.242	C
20.000-0.000			B	0.109	2.93		1	1	43.319			
00			C	0.109	2.93		1	1	43.319			
Sum Weight:	9.232	77.557						OTM	9076.646	76.579		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.018	0.731	A	0.154	2.756	0.039	0.8	1	4.512	0.581	0.058	C
280.000-270.0			B	0.154	2.756		0.8	1	4.512			
00			C	0.154	2.756		0.8	1	4.512			
T2	0.037	1.564	A	0.157	2.746	0.039	0.8	1	9.225	1.159	0.058	C
270.000-250.0			B	0.157	2.746		0.8	1	9.225			

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.157	2.746		0.8	1	9.225			
T3	0.346	2.155	A	0.181	2.661	0.038	0.8	1	10.771	3.102	0.155	C
250.000-230.0			B	0.181	2.661		0.8	1	10.771			
00			C	0.181	2.661		0.8	1	10.771			
T4	0.181	1.453	A	0.261	2.404	0.037	0.8	1	11.168	1.980	0.198	C
230.000-220.0			B	0.261	2.404		0.8	1	11.168			
00			C	0.261	2.404		0.8	1	11.168			
T5	0.362	2.838	A	0.225	2.514	0.036	0.8	1	23.577	4.055	0.203	C
220.000-200.0			B	0.225	2.514		0.8	1	23.577			
00			C	0.225	2.514		0.8	1	23.577			
T6	0.362	3.493	A	0.207	2.574	0.035	0.8	1	27.678	4.300	0.215	C
200.000-180.0			B	0.207	2.574		0.8	1	27.678			
00			C	0.207	2.574		0.8	1	27.678			
T7	0.412	4.409	A	0.198	2.603	0.034	0.8	1	32.135	4.873	0.244	C
180.000-160.0			B	0.198	2.603		0.8	1	32.135			
00			C	0.198	2.603		0.8	1	32.135			
T8	0.700	5.108	A	0.179	2.668	0.033	0.8	1	33.776	6.721	0.336	C
160.000-140.0			B	0.179	2.668		0.8	1	33.776			
00			C	0.179	2.668		0.8	1	33.776			
T9	1.017	4.985	A	0.153	2.761	0.032	0.8	1	32.685	8.071	0.404	C
140.000-120.0			B	0.153	2.761		0.8	1	32.685			
00			C	0.153	2.761		0.8	1	32.685			
T10	1.017	7.429	A	0.145	2.791	0.030	0.8	1	33.960	7.812	0.391	C
120.000-100.0			B	0.145	2.791		0.8	1	33.960			
00			C	0.145	2.791		0.8	1	33.960			
T11	1.017	7.549	A	0.133	2.836	0.029	0.8	1	34.608	7.458	0.373	C
100.000-80.0			B	0.133	2.836		0.8	1	34.608			
0			C	0.133	2.836		0.8	1	34.608			
T12	1.017	8.322	A	0.126	2.86	0.027	0.8	1	36.171	7.062	0.353	C
80.000-60.000			B	0.126	2.86		0.8	1	36.171			
00			C	0.126	2.86		0.8	1	36.171			
T13	1.017	8.454	A	0.118	2.893	0.024	0.8	1	36.879	6.481	0.324	C
60.000-40.000			B	0.118	2.893		0.8	1	36.879			
00			C	0.118	2.893		0.8	1	36.879			
T14	1.017	9.462	A	0.115	2.905	0.021	0.8	1	38.864	5.711	0.286	C
40.000-20.000			B	0.115	2.905		0.8	1	38.864			
00			C	0.115	2.905		0.8	1	38.864			
T15	0.712	9.604	A	0.109	2.93	0.021	0.8	1	39.616	4.651	0.233	C
20.000-0.000			B	0.109	2.93		0.8	1	39.616			
00			C	0.109	2.93		0.8	1	39.616			
Sum Weight:	9.232	77.557						OTM	8772.400	74.018		
									kip-ft			

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.018	0.731	A	0.154	2.756	0.039	0.85	1	4.512	0.581	0.058	C
280.000-270.0			B	0.154	2.756		0.85	1	4.512			
00			C	0.154	2.756		0.85	1	4.512			
T2	0.037	1.564	A	0.157	2.746	0.039	0.85	1	9.225	1.159	0.058	C
270.000-250.0			B	0.157	2.746		0.85	1	9.225			

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.157	2.746		0.85	1	9.225			
T3	0.346	2.155	A	0.181	2.661	0.038	0.85	1	10.771	3.102	0.155	C
250.000-230.0			B	0.181	2.661		0.85	1	10.771			
00			C	0.181	2.661		0.85	1	10.771			
T4	0.181	1.453	A	0.261	2.404	0.037	0.85	1	11.402	1.998	0.200	C
230.000-220.0			B	0.261	2.404		0.85	1	11.402			
00			C	0.261	2.404		0.85	1	11.402			
T5	0.362	2.838	A	0.225	2.514	0.036	0.85	1	24.100	4.096	0.205	C
220.000-200.0			B	0.225	2.514		0.85	1	24.100			
00			C	0.225	2.514		0.85	1	24.100			
T6	0.362	3.493	A	0.207	2.574	0.035	0.85	1	28.464	4.361	0.218	C
200.000-180.0			B	0.207	2.574		0.85	1	28.464			
00			C	0.207	2.574		0.85	1	28.464			
T7	0.412	4.409	A	0.198	2.603	0.034	0.85	1	33.128	4.948	0.247	C
180.000-160.0			B	0.198	2.603		0.85	1	33.128			
00			C	0.198	2.603		0.85	1	33.128			
T8	0.700	5.108	A	0.179	2.668	0.033	0.85	1	34.819	6.799	0.340	C
160.000-140.0			B	0.179	2.668		0.85	1	34.819			
00			C	0.179	2.668		0.85	1	34.819			
T9	1.017	4.985	A	0.153	2.761	0.032	0.85	1	33.667	8.145	0.407	C
140.000-120.0			B	0.153	2.761		0.85	1	33.667			
00			C	0.153	2.761		0.85	1	33.667			
T10	1.017	7.429	A	0.145	2.791	0.030	0.85	1	34.658	7.862	0.393	C
120.000-100.0			B	0.145	2.791		0.85	1	34.658			
00			C	0.145	2.791		0.85	1	34.658			
T11	1.017	7.549	A	0.133	2.836	0.029	0.85	1	35.349	7.510	0.375	C
100.000-80.0			B	0.133	2.836		0.85	1	35.349			
0			C	0.133	2.836		0.85	1	35.349			
T12	1.017	8.322	A	0.126	2.86	0.027	0.85	1	36.956	7.113	0.356	C
80.000-60.000			B	0.126	2.86		0.85	1	36.956			
00			C	0.126	2.86		0.85	1	36.956			
T13	1.017	8.454	A	0.118	2.893	0.024	0.85	1	37.710	6.530	0.327	C
60.000-40.000			B	0.118	2.893		0.85	1	37.710			
00			C	0.118	2.893		0.85	1	37.710			
T14	1.017	9.462	A	0.115	2.905	0.021	0.85	1	39.741	5.756	0.288	C
40.000-20.000			B	0.115	2.905		0.85	1	39.741			
00			C	0.115	2.905		0.85	1	39.741			
T15	0.712	9.604	A	0.109	2.93	0.021	0.85	1	40.542	4.699	0.235	C
20.000-0.000			B	0.109	2.93		0.85	1	40.542			
00			C	0.109	2.93		0.85	1	40.542			
Sum Weight:	9.232	77.557						OTM	8848.462	74.658		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.157	1.534	A	0.483	1.923	0.007	1	1	17.463	0.294	0.029	C
280.000-270.0			B	0.483	1.923		1	1	17.463			
00			C	0.483	1.923		1	1	17.463			
T2	0.313	3.130	A	0.474	1.937	0.007	1	1	34.146	0.571	0.029	C
270.000-250.0			B	0.474	1.937		1	1	34.146			

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.474	1.937		1	1	34.146			
T3	2.145	3.804	A	0.49	1.914	0.007	1	1	36.009	1.115	0.056	C
250.000-230.0			B	0.49	1.914		1	1	36.009			
00			C	0.49	1.914		1	1	36.009			
T4	1.124	2.532	A	0.627	1.79	0.007	1	1	33.669	0.718	0.072	C
230.000-220.0			B	0.627	1.79		1	1	33.669			
00			C	0.627	1.79		1	1	33.669			
T5	2.239	6.074	A	0.541	1.852	0.007	1	1	67.058	1.426	0.071	C
220.000-200.0			B	0.541	1.852		1	1	67.058			
00			C	0.541	1.852		1	1	67.058			
T6	2.226	7.205	A	0.481	1.926	0.006	1	1	72.335	1.466	0.073	C
200.000-180.0			B	0.481	1.926		1	1	72.335			
00			C	0.481	1.926		1	1	72.335			
T7	2.568	8.518	A	0.43	2.008	0.006	1	1	76.011	1.584	0.079	C
180.000-160.0			B	0.43	2.008		1	1	76.011			
00			C	0.43	2.008		1	1	76.011			
T8	4.500	9.239	A	0.374	2.118	0.006	1	1	75.064	2.293	0.115	C
160.000-140.0			B	0.374	2.118		1	1	75.064			
00			C	0.374	2.118		1	1	75.064			
T9	6.315	8.898	A	0.321	2.242	0.006	1	1	71.407	2.686	0.134	C
140.000-120.0			B	0.321	2.242		1	1	71.407			
00			C	0.321	2.242		1	1	71.407			
T10	6.258	12.056	A	0.32	2.245	0.005	1	1	78.647	2.629	0.131	C
120.000-100.0			B	0.32	2.245		1	1	78.647			
00			C	0.32	2.245		1	1	78.647			
T11	6.191	12.147	A	0.288	2.33	0.005	1	1	77.518	2.492	0.125	C
100.000-80.0			B	0.288	2.33		1	1	77.518			
0			C	0.288	2.33		1	1	77.518			
T12	6.109	12.909	A	0.266	2.391	0.005	1	1	78.235	2.336	0.117	C
80.000-60.000			B	0.266	2.391		1	1	78.235			
0			C	0.266	2.391		1	1	78.235			
T13	6.003	12.941	A	0.241	2.464	0.004	1	1	76.939	2.120	0.106	C
60.000-40.000			B	0.241	2.464		1	1	76.939			
0			C	0.241	2.464		1	1	76.939			
T14	5.851	13.847	A	0.226	2.513	0.004	1	1	77.744	1.837	0.092	C
40.000-20.000			B	0.226	2.513		1	1	77.744			
0			C	0.226	2.513		1	1	77.744			
T15	3.103	13.511	A	0.197	2.604	0.004	1	1	73.411	1.577	0.079	C
20.000-0.000			B	0.197	2.604		1	1	73.411			
0			C	0.197	2.604		1	1	73.411			
Sum Weight:	55.103	128.345						OTM	3052.705	25.144		
									kip-ft			

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.157	1.534	A	0.483	1.923	0.007	0.8	1	17.463	0.294	0.029	C
280.000-270.0			B	0.483	1.923		0.8	1	17.463			
00			C	0.483	1.923		0.8	1	17.463			
T2	0.313	3.130	A	0.474	1.937	0.007	0.8	1	34.146	0.571	0.029	C
270.000-250.0			B	0.474	1.937		0.8	1	34.146			

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.474	1.937		0.8	1	34.146			
T3	2.145	3.804	A	0.49	1.914	0.007	0.8	1	36.009	1.115	0.056	C
250.000-230.0			B	0.49	1.914		0.8	1	36.009			
00			C	0.49	1.914		0.8	1	36.009			
T4	1.124	2.532	A	0.627	1.79	0.007	0.8	1	32.734	0.708	0.071	C
230.000-220.0			B	0.627	1.79		0.8	1	32.734			
00			C	0.627	1.79		0.8	1	32.734			
T5	2.239	6.074	A	0.541	1.852	0.007	0.8	1	64.964	1.405	0.070	C
220.000-200.0			B	0.541	1.852		0.8	1	64.964			
00			C	0.541	1.852		0.8	1	64.964			
T6	2.226	7.205	A	0.481	1.926	0.006	0.8	1	69.192	1.433	0.072	C
200.000-180.0			B	0.481	1.926		0.8	1	69.192			
00			C	0.481	1.926		0.8	1	69.192			
T7	2.568	8.518	A	0.43	2.008	0.006	0.8	1	72.041	1.542	0.077	C
180.000-160.0			B	0.43	2.008		0.8	1	72.041			
00			C	0.43	2.008		0.8	1	72.041			
T8	4.500	9.239	A	0.374	2.118	0.006	0.8	1	70.889	2.248	0.112	C
160.000-140.0			B	0.374	2.118		0.8	1	70.889			
00			C	0.374	2.118		0.8	1	70.889			
T9	6.315	8.898	A	0.321	2.242	0.006	0.8	1	67.480	2.643	0.132	C
140.000-120.0			B	0.321	2.242		0.8	1	67.480			
00			C	0.321	2.242		0.8	1	67.480			
T10	6.258	12.056	A	0.32	2.245	0.005	0.8	1	75.854	2.600	0.130	C
120.000-100.0			B	0.32	2.245		0.8	1	75.854			
00			C	0.32	2.245		0.8	1	75.854			
T11	6.191	12.147	A	0.288	2.33	0.005	0.8	1	74.553	2.462	0.123	C
100.000-80.0			B	0.288	2.33		0.8	1	74.553			
0			C	0.288	2.33		0.8	1	74.553			
T12	6.109	12.909	A	0.266	2.391	0.005	0.8	1	75.093	2.306	0.115	C
80.000-60.000			B	0.266	2.391		0.8	1	75.093			
00			C	0.266	2.391		0.8	1	75.093			
T13	6.003	12.941	A	0.241	2.464	0.004	0.8	1	73.614	2.090	0.105	C
60.000-40.000			B	0.241	2.464		0.8	1	73.614			
00			C	0.241	2.464		0.8	1	73.614			
T14	5.851	13.847	A	0.226	2.513	0.004	0.8	1	74.232	1.809	0.090	C
40.000-20.000			B	0.226	2.513		0.8	1	74.232			
00			C	0.226	2.513		0.8	1	74.232			
T15	3.103	13.511	A	0.197	2.604	0.004	0.8	1	69.708	1.546	0.077	C
20.000-0.000			B	0.197	2.604		0.8	1	69.708			
00			C	0.197	2.604		0.8	1	69.708			
Sum Weight:	55.103	128.345						OTM	3009.846	24.773		
									kip-ft			

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.157	1.534	A	0.483	1.923	0.007	0.85	1	17.463	0.294	0.029	C
280.000-270.0			B	0.483	1.923		0.85	1	17.463			
00			C	0.483	1.923		0.85	1	17.463			
T2	0.313	3.130	A	0.474	1.937	0.007	0.85	1	34.146	0.571	0.029	C
270.000-250.0			B	0.474	1.937		0.85	1	34.146			

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.474	1.937		0.85	1	34.146			
T3	2.145	3.804	A	0.49	1.914	0.007	0.85	1	36.009	1.115	0.056	C
250.000-230.0			B	0.49	1.914		0.85	1	36.009			
00			C	0.49	1.914		0.85	1	36.009			
T4	1.124	2.532	A	0.627	1.79	0.007	0.85	1	32.968	0.711	0.071	C
230.000-220.0			B	0.627	1.79		0.85	1	32.968			
00			C	0.627	1.79		0.85	1	32.968			
T5	2.239	6.074	A	0.541	1.852	0.007	0.85	1	65.488	1.410	0.071	C
220.000-200.0			B	0.541	1.852		0.85	1	65.488			
00			C	0.541	1.852		0.85	1	65.488			
T6	2.226	7.205	A	0.481	1.926	0.006	0.85	1	69.978	1.441	0.072	C
200.000-180.0			B	0.481	1.926		0.85	1	69.978			
00			C	0.481	1.926		0.85	1	69.978			
T7	2.568	8.518	A	0.43	2.008	0.006	0.85	1	73.033	1.553	0.078	C
180.000-160.0			B	0.43	2.008		0.85	1	73.033			
00			C	0.43	2.008		0.85	1	73.033			
T8	4.500	9.239	A	0.374	2.118	0.006	0.85	1	71.933	2.259	0.113	C
160.000-140.0			B	0.374	2.118		0.85	1	71.933			
00			C	0.374	2.118		0.85	1	71.933			
T9	6.315	8.898	A	0.321	2.242	0.006	0.85	1	68.462	2.654	0.133	C
140.000-120.0			B	0.321	2.242		0.85	1	68.462			
00			C	0.321	2.242		0.85	1	68.462			
T10	6.258	12.056	A	0.32	2.245	0.005	0.85	1	76.552	2.608	0.130	C
120.000-100.0			B	0.32	2.245		0.85	1	76.552			
00			C	0.32	2.245		0.85	1	76.552			
T11	6.191	12.147	A	0.288	2.33	0.005	0.85	1	75.294	2.470	0.123	C
100.000-80.0			B	0.288	2.33		0.85	1	75.294			
0			C	0.288	2.33		0.85	1	75.294			
T12	6.109	12.909	A	0.266	2.391	0.005	0.85	1	75.879	2.313	0.116	C
80.000-60.000			B	0.266	2.391		0.85	1	75.879			
00			C	0.266	2.391		0.85	1	75.879			
T13	6.003	12.941	A	0.241	2.464	0.004	0.85	1	74.445	2.098	0.105	C
60.000-40.000			B	0.241	2.464		0.85	1	74.445			
00			C	0.241	2.464		0.85	1	74.445			
T14	5.851	13.847	A	0.226	2.513	0.004	0.85	1	75.110	1.816	0.091	C
40.000-20.000			B	0.226	2.513		0.85	1	75.110			
00			C	0.226	2.513		0.85	1	75.110			
T15	3.103	13.511	A	0.197	2.604	0.004	0.85	1	70.633	1.553	0.078	C
20.000-0.000			B	0.197	2.604		0.85	1	70.633			
00			C	0.197	2.604		0.85	1	70.633			
Sum Weight:	55.103	128.345						OTM	3020.560 kip-ft	24.866		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.018	0.731	A	0.154	2.756	0.010	1	1	4.512	0.150	0.015	C
280.000-270.0			B	0.154	2.756		1	1	4.512			
00			C	0.154	2.756		1	1	4.512			
T2	0.037	1.564	A	0.157	2.746	0.010	1	1	9.225	0.300	0.015	C
270.000-250.0			B	0.157	2.746		1	1	9.225			

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	Project 280' SELF-SUPPORT TOWER	Date 15:05:36 10/11/22
	Client SMARTLINK - AT&T	Designed by GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.157	2.746		1	1	9.225			
T3	0.346	2.155	A	0.181	2.661	0.010	1	1	10.771	0.802	0.040	C
250.000-230.0			B	0.181	2.661		1	1	10.771			
00			C	0.181	2.661		1	1	10.771			
T4	0.181	1.453	A	0.261	2.404	0.010	1	1	12.102	0.530	0.053	C
230.000-220.0			B	0.261	2.404		1	1	12.102			
00			C	0.261	2.404		1	1	12.102			
T5	0.362	2.838	A	0.225	2.514	0.009	1	1	25.670	1.091	0.055	C
220.000-200.0			B	0.225	2.514		1	1	25.670			
00			C	0.225	2.514		1	1	25.670			
T6	0.362	3.493	A	0.207	2.574	0.009	1	1	30.821	1.175	0.059	C
200.000-180.0			B	0.207	2.574		1	1	30.821			
00			C	0.207	2.574		1	1	30.821			
T7	0.412	4.409	A	0.198	2.603	0.009	1	1	36.106	1.338	0.067	C
180.000-160.0			B	0.198	2.603		1	1	36.106			
00			C	0.198	2.603		1	1	36.106			
T8	0.700	5.108	A	0.179	2.668	0.009	1	1	37.951	1.819	0.091	C
160.000-140.0			B	0.179	2.668		1	1	37.951			
00			C	0.179	2.668		1	1	37.951			
T9	1.017	4.985	A	0.153	2.761	0.008	1	1	36.612	2.162	0.108	C
140.000-120.0			B	0.153	2.761		1	1	36.612			
00			C	0.153	2.761		1	1	36.612			
T10	1.017	7.429	A	0.145	2.791	0.008	1	1	36.753	2.072	0.104	C
120.000-100.0			B	0.145	2.791		1	1	36.753			
00			C	0.145	2.791		1	1	36.753			
T11	1.017	7.549	A	0.133	2.836	0.007	1	1	37.573	1.981	0.099	C
100.000-80.0			B	0.133	2.836		1	1	37.573			
0			C	0.133	2.836		1	1	37.573			
T12	1.017	8.322	A	0.126	2.86	0.007	1	1	39.313	1.878	0.094	C
80.000-60.000			B	0.126	2.86		1	1	39.313			
00			C	0.126	2.86		1	1	39.313			
T13	1.017	8.454	A	0.118	2.893	0.006	1	1	40.204	1.727	0.086	C
60.000-40.000			B	0.118	2.893		1	1	40.204			
00			C	0.118	2.893		1	1	40.204			
T14	1.017	9.462	A	0.115	2.905	0.005	1	1	42.375	1.523	0.076	C
40.000-20.000			B	0.115	2.905		1	1	42.375			
00			C	0.115	2.905		1	1	42.375			
T15	0.712	9.604	A	0.109	2.93	0.005	1	1	43.319	1.252	0.063	C
20.000-0.000			B	0.109	2.93		1	1	43.319			
00			C	0.109	2.93		1	1	43.319			
Sum Weight:	9.232	77.557						OTM	2346.734	19.799		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.018	0.731	A	0.154	2.756	0.010	0.8	1	4.512	0.150	0.015	C
280.000-270.0			B	0.154	2.756		0.8	1	4.512			
00			C	0.154	2.756		0.8	1	4.512			
T2	0.037	1.564	A	0.157	2.746	0.010	0.8	1	9.225	0.300	0.015	C
270.000-250.0			B	0.157	2.746		0.8	1	9.225			

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	Project 280' SELF-SUPPORT TOWER	Date 15:05:36 10/11/22
	Client SMARTLINK - AT&T	Designed by GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.157	2.746		0.8	1	9.225			
T3	0.346	2.155	A	0.181	2.661	0.010	0.8	1	10.771	0.802	0.040	C
250.000-230.0			B	0.181	2.661		0.8	1	10.771			
00			C	0.181	2.661		0.8	1	10.771			
T4	0.181	1.453	A	0.261	2.404	0.010	0.8	1	11.168	0.512	0.051	C
230.000-220.0			B	0.261	2.404		0.8	1	11.168			
00			C	0.261	2.404		0.8	1	11.168			
T5	0.362	2.838	A	0.225	2.514	0.009	0.8	1	23.577	1.048	0.052	C
220.000-200.0			B	0.225	2.514		0.8	1	23.577			
00			C	0.225	2.514		0.8	1	23.577			
T6	0.362	3.493	A	0.207	2.574	0.009	0.8	1	27.678	1.112	0.056	C
200.000-180.0			B	0.207	2.574		0.8	1	27.678			
00			C	0.207	2.574		0.8	1	27.678			
T7	0.412	4.409	A	0.198	2.603	0.009	0.8	1	32.135	1.260	0.063	C
180.000-160.0			B	0.198	2.603		0.8	1	32.135			
00			C	0.198	2.603		0.8	1	32.135			
T8	0.700	5.108	A	0.179	2.668	0.009	0.8	1	33.776	1.738	0.087	C
160.000-140.0			B	0.179	2.668		0.8	1	33.776			
00			C	0.179	2.668		0.8	1	33.776			
T9	1.017	4.985	A	0.153	2.761	0.008	0.8	1	32.685	2.087	0.104	C
140.000-120.0			B	0.153	2.761		0.8	1	32.685			
00			C	0.153	2.761		0.8	1	32.685			
T10	1.017	7.429	A	0.145	2.791	0.008	0.8	1	33.960	2.020	0.101	C
120.000-100.0			B	0.145	2.791		0.8	1	33.960			
00			C	0.145	2.791		0.8	1	33.960			
T11	1.017	7.549	A	0.133	2.836	0.007	0.8	1	34.608	1.928	0.096	C
100.000-80.0			B	0.133	2.836		0.8	1	34.608			
0			C	0.133	2.836		0.8	1	34.608			
T12	1.017	8.322	A	0.126	2.86	0.007	0.8	1	36.171	1.826	0.091	C
80.000-60.000			B	0.126	2.86		0.8	1	36.171			
0			C	0.126	2.86		0.8	1	36.171			
T13	1.017	8.454	A	0.118	2.893	0.006	0.8	1	36.879	1.676	0.084	C
60.000-40.000			B	0.118	2.893		0.8	1	36.879			
0			C	0.118	2.893		0.8	1	36.879			
T14	1.017	9.462	A	0.115	2.905	0.005	0.8	1	38.864	1.477	0.074	C
40.000-20.000			B	0.115	2.905		0.8	1	38.864			
0			C	0.115	2.905		0.8	1	38.864			
T15	0.712	9.604	A	0.109	2.93	0.005	0.8	1	39.616	1.202	0.060	C
20.000-0.000			B	0.109	2.93		0.8	1	39.616			
0			C	0.109	2.93		0.8	1	39.616			
Sum Weight:	9.232	77.557						OTM	2268.072	19.137		
									kip-ft			

Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
T1	0.018	0.731	A	0.154	2.756	0.010	0.85	1	4.512	0.150	0.015	C
280.000-270.0			B	0.154	2.756		0.85	1	4.512			
00			C	0.154	2.756		0.85	1	4.512			
T2	0.037	1.564	A	0.157	2.746	0.010	0.85	1	9.225	0.300	0.015	C
270.000-250.0			B	0.157	2.746		0.85	1	9.225			

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	Project	280' SELF-SUPPORT TOWER	Date	15:05:36 10/11/22
	Client	SMARTLINK - AT&T	Designed by	GO

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
00			C	0.157	2.746		0.85	1	9.225			
T3	0.346	2.155	A	0.181	2.661	0.010	0.85	1	10.771	0.802	0.040	C
250.000-230.0			B	0.181	2.661		0.85	1	10.771			
00			C	0.181	2.661		0.85	1	10.771			
T4	0.181	1.453	A	0.261	2.404	0.010	0.85	1	11.402	0.517	0.052	C
230.000-220.0			B	0.261	2.404		0.85	1	11.402			
00			C	0.261	2.404		0.85	1	11.402			
T5	0.362	2.838	A	0.225	2.514	0.009	0.85	1	24.100	1.059	0.053	C
220.000-200.0			B	0.225	2.514		0.85	1	24.100			
00			C	0.225	2.514		0.85	1	24.100			
T6	0.362	3.493	A	0.207	2.574	0.009	0.85	1	28.464	1.128	0.056	C
200.000-180.0			B	0.207	2.574		0.85	1	28.464			
00			C	0.207	2.574		0.85	1	28.464			
T7	0.412	4.409	A	0.198	2.603	0.009	0.85	1	33.128	1.279	0.064	C
180.000-160.0			B	0.198	2.603		0.85	1	33.128			
00			C	0.198	2.603		0.85	1	33.128			
T8	0.700	5.108	A	0.179	2.668	0.009	0.85	1	34.819	1.758	0.088	C
160.000-140.0			B	0.179	2.668		0.85	1	34.819			
00			C	0.179	2.668		0.85	1	34.819			
T9	1.017	4.985	A	0.153	2.761	0.008	0.85	1	33.667	2.106	0.105	C
140.000-120.0			B	0.153	2.761		0.85	1	33.667			
00			C	0.153	2.761		0.85	1	33.667			
T10	1.017	7.429	A	0.145	2.791	0.008	0.85	1	34.658	2.033	0.102	C
120.000-100.0			B	0.145	2.791		0.85	1	34.658			
00			C	0.145	2.791		0.85	1	34.658			
T11	1.017	7.549	A	0.133	2.836	0.007	0.85	1	35.349	1.942	0.097	C
100.000-80.0			B	0.133	2.836		0.85	1	35.349			
0			C	0.133	2.836		0.85	1	35.349			
T12	1.017	8.322	A	0.126	2.86	0.007	0.85	1	36.956	1.839	0.092	C
80.000-60.000			B	0.126	2.86		0.85	1	36.956			
00			C	0.126	2.86		0.85	1	36.956			
T13	1.017	8.454	A	0.118	2.893	0.006	0.85	1	37.710	1.688	0.084	C
60.000-40.000			B	0.118	2.893		0.85	1	37.710			
00			C	0.118	2.893		0.85	1	37.710			
T14	1.017	9.462	A	0.115	2.905	0.005	0.85	1	39.741	1.488	0.074	C
40.000-20.000			B	0.115	2.905		0.85	1	39.741			
00			C	0.115	2.905		0.85	1	39.741			
T15	0.712	9.604	A	0.109	2.93	0.005	0.85	1	40.542	1.215	0.061	C
20.000-0.000			B	0.109	2.93		0.85	1	40.542			
00			C	0.109	2.93		0.85	1	40.542			
Sum Weight:	9.232	77.557						OTM	2287.738	19.303		
									kip-ft			

Force Totals

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Overturning Moments, M _x	Sum of Overturning Moments, M _z	Sum of Torques
	K	K	K	kip-ft	kip-ft	kip-ft
Leg Weight	51.895					
Bracing Weight	25.663					
Total Member Self-Weight	77.557					
Total Weight	108.002			0.163	19.069	
Wind 0 deg - No Ice			-0.010	-101.127	20.471	-90.412

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Fullerton Engineering Consultants, LLC</p> <p style="text-align: center;">1100 E. Woodfield Road. Suite 500 Schaumburg, IL 60173 Phone: 847-908-8400 FAX:</p>	Job <p style="text-align: center;">CTL05633 - SEYMOUR EAST</p>	Page <p style="text-align: center;">36 of 56</p>
	Project <p style="text-align: center;">280' SELF-SUPPORT TOWER</p>	Date <p style="text-align: center;">15:05:36 10/11/22</p>
	Client <p style="text-align: center;">SMARTLINK - AT&T</p>	Designed by <p style="text-align: center;">GO</p>

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 30 deg - No Ice		49.589	-85.910	-11711.710	-6741.165	-72.057
Wind 60 deg - No Ice		85.346	-49.274	-6722.850	-11625.531	-34.395
Wind 90 deg - No Ice		99.195	0.010	1.565	-13503.827	12.483
Wind 120 deg - No Ice		87.574	50.572	6877.727	-11890.417	56.017
Wind 150 deg - No Ice		49.606	85.920	11713.438	-6743.593	84.541
Wind 180 deg - No Ice		0.010	98.566	13448.617	17.668	90.412
Wind 210 deg - No Ice		-49.589	85.910	11712.036	6779.304	72.057
Wind 240 deg - No Ice		-87.564	50.555	6875.299	11927.154	34.395
Wind 270 deg - No Ice		-99.195	-0.010	-1.239	13541.966	-12.483
Wind 300 deg - No Ice		-85.356	-49.292	-6725.278	11665.071	-56.017
Wind 330 deg - No Ice		-49.606	-85.920	-11713.112	6781.732	-84.541
Member Ice	50.788					
Total Weight Ice	228.742			16.684	114.423	
Wind 0 deg - Ice		-0.002	-32.086	-4405.688	114.692	-25.687
Wind 30 deg - Ice		15.901	-27.546	-3785.230	-2080.302	-15.146
Wind 60 deg - Ice		27.463	-15.856	-2172.840	-3677.943	-0.546
Wind 90 deg - Ice		31.806	0.002	16.952	-4275.493	14.200
Wind 120 deg - Ice		27.787	16.045	2228.102	-3715.328	25.141
Wind 150 deg - Ice		15.905	27.548	3818.866	-2080.768	29.346
Wind 180 deg - Ice		0.002	31.715	4396.196	114.155	25.687
Wind 210 deg - Ice		-15.901	27.546	3818.597	2309.149	15.146
Wind 240 deg - Ice		-27.785	16.042	2227.637	3943.906	0.546
Wind 270 deg - Ice		-31.806	-0.002	16.415	4504.340	-14.200
Wind 300 deg - Ice		-27.465	-15.859	-2173.305	3907.058	-25.141
Wind 330 deg - Ice		-15.905	-27.548	-3785.499	2309.614	-29.346
Total Weight	108.002			0.163	19.069	
Wind 0 deg - Service		-0.003	-26.150	-3556.954	0.035	-23.376
Wind 30 deg - Service		12.823	-22.215	-3029.219	-1748.484	-18.630
Wind 60 deg - Service		22.069	-12.742	-1739.131	-3011.555	-8.893
Wind 90 deg - Service		25.650	0.003	-0.235	-3497.269	3.227
Wind 120 deg - Service		22.645	13.077	1777.894	-3080.041	14.483
Wind 150 deg - Service		12.827	22.218	3028.386	-1749.112	21.858
Wind 180 deg - Service		0.003	25.488	3477.097	-0.689	23.376
Wind 210 deg - Service		-12.823	22.215	3028.024	1747.830	18.630
Wind 240 deg - Service		-22.643	13.073	1777.266	3079.024	8.893
Wind 270 deg - Service		-25.650	-0.003	-0.960	3496.615	-3.227
Wind 300 deg - Service		-22.072	-12.746	-1739.759	3011.264	-14.483
Wind 330 deg - Service		-12.827	-22.218	-3029.582	1748.458	-21.858

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice

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<i>Comb. No.</i>	<i>Description</i>
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
T1	280 - 270	Leg	Max Tension	7	6.496	0.410	-0.267
			Max. Compression	2	-9.293	-0.002	0.175
			Max. Mx	20	-1.319	0.482	-0.000
			Max. My	2	-9.288	0.004	-0.495
			Max. Vy	20	-1.166	0.164	-0.018
			Max. Vx	2	-1.239	-0.002	0.175
		Diagonal	Max Tension	4	1.568	0.000	0.000
			Max. Compression	4	-1.619	0.000	0.000
			Max. Mx	28	0.621	-0.005	-0.000
			Max. My	8	-0.722	-0.003	-0.000
			Max. Vy	38	0.009	-0.005	0.000
			Max. Vx	8	-0.000	0.000	0.000
		Horizontal	Max Tension	6	0.266	0.000	0.000
			Max. Compression	11	-0.177	0.000	0.000
			Max. Mx	26	0.101	0.018	0.000
			Max. My	20	0.044	0.000	-0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	270 - 250	Top Girt	Max. Vy	26	-0.014	0.000	0.000
			Max. Vx	20	0.000	0.000	0.000
			Max Tension	18	0.605	0.000	0.000
			Max. Compression	14	-0.576	0.000	0.000
			Max. Mx	26	0.031	0.021	0.000
			Max. My	20	0.029	0.000	-0.000
			Max. Vy	26	-0.017	0.000	0.000
			Max. Vx	20	0.000	0.000	0.000
			Max Tension	6	0.705	0.000	0.000
			Max. Compression	3	-0.644	0.000	0.000
		Bottom Girt	Max. Mx	26	0.076	0.021	0.000
			Max. My	20	0.054	0.000	-0.000
			Max. Vy	26	-0.017	0.000	0.000
			Max. Vx	20	0.000	0.000	0.000
			Max Tension	29	0.110	0.000	0.000
			Max. Compression	3	-0.015	0.000	0.000
			Max. Mx	26	0.089	0.021	0.000
			Max. My	20	0.047	0.000	-0.000
			Max. Vy	26	-0.017	0.000	0.000
			Max. Vx	20	0.000	0.000	0.000
		Mid Girt	Max Tension	7	24.633	0.591	-0.371
			Max. Compression	2	-28.696	-0.022	0.255
			Max. Mx	8	-8.250	-0.698	-0.074
			Max. My	2	-9.300	-0.009	0.741
			Max. Vy	20	-1.659	0.224	-0.051
			Max. Vx	2	-1.789	-0.022	0.255
			Max Tension	4	2.193	0.000	0.000
			Max. Compression	4	-2.241	0.000	0.000
			Max. Mx	34	0.907	-0.005	0.000
			Max. My	6	-1.533	-0.002	-0.000
		Diagonal	Max. Vy	36	0.009	-0.005	-0.000
			Max. Vx	6	-0.000	0.000	0.000
			Max Tension	6	0.426	0.000	0.000
			Max. Compression	3	-0.338	0.000	0.000
			Max. Mx	26	0.096	0.018	0.000
			Max. My	20	0.048	0.000	-0.000
			Max. Vy	26	0.014	0.000	0.000
			Max. Vx	20	0.000	0.000	0.000
			Max Tension	18	0.632	0.000	0.000
			Max. Compression	22	-0.584	0.000	0.000
		Horizontal	Max. Mx	26	0.037	0.021	0.000
			Max. My	18	-0.300	0.000	0.000
			Max. Vy	26	0.017	0.000	0.000
			Max. Vx	18	-0.000	0.000	0.000
			Max Tension	6	0.939	0.000	0.000
			Max. Compression	3	-0.885	0.000	0.000
			Max. Mx	26	0.086	0.021	0.000
Max. My	20		0.093	0.000	-0.000		
Max. Vy	26		0.017	0.000	0.000		
Max. Vx	20		0.000	0.000	0.000		
Top Girt	Max Tension	6	0.273	0.000	0.000		
	Max. Compression	3	-0.178	0.000	0.000		
	Max. Mx	26	0.106	0.021	0.000		
	Max. My	20	0.051	0.000	-0.000		
	Max. Vy	26	0.017	0.000	0.000		
	Max. Vx	20	0.000	0.000	0.000		
	Max Tension	23	69.492	-0.309	-0.195		
	Max. Compression	2	-79.352	-0.072	2.800		
	Max. Mx	20	-68.954	2.358	-0.760		
	Max. My	2	-79.352	-0.072	2.800		
Bottom Girt	Max. Vy	8	4.939	0.317	0.035		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T4	230 - 220	Diagonal	Max. Vx	2	-5.796	-0.072	2.800
			Max Tension	16	5.600	0.000	0.000
			Max. Compression	16	-5.764	0.000	0.000
			Max. Mx	27	1.412	-0.007	0.000
			Max. My	6	-5.062	-0.002	-0.001
			Max. Vy	27	0.011	-0.007	0.000
		Horizontal	Max. Vx	6	-0.001	0.000	0.000
			Max Tension	6	0.771	0.000	0.000
			Max. Compression	3	-0.644	0.000	0.000
			Max. Mx	26	0.203	0.018	0.000
			Max. My	20	0.065	0.000	-0.000
			Max. Vy	26	-0.014	0.000	0.000
		Top Girt	Max. Vx	20	0.000	0.000	0.000
			Max Tension	18	1.388	0.000	0.000
			Max. Compression	15	-1.297	0.000	0.000
			Max. Mx	26	0.067	0.028	0.000
			Max. My	18	-0.682	0.000	0.000
			Max. Vy	26	-0.022	0.000	0.000
		Bottom Girt	Max. Vx	18	-0.000	0.000	0.000
			Max Tension	22	1.788	0.000	0.000
Max. Compression	3		-1.582	0.000	0.000		
Max. Mx	26		0.249	0.028	0.000		
Max. My	20		0.065	0.000	-0.000		
Max. Vy	26		-0.022	0.000	0.000		
T5	220 - 200	Leg	Max. Vx	20	0.000	0.000	0.000
			Max Tension	23	73.572	-2.735	-0.209
			Max. Compression	2	-82.689	2.756	-0.047
			Max. Mx	22	72.565	-3.380	0.088
			Max. My	4	-4.770	-0.302	-6.943
			Max. Vy	14	0.182	-3.360	0.026
		Diagonal	Max. Vx	20	0.691	-0.296	-6.647
			Max Tension	7	7.303	0.153	0.033
			Max. Compression	18	-8.246	0.000	0.000
			Max. Mx	22	4.962	0.158	0.012
			Max. My	6	-3.832	-0.059	0.057
			Max. Vy	22	0.037	0.158	0.012
			Max. Vx	6	-0.012	0.000	0.000
			Max Tension	23	104.795	-4.304	-0.067
T6	200 - 180	Leg	Max. Compression	2	-117.404	5.772	0.109
			Max. Mx	2	-117.404	5.772	0.109
			Max. My	4	-6.096	-0.302	-6.943
			Max. Vy	10	-0.275	4.379	0.050
			Max. Vx	20	-0.425	-0.296	-6.647
			Max Tension	18	6.740	0.000	0.000
		Diagonal	Max. Compression	18	-6.911	0.000	0.000
			Max. Mx	18	4.250	0.095	-0.017
T6	200 - 180	Leg	Max. My	21	-4.017	-0.046	-0.024
			Max. Vy	38	0.035	0.061	0.011
			Max. Vx	20	0.005	-0.042	-0.024
			Max Tension	23	129.337	-3.726	-0.058
			Max. Compression	2	-144.498	4.635	0.040
			Max. Mx	2	-128.734	5.772	0.109
		Diagonal	Max. My	20	-7.586	-0.110	-5.266
			Max. Vy	10	0.334	5.755	0.309
			Max. Vx	20	0.378	-0.110	-5.266
			Max Tension	7	8.242	0.000	0.000
T6	200 - 180	Diagonal	Max. Compression	18	-9.554	0.000	0.000
			Max. Mx	2	1.295	0.117	0.008
			Max. My	6	-4.018	-0.026	0.023
			Max. Vy	37	0.052	0.095	0.011
Max. Vx	6	-0.004	0.000	0.000			

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T7	180 - 160	Top Girt	Max Tension	22	4.881	0.000	0.000	
			Max. Compression	3	-4.010	0.000	0.000	
			Max. Mx	26	1.048	-0.101	0.000	
			Max. My	35	1.743	0.000	0.003	
			Max. Vy	26	0.050	0.000	0.000	
			Max. Vx	35	-0.001	0.000	0.000	
		Mid Girt	Max Tension	22	6.778	0.000	0.000	
			Max. Compression	3	-5.502	0.000	0.000	
			Max. Mx	26	1.529	-0.127	0.000	
			Max. My	27	2.599	0.000	0.004	
			Max. Vy	26	0.057	0.000	0.000	
			Max. Vx	27	-0.002	0.000	0.000	
		Leg	Max Tension	23	157.290	-3.684	-0.038	
			Max. Compression	2	-177.935	5.034	0.076	
			Max. Mx	2	-177.935	5.034	0.076	
			Max. My	20	-9.591	-0.093	-4.450	
			Max. Vy	14	-1.131	-3.712	-0.045	
			Max. Vx	20	-1.387	-0.093	-4.450	
			Diagonal	Max Tension	7	9.703	0.000	0.000
				Max. Compression	18	-11.044	0.000	0.000
Max. Mx	37			1.766	0.108	0.013		
Max. My	18			-11.003	-0.012	-0.020		
Max. Vy	37			0.060	0.108	0.013		
Max. Vx	35			0.004	0.000	0.000		
Top Girt	Max Tension		22	6.950	0.000	0.000		
	Max. Compression		3	-5.697	0.000	0.000		
	Max. Mx	26	1.531	-0.227	0.000			
	Max. My	27	2.626	0.000	0.007			
	Max. Vy	26	-0.091	0.000	0.000			
	Max. Vx	27	0.003	0.000	0.000			
	Mid Girt	Max Tension	22	5.673	0.000	0.000		
		Max. Compression	3	-4.506	0.000	0.000		
		Max. Mx	26	1.395	-0.274	0.000		
		Max. My	27	2.324	0.000	0.008		
Max. Vy		26	0.100	0.000	0.000			
Max. Vx		27	-0.003	0.000	0.000			
T8	160 - 140	Leg	Max Tension	23	197.005	-3.426	-0.014	
			Max. Compression	2	-228.425	4.318	0.057	
			Max. Mx	2	-199.420	5.034	0.076	
			Max. My	4	-13.143	-0.203	-5.233	
			Max. Vy	14	-1.821	-3.475	0.013	
			Max. Vx	20	-1.877	-0.189	-5.197	
		Diagonal	Max Tension	16	13.142	0.000	0.000	
			Max. Compression	16	-13.193	0.000	0.000	
			Max. Mx	27	3.058	0.159	0.018	
			Max. My	6	-9.005	0.019	0.036	
			Max. Vy	37	0.079	0.149	0.018	
			Max. Vx	6	-0.006	0.000	0.000	
		Top Girt	Max Tension	22	4.466	0.000	0.000	
			Max. Compression	3	-3.557	0.000	0.000	
			Max. Mx	26	1.102	-0.318	0.000	
			Max. My	27	1.837	0.000	0.009	
			Max. Vy	26	-0.106	0.000	0.000	
			Max. Vx	27	-0.003	0.000	0.000	
T9	140 - 120	Leg	Max Tension	23	246.098	-4.377	0.055	
			Max. Compression	2	-286.371	10.523	0.471	
			Max. Mx	2	-286.371	10.523	0.471	
			Max. My	24	-20.471	0.080	9.866	
			Max. Vy	14	-1.363	-4.413	-0.063	
			Max. Vx	24	1.695	-0.114	4.874	
		Diagonal	Max Tension	16	14.827	0.000	0.000	

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	<p>Project</p> <p>280' SELF-SUPPORT TOWER</p>	<p>Date</p> <p>15:05:36 10/11/22</p>
	<p>Client</p> <p>SMARTLINK - AT&T</p>	<p>Designed by</p> <p>GO</p>

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T10	120 - 100	Leg	Max. Compression	16	-15.342	0.000	0.000	
			Max. Mx	37	3.441	0.177	-0.019	
			Max. My	4	-14.265	0.013	0.045	
			Max. Vy	37	0.089	0.177	-0.019	
			Max. Vx	4	-0.006	0.000	0.000	
			Max Tension	23	279.848	-10.132	0.110	
			Max. Compression	2	-323.540	10.198	0.509	
		Diagonal	Max. Mx	6	273.102	-12.052	0.052	
			Max. My	24	-23.095	-1.100	19.200	
			Max. Vy	6	0.467	-12.052	0.052	
			Max. Vx	24	-1.001	-1.100	19.200	
			Max Tension	17	20.592	0.000	0.000	
			Max. Compression	16	-21.874	0.000	0.000	
			Max. Mx	37	4.493	-0.497	-0.066	
T11	100 - 80	Leg	Max. My	16	-21.470	-0.073	0.154	
			Max. Vy	37	-0.169	-0.497	-0.066	
			Max. Vx	16	-0.016	0.000	0.000	
			Max Tension	23	330.274	-11.748	0.520	
			Max. Compression	18	-381.957	15.157	-0.068	
			Max. Mx	2	-381.924	15.179	0.472	
			Max. My	24	-24.965	-1.100	19.199	
		Diagonal	Max. Vy	10	-0.514	15.156	-0.403	
			Max. Vx	24	1.022	-1.100	19.199	
			Max Tension	16	21.971	0.000	0.000	
			Max. Compression	4	-22.708	0.000	0.000	
			Max. Mx	37	5.335	-0.568	-0.092	
			Max. My	33	5.629	-0.491	0.093	
			Max. Vy	37	-0.186	-0.568	-0.092	
T12	80 - 60	Leg	Max. Vx	33	-0.013	0.000	0.000	
			Max Tension	23	376.918	-13.666	0.412	
			Max. Compression	18	-436.472	11.079	-0.025	
			Max. Mx	2	-433.955	15.178	0.472	
			Max. My	24	-31.009	-1.260	17.677	
			Max. Vy	29	-0.527	-6.193	0.005	
			Max. Vx	24	-0.924	-1.260	17.677	
		Diagonal	Max Tension	4	21.987	0.000	0.000	
			Max. Compression	4	-22.675	0.000	0.000	
			Max. Mx	37	3.910	-0.643	-0.096	
			Max. My	38	-4.202	-0.485	-0.102	
			Max. Vy	37	-0.202	-0.643	-0.096	
			Max. Vx	38	-0.013	0.000	0.000	
			Max Tension	23	420.938	-12.788	0.397	
T13	60 - 40	Leg	Max. Compression	18	-487.910	16.115	-0.030	
			Max. Mx	2	-487.453	16.124	0.361	
			Max. My	24	-32.080	-1.260	17.677	
			Max. Vy	29	0.882	-13.528	-0.000	
			Max. Vx	24	0.991	-1.260	17.677	
			Max Tension	4	22.606	0.000	0.000	
			Max. Compression	4	-23.830	0.000	0.000	
		Diagonal	Max. Mx	37	6.377	-0.692	-0.097	
			Max. My	38	6.754	-0.688	-0.098	
			Max. Vy	37	-0.215	-0.692	-0.097	
			Max. Vx	33	0.013	0.000	0.000	
			Max Tension	23	466.380	-14.060	0.339	
			Max. Compression	18	-543.000	11.630	-0.005	
			Max. Mx	2	-539.743	16.124	0.361	
T14	40 - 20	Leg	Max. My	24	-39.621	-1.822	27.158	
			Max. Vy	29	-1.219	-13.528	-0.000	
			Max. Vx	24	-1.416	-1.822	27.158	
			Max Tension	4	22.496	0.000	0.000	
			Max. Compression	4	-22.698	0.000	0.000	
			Diagonal	Max. Mx	37	6.377	-0.692	-0.097
				Max. My	38	6.754	-0.688	-0.098
		Max. Vy		37	-0.215	-0.692	-0.097	
		Max. Vx		33	0.013	0.000	0.000	
		Max Tension		23	466.380	-14.060	0.339	
		Max. Compression		18	-543.000	11.630	-0.005	
		Max. Mx		2	-539.743	16.124	0.361	

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T15	20 - 0	Leg	Max. Mx	37	1.674	-0.817	-0.121
			Max. My	14	-21.100	-0.421	0.134
			Max. Vy	37	-0.231	-0.817	-0.121
			Max. Vx	38	0.015	0.000	0.000
			Max Tension	23	503.647	-14.261	0.307
			Max. Compression	18	-587.254	0.000	0.001
			Max. Mx	35	-263.299	15.444	0.112
			Max. My	24	-40.061	-1.822	27.158
		Diagonal	Max. Vy	6	-1.057	-14.719	0.053
			Max. Vx	24	1.709	-1.822	27.158
			Max Tension	15	23.728	0.000	0.000
			Max. Compression	2	-25.995	0.000	0.000
			Max. Mx	36	9.751	-0.782	0.104
			Max. My	14	-8.564	-0.535	0.124
			Max. Vy	36	-0.233	-0.782	0.104
			Max. Vx	27	-0.013	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	614.758	57.293	-33.897
	Max. H _x	18	614.758	57.293	-33.897
	Max. H _z	7	-524.190	-50.668	30.077
	Min. Vert	7	-524.190	-50.668	30.077
	Min. H _x	7	-524.190	-50.668	30.077
Leg B	Min. H _z	18	614.758	57.293	-33.897
	Max. Vert	10	613.216	-58.199	-32.277
	Max. H _x	23	-525.520	51.641	28.468
	Max. H _z	23	-525.520	51.641	28.468
	Min. Vert	23	-525.520	51.641	28.468
Leg A	Min. H _x	10	613.216	-58.199	-32.277
	Min. H _z	10	613.216	-58.199	-32.277
	Max. Vert	2	614.030	-1.856	66.558
	Max. H _x	19	-252.500	4.502	-28.930
	Max. H _z	2	614.030	-1.856	66.558
	Min. Vert	15	-524.911	1.880	-58.943
	Min. H _x	7	311.007	-4.331	33.348
Min. H _z	15	-524.911	1.880	-58.943	

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	108.002	0.000	-0.000	0.163	19.071	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	129.602	-0.010	-101.123	-13841.872	24.639	-90.530
0.9 Dead+1.0 Wind 0 deg - No Ice	97.201	-0.010	-101.124	-13819.404	18.853	-90.490
1.2 Dead+1.0 Wind 30 deg - No Ice	129.602	49.586	-85.907	-11788.180	-6781.069	-72.127

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 30 deg - No Ice	97.201	49.587	-85.908	-11768.942	-6775.712	-72.080
1.2 Dead+1.0 Wind 60 deg - No Ice	129.602	85.342	-49.272	-6766.914	-11697.448	-34.503
0.9 Dead+1.0 Wind 60 deg - No Ice	97.201	85.343	-49.273	-6755.851	-11684.030	-34.475
1.2 Dead+1.0 Wind 90 deg - No Ice	129.602	99.190	0.010	1.429	-13587.997	12.364
0.9 Dead+1.0 Wind 90 deg - No Ice	97.201	99.192	0.010	1.425	-13571.533	12.365
1.2 Dead+1.0 Wind 120 deg - No Ice	129.602	87.570	50.570	6922.363	-11963.798	56.022
0.9 Dead+1.0 Wind 120 deg - No Ice	97.201	87.571	50.571	6911.097	-11950.102	56.015
1.2 Dead+1.0 Wind 150 deg - No Ice	129.602	49.604	85.916	11789.762	-6783.588	84.653
0.9 Dead+1.0 Wind 150 deg - No Ice	97.201	49.605	85.917	11770.483	-6778.255	84.651
1.2 Dead+1.0 Wind 180 deg - No Ice	129.602	0.010	98.561	13536.260	21.815	90.506
0.9 Dead+1.0 Wind 180 deg - No Ice	97.201	0.010	98.563	13514.094	16.053	90.488
1.2 Dead+1.0 Wind 210 deg - No Ice	129.602	-49.587	85.906	11788.162	6827.503	72.127
0.9 Dead+1.0 Wind 210 deg - No Ice	97.201	-49.587	85.907	11768.885	6810.623	72.080
1.2 Dead+1.0 Wind 240 deg - No Ice	129.602	-87.560	50.553	6919.723	12008.510	34.511
0.9 Dead+1.0 Wind 240 deg - No Ice	97.201	-87.561	50.553	6908.471	11983.267	34.477
1.2 Dead+1.0 Wind 270 deg - No Ice	129.602	-99.190	-0.010	-1.371	13633.982	-12.364
0.9 Dead+1.0 Wind 270 deg - No Ice	97.201	-99.192	-0.010	-1.376	13605.980	-12.365
1.2 Dead+1.0 Wind 300 deg - No Ice	129.602	-85.352	-49.289	-6769.142	11744.944	-56.008
0.9 Dead+1.0 Wind 300 deg - No Ice	97.201	-85.353	-49.290	-6758.080	11719.989	-56.010
1.2 Dead+1.0 Wind 330 deg - No Ice	129.602	-49.604	-85.917	-11789.376	6829.822	-84.653
0.9 Dead+1.0 Wind 330 deg - No Ice	97.201	-49.604	-85.918	-11770.145	6812.924	-84.652
1.2 Dead+1.0 Ice+1.0 Temp	250.343	0.001	0.001	16.671	118.661	0.003
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	250.343	-0.002	-32.085	-4466.314	119.930	-25.884
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	250.343	15.900	-27.544	-3837.401	-2105.023	-15.350
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	250.343	27.462	-15.855	-2203.134	-3724.401	-0.714
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	250.343	31.804	0.002	16.428	-4330.032	14.112
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	250.343	27.785	16.044	2257.765	-3762.222	25.168
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	250.343	15.904	27.546	3869.971	-2105.867	29.455
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	250.343	0.002	31.714	4455.235	119.303	25.876
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	250.343	-15.900	27.544	3869.749	2344.103	15.350
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	250.343	-27.783	16.041	2257.177	4001.086	0.716

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Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	250.343	-31.804	-0.002	15.906	4569.094	-14.112
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	250.343	-27.464	-15.858	-2203.567	3963.726	-25.168
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	250.343	-15.904	-27.546	-3837.974	2344.293	-29.455
Dead+Wind 0 deg - Service	108.002	-0.003	-26.149	-3575.558	19.523	-23.399
Dead+Wind 30 deg - Service	108.002	12.823	-22.214	-3045.009	-1738.515	-18.657
Dead+Wind 60 deg - Service	108.002	22.069	-12.741	-1747.912	-3008.489	-8.917
Dead+Wind 90 deg - Service	108.002	25.650	0.003	0.467	-3496.833	3.214
Dead+Wind 120 deg - Service	108.002	22.645	13.077	1788.259	-3077.289	14.483
Dead+Wind 150 deg - Service	108.002	12.827	22.217	3045.588	-1739.150	21.871
Dead+Wind 180 deg - Service	108.002	0.003	25.487	3496.758	18.800	23.400
Dead+Wind 210 deg - Service	108.002	-12.823	22.214	3045.211	1776.839	18.657
Dead+Wind 240 deg - Service	108.002	-22.642	13.072	1787.619	3115.228	8.917
Dead+Wind 270 deg - Service	108.002	-25.650	-0.003	-0.257	3535.125	-3.214
Dead+Wind 300 deg - Service	108.002	-22.071	-12.746	-1748.526	3047.150	-14.479
Dead+Wind 330 deg - Service	108.002	-12.827	-22.217	-3045.359	1777.457	-21.871

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-108.002	0.000	-0.000	108.002	0.000	0.000%
2	-0.010	-129.602	-101.127	0.010	129.602	101.123	0.003%
3	-0.010	-97.201	-101.127	0.010	97.201	101.124	0.002%
4	49.589	-129.602	-85.910	-49.586	129.602	85.907	0.003%
5	49.589	-97.201	-85.910	-49.587	97.201	85.908	0.002%
6	85.346	-129.602	-49.274	-85.342	129.602	49.272	0.003%
7	85.346	-97.201	-49.274	-85.343	97.201	49.273	0.003%
8	99.195	-129.602	0.010	-99.190	129.602	-0.010	0.003%
9	99.195	-97.201	0.010	-99.192	97.201	-0.010	0.002%
10	87.574	-129.602	50.572	-87.570	129.602	-50.570	0.003%
11	87.574	-97.201	50.572	-87.571	97.201	-50.571	0.002%
12	49.606	-129.602	85.920	-49.604	129.602	-85.916	0.003%
13	49.606	-97.201	85.920	-49.605	97.201	-85.917	0.002%
14	0.010	-129.602	98.566	-0.010	129.602	-98.561	0.003%
15	0.010	-97.201	98.566	-0.010	97.201	-98.563	0.003%
16	-49.589	-129.602	85.910	49.587	129.602	-85.906	0.003%
17	-49.589	-97.201	85.910	49.587	97.201	-85.907	0.002%
18	-87.564	-129.602	50.555	87.560	129.602	-50.553	0.003%
19	-87.564	-97.201	50.555	87.561	97.201	-50.553	0.002%
20	-99.195	-129.602	-0.010	99.190	129.602	0.010	0.003%
21	-99.195	-97.201	-0.010	99.192	97.201	0.010	0.002%
22	-85.356	-129.602	-49.292	85.352	129.602	49.289	0.003%
23	-85.356	-97.201	-49.292	85.353	97.201	49.290	0.003%
24	-49.606	-129.602	-85.920	49.604	129.602	85.917	0.003%
25	-49.606	-97.201	-85.920	49.604	97.201	85.918	0.002%
26	0.000	-250.343	0.000	-0.001	250.343	-0.001	0.001%
27	-0.002	-250.343	-32.086	0.002	250.343	32.085	0.001%
28	15.901	-250.343	-27.546	-15.900	250.343	27.544	0.001%
29	27.463	-250.343	-15.856	-27.462	250.343	15.855	0.001%
30	31.806	-250.343	0.002	-31.804	250.343	-0.002	0.001%
31	27.787	-250.343	16.045	-27.785	250.343	-16.044	0.001%
32	15.905	-250.343	27.548	-15.904	250.343	-27.546	0.001%
33	0.002	-250.343	31.715	-0.002	250.343	-31.714	0.001%
34	-15.901	-250.343	27.546	15.900	250.343	-27.544	0.001%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
35	-27.785	-250.343	16.042	27.783	250.343	-16.041	0.001%
36	-31.806	-250.343	-0.002	31.804	250.343	0.002	0.001%
37	-27.465	-250.343	-15.859	27.464	250.343	15.858	0.001%
38	-15.905	-250.343	-27.548	15.904	250.343	27.546	0.001%
39	-0.003	-108.002	-26.150	0.003	108.002	26.149	0.001%
40	12.823	-108.002	-22.215	-12.823	108.002	22.214	0.001%
41	22.069	-108.002	-12.742	-22.069	108.002	12.741	0.001%
42	25.650	-108.002	0.003	-25.650	108.002	-0.003	0.001%
43	22.645	-108.002	13.077	-22.645	108.002	-13.077	0.001%
44	12.827	-108.002	22.218	-12.827	108.002	-22.217	0.001%
45	0.003	-108.002	25.488	-0.003	108.002	-25.487	0.001%
46	-12.823	-108.002	22.215	12.823	108.002	-22.214	0.001%
47	-22.643	-108.002	13.073	22.642	108.002	-13.072	0.001%
48	-25.650	-108.002	-0.003	25.650	108.002	0.003	0.001%
49	-22.072	-108.002	-12.746	22.071	108.002	12.746	0.001%
50	-12.827	-108.002	-22.218	12.827	108.002	22.217	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	14	0.00007170	0.00012402
3	Yes	14	0.00005162	0.00008971
4	Yes	14	0.00007763	0.00013418
5	Yes	14	0.00005735	0.00009960
6	Yes	14	0.00008307	0.00014342
7	Yes	14	0.00006249	0.00010843
8	Yes	14	0.00007768	0.00013423
9	Yes	14	0.00005739	0.00009965
10	Yes	14	0.00007169	0.00012394
11	Yes	14	0.00005161	0.00008967
12	Yes	14	0.00007765	0.00013411
13	Yes	14	0.00005737	0.00009959
14	Yes	14	0.00008303	0.00014324
15	Yes	14	0.00006247	0.00010832
16	Yes	14	0.00007760	0.00013402
17	Yes	14	0.00005733	0.00009951
18	Yes	14	0.00007169	0.00012391
19	Yes	14	0.00005162	0.00008966
20	Yes	14	0.00007767	0.00013418
21	Yes	14	0.00005739	0.00009962
22	Yes	14	0.00008305	0.00014336
23	Yes	14	0.00006248	0.00010839
24	Yes	14	0.00007767	0.00013422
25	Yes	14	0.00005738	0.00009965
26	Yes	8	0.00000001	0.00013168
27	Yes	15	0.00008618	0.00013327
28	Yes	15	0.00008733	0.00013449
29	Yes	15	0.00008852	0.00013562
30	Yes	15	0.00008726	0.00013322
31	Yes	15	0.00008588	0.00013086
32	Yes	15	0.00008706	0.00013226
33	Yes	15	0.00008819	0.00013401
34	Yes	15	0.00008699	0.00013272
35	Yes	15	0.00008592	0.00013181

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36	Yes	15	0.00008728	0.00013426
37	Yes	15	0.00008851	0.00013647
38	Yes	15	0.00008741	0.00013508
39	Yes	14	0.00000001	0.00010322
40	Yes	14	0.00000001	0.00010563
41	Yes	14	0.00000001	0.00010787
42	Yes	14	0.00000001	0.00010550
43	Yes	14	0.00000001	0.00010292
44	Yes	14	0.00000001	0.00010524
45	Yes	14	0.00000001	0.00010746
46	Yes	14	0.00000001	0.00010519
47	Yes	14	0.00000001	0.00010288
48	Yes	14	0.00000001	0.00010544
49	Yes	14	0.00000001	0.00010782
50	Yes	14	0.00000001	0.00010562

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	9.295	39	0.3378	0.0570
T2	270 - 250	8.571	39	0.3347	0.0545
T3	250 - 230	7.174	39	0.3160	0.0510
T4	230 - 220	5.879	39	0.2808	0.0430
T5	220 - 200	5.306	39	0.2571	0.0374
T6	200 - 180	4.286	39	0.2219	0.0250
T7	180 - 160	3.420	47	0.1870	0.0186
T8	160 - 140	2.680	47	0.1602	0.0144
T9	140 - 120	2.032	47	0.1381	0.0112
T10	120 - 100	1.471	47	0.1140	0.0090
T11	100 - 80	1.014	47	0.0931	0.0077
T12	80 - 60	0.653	47	0.0711	0.0062
T13	60 - 40	0.374	47	0.0522	0.0046
T14	40 - 20	0.176	47	0.0330	0.0031
T15	20 - 0	0.050	47	0.0164	0.0015

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.000	Flash Beacon Lighting	39	9.295	0.3378	0.0570	119540
250.000	PIROD 15' T-FRAME SECTOR	39	7.174	0.3160	0.0510	62300
245.000	DB420-A	39	6.837	0.3089	0.0495	42038
235.000	DB2252-F	39	6.186	0.2915	0.0454	23422
170.000	PIROD 15' T-FRAME SECTOR	47	3.037	0.1724	0.0165	44621
160.000	Commscope SF-QV12-B	47	2.680	0.1602	0.0144	54177
150.000	PIROD 15' T-FRAME SECTOR	47	2.346	0.1492	0.0127	56528
140.000	SitePro1 VFA12-HD Sector Frame	47	2.032	0.1381	0.0112	57081

Maximum Tower Deflections - Design Wind

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	35.881	2	1.3027	0.2206
T2	270 - 250	33.089	2	1.2912	0.2111
T3	250 - 230	27.703	2	1.2184	0.1973
T4	230 - 220	22.707	2	1.0828	0.1664
T5	220 - 200	20.498	2	0.9917	0.1447
T6	200 - 180	16.564	2	0.8564	0.0968
T7	180 - 160	13.215	18	0.7219	0.0722
T8	160 - 140	10.352	18	0.6189	0.0556
T9	140 - 120	7.847	18	0.5334	0.0434
T10	120 - 100	5.680	18	0.4404	0.0350
T11	100 - 80	3.914	18	0.3594	0.0298
T12	80 - 60	2.521	18	0.2744	0.0240
T13	60 - 40	1.446	18	0.2016	0.0180
T14	40 - 20	0.681	18	0.1272	0.0119
T15	20 - 0	0.192	18	0.0633	0.0059

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.000	Flash Beacon Lighting	2	35.881	1.3027	0.2206	31087
250.000	PIROD 15' T-FRAME SECTOR	2	27.703	1.2184	0.1973	16094
245.000	DB420-A	2	26.401	1.1910	0.1916	10876
235.000	DB2252-F	2	23.893	1.1240	0.1759	6075
170.000	PIROD 15' T-FRAME SECTOR	18	11.732	0.6658	0.0638	11599
160.000	Commscope SF-QV12-B	18	10.352	0.6189	0.0556	14065
150.000	PIROD 15' T-FRAME SECTOR	18	9.059	0.5764	0.0490	14679
140.000	SitePro1 VFA12-HD Sector Frame	18	7.847	0.5334	0.0434	14823

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	280	Leg	A325N	0.6250	5	1.299	27.612	0.047	✓	1 Bolt DS
T2	270	Leg	A325N	0.7500	5	4.927	39.761	0.124	✓	1 Bolt DS
T3	250	Leg	A325N	1.0000	6	11.582	54.517	0.212	✓	1 Bolt Tension
T4	230	Leg	A325N	1.0000	6	12.262	54.517	0.225	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	7.303	21.206	0.344	✓	1 Member Bearing
T5	220	Leg	A325N	1.0000	6	17.466	54.517	0.320	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	6.740	12.724	0.530	✓	1 Member Bearing
T6	200	Leg	A325N	1.0000	6	21.556	54.517	0.395	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	8.242	21.206	0.389	✓	1 Member Bearing
		Top Girt	A325N	1.0000	1	4.881	12.724	0.384	✓	1 Member Bearing

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T7	180	Leg	A325N	1.2500	6	26.106	87.220	0.299	✓	1 Bolt Tension
		Diagonal	A325N	1.2500	1	9.703	26.644	0.364	✓	1 Member Bearing
		Top Girt	A325N	1.2500	1	6.950	21.315	0.326	✓	1 Member Bearing
T8	160	Leg	A325N	1.2500	6	32.687	87.220	0.375	✓	1 Bolt Tension
		Diagonal	A325N	1.2500	1	13.142	26.644	0.493	✓	1 Member Bearing
		Top Girt	A325N	1.2500	1	4.466	26.644	0.168	✓	1 Member Bearing
T9	140	Leg	A325N	1.2500	6	41.016	87.220	0.470	✓	1 Bolt Tension
		Diagonal	A325N	1.2500	1	14.827	26.644	0.557	✓	1 Member Bearing
T10	120	Leg	A325N	1.2500	12	23.321	87.220	0.267	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	2	10.296	56.006	0.184	✓	1 Member Bearing
T11	100	Leg	A325N	1.2500	12	27.523	87.220	0.316	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	2	10.986	56.006	0.196	✓	1 Member Bearing
T12	80	Leg	A325N	1.2500	12	31.410	87.220	0.360	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	2	10.994	56.006	0.196	✓	1 Member Bearing
T13	60	Leg	A325N	1.2500	12	35.078	87.220	0.402	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	2	11.303	56.006	0.202	✓	1 Member Bearing
T14	40	Leg	A325N	1.2500	12	38.865	87.220	0.446	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	2	11.248	56.006	0.201	✓	1 Member Bearing
T15	20	Diagonal	A325N	1.0000	2	11.864	56.006	0.212	✓	1 Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
T1	280 - 270	1 3/4	10.000	2.250	61.7 K=1.00	2.4053	-9.293	81.929	0.113 ¹ ✓
T2	270 - 250	2	20.000	2.375	57.0 K=1.00	3.1416	-28.696	111.479	0.257 ¹ ✓
T3	250 - 230	2 1/2	20.000	2.375	45.6 K=1.00	4.9087	-79.352	189.738	0.418 ¹ ✓
T4	230 - 220	Pirod 105245	10.017	10.017	37.8 K=1.00	5.3014	-82.689	214.859	0.385 ¹ ✓
T5	220 - 200	Pirod 105218	20.033	10.017	32.4 K=1.00	7.2158	-117.404	300.681	0.390 ¹ ✓
T6	200 - 180	Pirod 105218	20.033	10.017	32.4 K=1.00	7.2158	-144.498	300.681	0.481 ¹ ✓
T7	180 - 160	Pirod 105219	20.033	10.017	28.4 K=1.00	9.4248	-177.935	399.868	0.445 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T8	160 - 140	Pirod 105220	20.033	10.017	25.2 K=1.00	11.9282	-228.425	512.375	0.446 ¹
T9	140 - 120	Pirod 105220	20.033	10.017	25.2 K=1.00	11.9282	-286.371	512.375	0.559 ¹
T10	120 - 100	Pirod 112743	20.033	20.033	32.6 K=1.00	14.7262	-323.540	613.145	0.528 ¹
T11	100 - 80	Pirod 112743	20.033	20.033	32.6 K=1.00	14.7262	-381.957	613.145	0.623 ¹
T12	80 - 60	Pirod 112744	20.033	20.033	32.6 K=1.00	17.8187	-436.472	741.993	0.588 ¹
T13	60 - 40	Pirod 112744	20.033	20.033	32.6 K=1.00	17.8187	-487.910	741.993	0.658 ¹
T14	40 - 20	Pirod 112745	20.033	20.033	32.5 K=1.00	21.2057	-543.000	883.145	0.615 ¹
T15	20 - 0	Pirod 112740	20.033	20.033	32.5 K=1.00	21.2057	-587.254	883.145	0.665 ¹

¹ P_u / φP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L _d ft	Kl/r	φP _n K	A in ²	V _u K	φV _n K	Stress Ratio
T4	230 - 220	0.5	1.471	120.0	238.565	0.1963	0.693	3.446	0.202
T5	220 - 200	0.5	1.459	119.0	324.713	0.1963	0.428	3.378	0.128
T6	200 - 180	0.5	1.459	119.0	324.713	0.1963	0.380	3.378	0.114
T7	180 - 160	0.625	1.446	94.4	424.115	0.3068	0.365	6.958	0.054
T8	160 - 140	0.625	1.435	93.6	536.771	0.3068	1.817	7.011	0.259
T9	140 - 120	0.625	1.435	93.6	536.771	0.3068	1.701	7.011	0.244
T10	120 - 100	0.75	1.727	93.9	662.680	0.4418	1.009	14.364	0.071
T11	100 - 80	0.75	1.727	93.9	662.680	0.4418	1.034	14.364	0.073
T12	80 - 60	0.75	1.711	93.1	801.842	0.4418	0.939	14.531	0.066
T13	60 - 40	0.75	1.711	93.1	801.842	0.4418	1.008	14.531	0.070
T14	40 - 20	0.875	1.696	79.1	954.259	0.6013	1.433	23.594	0.062
T15	20 - 0	0.875	1.696	79.1	954.259	0.6013	1.718	23.594	0.074

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Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.483	2.662	131.4 K=0.90	0.6013	-1.619	7.868	0.206 ¹ ✓
T2	270 - 250	7/8	5.535	2.675	132.1 K=0.90	0.6013	-2.241	7.786	0.288 ¹ ✓
T3	250 - 230	1	5.535	2.652	114.6 K=0.90	0.7854	-5.764	13.514	0.427 ¹ ✓
T4	230 - 220	L3x3x5/16	11.416	5.024	106.8 K=1.04	1.7800	-8.246	41.111	0.201 ¹ ✓
T5	220 - 200	L3x3x3/16	12.503	5.669	115.6 K=1.01	1.0900	-6.911	22.519	0.307 ¹ ✓
T6	200 - 180	L3x3x5/16	13.796	6.369	129.8 K=1.00	1.7800	-9.554	30.261	0.316 ¹ ✓
T7	180 - 160	L3x3x5/16	15.243	7.092	144.5 K=1.00	1.7800	-11.044	24.402	0.453 ¹ ✓
T8	160 - 140	L3 1/2x3 1/2x5/16	16.803	7.892	137.3 K=1.00	2.0900	-13.193	31.751	0.416 ¹ ✓
T9	140 - 120	L3 1/2x3 1/2x5/16	18.448	8.729	151.8 K=1.00	2.0900	-14.493	25.959	0.558 ¹ ✓
T10	120 - 100	2L3 1/2x3 1/2x5/16x3/8	26.255	12.451	134.0 K=0.97	4.1800	-21.874	66.615	0.328 ¹ ✓
T11	100 - 80	2L3 1/2x3 1/2x5/16x3/8	27.592	13.142	139.9 K=0.96	4.1800	-22.708	61.156	0.371 ¹ ✓
T12	80 - 60	2L3 1/2x3 1/2x5/16x3/8	29.006	13.866	146.0 K=0.95	4.1800	-22.675	56.126	0.404 ¹ ✓
T13	60 - 40	2L3 1/2x3 1/2x5/16x3/8	30.485	14.620	152.4 K=0.94	4.1800	-23.830	51.525	0.462 ¹ ✓
T14	40 - 20	2L3 1/2x3 1/2x5/16x3/8	32.021	15.399	159.0 K=0.93	4.1800	-22.698	47.338	0.479 ¹ ✓
T15	20 - 0	2L3 1/2x3 1/2x5/16x3/8	33.606	16.200	165.8 K=0.92	4.1800	-25.995	43.542	0.597 ¹ ✓

¹ P_u / φP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.000	4.854	186.4 K=0.70	0.6013	-0.177	3.910	0.045 ¹ ✓
T2	270 - 250	7/8	5.000	4.833	185.6 K=0.70	0.6013	-0.497	3.944	0.126 ¹ ✓
T3	250 - 230	7/8	5.000	4.792	184.0 K=0.70	0.6013	-1.374	4.012	0.343 ¹ ✓

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¹ $P_u / \phi P_n$ controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.000	4.854	163.1 K=0.70	0.7854	-0.576	6.670	0.086 ¹ ✓
T2	270 - 250	1	5.000	4.833	162.4 K=0.70	0.7854	-0.584	6.728	0.087 ¹ ✓
T3	250 - 230	1 1/4	5.000	4.792	128.8 K=0.70	1.2272	-1.374	16.712	0.082 ¹ ✓
T6	200 - 180	L3x3x3/16	8.000	6.667	134.2 K=1.00	1.0900	-4.010	17.316	0.232 ¹ ✓
T7	180 - 160	L4x4x1/4	10.000	8.604	129.9 K=1.00	1.9400	-5.697	32.919	0.173 ¹ ✓
T8	160 - 140	L3 1/2x3 1/2x5/16	12.000	10.604	184.4 K=1.00	2.0900	-3.961	17.588	0.225 ¹ ✓

¹ $P_u / \phi P_n$ controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.000	4.854	163.1 K=0.70	0.7854	-0.644	6.670	0.097 ¹ ✓
T2	270 - 250	1	5.000	4.833	162.4 K=0.70	0.7854	-0.885	6.728	0.131 ¹ ✓
T3	250 - 230	1 1/4	5.000	4.792	128.8 K=0.70	1.2272	-1.582	16.712	0.095 ¹ ✓

¹ $P_u / \phi P_n$ controls

Mid Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.000	4.854	163.1 K=0.70	0.7854	-0.015	6.670	0.002 ¹ ✓
T2	270 - 250	1	5.000	4.833	162.4 K=0.70	0.7854	-0.178	6.728	0.026 ¹ ✓
T6	200 - 180	L3x3x3/16	9.000	8.000	145.3 K=0.90	1.0900	-5.502	14.785	0.372 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T7	180 - 160	L4x4x1/4	11.000	10.000	139.0 K=0.92	1.9400	-4.506	28.726	0.157 ¹ ✓

¹ P_u / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1 3/4	10.000	2.250	61.7	1.7942	6.496	87.466	0.074 ^{1 #} ✓
T2	270 - 250	2	20.000	2.375	57.0	3.1416	24.633	141.372	0.174 ^{1 #} ✓
T3	250 - 230	2 1/2	20.000	2.375	45.6	4.9087	69.492	220.893	0.315 ¹ ✓
T4	230 - 220	Pirod 105245	10.017	10.017	37.8	5.3014	73.572	238.565	0.308 ¹ ✓
T5	220 - 200	Pirod 105218	20.033	10.017	32.4	7.2158	104.795	324.713	0.323 ¹ ✓
T6	200 - 180	Pirod 105218	20.033	10.017	32.4	7.2158	129.337	324.713	0.398 ¹ ✓
T7	180 - 160	Pirod 105219	20.033	10.017	28.4	9.4248	156.636	424.115	0.369 ¹ ✓
T8	160 - 140	Pirod 105220	20.033	10.017	25.2	11.9282	196.122	536.771	0.365 ¹ ✓
T9	140 - 120	Pirod 105220	20.033	10.017	25.2	11.9282	246.098	536.771	0.458 ¹ ✓
T10	120 - 100	Pirod 112743	20.033	20.033	32.6	14.7262	279.848	662.680	0.422 ¹ ✓
T11	100 - 80	Pirod 112743	20.033	20.033	32.6	14.7262	330.274	662.680	0.498 ¹ ✓
T12	80 - 60	Pirod 112744	20.033	20.033	32.6	17.8187	376.918	801.842	0.470 ¹ ✓
T13	60 - 40	Pirod 112744	20.033	20.033	32.6	17.8187	420.938	801.842	0.525 ¹ ✓
T14	40 - 20	Pirod 112745	20.033	20.033	32.5	21.2057	466.380	954.259	0.489 ¹ ✓
T15	20 - 0	Pirod 112740	20.033	20.033	32.5	21.2057	503.647	954.259	0.528 ¹ ✓

¹ P_u / φP_n controls

Based on net area of leg in section below

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Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in ²	V_u K	ϕV_n K	Stress Ratio
T4	230 - 220	0.5	1.471	120.0	238.565	0.1963	0.693	3.446	0.202
T5	220 - 200	0.5	1.459	119.0	324.713	0.1963	0.428	3.378	0.128
T6	200 - 180	0.5	1.459	119.0	324.713	0.1963	0.380	3.378	0.114
T7	180 - 160	0.625	1.446	94.4	424.115	0.3068	0.365	6.958	0.054
T8	160 - 140	0.625	1.435	93.6	536.771	0.3068	1.817	7.011	0.259
T9	140 - 120	0.625	1.435	93.6	536.771	0.3068	1.701	7.011	0.244
T10	120 - 100	0.75	1.727	93.9	662.680	0.4418	1.009	14.364	0.071
T11	100 - 80	0.75	1.727	93.9	662.680	0.4418	1.034	14.364	0.073
T12	80 - 60	0.75	1.711	93.1	801.842	0.4418	0.939	14.531	0.066
T13	60 - 40	0.75	1.711	93.1	801.842	0.4418	1.008	14.531	0.070
T14	40 - 20	0.875	1.696	79.1	954.259	0.6013	1.433	23.594	0.062
T15	20 - 0	0.875	1.696	79.1	954.259	0.6013	1.718	23.594	0.074

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.483	2.662	146.0	0.6013	1.568	27.059	0.058 ¹
T2	270 - 250	7/8	5.535	2.675	146.8	0.6013	2.193	27.059	0.081 ¹
T3	250 - 230	1	5.535	2.652	127.3	0.7854	5.600	35.343	0.158 ¹
T4	230 - 220	L3x3x5/16	11.416	5.024	67.6	1.0713	7.303	46.603	0.157 ¹
T5	220 - 200	L3x3x3/16	11.930	5.424	71.5	0.6593	6.740	28.679	0.235 ¹
T6	200 - 180	L3x3x5/16	13.796	6.369	85.1	1.0713	8.242	46.603	0.177 ¹
T7	180 - 160	L3x3x5/16	15.243	7.092	94.9	1.0127	9.703	44.054	0.220 ¹
T8	160 - 140	L3 1/2x3 1/2x5/16	16.803	7.892	89.9	1.2452	13.142	54.168	0.243 ¹
T9	140 - 120	L3 1/2x3 1/2x5/16	17.616	8.319	94.6	1.2452	14.827	54.168	0.274 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T10	120 - 100	2L3 1/2x3 1/2x5/16x3/8	26.255	12.451	141.6	2.6077	20.592	113.433	0.182 ¹ ✓
T11	100 - 80	2L3 1/2x3 1/2x5/16x3/8	27.592	13.142	149.3	2.6077	21.971	113.433	0.194 ¹ ✓
T12	80 - 60	2L3 1/2x3 1/2x5/16x3/8	29.006	13.866	157.3	2.6077	21.987	113.433	0.194 ¹ ✓
T13	60 - 40	2L3 1/2x3 1/2x5/16x3/8	30.485	14.620	165.7	2.6077	22.606	113.433	0.199 ¹ ✓
T14	40 - 20	2L3 1/2x3 1/2x5/16x3/8	32.021	15.399	174.3	2.6077	22.496	113.433	0.198 ¹ ✓
T15	20 - 0	2L3 1/2x3 1/2x5/16x3/8	33.606	16.200	183.2	2.6077	23.728	113.433	0.209 ¹ ✓

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.000	4.854	266.3	0.6013	0.266	27.059	0.010 ¹ ✓
T2	270 - 250	7/8	5.000	4.833	265.1	0.6013	0.497	27.059	0.018 ¹ ✓
T3	250 - 230	7/8	5.000	4.792	262.9	0.6013	1.374	27.059	0.051 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.000	4.854	233.0	0.7854	0.605	35.343	0.017 ¹ ✓
T2	270 - 250	1	5.000	4.833	232.0	0.7854	0.632	35.343	0.018 ¹ ✓
T3	250 - 230	1 1/4	5.000	4.792	184.0	1.2272	1.388	55.223	0.025 ¹ ✓
T6	200 - 180	L3x3x3/16	8.000	6.667	89.5	0.6593	4.881	28.679	0.170 ¹ ✓
T7	180 - 160	L4x4x1/4	10.000	8.604	86.4	1.1972	6.950	52.078	0.133 ¹ ✓
T8	160 - 140	L3 1/2x3 1/2x5/16	12.000	10.604	122.2	1.2452	4.466	54.168	0.082 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
									✓

¹ P_u / φP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.000	4.854	233.0	0.7854	0.705	35.343	0.020 ¹ ✓
T2	270 - 250	1	5.000	4.833	232.0	0.7854	0.939	35.343	0.027 ¹ ✓
T3	250 - 230	1 1/4	5.000	4.792	184.0	1.2272	1.788	55.223	0.032 ¹ ✓

¹ P_u / φP_n controls

Mid Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.000	4.854	233.0	0.7854	0.110	35.343	0.003 ¹ ✓
T2	270 - 250	1	5.000	4.833	232.0	0.7854	0.273	35.343	0.008 ¹ ✓
T6	200 - 180	L3x3x3/16	9.000	8.000	102.2	1.0900	6.778	35.316	0.192 ¹ ✓
T7	180 - 160	L4x4x1/4	11.000	10.000	96.0	1.9400	5.673	62.856	0.090 ¹ ✓

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
T1	280 - 270	Leg	1 3/4	3	-9.293	81.929	11.3	Pass
		Diagonal	7/8	17	-1.619	7.868	20.6	Pass
		Horizontal	7/8	36	-0.177	3.910	4.5	Pass
		Top Girt	1	4	-0.576	6.670	8.6	Pass
		Bottom Girt	1	7	-0.644	6.670	9.7	Pass
		Mid Girt	1	11	0.110	35.343	0.3	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
T2	270 - 250	Leg	2	45	-28.696	111.479	25.7	Pass	
		Diagonal	7/8	59	-2.241	7.786	28.8	Pass	
		Horizontal	7/8	62	-0.497	3.944	12.6	Pass	
		Top Girt	1	48	-0.584	6.728	8.7	Pass	
		Bottom Girt	1	49	-0.885	6.728	13.1	Pass	
		Mid Girt	1	52	-0.178	6.728	2.6	Pass	
T3	250 - 230	Leg	2 1/2	123	-79.352	189.738	41.8	Pass	
		Diagonal	1	135	-5.764	13.514	42.7	Pass	
		Horizontal	7/8	137	-1.374	4.012	34.3	Pass	
		Top Girt	1 1/4	125	-1.374	16.712	8.2	Pass	
		Bottom Girt	1 1/4	127	-1.582	16.712	9.5	Pass	
T4	230 - 220	Leg	Pirod 105245	201	-82.689	214.859	38.5	Pass	
		Diagonal	L3x3x5/16	207	-8.246	41.111	20.1	Pass	
T5	220 - 200	Leg	Pirod 105218	210	-117.404	300.681	39.0	Pass	
		Diagonal	L3x3x3/16	216	-6.911	22.519	30.7	Pass	
T6	200 - 180						34.4 (b)		
		Leg	Pirod 105218	225	-144.498	300.681	48.1	Pass	
		Diagonal	L3x3x5/16	237	-9.554	30.261	31.6	Pass	
T7	180 - 160						38.9 (b)		
		Top Girt	L3x3x3/16	226	-4.010	17.316	23.2	Pass	
								38.4 (b)	
		Mid Girt	L3x3x3/16	229	-5.502	14.785	37.2	Pass	
T8	160 - 140	Leg	Pirod 105219	246	-177.935	399.868	44.5	Pass	
		Diagonal	L3x3x5/16	258	-11.044	24.402	45.3	Pass	
		Top Girt	L4x4x1/4	247	-5.697	32.919	17.3	Pass	
T9	140 - 120						32.6 (b)		
		Mid Girt	L4x4x1/4	250	-4.506	28.726	15.7	Pass	
		Leg	Pirod 105220	267	-228.425	512.375	44.6	Pass	
		Diagonal	L3 1/2x3 1/2x5/16	276	-13.193	31.751	41.6	Pass	
T10	120 - 100						49.3 (b)		
		Top Girt	L3 1/2x3 1/2x5/16	269	-3.961	17.588	22.5	Pass	
T11	100 - 80	Leg	Pirod 105220	285	-286.371	512.375	55.9	Pass	
		Diagonal	L3 1/2x3 1/2x5/16	291	-14.493	25.959	55.8	Pass	
T12	80 - 60	Leg	Pirod 112743	300	-323.540	613.145	52.8	Pass	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	306	-21.874	66.615	32.8	Pass	
T13	60 - 40	Leg	Pirod 112743	307	-381.957	613.145	62.3	Pass	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	314	-22.708	61.156	37.1	Pass	
T14	40 - 20	Leg	Pirod 112744	316	-436.472	741.993	58.8	Pass	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	323	-22.675	56.126	40.4	Pass	
T15	20 - 0	Leg	Pirod 112744	325	-487.910	741.993	65.8	Pass	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	332	-23.830	51.525	46.2	Pass	
		Leg	Pirod 112745	334	-543.000	883.145	61.5	Pass	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	341	-22.698	47.338	47.9	Pass	
		Leg	Pirod 112740	343	-587.254	883.145	66.5	Pass	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	350	-25.995	43.542	59.7	Pass	
							Summary		
							Leg (T15)	66.5	Pass
							Diagonal (T15)	59.7	Pass
							Horizontal (T3)	34.3	Pass
							Top Girt (T6)	38.4	Pass
							Bottom Girt (T2)	13.1	Pass
							Mid Girt (T6)	37.2	Pass
							Bolt Checks	55.7	Pass
							RATING =	66.5	Pass

Self Support Anchor Rod Capacity

Site Info	
Site Number	CTL05633
Site Name	SEYMOUR EAST
FA Number	10099965

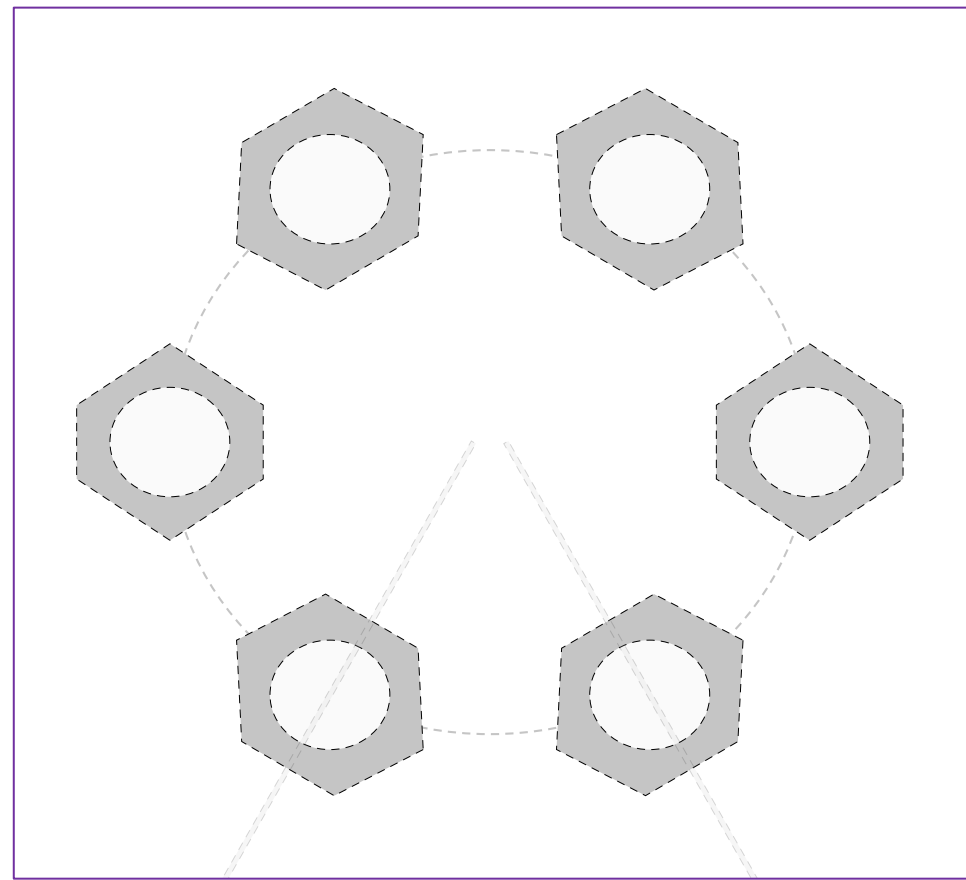
Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	0

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	614.76	525.52
Shear Force (kips)	66.57	58.97

*TIA-222-H Section 15.5 Applied

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.000
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	0.000

*Anchor Rod Eccentricity Applied

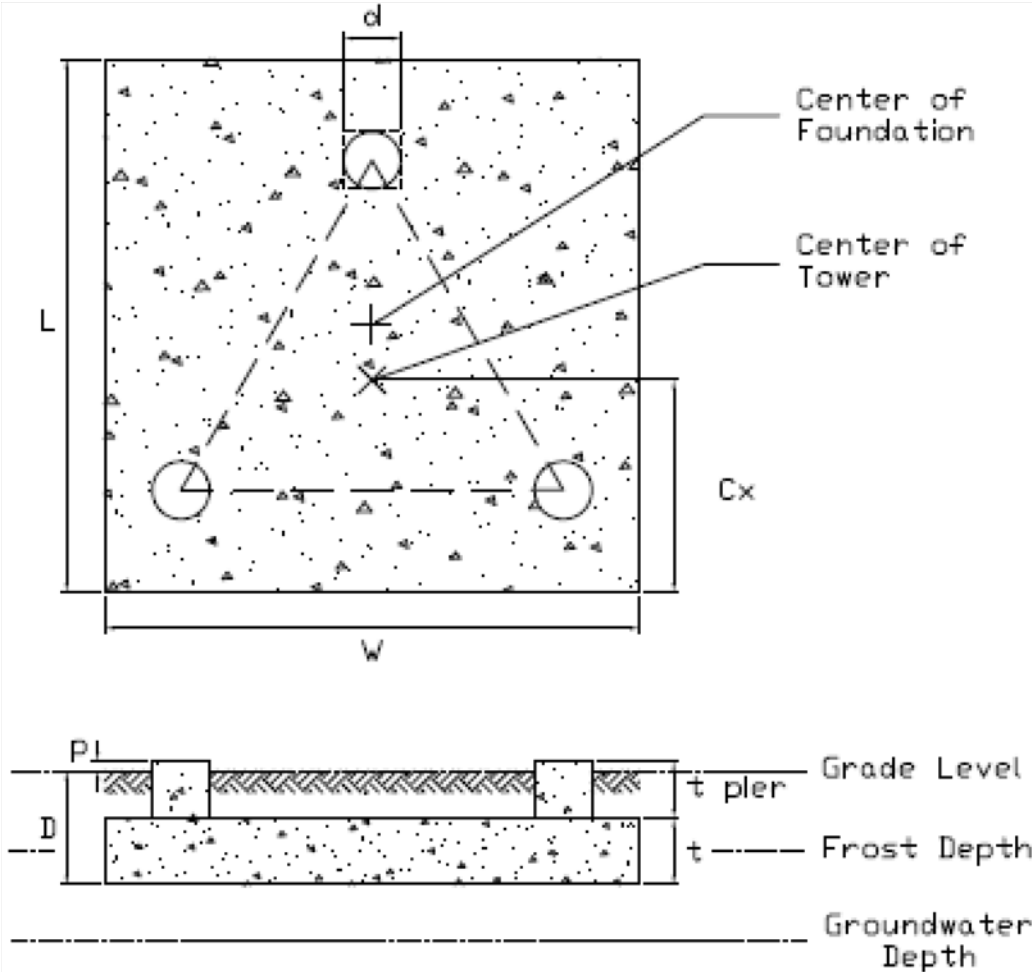


Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data	
(6) 2-1/4" ϕ bolts (A687 N; Fy=105 ksi, Fu=125 ksi)	
l_{ar} (in): 0	

Anchor Rod Summary		(units of kips, kip-in)
$Pu_t = 87.59$	$\phi Pn_t = 304.69$	Stress Rating
$Vu = 9.83$	$\phi Vn = 186.38$	27.4%
$Mu = n/a$	$\phi Mn = n/a$	Pass

Self-Supporting Tower Foundation - Pad & 3 Piers



Existing Tower Base Dimensions

D := 6ft

p := 6in

L := 38.50ft

W := 38.50ft

t := 3.25ft

d := 5ft

Pier_Type :=

- "Circular"
- "Square"

$t_{pier} := D + p - t$

$t_{pier} = 3.25 \text{ ft}$

Cx := 19.25ft

Depth from grade to the bottom of foundation

Projection of Pier above grade

Length of Pad

Width of Pad

Thickness of Pad

Diameter of Pier

Length of Pier

Minimum distance to center of gravity of tower from outer edge (based on foundation drawings)

Tower Reactions

$P_{u_no_ice} := 130\text{kip}$

Factored download reaction

$M_{u_no_ice} := 13860\text{kip}\cdot\text{ft}$

Factored moment reaction

$V_{u_no_ice} := 101\text{kip}$

Factored shear reaction

$P_{u_ice} := 250\text{kip}$

Factored download reaction - ice

$M_{u_ice} := 4594\text{kip}\cdot\text{ft}$

Factored moment reaction - ice

$V_{u_ice} := 32\text{kip}$

Factored shear reaction - ice

Soil Properties

$\text{Bearing} := 5\text{ksf}$

Allowable bearing pressure

$\text{Bearing_Type} :=$

"Gross"
 "Net"

$\text{SF}_{\text{Bearing}} := 2$

Factor of safety for allowable bearing pressure

$\text{Bearing}_{\text{Ult}} := \text{Bearing} \cdot \text{SF}_{\text{Bearing}}$

$\text{Bearing}_{\text{Ult}} = 10\cdot\text{ksf}$

Ultimate bearing pressure

$\phi_{\text{soil}} := 30\text{deg}$

Angle of internal friction

$P_p := 250\text{psf}$

Passive pressure

$\mu := 0.4$

Coefficient of friction

$H_{\text{water}} := 99\text{ft}$

Depth to groundwater table

$H_{\text{frost}} := 4\text{ft}$

Depth to frost line

$\gamma_{\text{conc}} := 150\text{pcf}$

$\gamma_{\text{soil}} := 115\text{pcf}$

$\gamma_{\text{H20}} := 62.4\text{pcf}$

$\phi_o := 0.75$

Reduction factor for Overturning

$\phi_b := 0.75$

Reduction factor for Bearing

$\phi_l := 0.75$

Reduction factor for Lateral

Overturning Calculations

$$A_{\text{pad}} := W \cdot L \quad A_{\text{pad}} = 1482.25 \text{ ft}^2 \quad \text{Area of pad}$$

$$A_{\text{pier}} := \begin{cases} \pi \frac{d^2}{4} & \text{if Pier_Type} = \text{"Circular"} \\ d^2 & \text{if Pier_Type} = \text{"Square"} \end{cases} \quad A_{\text{pier}} = 25 \text{ ft}^2 \quad \text{Area of pier}$$

$$W_{\text{t}_{\text{pad}}} := 0.9 \gamma_{\text{conc}} \cdot t \cdot A_{\text{pad}} \quad W_{\text{t}_{\text{pad}}} = 650.34 \cdot \text{kip} \quad \text{Factored weight of concrete pad}$$

$$W_{\text{t}_{\text{piers}}} := 0.9 \gamma_{\text{conc}} \cdot 3 \cdot t_{\text{pier}} \cdot A_{\text{pier}} \quad W_{\text{t}_{\text{piers}}} = 32.91 \cdot \text{kip} \quad \text{Factored weight of concrete piers}$$

$$D_{\text{tpad}} := t_{\text{pier}} - p \quad D_{\text{tpad}} = 2.75 \text{ ft} \quad \text{Depth of soil to top of pad}$$



$$V_{\text{soil}} = 4125.72 \cdot \text{ft}^3 \quad \text{Total volume of soil acting in overturning}$$

$$W_{\text{t}_{\text{soil}}} := 0.9 V_{\text{soil}} \cdot \gamma_{\text{soil}} \quad W_{\text{t}_{\text{soil}}} = 427.01 \cdot \text{kip} \quad \text{Factored weight of soil}$$

$$M_{\text{v}_{\text{no_ice}}} := V_{\text{u}_{\text{no_ice}}} \cdot (D + p) \quad M_{\text{v}_{\text{no_ice}}} = 656.5 \cdot \text{kip} \cdot \text{ft} \quad \text{Moment due to shear}$$

$$M_{\text{v}_{\text{ice}}} := V_{\text{u}_{\text{ice}}} \cdot (D + p) \quad M_{\text{v}_{\text{ice}}} = 208 \cdot \text{kip} \cdot \text{ft} \quad \text{Moment due to shear - ice}$$

Check overturning capacity - no ice

$$\phi M_n := \phi_o \cdot \left[(P_{\text{u}_{\text{no_ice}}} + W_{\text{t}_{\text{piers}}}) \cdot Cx + (W_{\text{t}_{\text{pad}}} + W_{\text{t}_{\text{soil}}}) \cdot \frac{\min(W, L)}{2} \right] \quad \phi M_n = 17906 \cdot \text{kip} \cdot \text{ft}$$

$$M_u := M_{\text{u}_{\text{no_ice}}} + M_{\text{v}_{\text{no_ice}}} \quad M_u = 1.45 \times 10^4 \cdot \text{kip} \cdot \text{ft}$$

$$\frac{M_u}{\phi M_n} = 0.81$$

OverturningCheck = "Overturning capacity of foundation is adequate."

Check overturning capacity - with ice

$$\phi M_n := \phi_o \cdot \left[(P_{\text{u}_{\text{ice}}} + W_{\text{t}_{\text{piers}}}) \cdot Cx + (W_{\text{t}_{\text{pad}}} + W_{\text{t}_{\text{soil}}}) \cdot \frac{\min(W, L)}{2} \right] \quad \phi M_n = 19639 \cdot \text{kip} \cdot \text{ft}$$

$$M_u := M_{\text{u}_{\text{ice}}} + M_{\text{v}_{\text{ice}}} \quad M_u = 4802 \cdot \text{kip} \cdot \text{ft}$$

$$\frac{M_u}{\phi M_n} = 0.24$$

OverturningCheck_{ice} = "Overturning capacity of foundation is adequate."

Soil Bearing Calculations

$$S := \frac{A_{\text{pad}} \cdot \min(W, L)}{6}$$

$$S = 9511.1 \cdot \text{ft}^3$$

Section Modulus of base



$$W_{\text{t}_{\text{pad}}} = 722.6 \cdot \text{kip}$$

Weight of concrete pad

$$W_{\text{t}_{\text{piers}}} = 36.56 \cdot \text{kip}$$

Weight of concrete piers

$$W_{\text{t}_{\text{soils}}} = 445.04 \cdot \text{kip}$$

Weight of soil is ignored if Net Bearing Pressure is given

$$W_{\text{t}_{\text{total}}} := 1.2W_{\text{t}_{\text{pad}}} + 1.2W_{\text{t}_{\text{piers}}} + 1.2W_{\text{t}_{\text{soils}}}$$

$$W_{\text{t}_{\text{total}}} = 1445.04 \cdot \text{kip}$$

Total factored weight of foundation

Check soil bearing capacity - no ice

$$\phi R_s := \phi_b \cdot \text{Bearing}_{\text{Ult}}$$

$$\phi R_s = 7.5 \cdot \text{ksf}$$

$$R_u := \frac{(P_{u_no_ice} + W_{\text{t}_{\text{total}}})}{A_{\text{pad}}} + \frac{M_{u_no_ice} + M_{v_no_ice}}{S}$$

$$R_u = 2.59 \cdot \text{ksf}$$

$$\frac{R_u}{\phi R_s} = 0.35$$

BearingCheck = "Bearing of soil is adequate."

Check soil bearing capacity - with ice

$$R_u := \frac{(P_{u_ice} + W_{\text{t}_{\text{total}}})}{A_{\text{pad}}} + \frac{M_{u_ice} + M_{v_ice}}{S}$$

$$R_u = 1.65 \cdot \text{ksf}$$

$$\frac{R_u}{\phi R_s} = 0.22$$

BearingCheck_{ice} = "Bearing of soil is adequate."

Lateral Calculations

$$W_{t_{total}} := 0.9W_{t_{pad}} + 0.9W_{t_{piers}} + 0.9W_{t_{soils}}$$

$$W_{t_{total}} = 1083.78 \cdot \text{kip}$$

Total factored weight of foundation

$$P_{resist} := P_p \cdot \min(L, W) \cdot (D - H_{frost})$$

$$P_{resist} = 19.25 \cdot \text{kip}$$

Resisting lateral force from soil

$$f := \mu \cdot (P_{u_{no_ice}} + W_{t_{total}})$$

$$f = 485.51 \cdot \text{kip}$$

Resisting friction force from soil

$$f_{ice} := \mu \cdot (P_{u_{ice}} + W_{t_{total}})$$

$$f_{ice} = 533.51 \cdot \text{kip}$$

Resisting friction force from soil with ice

Check lateral capacity - no ice

$$\phi R_s := \phi_1 \cdot (f + P_{resist})$$

$$\phi R_s = 378.57 \cdot \text{kip}$$

$$R_u := V_{u_{no_ice}}$$

$$R_u = 101 \cdot \text{kip}$$

$$\frac{R_u}{\phi R_s} = 0.27$$

SlidingCheck = "Lateral capacity of foundation is adequate."

Check lateral capacity - with ice

$$\phi R_s := \phi_1 \cdot (f_{ice} + P_{resist})$$

$$\phi R_s = 414.57 \cdot \text{kip}$$

$$R_u := V_{u_{ice}}$$

$$R_u = 32 \cdot \text{kip}$$

$$\frac{R_u}{\phi R_s} = 0.08$$

SlidingCheck_{ice} = "Lateral capacity of foundation is adequate."