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

March 5, 2020

Carolyn Seeley
Site Acquisition Supervisor
Empire Telecom USA, LLC
16 Esquire Road
Billerica, MA 01862

RE: **EM-AT&T-009-160922** – AT&T notice of intent to modify an existing telecommunications facility located at 38 Spring Hill Lane, Bethel, Connecticut.

Dear Ms. Seeley:

The Connecticut Siting Council (Council) received a notice of completion of construction for the above-referenced facility on February 10, 2020. On February 18, 2020, the Council issued a letter of non-compliance (enclosed) with conditions associated with the Council's October 11, 2016 decision for the above referenced exempt modification request. The Council recommended that Empire Telecom provide documentation certified by a Professional Engineer that AT&T's installation is in compliance with the conditions referenced in the Council's decision.

On February 28, 2020, the Council received a response to the letter of non-compliance which included a Structural Analysis prepared by Bennet & Pless, Inc. and dated October 19, 2016. The response did not include a Professional Engineer's certification that AT&T's installation was in compliance with the conditions referenced in the Council's decision letter.

Therefore, the completion notice is not in compliance with the conditions of approval at this time.

The Council recommends that Empire Telecom provide documentation certified by a Professional Engineer that AT&T's installation is in compliance with the conditions referenced in the Councils decision, on or before April 10, 2020. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to April 10, 2020.

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

Sincerely,

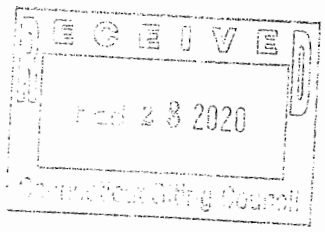
Melanie Bachman
Executive Director

MAB/IN/emr

Enclosures: Response to Letter of non-compliance dated February 24, 2020
Council Letter of non-compliance dated February 18, 2020
Completion Letter dated February 3, 2020
Council Decision Letter dated October 11, 2016

EMPIRE telecom

February 24, 2020



Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: EM-AT&T-009-160922 – 38 Spring Hill Road, Bethel, CT

COMPLETION OF CONSTRUCTION ACTIVITY

Dear Ms. Bachman:

The purpose of this letter is to notify the Siting Council that construction activity associated with the above-referenced decisions has been completed. Attached please find passing Structural Analysis including the modification design.

If you have any questions or need any additional information regarding this facility, please do not hesitate to contact me.

Very truly yours,

Carolyn Seeley

Carolyn Seeley
Site Acquisition Supervisor

Carolyn Seeley, Site Acquisition Supervisor, Empire Telecom USA, LLC • 16 Esquire Rd, Billerica, MA 01862 • 978-760-5577 • cseeley@empiretelecomm.com

STATE OF CONNECTICUT

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Ten Franklin Square, New Britain, CT 06051
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February 18, 2020

Carolyn Seeley
Site Acquisition Supervisor
Empire Telecom USA, LLC
16 Esquire Road
Billerica MA 01862

RE: **EM-AT&T-009-160922** – AT&T notice of intent to modify an existing telecommunications facility located at 38 Spring Hill Lane, Bethel, Connecticut.

Dear Ms. Seeley:

The Connecticut Siting Council (Council) received a notice of completion of construction for the above-referenced facility on February 10, 2020. Thank you for providing this information.

The Council approved the above referenced request for exempt modification in a Decision Letter dated October 11, 2016 (enclosed) with the following conditions:

1. Prior to commencement of installation, AT&T shall provide one copy of the Structural Analysis Report to the Council referencing Revision G of the Structural Standards for Steel Antenna Towers and Antenna Supporting Structures as adopted by the Connecticut State Building Code effective October 1, 2016;
2. Reinforcements shall be installed in accordance with the Structural Analysis Report and associated drawings prepared by Bennett & Pless, Inc. dated August 12, 2016 and stamped by Paul E. Grupe or subsequent Structural Analysis Report in accordance with Revision G as stated in the condition above; and
3. Within 45 days following completion of equipment installation, AT&T shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the structural analysis.

The completion notice does not contain documentation certified by a Professional Engineer that AT&T's installation is in compliance with the conditions referenced above.

Therefore, the completion notice is not in compliance with the conditions of approval at this time.

The Council recommends that Empire Telecom provide the above referenced documentation on or before March 20, 2020. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to March 20, 2020.

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

Sincerely,

Melanie Bachman
Executive Director

MAB/IN/emr

Enclosures: Completion Letter dated February 3, 2020
Council Decision Letter dated October 11, 2016

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
******									
Detuning Arm	A	From Leg	1.50 0.00 0.00	0.0000	6.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	B	From Leg	1.50 0.00 0.00	0.0000	6.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	C	From Leg	1.50 0.00 0.00	0.0000	6.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	A	From Leg	1.50 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	B	From Leg	1.50 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	C	From Leg	1.50 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	A	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	B	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
Detuning Arm	C	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.75 0.97 1.19 1.66	0.05 0.08 0.12 0.22	0.01 0.02 0.03 0.06
****									
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Tower Pressures - No Ice

$G_H = 1.100$

EMPIRE
telecom

February 3, 2020

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: EM-AT&T-009-160922 – 38 Spring Hill Road, Bethel, CT

COMPLETION OF CONSTRUCTION ACTIVITY

Dear Ms. Bachman:

The purpose of this letter is to notify the Siting Council that construction activity associated with the above-referenced decisions has been completed.

If you have any questions or need any additional information regarding this facility, please do not hesitate to contact me.

Very truly yours,

Carolyn Seeley

Carolyn Seeley
Site Acquisition Supervisor

Carolyn Seeley, Site Acquisition Supervisor, Empire Telecom USA, LLC • 16 Esquire Rd, Billerica, MA 01862 • 978-760-5577 • cseeley@empiretelecomm.com

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		ksf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
L1	137.47	1.082	0.04	7.086	A	0.000	7.086	7.086	100.00	0.000	0.000
140.00-135.00					B	0.000	7.086		100.00	0.000	0.000
					C	0.000	7.086		100.00	0.188	0.000
L2	132.48	1.071	0.04	7.528	A	0.000	7.528	7.528	100.00	0.000	0.125
135.00-130.00					B	0.000	7.528		100.00	0.000	0.125
					C	0.000	7.528		100.00	0.188	0.125
L3	127.48	1.059	0.04	7.970	A	0.000	7.970	7.970	100.00	0.000	0.125
130.00-125.00					B	0.000	7.970		100.00	0.000	0.125
					C	0.000	7.970		100.00	0.188	0.125
L4	122.48	1.047	0.04	8.412	A	0.000	8.412	8.412	100.00	0.000	0.125
125.00-120.00					B	0.000	8.412		100.00	0.000	0.125
					C	0.000	8.412		100.00	0.188	0.125
L5	117.48	1.035	0.04	8.855	A	0.000	8.855	8.855	100.00	0.000	0.125
120.00-115.00					B	0.000	8.855		100.00	0.000	0.125
					C	0.000	8.855		100.00	0.188	0.125
L6	112.48	1.022	0.04	9.297	A	0.000	9.297	9.297	100.00	0.000	0.125
115.00-110.00					B	0.000	9.297		100.00	0.000	0.125
					C	0.000	9.297		100.00	0.188	0.125
L7	107.48	1.009	0.04	9.739	A	0.000	9.739	9.739	100.00	0.000	0.125
110.00-105.00					B	0.000	9.739		100.00	0.000	0.125
					C	0.000	9.739		100.00	0.188	0.125
L8	103.49	0.998	0.04	6.055	A	0.000	6.055	6.055	100.00	0.812	0.075
105.00-102.00					B	0.000	6.055		100.00	0.812	0.075
					C	0.000	6.055		100.00	0.924	0.075
L9	101.87	0.993	0.04	0.511	A	0.000	0.511	0.511	100.00	0.169	0.006
102.00-101.75					B	0.000	0.511		100.00	0.169	0.006
					C	0.000	0.511		100.00	0.179	0.006
L10	99.23	0.986	0.04	10.448	A	0.000	10.448	10.448	100.00	6.485	0.125
101.75-96.75					B	0.000	10.448		100.00	3.383	0.125
					C	0.000	10.448		100.00	3.571	0.125
L11	94.23	0.972	0.03	10.890	A	0.000	10.890	10.890	100.00	10.425	0.125
96.75-91.75					B	0.000	10.890		100.00	2.402	0.125
					C	0.000	10.890		100.00	5.840	0.125
L12	91.25	0.963	0.03	2.189	A	0.000	2.189	2.189	100.00	1.954	0.025
91.75-90.75					B	0.000	2.189		100.00	0.000	0.025
					C	0.000	2.189		100.00	1.038	0.025
L13	88.23	0.954	0.03	11.210	A	0.000	11.210	11.210	100.00	10.280	0.125
90.75-85.75					B	0.000	11.210		100.00	0.507	0.125
					C	0.000	11.210		100.00	5.695	0.125
L14	85.54	0.945	0.03	0.962	A	0.000	0.962	0.962	100.00	1.105	0.011
85.75-85.33					B	0.000	0.962		100.00	0.284	0.011
					C	0.000	0.962		100.00	0.720	0.011
L15	85.20	0.944	0.03	0.574	A	0.000	0.574	0.574	100.00	0.658	0.006
85.33-85.08					B	0.000	0.574		100.00	0.169	0.006
					C	0.000	0.574		100.00	0.429	0.006
L16	83.79	0.94	0.03	5.987	A	0.000	5.987	5.987	100.00	8.788	0.127
85.08-82.50					B	0.000	5.987		100.00	1.746	0.127
					C	0.000	5.987		100.00	6.423	0.127
L17	82.37	0.935	0.03	0.585	A	0.000	0.585	0.585	100.00	0.908	0.013
82.50-82.25					B	0.000	0.585		100.00	0.169	0.013
					C	0.000	0.585		100.00	0.679	0.013
L18	82.12	0.934	0.03	0.586	A	0.000	0.586	0.586	100.00	0.908	0.013
82.25-82.00					B	0.000	0.586		100.00	0.169	0.013
					C	0.000	0.586		100.00	0.679	0.013
L19	81.87	0.933	0.03	0.587	A	0.000	0.587	0.587	100.00	0.908	0.013
82.00-81.75					B	0.000	0.587		100.00	0.169	0.013
					C	0.000	0.587		100.00	0.679	0.013
L20	79.95	0.927	0.03	8.531	A	0.000	8.531	8.531	100.00	12.408	0.179
81.75-78.17					B	0.000	8.531		100.00	3.661	0.179
					C	0.000	8.531		100.00	9.125	0.179

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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October 11, 2016

Nicole Caplan
Empire Telecom
16 Esquire Road
Billerica, MA 01862

RE: **EM-AT&T-009-160922** – AT&T notice of intent to modify an existing telecommunications facility located at 38 Spring Hill Lane, Bethel, Connecticut.

Dear Ms. Caplan:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Prior to commencement of installation, AT&T shall provide one copy of the Structural Analysis Report to the Council referencing Revision G of the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures* as adopted by the Connecticut State Building Code effective October 1, 2016;

2. Reinforcements shall be installed in accordance with the Structural Analysis Report and associated drawings prepared by Bennett & Pless, Inc. dated August 12, 2016 and stamped by Paul E. Grupe or subsequent Structural Analysis Report in accordance with Revision G as stated in the condition above;

3. Within 45 days following completion of equipment installation, AT&T shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the structural analysis;

4. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

5. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function;

8. The validity of this action shall expire one year from the date of this letter; and

9. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L21	78.04	0.921	0.03	0.603	A	0.000	0.603	0.603	100.00	0.827	0.013
78.17-77.92					B	0.000	0.603		100.00	0.338	0.013
					C	0.000	0.603		100.00	0.598	0.013
L22	77.79	0.92	0.03	0.605	A	0.000	0.605	0.605	100.00	0.827	0.013
77.92-77.67					B	0.000	0.605		100.00	0.338	0.013
					C	0.000	0.605		100.00	0.598	0.013
L23	77.54	0.919	0.03	0.607	A	0.000	0.607	0.607	100.00	0.827	0.013
77.67-77.42					B	0.000	0.607		100.00	0.338	0.013
					C	0.000	0.607		100.00	0.598	0.013
L24	77.29	0.918	0.03	0.615	A	0.000	0.615	0.615	100.00	0.837	0.013
77.42-77.17					B	0.000	0.615		100.00	0.342	0.013
					C	0.000	0.615		100.00	0.605	0.013
L25	74.65	0.909	0.03	12.388	A	0.000	12.388	12.388	100.00	13.607	0.250
77.17-72.17					B	0.000	12.388		100.00	3.835	0.250
					C	0.000	12.388		100.00	11.954	0.250
L26	69.65	0.891	0.03	12.830	A	0.000	12.830	12.830	100.00	14.878	0.250
72.17-67.17					B	0.000	12.830		100.00	5.012	0.250
					C	0.000	12.830		100.00	13.582	0.250
L27	66.82	0.881	0.03	1.787	A	0.000	1.787	1.787	100.00	2.430	0.034
67.17-66.48					B	0.000	1.787		100.00	1.070	0.034
					C	0.000	1.787		100.00	2.243	0.034
L28	66.36	0.879	0.03	0.655	A	0.000	0.655	0.655	100.00	0.888	0.013
66.48-66.23					B	0.000	0.655		100.00	0.391	0.013
					C	0.000	0.655		100.00	0.820	0.013
L29	65.87	0.877	0.03	1.928	A	0.000	1.928	1.928	100.00	2.604	0.037
66.23-65.50					B	0.000	1.928		100.00	1.147	0.037
					C	0.000	1.928		100.00	2.404	0.037
L30	65.37	0.875	0.03	0.661	A	0.000	0.661	0.661	100.00	0.888	0.013
65.50-65.25					B	0.000	0.661		100.00	0.391	0.013
					C	0.000	0.661		100.00	0.820	0.013
L31	63.96	0.87	0.03	6.881	A	0.000	6.881	6.881	100.00	5.759	0.129
65.25-62.67					B	0.000	6.881		100.00	2.461	0.129
					C	0.000	6.881		100.00	5.054	0.129
L32	62.54	0.864	0.03	0.673	A	0.000	0.673	0.673	100.00	0.469	0.013
62.67-62.42					B	0.000	0.673		100.00	0.222	0.013
					C	0.000	0.673		100.00	0.401	0.013
L33	61.21	0.859	0.03	6.572	A	0.000	6.572	6.572	100.00	6.540	0.121
62.42-60.00					B	0.000	6.572		100.00	2.150	0.121
					C	0.000	6.572		100.00	2.863	0.121
L34	59.87	0.854	0.03	0.685	A	0.000	0.685	0.685	100.00	0.719	0.013
60.00-59.75					B	0.000	0.685		100.00	0.222	0.013
					C	0.000	0.685		100.00	0.231	0.013
L35	57.24	0.843	0.03	13.931	A	0.000	13.931	13.931	100.00	14.823	0.250
59.75-54.75					B	0.000	13.931		100.00	4.886	0.250
					C	0.000	13.931		100.00	5.073	0.250
L36	54.08	0.829	0.03	3.780	A	0.000	3.780	3.780	100.00	5.006	0.067
54.75-53.42					B	0.000	3.780		100.00	2.363	0.067
					C	0.000	3.780		100.00	2.413	0.067
L37	53.29	0.826	0.03	0.713	A	0.000	0.713	0.713	100.00	0.941	0.013
53.42-53.17					B	0.000	0.713		100.00	0.444	0.013
					C	0.000	0.713		100.00	0.454	0.013
L38	52.29	0.821	0.03	5.028	A	0.000	5.028	5.028	100.00	6.599	0.088
53.17-51.42					B	0.000	5.028		100.00	3.114	0.088
					C	0.000	5.028		100.00	3.180	0.088
L39	51.29	0.817	0.03	0.723	A	0.000	0.723	0.723	100.00	0.941	0.013
51.42-51.17					B	0.000	0.723		100.00	0.444	0.013
					C	0.000	0.723		100.00	0.454	0.013
L40	48.82	0.805	0.03	13.696	A	0.000	13.696	13.696	100.00	14.847	0.233
51.17-46.50					B	0.000	13.696		100.00	6.071	0.233
					C	0.000	13.696		100.00	6.246	0.233

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated September 21, 2016. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Melanie A. Bachman
Acting Executive Director

MAB/CW/cm

c: The Honorable Matthew S. Knickerbocker, First Selectman, Town of Bethel
Steven Palmer, Director/Town Planner, Town of Bethel
Blue Sky Towers, LLC

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		ksf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
L41	46.00	0.792	0.03	2.930	A	0.000	2.930	2.930	100.00	2.210	0.050
46.50-45.50					B	0.000	2.930		100.00	0.888	0.050
					C	0.000	2.930		100.00	0.926	0.050
L42	44.58	0.785	0.03	5.416	A	0.000	5.416	5.416	100.00	10.361	0.092
45.50-43.67					B	0.000	5.416		100.00	1.628	0.092
					C	0.000	5.416		100.00	3.325	0.092
L43	43.54	0.779	0.03	0.743	A	0.000	0.743	0.743	100.00	1.413	0.013
43.67-43.42					B	0.000	0.743		100.00	0.222	0.013
					C	0.000	0.743		100.00	0.454	0.013
L44	43.33	0.778	0.03	0.497	A	0.000	0.497	0.497	100.00	0.944	0.008
43.42-43.25					B	0.000	0.497		100.00	0.148	0.008
					C	0.000	0.497		100.00	0.303	0.008
L45	43.12	0.777	0.03	0.746	A	0.000	0.746	0.746	100.00	1.413	0.013
43.25-43.00					B	0.000	0.746		100.00	0.222	0.013
					C	0.000	0.746		100.00	0.454	0.013
L46	40.49	0.763	0.03	15.161	A	0.000	15.161	15.161	100.00	26.264	0.250
43.00-38.00					B	0.000	15.161		100.00	2.443	0.250
					C	0.000	15.161		100.00	7.072	0.250
L47	35.49	0.735	0.03	15.604	A	0.000	15.604	15.604	100.00	23.821	0.250
38.00-33.00					B	0.000	15.604		100.00	0.000	0.250
					C	0.000	15.604		100.00	4.629	0.250
L48	31.12	0.708	0.03	11.993	A	0.000	11.993	11.993	100.00	18.005	0.188
33.00-29.25					B	0.000	11.993		100.00	1.110	0.188
					C	0.000	11.993		100.00	3.472	0.188
L49	29.12	0.7	0.02	0.808	A	0.000	0.808	0.808	100.00	1.219	0.013
29.25-29.00					B	0.000	0.808		100.00	0.222	0.013
					C	0.000	0.808		100.00	0.231	0.013
L50	28.54	0.7	0.02	2.982	A	0.000	2.982	2.982	100.00	4.486	0.046
29.00-28.08					B	0.000	2.982		100.00	0.817	0.046
					C	0.000	2.982		100.00	0.852	0.046
L51	27.90	0.7	0.02	1.137	A	0.000	1.137	1.137	100.00	1.707	0.018
28.08-27.73					B	0.000	1.137		100.00	0.311	0.018
					C	0.000	1.137		100.00	0.324	0.018
L52	27.61	0.7	0.02	0.748	A	0.000	0.748	0.748	100.00	1.121	0.012
27.73-27.50					B	0.000	0.748		100.00	0.204	0.012
					C	0.000	0.748		100.00	0.213	0.012
L53	25.79	0.7	0.02	11.224	A	0.000	11.224	11.224	100.00	18.663	0.171
27.50-24.08					B	0.000	11.224		100.00	3.035	0.171
					C	0.000	11.224		100.00	3.164	0.171
L54	23.96	0.7	0.02	0.829	A	0.000	0.829	0.829	100.00	1.426	0.013
24.08-23.83					B	0.000	0.829		100.00	0.222	0.013
					C	0.000	0.829		100.00	0.231	0.013
L55	23.25	0.7	0.02	3.882	A	0.000	3.882	3.882	100.00	6.651	0.058
23.83-22.67					B	0.000	3.882		100.00	1.036	0.058
					C	0.000	3.882		100.00	1.080	0.058
L56	22.54	0.7	0.02	0.836	A	0.000	0.836	0.836	100.00	1.426	0.013
22.67-22.42					B	0.000	0.836		100.00	0.222	0.013
					C	0.000	0.836		100.00	0.231	0.013
L57	20.66	0.7	0.02	11.826	A	0.000	11.826	11.826	100.00	16.465	0.175
22.42-18.92					B	0.000	11.826		100.00	3.109	0.175
					C	0.000	11.826		100.00	6.053	0.175
L58	18.79	0.7	0.02	0.853	A	0.000	0.853	0.853	100.00	0.926	0.013
18.92-18.67					B	0.000	0.853		100.00	0.222	0.013
					C	0.000	0.853		100.00	0.676	0.013
L59	18.37	0.7	0.02	1.997	A	0.000	1.997	1.997	100.00	2.163	0.029
18.67-18.08					B	0.000	1.997		100.00	0.519	0.029
					C	0.000	1.997		100.00	1.578	0.029
L60	17.96	0.7	0.02	0.856	A	0.000	0.856	0.856	100.00	0.926	0.013
18.08-17.83					B	0.000	0.856		100.00	0.222	0.013
					C	0.000	0.856		100.00	0.676	0.013

EMPIRE telecom

February 24, 2020

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: EM-AT&T-009-160922 – 38 Spring Hill Road, Bethel, CT

COMPLETION OF CONSTRUCTION ACTIVITY

Dear Ms. Bachman:

The purpose of this letter is to notify the Siting Council that construction activity associated with the above-referenced decisions has been completed. Attached please find passing Structural Analysis including the modification design.

If you have any questions or need any additional information regarding this facility, please do not hesitate to contact me.

Very truly yours,

Carolyn Seeley

Carolyn Seeley
Site Acquisition Supervisor

Carolyn Seeley, Site Acquisition Supervisor, Empire Telecom USA, LLC • 16 Esquire Rd, Billerica, MA 01862 • 978-760-5577 •
cseeley@empiretelecomm.com

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

February 18, 2020

Carolyn Seeley
Site Acquisition Supervisor
Empire Telecom USA, LLC
16 Esquire Road
Billerica MA 01862

RE: **EM-AT&T-009-160922** – AT&T notice of intent to modify an existing telecommunications facility located at 38 Spring Hill Lane, Bethel, Connecticut.

Dear Ms. Seeley:

The Connecticut Siting Council (Council) received a notice of completion of construction for the above-referenced facility on February 10, 2020. Thank you for providing this information.

The Council approved the above referenced request for exempt modification in a Decision Letter dated October 11, 2016 (enclosed) with the following conditions:

1. Prior to commencement of installation, AT&T shall provide one copy of the Structural Analysis Report to the Council referencing Revision G of the Structural Standards for Steel Antenna Towers and Antenna Supporting Structures as adopted by the Connecticut State Building Code effective October 1, 2016;
2. Reinforcements shall be installed in accordance with the Structural Analysis Report and associated drawings prepared by Bennett & Pless, Inc. dated August 12, 2016 and stamped by Paul E. Grupe or subsequent Structural Analysis Report in accordance with Revision G as stated in the condition above; and
3. Within 45 days following completion of equipment installation, AT&T shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the structural analysis.

The completion notice does not contain documentation certified by a Professional Engineer that AT&T's installation is in compliance with the conditions referenced above.

Therefore, the completion notice is not in compliance with the conditions of approval at this time.

The Council recommends that Empire Telecom provide the above referenced documentation on or before March 20, 2020. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to March 20, 2020.

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

Sincerely,

Melanie Bachman
Executive Director

MAB/IN/emr

Enclosures: Completion Letter dated February 3, 2020
Council Decision Letter dated October 11, 2016

Structural Analysis Report

Structure	: 125 foot Monopole
BST Site Name	: Spring Hill
BST Site Number	: CT-5003
Proposed Carrier	: AT&T
Site Location	: 38 Spring Hill Road Bethel, Connecticut 06801 41.3622, -73.3967
Date	: October 19, 2016
Max Member Stress Level	: **91.2% (Tower)** **110% (Foundations)**
Result	: **Tower – Pass** **Foundations - Will require further modification.**

Prepared by:
Bennett & Pless, Inc.
B&P Job No.
16307.001 (Rev. 1)

bennett&pless
Experience Structural Expertise

STATE OF CONNECTICUT
PAUL E. GRUPE
No. 21967
LICENSED
PROFESSIONAL ENGINEER
10-19-16

3395 Northeast Expy, Ste 110 | Atlanta, Georgia 30341 | TEL 678 990 8700 | FAX 678 990 8701
Atlanta | Chattanooga | www.bennett-pless.com

Table of Contents

Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the new loads proposed by AT&T with the proposed structural modifications. The objective of the analysis is to display that after the proposed structural modifications are performed the tower will be in conformance with the current codes and standards for the proposed equipment installation.

Supporting Documents

The following documents were made available for our structural analysis.

Tower Information	Ramaker & Associates SA dated July 15, 2014 Structural Analysis by Bennett & Pless, April 10, 2015
Foundation Information	Structural Analysis by CHA date June 10, 2011
Geotechnical Information	Structural Analysis by CHA date June 10, 2011
Equipment Information	Engineered Tower Solutions Mapping dated November 21, 2014 Structural Analysis by Bennett & Pless, April 10, 2015 Collocation Application from BlueSky Tower, December 28, 2015
Tower Reinforcement Information	**Proposed Modifications – Bennett & Pless Mod Dwgs dated 10/19/2016**

Design Criteria

The tower was analyzed using tnxTower (Version 7.0.7.0) tower analysis software using the following design criteria.

Building Code	IBC 2012
TIA/EIA Standard Code	Rev G (ASCE7-10)
Basic Wind Speed	117MPH
Basic Wind Speed w/ Ice	65 MPH w/ 0.75" Ice
Exposure Category	C
Topographic Category	III
Crest Height	330 ft
Steel Grade	65 ksi Pole, 50 ksi Base Plate, Anchor Bolts A615 Grade 75

Final Proposed Equipment Loading for AT&T

The following proposed loading was obtained from the collocation application provided by Blue Sky Tower. (December 28, 2015):

Antenna/Equipment					Coax	
Mount	RAD	Qty.	Antenna	Type	Qty.	Size/Type
122	-	1	Low Platform	Mount	12 1 **1** 2 **2**	1 5/8" Coax Fiber Cable **Fiber Cable** DC Cable **DC Cable**
	122	3	Powerwave 7770 w/ Mount Pipe	Panel		
		1	**CCI HPA-65R-BUU-H8***	Panel		
		2	**CCI HPA-65R-BUU-H6***	Panel		
		3	Powerwave P65-16-XLH-RR	Panel		
		6	Powerwave LGP21401	TMA		
		3	Ericsson RRUS-11	RRU		
		3	**Ericsson RRUS-11**	RRU		
		3	**Ericsson RRUS-32**	RRU		
		1	Raycap DC6-48-60-18-8F	Squid		
		1	**Raycap DC6-48-60-18-8F**	Squid		

Note: Proposed equipment is shown in bold.
***Note: The existing (3) Powerwave 7770 will be replaced by the proposed panels shown above.**
Note: All additional equipment considered in the analysis is listed on the tower profile.

Analysis Results

Based on the foregoing information, our structural analysis determined that **the existing tower is with the proposed structural modifications as shown in the Bennett and Pless Modification Drawings dated October 19, 2016 is structurally capable of supporting the proposed equipment loads.**

The existing foundations have also been evaluated and are not capable of supporting the proposed loads. The geotechnical information provided in previous analyses is sufficient for evaluation, however it is not sufficient for modifications designs. Therefore, a geotechnical study will be required prior to the design of the required foundations modifications.

Assumptions

The following assumptions were used in this structural analysis:

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. All member connections are assumed to have been designed to meet the load carrying capacity of the connected member.
3. Antenna mount loads have been estimated based on general information obtained in the field.
4. The new feed lines for the proposed antennas are assumed to be installed inside the pole.
5. The mounts for the proposed antennas have been analyzed and designed by others.
6. See additional assumptions contained in the report attached.

Conclusions

The existing self-support tower described above **does have sufficient capacity to support the proposed loading after the proposed modifications are installed** based on the TIA/EIA-222-G Standard referenced by the State Building Code. **Further geotechnical information will be required prior to the design of foundations reinforcements.**

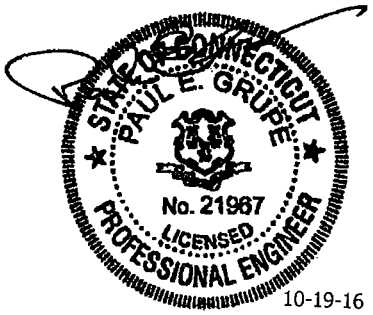
We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance please call us anytime at 605-540-4620.

Sincerely,

Analysis by:

Cory Blake, PE
Project Engineer

Reviewed by:



Paul E. Grupe, PE
Vice President

10-19-16

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but not necessarily limited, to:

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and it components, or relevant information.

- Information from drawings in possession of Bennett & Pless, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Bennett & Pless and used in the performance of our engineering services is correct and complete. In the absence of information contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in a un-corroded condition and have not deteriorated; and we, therefore consider that their capacity has not significantly changed from the original design condition.

All services will be performed to the codes and standards specified by the client, and we do not imply to meet any other code and standard requirements unless explicitly agreed to in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes and standards, the client shall specify the exact requirements. In the absence of information to the contrary, all work will be performed in accordance with the revision of ANSI/TIA/EIA-222 requested.

All services are performed, results obtained and recommendations made in accordance with the generally accepted engineering principles and practices. Bennett & Pless is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Disclaimer of Warranties

Bennett & Pless. makes no warranties, expressed or implied, in connection with this report, and disclaims any liability arising from the ability of the existing structure to support the design loads for which it was originally designed. Bennett & Pless. will not be responsible whatsoever for or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Bennett & Pless pursuant to this report will be limited to the total fee received for preparation of this report.

Appendix A
Calculations

tnxTower	Job	Page
	CT-5003 125' Tapered Monopole	1 of 28
Bennett and Pless	Project	Date
	Spring Hill, CT (Verizon)	12:01:02 10/18/16
Phone: FAX:	Client	Designed by
	Blue Sky Towers	Cory Blake

Tower Input Data

There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
ASCE 7-10 Wind Data is used.
Basic wind speed of 117 mph.
Risk Category II.
Exposure Category C.
Topographic Category 3.
Crest Height 330.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 65 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	125.00-92.08	32.92	3.92	18	18.0000	26.9000	0.1875	0.7500	A572-65 (65 ksi)
L2	92.08-81.00	15.00	0.00	18	25.4652	36.2600	0.2500	1.0000	A572-65 (65 ksi)
L3	81.00-47.67	33.33	5.67	18	36.2600	41.2800	0.4200	1.6800	A572-65 (65 ksi)
L4	47.67-1.00	52.34		18	39.5860	55.0000	0.4400	1.7600	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	18.2777	10.6007	424.9328	6.3234	9.1440	46.4712	850.4248	5.3013	2.8380	15.136
	27.3150	15.8973	1433.1421	9.4829	13.6652	104.8753	2868.1699	7.9501	4.4044	23.49
L2	28.7226	20.0083	1607.2099	8.9514	12.9363	124.2400	3216.5346	10.0060	4.0419	16.168
	36.8194	28.5739	4681.1628	12.7836	18.4201	254.1337	9368.4852	14.2897	5.9418	23.767
L3	36.8194	47.7776	7753.4978	12.7232	18.4201	420.9264	15517.1978	23.8933	5.6426	13.435
	41.9168	54.4696	11489.1725	14.5053	20.9702	547.8799	22993.4627	27.2400	6.5261	15.538
L4	41.8922	54.6698	10584.2391	13.8968	20.1097	526.3252	21182.4053	27.3401	6.1927	14.074
	55.8485	76.1963	28656.3012	19.3688	27.9400	1025.6371	57350.3092	38.1054	8.9056	20.24

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
L1 125.00-92.08				1	1	1			
L2 92.08-81.00				1	1	1			
L3 81.00-47.67				1	1	1			
L4 47.67-1.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Switchblade Reinf	A	Surface Af (CaAa)	83.00 - 1.00	1	1	-0.375	3.5000	14.0000	18.60
Switchblade Reinf	A	Surface Af (CaAa)	83.00 - 1.00	1	1	0.000 0.000	3.5000	14.0000	18.60
Switchblade Reinf	B	Surface Af (CaAa)	83.00 - 1.00	1	1	0.375 0.000	3.5000	14.0000	18.60
Switchblade Reinf	B	Surface Af (CaAa)	83.00 - 1.00	1	1	0.125 -0.125 0.000	3.5000	14.0000	18.60

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight plf
1 5/8" coax (ATT)	A	No	Inside Pole	123.00 - 2.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
Fiber Cable (ATT)	A	No	Inside Pole	123.00 - 2.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
Fiber Cable (ATT)	A	No	Inside Pole	123.00 - 2.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
DC Cable (0.8" Dia) (ATT)	A	No	Inside Pole	123.00 - 2.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
DC Cable (0.8" Dia) (ATT)	A	No	Inside Pole	123.00 - 2.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
1 5/8" coax (Sprint)	B	No	Inside Pole	117.00 - 2.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
HB058-M12-XXXF(5/8") (Sprint)	B	No	Inside Pole	117.00 - 2.00	1	No Ice	0.00	0.24
						1/2" Ice	0.00	0.24
						1" Ice	0.00	0.24
1 5/8" coax (T-Mobile)	C	No	Inside Pole	102.00 - 2.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
1 7/16" Coax (T-Mobile)	C	No	Inside Pole	102.00 - 2.00	1	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
1 5/8" (1.63", 41.3 mm) Fiber (T-Mobile)	C	No	Inside Pole	102.00 - 2.00	2	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
1 5/8" coax (Verizon)	C	No	Inside Pole	92.00 - 2.00	14	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
1 5/8" coax (dipole)	A	No	Inside Pole	72.00 - 2.00	1	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	125.00-92.08	A	0.000	0.000	0.000	0.000	0.39
		B	0.000	0.000	0.000	0.000	0.16
		C	0.000	0.000	0.000	0.000	0.15
L2	92.08-81.00	A	0.000	0.000	2.333	0.000	0.21
		B	0.000	0.000	2.333	0.000	0.15
		C	0.000	0.000	0.000	0.000	0.33
L3	81.00-47.67	A	0.000	0.000	38.885	0.000	1.69
		B	0.000	0.000	38.885	0.000	1.46
		C	0.000	0.000	0.000	0.000	0.98
L4	47.67-1.00	A	0.000	0.000	54.448	0.000	2.36
		B	0.000	0.000	54.448	0.000	2.03
		C	0.000	0.000	0.000	0.000	1.35

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	125.00-92.08	A	2.002	0.000	0.000	0.000	0.000	0.39
		B		0.000	0.000	0.000	0.000	0.16
		C		0.000	0.000	0.000	0.000	0.15
L2	92.08-81.00	A	1.999	0.000	0.000	3.935	0.000	0.28
		B		0.000	0.000	3.935	0.000	0.21
		C		0.000	0.000	0.000	0.000	0.33
L3	81.00-47.67	A	1.987	0.000	0.000	65.378	0.000	2.80
		B		0.000	0.000	65.378	0.000	2.56
		C		0.000	0.000	0.000	0.000	0.98
L4	47.67-1.00	A	1.891	0.000	0.000	91.545	0.000	3.91
		B		0.000	0.000	91.545	0.000	3.58
		C		0.000	0.000	0.000	0.000	1.35

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	16	Switchblade Reinf	92.08 - 83.00	1.0000	1.0000
L1	17	Switchblade Reinf	92.08 - 83.00	1.0000	1.0000
L1	18	Switchblade Reinf	92.08 - 83.00	1.0000	1.0000
L1	19	Switchblade Reinf	92.08 - 83.00	1.0000	1.0000
L3	16	Switchblade Reinf	47.67 - 81.00	1.0000	1.0000
L3	17	Switchblade Reinf	47.67 - 81.00	1.0000	1.0000
L3	18	Switchblade Reinf	47.67 - 81.00	1.0000	1.0000
L3	19	Switchblade Reinf	47.67 - 81.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
15' Omni (tower)	C	From Leg	3.50 0.00 8.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	3.42 5.28 6.83	3.42 5.28 6.83	0.10 0.13 0.17
LP 303-1 (ATT)	C	None		0.0000	123.00	No Ice 1/2" Ice 1" Ice	17.46 22.44 27.42	17.46 22.44 27.42	1.35 1.62 1.90
8'x2.4" Pipe Mounts (ATT)	A	From Leg	4.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	1.82 2.75 3.41	1.82 2.75 3.41	0.02 0.03 0.05
8'x2.4" Pipe Mounts (ATT)	B	From Leg	4.00 0.00	0.0000	123.00	No Ice 1/2" Ice	1.82 2.75	1.82 2.75	0.02 0.03

tnxTower	Job: CT-5003 125' Tapered Monopole	Page: 5 of 28
Bennett and Pless	Project: Spring Hill, CT (Verizon)	Date: 12:01:02 10/18/16
Phone: FAX:	Client: Blue Sky Towers	Designed by: Cory Blake

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	3.41	3.41	0.05
8'x2.4" Pipe Mounts (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	1.82	1.82	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
7770 w/ Mount Pipe (ATT)	B	From Leg	4.00	0.0000	123.00	No Ice	6.86	5.23	0.08
			0.00			1/2" Ice	7.65	6.41	0.14
			0.00			1" Ice	8.44	7.59	0.20
7770 w/ Mount Pipe (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	6.86	5.23	0.08
			0.00			1/2" Ice	7.65	6.41	0.14
			0.00			1" Ice	8.44	7.59	0.20
7770 w/ Mount Pipe (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	6.86	5.23	0.08
			0.00			1/2" Ice	7.65	6.41	0.14
			0.00			1" Ice	8.44	7.59	0.20
HPA-65R-BUU-H8 w/ Mount Pipe (ATT)	A	From Leg	4.00	0.0000	123.00	No Ice	13.20	9.50	0.10
			0.00			1/2" Ice	13.90	11.05	0.20
			0.00			1" Ice	14.59	12.50	0.30
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	B	From Leg	4.00	0.0000	123.00	No Ice	9.49	6.67	0.06
			0.00			1/2" Ice	9.96	7.44	0.13
			0.00			1" Ice	10.43	8.21	0.21
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	9.49	6.67	0.06
			0.00			1/2" Ice	9.96	7.44	0.13
			0.00			1" Ice	10.43	8.21	0.21
CCI TPA-65R-LCUUUU-H8-K (ATT)	A	From Leg	4.00	0.0000	123.00	No Ice	13.30	8.82	0.08
			0.00			1/2" Ice	13.90	9.42	0.15
			0.00			1" Ice	14.50	10.03	0.24
Quintel QS66512-2 (ATT)	B	From Leg	4.00	0.0000	123.00	No Ice	8.13	6.80	0.11
			0.00			1/2" Ice	8.59	7.27	0.17
			0.00			1" Ice	9.05	7.72	0.23
Quintel QS66512-2 (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	8.13	6.80	0.11
			0.00			1/2" Ice	8.59	7.27	0.17
			0.00			1" Ice	9.05	7.72	0.23
(2) LGP21401 (ATT)	A	From Leg	3.00	0.0000	123.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
(2) LGP21401 (ATT)	B	From Leg	3.00	0.0000	123.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
(2) LGP21401 (ATT)	C	From Leg	3.00	0.0000	123.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
RRUS-11 (ATT)	A	From Leg	3.00	0.0000	123.00	No Ice	2.94	1.25	0.06
			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS-11 (ATT)	B	From Leg	3.00	0.0000	123.00	No Ice	2.94	1.25	0.06
			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS-11 (ATT)	C	From Leg	3.00	0.0000	123.00	No Ice	2.94	1.25	0.06
			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS 32 B30 (ATT)	A	From Leg	3.00	0.0000	123.00	No Ice	2.69	1.57	0.06
			3.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
RRUS 32 B30 (ATT)	B	From Leg	3.00	0.0000	123.00	No Ice	2.69	1.57	0.06
			3.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
RRUS 32 B30 (ATT)	C	From Leg	3.00	0.0000	123.00	No Ice	2.69	1.57	0.06
			3.00			1/2" Ice	2.91	1.76	0.08

tnxTower	Job: CT-5003 125' Tapered Monopole	Page: 6 of 28
Bennett and Pless	Project: Spring Hill, CT (Verizon)	Date: 12:01:02 10/18/16
Phone: FAX:	Client: Blue Sky Towers	Designed by: Cory Blake

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	3.14	1.95	0.10
RRUS 32 B30	A	From Leg	3.00	0.0000	123.00	No Ice	2.69	1.57	0.06
(ATT)			-3.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
RRUS 32 B30	B	From Leg	3.00	0.0000	123.00	No Ice	2.69	1.57	0.06
(ATT)			-3.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
RRUS 32 B30	C	From Leg	3.00	0.0000	123.00	No Ice	2.69	1.57	0.06
(ATT)			-3.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
DC6-48-60-18-8F	A	From Leg	2.00	0.0000	123.00	No Ice	2.20	2.20	0.02
(ATT)			0.00			1/2" Ice	2.40	2.40	0.04
			0.00			1" Ice	2.60	2.60	0.07
DC6-48-60-18-8F	B	From Leg	2.00	0.0000	123.00	No Ice	2.20	2.20	0.02
(ATT)			0.00			1/2" Ice	2.40	2.40	0.04
			0.00			1" Ice	2.60	2.60	0.07
********									
LP 303-1	C	From Leg	0.00	0.0000	112.00	No Ice	17.46	17.46	1.35
(Sprint)			0.00			1/2" Ice	22.44	22.44	1.62
			-3.00			1" Ice	27.42	27.42	1.90
(4) 8'x2.4" Pipe Mounts	A	From Face	3.50	0.0000	112.00	No Ice	1.82	1.82	0.02
(Sprint)			0.00			1/2" Ice	2.75	2.75	0.03
			-3.00			1" Ice	3.41	3.41	0.05
(4) 8'x2.4" Pipe Mounts	B	From Face	3.50	0.0000	112.00	No Ice	1.82	1.82	0.02
(Sprint)			0.00			1/2" Ice	2.75	2.75	0.03
			-3.00			1" Ice	3.41	3.41	0.05
(4) 8'x2.4" Pipe Mounts	C	From Face	3.50	0.0000	112.00	No Ice	1.82	1.82	0.02
(Sprint)			0.00			1/2" Ice	2.75	2.75	0.03
			-3.00			1" Ice	3.41	3.41	0.05
APXVSPP18-C	A	From Face	3.50	0.0000	112.00	No Ice	8.02	5.28	0.06
(Sprint)			2.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVSPP18-C	B	From Face	3.50	0.0000	112.00	No Ice	8.02	5.28	0.06
(Sprint)			2.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVSPP18-C	C	From Face	3.50	0.0000	112.00	No Ice	8.02	5.28	0.06
(Sprint)			2.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXV9TM14-ALU-120	A	From Face	3.50	0.0000	112.00	No Ice	6.90	3.61	0.06
(Sprint)			-2.00			1/2" Ice	7.35	3.97	0.09
			0.00			1" Ice	7.80	4.33	0.13
APXV9TM14-ALU-120	B	From Face	3.50	0.0000	112.00	No Ice	6.90	3.61	0.06
(Sprint)			-2.00			1/2" Ice	7.35	3.97	0.09
			0.00			1" Ice	7.80	4.33	0.13
APXV9TM14-ALU-120	C	From Face	3.50	0.0000	112.00	No Ice	6.90	3.61	0.06
(Sprint)			-2.00			1/2" Ice	7.35	3.97	0.09
			0.00			1" Ice	7.80	4.33	0.13
TD-RRH 8x20	A	From Face	3.50	0.0000	112.00	No Ice	4.32	1.41	0.07
(Sprint)			-2.00			1/2" Ice	4.60	1.61	0.09
			0.00			1" Ice	4.88	1.81	0.12
TD-RRH 8x20	B	From Face	3.50	0.0000	112.00	No Ice	4.32	1.41	0.07
(Sprint)			-2.00			1/2" Ice	4.60	1.61	0.09
			0.00			1" Ice	4.88	1.81	0.12
TD-RRH 8x20	C	From Face	3.50	0.0000	112.00	No Ice	4.32	1.41	0.07
(Sprint)			-2.00			1/2" Ice	4.60	1.61	0.09
			0.00			1" Ice	4.88	1.81	0.12
Tri-Antenna Mount	A	From Face	0.50	0.0000	105.50	No Ice	5.00	5.00	0.27

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(Sprint)			0.00						
			-1.00			1/2" Ice	6.00	6.00	0.29
1900MHz 4x40W RRH (Sprint)	A	From Face	1.00	0.0000	105.50	1" Ice	7.00	7.00	0.31
			-1.00			No Ice	2.71	2.61	0.06
			-1.00			1/2" Ice	2.95	2.84	0.08
1900MHz 4x40W RRH (Sprint)	A	From Face	1.00	0.0000	105.50	1" Ice	3.19	3.07	0.11
			1.00			No Ice	2.71	2.61	0.06
			-1.00			1/2" Ice	2.95	2.84	0.08
1900MHz 4x40W RRH (Sprint)	B	From Face	1.00	0.0000	105.50	1" Ice	3.19	3.07	0.11
			-1.00			No Ice	2.71	2.61	0.06
			-1.00			1/2" Ice	2.95	2.84	0.08
1900MHz 4x40W RRH (Sprint)	B	From Face	1.00	0.0000	105.50	1" Ice	3.19	3.07	0.11
			1.00			No Ice	2.71	2.61	0.06
			-1.00			1/2" Ice	2.95	2.84	0.08
1900MHz 4x40W RRH (Sprint)	C	From Face	1.00	0.0000	105.50	1" Ice	3.19	3.07	0.11
			-1.00			No Ice	2.71	2.61	0.06
			-1.00			1/2" Ice	2.95	2.84	0.08
1900MHz 4x40W RRH (Sprint)	C	From Face	1.00	0.0000	105.50	1" Ice	3.19	3.07	0.11
			1.00			No Ice	2.71	2.61	0.06
			-1.00			1/2" Ice	2.95	2.84	0.08
800MHz 2X50W RRH W/FILTER (Sprint)	A	From Face	1.00	0.0000	105.50	1" Ice	3.19	3.07	0.11
			1.00			No Ice	2.06	1.93	0.06
			2.00			1/2" Ice	2.24	2.11	0.09
800MHz 2X50W RRH W/FILTER (Sprint)	B	From Face	1.00	0.0000	105.50	1" Ice	2.43	2.29	0.11
			1.00			No Ice	2.06	1.93	0.06
			2.00			1/2" Ice	2.24	2.11	0.09
800MHz 2X50W RRH W/FILTER (Sprint)	C	From Face	1.00	0.0000	105.50	1" Ice	2.43	2.29	0.11
			1.00			No Ice	2.06	1.93	0.06
			2.00			1/2" Ice	2.24	2.11	0.09
IBC1900HB-2 (Sprint)	A	None		0.0000	105.50	1" Ice	2.43	2.29	0.11
						No Ice	1.13	0.71	0.04
						1/2" Ice	1.27	0.84	0.05
IBC1900HB-2 (Sprint)	B	None		0.0000	105.50	1" Ice	1.42	0.97	0.06
						No Ice	1.13	0.71	0.04
						1/2" Ice	1.27	0.84	0.05
IBC1900HB-2 (Sprint)	C	None		0.0000	105.50	1" Ice	1.42	0.97	0.06
						No Ice	1.13	0.71	0.04
						1/2" Ice	1.27	0.84	0.05
******						1" Ice	1.42	0.97	0.06
LP 303-1 (T-Mobile)	C	None		0.0000	102.00	No Ice	17.46	17.46	1.35
						1/2" Ice	22.44	22.44	1.62
						1" Ice	27.42	27.42	1.90
(3) 8'x2.4" Pipe Mounts (T-Mobile)	A	From Face	3.50	0.0000	102.00	No Ice	1.81	1.81	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
(3) 8'x2.4" Pipe Mounts (T-Mobile)	B	From Face	3.50	0.0000	102.00	No Ice	1.81	1.81	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
(3) 8'x2.4" Pipe Mounts (T-Mobile)	C	From Face	3.50	0.0000	102.00	No Ice	1.81	1.81	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
(2) Kathrein 81010020R4B (T-Mobile)	A	From Face	3.50	0.0000	102.00	No Ice	6.00	4.00	0.06
			0.00			1/2" Ice	7.50	5.50	0.11
			0.00			1" Ice	9.00	7.00	0.16
(2) Kathrein 81010020R4B (T-Mobile)	B	From Face	3.50	0.0000	102.00	No Ice	6.00	4.00	0.06
			0.00			1/2" Ice	7.50	5.50	0.11
			0.00			1" Ice	9.00	7.00	0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) Kathrein 81010020R4B (T-Mobile)	C	From Face	3.50 0.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	6.00 7.50 9.00	4.00 5.50 7.00	0.06 0.11 0.16
14' 16 element dipole (T-Mobile)	A	From Face	3.50 -3.00 5.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	5.25 6.50 7.75	5.25 6.50 7.75	0.08 0.10 0.13
LNX6515DS-VTM w/Pipe (T-Mobile)	A	From Face	3.50 -3.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	11.80 0.00 0.00	11.30 0.00 0.00	0.13 0.17 0.21
LNX6515DS-VTM w/Pipe (T-Mobile)	B	From Face	3.50 -3.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	11.80 0.00 0.00	11.30 0.00 0.00	0.13 0.17 0.21
LNX6515DS-VTM w/Pipe (T-Mobile)	C	From Face	3.50 -3.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	11.80 0.00 0.00	11.30 0.00 0.00	0.13 0.17 0.21
RRUS 11 (T-Mobile)	A	From Face	2.50 -3.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
RRUS 11 (T-Mobile)	B	From Face	2.50 -3.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
RRUS 11 (T-Mobile)	C	From Face	2.50 -3.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
********									
LP 303-1	C	None		0.0000	95.00	No Ice 1/2" Ice 1" Ice	17.46 22.44 27.42	17.46 22.44 27.42	1.35 1.62 1.90
******Antennas*****									
X7C-FRO-660-VR0 w/ pipe mount (Verizon)	A	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	9.77 10.39 10.93	7.45 8.91 9.81	0.09 0.17 0.26
(2) WWX063X19G00 w/ pipe mount (Verizon)	A	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	8.77 9.35 9.88	7.14 8.61 9.52	0.07 0.15 0.23
BXA-80063-6CF w/ pipe mount (Verizon)	A	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	7.81 8.42 8.94	5.74 7.18 8.06	0.06 0.12 0.19
800 10736V01 w/ Mount Pipe (Verizon)	B	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	11.61 12.35 13.07	7.20 8.81 10.33	0.07 0.15 0.24
(2) WWX063X19G00 w/ pipe mount (Verizon)	B	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	8.77 9.35 9.88	7.14 8.61 9.52	0.07 0.15 0.23
BXA-80080-6CF w/ pipe mount (Verizon)	B	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	6.01 6.62 7.15	6.14 7.59 8.47	0.06 0.12 0.18
800 10736V01 w/ Mount Pipe (Verizon)	C	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	11.61 12.35 13.07	7.20 8.81 10.33	0.07 0.15 0.24
(2) WWX063X19G00 w/ pipe mount (Verizon)	C	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	8.77 9.35 9.88	7.14 8.61 9.52	0.07 0.15 0.23
BXA-80080-6CF w/ pipe mount (Verizon)	C	From Leg	4.00 0.00 0.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	6.01 6.62 7.15	6.14 7.59 8.47	0.06 0.12 0.18
********									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert (ft ft ft)	Azimuth Adjustment (°)	Placement (ft)		C_AA_A Front (ft^2)	C_AA_A Side (ft^2)	Weight (K)
RRH2x60 - AWS	C	From Leg	3.00	0.0000	96.00	No Ice	3.96	2.16	0.06
(Verizon)			0.00			1/2" Ice	4.27	2.44	0.08
			0.00			1" Ice	4.58	2.72	0.10
RRH2x60 - AWS	C	From Leg	3.00	0.0000	96.00	No Ice	3.96	2.16	0.06
(Verizon)			0.00			1/2" Ice	4.27	2.44	0.08
			0.00			1" Ice	4.58	2.72	0.10
RRH2x60 - AWS	C	From Leg	3.00	0.0000	96.00	No Ice	3.96	2.16	0.06
(Verizon)			0.00			1/2" Ice	4.27	2.44	0.08
			0.00			1" Ice	4.58	2.72	0.10
ALU RH 2x60 700	A	From Leg	3.00	0.0000	96.00	No Ice	2.29	1.21	0.05
(Verizon)			0.00			1/2" Ice	2.49	1.36	0.07
			0.00			1" Ice	2.70	1.53	0.09
ALU RH 2x60 700	A	From Leg	3.00	0.0000	96.00	No Ice	2.29	1.21	0.05
(Verizon)			0.00			1/2" Ice	2.49	1.36	0.07
			0.00			1" Ice	2.70	1.53	0.09
ALU RH 2x60 700	A	From Leg	3.00	0.0000	96.00	No Ice	2.29	1.21	0.05
(Verizon)			0.00			1/2" Ice	2.49	1.36	0.07
			0.00			1" Ice	2.70	1.53	0.09
ALU RH 2x60 - PCS	B	From Leg	3.00	0.0000	96.00	No Ice	2.94	1.25	0.06
(Verizon)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.41	1.59	0.10
ALU RH 2x60 - PCS	B	From Leg	3.00	0.0000	96.00	No Ice	2.94	1.25	0.06
(Verizon)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.41	1.59	0.10
ALU RH 2x60 - PCS	B	From Leg	3.00	0.0000	96.00	No Ice	2.94	1.25	0.06
(Verizon)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.41	1.59	0.10
Raycap DB-T1-6Z-8AB-0Z	A	From Leg	2.00	0.0000	96.00	No Ice	5.60	5.60	0.04
(Verizon)			0.00			1/2" Ice	6.60	6.60	0.06
			0.00			1" Ice	7.60	7.60	0.08
Raycap DB-T1-6Z-8AB-0Z	A	From Leg	2.00	0.0000	96.00	No Ice	5.60	5.60	0.04
(Verizon)			0.00			1/2" Ice	6.60	6.60	0.06
			0.00			1" Ice	7.60	7.60	0.08
10' Omni	B	From Leg	6.50	0.0000	92.00	No Ice	2.50	2.50	0.08
(Verizon)			0.00			1/2" Ice	3.53	3.53	0.09
			5.00			1" Ice	4.58	4.58	0.12
10' Omni	C	From Leg	6.50	0.0000	92.00	No Ice	2.50	2.50	0.08
(Verizon)			0.00			1/2" Ice	3.53	3.53	0.09
			5.00			1" Ice	4.58	4.58	0.12
*****									
LP 303-1	C	None		0.0000	82.00	No Ice	17.46	17.46	1.35
						1/2" Ice	22.44	22.44	1.62
						1" Ice	27.42	27.42	1.90
******									
LP 303-1	C	None		0.0000	72.00	No Ice	17.46	17.46	1.35
						1/2" Ice	22.44	22.44	1.62
						1" Ice	27.42	27.42	1.90
15' Dipole	A	From Face	3.50	0.0000	72.00	No Ice	3.50	3.50	0.04
			-5.00			1/2" Ice	5.50	5.50	0.07
			-8.00			1" Ice	7.50	7.50	0.10
******									

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	Blue Sky Towers	Cory Blake

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 125.00-92.08	107.41	1.285	70	62.538	A	0.000	62.538	62.538	100.00	0.000	0.000
					B	0.000	62.538		100.00	0.000	0.000
					C	0.000	62.538		100.00	0.000	0.000
L2 92.08-81.00	86.31	1.227	71	30.259	A	0.000	30.259	30.259	100.00	2.333	0.000
					B	0.000	30.259		100.00	2.333	0.000
					C	0.000	30.259		100.00	0.000	0.000
L3 81.00-47.67	63.98	1.152	71	109.345	A	0.000	109.345	109.345	100.00	38.885	0.000
					B	0.000	109.345		100.00	38.885	0.000
					C	0.000	109.345		100.00	0.000	0.000
L4 47.67-1.00	23.76	0.935	66	190.065	A	0.000	190.065	190.065	100.00	54.448	0.000
					B	0.000	190.065		100.00	54.448	0.000
					C	0.000	190.065		100.00	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 125.00-92.08	107.41	1.285	22	2.0023	73.524	A	0.000	73.524	73.524	100.00	0.000	0.000
						B	0.000	73.524		100.00	0.000	0.000
						C	0.000	73.524		100.00	0.000	0.000
L2 92.08-81.00	86.31	1.227	22	1.9994	33.956	A	0.000	33.956	33.956	100.00	3.935	0.000
						B	0.000	33.956		100.00	3.935	0.000
						C	0.000	33.956		100.00	0.000	0.000
L3 81.00-47.67	63.98	1.152	22	1.9872	120.384	A	0.000	120.384	120.384	100.00	65.378	0.000
						B	0.000	120.384		100.00	65.378	0.000
						C	0.000	120.384		100.00	0.000	0.000
L4 47.67-1.00	23.76	0.935	20	1.8908	205.522	A	0.000	205.522	205.522	100.00	91.545	0.000
						B	0.000	205.522		100.00	91.545	0.000
						C	0.000	205.522		100.00	0.000	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 125.00-92.08	107.41	1.285	16	62.538	A	0.000	62.538	62.538	100.00	0.000	0.000
					B	0.000	62.538		100.00	0.000	0.000
					C	0.000	62.538		100.00	0.000	0.000
L2 92.08-81.00	86.31	1.227	17	30.259	A	0.000	30.259	30.259	100.00	2.333	0.000

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	Blue Sky Towers	Cory Blake

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					B	0.000	30.259		100.00	2.333	0.000
					C	0.000	30.259		100.00	0.000	0.000
L3 81.00-47.67	63.98	1.152	17	109.345	A	0.000	109.345	109.345	100.00	38.885	0.000
					B	0.000	109.345		100.00	38.885	0.000
					C	0.000	109.345		100.00	0.000	0.000
L4 47.67-1.00	23.76	0.935	15	190.065	A	0.000	190.065	190.065	100.00	54.448	0.000
					B	0.000	190.065		100.00	54.448	0.000
					C	0.000	190.065		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.70	1.48	A	1	0.65	70	1	1	62.538	3.12	94.64	C
125.00-92.08			B	1	0.65		1	1	62.538			
			C	1	0.65		1	1	62.538			
L2	0.69	1.24	A	1	0.65	71	1	1	30.259	1.53	137.74	C
92.08-81.00			B	1	0.65		1	1	30.259			
			C	1	0.65		1	1	30.259			
L3	4.13	5.80	A	1	0.65	71	1	1	109.345	6.15	184.51	C
81.00-47.67			B	1	0.65		1	1	109.345			
			C	1	0.722		1	1	109.345			
L4 47.67-1.00	5.74	11.65	A	1	0.65	66	1	1	190.065	9.22	197.51	C
			B	1	0.65		1	1	190.065			
			C	1	0.67		1	1	190.065			
Sum Weight:	11.25	20.18						OTM	1058.84 kip-ft	20.01		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.70	1.48	A	1	0.65	70	1	1	62.538	3.12	94.64	C
125.00-92.08			B	1	0.65		1	1	62.538			
			C	1	0.65		1	1	62.538			
L2	0.69	1.24	A	1	0.65	71	1	1	30.259	1.53	137.74	C
92.08-81.00			B	1	0.65		1	1	30.259			
			C	1	0.65		1	1	30.259			
L3	4.13	5.80	A	1	0.722	71	1	1	109.345	6.15	184.51	A
81.00-47.67			B	1	0.65		1	1	109.345			
			C	1	0.65		1	1	109.345			
L4 47.67-1.00	5.74	11.65	A	1	0.67	66	1	1	190.065	9.22	197.51	A
			B	1	0.65		1	1	190.065			
			C	1	0.65		1	1	190.065			
Sum Weight:	11.25	20.18						OTM	1058.84 kip-ft	20.01		

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Bennett and Pless	CT-5003 125' Tapered Monopole	12 of 28
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	Blue Sky Towers	Cory Blake

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 125.00-92.08	0.70	1.48	A	1	0.65	70	1	1	62.538	3.12	94.64	C
			B	1	0.65		1	1	62.538			
			C	1	0.65		1	1	62.538			
L2 92.08-81.00	0.69	1.24	A	1	0.65	71	1	1	30.259	1.53	137.74	C
			B	1	0.65		1	1	30.259			
			C	1	0.65		1	1	30.259			
L3 81.00-47.67	4.13	5.80	A	1	1.2	71	1	1	109.345	13.25	397.52	B
			B	1	1.2		1	1	109.345			
			C	1	0.65		1	1	109.345			
L4 47.67-1.00	5.74	11.65	A	1	0.827	66	1	1	190.065	11.38	243.87	B
			B	1	0.827		1	1	190.065			
			C	1	0.65		1	1	190.065			
Sum Weight:	11.25	20.18						OTM	1555.23 kip-ft	29.27		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 125.00-92.08	0.70	3.47	A	1	1.2	22	1	1	73.524	2.09	63.40	C
			B	1	1.2		1	1	73.524			
			C	1	1.2		1	1	73.524			
L2 92.08-81.00	0.82	2.18	A	1	1.2	22	1	1	33.956	0.98	88.08	C
			B	1	1.2		1	1	33.956			
			C	1	1.2		1	1	33.956			
L3 81.00-47.67	6.34	9.13	A	1	1.2	22	1	1	120.384	6.38	191.49	C
			B	1	1.2		1	1	120.384			
			C	1	1.2		1	1	120.384			
L4 47.67-1.00	8.85	17.10	A	1	1.2	20	1	1	205.522	9.29	199.15	C
			B	1	1.2		1	1	205.522			
			C	1	1.2		1	1	205.522			
Sum Weight:	16.71	31.88						OTM	918.85 kip-ft	18.74		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face

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Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.70	3.47	A	1	1.2	22	1	1	73.524	2.09	63.40	C
125.00-92.08			B	1	1.2		1	1	73.524			
			C	1	1.2		1	1	73.524			
L2	0.82	2.18	A	1	1.2	22	1	1	33.956	0.98	88.08	C
92.08-81.00			B	1	1.2		1	1	33.956			
			C	1	1.2		1	1	33.956			
L3	6.34	9.13	A	1	1.2	22	1	1	120.384	6.38	191.49	A
81.00-47.67			B	1	1.2		1	1	120.384			
			C	1	1.2		1	1	120.384			
L4 47.67-1.00	8.85	17.10	A	1	1.2	20	1	1	205.522	9.29	199.15	A
			B	1	1.2		1	1	205.522			
			C	1	1.2		1	1	205.522			
Sum Weight:	16.71	31.88						OTM	918.85 kip-ft	18.74		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.70	3.47	A	1	1.2	22	1	1	73.524	2.09	63.40	C
125.00-92.08			B	1	1.2		1	1	73.524			
			C	1	1.2		1	1	73.524			
L2	0.82	2.18	A	1	1.2	22	1	1	33.956	0.98	88.08	C
92.08-81.00			B	1	1.2		1	1	33.956			
			C	1	1.2		1	1	33.956			
L3	6.34	9.13	A	1	1.2	22	1	1	120.384	5.47	164.09	B
81.00-47.67			B	1	1.2		1	1	120.384			
			C	1	1.2		1	1	120.384			
L4 47.67-1.00	8.85	17.10	A	1	1.2	20	1	1	205.522	8.11	173.69	B
			B	1	1.2		1	1	205.522			
			C	1	1.2		1	1	205.522			
Sum Weight:	16.71	31.88						OTM	834.31 kip-ft	16.64		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.70	1.48	A	1	0.65	16	1	1	62.538	0.73	22.27	C
125.00-92.08			B	1	0.65		1	1	62.538			
			C	1	0.65		1	1	62.538			
L2	0.69	1.24	A	1	0.65	17	1	1	30.259	0.36	32.41	C
92.08-81.00			B	1	0.65		1	1	30.259			
			C	1	0.65		1	1	30.259			
L3	4.13	5.80	A	1	0.65	17	1	1	109.345	1.45	43.42	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
81.00-47.67			B	1	0.65		1	1	109.345			
			C	1	0.722		1	1	109.345			
L4 47.67-1.00	5.74	11.65	A	1	0.65	15	1	1	190.065	2.17	46.48	C
			B	1	0.65		1	1	190.065			
			C	1	0.67		1	1	190.065			
Sum Weight:	11.25	20.18						OTM	249.15 kip-ft	4.71		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.70	1.48	A	1	0.65	16	1	1	62.538	0.73	22.27	C
125.00-92.08			B	1	0.65		1	1	62.538			
			C	1	0.65		1	1	62.538			
L2	0.69	1.24	A	1	0.65	17	1	1	30.259	0.36	32.41	C
92.08-81.00			B	1	0.65		1	1	30.259			
			C	1	0.65		1	1	30.259			
L3	4.13	5.80	A	1	0.722	17	1	1	109.345	1.45	43.42	A
81.00-47.67			B	1	0.65		1	1	109.345			
			C	1	0.65		1	1	109.345			
L4 47.67-1.00	5.74	11.65	A	1	0.67	15	1	1	190.065	2.17	46.48	A
			B	1	0.65		1	1	190.065			
			C	1	0.65		1	1	190.065			
Sum Weight:	11.25	20.18						OTM	249.15 kip-ft	4.71		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.70	1.48	A	1	0.65	16	1	1	62.538	0.73	22.27	C
125.00-92.08			B	1	0.65		1	1	62.538			
			C	1	0.65		1	1	62.538			
L2	0.69	1.24	A	1	0.65	17	1	1	30.259	0.36	32.41	C
92.08-81.00			B	1	0.65		1	1	30.259			
			C	1	0.65		1	1	30.259			
L3	4.13	5.80	A	1	1.2	17	1	1	109.345	3.12	93.54	B
81.00-47.67			B	1	1.2		1	1	109.345			
			C	1	0.65		1	1	109.345			
L4 47.67-1.00	5.74	11.65	A	1	0.827	15	1	1	190.065	2.68	57.38	B
			B	1	0.827		1	1	190.065			
			C	1	0.65		1	1	190.065			
Sum Weight:	11.25	20.18						OTM	365.95 kip-ft	6.89		

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	Blue Sky Towers	Cory Blake

Force Totals

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
Leg Weight	20.18					
Bracing Weight	0.00					
Total Member Self-Weight	20.18			1.59	2.76	
Total Weight	45.58			1.59	2.76	
Wind 0 deg - No Ice		0.05	-55.04	-4683.42	-3.26	-8.03
Wind 30 deg - No Ice		32.21	-55.72	-4488.64	-2592.78	-5.95
Wind 60 deg - No Ice		46.94	-27.12	-2323.65	-4018.02	-2.27
Wind 90 deg - No Ice		54.17	-0.05	-4.43	-4636.56	2.01
Wind 120 deg - No Ice		46.89	27.03	2316.41	-4012.00	5.76
Wind 150 deg - No Ice		32.12	55.67	4485.80	-2582.36	7.96
Wind 180 deg - No Ice		-0.05	55.04	4686.60	8.77	8.03
Wind 210 deg - No Ice		-32.21	55.72	4491.82	2598.29	5.95
Wind 240 deg - No Ice		-46.94	27.12	2326.83	4023.53	2.27
Wind 270 deg - No Ice		-54.17	0.05	7.61	4642.07	-2.01
Wind 300 deg - No Ice		-46.89	-27.03	-2313.23	4017.51	-5.76
Wind 330 deg - No Ice		-32.12	-55.67	-4482.62	2587.87	-7.96
Member Ice	11.71					
Total Weight Ice	85.69			3.46	6.30	
Wind 0 deg - Ice		-0.00	-36.73	-2761.91	6.32	-5.89
Wind 30 deg - Ice		17.30	-29.99	-2318.19	-1332.24	-4.00
Wind 60 deg - Ice		28.88	-16.69	-1311.86	-2268.70	-1.03
Wind 90 deg - Ice		30.01	0.00	3.48	-2485.96	2.21
Wind 120 deg - Ice		28.89	16.69	1318.81	-2268.72	4.86
Wind 150 deg - Ice		17.30	29.99	2325.13	-1332.28	6.21
Wind 180 deg - Ice		0.00	36.73	2768.82	6.28	5.89
Wind 210 deg - Ice		-17.30	29.99	2325.11	1344.83	4.00
Wind 240 deg - Ice		-28.88	16.69	1318.77	2281.30	1.03
Wind 270 deg - Ice		-30.01	-0.00	3.44	2498.55	-2.21
Wind 300 deg - Ice		-28.89	-16.69	-1311.89	2281.32	-4.86
Wind 330 deg - Ice		-17.30	-29.99	-2318.21	1344.87	-6.21
Total Weight	45.58			1.59	2.76	
Wind 0 deg - Service		0.01	-12.95	-1100.80	1.34	-1.89
Wind 30 deg - Service		7.58	-13.11	-1054.97	-607.98	-1.40
Wind 60 deg - Service		11.05	-6.38	-545.54	-943.34	-0.53
Wind 90 deg - Service		12.75	-0.01	0.17	-1088.88	0.47
Wind 120 deg - Service		11.03	6.36	546.27	-941.92	1.35
Wind 150 deg - Service		7.56	13.10	1056.73	-605.53	1.87
Wind 180 deg - Service		-0.01	12.95	1103.98	4.17	1.89
Wind 210 deg - Service		-7.58	13.11	1058.15	613.49	1.40
Wind 240 deg - Service		-11.05	6.38	548.72	948.85	0.53
Wind 270 deg - Service		-12.75	0.01	3.01	1094.40	-0.47
Wind 300 deg - Service		-11.03	-6.36	-543.09	947.44	-1.35
Wind 330 deg - Service		-7.56	-13.10	-1053.55	611.04	-1.87

Load Combinations

Comb. No.	Description

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
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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 92.08	20.608	46	1.5126	0.0155
L2	96 - 81	12.065	46	1.1941	0.0062
L3	81 - 47.67	8.627	46	0.9822	0.0038

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L4	53.34 - 1	3.771	46	0.6689	0.0019

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
123.00	15' Omni	46	19.979	1.4931	0.0148	16826
112.00	LP 303-1	46	16.570	1.3830	0.0108	6471
105.50	Tri-Antenna Mount	46	14.650	1.3120	0.0086	4314
102.00	LP 303-1	46	13.661	1.2708	0.0077	3657
96.00	X7C-FRO-660-VR0 w/ pipe mount	46	12.065	1.1941	0.0063	3082
95.00	LP 303-1	46	11.812	1.1805	0.0060	3106
92.00	10' Omni	46	11.078	1.1384	0.0055	3389
82.00	LP 303-1	46	8.838	0.9957	0.0039	5540
72.00	LP 303-1	46	6.827	0.8711	0.0030	4938

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 92.08	87.273	16	6.3797	0.0650
L2	96 - 81	51.247	16	5.0687	0.0263
L3	81 - 47.67	36.673	16	4.1751	0.0161
L4	53.34 - 1	16.044	16	2.8462	0.0081

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
123.00	15' Omni	16	84.624	6.3006	0.0631	4145
112.00	LP 303-1	16	70.265	5.8511	0.0458	1592
105.50	Tri-Antenna Mount	16	62.166	5.5590	0.0367	1060
102.00	LP 303-1	16	57.995	5.3885	0.0325	898
96.00	X7C-FRO-660-VR0 w/ pipe mount	16	51.247	5.0687	0.0265	754
95.00	LP 303-1	16	50.178	5.0116	0.0256	760
92.00	10' Omni	16	47.069	4.8346	0.0231	827
82.00	LP 303-1	16	37.566	4.2324	0.0167	1326
72.00	LP 303-1	16	29.027	3.7046	0.0125	1174

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	125 - 123.474	TP26.9x18x0.1875	32.92	124.00	230.0	10.8462	-0.19	46.32	0.004
	123.474 - 121.947					11.0918	-9.27	49.54	0.187
	121.947 - 120.421					11.3374	-9.47	52.91	0.179
	120.421 - 118.895					11.5830	-9.67	56.42	0.171
	118.895 - 117.368					11.8285	-9.87	60.09	0.164
	117.368 - 115.842					12.0741	-10.07	63.91	0.158
	115.842 - 114.316					12.3197	-10.27	67.88	0.151
	114.316 - 112.789					12.5653	-3.37	72.03	0.047
	112.789 - 111.263					12.8108	-16.68	76.33	0.219
	111.263 - 109.737					13.0564	-16.89	80.81	0.209
	109.737 - 108.211					13.3020	-5.70	85.45	0.067
	108.211 - 106.684					13.5476	-5.83	90.27	0.065
	106.684 - 105.158					13.7931	-6.88	95.27	0.072
	105.158 - 103.632					14.0387	-7.02	100.45	0.070
	103.632 - 102.105					14.2843	-7.16	105.82	0.068
	102.105 - 100.579					14.5299	-9.61	111.37	0.086
	100.579 - 99.0526					14.7754	-9.78	117.11	0.083
	99.0526 - 97.5263					15.0210	-9.95	123.05	0.081
	97.5263 - 96					15.2666	-10.13	129.18	0.078
	96 - 92.08					15.8973	-5.92	145.86	0.041
L2	96 - 92.08	TP36.26x25.4652x0.25	15.00	124.00	149.5	22.2468	-7.45	224.85	0.033
	92.08 - 91.0727					22.8220	-13.77	242.75	0.057
	91.0727 - 90.0655					23.3972	-13.97	261.57	0.053
	90.0655 - 89.0582					23.9724	-14.18	281.34	0.050
	89.0582 - 88.0509					24.5476	-14.38	302.08	0.048
	88.0509 - 87.0436					25.1228	-14.59	323.82	0.045
	87.0436 - 86.0364					25.6980	-14.80	346.57	0.043
	86.0364 - 85.0291					26.2731	-15.02	370.37	0.041
	85.0291 - 84.0218					26.8483	-15.23	395.23	0.039
	84.0218 - 83.0145					27.4235	-15.45	421.18	0.037

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	83.0145 - 82.0073					27.9987	-15.67	448.24	0.035
	82.0073 - 81					28.5739	-17.40	476.44	0.037
L3	81 - 79.5442	TP41.28x36.26x0.42	33.33	124.00	116.2	48.0699	-17.90	803.71	0.022
	79.5442 - 78.0884					48.3622	-18.40	818.46	0.022
	78.0884 - 76.6326					48.6545	-18.90	833.39	0.023
	76.6326 - 75.1768					48.9468	-19.41	848.50	0.023
	75.1768 - 73.7211					49.2391	-19.93	863.79	0.023
	73.7211 - 72.2653					49.5314	-20.44	879.26	0.023
	72.2653 - 70.8095					49.8237	-22.52	894.92	0.025
	70.8095 - 69.3537					50.1160	-23.04	910.76	0.025
	69.3537 - 67.8979					50.4083	-23.58	926.79	0.025
	67.8979 - 66.4421					50.7006	-24.11	943.01	0.026
	66.4421 - 64.9863					50.9928	-24.65	959.41	0.026
	64.9863 - 63.5305					51.2851	-25.20	976.01	0.026
	63.5305 - 62.0747					51.5774	-25.75	992.79	0.026
	62.0747 - 60.6189					51.8697	-26.30	1009.77	0.026
	60.6189 - 59.1632					52.1620	-26.86	1026.93	0.026
	59.1632 - 57.7074					52.4543	-27.42	1044.29	0.026
	57.7074 - 56.2516					52.7466	-27.99	1061.85	0.026
	56.2516 - 54.7958					53.0389	-28.57	1079.60	0.026
	54.7958 - 53.34					53.3312	-29.14	1097.55	0.027
	53.34 - 47.67					54.4697	-16.16	1169.34	0.014
L4	53.34 - 47.67	TP55x39.586x0.44	52.34	124.00	102.7	57.0017	-16.36	1221.06	0.013
	47.67 - 45.2137					58.0120	-33.59	1287.14	0.026
	45.2137 - 42.7574					59.0222	-34.66	1355.56	0.026
	42.7574 - 40.3011					60.0325	-35.74	1426.36	0.025
	40.3011 - 37.8447					61.0427	-36.83	1499.59	0.025
	37.8447 - 35.3884					62.0529	-37.93	1575.28	0.024
	35.3884 - 32.9321					63.0632	-39.05	1653.48	0.024
	32.9321 - 30.4758					64.0734	-40.18	1734.22	0.023
	30.4758 - 28.0195					65.0837	-41.32	1817.55	0.023
	28.0195 - 25.5632					66.0939	-42.47	1902.69	0.022

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	25.5632 - 23.1068					67.1041	-43.63	1985.32	0.022
	23.1068 - 20.6505					68.1144	-44.81	2068.03	0.022
	20.6505 - 18.1942					69.1246	-45.99	2150.74	0.021
	18.1942 - 15.7379					70.1349	-47.19	2233.37	0.021
	15.7379 - 13.2816					71.1451	-48.40	2315.85	0.021
	13.2816 - 10.8253					72.1553	-49.62	2398.11	0.021
	10.8253 - 8.36895					73.1656	-50.86	2480.08	0.021
	8.36895 - 5.91263					74.1758	-52.10	2561.70	0.020
	5.91263 - 3.45632					75.1861	-53.36	2642.93	0.020
	3.45632 - 1					76.1963	-54.62	2723.71	0.020

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	125 - 123.474	TP26.9x18x0.1875	0.07	301.27	0.000	0.00	301.27	0.000
	123.474 - 121.947		9.60	315.14	0.030	0.00	315.14	0.000
	121.947 - 120.421		16.82	328.05	0.051	0.00	328.05	0.000
	120.421 - 118.895		24.19	340.58	0.071	0.00	340.58	0.000
	118.895 - 117.368		31.71	353.27	0.090	0.00	353.27	0.000
	117.368 - 115.842		39.41	366.10	0.108	0.00	366.10	0.000
	115.842 - 114.316		47.25	379.07	0.125	0.00	379.07	0.000
	114.316 - 112.789		94.86	392.16	0.242	0.00	392.16	0.000
	112.789 - 111.263		62.43	405.39	0.154	0.00	405.39	0.000
	111.263 - 109.737		75.76	418.73	0.181	0.00	418.73	0.000
	109.737 - 108.211		153.65	432.20	0.356	0.00	432.20	0.000
	108.211 - 106.684		177.42	445.77	0.398	0.00	445.77	0.000
	106.684 - 105.158		201.54	459.45	0.439	0.00	459.45	0.000
	105.158 - 103.632		228.76	473.23	0.483	0.00	473.23	0.000
	103.632 - 102.105		256.22	487.11	0.526	0.00	487.11	0.000
	102.105 - 100.579		297.01	501.07	0.593	0.00	501.07	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	100.579 - 99.0526		336.53	515.13	0.653	0.00	515.13	0.000
	99.0526 - 97.5263		376.29	529.26	0.711	0.00	529.26	0.000
	97.5263 - 96		416.28	543.47	0.766	0.00	543.47	0.000
	96 - 92.08		230.37	580.27	0.397	0.00	580.27	0.000
L2	96 - 92.08	TP36.26x25.4652x0.25	324.78	923.04	0.352	0.00	923.04	0.000
	92.08 - 91.0727		594.51	964.33	0.617	0.00	964.33	0.000
	91.0727 - 90.0655		631.46	1006.10	0.628	0.00	1006.10	0.000
	90.0655 - 89.0582		668.53	1048.35	0.638	0.00	1048.35	0.000
	89.0582 - 88.0509		705.74	1091.03	0.647	0.00	1091.03	0.000
	88.0509 - 87.0436		743.07	1134.14	0.655	0.00	1134.14	0.000
	87.0436 - 86.0364		780.54	1177.63	0.663	0.00	1177.63	0.000
	86.0364 - 85.0291		818.15	1221.47	0.670	0.00	1221.47	0.000
	85.0291 - 84.0218		855.90	1265.66	0.676	0.00	1265.66	0.000
	84.0218 - 83.0145		893.79	1310.13	0.682	0.00	1310.13	0.000
	83.0145 - 82.0073		931.83	1354.89	0.688	0.00	1354.89	0.000
	82.0073 - 81		971.50	1399.89	0.694	0.00	1399.89	0.000
L3	81 - 79.5442	TP41.28x36.26x0.42	1029.36	2638.23	0.390	0.00	2638.23	0.000
	79.5442 - 78.0884		1088.04	2670.60	0.407	0.00	2670.60	0.000
	78.0884 - 76.6326		1147.54	2703.17	0.425	0.00	2703.17	0.000
	76.6326 - 75.1768		1207.87	2735.93	0.441	0.00	2735.93	0.000
	75.1768 - 73.7211		1269.03	2768.88	0.458	0.00	2768.88	0.000
	73.7211 - 72.2653		1331.00	2802.04	0.475	0.00	2802.04	0.000
	72.2653 - 70.8095		1393.95	2835.40	0.492	0.00	2835.40	0.000
	70.8095 - 69.3537		1460.13	2868.95	0.509	0.00	2868.95	0.000
	69.3537 - 67.8979		1527.14	2902.70	0.526	0.00	2902.70	0.000
	67.8979 - 66.4421		1594.99	2936.64	0.543	0.00	2936.64	0.000
	66.4421 - 64.9863		1663.68	2970.79	0.560	0.00	2970.79	0.000
	64.9863 - 63.5305		1733.20	3005.13	0.577	0.00	3005.13	0.000
	63.5305 - 62.0747		1803.57	3039.67	0.593	0.00	3039.67	0.000
	62.0747 - 60.6189		1874.78	3074.41	0.610	0.00	3074.41	0.000
	60.6189 - 59.1632		1946.83	3109.34	0.626	0.00	3109.34	0.000
	59.1632 - 57.7074		2019.72	3144.47	0.642	0.00	3144.47	0.000
	57.7074 -		2093.47	3179.80	0.658	0.00	3179.80	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	56.2516							
	56.2516 - 54.7958		2168.06	3215.32	0.674	0.00	3215.32	0.000
	54.7958 - 53.34		2243.50	3251.05	0.690	0.00	3251.05	0.000
	53.34 - 47.67		1264.76	3392.06	0.373	0.00	3392.06	0.000
L4	53.34 - 47.67	TP55x39.586x0.44	1281.14	3544.15	0.361	0.00	3544.15	0.000
	47.67 - 45.2137		2680.54	3671.57	0.730	0.00	3671.57	0.000
	45.2137 - 42.7574		2816.44	3801.24	0.741	0.00	3801.24	0.000
	42.7574 - 40.3011		2953.60	3933.16	0.751	0.00	3933.16	0.000
	40.3011 - 37.8447		3092.03	4067.33	0.760	0.00	4067.33	0.000
	37.8447 - 35.3884		3231.71	4194.04	0.771	0.00	4194.04	0.000
	35.3884 - 32.9321		3372.66	4314.49	0.782	0.00	4314.49	0.000
	32.9321 - 30.4758		3514.87	4436.02	0.792	0.00	4436.02	0.000
	30.4758 - 28.0195		3658.34	4558.62	0.803	0.00	4558.62	0.000
	28.0195 - 25.5632		3803.08	4682.23	0.812	0.00	4682.23	0.000
	25.5632 - 23.1068		3949.09	4806.85	0.822	0.00	4806.85	0.000
	23.1068 - 20.6505		4096.37	4932.44	0.830	0.00	4932.44	0.000
	20.6505 - 18.1942		4244.91	5058.98	0.839	0.00	5058.98	0.000
	18.1942 - 15.7379		4394.73	5186.43	0.847	0.00	5186.43	0.000
	15.7379 - 13.2816		4545.80	5314.77	0.855	0.00	5314.77	0.000
	13.2816 - 10.8253		4698.15	5443.96	0.863	0.00	5443.96	0.000
	10.8253 - 8.36895		4851.77	5573.99	0.870	0.00	5573.99	0.000
	8.36895 - 5.91263		5006.67	5704.83	0.878	0.00	5704.83	0.000
	5.91263 - 3.45632		5162.83	5836.44	0.885	0.00	5836.44	0.000
	3.45632 - 1		5320.27	5968.81	0.891	0.00	5968.81	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	125 - 123.474	TP26.9x18x0.1875	0.09	402.91	0.000	0.00	603.28	0.000
	123.474 - 121.947		4.69	412.03	0.011	0.18	631.05	0.000
	121.947 - 120.421		4.78	419.53	0.011	0.18	656.90	0.000
	120.421 -		4.88	426.24	0.011	0.18	682.00	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	118.895							
	118.895 - 117.368		5.00	432.85	0.012	0.74	707.41	0.001
	117.368 - 115.842		5.09	439.37	0.012	0.74	733.10	0.001
	115.842 - 114.316		5.19	445.77	0.012	0.74	759.06	0.001
	114.316 - 112.789		9.43	452.08	0.021	1.05	785.28	0.001
	112.789 - 111.263		8.69	458.30	0.019	0.18	811.77	0.000
	111.263 - 109.737		8.78	464.40	0.019	0.18	838.49	0.000
	109.737 - 108.211		15.50	470.41	0.033	1.61	865.45	0.002
	108.211 - 106.684		15.65	476.32	0.033	1.61	892.63	0.002
	106.684 - 105.158		17.77	482.13	0.037	2.06	920.02	0.002
	105.158 - 103.632		17.92	487.83	0.037	2.05	947.62	0.002
	103.632 - 102.105		18.07	493.44	0.037	2.05	975.40	0.002
	102.105 - 100.579		25.83	498.94	0.052	3.89	1003.38	0.004
	100.579 - 99.0526		25.98	504.34	0.052	3.89	1031.51	0.004
	99.0526 - 97.5263		26.13	509.65	0.051	3.88	1059.82	0.004
	97.5263 - 96		26.29	514.85	0.051	3.88	1088.27	0.004
	96 - 92.08		15.25	527.75	0.029	2.18	1161.95	0.002
L2	96 - 92.08	TP36.26x25.4652x0.25	20.87	801.37	0.026	3.08	1848.34	0.002
	92.08 - 91.0727		36.63	815.93	0.045	5.26	1931.00	0.003
	91.0727 - 90.0655		36.75	830.17	0.044	4.50	2014.66	0.002
	90.0655 - 89.0582		36.88	844.11	0.044	4.50	2099.26	0.002
	89.0582 - 88.0509		37.01	857.73	0.043	4.50	2184.74	0.002
	88.0509 - 87.0436		37.14	871.04	0.043	4.50	2271.05	0.002
	87.0436 - 86.0364		37.28	884.04	0.042	4.50	2358.14	0.002
	86.0364 - 85.0291		37.41	896.74	0.042	4.50	2445.94	0.002
	85.0291 - 84.0218		37.56	909.12	0.041	4.50	2534.41	0.002
	84.0218 - 83.0145		37.70	921.19	0.041	4.50	2623.47	0.002
	83.0145 - 82.0073		37.85	932.95	0.041	4.50	2713.10	0.002
	82.0073 - 81		39.47	944.39	0.042	4.50	2803.21	0.002
L3	81 - 79.5442	TP41.28x36.26x0.42	40.03	1785.68	0.022	4.50	5282.92	0.001
	79.5442 - 78.0884		40.60	1796.53	0.023	4.50	5347.73	0.001
	78.0884 - 76.6326		41.16	1807.39	0.023	4.50	5412.94	0.001
	76.6326 - 75.1768		41.73	1818.25	0.023	4.50	5478.54	0.001

tnxTower	Job: CT-5003 125' Tapered Monopole	Page: 24 of 28
Bennett and Pless	Project: Spring Hill, CT (Verizon)	Date: 12:01:02 10/18/16
Phone: FAX:	Client: Blue Sky Towers	Designed by: Cory Blake

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	75.1768 - 73.7211		42.30	1829.11	0.023	4.49	5544.54	0.001
	73.7211 - 72.2653		42.87	1839.97	0.023	4.49	5610.94	0.001
	72.2653 - 70.8095		45.19	1850.82	0.024	5.88	5677.73	0.001
	70.8095 - 69.3537		45.76	1861.68	0.025	5.87	5744.92	0.001
	69.3537 - 67.8979		46.33	1872.54	0.025	5.87	5812.50	0.001
	67.8979 - 66.4421		46.91	1883.40	0.025	5.87	5880.47	0.001
	66.4421 - 64.9863		47.48	1894.26	0.025	5.87	5948.84	0.001
	64.9863 - 63.5305		48.06	1905.11	0.025	5.87	6017.61	0.001
	63.5305 - 62.0747		48.64	1915.97	0.025	5.87	6086.77	0.001
	62.0747 - 60.6189		49.22	1926.83	0.026	5.87	6156.33	0.001
	60.6189 - 59.1632		49.80	1937.69	0.026	5.87	6226.28	0.001
	59.1632 - 57.7074		50.38	1948.55	0.026	5.87	6296.63	0.001
	57.7074 - 56.2516		50.97	1959.41	0.026	5.87	6367.37	0.001
	56.2516 - 54.7958		51.55	1970.26	0.026	5.87	6438.51	0.001
	54.7958 - 53.34		52.14	1981.12	0.026	5.87	6510.04	0.001
	53.34 - 47.67		27.72	2023.41	0.014	2.91	6792.42	0.000
L4	53.34 - 47.67	TP55x39.586x0.44	26.88	2117.47	0.013	2.95	7096.97	0.000
	47.67 - 45.2137		55.11	2155.00	0.026	5.86	7352.12	0.001
	45.2137 - 42.7574		55.63	2192.53	0.025	5.86	7611.77	0.001
	42.7574 - 40.3011		56.14	2230.06	0.025	5.86	7875.94	0.001
	40.3011 - 37.8447		56.66	2267.58	0.025	5.86	8144.62	0.001
	37.8447 - 35.3884		57.17	2299.79	0.025	5.86	8398.33	0.001
	35.3884 - 32.9321		57.69	2327.57	0.025	5.86	8639.58	0.001
	32.9321 - 30.4758		58.20	2355.04	0.025	5.86	8882.92	0.001
	30.4758 - 28.0195		58.72	2382.21	0.025	5.86	9128.42	0.001
	28.0195 - 25.5632		59.24	2409.06	0.025	5.85	9375.92	0.001
	25.5632 - 23.1068		59.75	2435.61	0.025	5.85	9625.50	0.001
	23.1068 - 20.6505		60.27	2461.84	0.024	5.85	9876.92	0.001
	20.6505 - 18.1942		60.79	2487.77	0.024	5.85	10130.33	0.001
	18.1942 - 15.7379		61.31	2513.39	0.024	5.85	10385.50	0.001
	15.7379 - 13.2816		61.82	2538.70	0.024	5.85	10642.50	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	13.2816 - 10.8253		62.34	2563.70	0.024	5.85	10901.25	0.001
	10.8253 - 8.36895		62.86	2588.39	0.024	5.85	11161.58	0.001
	8.36895 - 5.91263		63.38	2612.77	0.024	5.85	11423.58	0.001
	5.91263 - 3.45632		63.90	2636.84	0.024	5.85	11687.17	0.001
	3.45632 - 1		64.42	2660.60	0.024	5.85	11952.25	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	125 - 123.474	0.004	0.000	0.000	0.000	0.000	0.004 ✔	1.000	4.8.2 ✔
	123.474 - 121.947	0.187	0.030	0.000	0.011	0.000	0.218 ✔	1.000	4.8.2 ✔
	121.947 - 120.421	0.179	0.051	0.000	0.011	0.000	0.230 ✔	1.000	4.8.2 ✔
	120.421 - 118.895	0.171	0.071	0.000	0.011	0.000	0.243 ✔	1.000	4.8.2 ✔
	118.895 - 117.368	0.164	0.090	0.000	0.012	0.001	0.254 ✔	1.000	4.8.2 ✔
	117.368 - 115.842	0.158	0.108	0.000	0.012	0.001	0.265 ✔	1.000	4.8.2 ✔
	115.842 - 114.316	0.151	0.125	0.000	0.012	0.001	0.276 ✔	1.000	4.8.2 ✔
	114.316 - 112.789	0.047	0.242	0.000	0.021	0.001	0.289 ✔	1.000	4.8.2 ✔
	112.789 - 111.263	0.219	0.154	0.000	0.019	0.000	0.373 ✔	1.000	4.8.2 ✔
	111.263 - 109.737	0.209	0.181	0.000	0.019	0.000	0.390 ✔	1.000	4.8.2 ✔
	109.737 - 108.211	0.067	0.356	0.000	0.033	0.002	0.423 ✔	1.000	4.8.2 ✔
	108.211 - 106.684	0.065	0.398	0.000	0.033	0.002	0.464 ✔	1.000	4.8.2 ✔
	106.684 - 105.158	0.072	0.439	0.000	0.037	0.002	0.512 ✔	1.000	4.8.2 ✔
	105.158 - 103.632	0.070	0.483	0.000	0.037	0.002	0.555 ✔	1.000	4.8.2 ✔
	103.632 - 102.105	0.068	0.526	0.000	0.037	0.002	0.595 ✔	1.000	4.8.2 ✔
	102.105 - 100.579	0.086	0.593	0.000	0.052	0.004	0.682 ✔	1.000	4.8.2 ✔
	100.579 - 99.0526	0.083	0.653	0.000	0.052	0.004	0.740 ✔	1.000	4.8.2 ✔

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	CT-5003 125' Tapered Monopole	26 of 28
Bennett and Pless	Project	Date
	Spring Hill, CT (Verizon)	12:01:02 10/18/16
Phone: FAX:	Client	Designed by
	Blue Sky Towers	Cory Blake

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	99.0526 - 97.5263	0.081	0.711	0.000	0.051	0.004	0.795 ✓	1.000	4.8.2 ✓
	97.5263 - 96	0.078	0.766	0.000	0.051	0.004	0.847 ✓	1.000	4.8.2 ✓
	96 - 92.08	0.041	0.397	0.000	0.029	0.002	0.439 ✓	1.000	4.8.2 ✓
L2	96 - 92.08	0.033	0.352	0.000	0.026	0.002	0.386 ✓	1.000	4.8.2 ✓
	92.08 - 91.0727	0.057	0.617	0.000	0.045	0.003	0.675 ✓	1.000	4.8.2 ✓
	91.0727 - 90.0655	0.053	0.628	0.000	0.044	0.002	0.683 ✓	1.000	4.8.2 ✓
	90.0655 - 89.0582	0.050	0.638	0.000	0.044	0.002	0.690 ✓	1.000	4.8.2 ✓
	89.0582 - 88.0509	0.048	0.647	0.000	0.043	0.002	0.697 ✓	1.000	4.8.2 ✓
	88.0509 - 87.0436	0.045	0.655	0.000	0.043	0.002	0.702 ✓	1.000	4.8.2 ✓
	87.0436 - 86.0364	0.043	0.663	0.000	0.042	0.002	0.707 ✓	1.000	4.8.2 ✓
	86.0364 - 85.0291	0.041	0.670	0.000	0.042	0.002	0.712 ✓	1.000	4.8.2 ✓
	85.0291 - 84.0218	0.039	0.676	0.000	0.041	0.002	0.717 ✓	1.000	4.8.2 ✓
	84.0218 - 83.0145	0.037	0.682	0.000	0.041	0.002	0.721 ✓	1.000	4.8.2 ✓
	83.0145 - 82.0073	0.035	0.688	0.000	0.041	0.002	0.724 ✓	1.000	4.8.2 ✓
	82.0073 - 81	0.037	0.694	0.000	0.042	0.002	0.732 ✓	1.000	4.8.2 ✓
L3	81 - 79.5442	0.022	0.390	0.000	0.022	0.001	0.413 ✓	1.000	4.8.2 ✓
	79.5442 - 78.0884	0.022	0.407	0.000	0.023	0.001	0.430 ✓	1.000	4.8.2 ✓
	78.0884 - 76.6326	0.023	0.425	0.000	0.023	0.001	0.448 ✓	1.000	4.8.2 ✓
	76.6326 - 75.1768	0.023	0.441	0.000	0.023	0.001	0.465 ✓	1.000	4.8.2 ✓
	75.1768 - 73.7211	0.023	0.458	0.000	0.023	0.001	0.482 ✓	1.000	4.8.2 ✓
	73.7211 - 72.2653	0.023	0.475	0.000	0.023	0.001	0.499 ✓	1.000	4.8.2 ✓
	72.2653 - 70.8095	0.025	0.492	0.000	0.024	0.001	0.517 ✓	1.000	4.8.2 ✓
	70.8095 - 69.3537	0.025	0.509	0.000	0.025	0.001	0.535 ✓	1.000	4.8.2 ✓
	69.3537 - 67.8979	0.025	0.526	0.000	0.025	0.001	0.552 ✓	1.000	4.8.2 ✓
	67.8979 - 66.4421	0.026	0.543	0.000	0.025	0.001	0.569 ✓	1.000	4.8.2 ✓
	66.4421 - 64.9863	0.026	0.560	0.000	0.025	0.001	0.586 ✓	1.000	4.8.2 ✓

tnxTower	Job	Page
	CT-5003 125' Tapered Monopole	27 of 28
Bennett and Pless	**Project**	**Date**
	Spring Hill, CT (Verizon)	12:01:02 10/18/16
Phone: FAX:	**Client**	**Designed by**
	Blue Sky Towers	Cory Blake

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	64.9863 - 63.5305	0.026	0.577	0.000	0.025	0.001	0.603 ✔	1.000	4.8.2 ✔
	63.5305 - 62.0747	0.026	0.593	0.000	0.025	0.001	0.620 ✔	1.000	4.8.2 ✔
	62.0747 - 60.6189	0.026	0.610	0.000	0.026	0.001	0.637 ✔	1.000	4.8.2 ✔
	60.6189 - 59.1632	0.026	0.626	0.000	0.026	0.001	0.653 ✔	1.000	4.8.2 ✔
	59.1632 - 57.7074	0.026	0.642	0.000	0.026	0.001	0.669 ✔	1.000	4.8.2 ✔
	57.7074 - 56.2516	0.026	0.658	0.000	0.026	0.001	0.685 ✔	1.000	4.8.2 ✔
	56.2516 - 54.7958	0.026	0.674	0.000	0.026	0.001	0.701 ✔	1.000	4.8.2 ✔
	54.7958 - 53.34	0.027	0.690	0.000	0.026	0.001	0.717 ✔	1.000	4.8.2 ✔
	53.34 - 47.67	0.014	0.373	0.000	0.014	0.000	0.387 ✔	1.000	4.8.2 ✔
L4	53.34 - 47.67	0.013	0.361	0.000	0.013	0.000	0.375 ✔	1.000	4.8.2 ✔
	47.67 - 45.2137	0.026	0.730	0.000	0.026	0.001	0.757 ✔	1.000	4.8.2 ✔
	45.2137 - 42.7574	0.026	0.741	0.000	0.025	0.001	0.767 ✔	1.000	4.8.2 ✔
	42.7574 - 40.3011	0.025	0.751	0.000	0.025	0.001	0.777 ✔	1.000	4.8.2 ✔
	40.3011 - 37.8447	0.025	0.760	0.000	0.025	0.001	0.785 ✔	1.000	4.8.2 ✔
	37.8447 - 35.3884	0.024	0.771	0.000	0.025	0.001	0.795 ✔	1.000	4.8.2 ✔
	35.3884 - 32.9321	0.024	0.782	0.000	0.025	0.001	0.806 ✔	1.000	4.8.2 ✔
	32.9321 - 30.4758	0.023	0.792	0.000	0.025	0.001	0.816 ✔	1.000	4.8.2 ✔
	30.4758 - 28.0195	0.023	0.803	0.000	0.025	0.001	0.826 ✔	1.000	4.8.2 ✔
	28.0195 - 25.5632	0.022	0.812	0.000	0.025	0.001	0.835 ✔	1.000	4.8.2 ✔
	25.5632 - 23.1068	0.022	0.822	0.000	0.025	0.001	0.844 ✔	1.000	4.8.2 ✔
	23.1068 - 20.6505	0.022	0.830	0.000	0.024	0.001	0.853 ✔	1.000	4.8.2 ✔
	20.6505 - 18.1942	0.021	0.839	0.000	0.024	0.001	0.861 ✔	1.000	4.8.2 ✔
	18.1942 - 15.7379	0.021	0.847	0.000	0.024	0.001	0.869 ✔	1.000	4.8.2 ✔
	15.7379 - 13.2816	0.021	0.855	0.000	0.024	0.001	0.877 ✔	1.000	4.8.2 ✔
	13.2816 - 10.8253	0.021	0.863	0.000	0.024	0.001	0.884 ✔	1.000	4.8.2 ✔
	10.8253 - 8.36895	0.021	0.870	0.000	0.024	0.001	0.892 ✔	1.000	4.8.2 ✔

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	8.36895 - 5.91263	0.020	0.878	0.000	0.024	0.001	0.899 ✔	1.000	4.8.2 ✔
	5.91263 - 3.45632	0.020	0.885	0.000	0.024	0.001	0.905 ✔	1.000	4.8.2 ✔
	3.45632 - 1	0.020	0.891	0.000	0.024	0.000	0.912 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	125 - 92.08	Pole	TP26.9x18x0.1875	1	-10.13	129.18	84.7	Pass
L2	92.08 - 81	Pole	TP36.26x25.4652x0.25	2	-17.40	476.44	73.2	Pass
L3	81 - 47.67	Pole	TP41.28x36.26x0.42	3	-29.14	1097.55	71.7	Pass
L4	47.67 - 1	Pole	TP55x39.586x0.44	4	-54.62	2723.71	91.2	Pass
							Summary	
						Pole (L4)	91.2	Pass
						RATING =	**91.2**	**Pass**

PROJECT No:	CT-5003		ENG:	CB
PROJECT NAME:	Spring Hill		CHK:	PG
	Bennett & Pless			
DATE:	October 18, 2016		PAGE:	of

TIA-222-G

SINGLE GLOBAL FOUNDATION WITH PIER(s) CHECKS

Global Tower Reactions		*Factored Loads*		*Calculated Reactions*		Factored Resistance				
(◉) TIA-G	Maximum Moment	5,320.00	k-ft	Disturbing Moment	5,672.0	5,133.6	k-ft	fail	110.5%	[GOVERNS]
( ) EIA-F	Axial Load	55.00	kips	Maximum Bearing	6.82	30.00	kips	pass	22.7%	
	Shear Load	64.00	kips	Punching Shear	437.3	5,172.5	kips	pass	8.5%	
	Pier Rebar Required	(minimum only, use PCACOL for total quantity)			(45) #8 @ 6.93 in **MINIMUM**					
	Rebar Required	(checked rebar for 6" min to 24" max spacing)			(61) #6 @ 4.90 in				SF=1.81	

Soil Parameters	Soils Report		Pier Geometry		Pad Geometry	
ϕ	0.0 °		Qty of Piers	1	Width (Bm)	25.00 ft
Water Level	13.00 ft	(3.96 m)	Width (Bp)	7.00 ft	Width (Wm)	25.00 ft
Soil Dry Density (γ_{dry})	0.110 kcf	(17.3 kN/m^3)	Width (Wp)	7.00 ft	Height (Hm)	4.50 ft
Soil Sub Density (γ_{sub})	0.050 kcf	(7.85 kN/m^3)	Height (Hp)	1.00 ft	Depth (D)	5.50 ft
All. Bearing Pressure	20.000 ksf	(957.6 kPa)	Pier Type	s (Rnd or Sq)		
Bearing Safety Factor	2		Conc γ_{dry}	0.150 kcf (23.6)		

Volume of Concrete/Soil

	Concrete (106.0cuyd) 1 Pier	Mat	Soil	
Depth (above)	0.00	--	--	ft
Depth (dry)	1.00	4.50	1.00	ft
Depth (submerged)	0.00	0.00	0.00	ft
Volume (above)	0.00	--	--	ft^3
Volume (dry)	49.00	2,812.50	576.00	ft^3
Volume (submerged)	0.00	0	0.00	ft^3
Total	49	2813	576	ft^3

Concrete Reinforcing Design

f'c	4.000	ksi	(27.6 MPa)	
fy	60.00	ksi	(413.7 MPa)	
	MAT		PIER	
Steel (Metric/ASTM)	ASTM		ASTM	
Bar size	6	#	8	#
	0.440	in²	0.790	in²

Slab Reinforcing

½ Disturbing Moment	2836.00	kip-ft		
Ku	43.61		Wgt of Rebar	
ρ	0.00081		8,950	lbs
4/3•ρ if ρ < ρ min	0.00108			
ρ min ≥ 0.0018	0.00180			
As	27.00	in²		
Number of bars	61	bars on	4.90	in c/c

Note: The 1/2 moment is derived from a bending moment diagram that considered the uplift and download components at the exact face width of the tower.

Calculations

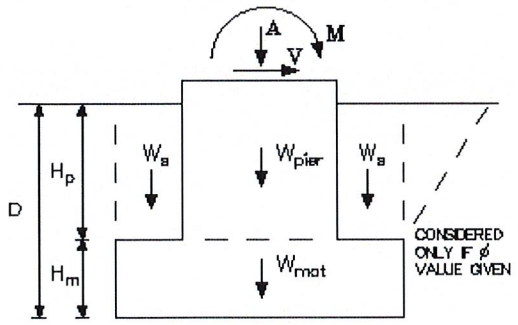
	Factored	*Allowable*	
Axial Download	55.0	--	kips
Weight of Concrete (not factored)	429.2	--	kips(106.0yds)
Weight of Soil (not factored)	63.4	--	kips
Total Download (P)	547.6	--	kips
Resisting Moment Arm	12.5	--	ft
Moment Resistance	5133.6	--	k-ft
	(x 0.75, cl 9.4.1)		

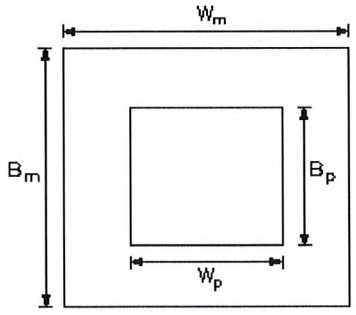
Bearing Capacity Check

Contact Area	625.00	--	ft²
Calculate eccentricity e	10.36	--	ft [>L/6]
Calculate (c = L/2 - e)	2.14	--	ft
1) q_{max} = P/A • (1+6e/L)	--	--	
2) q_{max} = 2P / b•3c	6.82	--	ksf [GOV]
$q_{allowable}$	30.00	--	ksf
	(2 • 0.75)		

Check for 2-Way Shear (Punching)

Shear Area (b_o x d)	189.32	--	ft²
Factored Bearing Stress	0.876	--	ksf
Factored Shear Force	437.31	--	kips
Factored Shear Resistance	5172.5	--	kips
Check for 2-way Shear	0.08	--	
	(ACI-318)		





M = 5320.0 k-ft
A = 55.0 kips
V = 64.0 kips

Bp = 7.00 ft
Wp = 7.00 ft
Hp = 1.00 ft

Bm = 25.00 ft
Wm = 25.00 ft
Hm = 4.50 ft
D = 5.50 ft

V_{mat} = 2861.5 cuft
Rebar = (61) #6 @ 4.90 in

Appendix B
Collocation Application

BlueSky Tower Partners LLC

Collocation Application

Installation Type: Anchor ☐ Collocation ☐ Add to Existing ☑

BlueSky Towers, LLC Info

Contact: Sean Gormley
Email collos@blueskytower.com
Office: 508-530-3580
Fax: 508-530-3564

Site Number: CT-5003
Site Name: Spring Hill Lane
Submittal Date 12/28/2015
Revision Date(s)

PLEASE SUBMIT THIS APPLICATION VIA E-MAIL. Send only final LE's, CD's structurals, etc with Application

Applicant Information

Applicant Name: New Cingular Wirless PCS, LLC
Applicant Site Name: Bethel Spring Street
Applicant Site Number: CT2268
Proposed ON AIR Date: ASAP
Applicant Legal Entity: New Cingular Wirless PCS, LLC
Notice Address for Site License:

Primary Contact/Agent Name: Tim Whalen
Contact/Agent Company Name: Centerline Communications
Contact/Agent Number: 781 375 8318
Contact/Agent Fax: 508 819 3017
Contact Email: twhalen@clinell.com

Applicant Contact Information

		Email:	Number:
Leasing Contact Name:			
RF Contact Name:			
Construction Contact Name:			
Emergency Contact Name:			
Account Payable Contact Name:			

Tower Information

Latitude: 41d 21m 43.94196s N
Longitude: 73d -23m -47.688s W
AMSL: FT
Site Address: 23 Spring Hill Lane, Bethel CT

Structure Type: Monopole
Structure Height:

EQUIPMENT SPECIFICATIONS

Summary of Work to be Completed:

Applicant Must fill in all bolded sections	SECTOR 1	SECTOR 2	SECTOR 3	SECTOR 4
Equipment Type	Panel	Panel	Panel	
Installation Status	Exisiting	Exisiting	Exisiting	
Desired RAD Center (Ft AGL)	122	122	122	
Tower Mount Mounting Height	122	122	122	
Mount Type(Attach Specs)	Secor Frame	Secor Frame	Secor Frame	
Antenna Manufacturer	Powerwave/ CCI/ Powerwave	Powerwave/ CCI/ Powerwave	Powerwave/ CCI/ Powerwave	
Antenna Model# (Attach Specs)	7770/ HPA-65R-BUU-H8/ P65-16-XLH-RR	7770/HPA-65R-BUU-H6/P65-16-XLH-RR	7770/HPA-65R-BUU-H6/P65-16-XLH-RR	
Antenna Dimensions (WidthxD)(Ft Or Inches)	55X11X5/92.4X14.8X7.4/ 72X12X6	55X11X5/72X14.8X9/72X12X6	55X11X5/72X14.8X9/72X12X6	
Antenna Weight (Per Item, In Lbs.)	35/ 68/ 64	35/ 50.7/ 64	35/ 50.7/ 64	
Antenna Quantity	1/1//1	1/1//1	1/1//1	
Dish Manufacturer				
Dish Model# (attach Specs)				
Dish Diam/Weight/Mount hgt or location				
Azimuths				
Total# Of Lines For Equipment in Column	4//1//2	4//1//2	4	
Line Type	Coax Fiber Hybrid Control C	Coax Hybri Cables	Coax	
Diameter Of Coax Cables (In)				
Transmitter/Receiver Type/RRU/Junction Boxes	TMA/ RRU/ RRU/ Squid	TMA/ RRU/ RRU/ Squid	TMA/ RRU/ RRU	
Qty Of Transmitters/Receivers/RRU's/Junction Boxes	2/2/1/1	2/2/1/1	2/2/2001	
Manufacturer	Pwave/ Ericsson/ Ericsson/ Raycap	Pwave/ Ericsson/ Ericsson/ Raycap	Pwave/ Ericsson/ Ericsson	
Type & Model	LGP21401/ RRUS 11/ RRUS 32/ DC 6	LGP21401/ RRUS 11/ RRUS 32/ DC 6	LGP21401/ RRUS 11/ RRUS 32/	
Removing Equipment (If Applicable)	Swapping(1)Powerwave 7770 for new CCI antenna	Swapping(1)Powerwave 7770 for new CCI antenna	Swapping(1)Powerwave 7770 for new CCI antenna	
Transmit Frequency (Mhz)	704-716, 1945-1950, 1965-1970, 880-890, 891-894	704-716, 1945-1950, 1965-1970, 880-890, 891-894	704-716, 1945-1950, 1965-1970, 880-890, 891-894	
Receive Frequency (Mhz)	734-746, 1865-1870, 11885-1890, 834-896, 847-849	734-746, 1865-1870, 11885-1890, 834-896, 847-849	734-746, 1865-1870, 11885-1890, 834-896, 847-849	
Antenna Gain (Db)				
Type of Technology				
TX Power Output				
ERP (Watts)				
Electric Service Required (Amps/Volts)				

Will RRUs be located behind antennas:

GROUND SPACE REQUIREMENTS - No Change

Exisiting Lease Area:	DIMS: L(ft)	7	W(ft) 16	OR	112	Square footage
New/Add'l Lease Area being requested:	DIMS: L(ft)		W(ft)	OR	no change	Square footage
New/Add'l Rooftop Lease Area being requested (if space is needed on both ground and rooftop:	DIMS: L(ft)		W(ft)	OR		Square footage
Shelter:	DIMS: L(ft)		W(ft)	H(ft)		
Concrete Pad for Shelter:	DIMS: L(ft)		W(ft)			
Cabinets:	DIMS: L(ft)		W(ft)	H(ft)		Propane tank
Concrete Pad for Cabinets:	DIMS: L(ft)		W(ft)			

Cabinet/Shelter Manufacturer/Model:

POWER REQUIREMENTS

Power Provided by:
Electrical Service Provider:
Electrical Service Telephone Number:
Average Monthly Power Consumption: KWH units
How many, if any, empty meter banks are present:
Telco/Interconnect Requirements: POTS ☐ T1 ☐ MICROWAVE ☐ FIBER OPTICS ☑
Fiber Provider:

BACK-UP POWER INFORMATION

Generator Required:
Generation Location:
Generator Ground Space Requirement: DIMS: L(ft) W(ft) H(ft)
BST Generator: Generator Owner: Fuel Type:
Generator Capacity: KW Generator Make: Shared Generator Peak Usage: KW
Fuel Tank Location: Fuel Tank Size: DIMS: L(ft) W(ft) Generator Model:
Pad for Fuel Tank (if required) DIMS: L(ft) W(ft) Fuel Tank Size: Gallons
Comments:

Before submitting application, this section MUST be addressed:

Attach manufacturer's equipment specifications for antennas, RRU's, mounts, and all struct loading info for analysis. Cabinets & shelters if available

Scope of Work Summary:
Swap Existing Powerwave 7770 in position 2 of each sector (3 total) with CCI HPA 65R-BUU
- Alpha will receive CCI HPA 65R-BUU H8
- Beta and Gamma will receive CCI HPA 65R-BUU H6

Adding (1) RRUS 11 per sector (3 total)
Adding (1) RRUS 32 per Sector (3 total)
Add (1) fiber trunk
Add (2) DC cables
Add 2nd Squid

Final Configuration after work is completed:

Final Configurations Include:
(9) Panel Antennas
- (3) Powerwave 770 (existing)
- (1) CCI 65R-BUU-H8 (new)
- (2) CCI 65R-BUU-H6 (new)
- (3) Powerwave P65-16-XLH-RR (existing)

(6) TMAs (existing)
(6) RRUS 11 (3 new, 3 existing)
(3) RRUS 32 (new)
(2) Squids (1 new , 1 existing)
(12) Coax (existing)
(4) DC lines (2 new, 2 existing)
(2) Fiber Cable (1 new, 1 existing)

Existing Equipment:

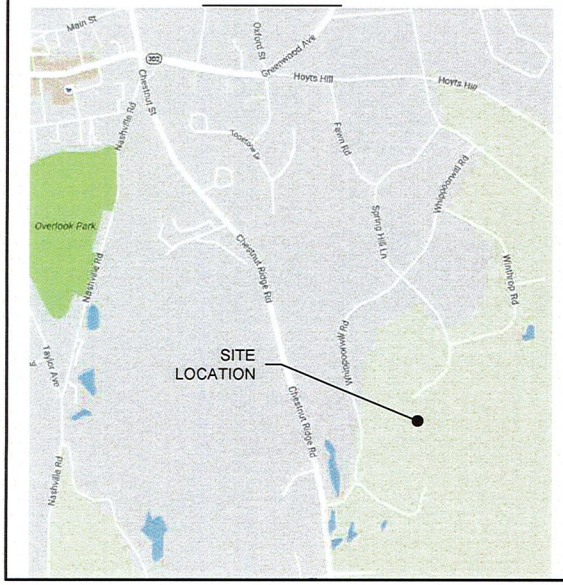
Comments: (SG) Will need SA, CDs.

TOWER MODIFICATION DRAWINGS

BlueSky Tower Partners LLC

BLUESKY SITE NUMBER:	CT-5003
SITE NAME:	Spring Hill Lane
ADDRESS:	23 Spring Hill Lane Bethel, CT 06801

SITE MAP



CONTACTS

TOWER OWNER	Blue Sky Tower, LLC
Sean Gormley Operations Support Manager	collos@blueskytower.com
Blue Sky Site Number: Blue Sky Site Name:	CT-5003 Spring Hill Lane
PROPOSED CARRIER	AT&T
Carrier Site Number Carrier Site Name	CT2268 Bethel Spring Street
ENGINEER	Bennett & Pless
Paul Grupe, PE Vice President	pgrupe@bennett-pless.com
Cory Blake, PE Project Manager	cblake@bennett-pless.com
Bennett & Pless Project Number:	16707.001 CT-5003

DRAWING LIST

T-1	COVER SHEET
SK-1	GENERAL NOTES
SK-2	TOWER SITE PLAN
SK-3	TOWER ELEVATION AND MODIFICATION SCHEDULE
SK-4	SWITCHBLADE INSTALLATION DETAILS

BlueSky Tower Partners LLC

bennett&pless

Experience Structural Expertise
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STATE OF CONNECTICUT
PAUL E. GRUPE
No. 21987
LICENSED PROFESSIONAL ENGINEER
8/12/2016

Revisions:

NO:	DESCRIPTION:	DATE:
0	CONSTRUCTION	8-12-16

DATE: 8/12/2016
SCALE: Not To Scale
SITE # (NAME): CT-5003 (Spring Hill Lane)
JOB NAME: Tower Modification For Proposed Antenna Installation
DRAWING TITLE: Cover Sheet
REVIEWED BY: Paul Grupe
DRAWN BY: JC

SHEET NUMBER:
T-1

DESIGN CRITERIA:

1. DESIGN CODE: = 2003 INTERNATIONAL BUILDING CODE

2. WIND DESIGN DATA:
   BASIC WIND SPEED = 85 MPH
   BASIC WIND SPEED W/ ICE = 74 MPH WITH 0.75" ICE

GENERAL NOTES:

1. ALL DIMENSIONS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER OF RECORD.
2. DO NOT MODIFY STRUCTURAL DETAILS WITHOUT APPROVAL OF THE ENGINEER OF RECORD.
3. CONTRACTOR RESPONSIBLE FOR ALL MEANS AND METHODS INCLUDING, BUT NOT LIMITED TO:
   A. PROVIDE ALL NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
   B. BRACE STRUCTURES UNTIL ALL STRUCTURAL ERECTION AND CONNECTIONS ARE COMPLETE.
   C. DETERMINE LOCATION OF UTILITIES AND APPURTENANCES BEFORE COMMENCING WORK.
   D. REPORT INCORRECTLY FABRICATED, DAMAGED, POORLY MAINTAINED, OR NONCONFORMING MATERIALS OR CONDITIONS TO THE ENGINEER OF RECORD PRIOR TO COMMENCING REMEDIAL OR CORRECTIVE ACTION. OBTAIN WRITTEN APPROVAL FOR REMEDIAL ACTIVITIES.
   E. COORDINATE CONSTRUCTION ACTIVITIES OF ALL PARTICIPANTS AND SUBCONTRACTORS.
   F. DO NOT INSTALL PROPOSED ANTENNAS UNTIL ALL REINFORCEMENT WORK IS COMPLETE.

EXISTING CONDITIONS:

1. MODIFICATION OF EXISTING STRUCTURES REQUIRES THOROUGH COORDINATION OF THE CONTRACT DOCUMENTS WITH EXISTING CONDITIONS. THE CONTRACTOR MUST VERIFY ALL RELEVANT EXISTING CONDITIONS, DIMENSIONS, AND DETAILS PRIOR TO BEGINNING CONSTRUCTION. REPORT ANY DEVIATIONS FROM CONDITIONS OR DIMENSIONS SHOWN ON THE CONTRACT DOCUMENTS TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW OF THE DESIGN AND POSSIBLE REVISION OF THE CONTRACT DOCUMENTS.
2. THE NATURE OF STRUCTURAL REINFORCEMENT IS INHERENTLY UNCERTAIN. THE EXACT CONDITION AND CAPACITY OF EACH STRUCTURAL ELEMENT CANNOT BE VERIFIED PRIOR TO THE COMMENCEMENT OF WORK. AS A RESULT, IT IS IMPERATIVE TO REPORT ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS, AS WELL AS ANY ELEMENT OF QUESTIONABLE STRUCTURAL INTEGRITY IMMEDIATELY TO STRUCTURAL ENGINEER OF RECORD FOR REVIEW.

STRUCTURAL STEEL NOTES:

1. FABRICATE AND ERECT STRUCTURAL STEEL IN CONFORMANCE WITH THE LATEST ISSUE OF AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION OF STRUCTURAL STEEL, (AISC 360)".
2. HOT DIP GALVANIZE STEEL IN ACCORDANCE WITH ASTM A123 AFTER SHOP FABRICATION.
3. REPAIR ALL DINGS, SCRAPES, AND MARS IN THE GALVANIZED AREAS BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
4. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
5. WELDED CONNECTIONS:
   A. ALL WELDING TO BE DONE USING E70XX ELECTRODES.
6. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
7. USE ONLY CERTIFIED WELDERS.
   B. AT THE COMPLETION OF CONNECTION INSTALLATION, REPAIR ALL DAMAGE TO GALVANIZED SURFACES.
   C. SUBMIT ALL CONNECTIONS DESIGNED BY THE FABRICATOR TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
8. TOUCH-UP PAINTING
   A. IMMEDIATELY AFTER ERECTION CLEAN BOLTED CONNECTIONS AND ABRADED AREAS.
   B. COAT CUTS AND DRILLED HOLES WITH (2) COATS OF ZINC RICH PAINT.
9. ALL SUBSTITUTES TO BE APPROVED, IN WRITING, BY THE ENGINEER OF RECORD.
10. UNLESS NOTED OTHERWISE PROVIDE STRUCTURAL MATERIALS CONFORMING TO:
    A. SCI SWITCHBLADE CHANNEL STEEL: GRADE A572-65 (65 KSI)
    B. AJAX BOLT: GRADE A325M
    C. ALL OTHER STRUCTURAL BOLTS: GRADE A325M, UNLESS NOTED OTHERWISE

CONTRACTOR NOTES:

1. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE TOWER OWNER AND ENGINEER.
2. CONSTRUCTION WORK PRESENTS UNIQUE THREATS TO HEALTH AND SAFETY. THE CONTRACTOR IS RESPONSIBLE TO EDUCATE THEIR WORKFORCE OF THESE DANGERS AND LIMIT THEIR EXPOSURE TO HAZARDS. THIS EDUCATION SHALL INCLUDE BUT NOT BE LIMITED TO APPLICABLE TRAINING COURSES AND CERTIFICATIONS, PROPER PERSONAL PROTECTIVE EQUIPMENT USAGE, DAILY TAILGATE MEETINGS AND ANY OTHER PREVENTATIVE MEASURES WHICH MAY BE REASONABLY EXPECTED. THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT WORK AREAS AND ANY PROPERTY OCCUPANTS WHO MAY BE AFFECTED BY THE WORK UNDER CONTRACT. THE CONTRACTOR SHALL REVIEW ALL LANDOWNER, PRIME CONTRACTOR, CARRIER, OSHA, AND LOCAL SAFETY GUIDELINES AND AT ALL TIMES SHALL CONFORM TO THE MOST RESTRICTIVE OF THESE STANDARDS TO ENSURE A SAFE WORKPLACE.
3. TOWER WORK PRESENTS ADDITIONAL THREATS TO HEALTH AND SAFETY. ALL TOWER WORKERS WORKING ON A TOWER MUST BE ADEQUATELY TRAINED AND MONITORED TO ENSURE THAT SAFE WORK PRACTICES ARE LEARNED AND FOLLOWED. AS REQUIRED BY OSHA, WHEN WORKING ON EXISTING COMMUNICATIONS TOWERS, EMPLOYEES MUST BE PROVIDED WITH APPROPRIATE FALL PROTECTION, TRAINED TO USE THIS FALL PROTECTION PROPERLY, AND THE USE OF FALL PROTECTION MUST BE CONSISTENTLY SUPERVISED AND ENFORCED BY THE CONTRACTOR.
4. ALL SAFETY EQUIPMENT SHALL BE INSPECTED ACCORDING TO ALL OSHA AND INDUSTRY SCHEDULED INTERVALS AND ALL INSPECTIONS SHALL BE DOCUMENTED PER APPLICABLE CODES AND STANDARDS.
5. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING: ANY PROBLEMS WITH ACCESS, INTERFERENCE, ETC. SHALL BE RESOLVED PRIOR TO MOBILIZATION, THE CONTRACTOR MUST VISIT THE SITE PRIOR TO ORDERING ANY MATERIAL AND MUST RESOLVE ALL ISSUES WITH THE OWNER PREVENTING A CONTINUOUS INSTALLATION. CONTRACTOR SHALL NOTE ALL ANTENNAS, MOUNTS, COAX, LIGHTING, CLIMBING SUPPORTS, STEP BOLTS, PORT HOLES, AND ANY OTHER TOWER APPURTENANCES IN THE REGION OF THE MODIFICATIONS.
6. CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY REMOVING ALL COAX, T-BRACKETS, ANTENNA MOUNTS, AND ANY OTHER TOWER APPURTENANCES THAT MAY INTERFERE WITH THE TOWER MODIFICATIONS. ALL TOWER APPURTENANCES MUST BE REPLACED AND / OR RESTORED TO ITS ORIGINAL LOCATION. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE TOWER OWNER IN WRITING.
7. SOME ATTACHMENTS MAY REQUIRE CUSTOM MODIFICATIONS TO PROPERLY FIT THE MODIFIED REGION OF THE STRUCTURE. THESE CUSTOMIZATIONS ARE DESIGNED BY OTHERS AND MUST BE APPROVED BY THE ENGINEER PRIOR TO REMOVING SUCH ATTACHMENTS. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE TOWER OWNER IN WRITING.
8. CONTRACTOR SHALL ONLY WORK WITHIN THE LIMITS OF THE TOWER OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.
9. WORK SHALL BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 10 MPH). CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY LOCAL TOWER SHORING, TEMPORARY GLOBAL TOWER SHORING, AND ALL SHORING OF SURROUNDING BUILDINGS, PADS, AND OTHER OUTDOOR SITE OBSTRUCTIONS. ALL SHORING, TEMPORARY BRACING, AND TEMPORARY SUPPORTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
10. ALL MODIFICATIONS PERFORMED ON THIS TOWER SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF TIA-1019-A CONSTRUCTION STANDARDS.
11. ALL MANUFACTURERS HARDWARE AND ASSEMBLY INSTRUCTIONS SHALL BE FOLLOWED EXACTLY. DEVIATION FROM THE INSTRUCTIONS IS UNACCEPTABLE AND REQUIRES WRITTEN APPROVAL FROM ENGINEER.

BlueSky Tower Partners LLC

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8/12/2016

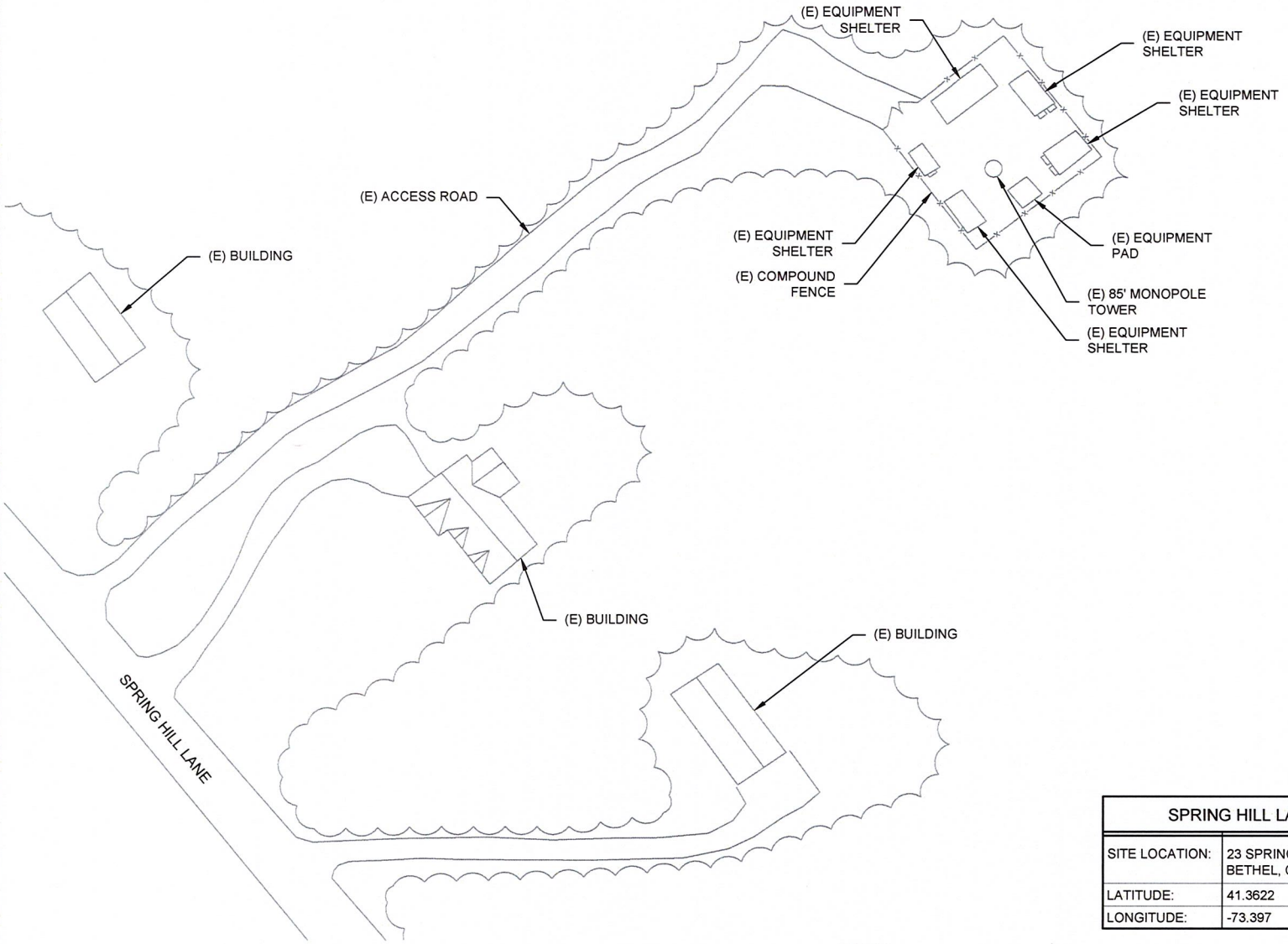
Revisions:

NO:	DESCRIPTION:	DATE:
0	CONSTRUCTION	8-12-16

SITE # (NAME): CT-5003 (Spring Hill Lane)
DATE: 8/12/2016
JOB NAME: Tower Modification For Proposed Antenna Installation
DRAWING TITLE: General Notes
DRAWN BY: JC
REVIEWED BY: Paul Grupe
SCALE: Not To Scale

SHEET NUMBER:

SK-1



TOWER SITE PLAN

NORTH

SPRING HILL LANE CT-5003	
SITE LOCATION:	23 SPRING HILL LANE BETHEL, CT 06801
LATITUDE:	41.3622
LONGITUDE:	-73.397

LEGEND:
(N) - NEW
(E) - EXISTING

BlueSky Tower Partners LLC

bennett&pless

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STATE OF CONNECTICUT
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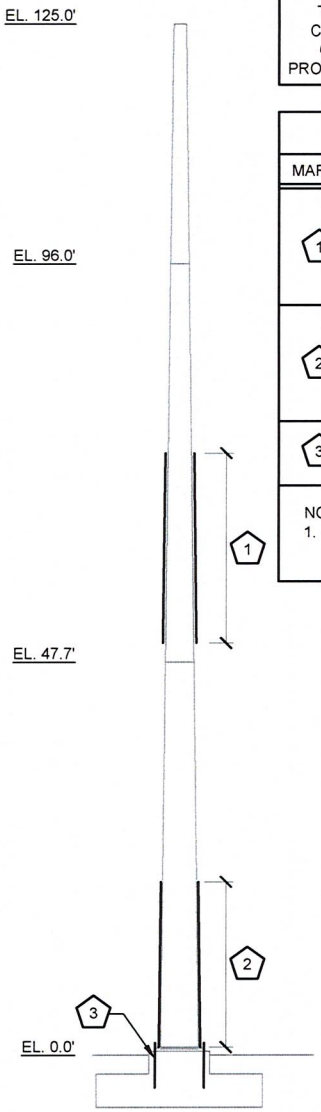
SITE # (NAME): CT-5003 (Spring Hill Lane)
DATE: 8/12/2016
JOB NAME: Tower Modification For Proposed Antenna Installation
DRAWING TITLE: Tower Site Plan
SCALE: Not To Scale
DRAWN BY: JC
REVIEWED BY: Paul Grupe

SHEET NUMBER:
SK-2



TOWER ELEVATION

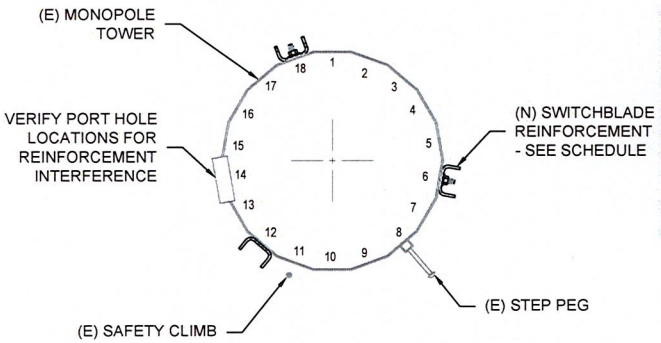
SEE DESIGNED APPURTENANCE LOADING TABLE THIS SHEET TO COORDINATE POSSIBLE OBSTRUCTIONS WITH PROPOSED REINFORCEMENT

MODIFICATION SCHEDULE

MARK	ELEVATION	MODIFICATION DESCRIPTION
1	± 50' - 73'	INSTALL NEW SCI SWITCHBLADE REINFORCEMENT #RSB-0112-XX (SPLICE/TERM) AT EACH END WITH FLYAROUND FOR EXISTING MOUNT. SEE DETAILS THIS SHEET FOR KNOWN OBSTRUCTIONS. ALL OBSTRUCTIONS TO BE VERIFIED DURING A PRECONSTRUCTION INSPECTION. FOR TYPICAL DETAILS, SEE SK-4.
2	BASE - 21'	INSTALL NEW SCI SWITCHBLADE REINFORCEMENT #RSB-0112-XX (SPLICE/TERM) AT TOP AND RSB-0131-XX AT THE MONOPOLE BASE. SEE DETAILS THIS SHEET FOR KNOWN OBSTRUCTIONS. ALL OBSTRUCTIONS TO BE VERIFIED DURING A PRECONSTRUCTION INSPECTION. FOR TYPICAL DETAILS, SEE SK-5.
3	BASE	INSTALL NEW 2 ¾" SCI ANCHOR ROD RSB-0700-XX EMBEDDED 48" INTO EXISTING FOUNDATION WITH HILTI RE 500 ADHESIVE. FOR TYPICAL DETAILS, SEE SK-5.

NOTES:
1. ALL SIZES AND LENGTHS OF REINFORCEMENT AS WELL AS REINFORCEMENT OBSTRUCTIONS SHALL BE VERIFIED DURING A PRE-CONSTRUCTION INSPECTION.

NOTE:
ALL EXISTING AND PROPOSED LINES ASSUMED TO BE LOCATED INSIDE MONOPOLE, UNLESS NOTED OTHERWISE



MODIFICATION REINFORCEMENT AND OBSTRUCTION LAYOUT PLAN

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
15' Omni (tower)	123	800MHz 2X50W RRH W/FILTER (Sprint)	105.5
LP 303-1 (ATT)	123		
8'x2.4" Pipe Mounts (ATT)	123	IBC1900HB-2 (Sprint)	105.5
8'x2.4" Pipe Mounts (ATT)	123	IBC1900HB-2 (Sprint)	105.5
8'x2.4" Pipe Mounts (ATT)	123	IBC1900HB-2 (Sprint)	105.5
7770 w/ Mount Pipe (ATT)	123	LP 303-1 (T-Mobile)	102
7770 w/ Mount Pipe (ATT)	123	(3) 8'x2.4" Pipe Mounts (T-Mobile)	102
7770 w/ Mount Pipe (ATT)	123	(3) 8'x2.4" Pipe Mounts (T-Mobile)	102
HPA-65R-BUU-H8 w/ Mount Pipe (ATT)	123	(3) 8'x2.4" Pipe Mounts (T-Mobile)	102
		(2) Kathrein 81010020R4B (T-Mobile)	102
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	123	(2) Kathrein 81010020R4B (T-Mobile)	102
		(2) Kathrein 81010020R4B (T-Mobile)	102
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	123	14' 16 element dipole (T-Mobile)	102
		LNX6515DS-VTM w/Pipe (T-Mobile)	102
CCI TPA-65R-LCUUUU-H8-K (ATT)	123	LNX6515DS-VTM w/Pipe (T-Mobile)	102
Quintel QS66512-2 (ATT)	123	LNX6515DS-VTM w/Pipe (T-Mobile)	102
Quintel QS66512-2 (ATT)	123	RRUS 11 (T-Mobile)	102
(2) LGP21401 (ATT)	123	RRUS 11 (T-Mobile)	102
(2) LGP21401 (ATT)	123	RRUS 11 (T-Mobile)	102
(2) LGP21401 (ATT)	123	X7C-FRO-660-VR0 w/ pipe mount (Verizon)	96
RRUS-11 (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
RRUS-11 (ATT)	123		
RRUS-11 (ATT)	123	BXA-80063-6CF w/ pipe mount (Verizon)	96
RRUS 32 B30 (ATT)	123	800 10736V01 w/ Mount Pipe (Verizon)	96
RRUS 32 B30 (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
RRUS 32 B30 (ATT)	123		
RRUS 32 B30 (ATT)	123	BXA-80080-6CF w/ pipe mount (Verizon)	96
RRUS 32 B30 (ATT)	123		
RRUS 32 B30 (ATT)	123	800 10736V01 w/ Mount Pipe (Verizon)	96
DC6-48-60-18-8F (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
DC6-48-60-18-8F (ATT)	123		
LP 303-1 (Sprint)	112	BXA-80080-6CF w/ pipe mount (Verizon)	96
(4) 8'x2.4" Pipe Mounts (Sprint)	112		
(4) 8'x2.4" Pipe Mounts (Sprint)	112	RRH2x60 - AWS (Verizon)	96
(4) 8'x2.4" Pipe Mounts (Sprint)	112	RRH2x60 - AWS (Verizon)	96
APXVSPP18-C (Sprint)	112	RRH2x60 - AWS (Verizon)	96
APXVSPP18-C (Sprint)	112	ALU RH 2x60 700 (Verizon)	96
APXVSPP18-C (Sprint)	112	ALU RH 2x60 700 (Verizon)	96
APXV9TM14-ALU-120 (Sprint)	112	ALU RH 2x60 700 (Verizon)	96
APXV9TM14-ALU-120 (Sprint)	112	ALU RH 2x60 - PCS (Verizon)	96
APXV9TM14-ALU-120 (Sprint)	112	ALU RH 2x60 - PCS (Verizon)	96
TD-RRH 8x20 (Sprint)	112	ALU RH 2x60 - PCS (Verizon)	96
TD-RRH 8x20 (Sprint)	112	Raycap DB-T1-6Z-8AB-0Z (Verizon)	96
TD-RRH 8x20 (Sprint)	112	Raycap DB-T1-6Z-8AB-0Z (Verizon)	96
Tri-Antenna Mount (Sprint)	105.5	LP 303-1	95
1900MHz 4x40W RRH (Sprint)	105.5	10' Omni (Verizon)	92
1900MHz 4x40W RRH (Sprint)	105.5	10' Omni (Verizon)	92
1900MHz 4x40W RRH (Sprint)	105.5	LP 303-1	82
1900MHz 4x40W RRH (Sprint)	105.5	LP 303-1	72
1900MHz 4x40W RRH (Sprint)	105.5	15' Dipole	72
800MHz 2X50W RRH W/FILTER (Sprint)	105.5		
800MHz 2X50W RRH W/FILTER (Sprint)	105.5		

LEGEND:
(N) - NEW
(E) - EXISTING

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STATE OF CONNECTICUT
PAUL E. GRUPE
No. 21987
LICENSED PROFESSIONAL ENGINEER
8/12/2016

Revisions:

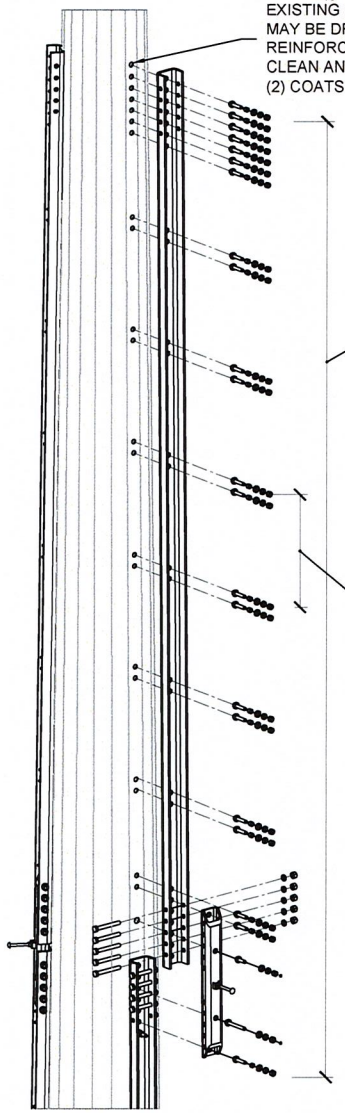
NO:	DESCRIPTION:	DATE:
0	CONSTRUCTION	8-12-16

SITE # (NAME): CT-5003 (Spring Hill Lane)
JOB NAME: Tower Modification For Proposed Antenna Installation
DRAWING TITLE: Tower Elevation and Modification Schedule
DATE: 8/12/2016
SCALE: Not To Scale
DRAWN BY: JC
REVIEWED BY: Paul Grupe

SHEET NUMBER:
SK-3

USE 1 3/16" ANNULAR CUTTER TO DRILL HOLES IN EXISTING MONOPOLE FOR AJAX BOLTS. HOLES MAY BE DRILLED THROUGH SWITCHBLADE USING REINFORCEMENTS AS A TEMPLATE. WIPE HOLES CLEAN AND COLD-GALVANIZE HOLES WITH MIN. (2) COATS OF 95% ZRC RICH PAINT.

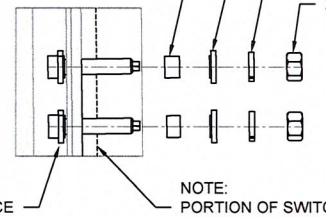
AJAX BOLT INSTALLATION INSTRUCTIONS:
PLACE ASSEMBLED BOLT IN SHOWN ORDER ON AJAX TOOL WITH SPLIT WASHER FOLDED AROUND THE THIN NECK ON THE TOOL. GUIDE BOLT THROUGH THE HOLE AND TWIST TO ENGAGE THE SPLIT WASHER AGAINST THE BACK FACE OF THE POLE. SLIDE SLEEVE INTO HOLE AND THE REST OF THE HARDWARE ONTO THE BOLT. HAND TIGHTEN NUT WHILE HOLDING BOLT WITH AJAX TOOL.



TOTAL LENGTH OF SWITCHBLADE WILL VARY FROM 5' TO 20'. SEE SK-3 AND OR PARTS LIST FOR SPECIFIC LENGTHS REQUIRED.

TYPICAL SPACING BETWEEN AJAX PAIRS IS 30"

SWITCHBLADE (SPLICE TERMINATION) INSTALLATION DETAIL



AJAX SLEEVE:
60mm AJAX: ½" SLEEVE
95mm AJAX: ½" SLEEVE
135mm AJAX: NO SLEEVE

20mm Ø AJAX FLAT WASHER

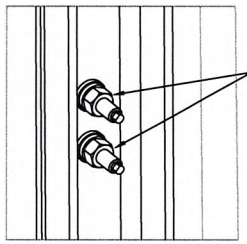
20mm Ø AJAX LOCK WASHER

20mm Ø AJAX NUT

MONOPOLE FACE

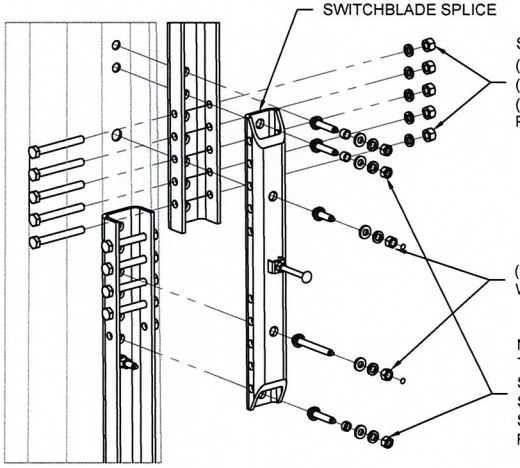
NOTE:
PORTION OF SWITCHBLADE IS HIDDEN TO SHOW AJAX DETAILS

AJAX CONNECTION DETAIL
EXPLODED VIEW



REMOVE AJAX TOOL AND PRE-TENSION INDIVIDUAL PARTS OF AJAX BOLTS. SEE SHEET GN-1 FOR TIGHTNING PROCEDURE OF AJAX BOLTS.

AJAX CONNECTION DETAIL



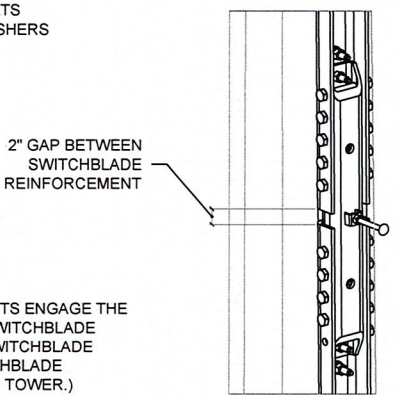
SWITCHBLADE SPLICE

SWITCHBLADE SPLICE HW:
(5) ⅞" x 7 ½" GALV. BOLTS
(5) ⅞" GALV. LOCK WASHERS
(5) ⅞" GALV. NUTS
PER LOCATION

(2) 135mm AJAX BOLTS WITH NO SLEEVE

NOTE:
THESE TWO AJAX BOLTS ENGAGE THE SWITCHBLADE AND SWITCHBLADE SPLICE. (LOCK THE SWITCHBLADE SPLICE TO THE SWITCHBLADE REINFORCEMENT AND TOWER.)

DETAIL A
SPLICE CONNECTION EXPLODED DETAIL



2" GAP BETWEEN SWITCHBLADE REINFORCEMENT

SPLICE CONNECTION ASSEMBLED DETAIL

BlueSky Tower Partners LLC

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STATE OF CONNECTICUT PAUL E. GRUPE No. 21967 LICENSED PROFESSIONAL ENGINEER

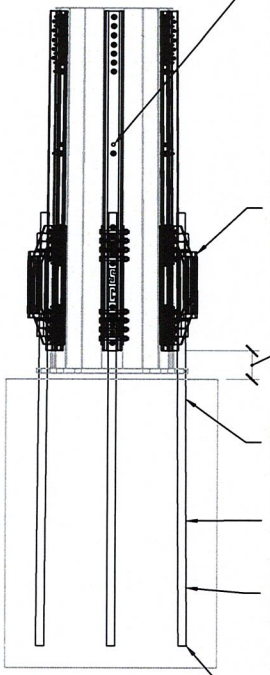
8/12/2016

Revisions:

NO:	DESCRIPTION:	DATE:
0	CONSTRUCTION	8-12-16

DATE: 8/12/2016
SITE # (NAME): CT-5003 (Spring Hill Lane)
JOB NAME: Tower Modification For Proposed Antenna Installation
DRAWING TITLE: Switchblade Installation Details
SCALE: Not To Scale
DRAWN BY: JC
REVIEWED BY: Paul Grupe

SHEET NUMBER:
SK-4



USE 1 3/16" ANNUAL CUTTER TO DRILL HOLES IN EXISTING MONOPOLE FOR AJAX BOLTS. HOLES MAY BE DRILLED THROUGH SWITCHBLADE USING REINFORCEMENTS AS A TEMPLATE. WIPE HOLES CLEAN AND COLD-GALVANIZE HOLES WITH MIN. (2) COATS OF 95% ZRC PAINT.

BASE TERMINATION CONFIGURATIONS AND QUANTITIES MAY VARY: SEE SHEET S-1 FOR EXACT CONFIGURATIONS AND SHEET SK-3 FOR EXACT LOCATIONS.

TOP OF FOUNDATION TO BOTTOM EDGE OF SWITCHBLADE 8" - 12" (DEPENDING ON THICKNESS OF GROUT AND BASE PLATE)

CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING CAISSON REINFORCEMENT PRIOR TO DRILLING HILES FOR ANCHOR ROD. ANCHOR ROD SHALL NOT INTERFERE WITH EXISTING VERTICAL REINFORCEMENT AND SHALL BE LOCATED WITHIN THE HORIZONTAL TIES.

2 3/4" ANCHOR ROD
F_u = 115 KSI

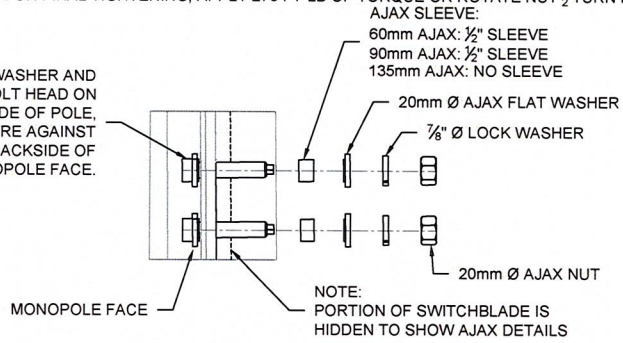
USE HILTI RE 500 TO BOND ANCHOR ROD TO FOUNDATION. FOLLOW ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS.

NOTE: IF CORE DEPTH EXCEEDS 7'-0" HOLD TOP OF ANCHOR ROD AT 5' ABOVE FOUNDATION. ENSURE BOTTOM OF CORE IS FILLED WITH EPOXY BY INSTALLING EPOXY BEFORE SETTING ROD.

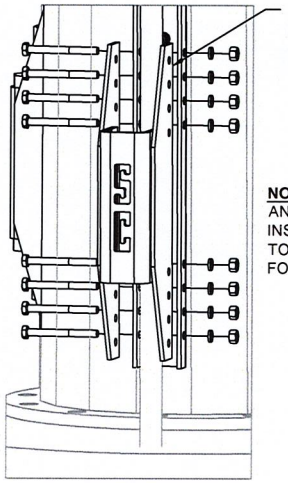
SWITCHBLADE FOUNDATION DETAIL

AJAX BOLT INSTALLATION INSTRUCTIONS:

AJAX BOLTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. PLACE ASSEMBLED BOLT IN SHOWN ORDER ON AJAX TOOL WITH SPLIT WASHER FOLDED AROUND THE THIN NECK ON THE TOOL. GUIDE THE BOLT THROUGH THE HOLE AND TWIST TO ENGAGE THE SPLIT WASHER AGAINST THE BACK FACE OF THE POLE. SLIDE SLEEVE INTO HOLE AND THE REST OF THE HARDWARE ONTO THE BOLT. HAND TIGHTEN NUT WHILE HOLDING BOLT WITH AJAX TOOL. FOR FINAL TIGHTENING, APPLY 270 FT-LB OF TORQUE OR ROTATE NUT 1/2 TURN PAST THE SNUG-TIGHT CONDITION.



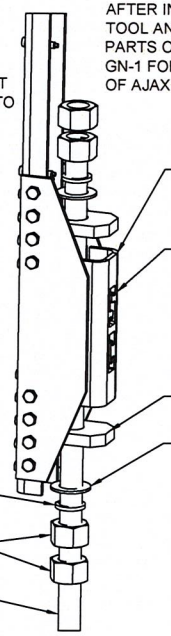
AJAX CONNECTION DETAIL
EXPLODED VIEW



SLIDE SWITCHBLADE BASE WELDMENT AROUND ANCHOR ROD AND ATTACH TO THE BASE PLATE USING:
(8) 7/8" x 9" A325 BOLTS
(8) 7/8" LOCK WASHERS
(8) 7/8" NUTS
PER SWITCHBLADE.

NOTE:
ANCHOR RODS SHOULD BE INSTALLED AFTER ALL AJAX BOLTS TO ENSURE PROPER CLEARANCE FOR AJAX TOOL AND TIGHTENING.

SWITCHBLADE INSTALL DETAIL
EXPLODED VIEW



AFTER INSTALLATION REMOVE AJAX TOOL AND PRE-TENSION INDIVIDUAL PARTS OF AJAX BOLTS. SEE SHEET GN-1 FOR TIGHTENING PROCEDURE OF AJAX BOLTS.

NOTE: ORIENT EACH SWITCHBLADE WASHER SO THAT IT FULLY COVERS THE OUTER EDGE OF THE SWITCHBLADE BASE WELDMENT

W185-301-01
SWITCHBLADE BASE WELDMENT

LOCK ANCHOR ROD TO SWITCHBLADE USING SHOWN HARDWARE CONFIGURATION.

P585-305-01
SWITCHBLADE WASHER TYP.

H03-0044-01
2 3/4" Ø FLAT WASHER TYP.

HARDWARE INSTALL DETAIL
EXPLODED VIEW

ANCHOR ROD INSTALLATION NOTES:

1. HOLES SHALL BE FREE OF DEBRIS AND MOISTURE; CLEAN WITH VACUUM WHEN NECESSARY.
2. REFER TO MANUFACTURER'S INSTRUCTIONS FOR ALLOWABLE INSTALLATION TEMPERATURE RANGE FOR HILTI RE 500.
3. AFTER CORING IS FINISHED, COMPLETE TAPE DROPS WITH PHOTOS FOR EACH HOLE. INSTALL ROD INTO HOLE TO ENSURE NO OBSTRUCTIONS, REMOVE, INSTALL EPOXY AND REINSTALL ROD.
4. APPROXIMATE EPOXY AMOUNTS BASED ON 3"Ø CORE AND 2 3/4" Ø ROD: 7' CORE = 0.85 GAL / AR.
5. REFER TO SK-1 FOR ADDITIONAL NOTES.

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8/12/2016

Revisions:

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SITE # (NAME): CT-5003 (Spring Hill Lane)
JOB NAME: Tower Modification For Proposed Antenna Installation
DRAWING TITLE: Switchblade Installation Details
DRAWN BY: JC
REVIEWED BY: Paul Grupe
DATE: 8/12/2016
SCALE: Not To Scale

SHEET NUMBER:
SK-5