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

December 29, 2015

Daniel M. Laub, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601

RE: **EM-CING-069-130123; EM-AT&T-060-130321; EM-CING-069-130130**
EM-CING-088-130109; TS-AT&T-004-131223; TS-AT&T-069-131216
EM-CING-128-130828; EM-CING-135-130910; EM-CING-156-130531
EM-CING-086-130712; TS-AT&T-101-131108; EM-CING-158-130703
EM-CING-073-130207; TS-AT&T-143-131227; EM-CING-103-130703
EM-CING-143-130122; EM-CING-104-130819; EM-CING-158-130326
TS-AT&T-164-131114; EM-CING-074-130322; EM-CING-003-130214
EM-CING-015-130531; EM-AT&T-089-131230; EM-AT&T-051-130408
EM-AT&T-118-131030

Dear Attorney Laub:

The Connecticut Siting Council (Council) is in receipt of your letter dated December 24, 2015, submitted on behalf of New Cingular Wireless PCS, LLC (AT&T), requesting an extension of time to submit notices of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications.

The Council previously granted six extension of time to submit notices of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications on June 30, 2014; September 2, 2014; November 4, 2014; November 20, 2014; December 29, 2014; and February 24, 2015.

Therefore, the Council hereby denies an extension of time to submit notices of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications that were approved in 2013.

Any modifications to these facilities will require explicit notice to the Council pursuant to Regulations of Connecticut State Agencies Section 16-50j-73 and a filing fee.

Thank you for your attention to this matter.

Sincerely,

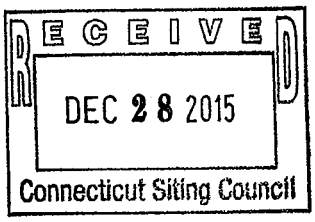
Melanie A. Bachman
Acting Executive Director

MAB/cm

CUDDY& FEDER LLP

445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
Tel 914.761.1300 Fax 914.761.5372
www.cuddyfeder.com

December 24, 2015



VIA EMAIL & FEDEX
Melanie Bachman, Esq.
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: New Cingular Wireless PCS, LLC (AT&T)
Exempt Modification/Tower Share Conditions
Notifications of Completion & Extension Requests

Dear Executive Director Bachman:

We are writing on behalf of our client, New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the Siting Council's requests for written notification of completion of construction and/or written notice of compliance with site-specific conditions for various modification filings made by AT&T and its vendors. Specifically, this letter addresses those sites related to the year 2013, listed in the attached correspondence. It is our understanding that these are the only sites remaining from 2013 that need an extension.

Accordingly, on behalf of AT&T and their vendors, we respectfully request an additional extension of time to June 30, 2016 for completion of all remaining 2013 non-tower sites.

Thank you once again for your continued consideration in this matter. Should you have any questions regarding the foregoing please do not hesitate to contact me.

Very truly yours,

Daniel M. Laub

Enclosures

cc: Michele Briggs, AT&T

C&F: 2961501.1

EM/TS #	Address	Town	Council Additional Conditions	Compliance with Council Additional Conditions Received	Notice of Completion Received	Decision Date	CSC Extension Granted
EM-CING-069-130123	1375 North Road	Dayville	Yes	No	No	3/8/2013	12/31/15
EM-AT&T-060-130321	370 Rockland Road	Guilford	Yes	No	No	4/5/2013	12/31/15
EM-CING-069-130130	246 East Franklin Street	Danielson	Yes	No	No	4/15/2013	12/31/15
EM-CING-088-130109	103 Eastside Boulevard	Naugatuck	N/A	N/A	No	4/15/2013	12/31/15
TS-AT&T-004-131223	376 Deercliff Road	Avon	N/A	N/A	No	6/28/2013	12/31/15
TS-AT&T-069-131216	1249 Hartford Pike	East Killingly	N/A	N/A	No	6/28/2013	12/31/15
EM-CING-128-130828	530 Brushy Hill Road	Simsbury	N/A	N/A	No	6/28/2013	12/31/15
EM-CING-135-130910	366 Old Long Ridge Road	Stamford	Yes	No	No	6/28/2013	12/31/15
EM-CING-156-130531	1 Burwell Road	West Haven	N/A	N/A	No	6/28/2013	12/31/15
EM-CING-086-130712	334 Route 85	Montville	Yes	No	No	7/12/2013	12/31/15
TS-AT&T-101-131108	50 Devine Street	North Haven	N/A	N/A	No	7/22/2013	12/31/15
EM-CING-158-130703	515 Post Road East	Westport	N/A	N/A	No	7/22/2013	12/31/15
EM-CING-073-130207	20 Mell Road	Lisbon	Yes	No	No	7/26/2013	12/31/15
TS-AT&T-143-131227	137 Wright Road	Torrington	Yes	No	No	7/26/2013	12/31/15
EM-CING-103-130703	177 West Rocks Road	Norwalk	N/A	N/A	No	8/8/2013	12/31/15
EM-CING-143-130122	1210 Highland Avenue	Torrington	Yes	No	No	8/16/2013	12/31/15
EM-CING-104-130819	39 Maennerchor Avenue	Norwich	Yes	No	No	8/23/2013	12/31/15
EM-CING-158-130326	880 Post Road East	Westport	Yes	No	No	9/13/2013	
TS-AT&T-164-131114	599 Matianuck Avenue	Windsor	N/A	N/A	No	9/27/2013	12/31/15
EM-CING-074-130322	438 BANTAM ROAD	LITCHFIELD	Yes	No	No	11/29/2013	
EM-CING-003-130214	353 Pumpkin Hill Road	Ashford	Yes	No	No	12/13/2013	
EM-CING-015-130531	1320 Chopsey Hill Road	Bridgeport	N/A	N/A	No	12/13/2013	
EM-AT&T-089-131230	One Hartford Square	New Britain	N/A	N/A	No	12/20/2013	
EM-AT&T-051-130408	280 Morehouse Drive	Fairfield	Yes	No	No	12/27/2013	
EM-AT&T-118-131030	845 Ethan Allen Highway	RIDGEFIELD	N/A	N/A	No	12/27/2013	

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E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 29, 2014

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601

RE: EM-CING-128-130828 - 530 Brushy Hill Road, Simsbury
TS-AT&T-164-131114 - 599 Matianuck Avenue, Windsor
TS-AT&T-004-131223 - 376 Deercliff Road, Avon
TS-AT&T-069-131216 - 1249 Hartford Pike, East Killingly
TS-AT&T-101-131108 - 50 Devine Street, North Haven
TS-AT&T-143-131227 - 137 Wright Road, Torrington

Dear Attorney Fisher:

The Connecticut Siting Council (Council) is in receipt of your letter dated December 24, 2014, submitted on behalf of AT&T/New Cingular Wireless PCS, LLC, requesting an extension of time to submit a notice of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications and tower share requests.

The Council hereby grants a 1-year extension of time until December 31, 2015, to submit a notice of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications.

This extension is granted with the understanding that the Council will be notified should AT&T/New Cingular Wireless PCS, LLC need additional time beyond 1-year to submit a notice of completion of construction and associated post modification inspection reports or decide not to proceed with construction.

Thank you for your attention to these matters.

Sincerely,

Melanie A. Bachman
Acting Executive Director

MAB/cm

CUDDY & FEDER LLP

445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
Tel 914.761.1300 Fax 914.761.5372
www.cuddyfeder.com

December 24, 2014

VIA EMAIL & FIRST CLASS MAIL
Melanie Bachman, Esq.
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: New Cingular Wireless PCS, LLC (AT&T)
Exempt Modification/Tower Share Conditions
Notifications of Completion & Extension Requests

Dear Executive Director Bachman:

We are writing once again behalf of our client, New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the Siting Council's requests for written notification of completion of construction and/or written notice of compliance with site specific conditions for various exempt modification filings made by AT&T and its vendors. Specifically, this letter addresses those items related to the year 2013 which the Council has received prior correspondence individually addressing various sites approved in different quarters of calendar year 2013. For purposes of efficiency this letter addresses the latest status of all sites (Quarters 1-3) as the attachment to your letter dated November 3, 2014 ("November List") included a listing of sites from Quarters 1-3.

Quarter 1, 2013

Since the date of our October 31st letter, we are advised that AT&T and its vendors have filed directly with the council close out letters for the following additional sites:

EM-AT&T-067-131230	107 Buck Road	Hebron
EM-CING-045-130103	2 Scott Road	East Lyme
EM-CING-057-130802	Old Greenwich Sta.	Old Greenwich
EM-CING-058-121031	131 Bishop Crossing	Griswold
EM-CING-137-121031	86 Voluntown Road	Pawcatuck
EM-CING-114-121114	5 Hinckley Hill Rd.	Preston

Quarter 2, 2013

Since the date of our October 31st letter, our information reflects that AT&T and its vendors have filed directly with the council a close out letter for the following additional site:

EM-CING-106-131114 1363 Boston Post Road Old Saybrook

Additionally, we are advised by AT&T that construction has been deferred on (3) Q2 sites:

CUDDY & FEDER LLP

TS-AT&T-004-131223 376 Deercliff Road Avon
TS-AT&T-069-131216 1249 Hartford Pike East Killingly
EM-CING-128-130828 530 Brushy Hill Road Simsbury.

On AT&T and their vendor's behalf, we respectfully request a one-year extension of time to December 31, 2015 for these three sites to be completed in accordance with the prior Exempt Modification Acknowledgement letters.

Quarter 3, 2013

As for the Quarter 3 sites listed we are writing to confirm your receipt of correspondence from AT&T's vendors for six (6) of the Q3 sites on the list you provided, as follows:

1.	EM-CING-135-130703	652 Glenbrook Rd	Stamford
2.	EM-CING-152-130201	126 Old Colchester Rd	Waterford
3.	EM-CING-166-130711	347 East Street	Wolcott
4.	EM-CING-100-130322	38 Lower Rd	North Canaan
5.	EM-CING-084-130305	111 Schoolhouse Rd	Milford
6.	EM-CING-031-130116	Mowhawk Mtn. Rd	Cornwall

Additionally, we are advised by AT&T that construction has been deferred on (3) Q3 sites:

TS-AT&T-101-131108 50 Devine Street North Haven
TS-AT&T-143-131227 137 Wright Rd Torrington
TS-AT&T-164-131114 599 Matianuck Avenue Windsor.

On AT&T and their vendor's behalf, we respectfully request a one-year extension of time to December 31, 2015 for these sites to be completed in accordance with the prior Exempt Modification Acknowledgement letters.

Process Moving Forward – Confirmation of Extensions

We are advised that other than the above noted deferrals AT&T's vendors are coordinating receipt of documentation from tower companies to certify compliance with conditions (i.e. P.E. certifications, etc.) for Q1, Q2 and Q3 sites. As per our recent telephone discussion, however, it appears that the Council's records do not reflect receipt of completion correspondence for sites which AT&T's vendors have a record of submitting. AT&T will revisit its records and coordinate submission of any outstanding completion correspondence with the Council.

CUDDY& FEDER LLP

Other than the deferred sites noted above, and to the extent an extension is required for any outstanding sites as per the Council's records, we respectfully request an extension to March 1, 2015 for all sites on the November list (2013 Q1, Q2, Q3) to submit notices of completion.

Thank you for your continued consideration in this matter.

Very truly yours,

Daniel M. Laub

cc: Michele Briggs, AT&T
Christopher B. Fisher, Esq.

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
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www.ct.gov/csc

April 8, 2014

Steven Quinn
Smartlink
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-143-131227** - AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 136 Wright Road, Torrington, Connecticut. **Request to Revise – Corrected Decision Letter.**

Dear Mr. Quinn:

At a public meeting of the Connecticut Siting Council (Council) held on April 3, 2014, the Council approved the requested amendment dated March 18, 2014, to the above-referenced tower share request that was originally approved by the Council on February 6, 2014.

Unfortunately, a Council decision letter dated April 4, 2014 was erroneously sent without the following conditions of approval:

- Prior to antenna installation, the tower modifications depicted in the Tower Modification Drawings prepared by B+T Group dated February 25, 2014, and stamped by Chad Tuttle, shall be implemented; and

- Within 45 days following completion of the antenna installation, AT&T shall provide documentation certified by a professional engineer that its installation complied with the requirements of the structural analysis.

This decision supersedes the Council letter dated April 4, 2014 and is under the exclusive jurisdiction of the Council. This facility has 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. Any deviation from the approved tower sharing request is enforceable under the provisions of Connecticut General Statutes § 16-50u.

The proposed shared use is to be implemented as specified in your tower share request letter dated December 26, 2013, and request for an amendment letter dated March 18, 2014, including the placement of all necessary equipment and shelters within the tower compound.

Please be advised that the validity of this action shall expire one year from the date of this letter.

Very truly yours,

Robert Stein MAB
Robert Stein
Chairman

RS/CDM/cm

c: The Honorable Elinor C. Carbone, Mayor, City of Torrington
Martin Connor, City Planner, City of Torrington

CSC
CONNECTICUT SITING COUNCIL

smartlink

Via Overnight Delivery

March 18, 2012

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

Re:	**Request to Revise a Previously Approved Tower Sharing Installation: TS-AT&T-143-131227**
Property Address:	**136 Wright Road, Torrington, CT 06790 (the "Property")**
Applicant:	**New Cingular Wireless PCS, LLC d/b/a AT&T ("AT&T")**

Dear Ms. Bachman:

On behalf of AT&T, please accept this correspondence as a request to revise a previously approved tower share installation. Enclosed please find an original and fifteen (15) copies of the correspondence package along with a check in the amount of six hundred and twenty five ($625.00) dollars.

On December 26, 2013, AT&T submitted an application to the Connecticut Siting Council (the "Council") for an order to approve the shared use of an existing tower and compound on the Property (the "Tower" and collectively, the "Facility"), pursuant to Connecticut General Status § 16-50aa, as amended (the "Statute"). During its hearing on February 6, 2014, the Council approved AT&T's shared use application. Subsequently, the Council issued the approval order on February 7, 2014 (see Tab 1 attached herewith).

AT&T requests to revise its previously approved installation as follows:

- Panel Antennas (no change):
  - Previous Design: Twelve (12), eight foot (8') panel antennas
  - Revised Design: Twelve (12), eight foot (8') panel antennas
    - Note that the number and size of the antennas has not changed but their models have (see attached structural analysis)

33 Boston Post Road West, Marlborough, Massachusetts 01752
p: 774.219.8022 • steven.quinn@smartlinkllc.com
www.smartlinkllc.com

- Remote Radio Head:
  - Previous Design: 15
  - Revised Design: 27

- Equipment Shelter: (no change)
  - Previous Design: 11.5' x 16'
  - Revised Design: 11.5' x 16'

- Structural Analysis Conclusion: (no change)
  - Previous Design: "the pole and foundation have sufficient capacity…"
  - Revised Design: "the pole and foundation have sufficient capacity…"

- Power Density Calculations:
  - Previous Design:
    - AT&T's MPE: 12.66%
    - Total MPE: 35.72%
  - Revised Design
    - AT&T's MPE: 9.04%
    - Total MPE: 32.46%

AT&T's proposed revisions to its previously approved shared use installation continue to meet all of the requirements set forth in the Statute. AT&T's revised design is technically, legally, economically and environmentally feasible, will meet public safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. Consequently, AT&T respectfully requests that the Council issue an order approving the proposed sharing use of the Facility.

Sincerely,

Steven J. Quinn

Enclosures

Cc w/enclosures:
Elinor Carbone, Mayor Town of Torrington
James N. and Carol E. Wright, Property owners

A REQUEST TO THE CONNECTICUT SITING COUNCIL
TO REVISED A PREVIOUSLY APPROVED
APPLICATION FOR A SHARED USE OF AN EXISTING TOWER

APPLICANT

New Cingular Wireless PCS, LLC (AT&T)
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

TOWER/PROPERTY ADDRESS

136 Wright Road
Torrington, CT 06790

PREPARED BY: Steven J. Quinn
Real Estate and Land Use Specialist
Smartlink, LLC
33 Boston Post Road West
Marlborough, Massachusetts 01752
774-219-8022
steven.quinn@smartlinkllc.com

Date Submitted: March 17, 2014

TABLE OF CONTENTS

APPLICANT

New Cingular Wireless PCS, LLC (AT&T)
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

TOWER/PROPERTY ADDRESS

136 Wright Road
Torrington, CT 06790

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 7, 2014

Adam Braillard
Smartlink
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-143-131227** - AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 136 Wright Road, Torrington, Connecticut.

Dear Mr. Braillard:

At a public meeting held February 6, 2014, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including 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;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- The validity of this action shall expire one year from the date of this letter;
- 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.
- Prior to antenna installation, the tower modifications depicted in the Tower Modification Drawings prepared by B+T Group dated December 13, 2013, and stamped by Chad Tuttle, shall be implemented; and
- Within 45 days following completion of the antenna installation, AT&T shall provide documentation certified by a professional engineer that its installation complied with the requirements of the structural analysis.

The Council notes that the City of Torrington requested that space be reserved on the tower for the City's municipal needs by letter dated January 3, 2014. This existing tower was not certificated by the Council. Therefore, there is no condition that the owner of the tower, Crown Castle, provide space for the municipality. As the entity requesting to share the tower, AT&T has no authority to provide space for the municipality on a tower owned by another entity. However, the Council encourages Crown Castle to work with the town on providing space for municipal needs.

This decision is under the exclusive jurisdiction of the Council. This facility has 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. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated December 26, 2013, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Robert Stein

Robert Stein
Chairman

RS/CDM/cm

c: The Honorable Elinor C. Carbone, Mayor, City of Torrington
Martin Connor, City Planner, City of Torrington
Crown Castle
Lt. Wayne Newkirk, Torrington Police Department

CERTIFICATE OF SERVICE

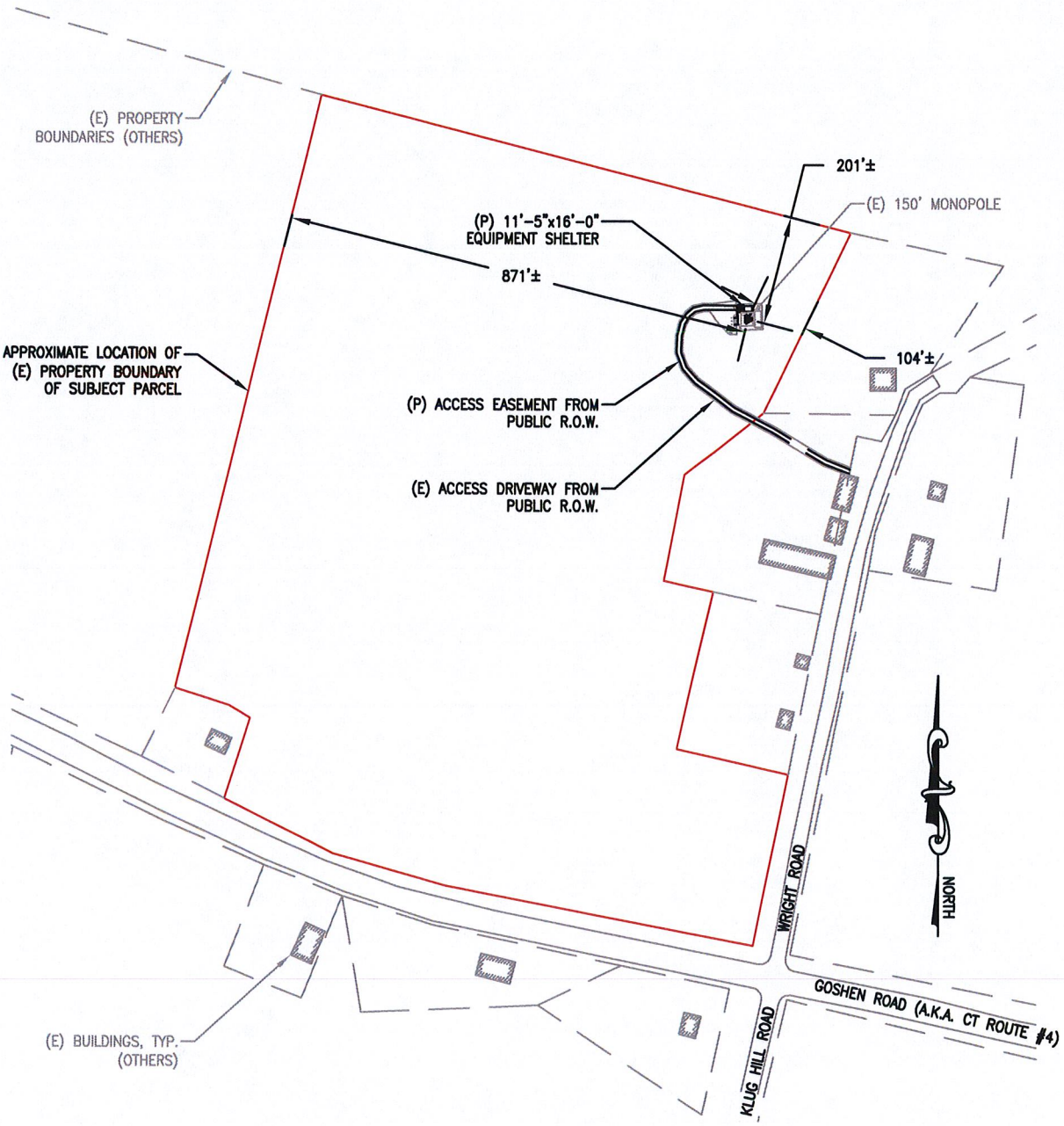
This is to certify that on the 18th day of March, 2014, the foregoing application by AT&T for an Order to Amend an Approved Shared Use of an Existing Tower was sent, via UPS, to the following:

James N. and Carol E. Wright
104 Wright Road
Torrington, CT 06790

and

Mayor Elinor Carbone
Town of Torrington
140 Main Street
Torrington, CT 06790
860-489-2228

By: Steven J. Quinn
Steven J. Quinn



1/1 SITE PLAN
SCALE: 1=300'-0"

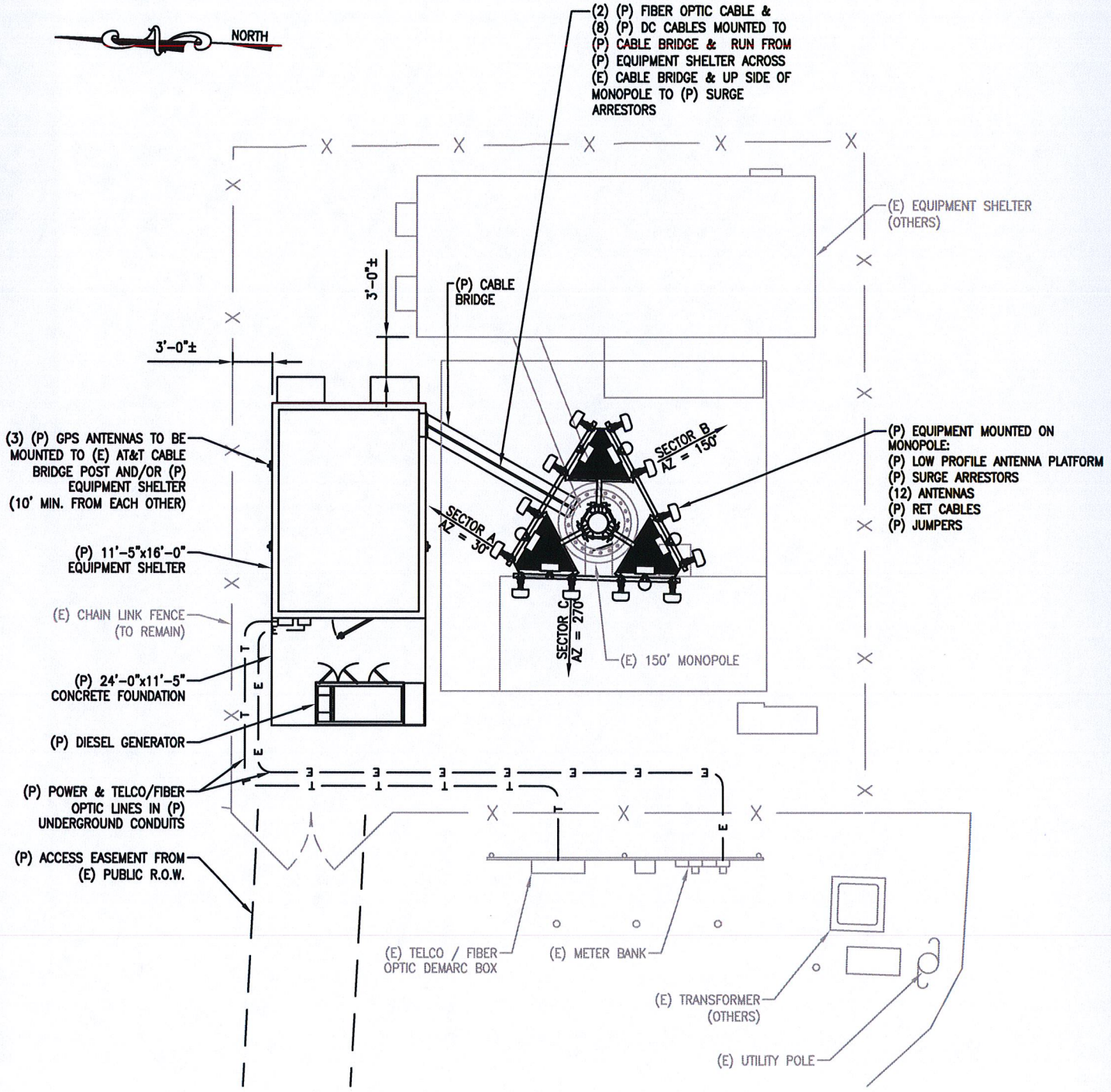
ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
EAST PROVIDENCE, RI 02914
PH: (401) 354-2403
FAX: (401) 633-6354

at&t
550 COCHITUATE ROAD, SUITE 13 & 14,
FRAMINGHAM, MA 01701-4681

smartlink
1997 ANNAPOLIS EXCHANGE PKWY, SUITE 200
ANNAPOLIS, MD 21401

TITLE:	LEASE EXHIBIT
SITE NO:	S4047A
SITE NAME:	TORRINGTON WRIGHT ROAD
ADDRESS:	136 WRIGHT ROAD TORRINGTON, CT 06790

DATE:	12/26/13
DRAWN BY:	MER
REVISION:	3
SCALE:	NOTED
SHEET:	1 OF 3



1/2 COMPOUND PLAN

SCALE: 3/32"=1'-0"

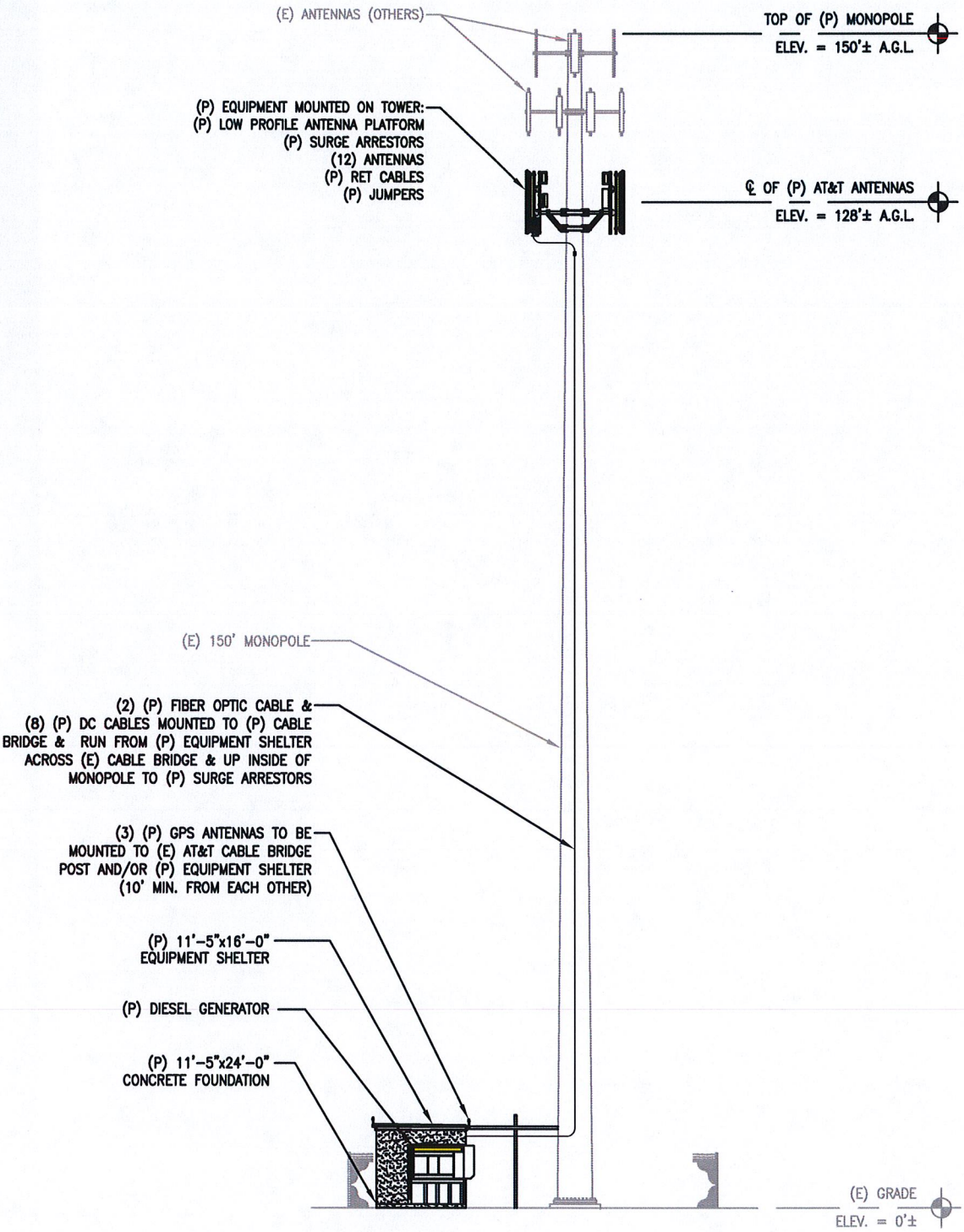
ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
EAST PROVIDENCE, RI 02914
PH: (401) 354-2403
FAX: (401) 633-6354

at&t
550 COCHITUATE ROAD, SUITE 13 & 14,
FRAMINGHAM, MA 01701-4681

smartlink
1997 ANNAPOLIS EXCHANGE PKWY, SUITE 200
ANNAPOLIS, MD 21401

TITLE: LEASE EXHIBIT
SITE NO: S4047A
SITE NAME: TORRINGTON WRIGHT ROAD
ADDRESS: 136 WRIGHT ROAD
TORRINGTON, CT 06790

DATE: 12/26/13
DRAWN BY: MER
REVISION: 3
SCALE: NOTED
SHEET: 2 OF 3



1/3 ELEVATION

SCALE: 1"=20'-0"

EG ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
EAST PROVIDENCE, RI 02914
PH: (401) 354-2403
FAX: (401) 633-6354

at&t
550 COCHITUATE ROAD, SUITE 13 & 14,
FRAMINGHAM, MA 01701-4681

smartlink
1997 ANNAPOLIS EXCHANGE PKWY, SUITE 200
ANNAPOLIS, MD 21401

TITLE: LEASE EXHIBIT
SITE NO: S4047A
SITE NAME: TORRINGTON WRIGHT ROAD
ADDRESS: 136 WRIGHT ROAD
TORRINGTON, CT 06790

DATE: 12/26/13
DRAWN BY: MER
REVISION: 3
SCALE: NOTED
SHEET: 3 OF 3

February 25, 2014

Mr. Steve Tuttle
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6607

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:	**Structural Modification Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	S4047A
	Carrier Site Name:	Wright Road
Crown Castle Designation:	**Crown Castle BU Number:**	876373
	Crown Castle Site Name:	Long Eddy / Wright Property
	Crown Castle JDE Job Number:	247671
	Crown Castle Work Order Number:	713384
	Crown Castle Application Number:	199882 Rev. 5
Engineering Firm Designation:	**B+T Group Project Number:**	89028.003.01
Site Data:	**136 Wright Rd., TORRINGTON, CT, Litchfield County**	
	Latitude *41° 49' 38.34"*, Longitude *-73° 10' 13.97"*	
	148 Foot - Monopole	

Dear Mr. Tuttle,

B+T Group is pleased to submit this **"Structural Modification Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and in accordance with application 199882, revision 5.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC4.8: TSA specified load case with proposed modification. **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and IBC 2006 based upon a wind speed of 80 mph fastest mile.

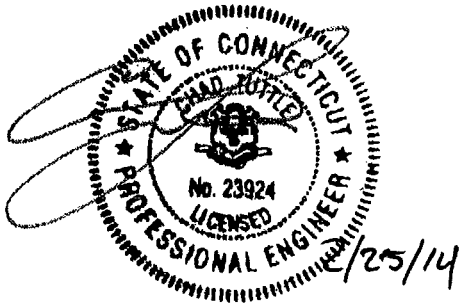
All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
B+T Engineering, Inc.

Ali Abbaszadeh, E.I.T.
Project Engineer

Chad E. Tuttle, P.E.
President



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1) INTRODUCTION

This tower is a 148 ft. monopole designed by Summit in June of 2000. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 28.1 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
128.0	128.0	6	Ericsson	RRUS 12-B2	2 3 8	3/8 5/16 3/4	--
		12	Cci Antennas	HPA-65R-BUU-H8			
		3	Ericsson	KRF 102 361/1			
		9	Ericsson	RRU-11			
		6	Ericsson	RRUS A2			
		3	Ericsson	RRUS E2 B29			
		3	Ericsson	RRUS-32 B30			
		4	Raycap	DC6-48-60-18-8F			
		1	--	Platform Mount [MTC3607]			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
149.0	149.0	3	Alcatel Lucent	TME-1900MHz RRH (65MHz)	--	--	1
		3	Alcatel Lucent	TME-800MHZ RRH			
		1	--	Collar Mount [SO 102-3]			
148.0	149.0	3	Alcatel Lucent	800 EXTERNAL NOTCH FILTER	3	1 1/4	1
		9	Rfs Celwave	ACU-A20-N			
		3	Rfs Celwave	APXVSPP18-C-A20			
	148.0	1	--	Platform Mount [LP 601-1]			
145.0	145.0	3	Alcatel Lucent	1900MHz RRH (65MHz)	--	--	2
		3	Alcatel Lucent	800MHZ RRH			
		1	--	Collar Mount [SO 102-3]			
138.0	138.0	1	Antel	BXA-171063-8BF-2	6	1-5/8	2
		2	Antel	BXA-171085-8BF-EDIN-2			
		3	Antel	BXA-70063-6CF-2			
		2	Antel	LPA-80063/6CF	12	1 5/8	1
		4	Antel	LPA-80080/6CF			
		1	--	Platform Mount [LP 601-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
79.0	84.0	1	Rfs Celwave	PD1109E	1	1/2	1
	79.0	1	--	Side Arm Mount [SO 701-1]			
45.0	45.0	1	Gps	GPS_A	1	1/2	1
		1	--	Side Arm Mount [SO 701-1]			
16.0	16.0	1	Gps	GPS_A	1	1/2	1
		1	--	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148	148	12	Dapa	48000 PCS Panel	--	--
		1	Generic	14' LP Platform		
140	140	12	Dapa	48000 PCS Panel	--	--
		1	Generic	14' LP Platform		
130	130	12	Dapa	48000 PCS Panel	--	--
		1	Generic	14' LP Platform		
120	120	12	Dapa	48000 PCS Panel	--	--
		1	Generic	14' LP Platform		
76	76	1	Generic	GPS Antenna	--	--
		1	Generic	GPS Stand-on Mount		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Co-locate, Revision# 5	199882	CCI Sites
Tower Manufacturer Drawing	Summit, Date: 06/23/2000	1631601	CCI Sites
Foundation Drawing	Summit, Job No. 10185	1634518	CCI Sites
Geotech Report	Clerence Welti Assoc., Inc., Date: 05/12/2000	1531964	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 02/04/2014	CCI Sites

3.1) Analysis Method

tnxTower (version 6.1.4.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
5) Mount areas and weights are assumed based on photographs provided.

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary) – LC4.8

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	148 - 116.5	Pole	TP29.48x24x0.219	1	-9.092	-	58.3	Pass[1]
L2	116.5 - 100.5	Pole	TP31.827x28.39x0.25	2	-11.666	-	95.7	Pass[1]
L3	100.5 - 80.25	Pole	TP35.35x31.827x0.434	3	-14.578	-	92.8	Pass[1]
L4	80.25 - 70.5	Pole	TP36.547x34.067x0.487	4	-18.399	-	97.6	Pass[1]
L5	70.5 - 39.75	Pole	TP41.9x36.547x0.591	5	-25.334	-	87.5	Pass[1]
L6	39.75 - 31.75	Pole	TP42.666x40.361x0.643	6	-30.814	-	87.2	Pass[1]
L7	31.75 - 18.5	Pole	TP44.971x42.666x0.627	7	-35.118	-	92.3	Pass[1]
L8	18.5 - 14.25	Pole	TP45.711x44.971x0.728	8	-36.825	-	87.9	Pass[1]
L9	14.25 - 0	Pole	TP48.19x45.711x0.619	9	-41.923	-	98.6	Pass[1]
					Summary			
					Pole (L9)		98.6	Pass[1]
					RATING =		**98.6**	**Pass[1]**

Table 6 - Tower Component Stresses vs. Capacity – LC4.8

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	83.4	Pass
1	Base Plate	Base	84.5	Pass
1	Base Foundation	Base	99.9	Pass

Structure Rating (max from all components) =	99.9%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

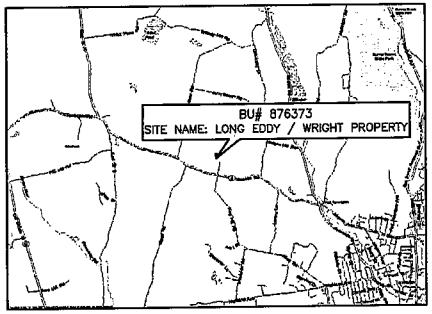
4.1) Recommendations

1) All modifications proposed in this report shall be installed in accordance with the attached drawings (Appendix D) for the determined available structural capacity to be effective.

TOWER MODIFICATION DRAWINGS

SITE NAME: LONG EDDY / WRIGHT PROPERTY
BU NUMBER: 876373

SITE ADDRESS:
136 WRIGHT RD.
TORRINGTON, CT 06790
LITCHFIELD COUNTY, USA



MAP

DIRECTIONS

44 WEST INTO TORRINGTON TO 4 WEST. TURN RIGHT ON WRIGHT ROAD. FOLLOW ALMOST TO END, MAKE LEFT AFTER RED BARN ON LEFT (YOU'LL SEE GRAVEL DRIVEWAY TURNS INTO PAVEMENT AND SECURITY GATE)

PROJECT CONTACTS:

1. CROWN TOWER STRUCTURAL ANALYST
STEVE TUTTLE
(585) 899-3445
STEVE.TUTTLE@CROWNCASTLE.COM
8 PARKMEADOW DR.
PITTSFORD, NY 14534

2. B+T GROUP PROJECT ENGINEER
ALI ABBASZADEH
(918) 587-4630
AABBASZADEH@BTGRP.COM
1717 S BOULDER AVENUE, SUITE 300
TULSA, OK 74119

3. B+T GROUP ENGINEER (EOR)
CHAD E TUTTLE, P.E.
(918) 587-4630
CTUTTLE@BTGRP.COM
1717 S BOULDER AVENUE, SUITE 300
TULSA, OK 74119

TOWER INFORMATION

TOWER MANUFACTURER / DWG #:	SUMMIT MANUFACTURING, LLC / DEI
TOWER HEIGHT / TYPE:	148' MONOPOLE
TOWER LOCATION: DATUM: (NAD 1983)	LAT. 41° 49' 38.34" LONG. -73° 10' 13.97" ELEV. 1089 FT AMSL
STRUCTURAL DESIGN DRAWING REPORT:	B+T GROUP / WO. # 713384
STRUCTURAL ANALYSIS REPORT:	B+T GROUP / WO. # 708099
STRUCTURAL ANALYSIS DATE:	02/11/14
APPLICATION ID / REVISION #:	199882 / REV. 5
CCISITES DOCUMENT ID:	4452500

CODE COMPLIANCE

THIS REINFORCEMENT DESIGN IS BASED ON THE REQUIREMENTS OF TIA/EIA-222-F STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES USING A FASTEST MILE WIND SPEED OF 80 MPH WITH NO ICE, 28.1 MPH WITH 1.0 INCH ICE THICKNESS AND 50 MPH UNDER SERVICE LOADS.

DRAWINGS INCLUDED

SHEET NUMBER	DESCRIPTION
S1	TITLE SHEET
S2	MODIFICATION INSPECTION NOTES AND CHECKLIST
S3	GENERAL NOTES, AJAX BOLT NOTES AND DETAIL
S4	TOWER ELEV., SCHEDULES & TX LINE DIST. DIAG.
S5	TOWER SECTION 0.5'–10.5' AND ANCHOR ROD DETAILS
S6	TOWER SECTIONS 10.5'–20.5' AND 20.5'–35.5'
S7	TOWER SECTIONS 35.5'–70.5' AND 70.5'–105.5'
S8	IN–LINE SPLICE DETAIL
D1	TRANSITION STIFFENER DETAILS

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

"CROWN CASTLE US PATENT NOS. 8,046,972; 8156712; 7849659; 8424269; AND PATENT PENDING."

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	88028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHAD E. TUTTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER
2/25/14

LONG EDDY / WRIGHT PROPERTY
876373
136 WRIGHT RD.
TORRINGTON, CT
EXISTING 148' MONOPOLE

SHEET TITLE
TITLE SHEET

SHEET NUMBER:	REVISION:
S1	0

MI CHECKLIST

REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
		PRE-CONSTRUCTION
X	MI CHECKLIST DRAWING	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT.
N/A	EOR APPROVED SHOP DRAWINGS	FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL PROVIDE APPROVED SHOP DRAWINGS TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	ASSEMBLY DRAWINGS	ONCE THE PRE-MODIFICATION MAPPING IS COMPLETE, PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS. THESE ARE TO INCLUDE, BUT ARE NOT LIMITED TO, A VISUAL LAYOUT OF NEW REINFORCEMENT, EXISTING REINFORCEMENT CONFIGURATION, PORTHOLES, MOUNTS, STEP PEGS, SAFETY CLIMBS AND ANY OTHER MISCELLANEOUS ITEMS WHICH MAY AFFECT SUCCESSFUL INSTALLATION OF MODIFICATIONS ON THE TOWER. THESE DRAWINGS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. APPROVED ASSEMBLY DRAWINGS SHALL BE SUBMITTED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	A VISUAL OBSERVATION BY A CWI OF A PORTION OF WELDING ON THE PROPOSED STRUCTURAL MEMBERS IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORT (MTR)	MILL CERTIFICATION SHALL BE PROVIDED FOR ALL STEEL AS SPECIFIED IN THE MODIFICATION DRAWINGS AND THIS DOCUMENTATION SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION	CRITICAL SHOP WELDS THAT REQUIRE TESTING (PER ENG-STD-10069) ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED WELD INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	NDE REPORT OF MONOPOLE BASE PLATE	A NDE (PER ENG-SOW-10033) OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
		CONSTRUCTION (PERFORMED BY CONTRACTOR)
X	CONSTRUCTION INSPECTIONS	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS.
N/A	FOUNDATION INSPECTIONS	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	POST INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH CROWN REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS INSTALLED IN ACCORDANCE WITH CROWN ENG-PRC-10012 FOR INCLUSION IN THE MI REPORT.
X	CONTRACTOR'S CERTIFIED WELD INSPECTION	A CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST AS NECESSARY ALL FIELD WELDS. CWI SHALL FOLLOW ALL THE PROCEDURES SPECIFIED IN CROWN STANDARD DOCUMENTS ENG-SOW-10066, ENG-STD-10069 AND SRV-STD-10159. A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT. FULL PENETRATION WELDS IN THE VICINITY OF BASE OF THE TOWER ARE REQUIRED TO BE 100% NDE INSPECTED BY UT IN ACCORDANCE WITH AWS D1.1. PARTIAL PENETRATION AND FILLET WELDS IN THE VICINITY OF BASE OF THE TOWER ARE REQUIRED TO BE 50% NDE INSPECTED BY MP IN ACCORDANCE WITH AWS D1.1.
N/A	EARTHWORK: LIFT AND DENSITY	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED IN ACCORDANCE WITH ENG-BUL-10149.
N/A	GUY WIRE TENSION REPORT	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT TO THE MI INSPECTOR INDICATING THE TEMPERATURE AND TENSION IN EVERY GUY CABLE AS PART OF PLUMB AND TENSION PROCEDURE FOR INCLUSION IN THE MI REPORT.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACT DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD.
		POST-CONSTRUCTION
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTORS REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
X	POST INSTALLED ANCHOR ROD PULL-OUT TESTING	POST-INSTALLED ANCHOR RODS SHALL BE TESTED IN ACCORDANCE WITH ENG-PRC-10119 AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI WHICH DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
ADDITIONAL TESTING AND INSPECTIONS:		
NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT AND N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT		

MODIFICATION INSPECTION NOTES:

GENERAL
THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

ALL MI'S SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (AEV) OR ENGINEERING SERVICE VENDOR (AESV) THAT IS APPROVED TO PERFORM ELEVATED WORK FOR CROWN. SEE ENG-BUL-10173 LIST OF APPROVED MI VENDORS.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR CROWN POINT OF CONTACT (POC).

REFER TO ENG-SOW-10007 : MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

MI INSPECTOR
THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO CROWN.

GENERAL CONTRACTOR
THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST AND ENG-SOW-10007.

RECOMMENDATIONS
THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI
IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, CROWN SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF CROWN CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MI'S
IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH CROWN TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH CROWN'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION

MI VERIFICATION INSPECTIONS
CROWN RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTION(S) ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ENG-SOW-10007.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT AEV/AESV FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS
BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO ENG-SOW-10007.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

B+T ENGINEERING, INC.

STATE OF CONNECTICUT ★ CHAD TUTTLE ★ No. 23924 LICENSED PROFESSIONAL ENGINEER 2/25/14

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
MODIFICATION INSPECTION NOTES AND CHECKLIST

SHEET NUMBER: S2
REVISION: 0

S:\Projects\Crown Castle\89028_876373_Long Eddy Wright Property\TOW MOD\89028.003.01_Long Eddy Wright Property-876373 TOW MOD.dwg - Sheet:S2 - User: Rcollins - February 25, 2014 - 8:21 PM

NOTES:

1. ALL STRUCTURAL BOLTS SHALL BE INSTALLED AND TIGHTENED TO THE PRE-TENSIONED CONDITION ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.

2. ALL STRUCTURAL BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.

3. ALL AJAX M20 BOLTS WITH SHEAR SLEEVES SHALL BE PRE-TENSIONED AND TIGHTENED UNTIL THE DIRECT TENSION INDICATOR (DTI) WASHERS SHOW THAT THE PROPER BOLT TENSION HAS BEEN REACHED. SEE NOTES AND DETAIL BELOW FOR THE USE OF DIRECT TENSION INDICATOR (DTI) WASHERS WITH THE AJAX M20 BOLTS.

4. ALL AJAX BOLTS SHALL BE INSTALLED USING DIRECT TENSION INDICATORS (DTI'S) AND HARDENED WASHERS. DTI'S SHALL BE THE SQUIRTER® STYLE, MADE TO ASTM F959 LATEST REVISION; AND HARDENED WASHERS SHALL CONFORM TO ASTM F436 AND HAVE A HARDNESS OF HRC 38 OR HIGHER.

5. AS AN ALTERNATIVE TO USING DTI WASHERS, AJAX BOLTS MAY BE PRETENSIONED PER AISC TURN-OF-NUT METHOD.

NOTES FOR AJAX M20 'ONE-SIDE' BOLTS WITH DIRECT TENSION INDICATORS (DTI'S):

DTI'S REQUIRED: DTI'S SHALL BE "SELF-INDICATING" SQUIRTER® STYLE DTI'S MADE WITH SILICONE EMBEDDED IN THEM, INSPECTED BY MEANS OF THE VISUAL EJECTION OF SILICONE AS THE DTI PROTRUSIONS COMPRESS. SQUIRTER® DTI'S SHALL BE CALIBRATED PER MANUFACTURES'S INSTRUCTIONS PRIOR TO USE.

THE DIRECT TENSION INDICATOR (DTI) WASHERS SHALL BE THE "SQUIRTER® STYLE" AS MANUFACTURED BY:

APPLIED BOLTING TECHNOLOGY PRODUCTS, INC.
1413 ROCKINGHAM ROAD
BELLOWS FALLS, VERMONT 05101, USA
PHONE 1-800-552-1999
WEBSITE: WWW.APPLIEDBOLTING.COM

DISTRIBUTORS OF SQUIRTER® DTI'S:
HTTP://WWW.APPLIEDBOLTING.COM/APPLIED-BOLTING-DISTRUBUTORS.HTML

DTI: USE DIRECT TENSION INDICATOR (DTI) WASHERS COMPATIBLE WITH 3/4" NOMINAL A325 BOLTS FOR THE AJAX M20 BOLTS. DTI'S SHALL NOT BE HOT-DIP GALVANIZED. DTI'S SHALL BE MECHANICALLY GALVANIZED (MG) BY THE COLD MECHANICAL PROCESS ONLY AS PROVIDED BY THE DTI MANUFACTURER.

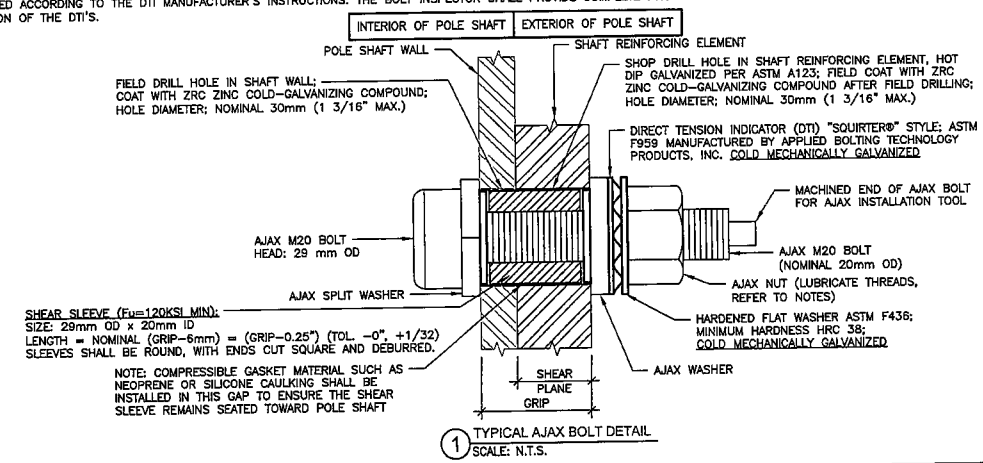
HARDENED WASHERS REQUIRED: USE A HARDENED WASHER FOR A 3/4" NOMINAL BOLT BETWEEN THE TOP OF THE DIRECT TENSION INDICATOR (DTI) WASHER AND THE NUT OF THE AJAX M20 BOLT. HARDENED WASHERS SHALL CONFORM TO ASTM F436 AND HAVE A MINIMUM HARDNESS OF HRC 38 OR HIGHER. THE HARDENED WASHERS SHALL BE MECHANICALLY GALVANIZED BY THE COLD MECHANICAL PROCESS. ALTERNATIVELY, CORRECTLY MADE HOT DIP GALVANIZED HARDENED FLAT WASHERS HAVING A MINIMUM HARDNESS OF HRC 38 CAN BE USED; CONTRACTOR SHALL PROVIDE DOCUMENTATION OF WASHER SPECIFICATION AND HARDNESS.

NUT LUBRICATION REQUIRED: PROPERLY LUBRICATE THE THREADS OF THE NUT OF THE AJAX BOLT SO THAT IT CAN BE PROPERLY TIGHTENED WITHOUT GALLING AND/OR LOCKING UP ON THE BOLT THREADS. CONTRACTOR SHALL FOLLOW DTI MANUFACTURER INSTRUCTIONS FOR PROPER LUBRICATION AND TIGHTENING.

NOTE: COMPLETELY COMPRESSED DTI'S SHOWING NO VISIBLE REMAINING GAP ARE ACCEPTABLE. DTI WASHERS SHALL BE PLACED DIRECTLY AGAINST THE OUTER AJAX WASHER WITH THE DTI BUMPS FACING AWAY FROM THE AJAX WASHER. PLACE A HARDENED WASHER BETWEEN THE DTI AND AJAX NUT. THE DTI BUMPS SHALL BEAR AGAINST THE UNDERSIDE OF A HARDENED FLAT WASHER, NEVER DIRECTLY AGAINST THE NUT.

CONTRACTOR SHALL FOLLOW DTI MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION, LUBRICATION, TIGHTENING AND INSPECTION.

INSPECTION REQUIRED: ALL AJAX BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 32, 2009, BY A QUALIFIED BOLT INSPECTOR. DURING INSTALLATION, THE BOLT INSPECTOR SHALL VERIFY AND DOCUMENT THE SHOP-DRILLED AND FIELD-DRILLED HOLE SIZES; THE INSTALLATION OF THE AJAX BOLT ASSEMBLY, INCLUDING THE SHEAR SLEEVE PLACEMENT AND NUT LUBRICATION AND THE CONTRACTOR'S TENSIONING PROCEDURE. IN ADDITION, ALL AJAX BOLTS AND DTI'S SHALL BE VISUALLY INSPECTED ACCORDING TO THE DTI MANUFACTURER'S INSTRUCTIONS. THE BOLT INSPECTOR SHALL PROVIDE COMPLETE PHOTO DOCUMENTATION OF ALL BOLTS AFTER TIGHTENING CLEARLY SHOWING THE CONDITION OF THE DTI'S.



1 TYPICAL AJAX BOLT DETAIL
SCALE: N.T.S.

GENERAL NOTES

1.1 ALL WORK SHALL COMPLY WITH THE TIA/EIA-222-F STANDARD AS WELL AS ANY OTHER GOVERNING BUILDING CODES.
1.2 FIELD WORK WILL BE DONE AROUND EXISTING COAXIAL CABLE AND EQUIPMENT. ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE.
1.3 A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO ANY FIELD CUTS OR FIELD DRILLED HOLES.
1.4 THE USE OF A GAS TORCH OR WELDER WILL NOT BE PERMITTED ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.
1.5 IN LIEU OF TEMPORARY BRACING CONTRACTOR MAY HAVE A STABILITY ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE TOWER IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 mph (3-SEC) PER TIA-1019.

FABRICATION

2.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2.2 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:

	YIELD	ASTM SPECS
A. STEEL SHAPES AND PLATES, U.N.O.	65ksi	A572
B. STEEL PIPE	35ksi	A53-B

2.3 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A153.
2.4 WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E80 SERIES.
2.5 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO B+T GROUP 2 WEEKS PRIOR TO FABRICATION.

KEY NOTES

(#) TOWER MODIFICATION I.D.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	88028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

B+T ENGINEERING, INC.

STATE OF CONNECTICUT — SHAD THOMAS — No. 23924 — LICENSED PROFESSIONAL ENGINEER — 2/25/14

LONG EDDY / WRIGHT PROPERTY
876373

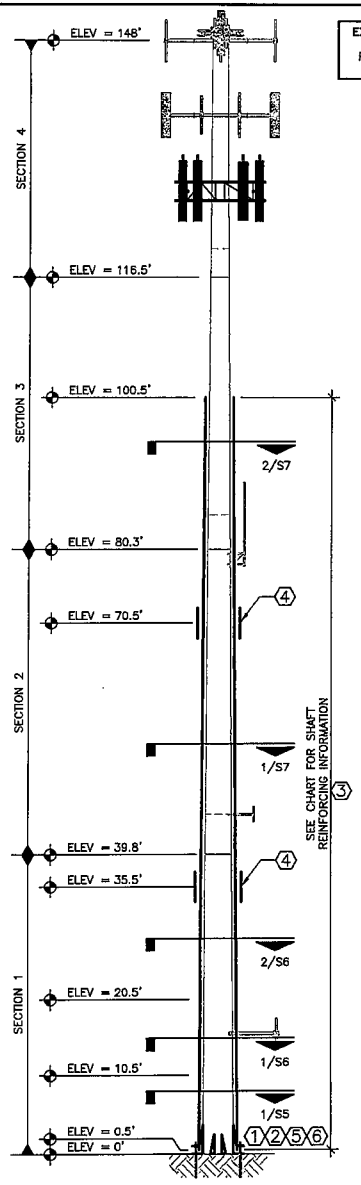
138 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
GENERAL NOTES, AJAX BOLT NOTES AND DETAILS

SHEET NUMBER: S3

REVISION: 0



1 TOWER ELEVATION
SCALE: N.T.S.

EXISTING ANTENNA MOUNTS SHALL BE REMOVED AND MODIFIED AS REQUIRED FOR INSTALLATION OF SHAFT REINFORCING.

CCI: FLAT PLATE-BILL OF MATERIALS (65KSI)

BOTTOM ELEVATION	TOP ELEVATION	FLAT PLATE DESIGNATION	FLAT PLATE LENGTH	FLAT PLATE QUANTITY	AJAX BOLTS PER PLATE	TOTAL AJAX BOLT QTY	TERMINATION BOLTS (BOTTOM)	TERMINATION BOLTS (TOP)	MAXIMUM INTERMEDIATE BOLT SPACING	TOTAL STEEL WEIGHT
0'-6"	20'-6"	CCI-SFP-06512520	20'-0"	2	31	62	11	11	19"	1104 LBS.
0'-6"	35'-6"	CCI-SFP-08512535	35'-0"	2	49	98	15	15	17"	2526 LBS.
10'-6"	35'-6"	CCI-SFP-08512525	25'-0"	1	42	42	15	15	17"	902 LBS.
35'-6"	70'-6"	CCI-SFP-08512535	35'-0"	3	49	147	15	15	17"	3789 LBS.
70'-6"	100'-6"	CCI-SFP-06010030	30'-0"	3	35	105	8	8	16"	1834 LBS.
						454				10155 LBS.

NOTES:
1. AJAX BOLTS ARE TO BE 20mm DIAMETER WITH CORRESPONDING 29mm DIAMETER SLEEVE WITH MATCHING STEEL GRADE.
2. ALL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATOR IN ACCORDANCE WITH ASTM A123. ALTERNATIVELY, ALL NEW STIFFENER PLATE STEEL REINFORCING MAY BE COLD GALVANIZED AS FOLLOWS: APPLY A MINIMUM OF TWO COATS OF ZRC-BRAND ZINC-RICH COLD GALVANIZING COMPOUND. FILM THICKNESS. 1-800-831-3275 FOR PRODUCT INFORMATION.
3. ALL SHIMS SHALL BE ASTM A36.
4. HOLES FOR AJAX BOLTS AND SHEAR SLEEVES ARE 30mm UNLESS NOTED OTHERWISE.
5. SHOP WELDS ARE ASSUMED E80XX OR GREATER, PER STANDARD SPLICE DETAIL.
6. IF SCOPE OF MODIFICATION REQUIRES REMOVAL OF TOWER ID TAG, IT MUST BE REPLACED.
7. THE CLIMBING FACILITIES, SAFETY CLIMB AND ALL PARTS THEREOF SHALL NOT BE IMPEDED, MODIFIED OR ALTERED WITHOUT THE EXPRESS APPROVAL OF THE ENGINEER OF RECORD OR TOWER OWNER.
8. WHERE POSSIBLE, CLIMBING HARDWARE SHOULD REMAIN IN-LINE ALONG THE POLE. IF AN OBSTRUCTION CAUSES A LATERAL OFFSET OF 2'-0" OR MORE, CLIMBING ANCHORS SHALL BE PROVIDED AT EACH CHANGE IN ALIGNMENT. IF NEW REINFORCEMENT REQUIRES STEP BOLT BRACKETS, INSTALL PRIOR TO GALVANIZATION OF STEEL.
9. SHIMS FOR MONOPOLE REINFORCEMENT MEMBER SHALL BE REQUIRED WHERE GAPS BETWEEN THE POLE SHAFT AND REINFORCING MEMBER EXIST AT FASTENER LOCATIONS. FOR INTERMEDIATE CONNECTIONS, THE MINIMUM SHIM LENGTH AND WIDTH SHALL BE THE WIDTH OF THE REINFORCING MEMBER. FOR TERMINATION CONNECTIONS, A CONTINUOUS SHIM PLATE (PREFERRED) OR EQUIVALENT INDIVIDUAL SHIM PLATES THE WIDTH OF THE REINFORCING MEMBER MAY BE USED. SHIM THICKNESSES SHALL BE NO LESS THAN 1/16". STACKING OF SHIMS IS PERMITTED.

NEW CCI FLAT PLATE (65KSI) REINFORCING ELEMENTS

START ELEVATION	END ELEVATION	QTY	FLAT #	FLAT PLATE *
0'-6"	20'-6"	2	4 & 7	CCI-SFP-06512520
0'-6"	35'-6"	2	12 & 18	CCI-SFP-08512535
10'-6"	35'-6"	1	6	CCI-SFP-08512525
35'-6"	70'-6"	3	6, 12, & 18	CCI-SFP-08512535
70'-6"	100'-6"	3	6, 12, & 18	CCI-SFP-06010030

* SEE CMRP 65 KSI PARTS CATALOG EDITION 2 REV. 1 FOR PART DETAILS

ALL BOLTS SHALL BE AJAX M20 BOLTS WITH HIGH STRENGTH SHEAR SLEEVES (ASTM A519 WITH MIN. Fu=120 KSI). CONTACT SUPPLIER FOR MATERIAL (PLATE AND BOLTS) AND INSTALLATION PROCEDURES.

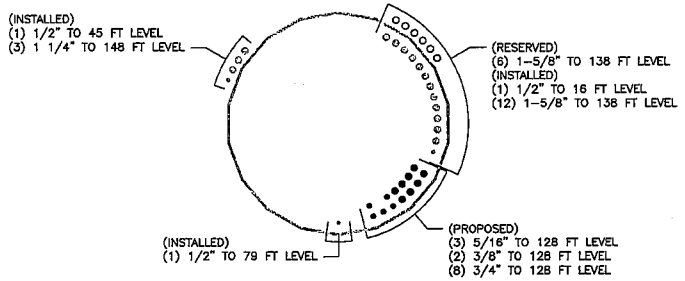
EXISTING MEMBER SCHEDULE

SECTION	NUMBER OF SIDES	THICKNESS	BOTTOM DIAMETER	TOP DIAMETER	LAP SPLICE
1	18	0.3750"	48.1900"	40.3595"	63"
2	18	0.3125"	41.8980"	34.0680"	54"
3	18	0.2500"	35.3510"	28.3910"	45"
4	18	0.2188"	29.4810"	24.0000"	----

TOWER MODIFICATIONS:

1. CONTRACTOR SHALL BUDGET A SITE VISIT TO CHECK CRITICAL DIMENSIONS AND VERIFY UNKNOWN CONDITIONS PRIOR TO STEEL FABRICATION.
2. THE NEW AND EXISTING TRANSMISSION LINES MUST BE DISTRIBUTED AS SHOWN IN THE TX LINE DIST. DIAGRAM RE: DETAIL 2/S4.
3. INSTALL NEW REINFORCING ELEMENTS RE: SHEET S5, S6, AND S7.
4. INSTALL NEW IN-LINE SPLICE RE: SHEET S8.
5. INSTALL NEW TRANSITION STIFFENERS RE: SHEET S5.
6. INSTALL NEW ANCHOR RODS, ANCHOR ROD BRACKETS, AND FOOT PADS RE: SHEET S5.

* CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR ALL REMOVE AND REPLACE PROCEDURES.
** MODIFICATIONS SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED APPURTENANCES.



2 TX LINE DISTRIBUTION DIAGRAM
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

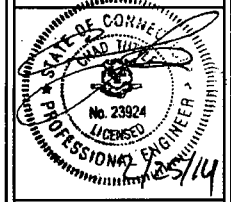
CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

B+T ENGINEERING, INC.



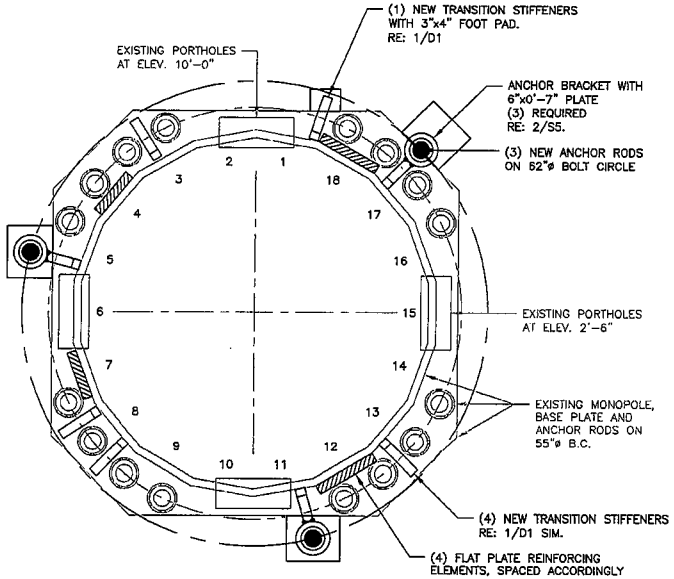
LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

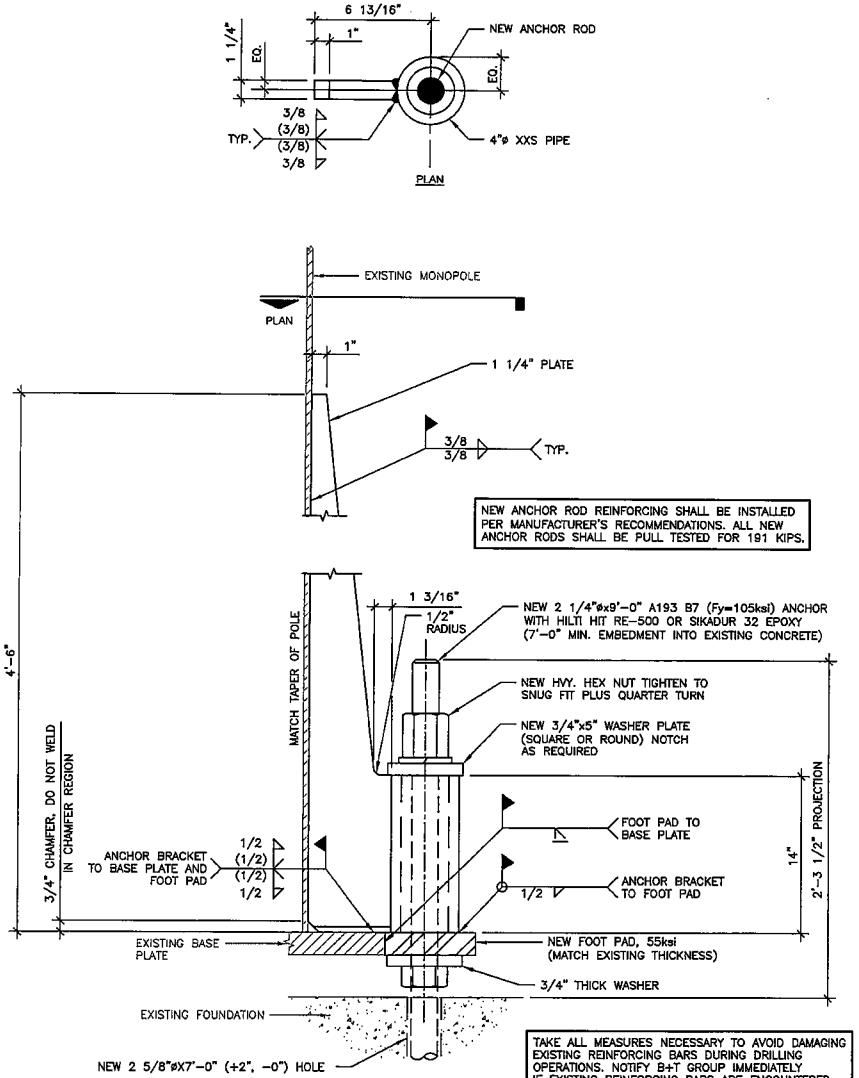
EXISTING 148' MONOPOLE

SHEET TITLE
TOWER ELEV., SCHEDULES, AND TX LINE DIST. DIAGRAM

SHEET NUMBER: S4
REVISION: 0



1 TOWER SECTION (0'-10.5')
SCALE: N.T.S.



2 ANCHOR ROD BRACKET
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
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PROJECT NO:	89028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

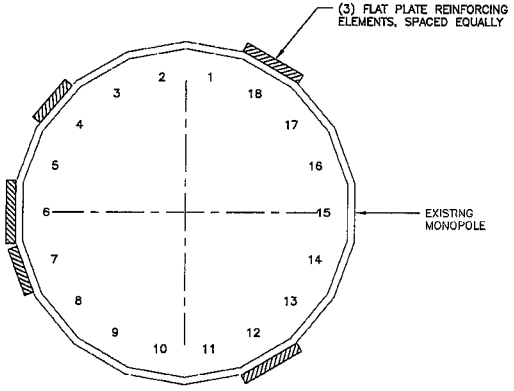
B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
2/25/14

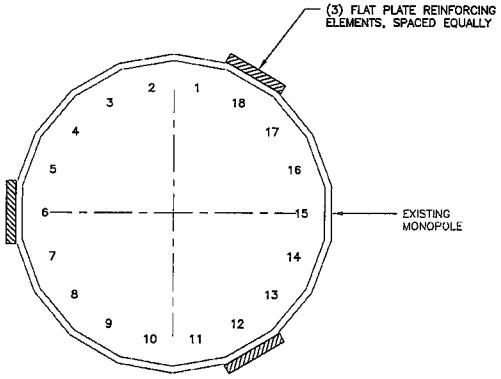
LONG EDDY / WRIGHT PROPERTY
876373
136 WRIGHT RD.
TORRINGTON, CT
EXISTING 148' MONOPOLE

SHEET TITLE
TOWER SECTION
0'-10.5' AND ANCHOR ROD
DETAILS

SHEET NUMBER: S5
REVISION: 0



1 TOWER SECTION (10.5'-20.5')
SCALE: N.T.S.



2 TOWER SECTION (20.5'-35.5')
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918).587-4630
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CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
ALI ABBASZADEH
No. 23924
LICENSED
PROFESSIONAL ENGINEER
2/25/14

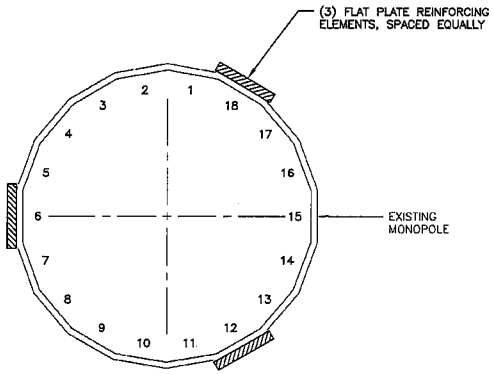
LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

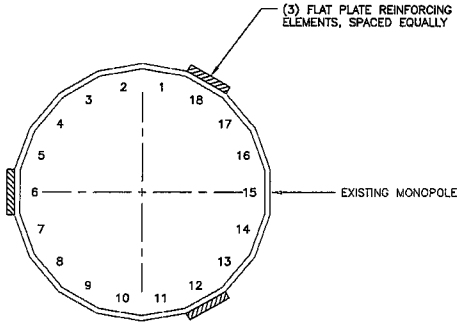
EXISTING 148' MONOPOLE

SHEET TITLE
TOWER SECTIONS
10.5'-20.5' AND 20.5'-35.5'

SHEET NUMBER:	REVISION:
S6	0



1 TOWER SECTION (35.5'-70.5')
SCALE: N.T.S.



2 TOWER SECTION (70.5'-105.5')
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
EDWARD TIETZ
No. 23924
LICENSED
PROFESSIONAL ENGINEER
2/25/14

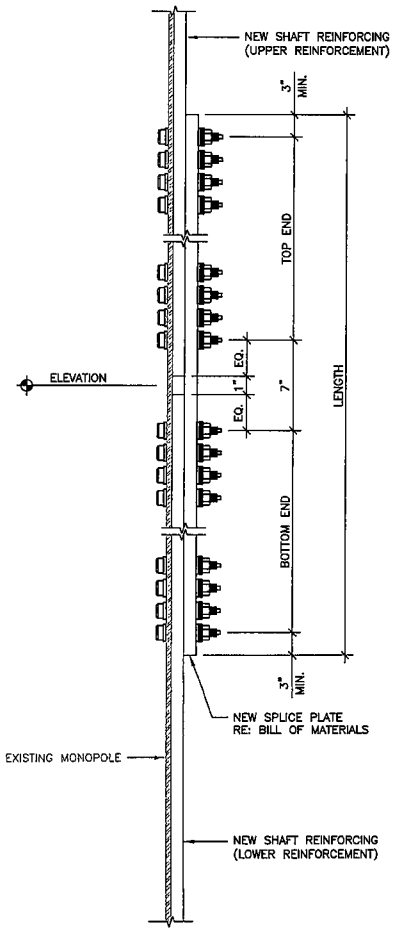
LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
TOWER SECTIONS
35.5'-70.5' AND 70.5'-105.5'

SHEET NUMBER:	REVISION:
S7	0



1 FLAT PLATE IN-LINE SPLICE DETAIL
SCALE: N.T.S.

SPLICE PLATE-BILL OF MATERIALS (65KSI)

ELEVATION	WIDTH	THICKNESS	LENGTH	QTY	QTY OF BOLTS (TOP END)	QTY OF BOLTS (BOTTOM END)	AJAX BOLTS PER SPLICE	TOTAL AJAX BOLTS	TOTAL STEEL WEIGHT	
35'-6 1/2"	8 1/2"	1 1/4"	8'-1"	3	15	15	30	90	875	LBS.
75'-7 1/2"	8 1/2"	1 1/4"	6'-4"	3	15	8	23	69	686	LBS.
							TOTAL:	159	1561	LBS.

* O.C. DISTANCE ON TERMINATION BOLTS TO BE 3 IN. U.N.O.
* USE SHIM PLATES AS REQUIRED.
**BOLT QTY INCLUDED IN S4 BILL OF MATERIALS

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

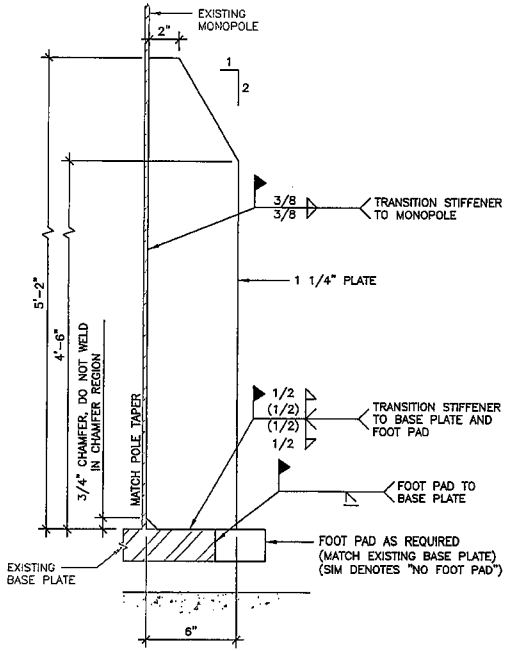
B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHAO-TUNG YU
No. 23924
LICENSED
PROFESSIONAL ENGINEER
2/25/14

LONG EDDY / WRIGHT PROPERTY
876373
138 WRIGHT RD.
TORRINGTON, CT
EXISTING 148' MONOPOLE

SHEET TITLE
IN-LINE SPLICE DETAIL

SHEET NUMBER: S8
REVISION: 0



1 TRANSITION STIFFENER DETAIL
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/25/14	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.003.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	BMT

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHAD M. TIER
No. 23924
LICENSED
PROFESSIONAL ENGINEER
2/25/14

LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
TRANSITION STIFFENER DETAILS

SHEET NUMBER: D1

REVISION: 0

CROWN CASTLE

3530 Toringdon Way
Suite 300
Charlotte, NC 28277

Tel: 704-405-6523
Fax: 724-416-6153

November 20, 2013

RE: Crown Castle Letter of Authorization (LOA)

Crown Castle, does hereby authorize **AT&T Mobility ("AT&T")** and its authorized contractors/agents to act as "Applicant" in the processing of all applications, permits, research and other related activities associated with the processing, planning, design review, permitting, entitlement and construction of additional equipment, antennas and site improvements for the Crown Castle existing wireless communications facility described as follows:

Customer Site Name:	Wright Road	**Crown Castle Site ID Number:**	876373
Site Address:	136 Wright Rd. Torrington, CT 06790	**Crown Castle Site Name:**	Long Eddy / Wright Property

This authorization is fully contingent upon **AT&T's** authorized contractors/agents' compliance with the following conditions:

1. Crown Castle must review the application prior to submittal. Crown Castle must be provided all applications, narratives, drawings and attachments at least 72 hours in advance of their submittal to the locality. Use of email and electronic attachments is encouraged. A Crown Castle Zoning Subject Matter Expert (SME) will review and provide written comment to the customer within 48 hours of receipt of a complete set of application materials. If Crown Castle indicates that changes are required, submissions shall be altered in accordance with Crown Castle comments prior to submission to the locality. Verification of corrections should also be accomplished via emails and attachments.
2. In no event may **AT&T** encourage, suggest, participate in, or permit the imposition of any restrictions or additional obligations whatsoever on the tower site or Crown Castle's current or future use or ability to license space at the tower site as part of or in exchange for obtaining any approval, permit, exception or variance.
3. A copy of the final permit and/or a written summary of the zoning/entitlement decision rendered by the locality and any/all conditions placed on that decision shall be communicated in detail to Crown Castle well within the appeal period provided by the locality (typically 10-15 days).
4. All conditions of approval pertinent to the construction of the proposed project must be included in the construction drawings for the project. The conditions of approval pertinent to the construction of the project shall be copied verbatim from the zoning permit approval language, and shall be present in the drawings prior to submission for building permits and contractor bidding. Crown Castle shall verify the inclusion of appropriate conditions of approval in the construction drawing redline process.
5. Crown Castle will provide a Notice To Proceed (NTP) to construction to the customer upon receipt of the final approved zoning permit and the approved Building Permit.

By Crown Castle:

Signature: Sarah Brown

Printed Name: **Sarah Brown**

Title: **Real Estate Specialist**

Date: **November 20, 2013**

Power Density Calculations

Applicant:	New Cingular Wireless PCS, LLC ("AT&T")
Site ID:	S4047
Site Type:	150' Monopole Tower
Address:	136 Wright Road, Torrington, CT 06790
Date:	March 17, 2014

---

1. Existing Power Density [1]

Carrier	# Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
Verizon PCS	7	274	138	0.0362	1970	1.0000	3.62%
Verizon cellular	9	379	138	0.0644	869	0.5793	11.12%
Verizon AWS	1	686	138	0.0130	2145	1.0000	1.30%
Verizon LTE	1	790	138	0.0149	698	0.4653	3.21%
Sprint CDMA/LTE	2	778	148	0.0255	1900	1.0000	2.55%
Sprint CDMA/LTE	1	438	148	0.0072	850	0.5667	1.27%
						TOTAL	**23.06%**

2. Proposed AT&T Power Density [2]

Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
AT&T UMTS	2	500	130	0.0219	800 Band	0.5867	3.74%
AT&T UMTS	1	500	130	0.0110	1900 Band	1.0000	1.10%
AT&T LTE	1	500	130	0.0110	700 Band	0.4667	2.35%
AT&T LTE	1	500	130	0.0110	1900 Band	1.0000	1.10%
AT&T LTE	1	500	130	0.0110	2300 Band	1.0000	1.10%
						TOTAL	**9.4%**

3. Cumulative Power Density Calculation Results

Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
Verizon PCS	7	274	138	0.0362	1970	1.0000	3.62%
Verizon cellular	9	379	138	0.0644	869	0.5793	11.12%
Verizon AWS	1	686	138	0.0130	2145	1.0000	1.30%
Verizon LTE	1	790	138	0.0149	698	0.4653	3.21%
Sprint CDMA/LTE	2	778	148	0.0255	1900	1.0000	2.55%
Sprint CDMA/LTE	1	438	148	0.0072	850	0.5667	1.27%
AT&T UMTS	2	500	200	0.0100	800 Band	0.5867	3.74%
AT&T UMTS	1	500	200	0.0050	1900 Band	1.0000	1.10%
AT&T LTE	1	500	200	0.0050	700 Band	0.4667	2.35%
AT&T LTE	1	500	200	0.0050	1900 Band	1.0000	1.10%
AT&T LTE	1	500	200	0.0050	2300 Band	1.0000	1.10%
						TOTAL	**32.46%**

[1] This Power Density information was taken from the Connecticut Siting Council database dated October 1, 2013.
[2] This Power Density information is based on worse case assumptions from AT&T's radio frequency engineers.

4. Conclusion:

The addition of AT&T's antennas on the existing tower will result in the cumulative maximum permissible exposure (MPE) level of 32.46%. The proposal complies with the National Council on Radiation Protection and Measurements standard for MPE adopted by the Federal Communications Commission ("FCC"). Moreover, the maximum level of radio-frequency energy emitted from AT&T's installation will be below the FCC's mandated radio frequency exposure limits.

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 7, 2014

Adam Braillard
Smartlink
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-143-131227** - AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 136 Wright Road, Torrington, Connecticut.

Dear Mr. Braillard:

At a public meeting held February 6, 2014, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including 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;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- The validity of this action shall expire one year from the date of this letter;
- 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.
- Prior to antenna installation, the tower modifications depicted in the Tower Modification Drawings prepared by B+T Group dated December 13, 2013, and stamped by Chad Tuttle, shall be implemented; and
- Within 45 days following completion of the antenna installation, AT&T shall provide documentation certified by a professional engineer that its installation complied with the requirements of the structural analysis.

The Council notes that the City of Torrington requested that space be reserved on the tower for the City's municipal needs by letter dated January 3, 2014. This existing tower was not certificated by the Council. Therefore, there is no condition that the owner of the tower, Crown Castle, provide space for the municipality. As the entity requesting to share the tower, AT&T has no authority to provide space for the municipality on a tower owned by another entity. However, the Council encourages Crown Castle to work with the town on providing space for municipal needs.

This decision is under the exclusive jurisdiction of the Council. This facility has 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. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

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

December 27, 2013

The Honorable Elinor C. Carbone
Mayor
Torrington Municipal Building
140 Main Street
Torrington, CT 06790-5245

RE: **TS-AT&T-143-131227** - AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 136 Wright Road, Torrington, Connecticut.

Dear Mayor Carbone:

The Connecticut Siting Council (Council) received a request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa, a copy of which has already been provided to you.

The Council will consider this item at a future public meeting. A copy of the agenda will be forwarded to you.

If you have any questions or comments regarding the proposal, please call me or inform the council by January 10, 2014.

Thank you for your cooperation and consideration.

Very truly yours,

Melanie Bachman
Acting Executive Director

MB/laf

c: Martin Connor, City Planner, City of Torrington

smartlink

TS-AT&T-143-131227

ORIGINAL

RECEIVED
DEC 27 2013
CONNECTICUT
SITING COUNCIL

Via Overnight Delivery

December 26, 2013

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

Re: Tower Sharing Application
Property Address: 137 Wright Road, Torrington, CT 06790 (the "Property")
Applicant: New Cingular Wireless PCS, LLC ("AT&T")

Dear Ms. Bachman:

On behalf of AT&T, enclosed in connection with the shared use of a tower located on the Property, please find an original and fifteen (15) copies of a tower sharing application package along with a check in the amount of six hundred and twenty five ($625.00) dollars.

If you could please date stamp a copy of this letter and a copy of the check (both attached) and email them back to me, that would be greatly appreciated. If you have any questions, please contact me.

Sincerely,

Adam F. Braillard

Enclosures

Cc w/enclosures:
Elinor Carbone, Mayor Town of Torrington
James N. and Carol E. Wright, Property owners

33 Boston Post Road West, Marlborough, Massachusetts 01752
p: 508.954.7702 • adam.braillard@smartlinkllc.com
www.smartlinkllc.com

APPLICATION TO THE CONNECTICUT SITING COUNCIL
FOR AN ORDER TO APPROVE THE SHARED USE OF AN EXISTING TOWER
PURSUANT TO CONNECTICUT GENERAL STATUTE §16-50aa

APPLICANT

New Cingular Wireless PCS, LLC (AT&T)
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

TOWER/PROPERTY ADDRESS

136 Wright Road
Torrington, Connecticut 06790

PREPARED BY: Adam F. Braillard
Regional Land Use Manager
Smartlink, LLC
33 Boston Post Road West
Marlborough, Massachusetts 01752
508-954-7702
adam.braillard@smartlinkllc.com

SUBMITTAL DATE: December 26, 2013

TABLE OF CONTENTS

APPLICANT

New Cingular Wireless PCS, LLC (AT&T)
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

TOWER/PROPERTY ADDRESS

136 Wright Road
Torrington, Connecticut 06790

smartlink

December 26, 2013

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

Re:	**Request for an Order to Approve the Shared Use of an Existing Tower**
Property Address:	**136 Wright Road, Torrington, CT (the "Property")**
Applicant:	**New Cingular Wireless PCS, LLC ("AT&T")**

Dear Ms. Bachman:

On behalf of AT&T, please accept this application pursuant to Connecticut General Statute §16-50aa, as amended (the "Statute"), requesting the finding from the Connecticut Siting Council (the "Council") that the shared use of the tower and facility located on the Property (the "Facility") is technically, legally, economically and environmentally feasible, will meet public safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. AT&T further requests an order from the Council approving the shared use of the Facility.

I. The Facility

The Facility is owned by Crown Atlantic Company LLC, ("Crown") and consists of a 150' monopole style tower (the "Tower") located on the Property. There are currently two (2) telecommunications carriers on the Tower with antenna centerline heights ranging from 150' to 138'. Further, the Facility consists of fenced in compound at the base of the Tower.

II. The Tower Share

AT&T proposes to install a total of twelve (12) panel antennas (4 per sector) and remote radio head ("RRHs") on the tower (see attached plans). The antennas and RRHs will be mounted on the Tower at an antenna centerline of 130'. Further, AT&T proposes to install an 11'.5" x 16' equipment shelter and a generator at the base of the Tower within the existing compound. The Tower will not be increased in height and the compound will not be extended.

33 Boston Post Road West, Marlborough, Massachusetts 01752
p: 508.954.7702 • adam.braillard@smartlinkllc.com
www.smartlinkllc.com

Moreover, no upgrades to the access road or parking area will be necessary. Please refer to Tab 3 (Engineering Drawings) of this application package for further specifications of AT&T's proposed installation.

III. Technical Feasibility

It is technically feasible for AT&T to install its equipment on the Tower. AT&T and Crown performed a structural analysis of the Tower with AT&T proposed modifications. The structural analysis, dated November 8, 2013 and attached herewith (see Tab 4) concludes that the Tower has "insufficient capacity" to hold AT&T proposed equipment without modifications. However, AT&T and Crown have drafted tower modification drawings (see Tab 5) providing details of the modification needed to make the Tower sufficient to hold AT&T equipment (the "Mod Drawings"). Upon completion of the required modifications of the Tower, pursuant to the Mod Drawings, the Tower and its foundation will have sufficient capacity to hold the existing, reserved and AT&T proposed loads. Consequently, the shared use of the Tower is technically feasible.

IV. Legal Feasibility

Pursuant to the Statute, the Council has the authority to issue an order approving the shared use of the Facility. By issuing an order approving AT&T's use of the Facility, AT&T will be able to proceed with obtaining a building permit from the Town of Torrington for the proposed installation on the Facility. Therefore, the shared use of the Facility is legally feasible.

V. Economic Feasibility

AT&T is a federally licensed telecommunications company providing service in areas of Connecticut, including the Town of Torrington. AT&T is entering into an agreement with Crown for the purpose of locating AT&T equipment at the Facility. Consequently, the shared use of the Facility is economically feasible.

VI. Environmental Feasibility

Pursuant to the Statute, AT&T's proposed sharing of the Facility will be environmentally feasible for the following reasons:

a. The proposal neither increases the height of the Tower nor extends the fenced compound at the base of the Tower. Therefore, the proposed sharing of the Facility will have an insignificant incremental visual impact on the area surrounding the Tower and will no significant change or alter the physical or environmental characteristics of the Facility.

b. The addition of AT&T equipment will not increase the noise levels by six (6) decibels or more.

c. The addition of the AT&T antennas will not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). The cumulative "worst-case" RF emissions for the operation of the existing Verizon antennas and the proposed AT&T antennas will be 35.72% of the FCC standards (see attached Tab 7, Power Density Table).

d. The proposed installation will have no impact on the local wetlands or water resources.

e. After installation, AT&T equipment will be unmanned and will only require monthly visits by maintenance personnel who will inspect the Facility to ensure it remains in good working order.

f. AT&T's proposal will have no impact on water, sanitary or sewer systems or other municipal utilities. Additionally, the proposal complies with all applicable local, state and federal safety rules and regulations.

VII. Public Safety and Benefits

As referenced in Section III above, AT&T has performed a structural analysis and has drafted Mod Drawings, and upon completion of the Tower modifications, the Tower will be structurally feasible to hold AT&T's additional equipment. Further, as referenced in Section VI.c above, AT&T has performed an analysis of the radio frequency emanating from its proposed antennas to ensure compliance with FCC standards. The analysis indicates that the maximum level of radio frequency energy emitting from the Facility after the installation of AT&T's antennas will be below the FCC's exposure limits. Moreover, AT&T proposal is expected to enhance safety by improving wireless communications in the area of the Facility

VII. Conclusion

For the aforementioned reasons, AT&T's proposed shared use of the Facility meets all of the requirements set forth in the Statute, and the proposal advances the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. Moreover, the proposal is technically, legally, economically and environmentally feasible and meets all public safety concerns. Consequently, AT&T respectfully requests that the Council issue an order approving the proposed sharing use of the Facility.

Sincerely,

Adam F. Braillard

CERTIFICATE OF SERVICE

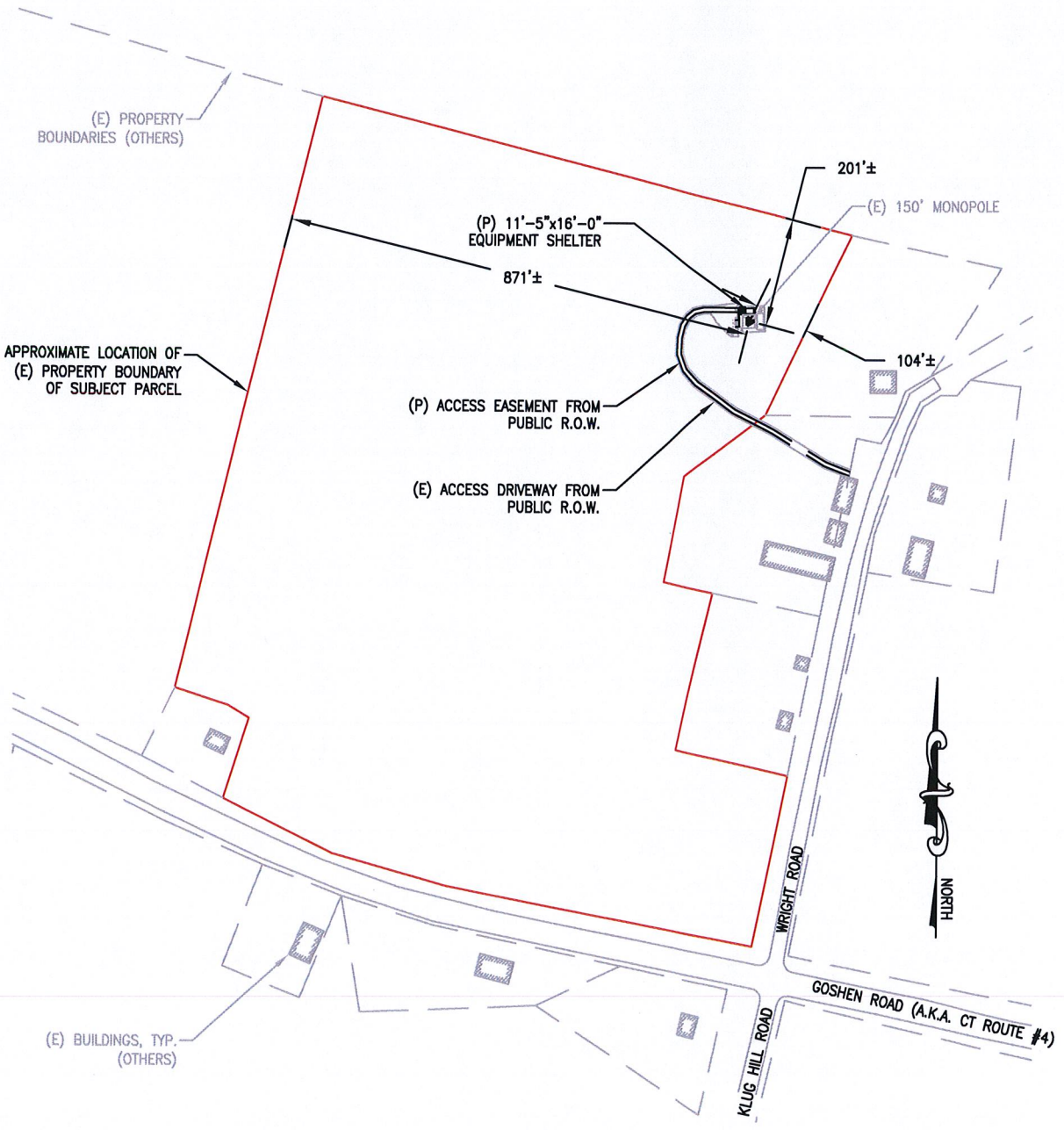
This is to certify that on the 26th day of December, 2013, the foregoing application by AT&T for an Order to Approve the Shared Use of an Existing Tower was sent, via UPS, to the following:

James N. and Carol E. Wright
104 Wright Road
Torrington, CT 06790

and

Mayor Elinor Carbone
Town of Torrington
140 Main Street
Torrington, CT 06790
860-489-2228

By:_____
Adam F. Braillard



1/1 SITE PLAN
SCALE: 1=300'-0"

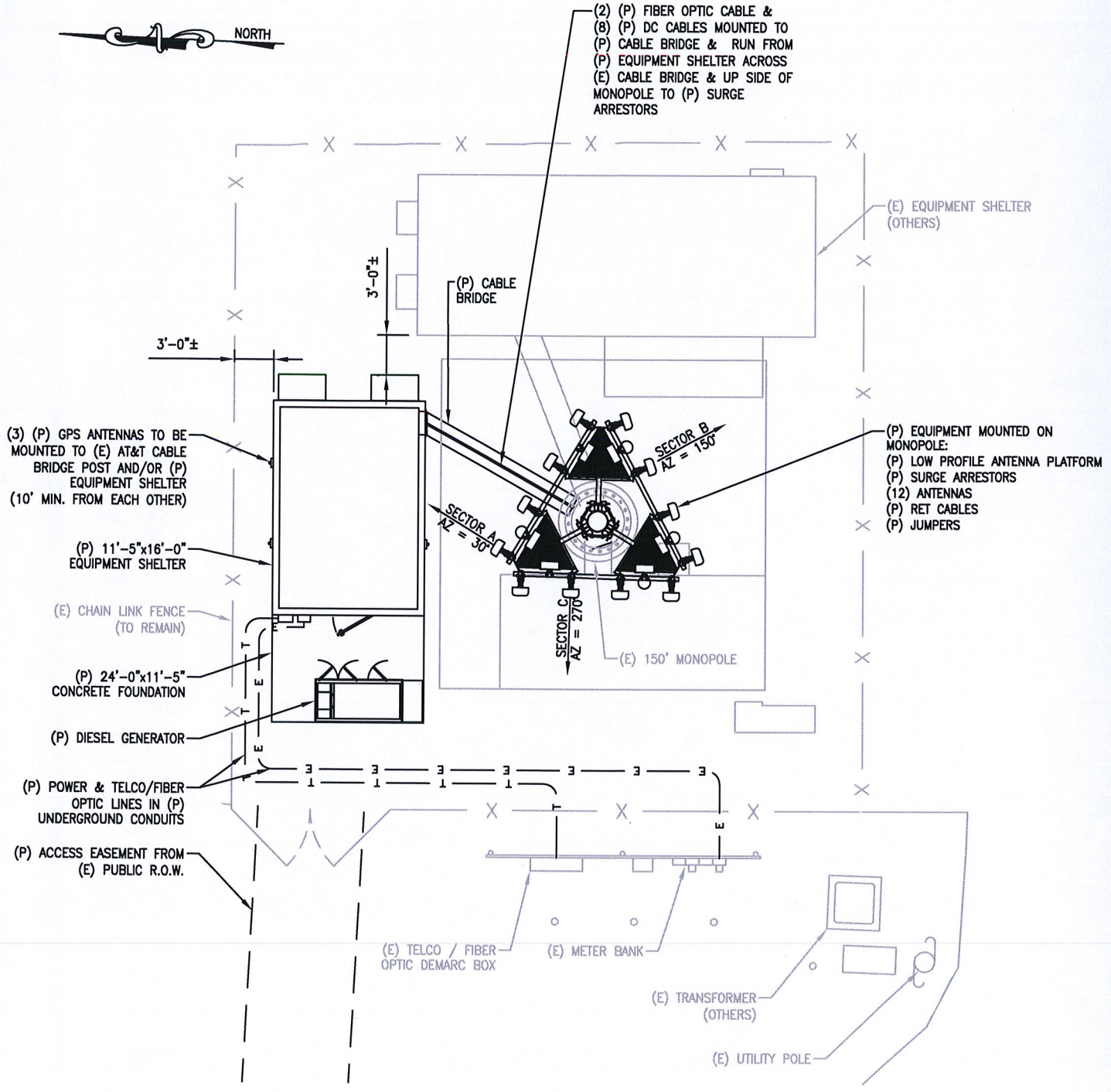
ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
EAST PROVIDENCE, RI 02914
PH: (401) 354-2403
FAX: (401) 633-6354

at&t
550 COCHITUATE ROAD, SUITE 13 & 14,
FRAMINGHAM, MA 01701-4681

smartlink
1997 ANNAPOLIS EXCHANGE PKWY, SUITE 200
ANNAPOLIS, MD 21401

TITLE:	LEASE EXHIBIT
SITE NO:	S4047A
SITE NAME:	TORRINGTON WRIGHT ROAD
ADDRESS:	136 WRIGHT ROAD TORRINGTON, CT 06790

DATE:	12/26/13
DRAWN BY:	MER
REVISION:	3
SCALE:	NOTED
SHEET:	1 OF 3



1/2 COMPOUND PLAN

SCALE: 3/32"=1'-0"

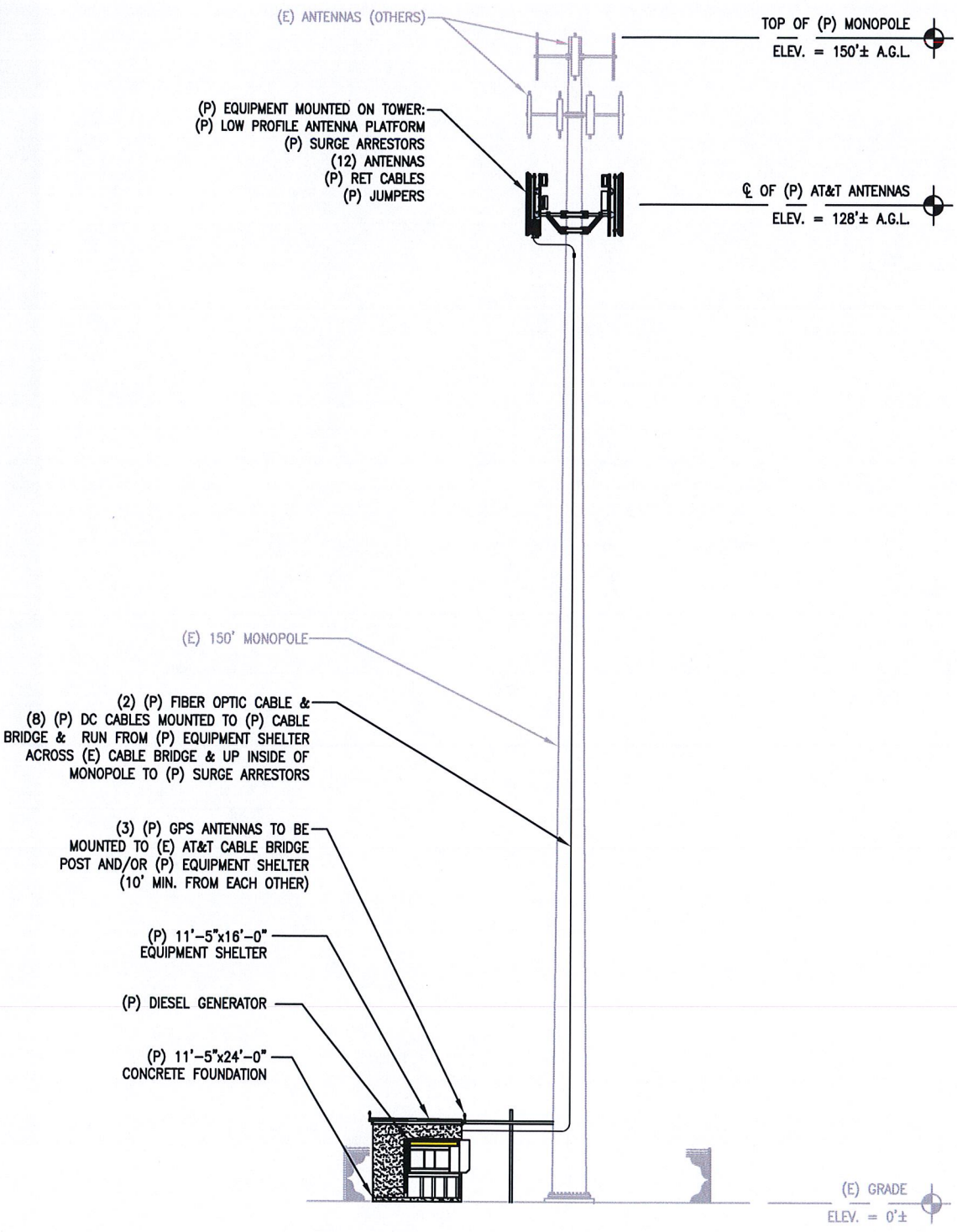
ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
EAST PROVIDENCE, RI 02914
PH: (401) 354-2403
FAX: (401) 633-6354

at&t
550 COCHITUATE ROAD, SUITE 13 & 14,
FRAMINGHAM, MA 01701-4681

smartlink
1997 ANNAPOLIS EXCHANGE PKWY, SUITE 200
ANNAPOLIS, MD 21401

TITLE: LEASE EXHIBIT
SITE NO: S4047A
SITE NAME: TORRINGTON WRIGHT ROAD
ADDRESS: 136 WRIGHT ROAD
TORRINGTON, CT 06790

DATE: 12/26/13
DRAWN BY: MER
REVISION: 3
SCALE: NOTED
SHEET: 2 OF 3



1/3 ELEVATION
SCALE: 1"=20'-0"

ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications
500 NORTH BROADWAY
EAST PROVIDENCE, RI 02914
PH: (401) 354-2403
FAX: (401) 633-6354

at&t
550 COCHITUATE ROAD, SUITE 13 & 14,
FRAMINGHAM, MA 01701-4681

smartlink
1997 ANNAPOLIS EXCHANGE PKWY, SUITE 200
ANNAPOLIS, MD 21401

TITLE:	LEASE EXHIBIT
SITE NO:	S4047A
SITE NAME:	TORRINGTON WRIGHT ROAD
ADDRESS:	136 WRIGHT ROAD TORRINGTON, CT 06790

DATE:	12/26/13
DRAWN BY:	MER
REVISION:	3
SCALE:	NOTED
SHEET:	3 OF 3

Date: **November 08, 2013**

James Williams
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Aero Solutions LLC
5500 Flatiron Parkway, Suite 100
Boulder, CO 80301
(720) 304-6882

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	S4047A
	Carrier Site Name:	WRIGHT ROAD
Crown Castle Designation:	**Crown Castle BU Number:**	876373
	Crown Castle Site Name:	LONG EDDY / WRIGHT PROPERTY
	Crown Castle JDE Job Number:	247671
	Crown Castle Work Order Number:	669375
	Crown Castle Application Number:	199882 Rev. 0
Engineering Firm Designation:	**Aero Solutions LLC Project Number:**	003-13-0140
Site Data:	**136 Wright Rd., Torrington, Litchfield County, CT** **Latitude *41° 49' 38.34"*, Longitude *-73° 10' 13.97"*** **148 Foot - Monopole Tower**	

Dear James Williams,

Aero Solutions LLC is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 591317, in accordance with application 199882, revision 0.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment **Insufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code requirements based upon a wind speed of 80 mph fastest mile.

We at *Aero Solutions LLC* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Shawn D. Cook, P.E.

Respectfully submitted by:

Shraddha Dharia, P.E.
Structural Engineer
CT PE: PEN0028187
Expires: 1/31/2014

11.11.2013

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 148 ft Monopole tower designed by Summit in June of 2000. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 28.1 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
128.0	128.0	3	cci antennas	HPA-65R-BUU-H8 w/ Mount Pipe	2 3 8	3/8 5/16 3/4	
		6	ericsson	KRC 118 054/1 w/ Mount Pipe			
		9	ericsson	KRF 102 361/1			
		18	ericsson	RRU-11			
		3	kmw communications	AM-X-CD-17-65-00T-RET w/ Mount Pipe			
		4	raycap	DC6-48-60-18-8F			
		1	tower mounts	Sector Mount [SM 406-3]			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
149.0	149.0	3	alcatel lucent	TME-1900MHz RRH (65MHz)	3	1-1/4	1
		3	alcatel lucent	TME-800MHZ RRH			
		1	tower mounts	Collar Mount [SO 102-3]			
	148.0	1	tower mounts	Platform Mount [LP 601-1]			
148.0	147.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		9	rfs celwave	ACU-A20-N			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
138.0	138.0	1	antel	BXA-171063-8BF-2 w/ Mount Pipe	6	1-5/8	2
		2	antel	BXA-171085-8BF-EDIN-2 w/ Mount Pipe			
		3	antel	BXA-70063-6CF-2 w/ Mount Pipe			
		2	antel	LPA-80063/6CF w/ Mount Pipe	12	1-5/8	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		4	antel	LPA-80080/6CF w/ Mount Pipe			
		1	tower mounts	Platform Mount [LP 601-1]			
79.0	84.0	1	rfs celwave	PD1109E	1	1/2	1
	79.0	1	tower mounts	Side Arm Mount [SO 701-1]			
45.0	45.0	1	gps	GPS_A	1	1/2	1
		1	tower mounts	Side Arm Mount [SO 701-1]			
16.0	16.0	1	gps	GPS_A	1	1/2	1
		1	tower mounts	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148	148	12	dapa	48000 PCS Panel		-
140	140	12	dapa	48000 PCS Panel		-
130	130	12	dapa	48000 PCS Panel		-
120	120	12	dapa	48000 PCS Panel		-
76	76	1	generic	GPS Antenna		-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clarence Welti Associates, Inc.	1531964	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit Manufacturing, LLC	1634518	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit Manufacturing, LLC	1631601	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Crown Castle	3193709	CCISITES

3.1) Analysis Method

tnxTower (version 6.1.3.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.

2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.

This analysis may be affected if any assumptions are not valid or have been made in error. Aero Solutions LLC should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	148 - 116.5	Pole	TP29.481x24x0.2188	1	-6.95	953.24	52.6	Pass
L2	116.5 - 80.25	Pole	TP35.351x28.391x0.25	2	-11.42	1415.67	105.1	Fail
L3	80.25 - 39.75	Pole	TP41.898x34.068x0.3125	3	-18.68	2097.24	115.2	Fail
L4	39.75 - 0	Pole	TP48.19x40.3595x0.375	4	-29.55	2958.67	111.8	Fail
							Summary	
						Pole (L3)	115.2	Fail
						Rating =	115.2	Fail

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	89.2	Pass
1	Base Plate	0	92.0	Pass
1	Base Foundation Soil Interaction	0	111.3	Pass

Structure Rating (max from all components) =	115.2%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower does not have sufficient capacity to carry the existing, reserved, and proposed loads. Modifications will be required to bring the tower into compliance with the TIA-222-F standard for the proposed, reserved and existing loading. The following components require modifications:

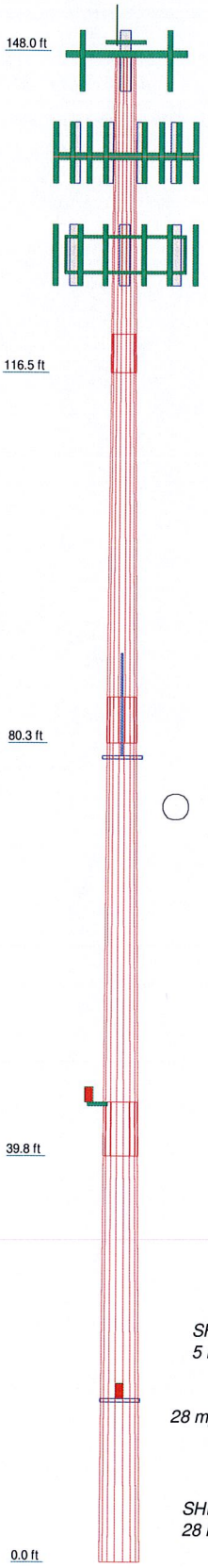
a) Pole Shaft from 0' to 29.5' and 44.5' to 63'
b) Foundation

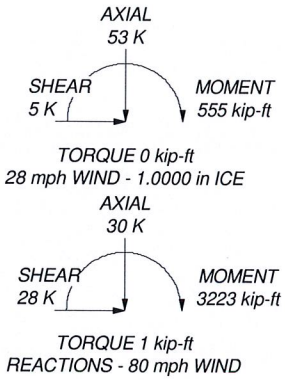
Further engineering and detailing is required to design the necessary modifications. The anchor rods and base plate are sufficient.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4
Length (ft)	31.50	40.00	45.00	45.00
Number of Sides	18	18	18	18
Thickness (in)	0.2188	0.2500	0.3125	0.3750
Socket Length (ft)	3.75	4.50	5.25	
Top Dia (in)	24.0000	28.3910	34.0680	40.3595
Bot Dia (in)	29.4810	35.3510	41.8980	48.1900
Grade	A607-60		A607-65	8.0
Weight (K)	2.0	3.4	5.7	19.1





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
TME-1900MHz RRH (65MHz)	149	BXA-171063-8BF-2 w/ Mount Pipe	138
TME-800MHZ RRH	149	Platform Mount [LP 601-1]	138
TME-1900MHz RRH (65MHz)	149	HPA-65R-BUU-H8 w/ Mount Pipe	128
TME-800MHZ RRH	149	(2) KRC 118 054/1 w/ Mount Pipe	128
TME-1900MHz RRH (65MHz)	149	(3) KRF 102 361/1	128
TME-800MHZ RRH	149	(6) RRU-11	128
Collar Mount [SO 102-3]	149	AM-X-CD-17-65-00T-RET w/ Mount Pipe	128
Lightning Rod 1" x 5'	148		
APXVSPP18-C-A20 w/ Mount Pipe	148	DC6-48-60-18-8F	128
800 EXTERNAL NOTCH FILTER	148	HPA-65R-BUU-H8 w/ Mount Pipe	128
(3) ACU-A20-N	148	(2) KRC 118 054/1 w/ Mount Pipe	128
APXVSPP18-C-A20 w/ Mount Pipe	148	(3) KRF 102 361/1	128
800 EXTERNAL NOTCH FILTER	148	(6) RRU-11	128
(3) ACU-A20-N	148	AM-X-CD-17-65-00T-RET w/ Mount Pipe	128
APXVSPP18-C-A20 w/ Mount Pipe	148		
800 EXTERNAL NOTCH FILTER	148	(2) DC6-48-60-18-8F	128
(3) ACU-A20-N	148	HPA-65R-BUU-H8 w/ Mount Pipe	128
(2) 6' x 2" Mount Pipe	148	(2) KRC 118 054/1 w/ Mount Pipe	128
(2) 6' x 2" Mount Pipe	148	(3) KRF 102 361/1	128
(2) 6' x 2" Mount Pipe	148	(6) RRU-11	128
Platform Mount [LP 601-1]	148	AM-X-CD-17-65-00T-RET w/ Mount Pipe	128
(2) LPA-80063/6CF w/ Mount Pipe	138		
(2) LPA-80080/6CF w/ Mount Pipe	138	DC6-48-60-18-8F	128
(2) LPA-80080/6CF w/ Mount Pipe	138	Sector Mount [SM 406-3]	128
BXA-70063-6CF-2 w/ Mount Pipe	138	PD1109E	79
BXA-171085-8BF-EDIN-2 w/ Mount Pipe	138	Side Arm Mount [SO 701-1]	79
		GPS_A	45
BXA-70063-6CF-2 w/ Mount Pipe	138	Side Arm Mount [SO 701-1]	45
BXA-171085-8BF-EDIN-2 w/ Mount Pipe	138	GPS_A	16
		Side Arm Mount [SO 701-1]	16
BXA-70063-6CF-2 w/ Mount Pipe	138		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 28 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 115.2%

Aero Solutions LLC
5500 Flatiron Parkway, Suite 100
Boulder, CO 80301
Phone: (720) 304-6882
FAX: (720) 304-6883

Job: ***BU#876373 LONG EDDY - WRIGHT PROPERTY***			
Project: ***Existing 148 FT Monopole***			
Client: Crown Castle	Drawn by: Shawn D. Cook, P.E.	App'd:	
Code: TIA/EIA-222-F	Date: 11/08/13	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

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

3) Tower is located in Litchfield County, Connecticut.
4) Basic wind speed of 80 mph.
5) Nominal ice thickness of 1.0000 in.
6) Ice thickness is considered to increase with height.
7) Ice density of 56.00 pcf.
8) A wind speed of 28 mph is used in combination with ice.
9) Temperature drop of 50 °F.
10) Deflections calculated using a wind speed of 50 mph.
11) A non-linear (P-delta) analysis was used.
12) Pressures are calculated at each section.
13) Stress ratio used in pole design is 1.333.
14) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

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
L1	148.00-116.50	31.50	3.75	18	24.0000	29.4810	0.2188	0.8750	A607-60 (60 ksi)
L2	116.50-80.25	40.00	4.50	18	28.3910	35.3510	0.2500	1.0000	A607-65 (65 ksi)
L3	80.25-39.75	45.00	5.25	18	34.0680	41.8980	0.3125	1.2500	A607-65 (65 ksi)
L4	39.75-0.00	45.00		18	40.3595	48.1900	0.3750	1.5000	A607-65 (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

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	24.3702	16.5116	1179.7676	8.4423	12.1920	96.7657	2361.0876	8.2574	3.8390	17.55
	29.9358	20.3171	2197.9387	10.3881	14.9763	146.7607	4398.7696	10.1605	4.8037	21.96
L2	29.4915	22.3299	2234.1018	9.9901	14.4226	154.9025	4471.1433	11.1671	4.5568	18.227
	35.8963	27.8526	4335.5365	12.4609	17.9583	241.4223	8676.7779	13.9290	5.7818	23.127
L3	35.3886	33.4812	4819.7890	11.9832	17.3065	278.4952	9645.9201	16.7438	5.4460	17.427
	42.5443	41.2476	9011.9791	14.7629	21.2842	423.4120	18035.816 4	20.6277	6.8240	21.837
L4	41.9098	47.5916	9612.8164	14.1945	20.5026	468.8578	19238.281 7	23.8003	6.4433	17.182
	48.9334	56.9118	16438.724 6	16.9743	24.4805	671.5023	32899.079 8	28.4613	7.8214	20.857

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
L1 148.00-116.50				1	1	1		
L2 116.50-80.25				1	1	1		
L3 80.25-39.75				1	1	1		
L4 39.75-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
HB114-1-0813U4-M5J(1 1/4")	A	No	CaAa (Out Of Face)	148.00 - 6.00	2	No Ice	0.00	1.20
						1/2" Ice	0.00	2.45
						1" Ice	0.00	4.30
						2" Ice	0.00	9.85
						4" Ice	0.00	28.27
HB114-1-0813U4-M5J(1 1/4")	A	No	CaAa (Out Of Face)	148.00 - 6.00	1	No Ice	0.15	1.20
						1/2" Ice	0.25	2.45
						1" Ice	0.35	4.30
						2" Ice	0.55	9.85
						4" Ice	0.95	28.27
*								
LDF7-50A(1-5/8")	B	No	CaAa (Out Of Face)	138.00 - 6.00	5	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF7-50A(1-5/8")	B	No	CaAa (Out Of Face)	138.00 - 6.00	1	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04
LDF7-50A(1-5/8")	B	No	Inside Pole	138.00 - 6.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
*								
ATCB-B01-060(5/16)	C	No	Inside Pole	128.00 - 6.00	3	No Ice	0.00	0.07
						1/2" Ice	0.00	0.07
						1" Ice	0.00	0.07
						2" Ice	0.00	0.07
						4" Ice	0.00	0.07
L98B-002-XXX_DB(3/8")	C	No	Inside Pole	128.00 - 6.00	2	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
						2" Ice	0.00	0.06

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
WR-VG86ST-BRD(3/4)	C	No	Inside Pole	128.00 - 6.00	8	4" Ice	0.00	0.06
						No Ice	0.00	0.58
						1/2" Ice	0.00	0.58
						1" Ice	0.00	0.58
						2" Ice	0.00	0.58
						4" Ice	0.00	0.58
*								
LDF4-50A(1/2")	C	No	Inside Pole	79.00 - 6.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
*								
LDF4-50A(1/2")	A	No	CaAa (Out Of Face)	45.00 - 6.00	1	No Ice	0.00	0.15
						1/2" Ice	0.16	0.84
						1" Ice	0.26	2.14
						2" Ice	0.46	6.58
						4" Ice	0.86	22.78
*								
LDF4-50A(1/2")	B	No	Inside Pole	16.00 - 6.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	148.00-116.50	A	0.000	0.000	0.000	4.851	0.11
		B	0.000	0.000	0.000	4.257	0.32
		C	0.000	0.000	0.000	0.000	0.06
L2	116.50-80.25	A	0.000	0.000	0.000	5.582	0.13
		B	0.000	0.000	0.000	7.178	0.54
		C	0.000	0.000	0.000	0.000	0.18
L3	80.25-39.75	A	0.000	0.000	0.000	6.237	0.15
		B	0.000	0.000	0.000	8.019	0.60
		C	0.000	0.000	0.000	0.000	0.21
L4	39.75-0.00	A	0.000	0.000	0.000	5.197	0.13
		B	0.000	0.000	0.000	6.683	0.50
		C	0.000	0.000	0.000	0.000	0.17

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	148.00-116.50	A	1.181	0.000	0.000	0.000	12.290	0.50
		B		0.000	0.000	0.000	9.335	0.93
		C		0.000	0.000	0.000	0.000	0.06
L2	116.50-80.25	A	1.140	0.000	0.000	0.000	14.144	0.58
		B		0.000	0.000	0.000	15.739	1.57
		C		0.000	0.000	0.000	0.000	0.18
L3	80.25-39.75	A	1.074	0.000	0.000	0.000	16.995	0.63
		B		0.000	0.000	0.000	17.250	1.69
		C		0.000	0.000	0.000	0.000	0.21
L4	39.75-0.00	A	1.000	0.000	0.000	0.000	21.824	0.56
		B		0.000	0.000	0.000	13.933	1.33
		C		0.000	0.000	0.000	0.000	0.17

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	148.00-116.50	0.1604	-0.1118	0.2846	-0.2548
L2	116.50-80.25	0.2274	-0.0729	0.4085	-0.1881
L3	80.25-39.75	0.2317	-0.0743	0.4179	-0.2376
L4	39.75-0.00	0.1998	-0.0641	0.3490	-0.4298

Discrete Tower Loads

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
Lightning Rod 1" x 5'	C	From Leg	0.00 0.00 2.50	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.50 1.02 1.43 2.06 3.45	0.50 1.02 1.43 2.06 3.45	0.03 0.03 0.04 0.07 0.17
***									
TME-1900MHz RRH (65MHz)	A	From Leg	2.00 0.00 0.00	20.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.70 2.94 3.18 3.70 4.85	2.77 3.01 3.26 3.78 4.93	0.06 0.08 0.11 0.18 0.35
TME-800MHZ RRH	A	From Leg	2.00 0.00 0.00	20.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
TME-1900MHz RRH (65MHz)	B	From Leg	2.00 0.00 0.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.70 2.94 3.18 3.70 4.85	2.77 3.01 3.26 3.78 4.93	0.06 0.08 0.11 0.18 0.35
TME-800MHZ RRH	B	From Leg	2.00 0.00 0.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
TME-1900MHz RRH (65MHz)	C	From Leg	2.00 0.00 0.00	-20.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.70 2.94 3.18 3.70 4.85	2.77 3.01 3.26 3.78 4.93	0.06 0.08 0.11 0.18 0.35
TME-800MHZ RRH	C	From Leg	2.00 0.00 0.00	-20.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
Collar Mount [SO 102-3]	C	None		0.0000	149.00	No Ice 1/2" Ice Ice	3.00 3.48 3.96	3.00 3.48 3.96	0.08 0.11 0.14

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
						1" Ice	4.92	4.92	0.20
						2" Ice	6.84	6.84	0.32
						4" Ice			
***									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 -1.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.23 0.41 0.91
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 -1.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11
(3) ACU-A20-N	A	From Leg	4.00 0.00 -1.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.08 0.12 0.17 0.30 0.67	0.14 0.19 0.25 0.40 0.80	0.00 0.00 0.00 0.01 0.04
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 -1.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.23 0.41 0.91
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00 0.00 -1.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11
(3) ACU-A20-N	B	From Leg	4.00 0.00 -1.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.08 0.12 0.17 0.30 0.67	0.14 0.19 0.25 0.40 0.80	0.00 0.00 0.00 0.01 0.04
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 -1.00	-20.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.23 0.41 0.91
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00 0.00 -1.00	-20.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11
(3) ACU-A20-N	C	From Leg	4.00 0.00 -1.00	-20.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.08 0.12 0.17 0.30 0.67	0.14 0.19 0.25 0.40 0.80	0.00 0.00 0.00 0.01 0.04
(2) 6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
(2) 6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	148.00	No Ice	1.43	1.43	0.02

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
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23
						4" Ice			
(2) 6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	148.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23
						4" Ice			
Platform Mount [LP 601-1]	C	None		0.0000	148.00	No Ice	28.47	28.47	1.12
						1/2"	33.59	33.59	1.51
						Ice	38.71	38.71	1.91
						1" Ice	48.95	48.95	2.69
						2" Ice	69.43	69.43	4.26
						4" Ice			
***									
***									
(2) LPA-80063/6CF w/ Mount Pipe	A	From Leg	4.00	20.0000	138.00	No Ice	10.33	10.43	0.05
			0.00			1/2"	10.90	11.48	0.14
			0.00			Ice	11.47	12.40	0.24
						1" Ice	12.65	14.31	0.46
						2" Ice	15.11	18.34	1.05
						4" Ice			
(2) LPA-80080/6CF w/ Mount Pipe	B	From Leg	4.00	10.0000	138.00	No Ice	4.58	10.76	0.05
			0.00			1/2"	5.13	12.04	0.11
			0.00			Ice	5.65	13.03	0.19
						1" Ice	6.70	15.05	0.36
						2" Ice	8.91	19.31	0.86
						4" Ice			
(2) LPA-80080/6CF w/ Mount Pipe	C	From Leg	4.00	20.0000	138.00	No Ice	4.58	10.76	0.05
			0.00			1/2"	5.13	12.04	0.11
			0.00			Ice	5.65	13.03	0.19
						1" Ice	6.70	15.05	0.36
						2" Ice	8.91	19.31	0.86
						4" Ice			
BXA-70063-6CF-2 w/ Mount Pipe	A	From Leg	4.00	20.0000	138.00	No Ice	7.97	5.80	0.04
			0.00			1/2"	8.61	6.95	0.10
			0.00			Ice	9.22	7.82	0.17
						1" Ice	10.46	9.60	0.34
						2" Ice	13.07	13.37	0.80
						4" Ice			
BXA-171085-8BF-EDIN-2 w/ Mount Pipe	A	From Leg	4.00	20.0000	138.00	No Ice	3.16	3.33	0.03
			0.00			1/2"	3.53	3.94	0.06
			0.00			Ice	3.94	4.56	0.10
						1" Ice	4.83	5.86	0.19
						2" Ice	6.73	8.84	0.48
						4" Ice			
BXA-70063-6CF-2 w/ Mount Pipe	B	From Leg	4.00	10.0000	138.00	No Ice	7.97	5.80	0.04
			0.00			1/2"	8.61	6.95	0.10
			0.00			Ice	9.22	7.82	0.17
						1" Ice	10.46	9.60	0.34
						2" Ice	13.07	13.37	0.80
						4" Ice			
BXA-171085-8BF-EDIN-2 w/ Mount Pipe	B	From Leg	4.00	10.0000	138.00	No Ice	3.16	3.33	0.03
			0.00			1/2"	3.53	3.94	0.06
			0.00			Ice	3.94	4.56	0.10
						1" Ice	4.83	5.86	0.19
						2" Ice	6.73	8.84	0.48
						4" Ice			
BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg	4.00	20.0000	138.00	No Ice	7.97	5.80	0.04
			0.00			1/2"	8.61	6.95	0.10
			0.00			Ice	9.22	7.82	0.17
						1" Ice	10.46	9.60	0.34

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" Ice	13.07	13.37	0.80
						4" Ice			
BXA-171063-8BF-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	20.0000	138.00	No Ice	3.18	3.35	0.03
						1/2" Ice	3.56	3.97	0.06
						1" Ice	3.96	4.60	0.10
						2" Ice	4.85	5.89	0.19
						4" Ice	6.77	8.89	0.49
Platform Mount [LP 601-1]	C	None		0.0000	138.00	No Ice	28.47	28.47	1.12
						1/2" Ice	33.59	33.59	1.51
						1" Ice	38.71	38.71	1.91
						2" Ice	48.95	48.95	2.69
						4" Ice	69.43	69.43	4.26
***									
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	13.53	9.58	0.10
						1/2" Ice	14.34	11.05	0.20
						1" Ice	15.14	12.50	0.30
						2" Ice	16.71	14.75	0.55
						4" Ice	19.95	19.46	1.22
(2) KRC 118 054/1 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	11.54	10.72	0.16
						1/2" Ice	12.16	12.15	0.25
						1" Ice	12.79	13.43	0.35
						2" Ice	14.17	15.66	0.59
						4" Ice	17.18	20.31	1.24
(3) KRF 102 361/1	A	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	2.26	0.63	0.03
						1/2" Ice	2.46	0.76	0.04
						1" Ice	2.68	0.89	0.06
						2" Ice	3.12	1.18	0.09
						4" Ice	4.13	1.88	0.21
(6) RRU-11	A	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	1.91	1.47	0.04
						1/2" Ice	2.10	1.65	0.06
						1" Ice	2.30	1.83	0.08
						2" Ice	2.72	2.22	0.12
						4" Ice	3.68	3.10	0.25
AM-X-CD-17-65-00T-RET w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	11.55	8.94	0.09
						1/2" Ice	12.27	10.45	0.18
						1" Ice	13.00	11.99	0.27
						2" Ice	14.45	14.31	0.50
						4" Ice	17.71	19.14	1.12
DC6-48-60-18-8F	A	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	2.57	2.57	0.03
						1/2" Ice	2.80	2.80	0.06
						1" Ice	3.04	3.04	0.08
						2" Ice	3.54	3.54	0.14
						4" Ice	4.66	4.66	0.31
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	13.53	9.58	0.10
						1/2" Ice	14.34	11.05	0.20
						1" Ice	15.14	12.50	0.30
						2" Ice	16.71	14.75	0.55
						4" Ice	19.95	19.46	1.22
(2) KRC 118 054/1 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice	11.54	10.72	0.16
						1/2" Ice	12.16	12.15	0.25
						1" Ice	12.79	13.43	0.35
						2" Ice	14.17	15.66	0.59
						4" Ice	17.18	20.31	1.24
(3) KRF 102 361/1	B	From Leg	4.00 0.00	0.0000	128.00	No Ice	2.26	0.63	0.03
						1/2" Ice	2.46	0.76	0.04

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			Ice	2.68	0.89	0.06
						1" Ice	3.12	1.18	0.09
						2" Ice	4.13	1.88	0.21
						4" Ice			
(6) RRU-11	B	From Leg	4.00	0.0000	128.00	No Ice	1.91	1.47	0.04
			0.00			1/2"	2.10	1.65	0.06
			0.00			Ice	2.30	1.83	0.08
						1" Ice	2.72	2.22	0.12
						2" Ice	3.68	3.10	0.25
						4" Ice			
AM-X-CD-17-65-00T-RET w/ Mount Pipe	B	From Leg	4.00	0.0000	128.00	No Ice	11.55	8.94	0.09
			0.00			1/2"	12.27	10.45	0.18
			0.00			Ice	13.00	11.99	0.27
						1" Ice	14.45	14.31	0.50
						2" Ice	17.71	19.14	1.12
						4" Ice			
(2) DC6-48-60-18-8F	B	From Leg	4.00	0.0000	128.00	No Ice	2.57	2.57	0.03
			0.00			1/2"	2.80	2.80	0.06
			0.00			Ice	3.04	3.04	0.08
						1" Ice	3.54	3.54	0.14
						2" Ice	4.66	4.66	0.31
						4" Ice			
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Leg	4.00	0.0000	128.00	No Ice	13.53	9.58	0.10
			0.00			1/2"	14.34	11.05	0.20
			0.00			Ice	15.14	12.50	0.30
						1" Ice	16.71	14.75	0.55
						2" Ice	19.95	19.46	1.22
						4" Ice			
(2) KRC 118 054/1 w/ Mount Pipe	C	From Leg	4.00	0.0000	128.00	No Ice	11.54	10.72	0.16
			0.00			1/2"	12.16	12.15	0.25
			0.00			Ice	12.79	13.43	0.35
						1" Ice	14.17	15.66	0.59
						2" Ice	17.18	20.31	1.24
						4" Ice			
(3) KRF 102 361/1	C	From Leg	4.00	0.0000	128.00	No Ice	2.26	0.63	0.03
			0.00			1/2"	2.46	0.76	0.04
			0.00			Ice	2.68	0.89	0.06
						1" Ice	3.12	1.18	0.09
						2" Ice	4.13	1.88	0.21
						4" Ice			
(6) RRU-11	C	From Leg	4.00	0.0000	128.00	No Ice	1.91	1.47	0.04
			0.00			1/2"	2.10	1.65	0.06
			0.00			Ice	2.30	1.83	0.08
						1" Ice	2.72	2.22	0.12
						2" Ice	3.68	3.10	0.25
						4" Ice			
AM-X-CD-17-65-00T-RET w/ Mount Pipe	C	From Leg	4.00	0.0000	128.00	No Ice	11.55	8.94	0.09
			0.00			1/2"	12.27	10.45	0.18
			0.00			Ice	13.00	11.99	0.27
						1" Ice	14.45	14.31	0.50
						2" Ice	17.71	19.14	1.12
						4" Ice			
DC6-48-60-18-8F	C	From Leg	4.00	0.0000	128.00	No Ice	2.57	2.57	0.03
			0.00			1/2"	2.80	2.80	0.06
			0.00			Ice	3.04	3.04	0.08
						1" Ice	3.54	3.54	0.14
						2" Ice	4.66	4.66	0.31
						4" Ice			
Sector Mount [SM 406-3]	C	None		0.0000	128.00	No Ice	19.83	19.83	0.92
						1/2"	29.41	29.41	1.33
						Ice	38.99	38.99	1.73
						1" Ice	58.15	58.15	2.53
						2" Ice	96.47	96.47	4.15
						4" Ice			

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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
PD1109E	A	From Leg	2.00 0.00 5.00	0.0000	79.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.85 3.92 5.01 6.43 9.09	2.85 3.92 5.01 6.43 9.09	0.02 0.04 0.07 0.14 0.38
Side Arm Mount [SO 701-1]	A	From Leg	1.00 0.00 0.00	0.0000	79.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.85 1.14 1.43 2.01 3.17	1.67 2.34 3.01 4.35 7.03	0.07 0.08 0.09 0.12 0.18
***									
GPS_A	C	From Leg	2.00 0.00 0.00	0.0000	45.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.30 0.37 0.46 0.65 1.15	0.30 0.37 0.46 0.65 1.15	0.00 0.00 0.01 0.02 0.08
Side Arm Mount [SO 701-1]	C	From Leg	1.00 0.00 0.00	0.0000	45.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.85 1.14 1.43 2.01 3.17	1.67 2.34 3.01 4.35 7.03	0.07 0.08 0.09 0.12 0.18
***									
GPS_A	A	From Leg	2.00 0.00 0.00	0.0000	16.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.30 0.37 0.46 0.65 1.15	0.30 0.37 0.46 0.65 1.15	0.00 0.00 0.01 0.02 0.08
Side Arm Mount [SO 701-1]	A	From Leg	1.00 0.00 0.00	0.0000	16.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.85 1.14 1.43 2.01 3.17	1.67 2.34 3.01 4.35 7.03	0.07 0.08 0.09 0.12 0.18

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp

Comb. No.	Description
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	148 - 116.5	Pole	Max Tension	33	0.00	-0.00	0.00
			Max. Compression	14	-21.50	-1.09	0.48
			Max. Mx	5	-7.10	-278.79	3.27
			Max. My	8	-6.96	3.09	-290.04
			Max. Vy	5	19.09	-278.79	3.27
			Max. Vx	2	-19.71	-3.53	289.97
			Max. Torque	9			-0.77
L2	116.5 - 80.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-28.78	-2.62	0.51
			Max. Mx	5	-11.53	-1008.18	9.83
			Max. My	2	-11.43	-10.20	1041.25
			Max. Vy	5	21.95	-1008.18	9.83
			Max. Vx	2	-22.58	-10.20	1041.25
			Max. Torque	10			-0.24
L3	80.25 - 39.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-39.15	-4.52	1.02
			Max. Mx	5	-18.73	-1947.83	17.32
			Max. My	2	-18.68	-17.68	2004.64
			Max. Vy	5	25.05	-1947.83	17.32
			Max. Vx	2	-25.64	-17.68	2004.64
			Max. Torque	5			0.71
L4	39.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-53.29	-6.08	1.30
			Max. Mx	5	-29.55	-3139.19	25.00
			Max. My	2	-29.55	-25.31	3222.31
			Max. Vy	5	27.77	-3139.19	25.00
			Max. Vx	2	-28.32	-25.31	3222.31
			Max. Torque	5			0.81

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	16	53.29	-2.26	3.96
	Max. H_x	11	29.58	27.74	-0.16
	Max. H_z	2	29.58	-0.16	28.29
	Max. M_x	2	3222.31	-0.16	28.29
	Max. M_z	5	3139.19	-27.74	0.16
	Max. Torsion	5	0.81	-27.74	0.16
	Min. Vert	1	29.58	0.00	0.00
	Min. H_x	5	29.58	-27.74	0.16
	Min. H_z	8	29.58	0.16	-28.29
	Min. M_x	8	-3221.26	0.16	-28.29
	Min. M_z	11	-3137.51	27.74	-0.16
	Min. Torsion	11	-0.80	27.74	-0.16

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	29.58	0.00	0.00	-0.52	-0.81	0.00
Dead+Wind 0 deg - No Ice	29.58	0.16	-28.29	-3222.31	-25.31	-0.14
Dead+Wind 30 deg - No Ice	29.58	14.01	-24.58	-2802.91	-1590.95	-0.52
Dead+Wind 60 deg - No Ice	29.58	24.10	-14.29	-1632.74	-2730.74	-0.77
Dead+Wind 90 deg - No Ice	29.58	27.74	-0.16	-25.00	-3139.19	-0.81
Dead+Wind 120 deg - No Ice	29.58	23.94	14.01	1589.44	-2706.49	-0.63
Dead+Wind 150 deg - No Ice	29.58	13.73	24.42	2777.62	-1548.69	-0.28
Dead+Wind 180 deg - No Ice	29.58	-0.16	28.29	3221.26	23.63	0.14
Dead+Wind 210 deg - No Ice	29.58	-14.01	24.58	2801.86	1589.26	0.52
Dead+Wind 240 deg - No Ice	29.58	-24.10	14.29	1631.70	2729.06	0.76
Dead+Wind 270 deg - No Ice	29.58	-27.74	0.16	23.95	3137.51	0.80
Dead+Wind 300 deg - No Ice	29.58	-23.94	-14.01	-1590.50	2704.82	0.62
Dead+Wind 330 deg - No Ice	29.58	-13.73	-24.42	-2778.68	1547.01	0.28
Dead+Ice+Temp	53.29	0.00	-0.00	-1.30	-6.08	-0.00
Dead+Wind 0 deg+Ice+Temp	53.29	0.02	-4.57	-552.18	-9.50	0.02
Dead+Wind 30 deg+Ice+Temp	53.29	2.26	-3.96	-480.04	-278.58	-0.07
Dead+Wind 60 deg+Ice+Temp	53.29	3.90	-2.30	-279.62	-474.68	-0.14
Dead+Wind 90 deg+Ice+Temp	53.29	4.49	-0.02	-4.63	-545.25	-0.17
Dead+Wind 120 deg+Ice+Temp	53.29	3.88	2.27	271.25	-471.37	-0.16
Dead+Wind 150 deg+Ice+Temp	53.29	2.23	3.94	474.09	-272.85	-0.10
Dead+Wind 180 deg+Ice+Temp	53.29	-0.02	4.57	549.54	-2.88	-0.02
Dead+Wind 210 deg+Ice+Temp	53.29	-2.26	3.96	477.40	266.20	0.07
Dead+Wind 240 deg+Ice+Temp	53.29	-3.90	2.30	276.98	462.30	0.14
Dead+Wind 270 deg+Ice+Temp	53.29	-4.49	0.02	1.99	532.87	0.17
Dead+Wind 300 deg+Ice+Temp	53.29	-3.88	-2.27	-273.89	458.99	0.16
Dead+Wind 330 deg+Ice+Temp	53.29	-2.23	-3.94	-476.73	260.47	0.10
Dead+Wind 0 deg - Service	29.58	0.06	-11.05	-1262.13	-10.43	-0.06
Dead+Wind 30 deg - Service	29.58	5.47	-9.60	-1097.91	-623.50	-0.21
Dead+Wind 60 deg - Service	29.58	9.41	-5.58	-639.64	-1069.75	-0.30
Dead+Wind 90 deg - Service	29.58	10.83	-0.06	-10.12	-1229.58	-0.32
Dead+Wind 120 deg - Service	29.58	9.35	5.47	621.98	-1060.18	-0.25
Dead+Wind 150 deg - Service	29.58	5.36	9.54	1087.27	-606.91	-0.11
Dead+Wind 180 deg -	29.58	-0.06	11.05	1261.07	8.74	0.06

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Service						
Dead+Wind 210 deg - Service	29.58	-5.47	9.60	1096.84	621.81	0.21
Dead+Wind 240 deg - Service	29.58	-9.41	5.58	638.58	1068.06	0.30
Dead+Wind 270 deg - Service	29.58	-10.83	0.06	9.06	1227.90	0.32
Dead+Wind 300 deg - Service	29.58	-9.35	-5.47	-623.05	1058.49	0.25
Dead+Wind 330 deg - Service	29.58	-5.36	-9.54	-1088.33	605.22	0.11

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-29.58	0.00	0.00	29.58	0.00	0.000%
2	0.16	-29.58	-28.29	-0.16	29.58	28.29	0.000%
3	14.01	-29.58	-24.58	-14.01	29.58	24.58	0.000%
4	24.10	-29.58	-14.29	-24.10	29.58	14.29	0.000%
5	27.74	-29.58	-0.16	-27.74	29.58	0.16	0.000%
6	23.94	-29.58	14.01	-23.94	29.58	-14.01	0.000%
7	13.73	-29.58	24.42	-13.73	29.58	-24.42	0.000%
8	-0.16	-29.58	28.29	0.16	29.58	-28.29	0.000%
9	-14.01	-29.58	24.58	14.01	29.58	-24.58	0.000%
10	-24.10	-29.58	14.29	24.10	29.58	-14.29	0.000%
11	-27.74	-29.58	0.16	27.74	29.58	-0.16	0.000%
12	-23.94	-29.58	-14.01	23.94	29.58	14.01	0.000%
13	-13.73	-29.58	-24.42	13.73	29.58	24.42	0.000%
14	0.00	-53.29	0.00	-0.00	53.29	0.00	0.000%
15	0.02	-53.29	-4.57	-0.02	53.29	4.57	0.000%
16	2.26	-53.29	-3.96	-2.26	53.29	3.96	0.000%
17	3.90	-53.29	-2.30	-3.90	53.29	2.30	0.000%
18	4.49	-53.29	-0.02	-4.49	53.29	0.02	0.000%
19	3.88	-53.29	2.27	-3.88	53.29	-2.27	0.000%
20	2.23	-53.29	3.94	-2.23	53.29	-3.94	0.000%
21	-0.02	-53.29	4.57	0.02	53.29	-4.57	0.000%
22	-2.26	-53.29	3.96	2.26	53.29	-3.96	0.000%
23	-3.90	-53.29	2.30	3.90	53.29	-2.30	0.000%
24	-4.49	-53.29	0.02	4.49	53.29	-0.02	0.000%
25	-3.88	-53.29	-2.27	3.88	53.29	2.27	0.000%
26	-2.23	-53.29	-3.94	2.23	53.29	3.94	0.000%
27	0.06	-29.58	-11.05	-0.06	29.58	11.05	0.000%
28	5.47	-29.58	-9.60	-5.47	29.58	9.60	0.000%
29	9.41	-29.58	-5.58	-9.41	29.58	5.58	0.000%
30	10.83	-29.58	-0.06	-10.83	29.58	0.06	0.000%
31	9.35	-29.58	5.47	-9.35	29.58	-5.47	0.000%
32	5.36	-29.58	9.54	-5.36	29.58	-9.54	0.000%
33	-0.06	-29.58	11.05	0.06	29.58	-11.05	0.000%
34	-5.47	-29.58	9.60	5.47	29.58	-9.60	0.000%
35	-9.41	-29.58	5.58	9.41	29.58	-5.58	0.000%
36	-10.83	-29.58	0.06	10.83	29.58	-0.06	0.000%
37	-9.35	-29.58	-5.47	9.35	29.58	5.47	0.000%
38	-5.36	-29.58	-9.54	5.36	29.58	9.54	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00005214

3	Yes	6	0.00000001	0.00009799
4	Yes	6	0.00000001	0.00009927
5	Yes	5	0.00000001	0.00009053
6	Yes	6	0.00000001	0.00009674
7	Yes	6	0.00000001	0.00009782
8	Yes	5	0.00000001	0.00006996
9	Yes	6	0.00000001	0.00009944
10	Yes	6	0.00000001	0.00009741
11	Yes	4	0.00000001	0.00079571
12	Yes	6	0.00000001	0.00009789
13	Yes	6	0.00000001	0.00009747
14	Yes	4	0.00000001	0.00004719
15	Yes	5	0.00000001	0.00043863
16	Yes	5	0.00000001	0.00060118
17	Yes	5	0.00000001	0.00059743
18	Yes	5	0.00000001	0.00043227
19	Yes	5	0.00000001	0.00057727
20	Yes	5	0.00000001	0.00058540
21	Yes	5	0.00000001	0.00043542
22	Yes	5	0.00000001	0.00057906
23	Yes	5	0.00000001	0.00057370
24	Yes	5	0.00000001	0.00042079
25	Yes	5	0.00000001	0.00056797
26	Yes	5	0.00000001	0.00056906
27	Yes	4	0.00000001	0.00020026
28	Yes	5	0.00000001	0.00037572
29	Yes	5	0.00000001	0.00037973
30	Yes	4	0.00000001	0.00037747
31	Yes	5	0.00000001	0.00035305
32	Yes	5	0.00000001	0.00036181
33	Yes	4	0.00000001	0.00027544
34	Yes	5	0.00000001	0.00038212
35	Yes	5	0.00000001	0.00036836
36	Yes	4	0.00000001	0.00017676
37	Yes	5	0.00000001	0.00035852
38	Yes	5	0.00000001	0.00035905

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	148 - 116.5	51.476	28	2.9105	0.0023
L2	120.25 - 80.25	34.868	28	2.7367	0.0014
L3	84.75 - 39.75	17.083	28	1.9424	0.0009
L4	45 - 0	4.734	28	0.9651	0.0003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	TME-1900MHz RRH (65MHz)	28	51.476	2.9105	0.0023	21189
148.00	Lightning Rod 1" x 5'	28	51.476	2.9105	0.0023	21189
138.00	(2) LPA-80063/6CF w/ Mount Pipe	28	45.364	2.8795	0.0019	10594
128.00	HPA-65R-BUU-H8 w/ Mount Pipe	28	39.366	2.8201	0.0016	5296
79.00	PD1109E	28	14.754	1.7932	0.0008	2242
45.00	GPS_A	28	4.734	0.9651	0.0003	2030
16.00	GPS_A	28	1.050	0.3332	0.0001	5585

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	148 - 116.5	131.004	2	7.4139	0.0066
L2	120.25 - 80.25	88.788	2	6.9721	0.0039
L3	84.75 - 39.75	43.542	2	4.9516	0.0024
L4	45 - 0	12.077	3	2.4621	0.0009

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	TME-1900MHz RRH (65MHz)	2	131.004	7.4139	0.0066	8567
148.00	Lightning Rod 1" x 5'	2	131.004	7.4139	0.0066	8567
138.00	(2) LPA-80063/6CF w/ Mount Pipe	2	115.470	7.3350	0.0055	4282
128.00	HPA-65R-BUU-H8 w/ Mount Pipe	2	100.224	7.1842	0.0046	2138
79.00	PD1109E	2	37.612	4.5718	0.0021	891
45.00	GPS_A	3	12.077	2.4621	0.0009	798
16.00	GPS_A	3	2.680	0.8505	0.0002	2192

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	148 - 116.5 (1)	TP29.481x24x0.2188	31.50	0.00	0.0	36.000	19.8641	-6.95	715.11	0.010
L2	116.5 - 80.25 (2)	TP35.351x28.391x0.25	40.00	0.00	0.0	39.000	27.2313	-11.42	1062.02	0.011
L3	80.25 - 39.75 (3)	H1-3+VT (1.40 CR) - 2 TP41.898x34.068x0.3125	45.00	0.00	0.0	39.000	40.3415	-18.68	1573.32	0.012
L4	39.75 - 0 (4)	H1-3+VT (1.54 CR) - 3 TP48.19x40.3595x0.375 H1-3+VT (1.49 CR) - 4	45.00	0.00	0.0	39.000	56.9118	-29.55	2219.56	0.013

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	148 - 116.5 (1)	TP29.481x24x0.2188	290.07	24.816	36.000	0.689	0.00	0.000	36.000	0.000
L2	116.5 - 80.25 (2)	TP35.351x28.391x0.25	1041.50	54.166	39.000	1.389	0.00	0.000	39.000	0.000
L3	80.25 - 39.75 (3)	TP41.898x34.068x0.3125	2005.29	59.424	39.000	1.524	0.00	0.000	39.000	0.000
L4	39.75 - 0 (4)	TP48.19x40.3595x0.375	3222.95	57.595	39.000	1.477	0.00	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	148 - 116.5 (1)	TP29.481x24x0.2188	19.71	0.992	24.000	0.083	0.23	0.009	24.000	0.000
L2	116.5 - 80.25 (2)	TP35.351x28.391x0.25	22.58	0.829	26.000	0.064	0.19	0.005	26.000	0.000
L3	80.25 - 39.75 (3)	TP41.898x34.068x0.3125	25.65	0.636	26.000	0.049	0.39	0.006	26.000	0.000
L4	39.75 - 0 (4)	TP48.19x40.3595x0.375	28.32	0.498	26.000	0.038	0.52	0.005	26.000	0.000

Pole Interaction Design Data

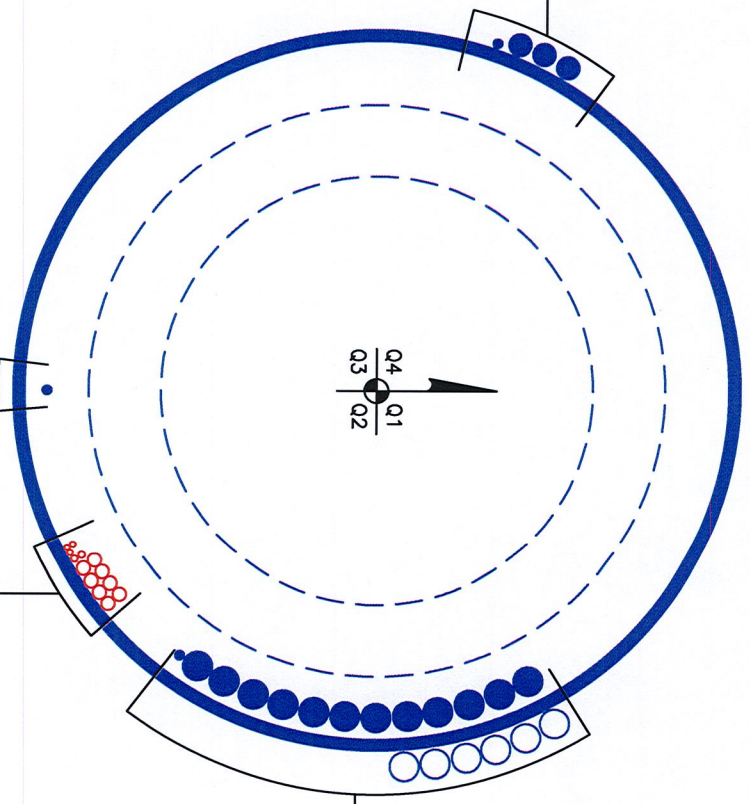
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	148 - 116.5 (1)	0.010	0.689	0.000	0.083	0.000	0.701 ✓	1.333	H1-3+VT ✓
L2	116.5 - 80.25 (2)	0.011	1.389	0.000	0.064	0.000	1.401 ✗	1.333	H1-3+VT ✗
L3	80.25 - 39.75 (3)	0.012	1.524	0.000	0.049	0.000	1.536 ✗	1.333	H1-3+VT ✗
L4	39.75 - 0 (4)	0.013	1.477	0.000	0.038	0.000	1.490 ✗	1.333	H1-3+VT ✗

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	148 - 116.5	Pole	TP29.481x24x0.2188	1	-6.95	953.24	52.6	Pass
L2	116.5 - 80.25	Pole	TP35.351x28.391x0.25	2	-11.42	1415.67	105.1	Fail ✗
L3	80.25 - 39.75	Pole	TP41.898x34.068x0.3125	3	-18.68	2097.24	115.2	Fail ✗
L4	39.75 - 0	Pole	TP48.19x40.3595x0.375	4	-29.55	2958.67	111.8	Fail ✗
							Summary	
						Pole (L3)	115.2	Fail ✗
						RATING =	**115.2**	**Fail** ✗

APPENDIX B

BASE LEVEL DRAWING



(INSTALLED)
(1) 1/2" TO 45 FT LEVEL
(3) 1 1/4" TO 148 FT LEVEL

(INSTALLED)
(1) 1/2" TO 79 FT LEVEL

(PROPOSED)
(3) 5/16" TO 128 FT LEVEL
(2) 3/8" TO 128 FT LEVEL
(8) 3/4" TO 128 FT LEVEL

(RESERVED–IN ADDITION TO INSTALLED)
(6) 1–5/8" TO 138 FT LEVEL
(INSTALLED)
(1) 1/2" TO 16 FT LEVEL
(12) 1–5/8" TO 138 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /C

Assumptions: 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *876373*
Site Name: *LONG EDDY - WRIGHT PI*
App #: *199882 R0*

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	55	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	54	in
Thick:	2.75	in
Grade:	55	ksi
Clip Distance:	4	in

Stiffener Data (Welding at both sides)		
Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	48.19	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Base Reactions		
TIA Revision:	F	
Unfactored Moment, M:	3222.94935	ft-kips
Unfactored Axial, P:	29.5463	kips
Unfactored Shear, V:	28.325026	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	174.0 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	89.2% **Pass**

Base Plate Results	Flexural Check
Base Plate Stress:	50.6 ksi
Allowable PL Bending Stress:	55.0 ksi
Base Plate Stress Ratio:	92.0% **Pass**

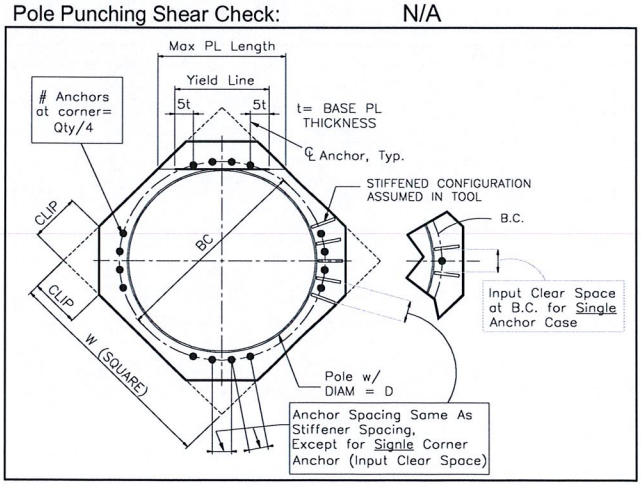
N/A - Unstiffened

Stiffener Results

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check:	N/A



(Bearing and Stability Checks) Tool for TIA Rev F or G - Application (MP, SST with unitbase)

Site Data

BU#: *876373*
Site Name: *LONG EDDY - WRIGHT PROPERTY*
App #: *????*

Enter Load Factors Below:		
For P (DL)	1.2	<---- Enter Factor
For P,V, and M (WL)	1.35	<---- Enter Factor

Pad & Pier Data		
Base PL Dist. Above Pier:	0	in
Pier Dist. Above Grade:	6	in
Pad Bearing Depth, D:	3.5	ft
Pad Thickness, T:	3.5	ft
Pad Width=Length, L:	24.5	ft
Pier Cross Section Shape:	Square	<--Pull Down
Enter Pier Side Width:	24.5	ft
Concrete Density:	150.0	pcf
Pier Cross Section Area:	600.25	ft^2
Pier Height:	0.50	ft
Soil (above pad) Height:	0.00	ft

Soil Parameters		
Unit Weight, γ:	120.0	pcf
Ultimate Bearing Capacity, qn:	12.00	ksf
Strength Reduct. factor, ϕ:	0.75	
Angle of Friction, Φ:	32.0	degrees
Undrained Shear Strength, Cu:	0.00	ksf
Allowable Bearing: ϕ*qn:	9.00	ksf
Passive Pres. Coeff., Kp	3.25	

Forces/Moments due to Wind and Lateral Soil		
Minimum of (φ*Ultimate Pad Passive Force, Vu):	38.2	kips
Pad Force Location Above D:	1.17	ft
ϕ(Passive Pressure Moment):	44.61	ft-kips
Factored O.T. M(WL), "1.6W":	4503.9	ft-kips
Factored OT (MW-Msoil), M1	4459.32	ft-kips

Resistance due to Foundation Gravity		
Soil Wedge Projection grade, a:	0.00	ft
Sum of Soil Wedges Wt:	0.00	kips
Soil Wedges ecc, K1:	0.00	ft
Ftg+Soil above Pad wt:	360.2	kips
Unfactored (Total ftg-soil Wt):	360.15	kips
1.2D. **No Soil Wedges**.	467.64	kips
0.9D. **With Soil Wedges**	350.73	kips

Resistance due to Cohesion (Vertical)		
ϕ*(1/2*Cu)(Total Vert. Planes)	0.00	kips
Cohesion Force Eccentricity, K2	0.00	ft

Monopole Base Reaction Forces		
TIA Revision:	F	<--Pull Down
Unfactored DL Axial, PD:	29.5463	kips
Unfactored WL Axial, PW:	0	kips
Unfactored WL Shear, V:	28.32503	kips
Unfactored WL Moment, M:	3222.949	ft-kips

Load Factor	Shaft Factored Loads		
1.20	1.2D+1.6W, Pu:	35.45556	kips
0.90	0.9D+1.6W, Pu:	26.59167	kips
1.35	Vu:	38.23879	kips
	Mu:	4350.982	ft-kips

1.2D+1.6W Load Combination, Bearing Results:

(**No Soil Wedges**) [Reaction+Conc+Soil]	467.64	P1="1.2D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil), M1	4459.32	ft-kips

Orthogonal Direction:

ecc1 = M1/P1 = 9.54 ft
Orthogonal qu= 3.52 ksf
qu/ϕ*qn Ratio= **39.07%** **Pass**

Diagonal Direction:

ecc2 = (0.707M1)/P1 = 6.74 ft
Diagonal qu= 3.85 ksf
qu/ϕ*qn Ratio= **42.82%** **Pass**

Run <-- Press Upon Completing All Input

Overturning Stability Check

0.9D+1.6W Load Combination, Bearing Results:

(**w/ Soil Wedges**) [Reaction+Conc+Soil]	350.73	P2="0.9D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil) - 0.9(M of Wedge + M of Cohesion), M2	4459.32	ft-kips

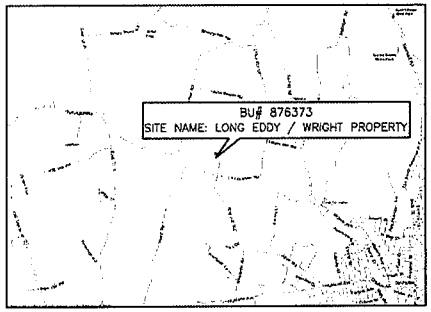
Orthogonal ecc3 = M2/P2 = 12.71 ft
Ortho Non Bearing Length,NBL= 25.43
Orthogonal qu= Ecc>L/2
Diagonal qu= 8.25

Max Reaction Moment (ft-kips) so that qu=φ*qn = 100% Capacity Rating			
Actual M:	3222.95		
M Orthogonal:	2895.65	**111.30%**	**Fail**
M Diagonal:	2895.65	**111.30%**	**Fail**

TOWER MODIFICATION DRAWINGS

SITE NAME: LONG EDDY / WRIGHT PROPERTY
BU NUMBER: 876373

SITE ADDRESS:
136 WRIGHT RD.
TORRINGTON, CT 06790
LITCHFIELD COUNTY, USA



MAP

DIRECTIONS

44 WEST INTO TORRINGTON TO 4 WEST. TURN RIGHT ON WRIGHT ROAD. FOLLOW ALMOST TO END, MAKE LEFT AFTER RED BARN ON LEFT (YOU'LL SEE GRAVEL DRIVEWAY TURNS INTO PAVEMENT AND SECURITY GATE)

PROJECT CONTACTS:

1. CROWN TOWER STRUCTURAL ANALYST
STEVE TUTTLE
(585) 899-3445
STEVE.TUTTLE@CROWNCASTLE.COM
8 PARKMEADOW DR.
PITTSFORD, NY 14534

2. B+T GROUP PROJECT ENGINEER
ALI ABBASZADEH
(918) 587-4630
AABBASZADEH@BTGRP.COM
1717 S BOULDER AVENUE, SUITE 300
TULSA, OKLA. 74119

3. B+T GROUP ENGINEER (EOR)
CHAD E TUTTLE, P.E.
(918) 587-4630
CTUTTLE@BTGRP.COM
1717 S BOULDER AVENUE, SUITE 300
TULSA, OKLA. 74119

TOWER INFORMATION

TOWER MANUFACTURER / DWG #:	SUMMIT MANUFACTURING, LLC / DEI
TOWER HEIGHT / TYPE:	148' MONOPOLE
TOWER LOCATION: DATUM: (NAD 1983)	LAT. 41° 49' 38.34" LONG. -73° 10' 13.97" ELEV. 1089 FT AMSL
STRUCTURAL DESIGN DRAWING REPORT:	B+T GROUP / WO. # 684651
STRUCTURAL ANALYSIS REPORT:	AERO SOLUTIONS LLC / WO # 669375
STRUCTURAL ANALYSIS DATE:	11/08/13
APPLICATION ID / REVISION #:	199882 / REV. 0
CCISITES DOCUMENT ID:	4066834

CODE COMPLIANCE

THIS REINFORCEMENT DESIGN IS BASED ON THE REQUIREMENTS OF TIA/EIA-222-F STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES USING A FASTEST MILE WIND SPEED OF 80 MPH WITH NO ICE, 28.1 MPH WITH 0.75 INCH ICE THICKNESS AND 50 MPH UNDER SERVICE LOADS.

DRAWINGS INCLUDED

SHEET NUMBER	DESCRIPTION
S1	TITLE SHEET
S2	MODIFICATION INSPECTION NOTES AND CHECKLIST
S3	GENERAL NOTES, AJAX BOLT NOTES AND DETAIL
S4	TOWER ELEV., SCHEDULES & TX LINE DIST. DIAG.
S5	TOWER SECTION (0'–35.5')
S6	TOWER SECTION (30.5'–60.5')
S7	TOWER SECTION (60.5'–95.5')
D1	DETAILS

B+T GRP
1717 S. BOULDER AVE
SUITE 300
TULSA, OK 74119
PH. (918) 587-4630
www.btgrp.com

ISSUED FOR:

REV.	DATE	DESCRIPTION
0	12/13/13	ISSUED FOR CONSTRUCTION

PROJECT NO:	89029.001.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	HGR

B+T ENGINEERING, INC.

STATE OF CONNECTICUT — CHAD E. TUTTLE — No. 23924 — LICENSED PROFESSIONAL ENGINEER — 12/13/13

LONG EDDY / WRIGHT PROPERTY
876373
136 WRIGHT RD.
TORRINGTON, CT
EXISTING 148' MONOPOLE

SHEET TITLE
TITLE SHEET

SHEET NUMBER: S1
REVISION: 0

MI CHECKLIST

REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
	PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT.
N/A	EOR APPROVED SHOP DRAWINGS	FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL PROVIDE APPROVED SHOP DRAWINGS TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	ASSEMBLY DRAWINGS	ONCE THE PRE-MODIFICATION MAPPING IS COMPLETE, PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS. THESE ARE TO INCLUDE, BUT ARE NOT LIMITED TO, A VISUAL LAYOUT OF NEW REINFORCEMENT, EXISTING REINFORCEMENT CONFIGURATION, PORTHOLES, MOUNTS, STEP PEGS, SAFETY CLIMBS AND ANY OTHER MISCELLANEOUS ITEMS WHICH MAY AFFECT SUCCESSFUL INSTALLATION OF MODIFICATIONS ON THE TOWER. THESE DRAWINGS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. APPROVED ASSEMBLY DRAWINGS SHALL BE SUBMITTED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	A VISUAL OBSERVATION BY A CWI OF A PORTION OF WELDING ON THE PROPOSED STRUCTURAL MEMBERS IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORT (MTR)	MILL CERTIFICATION SHALL BE PROVIDED FOR ALL STEEL AS SPECIFIED IN THE MODIFICATION DRAWINGS AND THIS DOCUMENTATION SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION	CRITICAL SHOP WELDS THAT REQUIRE TESTING (PER ENG-STD-10069) ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED WELD INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	NDE REPORT OF MONOPOLE BASE PLATE	A NDE (PER ENG-SOW-10033) OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	CONSTRUCTION (PERFORMED BY CONTRACTOR)	
X	CONSTRUCTION INSPECTIONS	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS.
N/A	FOUNDATION INSPECTIONS	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	POST INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH CROWN REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS INSTALLED IN ACCORDANCE WITH CROWN ENG-PRC-10012 FOR INCLUSION IN THE MI REPORT.
X	CONTRACTOR'S CERTIFIED WELD INSPECTION	A CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST AS NECESSARY ALL FIELD WELDS. CWI SHALL FOLLOW ALL THE PROCEDURES SPECIFIED IN CROWN STANDARD DOCUMENTS ENG-SOW-10066, ENG-STD-10069 AND SRV-STD-10159. A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT. FULL PENETRATION WELDS IN THE VICINITY OF BASE OF THE TOWER ARE REQUIRED TO BE 100% NDE INSPECTED BY UT IN ACCORDANCE WITH AWS D1.1. PARTIAL PENETRATION AND FILLET WELDS IN THE VICINITY OF BASE OF THE TOWER ARE REQUIRED TO BE 50% NDE INSPECTED BY MP IN ACCORDANCE WITH AWS D1.1.
N/A	EARTHWORK: LIFT AND DENSITY	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED IN ACCORDANCE WITH ENG-BUL-10149.
N/A	GUY WIRE TENSION REPORT	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT TO THE MI INSPECTOR INDICATING THE TEMPERATURE AND TENSION IN EVERY GUY CABLE AS PART OF PLUMB AND TENSION PROCEDURE FOR INCLUSION IN THE MI REPORT.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACT DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD.
	POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTORS REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING	POST-INSTALLED ANCHOR RODS SHALL BE TESTED IN ACCORDANCE WITH ENG-PRC-10119 AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI WHICH DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
ADDITIONAL TESTING AND INSPECTIONS:		

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT AND N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT

MODIFICATION INSPECTION NOTES:

GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

ALL MI'S SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (AEV) OR ENGINEERING SERVICE VENDOR (AESV) THAT IS APPROVED TO PERFORM ELEVATED WORK FOR CROWN. SEE ENG-BUL-10173 LIST OF APPROVED MI VENDORS.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR CROWN POINT OF CONTACT (POC).

REFER TO ENG-SOW-10007 : MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

MI INSPECTOR

THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO CROWN.

GENERAL CONTRACTOR

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST AND ENG-SOW-10007.

RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, CROWN SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF CROWN CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MI'S

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH CROWN TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH CROWN'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION

MI VERIFICATION INSPECTIONS

CROWN RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTION(S) ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ENG-SOW-10007.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT AEV/AESV FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO ENG-SOW-10007.

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CROWN CASTLE

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REV	DATE	DESCRIPTION
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PROJECT NO:	89028.001.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
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B+T ENGINEERING, INC.

STATE OF CONNECTICUT LICENSED PROFESSIONAL ENGINEER No. 23924

LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
MODIFICATION INSPECTION NOTES AND CHECKLIST

SHEET NUMBER: S2
REVISION: 0

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NOTES:

1. ALL STRUCTURAL BOLTS SHALL BE INSTALLED AND TIGHTENED TO THE PRE-TENSIONED CONDITION ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.

2. ALL STRUCTURAL BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.

3. ALL AJAX M20 BOLTS WITH SHEAR SLEEVES SHALL BE PRE-TENSIONED AND TIGHTENED UNTIL THE DIRECT TENSION INDICATOR (DTI) WASHERS SHOW THAT THE PROPER BOLT TENSION HAS BEEN REACHED. SEE NOTES AND DETAIL BELOW FOR THE USE OF DIRECT TENSION INDICATOR (DTI) WASHERS WITH THE AJAX M20 BOLTS.

4. ALL AJAX BOLTS SHALL BE INSTALLED USING DIRECT TENSION INDICATORS (DTI'S) AND HARDENED WASHERS. DTI'S SHALL BE THE SQUIRTER® STYLE, MADE TO ASTM F959 LATEST REVISION; AND HARDENED WASHERS SHALL CONFORM TO ASTM F436 AND HAVE A HARDNESS OF HRC 38 OR HIGHER.

5. AS AN ALTERNATIVE TO USING DTI WASHERS, AJAX BOLTS MAY BE PRETENSIONED PER AISC TURN-OF-NUT METHOD.

NOTES FOR AJAX M20 'ONE-SIDE' BOLTS WITH DIRECT TENSION INDICATORS (DTI'S):

DTI'S REQUIRED: DTI'S SHALL BE "SELF-INDICATING" SQUIRTER® STYLE DTI'S MADE WITH SILICONE EMBEDDED IN THEM, INSPECTED BY MEANS OF THE VISUAL EJECTION OF SILICONE AS THE DTI PROTRUSIONS COMPRESS. SQUIRTER® DTI'S SHALL BE CALIBRATED PER MANUFACTURES'S INSTRUCTIONS PRIOR TO USE.

THE DIRECT TENSION INDICATOR (DTI) WASHERS SHALL BE THE "SQUIRTER® STYLE" AS MANUFACTURED BY:

APPLIED BOLTING TECHNOLOGY PRODUCTS, INC.
1413 ROCKINGHAM ROAD
BELLOWS FALLS, VERMONT 05101, USA
PHONE 1-800-552-1999
WEBSITE: WWW.APPLIEDBOLTING.COM

DISTRIBUTORS OF SQUIRTER® DTI'S:
HTTP://WWW.APPLIEDBOLTING.COM/APPLIED-BOLTING-DISTRUBUTORS.HTML

DTI: USE DIRECT TENSION INDICATOR (DTI) WASHERS COMPATIBLE WITH 3/4" NOMINAL A325 BOLTS FOR THE AJAX M20 BOLTS. DTI'S SHALL NOT BE HOT-DIP GALVANIZED. DTI'S SHALL BE MECHANICALLY GALVANIZED (MG) BY THE COLD MECHANICAL PROCESS ONLY AS PROVIDED BY THE DTI MANUFACTURER.

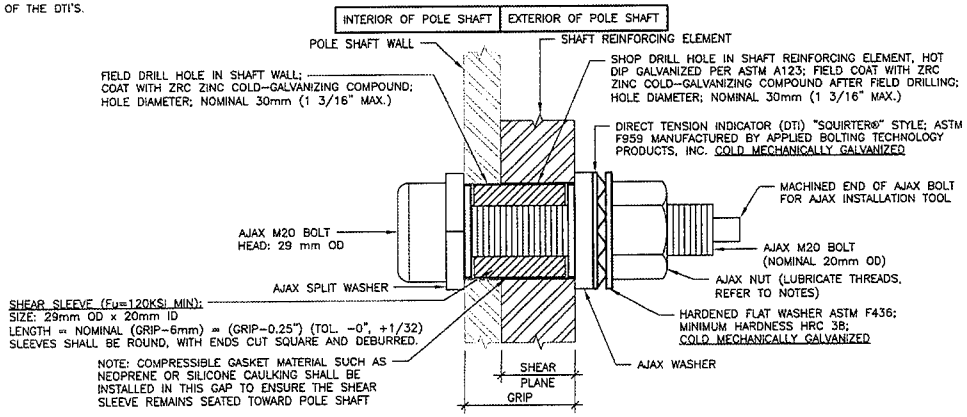
HARDENED WASHERS REQUIRED: USE A HARDENED WASHER FOR A 3/4" NOMINAL BOLT BETWEEN THE TOP OF THE DIRECT TENSION INDICATOR (DTI) WASHER AND THE NUT OF THE AJAX M20 BOLT. HARDENED WASHERS SHALL CONFORM TO ASTM F436 AND HAVE A MINIMUM HARDNESS OF HRC 38 OR HIGHER. THE HARDENED WASHERS SHALL BE MECHANICALLY GALVANIZED BY THE COLD MECHANICAL PROCESS. ALTERNATIVELY, CORRECTLY MADE HOT DIP GALVANIZED HARDENED FLAT WASHERS HAVING A MINIMUM HARDNESS OF HRC 38 CAN BE USED; CONTRACTOR SHALL PROVIDE DOCUMENTATION OF WASHER SPECIFICATION AND HARDNESS.

NUT LUBRICATION REQUIRED: PROPERLY LUBRICATE THE THREADS OF THE NUT OF THE AJAX BOLT SO THAT IT CAN BE PROPERLY TIGHTENED WITHOUT GALLING AND/OR LOCKING UP ON THE BOLT THREADS. CONTRACTOR SHALL FOLLOW DTI MANUFACTURER INSTRUCTIONS FOR PROPER LUBRICATION AND TIGHTENING.

NOTE: COMPLETELY COMPRESSED DTI'S SHOWING NO VISIBLE REMAINING GAP ARE ACCEPTABLE. DTI WASHERS SHALL BE PLACED DIRECTLY AGAINST THE OUTER AJAX WASHER WITH THE DTI BUMPS FACING AWAY FROM THE AJAX WASHER. PLACE A HARDENED WASHER BETWEEN THE DTI AND AJAX NUT. THE DTI BUMPS SHALL BEAR AGAINST THE UNDERSIDE OF A HARDENED FLAT WASHER, NEVER DIRECTLY AGAINST THE NUT.

CONTRACTOR SHALL FOLLOW DTI MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION, LUBRICATION, TIGHTENING AND INSPECTION.

INSPECTION REQUIRED: ALL AJAX BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 32, 2009, BY A QUALIFIED BOLT INSPECTOR. DURING INSTALLATION, THE BOLT INSPECTOR SHALL VERIFY AND DOCUMENT THE SHOP-DRILLED AND FIELD-DRILLED HOLE SIZES; THE INSTALLATION OF THE AJAX BOLT ASSEMBLY, INCLUDING THE SHEAR SLEEVE PLACEMENT AND NUT LUBRICATION AND THE CONTRACTOR'S TENSIONING PROCEDURE. IN ADDITION, ALL AJAX BOLTS AND DTI'S SHALL BE VISUALLY INSPECTED ACCORDING TO THE DTI MANUFACTURER'S INSTRUCTIONS. THE BOLT INSPECTOR SHALL PROVIDE COMPLETE PHOTO DOCUMENTATION OF ALL BOLTS AFTER TIGHTENING CLEARLY SHOWING THE CONDITION OF THE DTI'S.



1 TYPICAL AJAX BOLT DETAIL
SCALE: N.T.S.

GENERAL NOTES

1.1 ALL WORK SHALL COMPLY WITH THE TIA/EIA-222-F STANDARD AS WELL AS ANY OTHER GOVERNING BUILDING CODES.
1.2 FIELD WORK WILL BE DONE AROUND EXISTING COAXIAL CABLE AND EQUIPMENT. ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE.
1.3 A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO ANY FIELD CUTS OR FIELD DRILLED HOLES.
1.4 THE USE OF A GAS TORCH OR WELDER WILL NOT BE PERMITTED ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.
1.5 IN LIEU OF TEMPORARY BRACING CONTRACTOR MAY HAVE A STABILITY ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE TOWER IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 mph (3-SEC) PER TIA-1019.

FABRICATION

2.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2.2 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:

	YIELD	ASTM SPECS
A. STEEL SHAPES AND PLATES, U.N.O.	65ksi	A572

2.3 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A153.
2.4 WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E80 SERIES.
2.5 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO B+T GROUP 2 WEEKS PRIOR TO FABRICATION.

KEY NOTES

(#) TOWER MODIFICATION I.D.

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1717 S. BOULDER AVE
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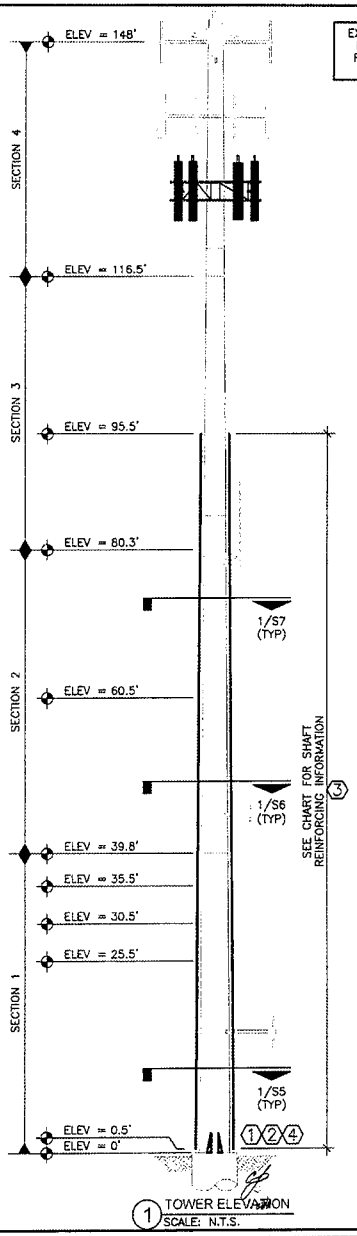
STATE OF CONNECTICUT — CHAD R. CASTLE — No. 23924 — LICENSED PROFESSIONAL ENGINEER

LONG EDDY / WRIGHT PROPERTY
876373
136 WRIGHT RD.
TORRINGTON, CT
EXISTING 148' MONOPOLE

SHEET TITLE
GENERAL NOTES, AJAX BOLT NOTES AND DETAILS

SHEET NUMBER: S3
REVISION: 0



1 TOWER ELEVATION
SCALE: N.T.S.

EXISTING ANTENNA MOUNTS SHALL BE REMOVED AND MODIFIED AS REQUIRED FOR INSTALLATION OF SHAFT REINFORCIING.

CCI: FLAT PLATE-BILL OF MATERIALS (65KSI)

BOTTOM ELEVATION	TOP ELEVATION	FLAT PLATE DESIGNATION	FLAT PLATE LENGTH	FLAT PLATE QUANTITY	AJAX BOLTS PER PLATE	TOTAL AJAX BOLT QTY	TERMINATION BOLTS (BOTTOM)	TERMINATION BOLTS (TOP)	MAXIMUM INTERMEDIATE BOLT SPACING	TOTAL STEEL WEIGHT	
0'-6"	30'-6"	CCI-SFP-06512530	30'-0"	2	37	74	11	11	19"	1656	LBS.
0'-6"	35'-6"	CCI-SFP-06512535	35'-0"	1	40	40	11	11	19"	966	LBS.
30'-5"	60'-5"	CCI-SFP-06512530	30'-0"	2	37	74	11	11	19"	1656	LBS.
25'-6"	60'-6"	CCI-SFP-06512535	35'-0"	1	40	40	11	11	19"	966	LBS.
60'-6"	95'-6"	CCI-SFP-06010035	35'-0"	3	41	123	11	8	16"	2140	LBS.
						351				7384	LBS.

NOTES:
1. AJAX BOLTS ARE TO BE 20mm DIAMETER WITH CORRESPONDING 29mm DIAMETER SLEEVE WITH MATCHING STEEL GRADE.
2. ALL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATOR IN ACCORDANCE WITH ASTM A123. ALTERNATIVELY, ALL NEW STIFFENER PLATE STEEL REINFORCING MAY BE COLD GALVANIZED AS FOLLOWS: APPLY A MINIMUM OF TWO COATS OF ZRC-BRAND ZINC-RICH COLD GALVANIZING COMPOUND. FILM THICKNESS. 1-800-831-3275 FOR PRODUCT INFORMATION.
3. ALL SHIMS SHALL BE ASTM A36.
4. HOLES FOR AJAX BOLTS AND SHEAR SLEEVES ARE 30mm UNLESS NOTED OTHERWISE.
5. SHOP WELDS ARE ASSUMED E80XX OR GREATER, PER STANDARD SPLICE DETAIL.
6. IF SCOPE OF MODIFICATION REQUIRES REMOVAL OF TOWER ID TAG, IT MUST BE REPLACED.
7. THE CLIMBING FACILITIES, SAFETY CLIMB AND ALL PARTS THEREOF SHALL NOT BE IMPEDED, MODIFIED OR ALTERED WITHOUT THE EXPRESS APPROVAL OF THE ENGINEER OF RECORD OR TOWER OWNER.
8. WHERE POSSIBLE, CLIMBING HARDWARE SHOULD REMAIN IN-LINE ALONG THE POLE. IF AN OBSTRUCTION CAUSES A LATERAL OFFSET OF 2'-0" OR MORE, CLIMBING ANCHORS SHALL BE PROVIDED AT EACH CHANGE IN ALIGNMENT.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FITTING OF REINFORCEMENT ON MONOPOLES. THIS INCLUDES BUT IS NOT LIMITED TO SHIM PLATES FOR ANY REINFORCEMENT PASSING OVER A LAP SPLICE. AS WELL AS OTHER LOCATIONS WHERE REQUIRED.

NEW CCI FLAT PLATE (65KSI) REINFORCING ELEMENTS

START ELEVATION	END ELEVATION	QTY	FLAT #	FLAT PLATE *
0'-6"	30'-6"	2	2 & 8	CCI-SFP-06512530
0'-6"	35'-6"	1	13	CCI-SFP-06512535
30'-5"	60'-5"	2	2 & 8	CCI-SFP-06512530
25'-6"	60'-6"	1	14	CCI-SFP-06512535
60'-6"	95'-6"	3	2, 8, & 14	CCI-SFP-06010035

* SEE CMRP 65 KSI PARTS CATALOG EDITION 2 REV. 1 FOR PART DETAILS

ALL BOLTS SHALL BE AJAX M20 BOLTS WITH HIGH STRENGTH SHEAR SLEEVES (ASTM A519 WITH MIN. Fu=120 KSI). CONTACT SUPPLIER FOR MATERIAL (PLATE AND BOLTS) AND INSTALLATION PROCEDURES.

EXISTING MEMBER SCHEDULE

SECTION	NUMBER OF SIDES	THICKNESS	BOTTOM DIAMETER	TOP DIAMETER	LAP SPLICE
1	18	0.3750"	48.1900"	40.3595"	63.00"
2	18	0.3125"	41.8980"	34.0680"	54.00"
3	18	0.2500"	35.3510"	28.3910"	45.00"
4	18	0.2188"	29.4810"	24.0000"	---

NEW AEROSOLUTIONS MP3 REINFORCING ELEMENTS

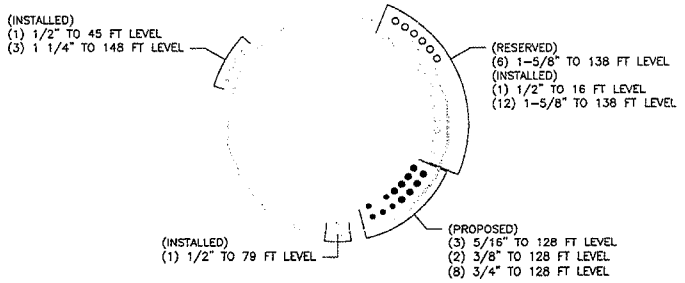
START ELEVATION	END ELEVATION	QTY	FLAT #	MP3
0'-6"	30'-6"	2	2 & 8	MP306
0'-6"	35'-6"	1	13	MP306
30'-5"	60'-5"	2	2 & 8	MP305
25'-6"	60'-6"	1	14	MP305
60'-6"	95'-6"	3	2, 8, & 14	MP304

ALL BOLTS SHALL BE AJAX M20 BOLTS WITH HIGH STRENGTH SHEAR SLEEVES (ASTM A519 WITH MIN. Fu=120 KSI). CONTACT SUPPLIER FOR MATERIAL (PLATE AND BOLTS) AND INSTALLATION PROCEDURES. LOCATION OF OVERLAPS AND SPLICES TO BE DETERMINED BY AEROSOLUTIONS.

TOWER MODIFICATIONS:

1. CONTRACTOR SHALL BUDGET A SITE VISIT TO CHECK CRITICAL DIMENSIONS AND VERIFY UNKNOWN CONDITIONS PRIOR TO STEEL FABRICATION.
2. THE NEW AND EXISTING TRANSMISSION LINES MUST BE DISTRIBUTED AS SHOWN IN THE TX LINE DIST. DIAGRAM RE: DETAIL 2/S4.
3. INSTALL NEW REINFORCING ELEMENTS RE: SHEET S5, S6, AND S7.
4. INSTALL NEW TRANSITION STIFFENERS RE: SHEET S5.

* CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR ALL REMOVE AND REPLACE PROCEDURES.
** MODIFICATIONS SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED APPURTENANCES.



2 TX LINE DISTRIBUTION DIAGRAM
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

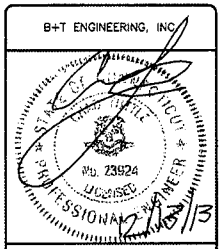
CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	12/13/13	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.001.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	HGR

B+T ENGINEERING, INC.



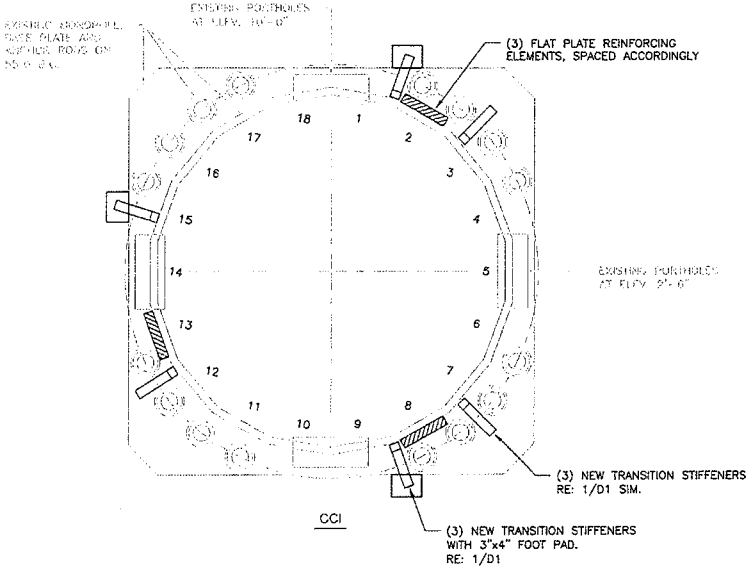
LONG EDDY / WRIGHT PROPERTY
876373

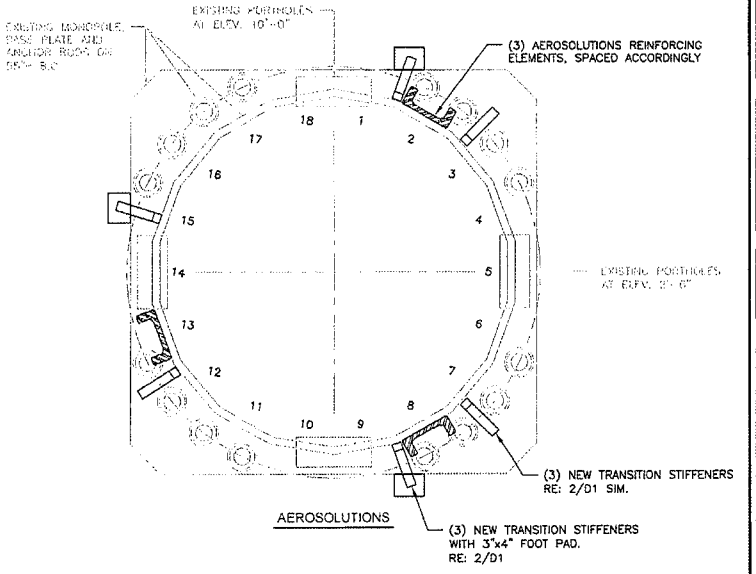
136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
TOWER ELEV., SCHEDULES, AND TX LINE DIST. DIAGRAM

SHEET NUMBER: S4
REVISION: 0





1 TOWER SECTION (0'-35.5')
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	12/13/13	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.001.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	HGR

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHRISTOPHER R. CLARK
NO. 23924
LICENSED PROFESSIONAL ENGINEER
12/13/13

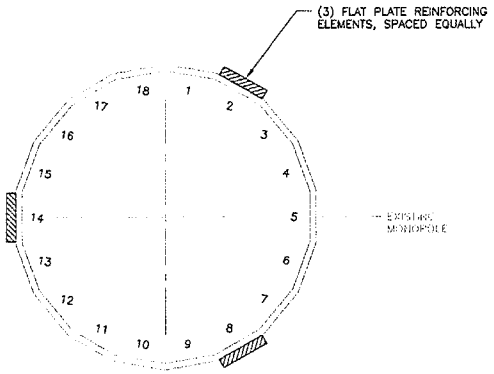
LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
TOWER SECTION
0'-35.5'

SHEET NUMBER:	REVISION:
S5	0



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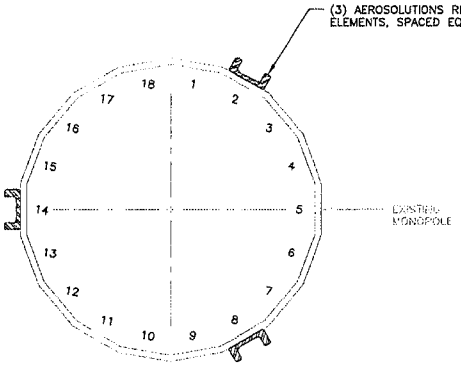


AEROSOLUTIONS

1 TOWER SECTION (30.5'-60.5')
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	12/13/13	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.001.01
PROJECT ENG.	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	HGR

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHRISTOPHER R. CHASE
No. 23924
LICENSED PROFESSIONAL ENGINEER

LONG EDDY / WRIGHT PROPERTY
876373

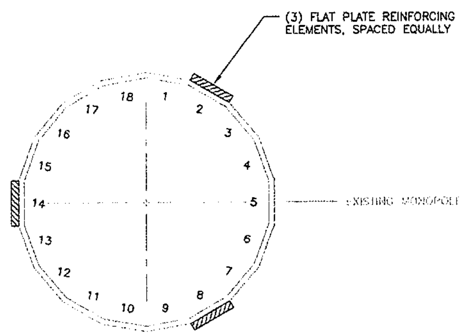
136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
TOWER SECTION
30.5'-60.5'

SHEET NUMBER: S6

REVISION: 0



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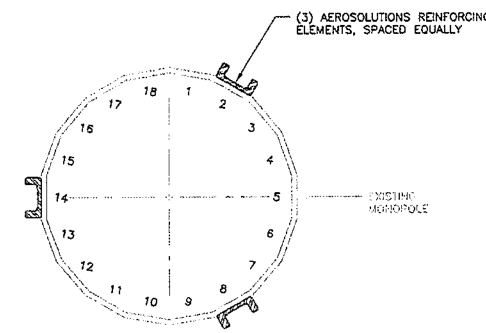


AEROSOLUTIONS

1 TOWER SECTION (60.5'-95.5')
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	12/13/13	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.001.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	HGR

B+T ENGINEERING, INC.

STATE OF CONNECTICUT PROFESSIONAL ENGINEER No. 23924 LICENSED

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

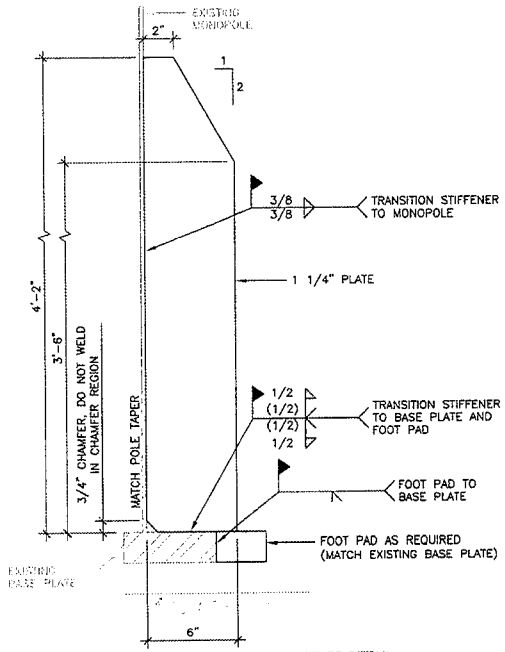
LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

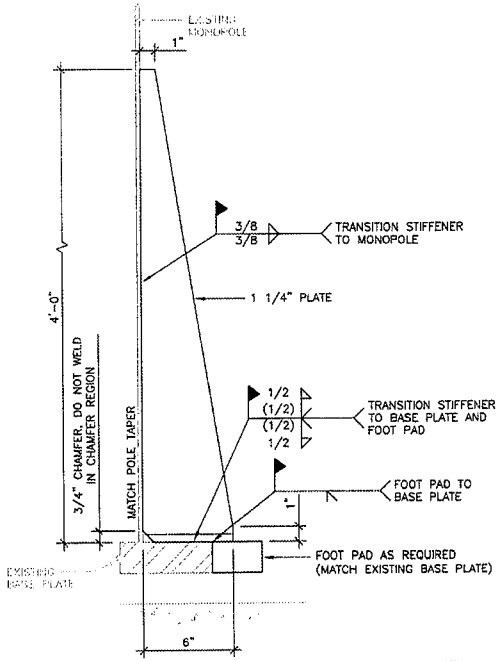
EXISTING 148' MONOPOLE

SHEET TITLE
TOWER SECTION
60.5'-95.5'

SHEET NUMBER: S7
REVISION: 0



1 CCI-TRANSITION STIFFENER DETAIL
SCALE: N.T.S.



2 AEROSOLUTIONS TRANSITION STIFFENER DETAIL
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER AVE
SUITE 300
TULSA, OK 74119
PH (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	12/13/13	ISSUED FOR CONSTRUCTION

PROJECT NO:	89026.001.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	HGR

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
REG. 23924
LICENSED PROFESSIONAL ENGINEER

LONG EDDY / WRIGHT PROPERTY
876373

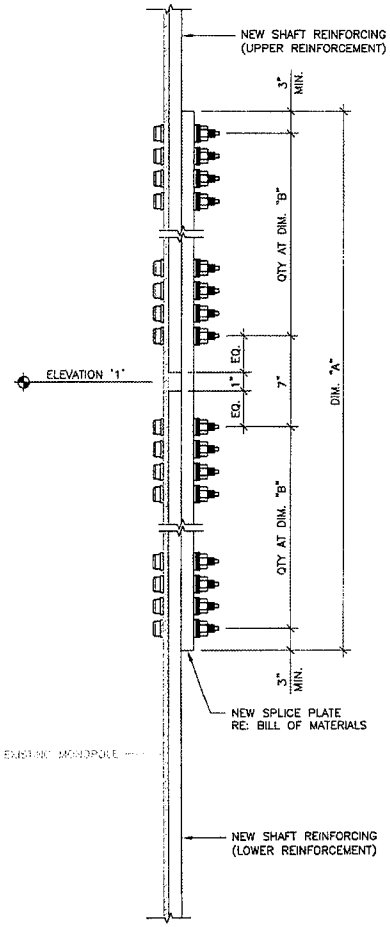
136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE
DETAILS

SHEET NUMBER: D1

REVISION: 0



1 FLAT PLATE IN LINE SPLICE DETAIL
SCALE: N.T.S.

SPLICE PLATE-BILL OF MATERIALS (65ksi)								
ELEVATION '1'	FLAT PLATE SIZE	QTY	DIM. "A"	QTY AT DIM. "B"	AJAX BOLTS PER SPLICE	TOTAL AJAX BOLTS **	TOTAL STEEL WEIGHT	
30'-6"	1 1/4"x6 1/2"	2	6'-0"	11 @ 2'-6"	22	44	331	LBS.
60'-6"	1 1/4"x6 1/2"	3	6'-0"	11 @ 2'-6"	22	66	497	LBS.
					TOTAL:	110	828	LBS.

* O.C. DISTANCE ON TERMINATION BOLTS TO BE 3 IN. U.N.O.
* USE SHIM PLATES AS REQUIRED.

** NOTE: BOLTS COUNTED ON SHEET S4.

B+T GRP
1717 S. BOULDER AVE.
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

CROWN CASTLE

ISSUED FOR:

REV.	DATE	DESCRIPTION
0	12/13/13	ISSUED FOR CONSTRUCTION

PROJECT NO:	89028.001.01
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	CRC
CHECKED BY:	HGR

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHRISTOPHER R. LITTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER

LONG EDDY / WRIGHT PROPERTY
876373

136 WRIGHT RD.
TORRINGTON, CT

EXISTING 148' MONOPOLE

SHEET TITLE

SPLICE DETAIL AND NOTES

SHEET NUMBER:	REVISION:
RD1	0

CROWN CASTLE

3530 Toringdon Way
Suite 300
Charlotte, NC 28277

Tel: 704-405-6523
Fax: 724-416-6153

November 20, 2013

RE: Crown Castle Letter of Authorization (LOA)

Crown Castle, does hereby authorize **AT&T Mobility ("AT&T")** and its authorized contractors/agents to act as "Applicant" in the processing of all applications, permits, research and other related activities associated with the processing, planning, design review, permitting, entitlement and construction of additional equipment, antennas and site improvements for the Crown Castle existing wireless communications facility described as follows:

Customer Site Name:	**Wright Road**	**Crown Castle Site ID Number:**	**876373**
Site Address:	**136 Wright Rd. Torrington, CT 06790**	**Crown Castle Site Name:**	**Long Eddy / Wright Property**

This authorization is fully contingent upon **AT&T's** authorized contractors/agents' compliance with the following conditions:

1. Crown Castle must review the application prior to submittal. Crown Castle must be provided all applications, narratives, drawings and attachments at least 72 hours in advance of their submittal to the locality. Use of email and electronic attachments is encouraged. A Crown Castle Zoning Subject Matter Expert (SME) will review and provide written comment to the customer within 48 hours of receipt of a complete set of application materials. If Crown Castle indicates that changes are required, submissions shall be altered in accordance with Crown Castle comments prior to submission to the locality. Verification of corrections should also be accomplished via emails and attachments.
2. In no event may **AT&T** encourage, suggest, participate in, or permit the imposition of any restrictions or additional obligations whatsoever on the tower site or Crown Castle's current or future use or ability to license space at the tower site as part of or in exchange for obtaining any approval, permit, exception or variance.
3. A copy of the final permit and/or a written summary of the zoning/entitlement decision rendered by the locality and any/all conditions placed on that decision shall be communicated in detail to Crown Castle well within the appeal period provided by the locality (typically 10-15 days).
4. All conditions of approval pertinent to the construction of the proposed project must be included in the construction drawings for the project. The conditions of approval pertinent to the construction of the project shall be copied verbatim from the zoning permit approval language, and shall be present in the drawings prior to submission for building permits and contractor bidding. Crown Castle shall verify the inclusion of appropriate conditions of approval in the construction drawing redline process.
5. Crown Castle will provide a Notice To Proceed (NTP) to construction to the customer upon receipt of the final approved zoning permit and the approved Building Permit.

By Crown Castle:

Signature: Sarah Brown

Printed Name: **Sarah Brown**

Title: **Real Estate Specialist**

Date: **November 20, 2013**

Power Density Calculations

Applicant:	New Cingular Wireless PCS, LLC ("AT&T")
Site ID:	S4047
Site Type:	150' Monopole Tower
Address:	136 Wright Road, Torrington, CT 06790
Date:	December 26, 2013

---

1. Existing Power Density [1]

Carrier	# Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
Verizon PCS	7	274	138	0.0362	1970	1.0000	3.62%
Verizon cellular	9	379	138	0.0644	869	0.5793	11.12%
Verizon AWS	1	686	138	0.0130	2145	1.0000	1.30%
Verizon LTE	1	790	138	0.0149	698	0.4653	3.21%
Sprint CDMA/LTE	2	778	148	0.0255	1900	1.0000	2.55%
Sprint CDMA/LTE	1	438	148	0.0072	850	0.5667	1.27%
						TOTAL	**23.06%**

2. Proposed AT&T Power Density [2]

Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
AT&T UMTS	2	500	130	0.0219	800 Band	0.5867	3.74%
AT&T UMTS	1	500	130	0.0110	1900 Band	1.0000	2.19%
AT&T LTE	1	500	130	0.0110	700 Band	0.4667	2.35%
AT&T LTE	1	500	130	0.0110	1900 Band	1.0000	2.19%
AT&T LTE	1	500	130	0.0110	2300 Band	1.0000	2.19%
						TOTAL	**12.66%**

3. Cumulative Power Density Calculation Results

Carrier	#Channels	ERP/Ch	Ant Ht	Power Density (mW/cm2)	Frequency MHz	Limit	%MPE
Verizon PCS	7	274	138	0.0362	1970	1.0000	3.62%
Verizon cellular	9	379	138	0.0644	869	0.5793	11.12%
Verizon AWS	1	686	138	0.0130	2145	1.0000	1.30%
Verizon LTE	1	790	138	0.0149	698	0.4653	3.21%
Sprint CDMA/LTE	2	778	148	0.0255	1900	1.0000	2.55%
Sprint CDMA/LTE	1	438	148	0.0072	850	0.5667	1.27%
AT&T UMTS	2	500	200	0.0100	800 Band	0.5867	3.74%
AT&T UMTS	1	500	200	0.0050	1900 Band	1.0000	2.19%
AT&T LTE	1	500	200	0.0050	700 Band	0.4667	2.35%
AT&T LTE	1	500	200	0.0050	1900 Band	1.0000	2.19%
AT&T LTE	1	500	200	0.0050	2300 Band	1.0000	2.19%
						TOTAL	**35.72%**

[1] This Power Density information was taken from the Connecticut Siting Council database dated October 1, 2013.
[2] This Power Density information is based on worse case assumptions from AT&T's radio frequency engineers.

4. Conclusion:

The addition of AT&T's antennas on the existing tower will result in the cumulative maximum permissible exposure (MPE) level of 35.72%. The proposal complies with the National Council on Radiation Protection and Measurements standard for MPE adopted by the Federal Communications Commission ("FCC"). Moreover, the maximum level of radio-frequency energy emitted from AT&T's installation will be below the FCC's mandated radio frequency exposure limits.

CITY OF TORRINGTON

MARTIN J. CONNOR, AICP
CITY PLANNER
LAND USE OFFICE
140 Main Street • City Hall
Torrington, CT 06790-5245

Phone: (860) 489-2221
Fax: (860) 496-5928
e-mail: *martin_connor@torringtonct.org*

January 3, 2014

Melanie Bachman, Acting Executive Director
State of Connecticut
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: **TS-AT&T-143-131227**- AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 136 Wright Road, Torrington, Connecticut

Dear Ms. Bachman:

Thank you for your letter dated December 27, 2013, regarding AT&T's request for tower sharing at the telecommunications facility located at 136 Wright Road, Torrington, Connecticut. The City is supportive of this tower sharing request as it is in the best interest of our community to limit the number of towers and share space whenever possible. We do want to make sure, however, that space is reserved on the existing tower for the City of Torrington's present and future municipal needs.

If you have any questions, please call me at 860-489-2220.

Sincerely yours,

Martin J. Connor, AICP
City Planner

Cc: Mayor Elinor Carbone
Lt. Wayne Newkirk, Torrington Police Department

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

December 27, 2013

The Honorable Elinor C. Carbone
Mayor
Torrington Municipal Building
140 Main Street
Torrington, CT 06790-5245

RE: **TS-AT&T-143-131227** - AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 136 Wright Road, Torrington, Connecticut.

Dear Mayor Carbone:

The Connecticut Siting Council (Council) received a request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa, a copy of which has already been provided to you.

The Council will consider this item at a future public meeting. A copy of the agenda will be forwarded to you.

If you have any questions or comments regarding the proposal, please call me or inform the council by January 10, 2014.

Thank you for your cooperation and consideration.

Very truly yours,

Melanie Bachman
Acting Executive Director

MB/laf

c: Martin Connor, City Planner, City of Torrington