

November 29, 2017

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Work Complete
1 Hartford Square, New Britain, CT
AT&T Site #: 10071149 / CT5254
EM-AT&T-089-160223 and EM-AT&T-089-170425

Members of the Siting Council:

On behalf of AT&T, SBA Communications is hereby notifying the Connecticut Siting Council that work has been completed at the aforementioned telecommunications facility.

Pursuant to the Council's letters of acknowledgement, please find the enclosed Statement of Special Inspections and supporting materials confirming that the installation meets with the recommendations made.

Thank you,



Kri Pelletier
Property Specialist
SBA Communications Corporation
134 Flanders Rd., Suite 125
Westborough, MA 01581
508-251-0720 x 3804 + T
508-251-1755 + F
kpelletier@sbsite.com

Final Report of Special Inspections

Project: *AT&T LTE Multi Carrier RRU Add – CT5254 / New Britain West*
Building Permit: *B-16-152 & B-17-357*
Exempt Mod. No.: *EM-AT&T-089-160223 & EM-AT&T-089-170425*
Location: *1 Hartford Square, New Britain, CT 06052*
Owner: *AT&T Mobility*
Owner's Address: *550 Cochituate Road, Framingham, MA 01701*
Engineer of Record: *Michael Plahovinsak, PE*
Trylon TSF Inc, Irving, TX 75038

To the best of my information, knowledge, and belief, no special inspections were required for this project. A general visual inspection from ground level of completed construction has been performed as noted in the attached field inspection report, and all discovered discrepancies have been reported and resolved.

Based on my knowledge, information, and belief, the completed construction substantially conforms to the following:

1. Final Construction Drawings prepared by Trylon TSF Inc dated 12/12/2016
2. Passing Structural Analysis prepared by AllPro Consulting Group dated 2/17/2017
3. Passing Post Modification Inspection report prepared by AllPro Consulting Group dated 7/24/2017

All deviations from the approved plans do not endanger then intended occupancy of the facility, and equipment substitutions are approved as equivalent to the original specifications. Construction has been satisfactorily completed.

Respectfully submitted,
Trylon TSF Inc

Michael Plahovinsak, PE
(Type or print name)


Signature

NOV 20 2017
Date



Inspection Report

November 17, 2017

ATTN: Bryan Bakis
SBA Communications Corp
134 Flanders Rd, Suite 125
Westborough, MA, 01581

Reference: Inspection Report for AT&T LTE Multi Carrier RRU Add Project
SBA Site ID: CT04382-S
AT&T Site ID: CT5254
Site Address: 1 Hartford Square, New Britain, CT 06052

Dear Sir:

Trylon has recently issued a construction drawing (dated 12/12/2016) for the above-referenced site. We have completed a visual inspection from ground level of the construction completed per this CD. Based on the information gathered during the inspection, we can confirm that the following items have been properly implemented as shown on the PE stamped CD:

- Installation of a V-Stabilizer below each existing T-Frame.
- Connection the new pipe face horizontal to each antenna pipe mount (four connection kits per sector).
- Replacement of (1) RRUS-11 from each sector with (1) new RRUS-32 (three in total).

In addition, the following items were inspected as per the Connecticut Siting Council's decisions EM-AT&T-089-160223 and EM-AT&T-089-170425:

- Installation of the proposed feedlines in accordance with the structural analysis report prepared by Velocitel dated 01/21/2016. *Note: the structural analysis report prepared by AllPro dated 2/17/2017 supersedes this report. The more recent structural analysis report indicates that no new feedlines were to be installed for this project. We can confirm that no new feedlines were installed.*
- Installation of tower reinforcement in accordance with the structural analysis report prepared by AllPro Consulting Group dated 02/17/2017. *Note: the inspection of the tower reinforcement was completed by AllPro Consulting Group. Refer to passing Post Modification Inspection report dated 7/24/2017.*
- Installation of antenna platform reinforcement in accordance with the site plans prepared by Trylon dated 12/12/2016.

Should you have any questions, comments, or require additional information, please do not hesitate to contact us.

Sincerely,

Michael Plahovinsak, PE



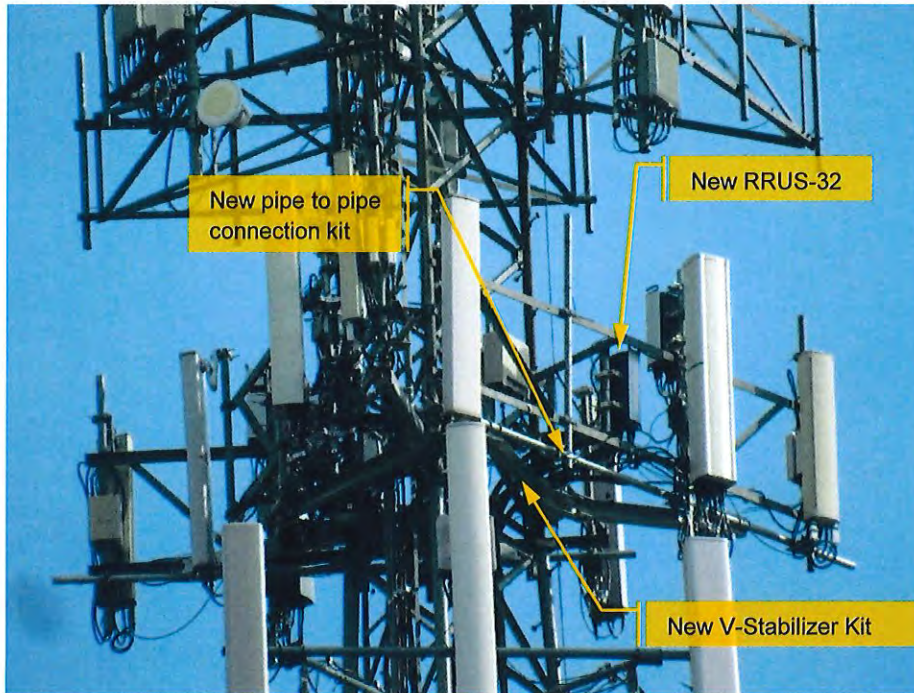


Photo 1 – Existing mount at 162-ft, showing new RRUS, new V-Stabilizer kit and new pipe to pipe connection kits



Photo 2 – Existing shelter with new XMU equipment assumed to be installed inside



Photo 3 – Existing AT&T feedlines

10071149_LTE-CT5254

DISPLAY PERMIT IN A CONSPICUOUS PLACE ON THE PREMISES

State of Connecticut

City of New Britain



27 West Main Street, New Britain, CT 06051 Tel: (860) 826-3383

PERMIT TO BUILD

Date: 3/21/2016

Fee: 280.00

NO. B-16-152

Building Location: 1 HARTFORD SQ

Applicant Name: EMPIRE TELECOM USA LLC

Type of Occupancy: Commercial

Type of Work: Commercial: Remodeling

Work Description: Swap 3 existing antennas with 3 newer technology cell antennas and associated equipment at existing cell site, no change to tower height or compound size, to specs, plans, diagram, mfg recommendations and 2005 CT State Building Code.

Additional Remarks:

Owner: HARTFORD SQUARE ASSOCIATES LLC

Contractor Name: EMPIRE TELECOM USA LLC

Contractor Phone:

Contractor Address: 1150 1ST AVE STE 600 KING OF PRUSSIA PA 19406-1300

License Type: MCO

License No: MCO.0903244

License Exp:

6/30/2016

NOTE: The recipient of this permit accepts this permit on the condition that, as owner or as agent of the owner, he/she agrees to comply with all Building & Zoning Regulations of the City of New Britain & the State Statutes of the State of Connecticut regarding the use, occupancy & type of building to be constructed, added to, demolished, or altered. The recipient also agrees that this building is to be located the proper distance from all street lines, side yard lines & required distances from all other zones & is located in a zone in which the building & its use is allowed. Additional conditions listed below:

Comments:

Restrictions:

All permits approved are subject to inspections performed by a representative of this office. Requests for inspections must be made at least 24 hours in advance.



Building Official Signature

3/21/2016

Date

Call (860) 826-3383 For Inspection

Building Permit

CT5254

DISPLAY PERMIT IN A CONSPICUOUS PLACE ON THE PREMISES

State of Connecticut
City of New Britain

27 West Main Street, New Britain, CT 06051 Tel: (860) 826-3383

PERMIT TO BUILDDate: 5/18/2017Fee: 280.00NO. **B-17-357**Building Location: 1 HARTFORD SQApplicant Name: EMPIRE TELECOM USA LLCType of Occupancy: CommercialType of Work: Commercial: RemodelingWork Description: **Swap 3 existing Remote Radio Units (RRUs) with 3 newer technology RRUs and associated equipment at existing cell site (A T & T), no change to tower/height or compound/size, all new existing panels, breakers must be labeled.**

Additional Remarks:

Owner: **HARTFORD SQUARE ASSOCIATES LLC**Contractor Name: EMPIRE TELECOM USA LLC

Contractor Phone: _____

Contractor Address: 1150 First Avenue KING OF PRUSSIA PA 194061300License Type: MAJOR License No: MCO.0903244 License Exp: 6/30/2018
CONTRACTOR

NOTE: The recipient of this permit accepts this permit on the condition that, as owner or as agent of the owner, he/she agrees to comply with all Building & Zoning Regulations of the City of New Britain & the State Statutes of the State of Connecticut regarding the use, occupancy & type of building to be constructed, added to, demolished, or altered. The recipient also agrees that this building is to be located the proper distance from all street lines, side yard lines & required distances from all other zones & is located in a zone in which the building & its use is allowed. Additional conditions listed below:

Comments:

Restrictions:

All permits approved are subject to inspections performed by a representative of this office. Requests for inspections must be made at least 24 hours in advance.



Building Official Signature5/18/2017

Date

Call (860) 826-3383 For Inspection

Building Permit



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

March 14, 2016

Kri Pelletier
SBA Communications
134 Flanders Rd., Ste. 125
Westborough, MA 01581

RE: **EM-AT&T-089-160223** – AT&T notice of intent to modify an existing telecommunications facility located at 1 Hartford Square, New Britain, Connecticut.

Dear Ms. Pelletier:

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

1. The proposed feed lines shall be installed in accordance with the structural analysis report prepared by Velocitel, Inc. dated January 21, 2016 and stamped by Dennis D. Abel;
2. Within 45 days following completion of the equipment installation, AT&T shall provide documentation that its installation complied with the recommendations of the structural analysis;
3. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
6. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function;
7. The validity of this action shall expire one year from the date of this letter; and
8. 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.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated February 22, 2016. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and

Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

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

Very truly yours,



Melanie A. Bachman
Acting Executive Director

MAB/CH/cm

- c: The Honorable Erin Stewart, Mayor, City of New Britain
Sergio Lupo, Director of License Permit & Inspections, City of New Britain
Hartford Square Associates, LLC

**Structural Analysis for
SBA Network Services, Inc.**

176.0' Self-Support Tower (176.0' AGL)

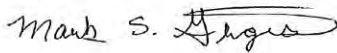
**SBA Site Name: New Britain 2, CT
SBA Site ID: CT04382-S-02
AT&T Site ID: 15210 / FA# 10071149
Site Address: 1 Hartford Square, New Britain, CT 06052-1161**

FDH Velocitel Project Number 16BBAF1400

Analysis Results

Tower Components	93.8%	Sufficient
Foundation	73.5%	Sufficient

Prepared By:



Mark S. Girgis, EI
Project Engineer II

Reviewed By:



Dennis D. Abel, PE
Director of Structural Engineering
CT License No. 23247

Velocitel, Inc., d.b.a. FDH Velocitel
6521 Meridien Drive
Raleigh, NC, 27616
(919) 755-1012



January 21, 2016

01-21-2016

Prepared pursuant to the TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and 2005 Connecticut Building Code

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EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Velocitel performed a structural analysis of the existing Self-Support Tower located in New Britain, CT to determine whether the tower is structurally adequate to support the antenna configuration in place per **Table 1** pursuant to the *TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and 2005 Connecticut Building Code*. Information pertaining to the antenna loading, current tower geometry, member sizes, and below grade parameters was obtained from:

Source	Document Type	Reference	Date
Rohn Industries, Inc.	Tower Drawings	Eng. File No 44545AE	August 18, 2000
Rohn Industries, Inc.	Foundation Drawings	Eng. File No 44545AE	July 26, 2000
SBA Network Services, Inc.	-	-	-

The *basic design wind speed* per *TIA/EIA-222-F* standards and the *2005 Connecticut Building Code* is 80 mph without ice and 38 mph with 1" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the antenna configuration in place per **Table 1** we have determined the tower stress level to be sufficient and the foundation to be sufficient pursuant to the requirements stipulated by *TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures* and the *2005 Connecticut Building Code* provided the **Recommendations** listed below are satisfied. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Velocitel is accurate (i.e., the structure member information, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the current analysis standards are met with the antenna configuration in place per **Table 1**, we have the following recommendations:

1. Feed lines to be installed as shown in **Figure 1** in the Appendix.
2. RRU/RRH Stipulation: The equipment may be installed in any arrangement as determined by the client.

APPURTENANCE LISTING

The antennas and equipment, with their corresponding feed lines, considered for this analysis are shown in **Table 1**. *If the actual layout determined in the field deviates from the layout, FDH Velocitel should be contacted to perform a revised analysis.*

Table 1 - Appurtenance Loading

Existing Loading:

Antenna Elevation (ft.)	Description	Feed Lines ¹	Carrier	Mount Elevation (ft.)	Mount Type
172	(3) Kathrein 840-10054 (4) Andrew VHLP2.5 (3) Samsung U-RAS Flexible RRH (3) Dragonwave Horizon Duo	(6) 5/16" Fiber	Clearwire	172	(3) T-Frames
162	(6) KMW AM-X-CD-16-65-00T (6) Powerwave 7770 (6) Powerwave LGP21401 (6) Powerwave LGP13519 (6) Ericsson RRUS-11 (1) Raycap DC6-48-60-18-8F	(12) 1-5/8" (1) 1/2" Fiber (2) 3/4" DC Power (1) 3" Flex Conduit	AT&T	162	(3) T-Frames
152	(3) Commscope LNX-6515DS-A1M (3) Ericsson S11B12 (3) Ericsson AIR 21 B2A/B4P (3) Ericsson AIR 21 B4A/B2P (3) Ericsson KRY 112 144/1	(12) 1-5/8" (1) 1-5/8" Fiber	T-Mobile	152	(3) T-Frames
140	(6) Andrew SBNHH-1D65B (3) Kathrein 800 10735v01 (3) Antel BXA-80080/4CF (3) Alcatel Lucent RRH-2x60-AWS (3) Alcatel Lucent RRH-2x60-PCS (3) Alcatel Lucent RRH-2X60W-700U (1) RFS DB-T1-6Z-8AB-0Z	(12) 1-5/8" (2) 1-5/8" Hybrid	Verizon	140	(3) T-Frames
130	(3) Kathrein 742 213	(6) 1-5/8"	Metro PCS	130	(3) Pipe Mounts

1. The (1) 1/2" Fiber cable and (2) 3/4" DC Power cable for AT&T are installed in (1) 3" flex conduit.

Proposed Carrier Final Loading:

Antenna Elevation (ft.)	Description	Feed Lines ¹	Carrier	Mount Elevation (ft.)	Mount Type
162	(3) Kathrein 800 10121 (3) Quintel Technology QS6651-3 (6) KMW AM-X-CD-16-65-00T (3) Ericsson RRUS-32 (3) Ericsson RRU A2 (3) Ericsson RRUS-11 (6) Powerwave LGP21401 (6) Powerwave LGP13519 (2) Raycap DC6-48-60-18-8F	(12) 1-5/8" (2) 1/2" Fiber (4) 3/4" DC Power (1) 3" Flex Conduit	AT&T	162	(3) T-Frames

1. The (2) 1/2" Fiber cable and (4) 3/4" DC Power cable for AT&T will be installed in (1) 3" flex conduit.

RESULTS

The following material grades for individual members were used for analysis:

Table 2 - Material Grade

Member Type	Material Grade
Legs	A572-50
Bracing	A572-50 & A36
Anchor Rods	A354-BC

Table 3 and **Table 4** display the summary of capacities for the analyzed structure and its additional components. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 5** displays the maximum dish rotations at service winds speeds.

If the assumptions outlined in this report differ from actual field conditions, FDH Velocitel should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 - Structure Member Capacities

Section No.	Elevation (ft.)	Component Type	Size	% Capacity	Pass / Fail
T1	176 - 160	Leg	ROHN 3 EH	9.4	Pass
T2	160 - 140	Leg	ROHN 4 EH	29.4	Pass
T3	140 - 120	Leg	ROHN 5 EH	40.3	Pass
T4	120 - 100	Leg	ROHN 6 EHS	51.4	Pass
T5	100 - 80	Leg	ROHN 6 EH	51.4	Pass
T6	80 - 60	Leg	ROHN 6 EH	60.7	Pass
T7	60 - 40	Leg	ROHN 8 EHS	59.8	Pass
T8	40 - 20	Leg	ROHN 8 X-STR	52.2 52.8 (b)	Pass
T9	20 - 0	Leg	ROHN 8 EH	57.7	Pass
T1	176 - 160	Diagonal	L2x2x1/4	14.6 29.3 (b)	Pass
T2	160 - 140	Diagonal	L2x2x3/16	38.5 68.7 (b)	Pass
T3	140 - 120	Diagonal	L2x2x3/16	79.0 93.8 (b)	Pass
T4	120 - 100	Diagonal	L2 1/2x2 1/2x3/16	68.0 87.9 (b)	Pass
T5	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	89.0	Pass
T6	80 - 60	Diagonal	L3x3x1/4	51.7	Pass
T7	60 - 40	Diagonal	L3 1/2x3 1/2x1/4	54.5 57.1 (b)	Pass
T8	40 - 20	Diagonal	L3 1/2x3 1/2x1/4	67.6	Pass
T9	20 - 0	Diagonal	L4x4x1/4	57.5 63.4 (b)	Pass
T1	176 - 160	Top Girt	L2x2x1/4	2.6 3.4 (b)	Pass

1. Capacities include 1/3 allowable stress increase for wind, per TIA/EIA-222-F standards.

Table 4 - Additional Structure Component Capacities

Elevation (ft.)	Component	% Capacity	Pass / Fail	Notes
0	Anchor Rods	65.9	Pass	1
0	Base Foundation (Reaction Comparison)	73.5	Pass	-

1. Capacities include 1/3 allowable stress increase for wind, per TIA/EIA-222-F standards.

Table 5 - Maximum Dish Rotations at Service Wind Speeds

Centerline Elevation (ft.)	Dish	Tilt (deg)*	Twist (deg)*
172	(4) Andrew VHLP2.5 Dish	0.2542	0.0346

*Allowable tilt and twist to be reviewed by the carrier.

GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Velocitel should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Velocitel.



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

May 15, 2017

Kri Pelletier
SBA Communications
134 Flanders Road, Suite 125
Westborough, MA 01581

RE: **EM-AT&T-089-170425** – AT&T notice of intent to modify an existing telecommunications facility located at 1 Hartford Square, New Britain, Connecticut.

Dear Ms. Pelletier:

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

1. The tower shall be reinforced in accordance with the Structural Analysis report prepared AllPro Consulting Group dated February 17, 2017 and stamped by Joji George;
2. The antenna platform shall be reinforced in accordance with the Site Plans prepared by Tylon, dated December 12, 2016 and stamped by Michael Plahovinsak;
3. Within 45 days following completion of the equipment installation, AT&T shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations presented in the Structural Analysis and on the Site Plans;
4. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
5. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function;
8. The validity of this action shall expire one year from the date of this letter; and
9. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated April 24, 2017. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission



CONNECTICUT SITING COUNCIL

Affirmative Action / Equal Opportunity Employer

pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

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

Very truly yours,



Melanie A. Bachman
Executive Director

MAB/CMW/bm

- c: The Honorable Erin Stewart, Mayor, City of New Britain
- Sergio Lupo, Director of License Permit & Inspections, City of New Britain
- Hartford Square Associates, Property Owner



CONSULTING GROUP, INC.

9221 Lyndon B. Johnson Freeway, #204, Dallas, TX 75243 ★ PHONE 972-231-8893 ★ FAX 1-866-364-8375
www.allprocgi.com ★ e-mail: info@allprocgi.com

**Tower Modification Design Report for
SBA Communications Corporation**



Existing 175' Self Support Tower

SBA Site Name: New Britain 2, CT

SBA Site Number: CT04382-S-02

Carrier Name: AT&T

Carrier Site ID/Name: 15210/New Britain West Tenant

Fixed Asset #10071149

App #: 47583, v1.

Site Location:

**1 Hartford Square,
New Britain,
CT 06052-1161**

Latitude: 41.666209°

Longitude: -72.811634°

ACGI Job # 17-0378

(Refer to previous failing SA ACGI Job # 16-4300)

ANALYSIS RESULTS		
Tower Components	98.6 %	Pass with Modification
Tower Foundation Capacity	63.6 %	Pass

Prepared By:
Jingcheng Li, EIT



02/17/2017
Approved By:
Joji Gerge, P.E.
CT PE #24444

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1. ANALYSIS SUMMARY

The existing 175’ Self Support Tower located in New Britain, CT was analyzed by Allpro Consulting Group, Inc (ACGI) for the existing loads and the proposed AT&T antennas and coaxes as authorized by SBA Communication Corp. Based on the results of the analysis, the existing tower with mentioned proposed and existing loading is found **to be in code compliance** with TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and IBC 2012, after proposed modifications installed.

2. SCOPE & SOURCE OF INFORMATION

The purpose of this structural analysis is to determine whether the existing structure is capable of supporting additional proposed loads.

SOURCE OF INFORMATION		
Tower Data:	Rohn Industries, Inc.	-Original Tower Drawings by Rohn Industries, Inc. (Eng. File No. 44545AE dated 08/18/2000)
	FDH Engineering, Inc.	-Previous Structural Analysis by FDH Engineering, Inc.(FDH Project Number 16BICQ1400, dated 05/13/2016)
	Allpro Consulting Group, Inc.	-Previous failing structural analysis by Allpro Consulting group, Inc., ACGI # 16-4300, dated 12/07/2016
Foundation Data:	Rohn Industries, Inc.	- Existing MAT foundation data is as per original foundation design by Rohn Industries, Inc. (Eng. File No. 44545AE dated 07/26/2000)
Geotechnical Report:	Jaworski Geotech, Inc	Foundation design was based on geotechnical report (No. 00309G dated 07/05/2000)
Loading Data:	Allpro Consulting Group, Inc.	-Previous failing structural analysis by Allpro Consulting group, Inc., ACGI # 16-4300, dated 12/07/2016
	SBA Communication Corp.	Proposed final loading for AT&T as per SBA Portal, App #47583, v1.
Authorization:	SBA Communication Corp.	

3. ANALYSIS METHODS & DATA

The analysis was performed in accordance with Telecommunication Industry Association specification TIA-222-G. The tower was modeled using TNX Tower, a 3-D finite element program. TNX Tower is a general-purpose modeling, analysis, and design program created specifically for communication towers using the EIA-222-C, EIA-222-D, TIA/EIA-222-F or TIA-222-G standards. The 3-D model included the tower, with existing appurtenances and all proposed loads.

SITE DATA	
SBA Site Name:	New Britain 2, CT
SBA Site Number:	CT04382-S-02
Carrier Site ID:	AT&T: 15210 / New Britain West Tenant Fixed Asset #10071149
City, State:	Hartford, CT
County:	New Britain County
Code Wind Load Requirement:	ANSI/TIA-222-G & International Building Code (122 mph ultimate wind speed equivalent to 95 mph basic wind speed)
Wind Load Used:	ANSI/TIA-222-G Code: <ul style="list-style-type: none"> • Basic wind speed of 95 mph (3 second gust wind speed) • Structure Class II. • Exposure Category C. • Topographic Category 1. • Crest Height 0.00 ft. • A wind speed of 50 mph is used in combination with ice • Nominal ice thickness of 1.0 in.

TOWER DATA	
Tower Type:	Self Support Tower
Height:	175'
Cross Section:	Triangular
Steel Strength:	Legs – 50 ksi , Braces – 36 ksi
Type of Foundation:	Mat Foundation with (3) Pedestals

TOWER HISTORY	
Tower Manufacturer / Model:	Rohn Industries, Inc.
Date of Original Design:	08/18/2000
Previous Modifications:	N/A
Original Design Code Requirements:	TIA-222-F 2005, 80 mph wind speed + 1" radical ice 38 mph wind speed

4. CONCLUSIONS

RESULT SUMMARY		
MEMBER	% Capacity	Pass/Acceptable
Legs	66.2 %	Pass
Diagonals	98.6 %	Pass w/ Modification
Top Girt	2.9 %	Pass
Bolt checks	98.6 %	Pass
Foundation (see attached MathCAD for details)	Net Soil Pressure (22.2 %)	Pass
	Horizontal shear (30.3 %)	Pass
	Safety against overturning (63.6 %)	Pass
OVERALL TOWER RATING = 98.6 %		

As per the results of the analysis, the existing tower is in code compliance for the proposed and existing antenna loads, after installing proposed tower modifications.

Upon installation of proposed modifications, maximum tower member stress is less than allowable, making it in code compliance under the TIA-222-G code and 2012 International Building Code.

5. DISCLAIMER

Installation procedures and related loading are not within the scope of this analysis. A contractor experienced in similar work should perform all installation work. The engineering services provided by Allpro Consulting Group, Inc. (ACGI) are limited to the computer analysis and calculations of the structure with the proposed and existing loads. This analysis is considered void if the loading mentioned in this report is changed or is different as installed. It is assumed that the existing structure is properly maintained and is in good condition free of any defects. Scope of this analysis does not include existing connections, except as noted in this report.

ACGI does not make any warranties, expressed or implied in connection with this engineering analysis report and disclaims any liability arising from deficiencies or any existing conditions of the original structure. ACGI will not be responsible for consequential or incidental damages sustained by any parties as a result of any data or conclusions included in this Report. The maximum liability of ACGI pursuant to this report shall be limited to the consulting fee received for the preparation of the report.

6. ASSUMPTIONS

This analysis was completed based on the following assumptions:

- Tower has been properly maintained.
- Tower erection was in accordance to manufacturer drawings and modification reports.
- Leg flanges have been properly designed by manufacturer to not be a limiting reaction.
- Welds have been properly designed and installed by manufacturer to not be a limiting reaction.
- Foundation data was not provided. It is assumed that the foundation is designed to resist the original tower reactions.
- Foundation does not have structural damage.
- Bolts have been properly tightened according to manufacturer specifications.
- Appurtenance, mount and transmission line sizes and weights are best estimates using the tnxTower database and manufacturer information.



7. **RECOMMENDATIONS**

The existing tower is recommended for the final loading listed under Section 8 "Appurtenances Listing", after installing proposed tower modifications.

Modification Summary:

1. Reinforce existing diagonals using same size angle steel members to make it C-Section. For Elevations:
80'-86.7'



8. APPURTENANCE LISTING

EXISTING LOAD DESCRIPTION					
<u>ELEV</u> <u>(ft.)</u>	<u>Qty.</u>	<u>Antenna Description</u>	<u>Mount Type &</u> <u>Qty.</u>	<u>TX. LINE (in)</u>	<u>TENANT</u>
172±	3	Kathrein 840-10054	(3) T-Frames	(6)5/16" Fiber	Clearwire
	4	Andrew VHLP2.5			
	3	Samsung U-RAS Flexible RRH			
	3	Dragonwave Horizon Duo			
162±	3	Kathrein 800 10121	(3) T-Frames	(12) 1-5/8" Coax (2) 1/2" Fiber (4) 3/4" DC Power (1)3" Flex Conduit	AT&T
	3	Quintel Technology QS66512-2			
	6	KMW AM-X-CD-16-65-00T			
	3	Ericsson RRUS-32			
	6	Ericsson RRUS-11			
	6	Powerwave LGP 21401			
	6	CCI TPX-070821			
	2	Kathrein 860-10025			
152±	3	Commscope LNX-6515DS-A1M	(3) T-Frames	(12) 1-5/8" Coax (1) 1-5/8" Fiber	T-Mobile
	3	Ericsson S11B12			
	3	Ericsson AIR 21 B2A/B4P			
	3	Ericsson AIR 21 B4A/B2P			
	3	Ericsson KRY 112 144/1			
140±	6	Andrew SBNHH-1D65B	(3) T-Frames	(12) 1-5/8" Coax (2) 1-5/8" Hybrid	Verizon
	3	Kathrein 800 10735v01			
	3	Antel BXA-80080/4CF			
	3	Alcatel Lucent RRH-2x60-AWS			
	3	Alcatel Lucent RRH-2x60-PCS			
	3	Alcatel Lucent RRH-2X60W-700U			
	1	RFS DB-T1-6Z-8AB-0Z			
130±	3	Kathrein 742 213	(3) Pipe Mounts	(6) 1-5/8" Coax	Metro PCS

FINAL AT&T LOAD DESCRIPTION					
<u>ELEV</u> <u>(ft.)</u>	<u>Qty.</u>	<u>Antenna Description</u>	<u>Mount Type & Qty.</u>	<u>TX. LINE (in)</u>	<u>TENANT</u>
162±	3	Kathrein 800 10121	(3) T-Frames	(12) 1-5/8" Coax (2) 1/2" Fiber (4) 3/4" DC Power (1)3" Flex Conduit*	AT&T
	3	Quintel Technology QS66512-2			
	6	KMW AM-X-CD-16-65-00T			
	3	Ericsson RRUS-32			
	3	Ericsson RRUS-11			
	3	Ericsson RRUS-32 B2s			
	6	Powerwave LGP 21401			
	6	CCI TPX-070821			
	6	Kathrein 860-10025			
	2	Raycap DC6-48-60-18-8F			

1. ACGI should be notified of any discrepancies found in the data listed in this report.
2. Notify ACGI if any potential physical and other interference with existing antennas for a redesign.
3. *The (2) 1/2" Fiber Cable and (4) 3/4" DC Power Cable for ATT will be installed in (1) 3" Flex Conduit



9. SUMMARY OF WORKING PERCENTAGE OF STRUCTURAL COMPONENTS

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	σP_{allow} K	% Capacity	Pass Fail	
T1	176 - 160	Leg	ROHN 3 EH	2	-11.51	119.12	9.7	Pass	
T2	160 - 140	Leg	ROHN 4 EH	32	-53.06	183.54	28.9	Pass	
T3	140 - 120	Leg	ROHN 5 EH	66	-102.15	254.38	40.2	Pass	
T4	120 - 100	Leg	ROHN 6 EHS	93	-143.98	274.77	52.4	Pass	
T5	100 - 93.3333	Leg	ROHN 6 EH	114	-157.85	343.10	46.0	Pass	
T6	93.3333 - 86.6667	Leg	ROHN 6 EH	123	-170.95	343.10	49.8	Pass	
T7	86.6667 - 80	Leg	ROHN 6 EH	132	-183.97	343.10	53.6	Pass	
T8	80 - 60	Leg	ROHN 6 EH	141	-222.29	343.10	64.8	Pass	
T9	60 - 40	Leg	ROHN 8 EHS	162	-255.74	386.39	66.2	Pass	
T10	40 - 20	Leg	ROHN 8 X-STR	177	-291.44	505.55	57.6	Pass	
T11	20 - 0	Leg	ROHN 8 EH	192	-325.83	505.55	59.5 (b)	Pass	
T1	176 - 160	Diagonal	L2x2x1/4	9	-2.85	19.13	64.5	Pass	
T2	160 - 140	Diagonal	L2x2x3/16	37	-4.74	11.91	29.2 (b)	Pass	
T3	140 - 120	Diagonal	L2x2x3/16	70	-6.62	7.89	39.8	Pass	
T4	120 - 100	Diagonal	L2 1/2x2 1/2x3/16	97	-7.45	9.76	69.0 (b)	Pass	
T5	100 - 93.3333	Diagonal	L2 1/2x2 1/2x3/16	118	-7.55	8.87	83.9	Pass	
T6	93.3333 - 86.6667	Diagonal	L2 1/2x2 1/2x3/16	127	-7.52	8.09	98.6 (b)	Pass	
T7	86.6667 - 80	Diagonal	L2.5x2.5x3/16 + L2.5x2.5x3/16 (C-shape)	135	-8.06	32.06	76.3	Pass	
T8	80 - 60	Diagonal	L3x3x1/4	144	-8.29	13.19	84.7	Pass	
T9	60 - 40	Diagonal	L3 1/2x3 1/2x1/4	165	-9.84	14.60	94.4 (b)	Pass	
T10	40 - 20	Diagonal	L3 1/2x3 1/2x1/4	180	-10.32	12.18	96.4 (b)	Pass	
T11	20 - 0	Diagonal	L4x4x1/4	195	-11.05	15.47	92.9	Pass	
T1	176 - 160	Top Girt	L2x2x1/4	5	-0.33	12.90	95.2 (b)	Pass	
							Summary		
							Leg (T9)	66.2	Pass
							Diagonal (T3)	98.6	Pass
							Top Girt (T1)	2.9	Pass
							Bolt Checks	98.6	Pass
							RATING =	98.6	Pass



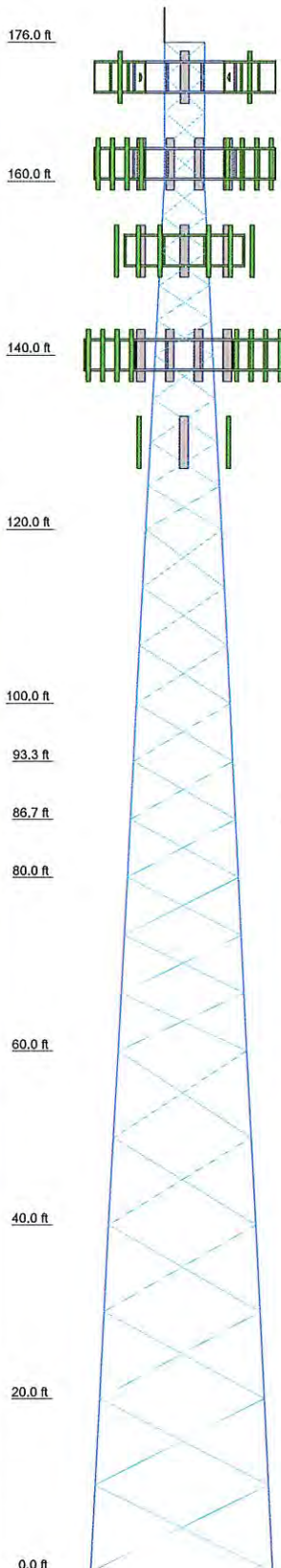
APPENDIX

COAX LAYOUT



TOWER ELEVATION DRAWING

Section	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EH	ROHN 8 X-STR	ROHN 8 EHS	ROHN 6 EH	ROHN 6 EHS	ROHN 5 EH	ROHN 4 EH	ROHN 3 EH			
Leg Grade	L4x4x1/4	L3 1/2x3 1/2x1/4	L3x3x1/4	A	L2 1/2x2 1/2x3/16	L2x2x3/16	L2x2x1/4	L2x2x1/4			
Diagonals											
Diagonal Grade											
Top Girts											
Face Width (ft)	21	18.9609	16.9219	12.8438	12.1641	11.4844	10.8047	8.76563	6.72656	4.6675	
# Panels @ (ft)	24.9	4.2	3.4	3.2	1.2	0.9	0.9	2.1	1.9	1.5	1.1
Weight (K)	4.6	4.2	3.4	3.2	1.2	0.9	0.9	2.1	1.9	1.5	1.1



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2.5x2.5x3/16 + L2.5x2.5x3/16 (C-shape)		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

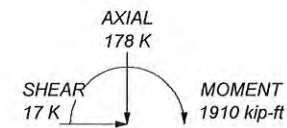
1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 95 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 98.6%

ALL REACTIONS ARE FACTORED

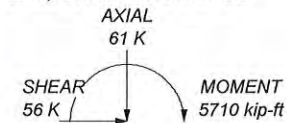
MAX. CORNER REACTIONS AT BASE:

DOWN: 334 K
SHEAR: 35 K

UPLIFT: -288 K
SHEAR: 31 K



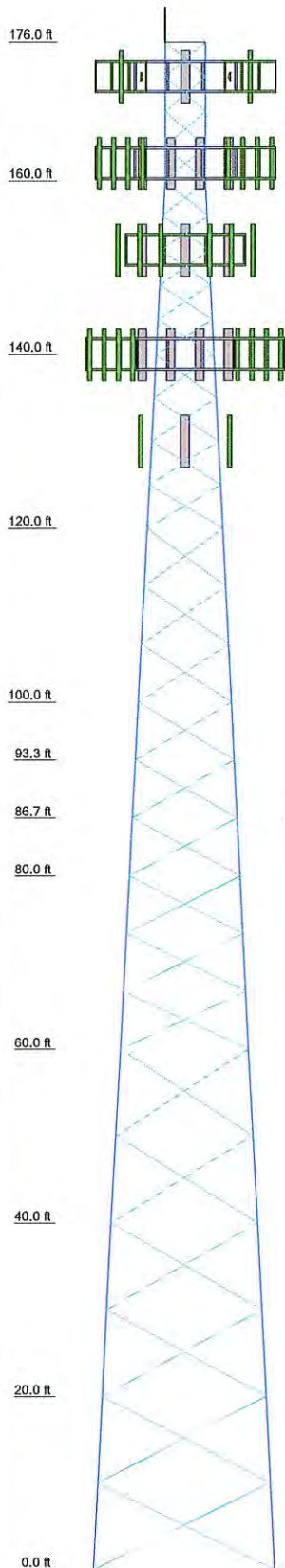
TORQUE 4 kip-ft
50 mph WIND - 1.000 in ICE



TORQUE 15 kip-ft
REACTIONS - 95 mph WIND

Allpro Consulting Group, Inc.		Job: 17-0378	
9221 Lyndon B. Johnson Freeway, #204		Project: CT04382-S-02 New Britain 2, CT Modification Desig	
Dallas, TX 75243	Client: SBA Network Services, Inc.	Drawn by: JLi	App'd:
Phone: 972-231-8893	Code: TIA-222-G	Date: 02/17/17	Scale: NTS
FAX: 866-364-8375	Path:		Dwg No. E-1

Section	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EH	ROHN 8 X-STR	ROHN 8 EHS	ROHN 8 EHS	ROHN 6 EH	ROHN 6 EH	ROHN 6 EHS	ROHN 6 EHS	ROHN 5 EH	ROHN 4 EH	ROHN 3 EH
Leg Grade					A572-50						
Diagonals	L4x4x1/4	L3 1/2x3 1/2x1/4	L3x3x1/4	L2 1/2x2 1/2x3/16	A				L2x2x1/4	L2x2x1/4	L2x2x1/4
Diagonal Grade		A572-50							A36		
Top Girts					N.A.						
Face Width (ft)	18.9609	16.9219	14.8828	12.8438	12.1641	11.4844	10.8047	8.76593	6.72656		4.6875
# Panels @ (ft)		6 @ 10			9 @ 5.66667	9 @ 5.66667	9 @ 5.66667	4 @ 5	4 @ 5	9 @ 4	
Weight (K)	24.9		3.4	3.2	1.2	0.9	0.8	2.1	1.9	1.5	1.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	176	(2) AM-X-CD-16-65-00T	162
840-10054 w/ Mount Pipe	172	(2) AM-X-CD-16-65-00T	162
840-10054 w/ Mount Pipe	172	AIR 21 B2A/B4P w/ Mount Pipe	152
840-10054 w/ Mount Pipe	172	AIR 21 B2A/B4P w/ Mount Pipe	152
URAS-FLEXIBLE	172	AIR 21 B2A/B4P w/ Mount Pipe	152
URAS-FLEXIBLE	172	AIR 21 B4A/B2P w/ Mount Pipe	152
URAS-FLEXIBLE	172	AIR 21 B4A/B2P w/ Mount Pipe	152
Horizon Duo	172	AIR 21 B4A/B2P w/ Mount Pipe	152
Horizon Duo	172	S11B12	152
Horizon Duo	172	S11B12	152
(3) Empty Pipe Mount	172	S11B12	152
(3) Empty Pipe Mount	172	KRY 112 144/1	152
(3) Empty Pipe Mount	172	KRY 112 144/1	152
(3) T-Frames	172	KRY 112 144/1	152
(2) VHLP2.5 Dish	172	Empty Pipe Mount	152
VHLP2.5 Dish	172	Empty Pipe Mount	152
VHLP2.5 Dish	172	Empty Pipe Mount	152
Kathrein 800-10121	162	(3) T-Frames	152
Kathrein 800-10121	162	LNX-6515DS-A1M w/ Mount Pipe	152
Kathrein 800-10121	162	LNX-6515DS-A1M w/ Mount Pipe	152
QS65512-2	162	LNX-6515DS-A1M w/ Mount Pipe	152
QS65512-2	162	800 10735v01 w/ Mount Pipe	140
QS65512-2	162	800 10735v01 w/ Mount Pipe	140
(2) LGP 21401	162	800 10735v01 w/ Mount Pipe	140
(2) LGP 21401	162	BXA-80080/4CF w/ Mount Pipe	140
(2) LGP 21401	162	BXA-80080/4CF w/ Mount Pipe	140
(2) Katherin 860-10025	162	BXA-80080/4CF w/ Mount Pipe	140
(2) Katherin 860-10025	162	RRH-2x60-AWS	140
(2) Katherin 860-10025	162	RRH-2x60-AWS	140
Ericsson RRUS 11	162	RRH-2x60-AWS	140
Ericsson RRUS 11	162	RRH-2x60-PCS	140
Ericsson RRUS 11	162	RRH-2x60-PCS	140
Ericsson RRUS 32	162	RRH-2x60-PCS	140
Ericsson RRUS 32	162	RRH 2x60-700	140
Ericsson RRUS 32	162	RRH 2x60-700	140
Ericsson RRUS 32 B2s	162	RRH 2x60-700	140
Ericsson RRUS 32 B2s	162	DB-T1-6Z-8AB-0Z	140
Ericsson RRUS 32 B2s	162	(3) T-Frames	140
(2) TPX-070821	162	(2) SBNHH-1D65B w/ Mount Pipe	140
(2) TPX-070821	162	(2) SBNHH-1D65B w/ Mount Pipe	140
(2) TPX-070821	162	(2) SBNHH-1D65B w/ Mount Pipe	140
DC6-48-60-18-8F	162	(3) Pipe Mounts	130
DC6-48-60-18-8F	162	742 213 w/ Mount Pipe	130
(3) T-Frames	162	742 213 w/ Mount Pipe	130
(2) AM-X-CD-16-65-00T	162	742 213 w/ Mount Pipe	130

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2.5x2.5x3/16 + L2.5x2.5x3/16 (C-shape)		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

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4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft

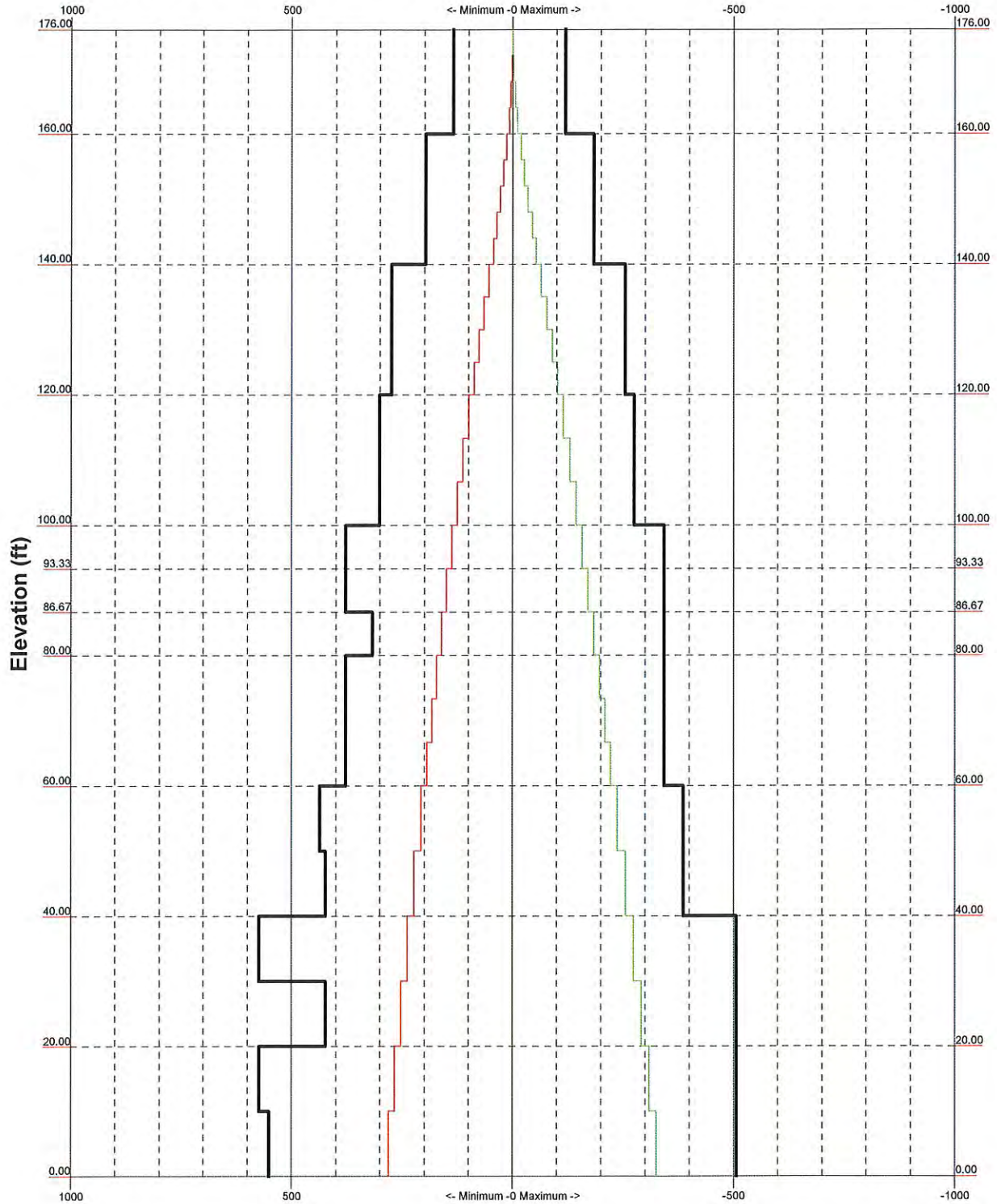
Allpro Consulting Group, Inc.		Job: 17-0378	
9221 Lyndon B. Johnson Freeway, #204		Project: CT04382-S-02 New Britain 2, CT Modification Desig	
Dallas, TX 75243		Client: SBA Network Services, Inc.	Drawn by: JLi
Phone: 972-231-8893		Code: TIA-222-G	Date: 02/17/17
FAX: 866-364-8375		Path:	Scale: NTS
			Dwg No. E-1



MISCELLANEOUS PLOTS

TIA-222-G - 95 mph/50 mph 1.000 in Ice Exposure C

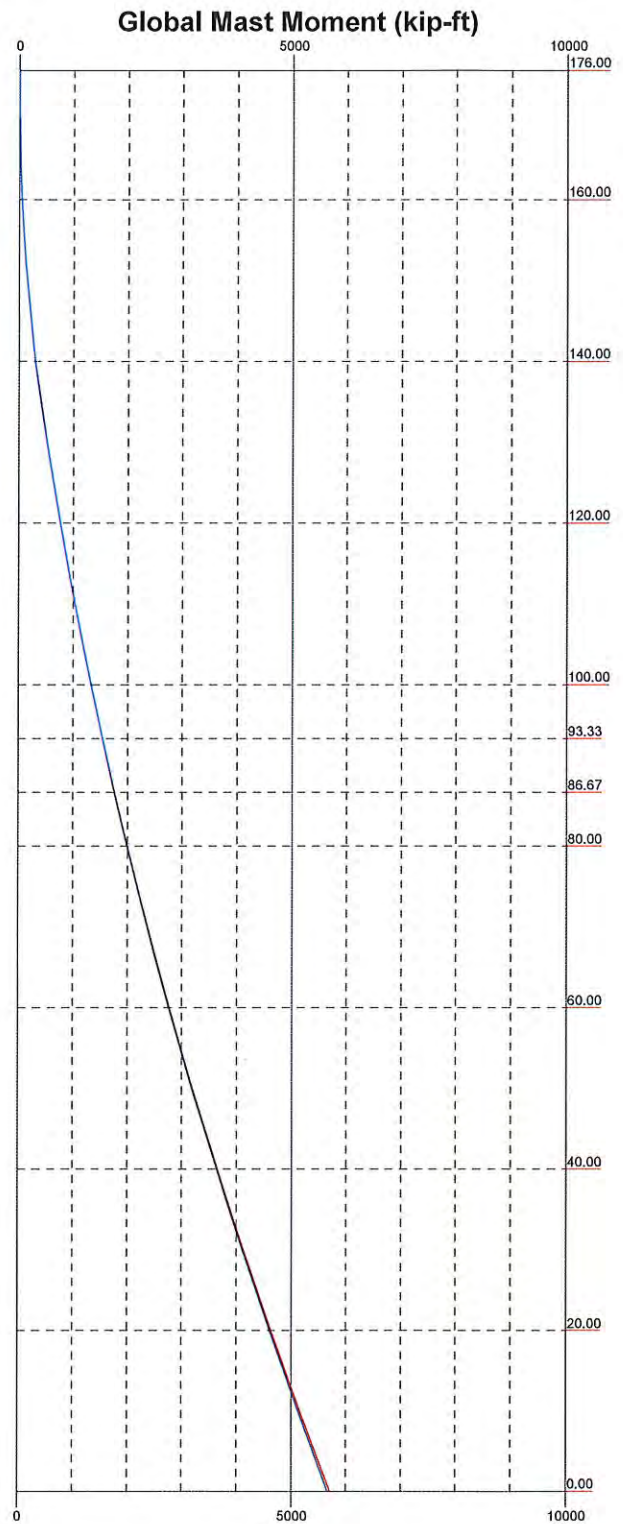
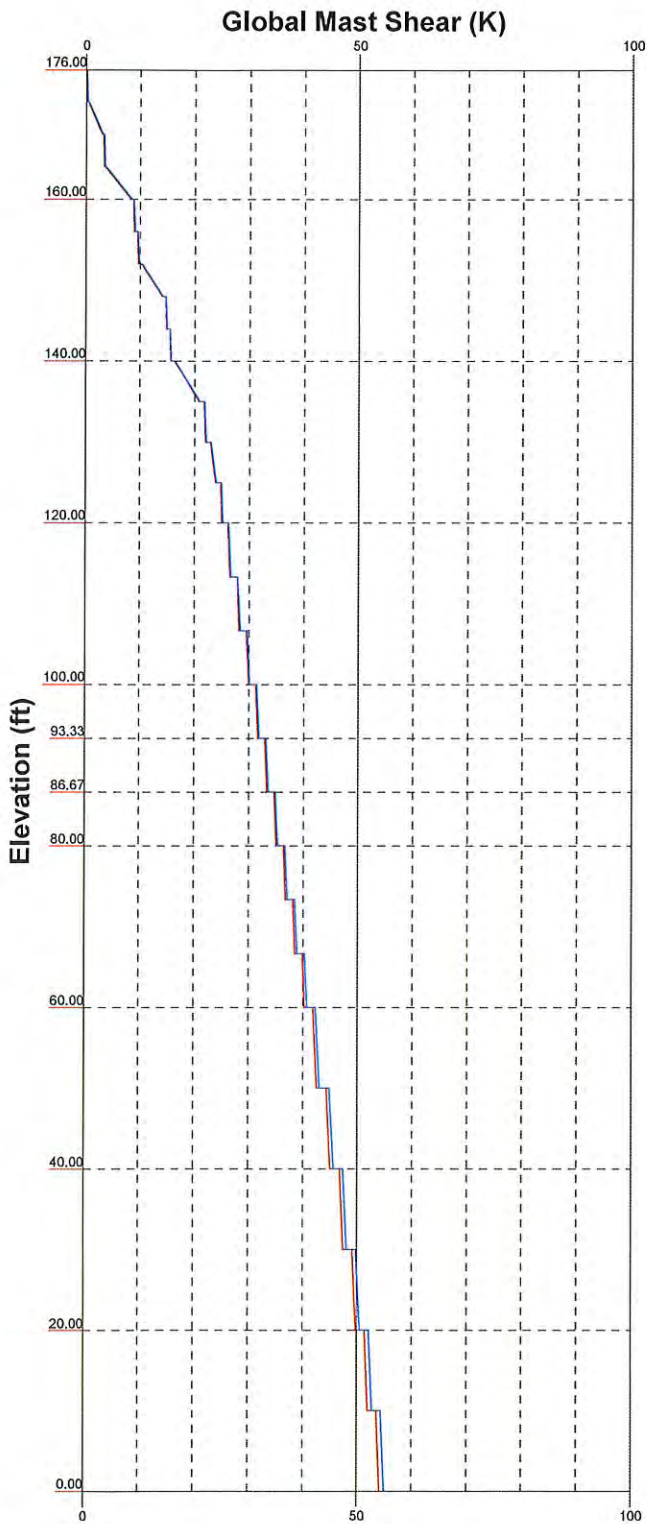
Leg Capacity ——— Leg Compression (K)



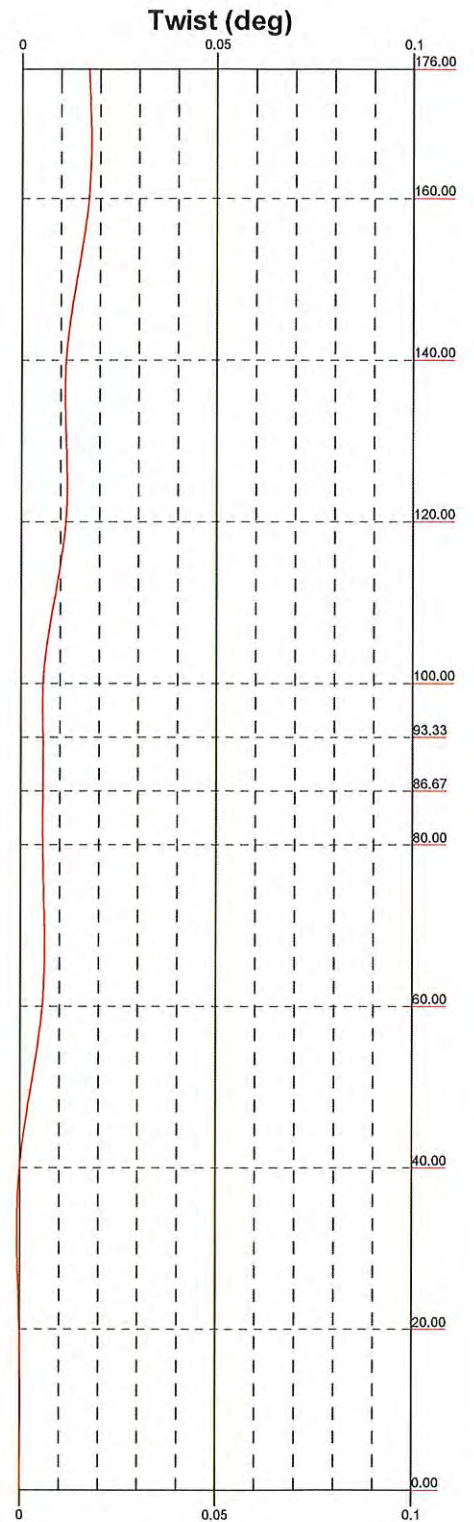
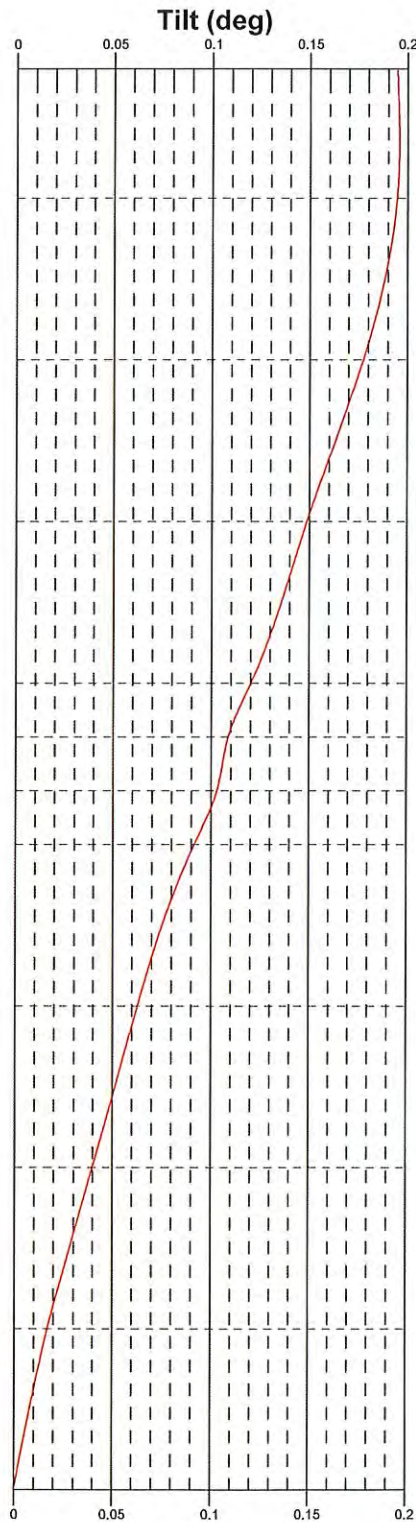
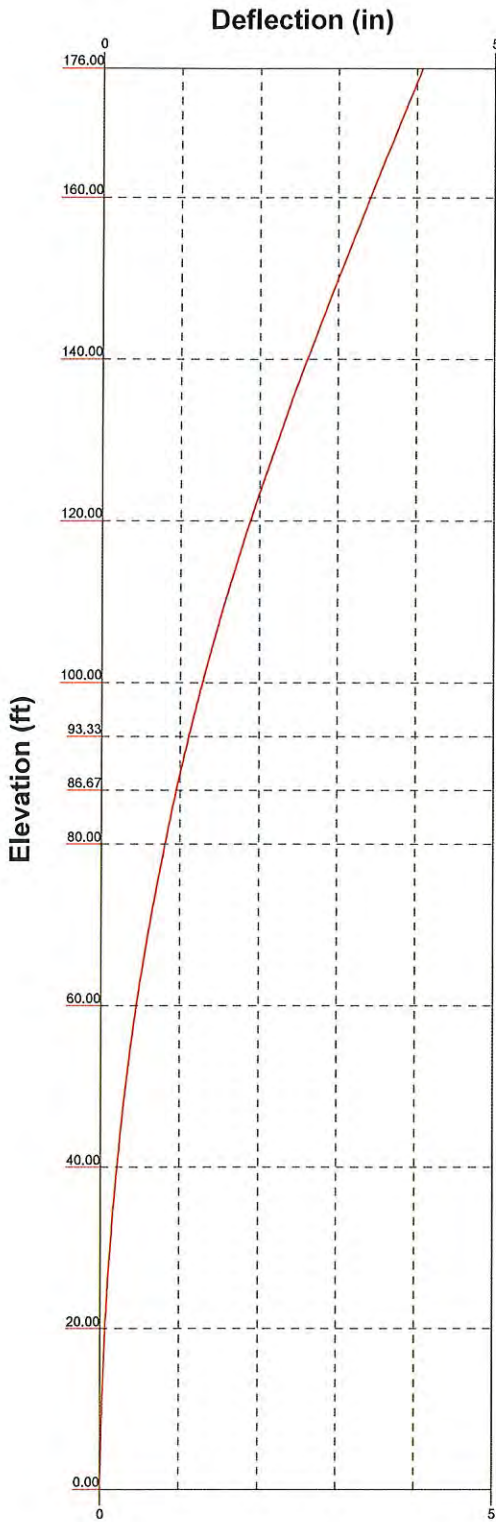
Allpro Consulting Group, Inc.		Job: 17-0378	
9221 Lyndon B. Johnson Freeway, #204		Project: CT04382-S-02 New Britain 2, CT Modification Desig	
Dallas, TX 75243		Client: SBA Network Services, Inc.	Drawn by: JLi
Phone: 972-231-8893		Code: TIA-222-G	Date: 02/17/17
FAX: 866-364-8375		Path:	Scale: NTS
			Dwg No. E-3

Vx Vz

Mx Mz



Allpro Consulting Group, Inc.		Job: 17-0378	
9221 Lyndon B. Johnson Freeway, #204		Project: CT04382-S-02 New Britain 2, CT Modification Desig	
Dallas, TX 75243		Client: SBA Network Services, Inc.	Drawn by: JLi
Phone: 972-231-8893		Code: TIA-222-G	Date: 02/17/17
FAX: 866-364-8375		Path:	Scale: NTS
			Dwg No. E-4

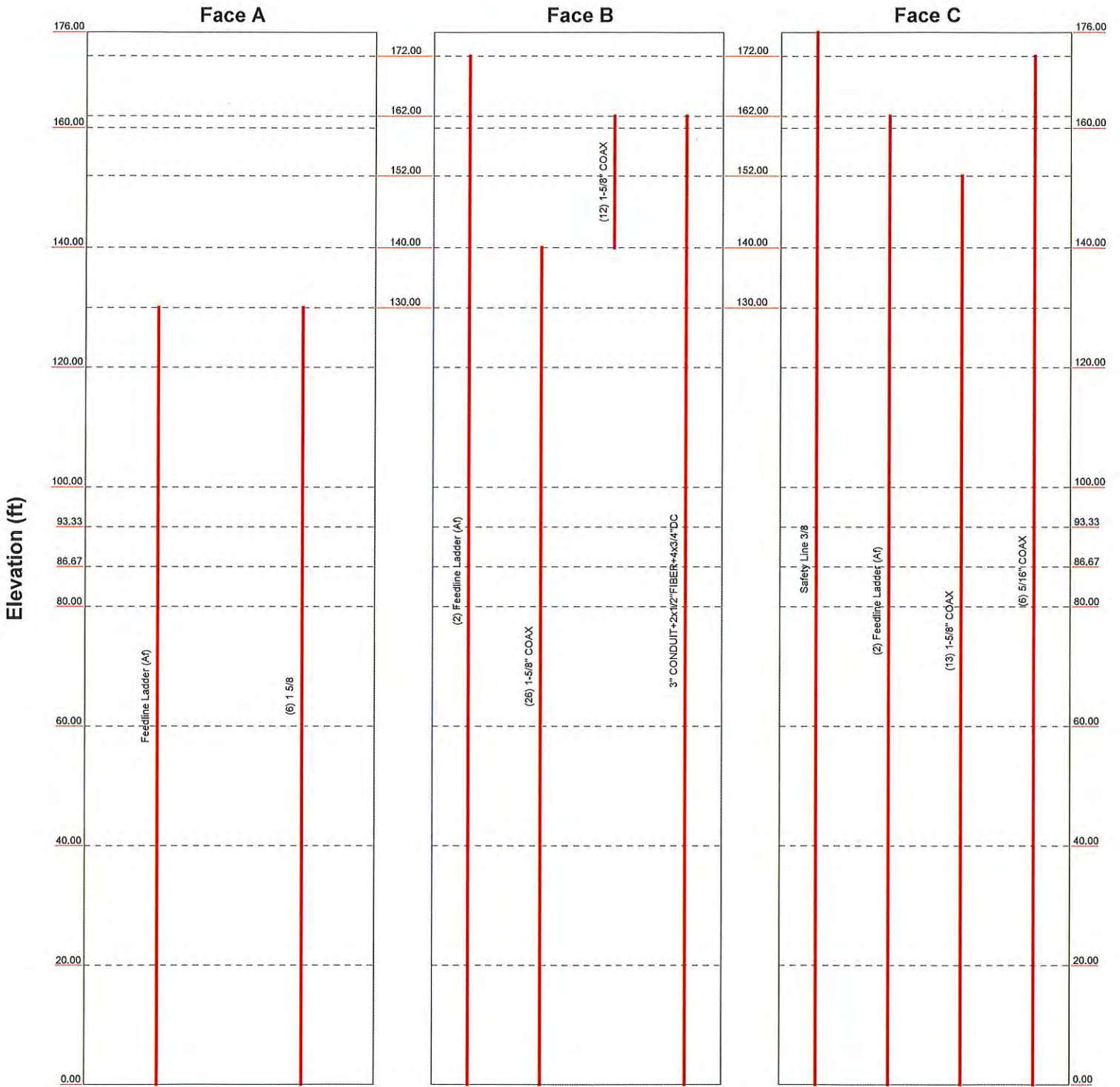


Allpro Consulting Group, Inc.		Job: 17-0378	
9221 Lyndon B. Johnson Freeway, #204		Project: CT04382-S-02 New Britain 2, CT Modification Design	
Dallas, TX 75243		Client: SBA Network Services, Inc.	Drawn by: JLI App'd:
Phone: 972-231-8893		Code: TIA-222-G	Date: 02/17/17 Scale: NTS
FAX: 866-364-8375		Path:	Dwg No. E-5

Feed Line Distribution Chart

0' - 176'

— Round
 — Flat
 — App In Face
 — App Out Face
 — Truss Leg



Allpro Consulting Group, Inc.		Job: 17-0378	
9221 Lyndon B. Johnson Freeway, #204		Project: CT04382-S-02 New Britain 2, CT Modification Desig	
Dallas, TX 75243		Client: SBA Network Services, Inc.	Drawn by: JLI App'd:
Phone: 972-231-8893		Code: TIA-222-G	Date: 02/17/17 Scale: NTS
FAX: 866-364-8375		Path:	Dwg No. E-7



CONSULTING GROUP, INC.

9221 Lyndon B. Johnson Freeway, #204, Dallas, TX 75243 * PHONE 972-231-8893 * FAX 1-866-364-8375
www.allprocgi.com * e-mail: info@allprocgi.com *

July 24, 2017

Mark Luther
Regional Collocation Site Manager

Post Modification Inspection (PMI) Report

Ref: SBA Site Name: New Britain 2
SBA Site ID: CT04382-S-02
Carrier Name: AT&T
Carrier ID: 15210/New Britain West Tenant
1 Hartford Square, New Britain, CT 06052-1161
Latitude: 41.666209°, Longitude: -72.811634°
ACGI Job# 17-1992

Dear Mark,

As per your request, we are providing the post modification inspection (PMI) report for newly installed tower modification on existing Self Support tower located at the above referenced location.

Description	Company	Contact
Engineer of Record	Allpro Consulting Group, Inc.	Joji M. George (972) 231-8893
General Contractor	Vanguard Towers Inc.	Randy Bailey (318)762-0999
PMI/ TIA-EIA Inspector	Structural One	Todd Woolsey (402) 641-7365

Based off the field photos and post modification inspection report by Structural One, and close out package from Vanguard Towers Inc., we approve and confirm that the tower modifications are installed in accordance with modification design report by Allpro Consulting Group, Inc. (ACGI # 17-0378 dated 02/21/2017).

We appreciate the opportunity to be of service to you for this phase of the project. If you have any questions concerning this report please contact us.

Enclosed:
-PMI Report by Structural One
-Closeout data from
Vanguard Towers Inc.



07/24/2017

Approved By:
Joji M. George, PE
CT PE # 24444



CONSULTING GROUP, INC.

9221 Lyndon B. Johnson Freeway, #204, Dallas, TX 75243 * PHONE 972-231-8893 * FAX 1-866-364-8375
www.allprocgi.com * e-mail: info@allprocgi.com *

PMI- Check List

POST-CONSTRUCTION

- Inspector Notes

CLOSE OUT PACKAGE FROM True North Management Services, LLC

- Red Line Drawings
- Packaging Slip
- Mill Certifications
- Post Modification Photos

PMI

Inspection Report

Site Name:

New Britain 2

Site #:

CT04382-S

Date Site Was Visited

07/16/2017

Prepared For:

ENGINEERING FIRM



TOWER OWNER/CARRIER



Prepared By:



314 W. D. Street
David City, NE 68632

Inspectors:
Todd Woolsey
Mike Elofson

Report Prepared by: Mike Elofson
Reviewed By: Todd Woolsey (402) 641-7365

PMI INSPECTION REPORT

Site Name: New Britain 2
Site #: CT04382-S

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SITE COMMENTS FROM FIELD CREW VISIT:

<u>Description</u>	<u>Company</u>	<u>Contact</u>
Engineer of Record	Allpro Consulting Group, Inc	Joji George, P.E. <u>(972)-231-8893</u>
General Contractor	Vanguard Towers Inc.	Randy Bailey (318) 762-0999
PMI / TIA-EIA Inspector	Structural One	Todd Woolsey (402) 641-7365

PMI INSPECTION REPORT

Site Name: New Britain 2

Site #: CT04382-S

SUMMARY OF NOTED OBSERVATIONS AND RECOMMENDATIONS

- **Problem Observed: No Problems Observed**
 - **Recommendation: N/A**
 - **Refer to Page -- for Details**

Corrosion Classification:		
Category 1 Corrosion <ul style="list-style-type: none">• Surface of steel stained with brown color• Galvanization still intact Recommendations: <ul style="list-style-type: none">• Monitor area with later inspections	Category 2 Corrosion <ul style="list-style-type: none">• Surface has a dark brown color• Shallow pitting is now visible• Galvanization has been penetrated• Very minimal loss of area or material Recommendations: <ul style="list-style-type: none">• Wire brush clean to bare steel and apply two coats of zinc oxide paint• Repair or replace member /hardware as practical	Category 3 Corrosion <ul style="list-style-type: none">• Severe heavy pitting / corrosion• Loss of material is noticeable• Steel is scaling Recommendations: <ul style="list-style-type: none">• Replace members• Engineer designed modification

PMI INSPECTION REPORT

Site Name: New Britain 2

Site #: CT04382-S

TOWER INFORMATION

IDENTIFICATION	
TOWER TYPE	Self Support
ADDRESS	Hartford County
FCC #	
LATITUDE	41 39 59.08
LONGITUDE	-72 48 46.09
TOWER TAG INFORMATION	
Tower MF.	None
Model #	
Serial #	
Date Manufactured	



TOWER PICTURE



Bottom Half of Tower

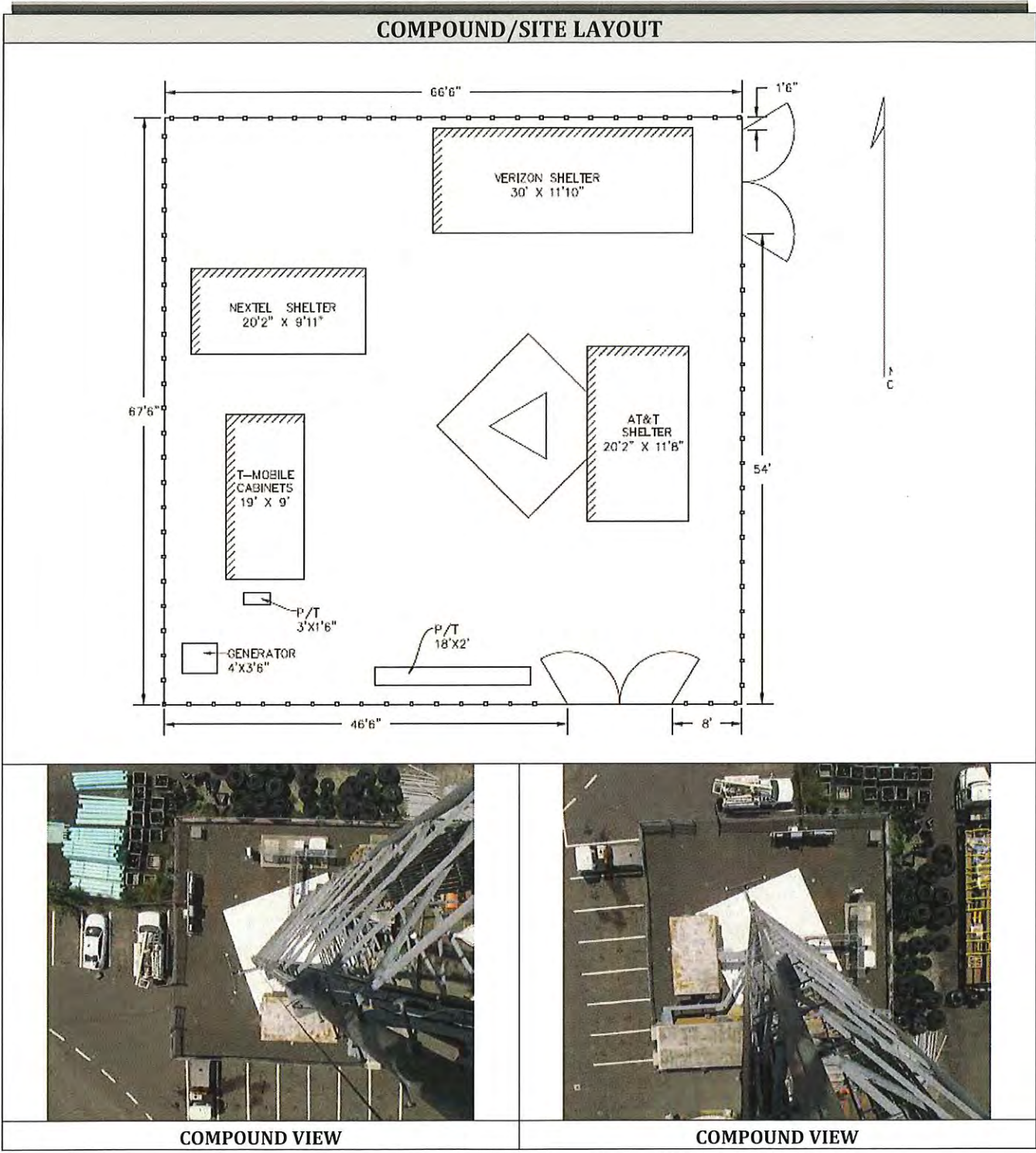


Top Half of Tower

PMI INSPECTION REPORT

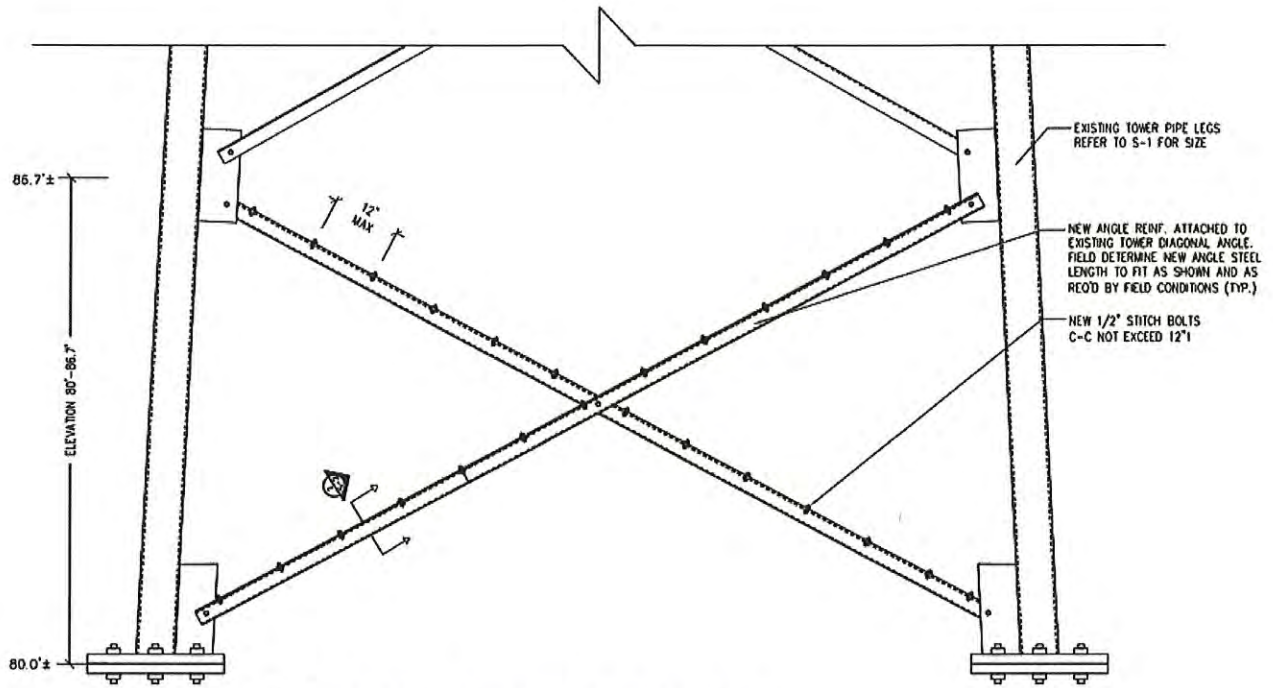
Site Name: New Britain 2

Site #: CT04382-S



PMI INSPECTION REPORT

Site Name: New Britain 2
 Site #: CT04382-S



1 PROPOSED DIAGONALS REINFORCEMENT
 S-2 SCALE: N.T.S.

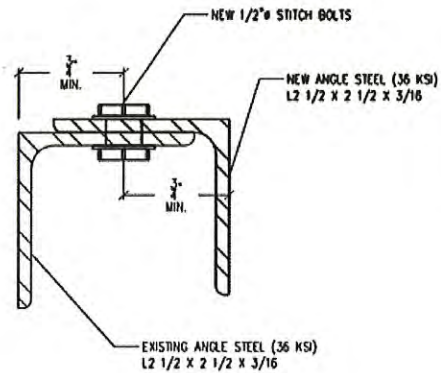


TABLE 2.1 - DIAGONAL C-SHAPE REINFORCEMENT SCHEDULE TABLE				
ELEV.	EXISTING DIAGONAL ANGLE STEEL (36 KSI)	NEW DIAGONAL ANGLE STEEL (36 KSI)	STITCH BOLTS DIAMETER	STITCH BOLTS MINIMUM EDGE DIST.
80.0'-86.7'	L2 1/2 X 2 1/2 X 3/16	L2 1/2 X 2 1/2 X 3/16	1/2"	3/4"

NOTE: EXISTING ANTENNAS, MW DISHES, FEEDLINES AND SECTOR MOUNTS MAY NEED TO BE RELOCATED TEMPORARILY TO FACILITATE INSTALLATION OF MODIFICATIONS. REFER TO S-1 SHEET FOR LOCATION OF APPURTENANCES

PMI INSPECTION REPORT

Site Name: New Britain 2

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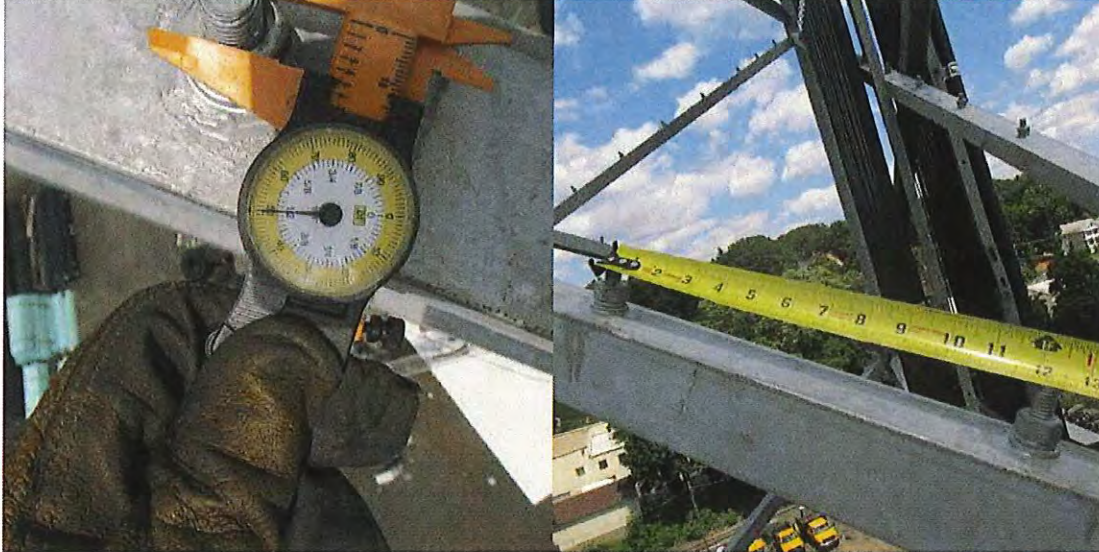
All Added Diagonals Installed Correctly



PMI INSPECTION REPORT

Site Name: New Britain 2

Site #: CT04382-S

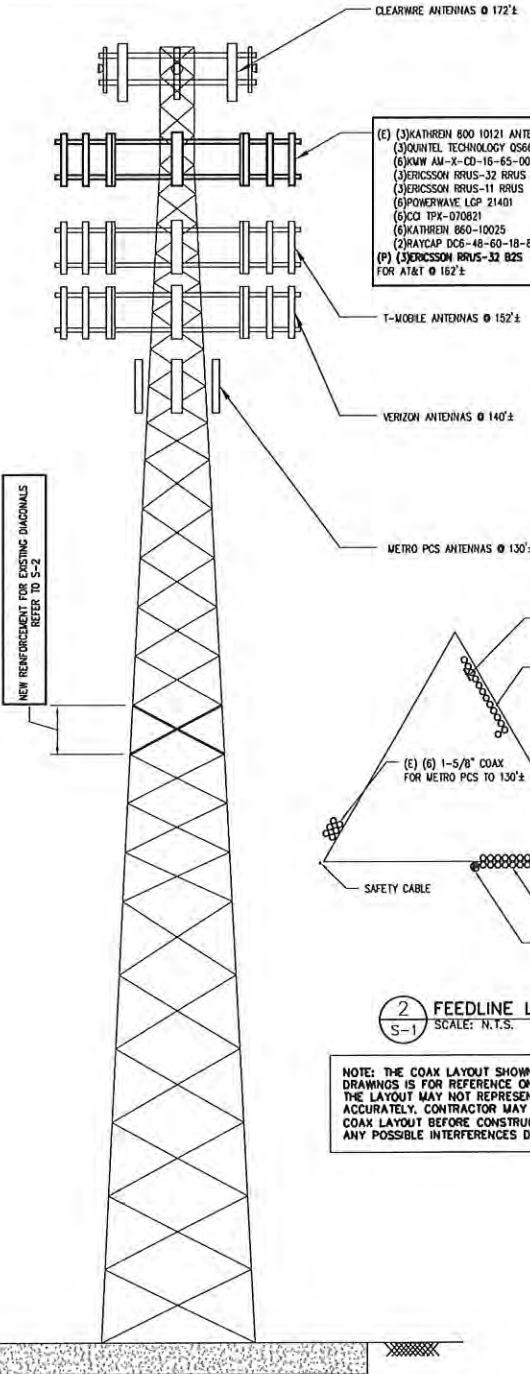


DO NOT MODIFY THE TOWER DURING WINDS OF MORE THAN 15 MPH.
 TEMPORARY BRACING IS REQUIRED AND IS THE CONTRACTOR'S RESPONSIBILITY WHEN REMOVING ANY MEMBERS OR BOLTS.
 MODIFY ONE MEMBER AT A TIME.

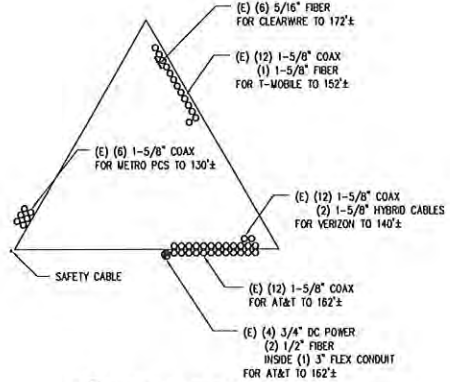
1. DURING MODIFICATIONS, THE CONTRACTOR SHALL PRESERVE THE STRUCTURAL INTEGRITY AND THE STABILITY OF THE TOWER. BRACE THE TOWER AS NEEDED TO STABILIZE THE TOWER DURING MODIFICATION.
 2. PROVIDED DIMENSIONS ARE FOR REFERENCE ONLY. BEFORE ANY FABRICATION CONTRACTOR SHALL FIELD VERIFY ALL NEW MEMBER DIMENSIONS FOR FIT & POSSIBLE INTERFERENCE.
 3. FUTURE AND PROPOSED TRANSMISSION LINES SHALL BE INSTALLED AS DEPICTED IN THE COAX LAYOUT SHOWN ON SHEET S-1 TO AVOID TOWER OVERSTRESS. THIS LINE LAYOUT IS IMPERATIVE TO THE SAFETY AND STRUCTURAL INTEGRITY OF THE TOWER. TOWER MAY OVERSTRESS WITHOUT THIS PROPOSED LINE LAYOUT.

TOWER MODIFICATION SCHEDULE	
ELEVATION	MODIFICATION DESCRIPTION
80'-86.7'	INSTALL NEW ANGLE DIAGONAL REINFORCEMENT. SEE S-2 FOR DETAILS

LEDS - 50 lbs	DIMS - 35 lbs/30 lbs	DRKS - 36 lbs	ELEV. 176'
ROHN 3 EH	L2201/4	L2201/4	4.69'
ROHN 4 EH	L2203/16	L2203/16	ELEV. 160'
Pipe ROHN 3 EH	L2203/16	L2203/16	ELEV. 140'
ROHN 5 EHS	L2 1/2 22 1/2 3/16	L2 1/2 22 1/2 3/16	6.73'
Pipe ROHN 6 EH	N/A	N/A	ELEV. 120'
ROHN 6 EH	L3341/4	L3341/4	8.77'
Pipe ROHN 6 EH	L2 1/2 22 1/2 3/16	L2 1/2 22 1/2 3/16	ELEV. 100'
ROHN 6 EH	L3341/4	L3341/4	10.90'
ROHN 8 EHS	L3341/4	L3341/4	ELEV. 86.7'
ROHN 8 EHS	L3341/4	L3341/4	12.18'
ROHN 8 EHS	L3341/4	L3341/4	ELEV. 80'
ROHN 8 EHS	L3341/4	L3341/4	12.84'
ROHN 8 X-STR	L3 1/2 23 1/2 1/4	L3 1/2 23 1/2 1/4	ELEV. 60'
ROHN 8 EH	L4441/4	L4441/4	14.88'
ROHN 8 EH	L4441/4	L4441/4	ELEV. 40'
ROHN 8 EH	L4441/4	L4441/4	16.92'
ROHN 8 EH	L4441/4	L4441/4	ELEV. 20'
ROHN 8 EH	L4441/4	L4441/4	18.96'
ROHN 8 EH	L4441/4	L4441/4	ELEV. 0'
ROHN 8 EH	L4441/4	L4441/4	21.00'



- (E) (3) KATHREN 800 10121 ANTENNAS
- (3) QUNTEL TECHNOLOGY QS66512-2 ANTENNAS
- (6) NUV AM-X-CD-18-65-700 ANTENNAS
- (3) ERICSSON RRUS-32 RRUS
- (3) ERICSSON RRUS-11 RRUS
- (6) POWERWAVE LCP 21401
- (6) CCI TPX-070821
- (6) KATHREN 860-10025
- (2) RAYCAP DC6-48-60-18-8F
- (P) (3) ERICSSON RRUS-32 B25 FOR AT&T @ 152'±



2 FEEDLINE LAYOUT
 SCALE: N.T.S.

NOTE: THE COAX LAYOUT SHOWN IN THE MODIFICATION DRAWINGS IS FOR REFERENCE ONLY AND NOT TO SCALE. THE LAYOUT MAY NOT REPRESENT THE FIELD CONDITIONS ACCURATELY. CONTRACTOR MAY HAVE TO FIELD VERIFY COAX LAYOUT BEFORE CONSTRUCTION/FABRICATION FOR ANY POSSIBLE INTERFERENCES DURING THE INSTALLATION.



02/21/2017
 J.M. GEORGE, P.E.
 CT PE # 24444

1 ELEVATION VIEW: 176' SST
 SCALE: N.T.S.

ALL DRAWINGS AND WRITTEN MATERIALS CONTAINED HEREIN ARE THE PROPERTY OF ALLPRO CONSULTING GROUP, INC. AND MAY NOT BE DUPLICATED, USED OR DISCLOSED.

ACQ JOB # 17-0378 SHEET S-1 OF 4	DRAWN BY: JLI ENGD. BY: JLI APP'D. BY: JG	SITE DESCRIPTION NEW BRITAIN 2 SITE # CT04382-S-02 1 HARTFORD SQUARE, NEW BRITAIN, CT 06052-1161 CLIENT SBA COMMUNICATIONS CORPORATION	<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>02/17/17</td> <td>TOWER MODIFICATION</td> <td>JL</td> </tr> <tr> <td>1</td> <td>02/21/17</td> <td>REV.1</td> <td>JL</td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	BY	0	02/17/17	TOWER MODIFICATION	JL	1	02/21/17	REV.1	JL	 CONSULTING GROUP, INC. 9221 Lydon B. Johnson Freeway, # 204, Dallas, TX 75244 Phone: 972-251-8800 Fax: 966-364-8375 www.allpro.com
REV	DATE	DESCRIPTION	BY													
0	02/17/17	TOWER MODIFICATION	JL													
1	02/21/17	REV.1	JL													

DO NOT MODIFY THE TOWER DURING WINDS OF MORE THAN 15 MPH.

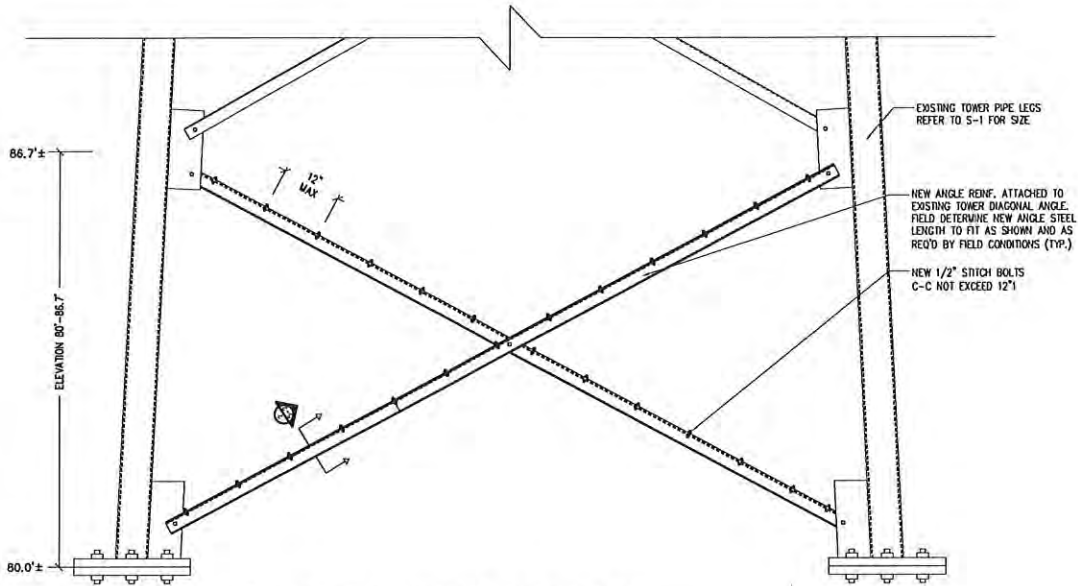
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1 PROPOSED DIAGONALS REINFORCEMENT
S-2 SCALE: N.T.S.

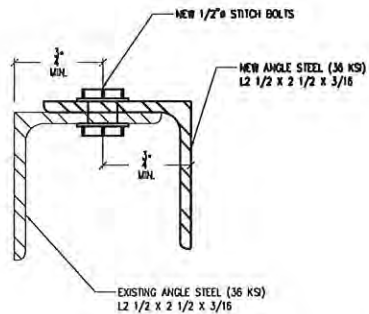


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2 DIAGONAL REINFORCEMENT C-SHAPE SECTION DETAILS (TYP.)
S-2 SCALE: N.T.S.



02/21/2017
JOLI M. GEORGE, P.E.
CT PE # 24444

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ACQ JOB#
17-0378
SHEET
S-2
OF
4

DRAWN BY:
JLI
ENGD. BY:
JLI
APP'D. BY:
JG

SITE DESCRIPTION
NEW BRITAIN 2 SITE # CT04382-S-02
1 HARTFORD SQUARE, NEW BRITAIN, CT 06052-1161
CLIENT
SBA COMMUNICATIONS CORPORATION

REV	DATE	DESCRIPTION	BY
0	02/17/17	TOWER MODIFICATION	JL
1	02/21/17	REV.1	JL



GENERAL AND TECHNICAL SPECIFICATION NOTES

1. INDICATED MODIFICATIONS COMPLES WITH ANSI/EIA-222-G, FOR 95 MPH NOMINAL DESIGN WIND SPEED AND 50MPH + 1" ICE. THE TOWER IS ASSUMED TO BE IN GOOD CONDITION AND PROPERLY MAINTAINED.
2. TOWER DATA AND LOADING DATA AS PER PREVIOUS STRUCTURAL ANALYSIS BY ALLPRO CONSULTING GROUP, JOB# 16-4300, DATED 12/07/16.
3. ALL MODIFICATION FABRICATION AND INSTALLATION SHOULD BE DONE BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK.
4. CONTRACTOR SHALL OBSERVE ALL OSHA AND OTHER APPLICABLE SAFETY GUIDELINES DURING MODIFICATION
5. ALL FABRICATION AND INSTALLATION PROCEDURES AND SITE SAFETY ARE THE SOLE RESPONSIBILITY
6. DURING INSTALLING THE MODIFICATION, THE CONTRACTOR SHALL PRESERVE THE STRUCTURAL INTEGRITY AND STABILITY OF THE TOWER. BRACE THE TOWER AS NEEDED TO STABILIZE THE TOWER
7. CONTRACTOR SHALL OBSERVE ALL WEATHER CONDITIONS. DO NOT MODIFY THE TOWER DURING WINDS OF MORE THAN 15 MPH.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND FIT BEFORE FABRICATION.
9. MODIFICATION DRAWINGS DO NOT INCLUDE ALL THE EXISTING FIELD CONDITIONS, SOME OF WHICH MAY INTERFERE WITH THE INSTALLATION. CONTRACTOR SHALL CONDUCT A FIELD SURVEY TO IDENTIFY ANY POTENTIAL DIFFICULTIES IN THE INSTALLATION BEFORE WORK COMMENCES. CONTACT THE ENGINEER IF THE FIELD CONDITIONS REQUIRE ANY CHANGES IN THE MODIFICATION.
10. CONTRACTOR MAY HAVE TO MOVE EXISTING TRANSMISSION LINES AND OTHER OBSTRUCTIONS TO ADD THE MODIFICATION. COORDINATE ALL SUCH PROCEDURES WITH THE TOWER OWNER.
11. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LICENSES, PERMITS AND ANY OTHER APPROVALS REQUIRED FOR CONSTRUCTION.
12. PAINT THE NEW MEMBERS TO MATCH THE EXISTING TOWER.
13. ALL STEEL SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A123 SPECIFICATIONS.
14. ALL STEEL HARDWARE SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A153
15. ALL FINISHED BOLT HOLES SHALL NOT BE MORE THAN 1/16 INCH LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE
16. ALL BOLTS SHALL BE TIGHTENED USING TURN-OFF-THE-NUT METHOD.
17. ALL BOLT HOLES EDGE DISTANCES SHALL BE 1 1/2 INCH UNLESS OTHERWISE NOTED.
18. FOR ACCURATE FIT OF THE NEW MEMBERS SOME FIELD PUNCHING MAY BE REQUIRED. IF GALVANIZING IS REMOVED, RE-COAT WITH TWO COATS OF GAL-CON OR EQUIVALENT COATING.
19. DO NOT HEAT STRUCTURAL MATERIAL FOR STRAIGHTENING BENT OR WARPED MEMBERS.
20. CLEAN THE SITE OF ALL DEBRIS UPON COMPLETION OF THE WORK. STORE ALL SURPLUS MATERIALS NEATLY IN AN AREA APPROVED BY THE OWNER.
21. BEFORE FIELD WELDING CLEAN ALL PAINT AND GALVANIZING TO BARE METAL. PREHEATING AND POSTHEATING OF THE BASE METAL SHOULD BE AS PER AWS D1.1 SPECIFICATION AND APPLICABLE CODES REGARDING PREHEATING AND POSTHEATING.
22. CONTRACTOR SHALL PROVIDE FIRE PROTECTION BEFORE FIELD WELDING.



02/21/2017
 J.M. GEORGE, P.E.
 CT PE # 24444

ACCI JOB#	17-0378
SHEET	S-3
OF	4

DRAWN BY:	JLI
ENGD. BY:	JLI
APP'D. BY:	JG

SITE DESCRIPTION	NEW BRITAIN 2 SITE # CT04382-S-02
	1 HARTFORD SQUARE, NEW BRITAIN, CT 06052-1161
CLIENT	SBA COMMUNICATIONS CORPORATION

REV	DATE	DESCRIPTION	BY
0	02/17/17	TOWER MODIFICATION	JL
1	02/21/17	REV.1	JL

CONSULTING GROUP, INC.
 150 Lyndon B. Johnson Freeway, #204, Dallas TX 75243
 Phone: 972.931.4310 Fax: 972.931.4375
www.allpro.com

MODIFICATION INSPECTION CHECKLIST

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING
N/A	ERO APPROVED SHOP DRAWING
N/A	FABRICATION INSPECTION
N/A	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT
N/A	FABRICATOR NDE INSPECTION
N/A	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS
N/A	POST INSTALLED ANCHOR ROD VERIFICATION
N/A	BASE PLATE GROUT VERIFICATION
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
X	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWINGS
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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 CONDUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO GENERAL INSULATION CONFORMANCE AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF. DOES THE INSPECTOR HAVE OVERSIGHT OF THE MODIFICATION DESIGN OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

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 PRODUCTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT ALPRO CONSULTING GROUP, INC.

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 ALPRO GC.

GENERAL CONTRACTOR

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO OR A NTP FOR THE MODIFICATION INSTALLATION, 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 ANSI/TIA-222 CODE.

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.
- 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 CHECKLIST 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, ALPRO GC 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.).

CORRECTION OF FAILING MIs

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI (FAILED MI), THE GC SHALL WORK WITH MODIFICATION INSPECTOR 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 TOWER OWNER'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

MI VERIFICATION INSPECTIONS

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

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ANSI/TIA 222 CODE.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT ADV/SEV FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED PRESENT MI OR TESTS 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/ECTION 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.



02/21/2017
J.M. GEORGE, P.E.
CT PE # 24444

ACQ JOB#	DRAWN BY:
17-0378	JLI
SHEET	ENGD. BY:
S-4	JLI
OF	APPD. BY:
4	JG

SITE DESCRIPTION	
NEW BRITAIN 2 SITE # CT04382-S-02	
1 HARTFORD SQUARE, NEW BRITAIN, CT 06052-1161	
CLIENT	
SBA COMMUNICATIONS CORPORATION	

REV	DATE	DESCRIPTION	BY
0	02/17/17	TOWER MODIFICATION	JL
1	02/21/17	REV.1	JL

CONSULTING GROUP, INC.
9201 Lyndon B. Johnson Freeway, # 204 Dallas, TX 75243
Phone: 972.221.8500 Fax: 972.221.8512
www.allpro.com



PACKAGING SLIP

RLB Contracting Inc

PO Box 268
 Wilton AL 35187
 205-451-8198

ronniebowen@RLBcontractinginc.com

DATE: June 22, 2017

CUSTOMER ID: Vanguard Towers

SHIP TO: CPU
 [Company Name]
 [Street Address]
 [City, ST ZIP Code]
 [Phone]

BILL TO: Alan Martin
 Vanguard Towers
 PO Box 5258
 Monroe LA 71211

ORDER DATE	ORDER NUMBER	JOB
6/16/17	CT04382	New Britian

ITEM #	DESCRIPTION	QUANTITY
1	DR1 diagonal 2.5x2.5x3/16 - 16'	6
2		
3	A325 bolt assembly 1/2 x 1.75 with lock and 2H nut HDG	120
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Please contact Customer Service at 205-451-8198 with any questions or concerns.

THANK YOU FOR YOUR BUSINESS!

*Rodney Kuhl
 Vanguard Towers
 6-22-17*

NUCOR
NUCOR CORPORATION
NUCOR STEEL SOUTH CAROLINA

Mill Certification
7/31/2014

MTR #: 0000031601
 300 Steel Mill Road
 DARLINGTON, SC 29540
 (843) 393-5841
 Fax: (843) 395-8701

Sold To: SAGINAW PIPE CO INC
 PO BOX 8
 PO BOX 8
 SAGINAW, AL 35137-0000
 (205) 664-3670
 Fax: (205) 624-1208

Ship To: SAGINAW PIPE CO INC
 1980 HWY 31 S
 PO BOX 8
 SAGINAW, AL 35137-0000
 (205) 664-3670
 Fax: (205) 624-1208

Customer P.O.	46500	Sales Order	208113.4
Product Group	Merchant Bar Quality	Part Number	2025018848010W0
Grade	NUCOR MULTIGRADE	Lot #	DL1410333001
Size	2-1/2x2-1/2x3/16 Angle	Heat #	DL14103330
Product	2-1/2x2-1/2x3/16 Angle 40' NUCOR MULTIGRADE	B.L. Number	C1-638713
Description	NUCOR MULTIGRADE	Load Number	C1-318463
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 6/10/2014 Melt Date: 6/1/2014 Qty Shipped LBS: 9,824 Qty Shipped Pcs: 80

Melt Date: 6/1/2014

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	Sn
0.16%	0.74%	0.011%	0.023%	0.21%	0.16%	0.05%	0.08%	0.010%	0.0270%	0.002%	0.008%
Ti	CE4020										
0.001%	0.32%										

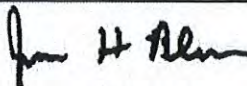
CE4020: C. E. CSA G4020, AASHTO M270

Roll Date: 6/10/2014

Yield 1: 54,000psi (372MPa) Tensile 1: 72,000psi (496MPa) Elongation: 30% in 8"(% in 203.3mm)
 Yield 2: 53,000psi (365MPa) Tensile 2: 72,000psi (496MPa) Elongation 30% in 8"(% in 203.3mm)

Specification Comments: NUCOR MULTIGRADE MEETS THE REQUIREMENTS OF: ASTM A36/A36M-08, A529/529M-05(2009) GR50(345), A572/572M-07 GR50(345), A709/709M-10 GR36(250) & GR50(345), CSA G40.21-04 GR44W(300W) & GR50W(350W) AASHTO M270/M270M-10 GR36(270) & GR50(345), ASME SA36/SA36M-07, QQ-S-741D KILLED STEEL PRODUCED TO A FINE GRAIN PRACTICE

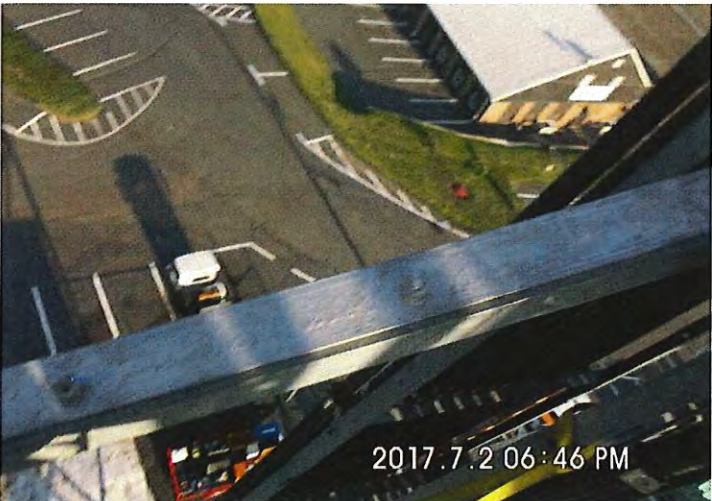
1. WELDING OR WELD REPAIR WAS NOT PERFORMED ON THIS MATERIAL
2. MELTED AND MANUFACTURED IN THE USA
3. MERCURY, RADIUM, OR ALPHA SOURCE MATERIALS IN ANY FORM HAVE NOT BEEN USED IN THE PRODUCTION OF THIS MATERIAL

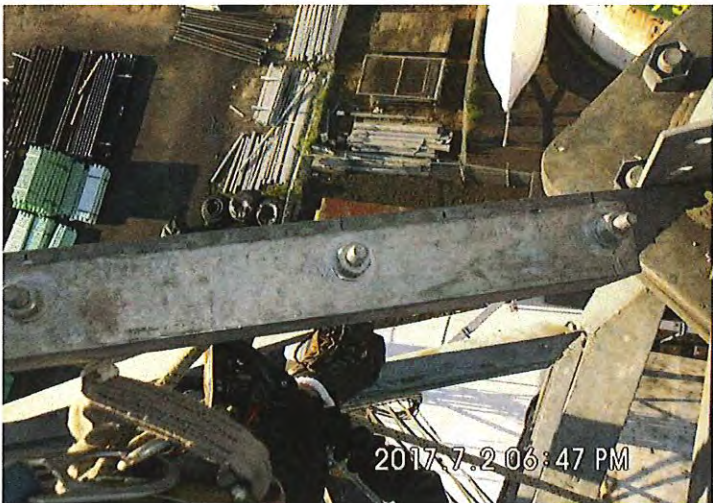


James H. Blew
 Division Metallurgist











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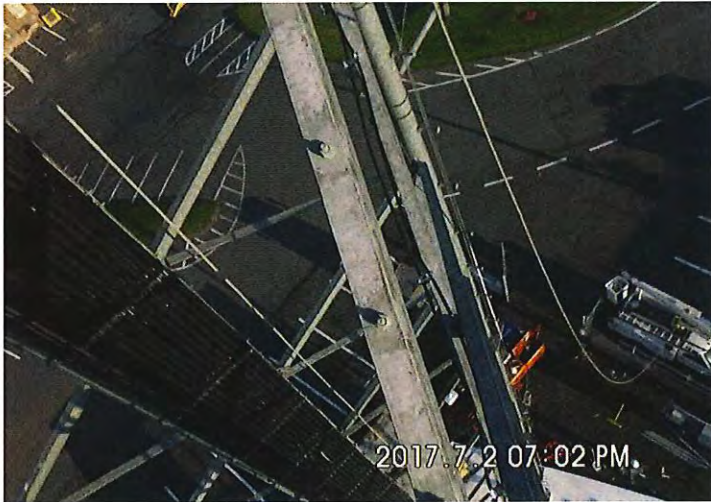
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