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

August 10, 2015

Camille M. Mulligan
Alcatel-Lucent
1 Robbins Road
Westford, MA 01886

RE: **Compliance Extension Request**

EM-SPRINT-008-130130	93 Old Amity Road	Bethany
EM-SPRINT-009-131008	8 Sky Edge Drive	Bethel
EM-SPRINT-017-131008	371 Terryville Avenue	Bristol
EM-SPRINT-018-130322	39 Carmen Hill Road	Brookfield
EM-SPRINT-033-130920	179 Shunpike Road	Cromwell
EM-SPRINT-034-130920	41 Padanaram Road	Danbury
EM-SPRINT-069-130409	246 East Franklin Street	Danielson
EM-SPRINT-035-130322	126 Ledge Road	Darien
EM-SPRINT-043-130311	310 Prestige Park Road	East Hartford
EM-SPRINT-047-131008	232 South Main Street	East Windsor
EM-SPRINT-051-130606	280 Morehouse Drive	Fairfield
EM-SPRINT-052-130606	45 Maple Ridge Road	Farmington
EM-SPRINT-057-120122	363 Riversville Road	Greenwich
EM-SPRINT-057-131127	9 Sound Shore Dr., a/k/a 12 Sound Shore Drive	Greenwich
EM-SPRINT-059-130819	99 Briar Road	Groton
EM-SPRINT-062-130509	Talmadge Road	Hamden
EM-SPRINT-068-121226	136 Bulls Bridge Road	Kent
EM-SPRINT-076-130819	135 New Road	Madison
EM-SPRINT-077-130828	Olcott Street a/k/a 250 Olcott Street	Manchester
EM-SPRINT-080-131024	21 West Peak Drive	Meriden
EM-SPRINT-081-130716	1 Service Road	Middlebury
EM-SPRINT-084-130124	528 Wheeler's Farm Rd.	Milford
EM-SPRINT-091-130606	302 Ball Pond Road	New Fairfield
EM-SPRINT-095-131008	26 Washinton Street	New London
EM-SPRINT-097-131008	8 Ferris Road	Newtown
EM-SPRINT-097-131129	201 South Main St.	Newtown
EM-SPRINT-103-121226	173/177 West Rocks Road	Norwalk
EM-SPRINT-104-131112	2 Hinkley Hill Road	Norwich
EM-SPRINT-108-130215	20 Great Oak Road	Oxford
EM-SPRINT-108-130401	133 Coppermine Road	Oxford
EM-SPRINT-108-130712	338 Oxford Road	Oxford
EM-SPRINT-119-130314	47 Inwood Road	Rocky Hill

EM-SPRINT-119-130819	52 New Britain Avenue	Rocky Hill
EM-SPRINT-120-130828	Lower County Road a/k/a 35 Lower County Road	Roxbury
EM-SPRINT-126-130325	219 Nells Rock Road	Shelton
EM-SPRINT-126-130515	70 Platt Road	Shelton
EM-SPRINT-128-131112	22 Wintonbury Road (aka 49a and 53 Wintonbury Road)	Simsbury
EM-SPRINT-130-130531	1432 Old Waterbury Road	Southbury
EM-SPRINT-135-130128	69 Guinea Road	Stamford
EM-SPRINT-135-131112	366 Old Long Ridge Road	Stamford
EM-SPRINT-143-130712	350 Burr Mountain Road	Torrington
EM-SPRINT-151-131209	184 Garden Circle	Waterbury
EM-SPRINT-155-130828	345 North Main Street a/k/a 333 North Main Street	West Hartford
EM-SPRINT-157-130701	56 Norfield Road	Weston
EM-SPRINT-164-130920	Windsor Avenue a/k/a 494 Windsor Avenue	Windsor
EM-SPRINT-NEXTEL-166-130116	164 County Road	Wolcott

Dear Ms. Mulligan:

The Connecticut Siting Council (Council) is in receipt of your letter dated August 10, 2015, submitted on behalf of Sprint, requesting 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.

Please be advised that Council approval of these exempt modifications has expired. Therefore, any additional changes 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

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
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E-Mail: siting.council@ct.gov
www.ct.gov/csc

October 25, 2013

Melanie Howlett
HPC Wireless Services
22 Shelter Rock Lane, Building C
Danbury, CT 06811

RE: **EM-SPRINT-017-131008** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 371 Terryville Avenue, Bristol, Connecticut.

Dear Ms. Howlett:

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:

- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction 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 design drawings attached to the Structural Analysis Report with Modification Design prepared by GPD Group dated August 16, 2013, and stamped by John Kabak, shall be implemented; and
- Within 45 days following completion of the antenna installation, Sprint shall provide documentation certified by a professional engineer that its installation complied with the requirements of the structural analysis.

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 October 4, 2013. 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, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to 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/CDM/cm

c: The Honorable Arthur J. Ward, Mayor, City of Bristol
William J. Veits, Planner Commission Chairman, City of Bristol
AT&T

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

October 9, 2013

The Honorable Arthur J. Ward
Mayor
City of Bristol
P.O. Box 114
Bristol, CT 06010-0114

RE: **EM-SPRINT-017-131008** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 371 Terryville Avenue, Bristol, Connecticut.

Dear Mayor Ward:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72, a copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by October 23, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

Melanie Bachman
Acting Executive Director

MB/cm

c: William J. Veits, Planner Commission Chairman, City of Bristol

CONNECTICUT SITING COUNCIL

EM-SPRINT-017-131008

HPC Wireless Services
22 Shelter Rock Lane.
Building C
Danbury, CT, 06810
P.: 203.797.1112

ORIGINAL

October 4, 2013

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Melanie Bachman, Acting Executive Director

Re: Sprint Spectrum, L.P. – Exempt Modification
371 Terryville Avenue, Bristol, Connecticut

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Sprint Spectrum, L.P. ("Sprint"). Sprint is undertaking modifications to certain existing sites in its Connecticut system in order to implement updated technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Mayor of the Town of Bristol.

Sprint plans to modify the existing wireless communications facility owned by AT&T and located at 371 Terryville Avenue, Bristol (coordinates 41°-40'-47.65" N, 72°-57'-45.63" W). Attached are plan and elevation drawings depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration, subject to modifications detailed in the attached structural documentation. Also included is a power density report reflecting the modification to Sprint's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. Sprint will remove the existing six (6) CMDA antennas and add three (3) dual-band panel LTE antennas on existing mounts on the existing T-frames, at a centerline height of approximately 158'. Sprint will also install three (3) Notch Filters and six (6) RRHs (remote radio heads) on new mounts behind the antennas, also at a centerline height of approximately 158'. During an interim period of up to one year, the six (6) existing CDMA antennas will remain. Sprint will also install three (3) hybriflex cables

along the existing coaxial cable run, and will remove the coaxial cable at the end of the interim period. The proposed modifications will not extend the height of the approximately 168.5' structure.

2. Sprint will replace the two (2) existing cabinets with two (2) similar cabinets, add new fiber/power junction box on new posts on a proposed H-frame onto the existing platform, and all on the existing concrete pad. The existing GPS antenna mounted on the Monopole will be replaced by a new GPS antenna mounted on the existing Cable Bridge. The Cable Bridge will also be extended. These changes will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by EBI Consulting, Sprint's operations at the site will result in a power density of approximately 16.592%; the combined site operations will result in a total power density of approximately 56.842%.

Please contact me by phone at (203) 610-1071 or by e-mail at mjhowlett@optonline.net with questions concerning this matter. Thank you for your consideration.

Respectfully yours,

Melanie J. Howlett

Attachments

cc: Honorable Arthur J. Ward, Mayor and Chairman of Town Council, Town of Bristol
Bristol Hospital (underlying property owner)

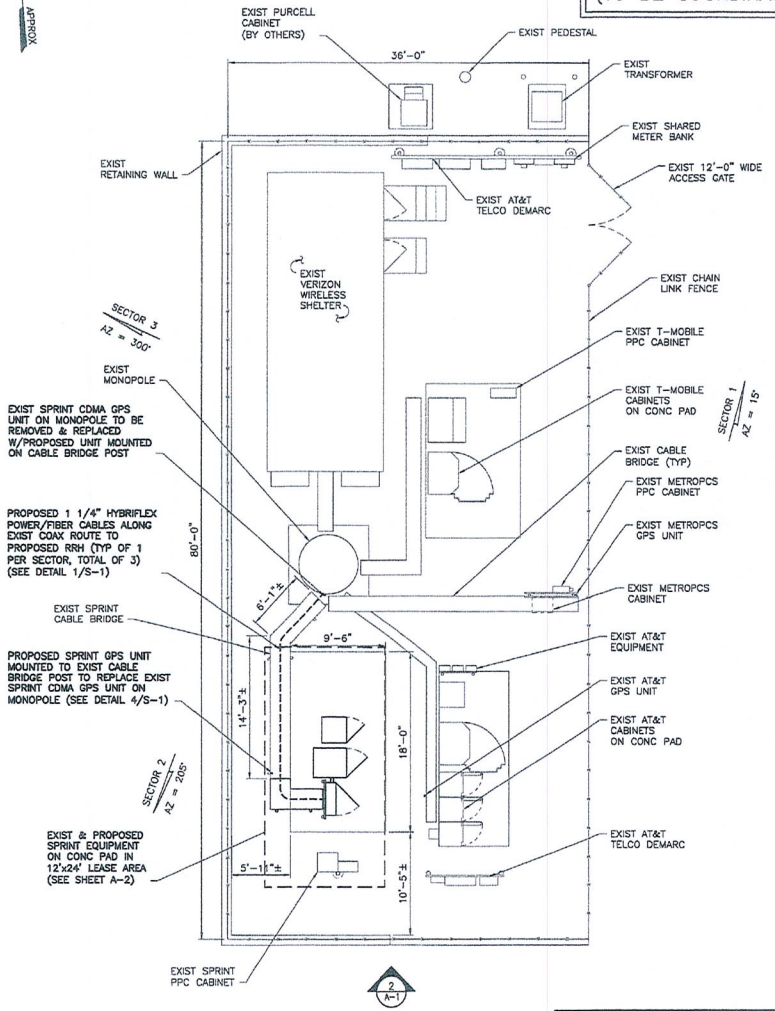
N

APPROX

NORTH NOTE:

NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.

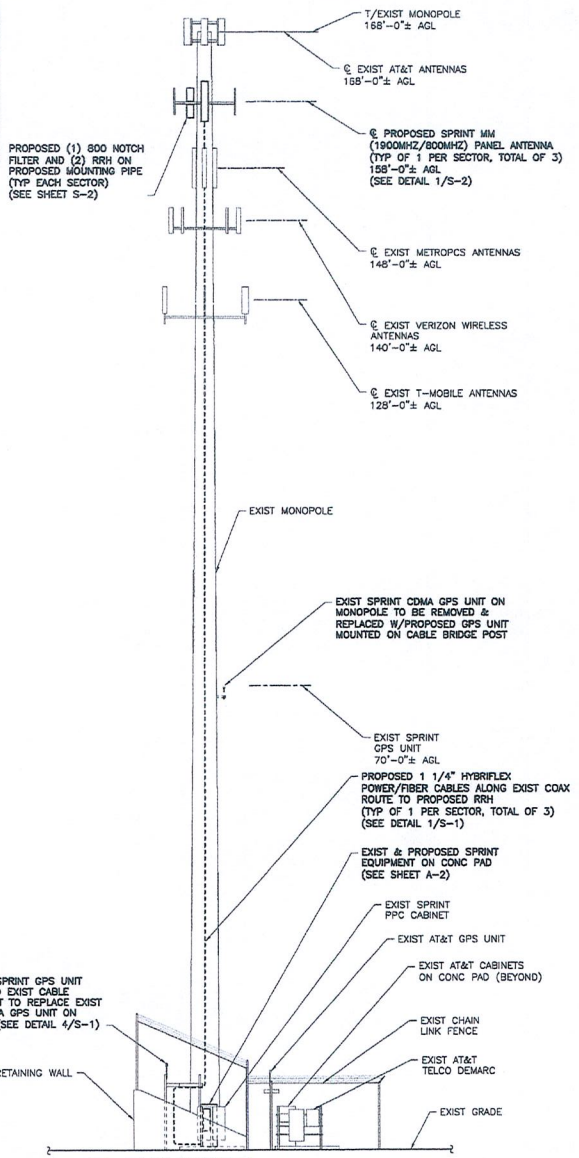
THE PROPOSED INSTALLATION & EXISTING MONOPOLE SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT (TO BE COORDINATED BY OTHERS).



1 A-1 SITE PLAN

SCALE: 3/16" = 1'-0"

PLUMBING SCENARIO 124 & 131



2 A-1 ELEVATION

SCALE: 1/8" = 1'-0"

Sprint
NETWORK VISION MOBILE LAUNCH
1 INTERNATIONAL BLVD., SUITE 800
MAHWAH, NJ 07495
OFFICE:(201)684-4000
FAX:(201)648-4223

Alcatel·Lucent
1 ROBBINS ROAD
WESTFORD, MA 01886
TEL:(978) 952-1000

HPC WIRELESS SERVICES

TECTONIC
TECTONIC Engineering & Surveying Consultants P.C.
1270 Route 300
Newburgh, NY 12550
Phone: (845) 567-8656
Fax: (845) 567-8753
www.tectonicengineering.com

SUBMITTALS

PROJECT NO: 6318.54-710

NO	DATE	DESCRIPTION	BY
0	9/27/12	FOR COMMENT	SL
1	12/05/12	PER COMMENTS	MJR
2	01/10/13	PER COMMENTS	DAC
3	04/25/13	PER COMMENTS	JT
4	09/03/13	PER COMMENTS	MP
5	09/19/13	PER COMMENTS	SF

DATE	RELEASED BY

SHEET TITLE:

SITE PLAN & ELEVATION

SHEET NO:

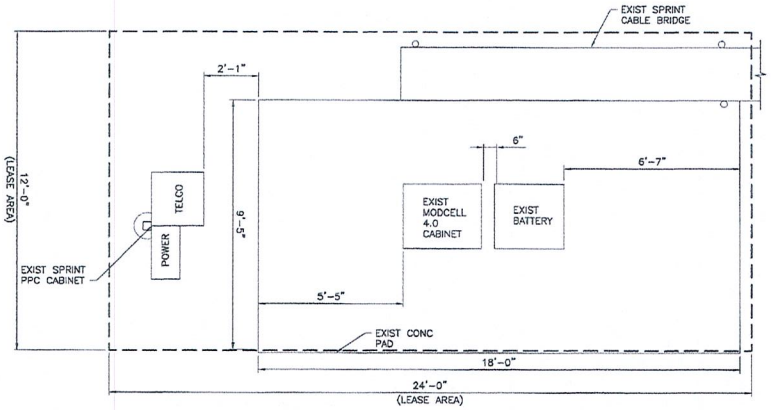
A-1

APPROX N

NORTH NOTE:

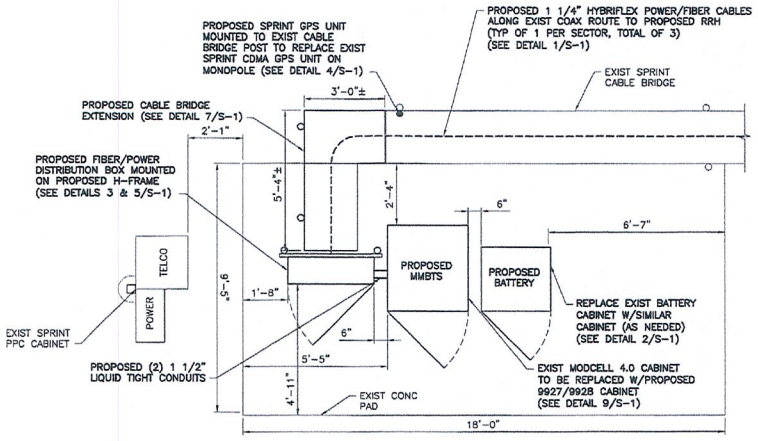
NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.

PLUMBING SCENARIO 124 & 131



1/A-3 ENLARGED EQUIPMENT LAYOUT PLAN (EXIST)

SCALE: 1/2" = 1'-0"



2/A-3 ENLARGED EQUIPMENT LAYOUT PLAN (FINAL)

SCALE: 1/2" = 1'-0"

Sprint
NETWORK VISION MMBTS LAUNCH
1 INTERNATIONAL BLVD., SUITE 800
MAHWAH, NJ 07495
OFFICE:(201)684-4000
FAX:(201)648-4223

Alcatel·Lucent
1 ROBBINS ROAD
WESTFORD, MA 01886
TEL:(978) 952-1600

HPC
WIRELESS SERVICES

TECTONIC
TECTONIC Engineering & Surveying Consultants P.C.
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-0058
Fax: (845) 567-0703
www.tectonicengineering.com

SUBMITTALS

PROJECT NO: 6318.54-710

NO.	DATE	DESCRIPTION	BY
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3	04/25/13	PER COMMENTS	JT
4	09/03/13	PER COMMENTS	MP
5	09/19/13	PER COMMENTS	SF

DATE	RELEASED BY

SEAL

SITE NUMBER:
CT54XC710

SITE NAME:
NORTH BIRSTOL - AT&T - LAVERO

SITE ADDRESS:
371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET TITLE:
ENLARGED EQUIPMENT LAYOUT PLANS

SHEET NO:
A-2

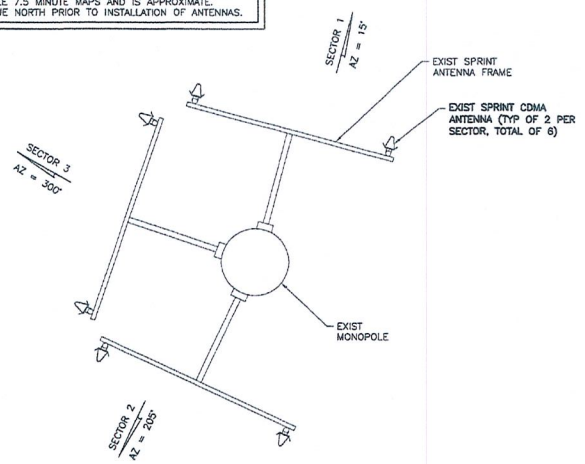
N

APPROX

NORTH NOTE:

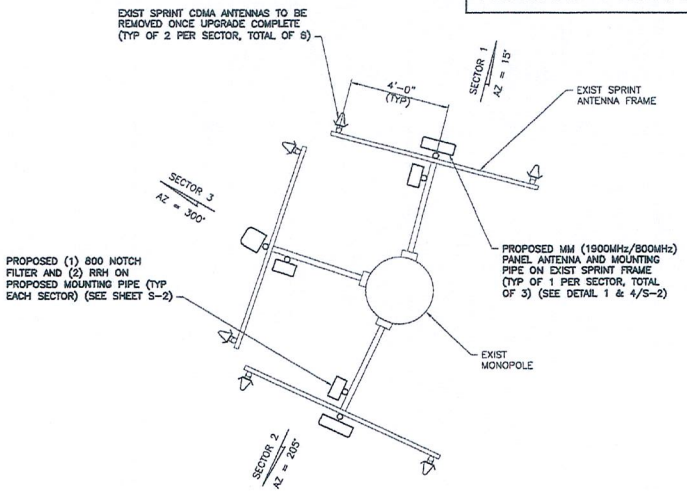
NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.

PLUMBING SCENARIO 124 & 131



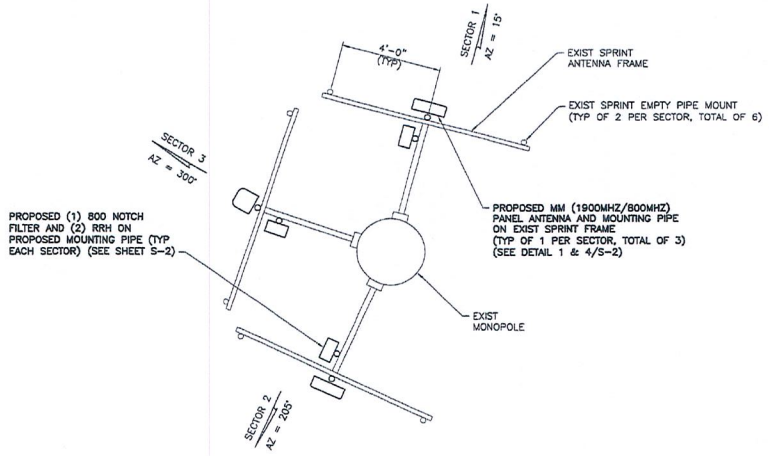
1 A-3 ANTENNA LAYOUT PLAN (EXIST)

SCALE: 3/8" = 1'-0"



2 A-3 ANTENNA LAYOUT PLAN (INTERIM)

SCALE: 3/8" = 1'-0"



3 A-3 ANTENNA LAYOUT PLAN (FINAL)

SCALE: 3/8" = 1'-0"

THE PROPOSED INSTALLATION, ANTENNA MOUNTS & EXISTING MONOPOLE SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT (TO BE COORDINATED BY OTHERS).

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SUBMITTALS

PROJECT NO: 6318.54-710

NO	DATE	DESCRIPTION	BY
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5	09/19/13	PER COMMENTS	SF
DATE		RELEASED BY	

SEAL

SITE NUMBER:
CT54XC710

SITE NAME:
NORTH BIRSTOL - AT&T - LAVERO

SITE ADDRESS:
371 TERRYVILLE AVE
BRISTOL, CT 06010

SHEET TITLE:
ANTENNA LAYOUT PLANS

SHEET NO:
A-3

AT&T Towers
2300 Northlake Center Drive, Suite 405
Tucker, GA 30084-4032
(404) 532-5855

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
Kevin Clements
520 South Main Street, Suite 2531
Akron, OH 44311
(678) 781-5061
kclements@gpdgroup.com

GPD# 2013723.01.27047.02
August 16, 2013

STRUCTURAL ANALYSIS REPORT WITH MODIFICATION DESIGN

AT&T DESIGNATION:	**Site USID:**	**27074**
	Site FA:	**10070954**
	Site Name:	**BRISTOL CENTER**
	AT&T Project:	**2_Sprint Modification 10-24-2012**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2005 CTBC, 2003 IBC & ASCE 7-05**
		80-mph fastest mile with 0" ice
		28-mph fastest mile with 1" ice
SITE DATA:		**371 Terryville Ave, Bristol, CT 06010, Hartford County**
		Latitude 41° 40' 51.211" N, Longitude 72° 57' 56.516" W
		Market: New England
		168.5' EEI Modified Monopole

Mr. Marty Jelleme,

GPD is pleased to submit this Structural Analysis Report with Modification Design to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	94.1%	Pass
Foundation Ratio with Proposed Equipment:	92.1%	Pass

Note: In order for the analysis results to be valid for the existing, proposed, and reserved loading in Appendix A, the modifications referenced in the design drawings by GPD (Project #: 2013723.27074.02, dated 8/16/2013) must be installed.

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T Mobility. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,

STATE OF CONNECTICUT JOHN N. KABAK 28336 LICENSED PROFESSIONAL ENGINEER

John N. Kabak, P.E.
Connecticut #: 28336

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by Sprint to AT&T Mobility. This report was commissioned by Mr. Marty Jelleme of AT&T Mobility.

The modifications by Black & Veatch (Project #: 166951, dated 5/4/2012) were considered in this analysis.

The modifications by GPD (Project #: 2013801.01, dated 2/8/13) were considered in this analysis.

In order for the analysis results to be valid for the existing, proposed, and reserved loading in Appendix A, the modifications referenced in the design drawings by GPD (Project #: 2013723.27074.02, dated 8/16/2013) must be installed.

The proposed coax shall be installed internal to the monopole with the existing coax in order for the analysis to be valid.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	94.1%	Pass
Anchor Rods	59.0%	Pass
Base Plate	49.3%	Pass
Foundation	92.1%	Pass

ANALYSIS METHOD

tnxTower (Version 6.1.3.1), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Notice of Co-location Form	Sprint Co-location Document, uploaded 11/14/2012	Siterra
Site Lease Application	Sprint Application, uploaded 11/5/2012	Siterra
Tower Design	EEI Project #: 12027 Rev 1, dated 11/26/2003	Siterra
Foundation Design	EEI Project #: 12027, dated 12/2/2003	Siterra
Geotechnical Report	VN Engineers Project #: 23-124G, dated 11/11/2003	Siterra
Previous Structural Analysis	GPD Project #: 2013723.27074.01, dated 5/29/2013	Siterra
Modification Drawings	GPD Project #: 2013801.01, dated 2/8/2013	Siterra
Modification Drawings	B&V Project #: 166951, dated 5/3/2012	Siterra
Post Modification Inspection	B&V Project #: 166951, dated 10/15/2012	Siterra
Modification Drawings	GPD Project #: 2013723.27074.02, dated 8/16/2013	GPD

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower shaft sizes and shape are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
8. All prior structural modifications, if any, are assumed to be as per data supplied/ available, to have been properly installed and to be fully effective.
9. All existing loading was obtained from the most recent structural analysis by GPD (Job # 2013723.01.27074.01, dated 5/29/2013), the provided Notice of Co-location Form (uploaded 11/14/2012), the Site Lease Application (uploaded 11/5/2012) and site photos and is assumed to be accurate.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. The existing/reserved AT&T Mobility loading has been modeled based on the loading reflected within the most recent structural analysis by GPD (Project # 201373.01.27074.01, dated 5/29/2013).
12. The future AT&T loading has been modeled based on the generic future loading scenario.
13. The proposed coax shall be installed internal to the monopole for the results of this analysis to remain valid.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the specified code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

NV_CT54XC710

Tower Analysis Summary Form

General Info

Site Name	BRISTOL CENTER
Site Number	27074
FA Number	10070954
Date of Analysis	8/16/2013
Company Performing Analysis	GPD

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

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	168.5'	
Tower Manufacturer	EEI	
Tower Model	n/a	
Tower Design	EEI, Inc. Project #: 12027 Rev 1	11/26/2003
Foundation Design	EEI, Inc. Project #: 12027	12/2/2003
Geotech Report	VN Engineers Project #: 23-124G	11/11/2003
Tower Mapping	n/a	
Previous Structural Analysis	GPD Project #: 2013723.27074.01	5/29/2013
Modification Drawings	GPD Project #: 2013801.01	2/8/2013
Modification Drawings	B&V Project #: 166951	5/3/2012
Post Modification Inspection	B&V Project #: 166951	10/15/2012

Design Parameters

Design Code Used	TIA/EIA-222-F, 2005 CTBC, 2003 IBC & ASCE 7-05
Location of Tower (County, State)	Hartford, CT
Basic Wind Speed (mph)	80 (fastest mile)
Ice Thickness (in)	1
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Proposed Condition	
Tower (%)	94.1%
Tower Base (%)	59.0%
Foundation (%)	92.1%
Foundation Adequate?	Yes

The modifications by Black & Veatch (Project #: 166951, dated 5/4/2012) were considered in this analysis.

The modifications by GPD (Project #: 2013801.01, dated 2/8/13) were considered in this analysis.

In order for the analysis results to be valid for the existing, proposed, and reserved loading in Appendix A, the modifications referenced in the design drawings by GPD (Project #: 2013723.27074.02, dated 8/16/2013) must be installed.

Steel Yield Strength (ksi)

Pole	65
Base Plate	60
Anchor Rods	75

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	168	169	6	Panel	Kathrein	800-10121	30/150/270	1	Unknown	12.5' LP Platform	12	Unknown	1-5/8"	Internal
AT&T Mobility	168	169	1	Panel	Andrew	SBNH-1D6565C	30			On the same mount	2	DC Line	7/8"	Internal
AT&T Mobility	168	169	1	Panel	Powerwave	P65-17-XLH-RR	150			On the same mount	1	Fiber	1/2"	Internal
AT&T Mobility	168	169	1	Panel	KMW	AM-X-CD-16-65-00T	270			On the same mount	1	RET	3/8"	Internal
AT&T Mobility	168	169	6	TMA	Powerwave	LGP 21401				Behind the antennas				
AT&T Mobility	168	169	6	RRH	Ericsson	RBS 6601				On the same mount				
AT&T Mobility	168	167	1	DC Unit	Raycap	DC6-48-60-18-8F				On the same mount				
AT&T Mobility	168	169	6	RET	Kathrein	860 10025				On the same mount				
Sprint	158	158	9	Panel	Decibel	DB980F90T4E-M	60/160/280	3	Unknown	12' T-Arms	9	Unknown	1-5/8"	Internal
Pocket Communications	148	148	3	Panel	RFS	APXV18-206517S-C	25/130/250	3	Unknown	Pipe Mounts	6	Unknown	1-5/8"	Internal
Verizon	140	140	6	Panel	Antel	LPD-6513	60/180/300	1	Unknown	13' LP Platform	12	Unknown	1-5/8"	Internal
Verizon	140	140	2	Panel	Antel	BXA 70080/6CF-4	60/300			On the same mount				
Verizon	140	140	2	Panel	Antel	BXA 171085-12BF	60/300			On the same mount				
Verizon	140	140	1	Panel	Antel	BXA 70063/4CF	180			On the same mount				
Verizon	140	140	1	Panel	Antel	BXA 171063/8BF	180			On the same mount				
Verizon	140	140	6	Diplexer	RFS	FD9R6004/2C-3L				Behind the antennas				
T-Mobile	128	130	3	Panel	RFS	APXV18-209014-C	30/120/240	1	Unknown	13' LP Platform	12	Unknown	1-5/8"	Internal
T-Mobile	128	130	3	Panel	RFS	APX16DWV-16DWV-S-E-ACU	30/120/240			On the same mount				
T-Mobile	128	130	6	TMA	Andrew	Twin Dual Duplex				On the same mount				
Sprint	70	70	1	GPS	Unknown	GPS Unit		1	Unknown	Pipe Mount	1	Unknown	1/2"	Internal

Note: The (1) existing GPS Unit at 70' shall be replaced prior to the installation of the proposed configuration and has not been considered in this analysis. All other existing/reserved equipment shall be reused.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
Sprint	158	158	2	Panel	Powerwave	P40-16-XLPP-RR-A	15/205			On the existing mounts	3	Hybriflex	1-1/4"	Internal
Sprint	158	158	1	Panel	Andrew	APXVSPP18-C-A20	300			On the existing mounts				
Sprint	158	158	3	RRH	Alcatel lucent	1900 MHz RRH				Behind the antennas				
Sprint	158	158	3	RRH	Alcatel Lucent	800 MHz RRH				Behind the antennas				
Sprint	70	70	1	GPS	Unknown	GPS Unit				On the existing mounts				

Note: The proposed equipment shall be installed in addition to the existing/reserved loading at the same elevation.
Note: The proposed coax shall be installed internal to the monopole for the results of this analysis to remain valid.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	168	169	3	Panel	KMW	AM-X-CD-16-65-00T	30/150/270			On the existing mounts	6	LDF7-50A	1-5/8"	Internal

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

APPENDIX B

tnxTower Output File

tnxTower	Job: 27074 Bristol Center	Page: 1 of 9
GPD 520 South Main Street, Ste 2531 Akron, OH Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2013723.27074.02	Date: 10:24:26 08/16/13
	Client: AT&T Mobility	Designed by: bbrookbank

Tower Input Data

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

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 28 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Area

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement* *ft*	*Total Number*		C_AA_A *ft²/ft*	*Weight* *plf*
Safety Line 3/8	C	No	CaAa (Out Of Face)	168.50 - 8.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46
Climbing Pegs	C	No	CaAa (Out Of Face)	168.50 - 8.00	1	No Ice	0.01	0.31
						1/2" Ice	0.12	0.71
						1" Ice	0.22	1.71
						2" Ice	0.41	5.56
						4" Ice	0.82	20.59
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	168.50 - 8.00	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
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	168.50 - 8.00	18	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
RET Cable	C	No	Inside Pole	168.50 - 8.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
						2" Ice	0.00	0.08
						4" Ice	0.00	0.08
7/8" DC Power Cable	C	No	Inside Pole	168.50 - 8.00	2	No Ice	0.00	0.60
						1/2" Ice	0.00	0.60
						1" Ice	0.00	0.60
						2" Ice	0.00	0.60
						4" Ice	0.00	0.60
1/2" Fiber Cable	C	No	Inside Pole	168.50 - 8.00	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

tnxTower	Job: 27074 Bristol Center	Page: 2 of 9
GPD 520 South Main Street, Ste 2531 Akron, OH Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2013723.27074.02	Date: 10:24:26 08/16/13
	Client: AT&T Mobility	Designed by: bbrookbank

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	158.00 - 8.00	9	4" Ice	0.00	0.15
						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
1 1/4" Hybriflex Cable	C	No	Inside Pole	158.00 - 8.00	3	No Ice	0.00	0.70
						1/2" Ice	0.00	0.70
						1" Ice	0.00	0.70
						2" Ice	0.00	0.70
						4" Ice	0.00	0.70
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	148.00 - 8.00	6	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
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	140.00 - 8.00	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
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	128.00 - 8.00	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
LDF4-50A (1/2 FOAM)	C	No	Inside Pole	70.00 - 8.00	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
1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	115.75 - 0.75	1	No Ice	0.21	0.00
						1/2" Ice	0.32	0.00
						1" Ice	0.43	0.00
						2" Ice	0.65	0.00
						4" Ice	1.10	0.00
1-1/4" Mod Plate	B	No	CaAa (Out Of Face)	115.75 - 0.75	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
1-1/4" Mod Plate	C	No	CaAa (Out Of Face)	115.75 - 0.75	1	No Ice	0.21	0.00
						1/2" Ice	0.32	0.00
						1" Ice	0.43	0.00
						2" Ice	0.65	0.00
						4" Ice	1.10	0.00
5"x5/8" mod. plate	A	No	CaAa (Out Of Face)	84.67 - 0.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5"x5/8" mod. plate	B	No	CaAa (Out Of Face)	84.67 - 0.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5"x5/8" mod. plate	C	No	CaAa (Out Of Face)	84.67 - 0.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00

tnxTower	Job: 27074 Bristol Center	Page: 3 of 9
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	Client: AT&T Mobility	Designed by: bbrookbank

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
5"x5/8" mod. plate	A	No	CaAa (Out Of Face)	120.00 - 84.67	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5"x5/8" mod. plate	B	No	CaAa (Out Of Face)	120.00 - 84.67	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5"x5/8" mod. plate	C	No	CaAa (Out Of Face)	120.00 - 84.67	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
12.5' LP Platform - Round (GPD)	B	None		0.0000	168.00	No Ice	16.12	16.12	1250.00
						1/2" Ice	19.89	19.89	1600.00
						1" Ice	23.66	23.66	1950.00
						2" Ice	31.20	31.20	2650.00
						4" Ice	46.28	46.28	4050.00
(2) 800 10121 w/ Mount Pipe	A	From Centroid-Leg	3.46 2.00 1.00	30.0000	168.00	No Ice	5.46	3.29	46.00
						1/2" Ice	5.88	3.64	78.91
						1" Ice	6.31	3.99	116.59
						2" Ice	7.21	4.76	207.06
						4" Ice	9.09	6.53	453.88
(2) 800 10121 w/ Mount Pipe	B	From Centroid-Leg	3.46 2.00 1.00	30.0000	168.00	No Ice	5.46	3.29	46.00
						1/2" Ice	5.88	3.64	78.91
						1" Ice	6.31	3.99	116.59
						2" Ice	7.21	4.76	207.06
						4" Ice	9.09	6.53	453.88
(2) 800 10121 w/ Mount Pipe	C	From Centroid-Leg	3.46 2.00 1.00	30.0000	168.00	No Ice	5.46	3.29	46.00
						1/2" Ice	5.88	3.64	78.91
						1" Ice	6.31	3.99	116.59
						2" Ice	7.21	4.76	207.06
						4" Ice	9.09	6.53	453.88
SBNH-1D6565C w/ Mount Pipe	A	From Centroid-Leg	3.46 2.00 1.00	30.0000	168.00	No Ice	11.45	9.60	90.00
						1/2" Ice	12.06	11.02	176.97
						1" Ice	12.69	12.29	273.69
						2" Ice	14.03	14.51	500.39
						4" Ice	17.05	19.14	1124.30
P65-17-XLH-RR w/ Mount Pipe	B	From Centroid-Leg	3.46 2.00 1.00	30.0000	168.00	No Ice	11.47	8.70	99.20
						1/2" Ice	12.08	10.11	182.36
						1" Ice	12.71	11.38	275.18
						2" Ice	14.07	13.58	493.82
						4" Ice	17.08	18.18	1100.49
AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	C	From Centroid-Leg	3.46 2.00 1.00	30.0000	168.00	No Ice	7.09	5.68	56.73
						1/2" Ice	7.71	6.69	115.40
						1" Ice	8.28	7.51	180.87
						2" Ice	9.45	9.18	335.66

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	Client: AT&T Mobility	Designed by: bbrookbank

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						4" Ice	11.92	12.75	772.96
AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	A	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.09 7.71 8.28 9.45 11.92	5.68 6.69 7.51 9.18 12.75	56.73 112.77 179.35 335.57 772.87
(2) AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	B	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.09 7.71 8.28 9.45 11.92	5.68 6.69 7.51 9.18 12.75	56.73 112.77 179.35 335.57 772.87
AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	C	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.09 7.71 8.28 9.45 11.92	5.68 6.69 7.51 9.18 12.75	56.73 112.77 179.35 335.57 772.87
(2) LGP21401	A	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	14.10 21.26 30.32 54.89 135.29
(2) LGP21401	B	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	14.10 21.26 30.32 54.89 135.29
(2) LGP21401	C	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	14.10 21.26 30.32 54.89 135.29
(2) RBS 6601	A	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.00 34.88 50.27 89.38 206.33
(2) RBS 6601	B	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.00 34.88 50.27 89.38 206.33
(2) RBS 6601	C	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.00 34.88 50.27 89.38 206.33
DC6-48-60-18-8F Surge Suppression Unit	A	From Centroid-Le g	3.46 2.00 -1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	32.80 50.52 70.72 119.24 252.92
(2) 860 10025	A	From Centroid-Le g	3.46 2.00 1.00	30.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.18 0.25 0.33 0.51 0.98	0.15 0.21 0.29 0.47 0.93	1.20 2.85 5.48 14.45 52.66
(2) 860 10025	B	From	3.46	30.0000	168.00	No Ice	0.18	0.15	1.20

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	Client: AT&T Mobility	Designed by: bbrookbank

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		Centroid-Leg	2.00 1.00			1/2" Ice	0.25	0.21	2.85
						1" Ice	0.33	0.29	5.48
						2" Ice	0.51	0.47	14.45
						4" Ice	0.98	0.93	52.66
(2) 860 10025	C	From Centroid-Leg	3.46 2.00 1.00	30.0000	168.00	No Ice	0.18	0.15	1.20
						1/2" Ice	0.25	0.21	2.85
						1" Ice	0.33	0.29	5.48
						2" Ice	0.51	0.47	14.45
						4" Ice	0.98	0.93	52.66
12' T-Arm - Round (GPD)	A	From Face	2.00 0.00 0.00	0.0000	158.00	No Ice	4.70	2.33	333.00
						1/2" Ice	5.33	2.96	400.00
						1" Ice	6.00	3.60	467.00
						2" Ice	6.67	4.87	533.00
						4" Ice	8.33	7.41	600.00
12' T-Arm - Round (GPD)	B	From Face	1.88 -0.68 0.00	-20.0000	158.00	No Ice	4.70	2.33	333.00
						1/2" Ice	5.33	2.96	400.00
						1" Ice	6.00	3.60	467.00
						2" Ice	6.67	4.87	533.00
						4" Ice	8.33	7.41	600.00
12' T-Arm - Round (GPD)	C	From Face	1.88 -0.68 0.00	-20.0000	158.00	No Ice	4.70	2.33	333.00
						1/2" Ice	5.33	2.96	400.00
						1" Ice	6.00	3.60	467.00
						2" Ice	6.67	4.87	533.00
						4" Ice	8.33	7.41	600.00
(3) DB980F90T4E-M w/Mount Pipe	A	From Face	4.00 0.00 0.00	0.0000	158.00	No Ice	3.99	3.72	31.40
						1/2" Ice	4.45	4.58	67.64
						1" Ice	4.90	5.32	110.22
						2" Ice	5.82	6.85	217.69
						4" Ice	7.98	10.10	552.44
(3) DB980F90T4E-M w/Mount Pipe	B	From Face	3.76 -1.36 0.00	-20.0000	158.00	No Ice	3.99	3.72	31.40
						1/2" Ice	4.45	4.58	67.64
						1" Ice	4.90	5.32	110.22
						2" Ice	5.82	6.85	217.69
						4" Ice	7.98	10.10	552.44
(3) DB980F90T4E-M w/Mount Pipe	C	From Face	3.76 -1.36 0.00	-20.0000	158.00	No Ice	3.99	3.72	31.40
						1/2" Ice	4.45	4.58	67.64
						1" Ice	4.90	5.32	110.22
						2" Ice	5.82	6.85	217.69
						4" Ice	7.98	10.10	552.44
P40-16-XLPP-RR-A w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	15.0000	158.00	No Ice	7.04	4.24	74.90
						1/2" Ice	7.61	5.08	126.13
						1" Ice	8.15	5.79	183.84
						2" Ice	9.25	7.26	321.96
						4" Ice	11.60	10.59	719.65
P40-16-XLPP-RR-A w/ Mount Pipe	B	From Leg	3.76 -1.36 0.00	85.0000	158.00	No Ice	7.04	4.24	74.90
						1/2" Ice	7.61	5.08	126.13
						1" Ice	8.15	5.79	183.84
						2" Ice	9.25	7.26	321.96
						4" Ice	11.60	10.59	719.65
APXVSPP18-C-A20 w/mount pipe	C	From Leg	3.76 -1.36 0.00	60.0000	158.00	No Ice	8.26	6.71	78.90
						1/2" Ice	8.81	7.66	144.31
						1" Ice	9.36	8.49	217.47
						2" Ice	10.50	10.20	390.34
						4" Ice	12.88	13.98	872.84
1900MHz RRH	A	From Leg	4.00 0.00 0.00	15.0000	158.00	No Ice	2.91	3.80	44.00
						1/2" Ice	3.14	4.06	75.27
						1" Ice	3.39	4.34	110.18

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	Client: AT&T Mobility	Designed by: bbrookbank

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						2" Ice	3.91	4.91	191.65
						4" Ice	5.05	6.15	406.70
1900MHz RRH	B	From Leg	3.76 -1.36 0.00	85.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.91 3.14 3.39 3.91 5.05	3.80 4.06 4.34 4.91 6.15	44.00 75.27 110.18 191.65 406.70
1900MHz RRH	C	From Leg	3.76 -1.36 0.00	60.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.91 3.14 3.39 3.91 5.05	3.80 4.06 4.34 4.91 6.15	44.00 75.27 110.18 191.65 406.70
800 MHZ RRH	A	From Leg	4.00 0.00 0.00	15.0000	158.00	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	53.00 74.19 98.39 156.61 317.77
800 MHZ RRH	B	From Leg	3.76 -1.36 0.00	85.0000	158.00	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	53.00 74.19 98.39 156.61 317.77
800 MHZ RRH	C	From Leg	3.76 -1.36 0.00	60.0000	158.00	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	53.00 74.19 98.39 156.61 317.77
APXV18-206517S-C w/mount pipe	A	From Leg	0.91 0.42 0.00	25.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.17 5.62 6.08 7.02 9.12	3.04 3.47 3.91 4.81 6.70	26.40 53.00 85.10 166.61 404.25
APXV18-206517S-C w/mount pipe	B	From Leg	0.98 0.17 0.00	10.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.17 5.62 6.08 7.02 9.12	3.04 3.47 3.91 4.81 6.70	26.40 53.00 85.10 166.61 404.25
APXV18-206517S-C w/mount pipe	C	From Leg	0.98 0.17 0.00	10.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.17 5.62 6.08 7.02 9.12	3.04 3.47 3.91 4.81 6.70	26.40 53.00 85.10 166.61 404.25
13' LP Platform - Round (GPD)	B	None		0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	16.62 20.50 24.38 32.14 47.66	16.62 20.50 24.38 32.14 47.66	1300.00 1650.00 2000.00 2700.00 4100.00
(2) LPD-6513 w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.14 7.86 8.46 9.69 12.31	6.81 7.92 8.75 10.44 14.03	53.55 118.05 189.32 355.79 818.48
(2) LPD-6513 w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.14 7.86 8.46 9.69 12.31	6.81 7.92 8.75 10.44 14.03	53.55 118.05 189.32 355.79 818.48

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	Client: AT&T Mobility	Designed by: bbrookbank

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(2) LPD-6513 w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.14 7.86 8.46 9.69 12.31	6.81 7.92 8.75 10.44 14.03	53.55 118.05 189.32 355.79 818.48
BXA-70080/6CFx4 w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.01 6.58 7.10 8.20 10.75	6.21 7.38 8.26 10.05 13.89	43.55 98.24 160.50 311.34 752.33
BXA-70080/6CFx4 w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.01 6.58 7.10 8.20 10.75	6.21 7.38 8.26 10.05 13.89	43.55 98.24 160.50 311.34 752.33
BXA-70063/4CF w/ mount pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.17 5.56 5.96 6.77 8.52	3.31 3.85 4.42 5.63 8.53	24.50 63.97 109.03 218.47 538.36
BXA-171085-12BF w/Mount Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.74 5.19 5.64 6.58 8.58	5.30 6.10 6.91 8.59 12.14	49.74 95.67 149.57 279.78 669.13
BXA-171085-12BF w/Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.74 5.19 5.64 6.58 8.58	5.30 6.10 6.91 8.59 12.14	49.74 95.67 149.57 279.78 669.13
BXA-171063/8BF w/Mount Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.44 3.87 4.34 5.35 7.50	3.81 4.48 5.15 6.56 9.72	45.24 82.21 125.62 230.18 549.63
(2) FD9R6004/2C-3L	A	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.08 0.14 0.20 0.34 0.74	3.10 5.40 8.79 19.61 62.87
(2) FD9R6004/2C-3L	B	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.08 0.14 0.20 0.34 0.74	3.10 5.40 8.79 19.61 62.87
(2) FD9R6004/2C-3L	C	From Centroid-Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.08 0.14 0.20 0.34 0.74	3.10 5.40 8.79 19.61 62.87
13' LP Platform - Round (GPD)	B	None		0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	16.62 20.50 24.38 32.14 47.66	16.62 20.50 24.38 32.14 47.66	1300.00 1650.00 2000.00 2700.00 4100.00
APXV18-209014-C w/ Mount Pipe	A	From Centroid-Le	4.00 0.00	30.0000	128.00	No Ice 1/2" Ice	3.62 4.00	3.21 3.84	36.95 69.82

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	Client: AT&T Mobility	Designed by: bbrookbank

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		g	2.00			1" Ice	4.40	4.49	108.42
						2" Ice	5.30	5.82	205.77
						4" Ice	7.23	8.76	508.14
APXV18-209014-C w/ Mount Pipe	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	3.62 4.00 4.40	3.21 3.84 4.49	36.95 69.82 108.42
						2" Ice	5.30	5.82	205.77
						4" Ice	7.23	8.76	508.14
APXV18-209014-C w/ Mount Pipe	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	3.62 4.00 4.40	3.21 3.84 4.49	36.95 69.82 108.42
						2" Ice	5.30	5.82	205.77
						4" Ice	7.23	8.76	508.14
APX16DWV-16DWV-S-E-A CU w/ Mount Pipe	A	From Centroid-Le g	4.00 0.00 2.00	30.0000	128.00	No Ice 1/2" Ice 1" Ice	6.84 7.31 7.78	3.19 3.82 4.46	57.85 102.47 153.24
						2" Ice	8.77	5.80	276.16
						4" Ice	10.85	8.73	634.61
APX16DWV-16DWV-S-E-A CU w/ Mount Pipe	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	6.84 7.31 7.78	3.19 3.82 4.46	57.85 102.47 153.24
						2" Ice	8.77	5.80	276.16
						4" Ice	10.85	8.73	634.61
APX16DWV-16DWV-S-E-A CU w/ Mount Pipe	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	6.84 7.31 7.78	3.19 3.82 4.46	57.85 102.47 153.24
						2" Ice	8.77	5.80	276.16
						4" Ice	10.85	8.73	634.61
(2) Onebase Twin Dual Duplex TMA	A	From Centroid-Le g	4.00 0.00 2.00	30.0000	128.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.31 0.39 0.49	11.00 15.83 22.16
						2" Ice	0.00	0.70	40.11
						4" Ice	0.00	1.23	102.61
(2) Onebase Twin Dual Duplex TMA	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.31 0.39 0.49	11.00 15.83 22.16
						2" Ice	0.00	0.70	40.11
						4" Ice	0.00	1.23	102.61
(2) Onebase Twin Dual Duplex TMA	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.31 0.39 0.49	11.00 15.83 22.16
						2" Ice	0.00	0.70	40.11
						4" Ice	0.00	1.23	102.61
Pipe Mount 2'x2.375"	A	From Leg	0.50 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice	0.34 0.47 0.63	0.34 0.47 0.63	7.60 11.40 16.82
						2" Ice	0.99	0.99	33.12
						4" Ice	1.84	1.84	91.83
GPS	A	From Leg	1.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice	0.17 0.24 0.32	0.17 0.24 0.32	0.87 3.85 7.85
						2" Ice	0.51	0.51	19.56
						4" Ice	1.02	1.02	62.07

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	Client: AT&T Mobility	Designed by: bbrookbank

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
168.00	12.5' LP Platform - Round (GPD)	27	45.325	2.7117	0.0222	14262
158.00	12' T-Arm - Round (GPD)	27	39.715	2.5938	0.0165	6791
148.00	APXV18-206517S-C w/mount pipe	27	34.283	2.4525	0.0114	3477
140.00	13' LP Platform - Round (GPD)	27	30.178	2.3078	0.0081	2500
128.00	13' LP Platform - Round (GPD)	27	24.619	2.0162	0.0048	2016
70.00	Pipe Mount 2'x2.375"	28	7.105	0.9824	0.0011	3444

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	168.5 - 130.67	Pole	TP25.31x19x0.1875	1	-7038.77	758319.67	81.1	Pass
L2	130.67 - 118.75	Pole	TP26.8884x24.3228x0.25	2	-10674.20	1098877.17	94.1	Pass
L3	118.75 - 114.75	Pole	TP27.5466x26.8884x0.3698	3	*	*	*	Pass
L4	114.75 - 84.71	Pole	TP32.49x27.5466x0.5713	4	*	*	*	Pass
L5	84.71 - 75.667	Pole	TP33.468x31.2363x0.6933	5	*	*	*	Pass
L6	75.667 - 73	Pole	TP33.9049x33.468x0.7599	6	*	*	*	Pass
L7	73 - 43.79	Pole	TP38.69x33.9049x0.6949	7	*	*	*	Pass
L8	43.79 - 28	Pole	TP40.6566x37.1771x0.7813	8	*	*	*	Pass
L9	28 - 0	Pole	TP45.25x40.6566x0.7345	9	*	*	*	Pass

	Summary	ELC:	Existing + Proposed + Reserved
	Pole (L2)	94.1	Pass
	Rating =	94.1	Pass

*See Appendix C for modification calculations.

APPENDIX C

Modification Calculations

Reinforcement 1						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	28	4	PL1.25x6-18	F	0	T&C
28	45.25	4	PL1.25x6-18	F	0	T&C
45.25	73	4	PL1.25x5-18	F	0	T&C
73	85.75	4	PL1.25x5-18	F	0	T&C
85.75	114.75	3	PL1.25x5-18	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 2						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	75.667	6	PL0.625x5-6	F	0	T&C
75.667	118.75	3	PL0.625x5-6	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 3						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Bottom Elevation	Top Elevation	Original Thickness	Original Yield Stress	Original Ultimate Stress	Reinforced Shaft Capacity	Reinf. 1 QTY	Reinf. 1 Type	Rein. 1 Capacity	Reinf. 2 QTY	Reinf. 2 Type	Rein. 2 Capacity	Reinf. 3 QTY	Reinf. 3 Type	Rein. 3 Capacity	Control Stress Ratio	Top Height	Section Length	Lap Splice	# of Sides	Top Diameter	Bottom Diameter	Equivalent Shaft Thickness	Equivalent Shaft Fy	Equivalent Weight Mult.		Top Elevation Failure	Bottom Elevation Failure	Section Failure %
130.6700	168.5000	0.1875	65	80	80.9%										**80.9%**	168.5000	37.8300	3.6700	18	19.0000	25.3100	0.1875	65.0	1.00	1			
118.7500	134.3400	0.2500	65	80	94.1%										**94.1%**	134.3400	15.5900	0.0000	18	24.3228	26.8884	0.2500	65.0	1.00	2			
114.7500	118.7500	0.2500	65	80	68.3%				3	PL0.625x5-6	90.2%				**90.2%**	118.7500	4.0000	0.0000	18	26.8884	27.5466	0.3698	48.5	0.97	3			
84.7100	114.7500	0.2500	65	80	59.7%	3	PL1.25x5-18	79.6%	3	PL0.625x5-6	78.1%				**79.6%**	114.7500	30.0400	4.5800	18	27.5466	32.4900	0.5713	47.7	0.94	4			
75.6670	89.2900	0.3125	65	80	59.9%	4	PL1.25x5-18	64.6%	3	PL0.625x5-6	78.2%				**78.2%**	89.2900	13.6230	0.0000	18	31.2363	33.4680	0.6933	51.3	0.93	5			
73.0000	75.6670	0.3125	65	80	53.5%	4	PL1.25x5-18	66.8%	6	PL0.625x5-6	69.7%				**69.7%**	75.6670	2.6670	0.0000	18	33.4680	33.9049	0.7599	49.2	0.96	6			
43.7900	73.0000	0.3125	65	80	62.6%	4	PL1.25x5-18	70.7%	6	PL0.625x5-6	78.9%				**78.9%**	73.0000	29.2100	5.4200	18	33.9049	38.6900	0.6949	48.7	0.99	7			
28.0000	49.2100	0.3750	65	80	61.4%	4	PL1.25x6-18	72.0%	6	PL0.625x5-6	79.6%				**79.6%**	49.2100	21.2100	0.0000	18	37.1771	40.6566	0.7813	50.2	0.98	8			
0.0000	28.0000	0.3750	65	80	65.4%	4	PL1.25x6-18	76.2%	6	PL0.625x5-6	84.5%				**84.5%**	28.0000	28.0000	0.0000	18	40.6566	45.2500	0.7345	48.9	0.99	9			
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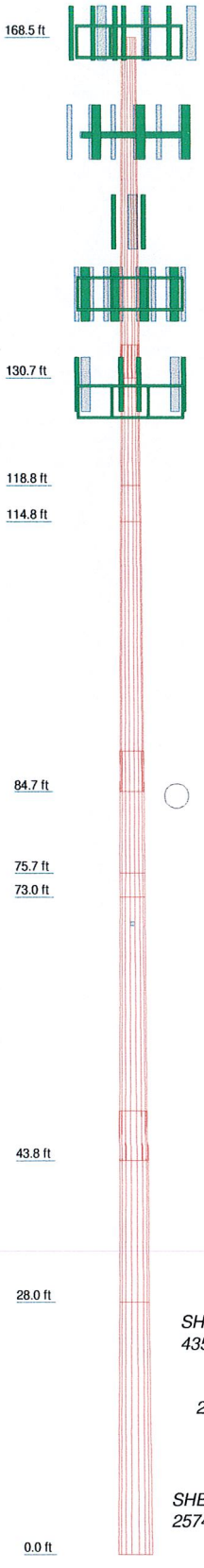
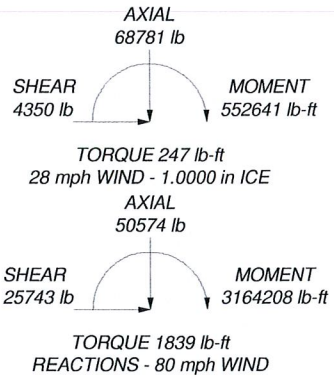
APPENDIX D

Tower Elevation Drawing

Section	1	2	3	4	5	6	7	8	9
Length (ft)	37.83	15.59	4.00	30.04	13.62	2.67	29.21	21.21	28.00
Number of Sides	18	18	18	18	18	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3698	0.5713	0.6933	0.7599	0.6949	0.7813	0.7345
Socket Length (ft)	3.67			4.58			5.42		
Top Dia (in)	19.0000	24.3228	26.8884	27.5466	31.2363	33.4680	33.9049	37.1771	40.6566
Bot Dia (in)	25.3100	26.8884	27.5466	32.4900	33.4680	33.9049	38.6900	40.6566	45.2500
Grade	A572-65			48.483304ksi	47.704397ksi	51.329107ksi	49.217315ksi	48.675455ksi	50.189114ksi
Weight (lb)	1682.9	1067.3	417.6	5134.2	3014.3	695.4	7725.3	6679.8	9239.4

Total Weight (lb): 35656.2





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12.5' LP Platform - Round (GPD)	168	1900MHz RRH	158
(2) 800 10121 w/ Mount Pipe	168	800 MHZ RRH	158
(2) 800 10121 w/ Mount Pipe	168	800 MHZ RRH	158
(2) 800 10121 w/ Mount Pipe	168	800 MHZ RRH	158
SBNH-1D6565C w/ Mount Pipe	168	APXV18-206517S-C w/mount pipe	148
P65-17-XLH-RR w/ Mount Pipe	168	APXV18-206517S-C w/mount pipe	148
AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	168	APXV18-206517S-C w/mount pipe	148
		13' LP Platform - Round (GPD)	140
AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	168	(2) LPD-6513 w/ Mount Pipe	140
		(2) LPD-6513 w/ Mount Pipe	140
(2) AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	168	(2) LPD-6513 w/ Mount Pipe	140
		BXA-70080/6CFx4 w/ Mount Pipe	140
AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe	168	BXA-70080/6CFx4 w/ Mount Pipe	140
(2) LGP21401	168	BXA-70063/4CF w/ mount pipe	140
(2) LGP21401	168	BXA-171085-12BF w/Mount Pipe	140
(2) LGP21401	168	BXA-171085-12BF w/Mount Pipe	140
(2) RBS 6601	168	BXA-171063/8BF w/Mount Pipe	140
(2) RBS 6601	168	(2) FD9R6004/2C-3L	140
(2) RBS 6601	168	(2) FD9R6004/2C-3L	140
DC6-48-60-18-8F Surge Suppression Unit	168	(2) FD9R6004/2C-3L	140
		13' LP Platform - Round (GPD)	128
(2) 860 10025	168	APXV18-209014-C w/ Mount Pipe	128
(2) 860 10025	168	APXV18-209014-C w/ Mount Pipe	128
(2) 860 10025	168	APXV18-209014-C w/ Mount Pipe	128
12' T-Arm - Round (GPD)	158	APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	128
12' T-Arm - Round (GPD)	158	APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	128
12' T-Arm - Round (GPD)	158		
(3) DB980F90T4E-M w/Mount Pipe	158	APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	128
(3) DB980F90T4E-M w/Mount Pipe	158		
(3) DB980F90T4E-M w/Mount Pipe	158	(2) Onebase Twin Dual Duplex TMA	128
P40-16-XLPP-RR-A w/ Mount Pipe	158	(2) Onebase Twin Dual Duplex TMA	128
P40-16-XLPP-RR-A w/ Mount Pipe	158	(2) Onebase Twin Dual Duplex TMA	128
APXVSPP18-C-A20 w/mount pipe	158	Pipe Mount 2'x2.375"	70
1900MHz RRH	158	GPS	70
1900MHz RRH	158		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	49.217315ksi	49 ksi	64 ksi
48.483304ksi	48 ksi	63 ksi	48.675455ksi	49 ksi	64 ksi
47.704397ksi	48 ksi	63 ksi	50.189114ksi	50 ksi	65 ksi
51.329107ksi	51 ksi	66 ksi	48.907811ksi	49 ksi	64 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 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.

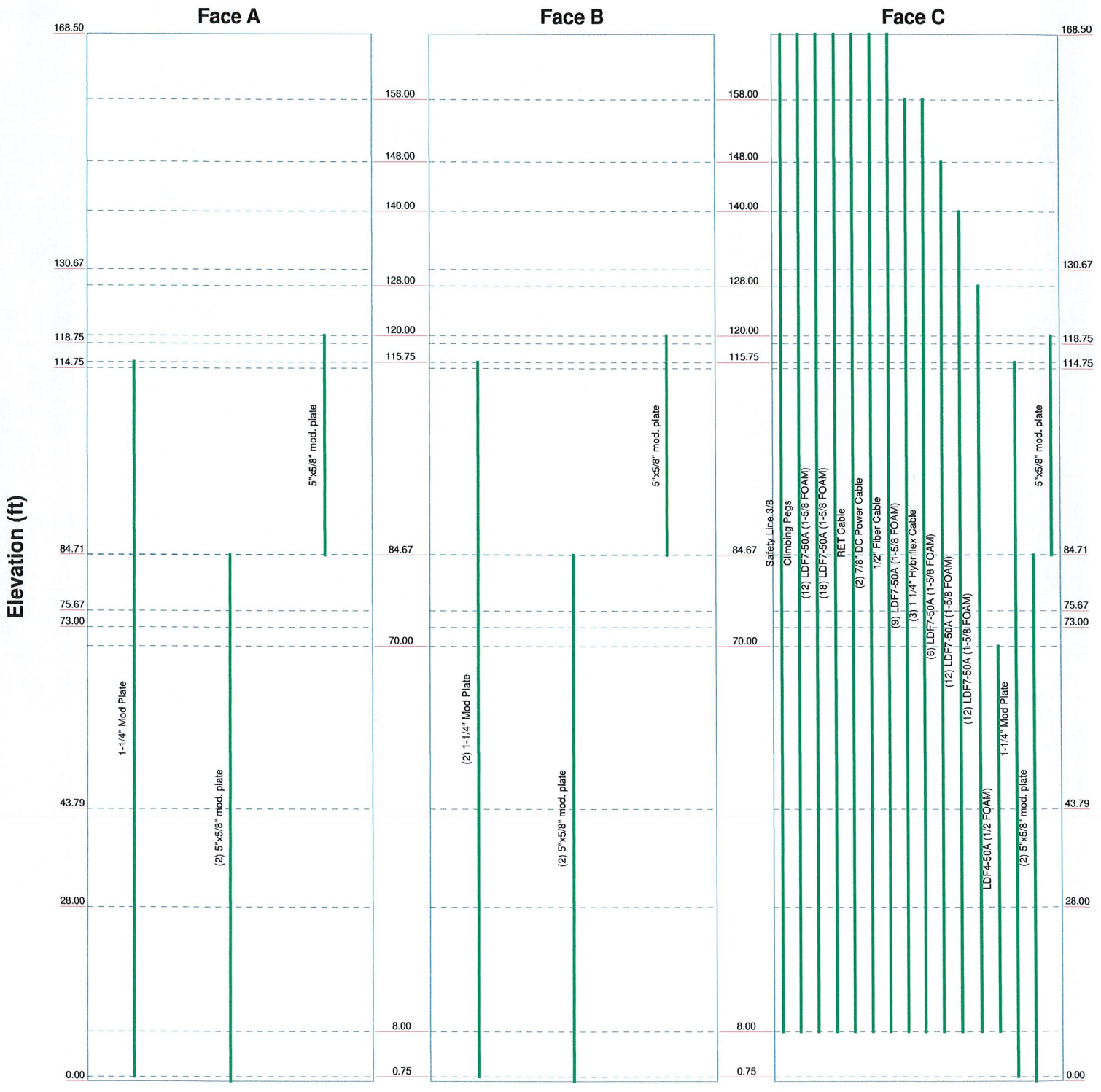
GPD
520 South Main Street, Ste 2531
Akron, OH
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: 27074 Bristol Center			
Project: 2013723.01.27074.01			
Client: AT&T Mobility	Drawn by: bbrookbank	App'd:	
Code: TIA/EIA-222-F	Date: 08/16/13	Scale: NTS	
Path:		Dwg No. E-1	

Feed Line Distribution Chart
0' - 168'6"

NV_CT54XC710

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



GPD

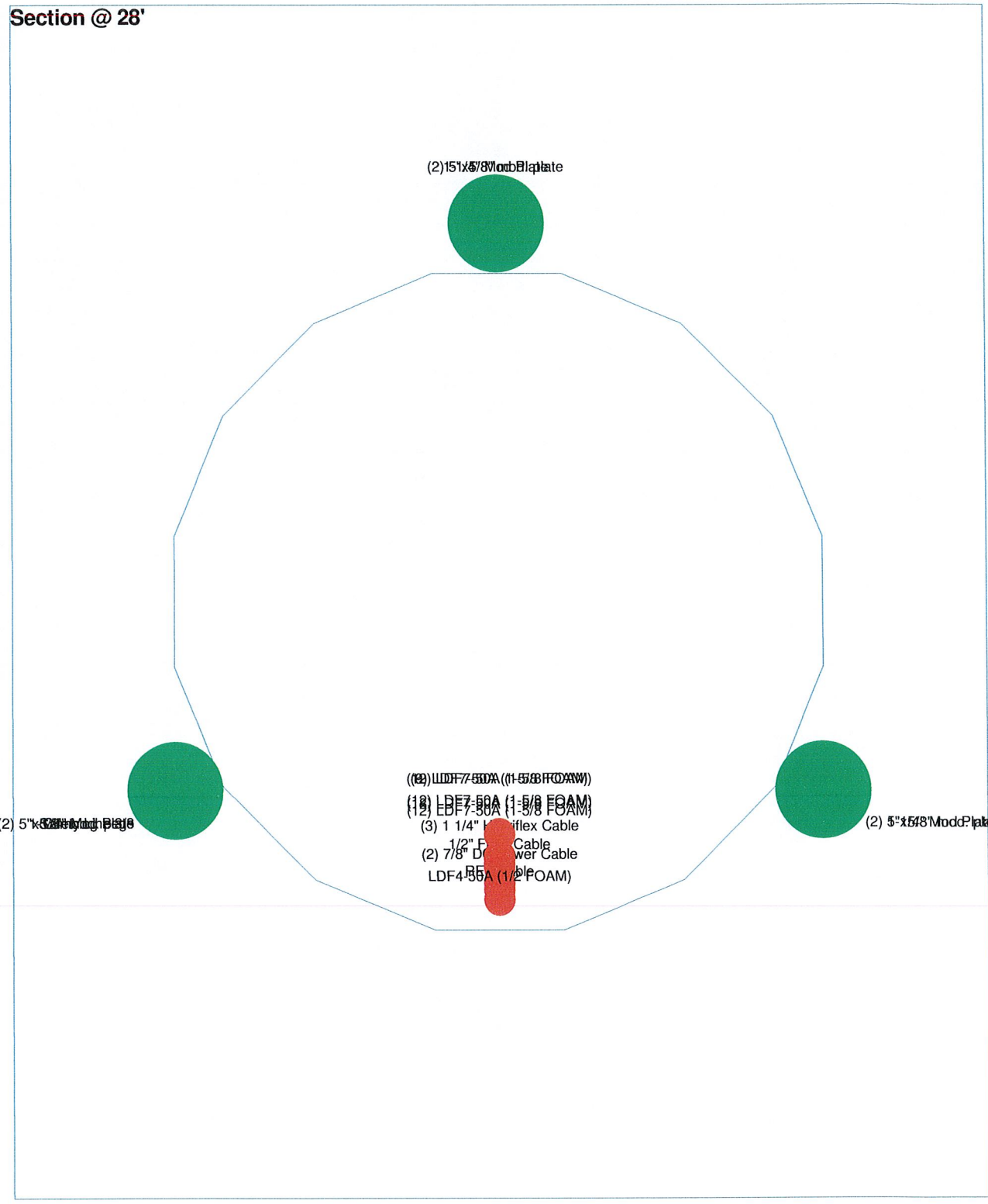
520 South Main Street, Ste 2531
Akron, OH
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: 27074 Bristol Center			
Project: 2013723.01.27074.01			
Client: AT&T Mobility	Drawn by: bbrookbank		App'd:
Code: TIA/EIA-222-F	Date: 08/16/13		Scale: NTS
Path:			Dwg No. E-7

Feed Line Plan
28'

NV_CT54XC710

_____ Round _____ Flat _____ App In Face _____ App Out Face



GPD

GPD
520 South Main Street, Ste 2531
Akron, OH
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: *27074 Bristol Center*			
Project: *2013723.01.27074.01*			
Client: AT&T Mobility	Drawn by: bbrookbank	App'd:	
Code: TIA/EIA-222-F	Date: 08/16/13	Scale: NTS	
Path:		Dwg No. E-7	

APPENDIX E

Base Plate & Anchor Rod Analysis

GPD GROUP

Anchor Rod and Base Plate Stresses
27074 BRISTOL CENTER
2013723.01.27074.02

Overturning Moment =	3164.21	k*ft
Axial Force =	50.57	k
Shear Force =	25.74	k

Acceptable Stress Ratio =	100.0%

Anchor Rods		
Number of Rods =	24	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	54	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in^2
Max Tension on Rod =	114.98	kips
Max Compression on Rod =	119.20	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	**59.0%**	**OK**

Base Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Outside Diameter =	60	in
Plate Thickness =	2	in
wcalc =	29.47	in
b =	6.57	in
Le =	7.00	in
S =	4.67	in^3
fb =	29.57	ksi
Fb =	60	ksi
BP Capacity =	**49.3%**	**OK**

Stiffeners		
Configuration =	Every Rod	
Thickness =	0.5	in
Width =	7	in
Notch =	0.5	in
Height =	12	in
Stiffener Strength (F_y) =	65	ksi
Clear Spacing b/w Stiffeners=	5	in
Weld Info. Known? =	Yes	
Vertical Weld Size =	0.375	in
Horiz. Weld Type =	Both	
Groove Angle =	45	deg
Groove Size =	0.25	in
Fillet Size =	0.375	in
Weld Strength =	70	ksi
Stiffener Vertical Force =	80.94	kips
Vert. Weld Capacity =	63.7%	kips
Horiz. Weld Capacity =	27.3%	kips
Stiffener Capacity =	90.9%	kips
Controlling Capacity =	**90.9%**	**OK**

Pole		
Pole Diameter =	45.25	in
Number of Sides =	18	
Thickness =	0.375	in
Pole Yield Strength =	65	ksi

APPENDIX F

Foundation Analysis

GPD GROUP

Caisson Analysis
27074 BRISTOL CENTER
2013723.01.27074.02

General Info	
Code	TIA/EIA-222-F
Concrete Code	ACI 318-05
Seismic Design Category	B
Max Stress Ratio	1.00
Reinforcing Known?	Yes
Modified?	No

General Soil		
Ground Water	99.00	ft
Soil Depth to Neglect	3.00	ft

Reactions		
Moment, M	3164.21	k-ft
Axial, P	50.57	k
Shear, V	25.74	k

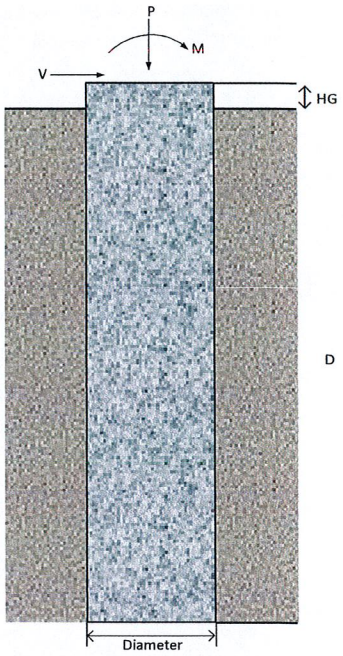
Pier Information		
Pier Diameter	6.5	ft
Pier Length Below Grade	26	ft
Distance Above Grade	1	ft
Vertical Bar Size	# 11	
Vertical Bar Quantity	16	
Tie Size	# 5	ft
fc' =	4	ksi
fy =	60	ksi
Clear Cover =	4	in

Soil Summary (Req. FS=2.0)		
Mu =	3164.21	k-ft
Mr =	9706.16	k-ft
FS =	3.07	
Capacity =	65.2%	Pass

Reinforcing Summary (Above 13.5')		
ϕMn =	4668.87*	k-ft
Mu =	4298.12	k-ft
Capacity =	92.1%	Pass

*See L-Pile output

Reinforcing Summary (Below 13.5')		
ϕMn =	3845.54	k-ft
Mu =	3235.60	k-ft
Capacity =	84.1%	Pass



Soil Info

Layer	Soil Type	Thickness	γ, pcf	Cu, psf	ϕ	Kp	Top of Layer	Bot. of Layer
Layer 1	Clay	3	110	0	0	0.00	0.00	3.00
Layer 2	Sand	25	120	0	30	3.00	3.00	28.00
Layer 3	Clay					0.00	28.00	28.00
Layer 4	Clay					0.00	28.00	28.00
Layer 5	Clay					0.00	28.00	28.00
Layer 6	Sand					1.00	28.00	28.00
Layer 7	Sand					1.00	28.00	28.00
Layer 8	Clay					0.00	28.00	28.00
Layer 9	Sand					1.00	28.00	28.00
Layer 10	Clay					0.00	28.00	28.00

LPILE Plus for Windows, Version 5.0 (5.0.39)

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

Analysis Type 2:
- Computation of Ultimate Bending Moment of Cross Section (Section Design)

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Number of sections = 1

Pile Section No. 1

The sectional shape is a circular drilled shaft (bored pile).

Outside Diameter = 78.0000 in

Material Properties:

Compressive Strength of Concrete	=	4.000 kip/in**2
Yield Stress of Reinforcement	=	60. kip/in**2
Modulus of Elasticity of Reinforcement	=	29000. kip/in**2
Number of Reinforcing Bars	=	0
Area of Single Bar	=	.00000 in**2
Number of Rows of Reinforcing Bars	=	11
Area of Steel	=	.000 in**2
Area of Shaft	=	4778.362 in**2
Percentage of Steel Reinforcement	=	.000 percent
Cover Thickness (edge to bar center)	=	3.000 in

Unfactored Axial Squash Load Capacity = 18012.35 kip

Distribution and Area of Steel Reinforcement

Row Number	Area of Reinforcement in**2	Distance to Centroidal Axis in
1	1.560	33.670
2	3.120	31.107
3	3.120	23.808
4	3.120	17.778
5	3.120	12.885
6	3.120	0.000
7	3.120	-12.885
8	3.120	-17.778
9	3.120	-23.808
10	3.120	-31.107
11	1.560	-33.670

Axial Thrust Force = 50574.00 lbs

Unfactored (Nominal) Moment Capacity at Concrete Strain of 0.003 = 62251.61600 in-kip

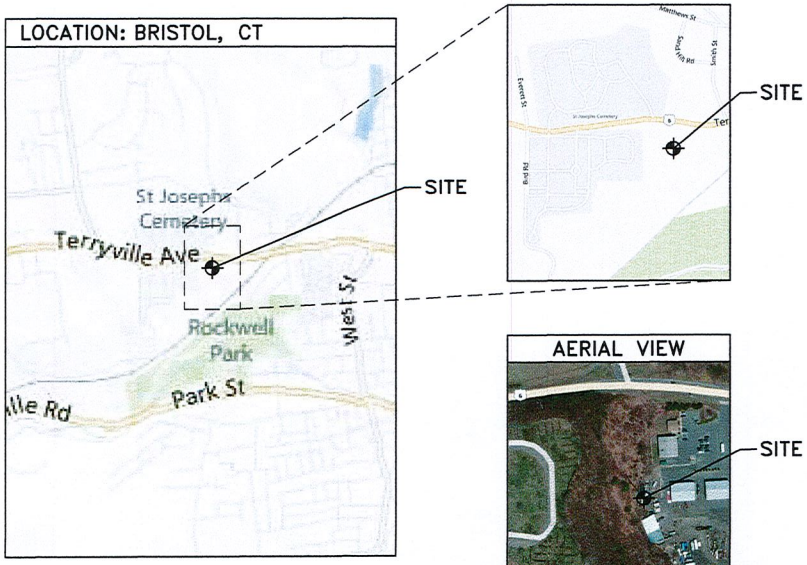
NV_CT54XC710

BRISTOL CENTER

USID #: 27074

168.5' MODIFIED EEI MONOPOLE

LOCATION: BRISTOL, CT



AERIAL VIEW

PROJECT SUMMARY	
TOWER OWNER:	AT&T MOBILITY
TOWER TYPE:	MONOPOLE
GOVERNING CODE:	TIA/EIA-222-F, 2005 CTBC, 2003 IBC, & ASCE 7-05
LATITUDE:	41° 40' 51.211" N
LONGITUDE:	72° 57' 56.516" W
OWNER CONTACT:	MR. MARTY JELLEME 2300 NORTHLAKE CENTER DRIVE, SUITE 405 TUCKER, GA 30084-4032 (404) 532-5855 DESK (678) 735-8038 CELL
ENGINEER CONTACT:	MR. JIBRIL SHEHU 520 SOUTH MAIN STREET, SUITE 2531 AKRON, OH 44311 (330) 572-2216

PROJECT OVERVIEW:
THE LISTED DRAWINGS REPRESENT MODIFICATIONS TO THE EXISTING TOWER BY INSTALLING ADDITIONAL REBAR TO THE EXISTING TOWER FOUNDATION.

DRAWING INDEX
T-01 TITLE SHEET
N-01 PROJECT NOTES
S-01 TOWER ELEVATION & MODIFICATION SCHEDULE
F-01 FOUNDATION SECTION
MI-01 MODIFICATION INSPECTION CHECKLIST

CO-LOCATOR:

Sprint
Together with Nextel

GPD GROUP
(Glaus, Pyle, Schomer, Burns & DeHaven, Inc.)
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101
Copyright: Glaus, Pyle, Schomer, Burns & DeHaven, Inc. 2013

at&t

REV	DATE	DESCRIPTION

27074 - BRISTOL CENTER
371 TERRYVILLE AVE.
BRISTOL, CT 06010

TITLE SHEET

ISSUED FOR:	
PERMIT	08/15/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
JS	BAB

JOB NO. 2013723.01.27074.02

T-01

NV_CT54XC710

GENERAL NOTES

1. THE MODIFICATIONS REPRESENTED WITHIN THESE DRAWINGS ARE BASED ON A STRUCTURAL ANALYSIS REPORT BY GPD GROUP (PROJECT #: 2012723.01.27074.01, DATED MAY 29, 2013). ALL MODIFICATIONS MUST BE INSTALLED TO BRING THE TOWER INTO CONFORMANCE WITH TIA/EIA-222-F, 2005 CTBC, 2003 IBC, AND ASCE 7-05.
2. THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222-F, 2005 CTBC, 2003 IBC, AND ASCE 7-05, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
3. ALL TOWER INFORMATION WAS OBTAINED IN THE FORM OF TOWER DESIGN BY EEI, INC. (PROJECT #: 12027 REV. 1, DATED NOVEMBER 26, 2003), FOUNDATION DESIGN BY EEI, INC. (PROJECT #: 12027, DATED DECEMBER 2, 2003), CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED TOWER DOCUMENTS.
4. THIS DESIGN ASSUMES THE TOWER AND FOUNDATIONS HAVE BEEN WELL MAINTAINED, IN GOOD CONDITION, AND ARE WITHOUT DEFECT. BENT MEMBERS, CORRODED MEMBERS, LOOSE BOLTS, CRACKED WELDS AND OTHER MEMBER DEFECTS HAVE NOT BEEN CONSIDERED. THE TOWER IS ASSUMED TO BE PLUMB AND THE SITE IS ASSUMED TO BE LEVEL. THIS DESIGN IS BEING PROVIDED WITHOUT THE BENEFIT OF A CONDITION ASSESSMENT BY GPD GROUP. **CONTRACTOR SHALL COMMISSION A COMPLETE CONDITION ASSESSMENT PRIOR TO ORDERING ANY REINFORCING MATERIALS. CONTRACTOR SHALL SUPPLY CONDITION ASSESSMENT TO ENGINEER FOR REVIEW, SEE CONTRACTOR NOTES.**
5. MANUFACTURER TOLERANCES, FIELD ADJUSTMENTS, INCORRECT STACKING, AND TEMPERATURE CAN CAUSE DIMENSION DISCREPANCIES. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS. ALL FIELD MEASUREMENTS MUST BE REPORTED TO ENGINEER.
6. ALL NEW STEEL SHALL BE HOT DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
7. ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING BRUSH APPLIED PAINT (ZRC OR EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
8. LOADINGS:

   WIND LOADS:
   FASTEST MILE WIND SPEED (PER: TIA/EIA-222-F, CTBC, 2003 IBC, AND ASCE 7-05) 80 MPH
   (HARTFORD COUNTY, CONNECTICUT)

   ICE LOADS:
   1" RADIAL BASE ICE
   FASTEST MILE WIND SPEED (CONCURRENT W/ ICE) 28 MPH
9. STRUCTURAL STEEL:

   SPECIFICATIONS (LATEST EDITION OF AISC)

   MATERIALS

   EPOXY HILTI HIT-RE 500-SD EPOXY (ICC#: ESR-2322)
10. ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZES AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.
11. ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA/EIA-222-F SECTION 1.1.3 REQUIREMENTS.
12. ALL SUBSTITUTES PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR DETERMINING IF SUBSTITUTE IS SUITABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
13. PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
14. UNLESS NOTED OTHERWISE, ALL NEW MEMBERS SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
15. THE ENGINEER (GPD GROUP) SHALL MAKE POST INSTALLATION OBSERVATION FOR TOWER AND FOUNDATION. CONTRACTOR SHALL COORDINATE THE ON-SITE INSTALLATION OBSERVATION W/ ENGINEER (GPD GROUP) AT LEAST 5 BUSINESS DAYS PRIOR TO THE CONCRETE POUR FOR EACH FOUNDATION MODIFICATION. CONTRACTOR SHALL COORDINATE W/ENGINEER (GPD GROUP) WITHIN 72 HOURS AFTER 100% COMPLETION OF THE TOWER MODIFICATION INSTALLATION. INSTALLATION OF PROPOSED LOADING WITHOUT ENGINEER APPROVAL IS PROHIBITED. INSTALLATION OF THE PROPOSED LOADING IS BY OTHERS, AND IS BEYOND THE SCOPE OF THESE DRAWINGS.

CONTRACTOR NOTES

1. ALL CONTRACTORS AND LOWER TIER CONTRACTORS MUST ACKNOWLEDGE IN WRITING TO TOWER OWNER AND GPD GROUP THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW TOWER OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECIPT OF ACKNOWLEDGMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR TOWER OWNER AND GPD GROUP ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM LOWER TIER SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO TOWER OWNER AND GPD GROUP.
2. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, GPD GROUP SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.
3. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE TOWER OWNER AND ENGINEER.
4. THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS AND PRECAUTIONS IN CONNECTION WITH THIS WORK.
6. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING; ANY PROBLEMS WITH ACCESS, INTERFERENCE, ETC. SHALL BE RESOLVED PRIOR TO MOBILIZATION. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO ORDERING ANY MATERIAL AND MUST RESOLVE ALL ISSUES WITH THE OWNER PREVENTING A CONTINUOUS INSTALLATION. CONTRACTOR SHALL NOTE ALL ANTENNAS, MOUNTS, COAX, LIGHTING, CLIMBING SUPPORTS, STEP BOLTS, PORT HOLES, AND ANY OTHER TOWER APPURTENANCES IN THE REGION OF THE MODIFICATIONS. SEE GENERAL NOTES #4 AND #5 THIS SHEET.
7. CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY REMOVING ALL COAX, T-BRACKETS, ANTENNA MOUNTS, AND ANY OTHER TOWER APPURTENANCE THAT MAY INTERFERE WITH THE TOWER MODIFICATIONS. ALL TOWER APPURTENANCES MUST BE REPLACED AND/OR RESTORED TO ITS ORIGINAL LOCATION. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE TOWER OWNER IN WRITING.
8. SOME ATTACHMENTS MAY REQUIRE CUSTOM MODIFICATIONS TO PROPERLY FIT THE MODIFIED REGION OF THE STRUCTURE. THESE CUSTOMIZATIONS ARE DESIGNED BY OTHERS AND MUST BE APPROVED BY THE ENGINEER PRIOR TO REMOVING SUCH ATTACHMENTS. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE TOWER OWNER IN WRITING.
9. CONTRACTOR SHALL ONLY WORK WITHIN THE LIMITS OF THE TOWER OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.
10. **WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 10-MPH). CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY LOCAL TOWER SHORING, TEMPORARY GLOBAL TOWER SHORING, AND ALL SHORING OF SURROUNDING BUILDINGS, PADS, AND OTHER OUTDOOR SITE OBSTRUCTIONS. ALL SHORING, TEMPORARY BRACING, AND TEMPORARY SUPPORTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.**
11. ALL MODIFICATIONS PERFORMED ON THIS TOWER SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF TIA-1019-A CONSTRUCTION STANDARDS.
12. **ABSOLUTELY NO WELDING, TORCH CUTTING, OR OPEN FLAME OF ANY TYPE IS PERMITTED ON THIS STRUCTURE AND ON THIS CONSTRUCTION SITE.**
13. ALL MANUFACTURERS HARDWARE AND ASSEMBLY INSTRUCTIONS SHALL BE FOLLOWED EXACTLY. DEVIATION FROM THE INSTRUCTIONS IS UNACCEPTABLE AND REQUIRES WRITTEN APPROVAL FROM ENGINEER.

FOUNDATION NOTES

1. **CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS 5 BUSINESS DAYS PRIOR TO FOUNDATION CONSTRUCTION IN ORDER TO COORDINATE THE VISUAL INSPECTION BY GPD:**

   -MARTY JELLEME (AT&T) **404-532-5855**
   -JIBRIL SHEHU (GPD GROUP) 330-572-2216
   -BRANDON BROOKBANK (GPD GROUP) 317-295-3174
   -NATE HENDRICKS (GPD GROUP) 330-572-2208
2. EXISTING FOUNDATION INFORMATION BASED UPON FOUNDATION DESIGN BY EEI, INC. (PROJECT #: 12027, DATED DECEMBER 2, 2003). CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED FOUNDATION DOCUMENT. IF EXISTING FOUNDATION CONDITIONS DIFFER FROM THE REFERENCED DOCUMENT, CONTACT ENGINEER AND TOWER OWNER IMMEDIATELY.
3. CONCRETE WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES, SAFETY REGULATIONS AND UNLESS OTHERWISE NOTED, THE LATEST REVISION OF ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
4. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
5. REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED. SPLICES IN REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE INDICATED.
6. CARE SHALL BE TAKEN DURING INSTALLATION OF DOWELS SO THAT EXISTING REINFORCING STEEL AND ANCHOR BOLTS ARE NOT DAMAGED. CONTRACTOR SHALL USE X-RAY OR OTHER ENGINEER APPROVED NON-DESTRUCTIVE MEANS TO LOCATE EXISTING REINFORCING STEEL AND ANCHOR BOLTS. CONTACT ENGINEER IMMEDIATELY IF EXISTING STEEL IS ENCOUNTERED.
7. CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOFABRIC, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.
8. SOIL INFORMATION IS BASED ON A GEOTECHNICAL REPORT BY VN ENGINEERS (PROJECT #: 23-124G, DATED: NOVEMBER 11, 2003). CONTRACTOR SHALL OBTAIN AND IMPLEMENT ALL RECOMMENDATIONS CONTAINED IN THE REFERENCED GEOTECHNICAL REPORT. IF SOIL CONDITIONS ENCOUNTERED ARE DIFFERENT FROM REFERENCED GEOTECHNICAL REPORT, NOTIFY ENGINEER IMMEDIATELY.

   A. UNIT WEIGHT OF SOIL = 120 PCF
   B. GROUNDWATER = NOT ENCOUNTERED
9. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH SIKA & HILTI BONDING AGENT INSTALLATION PROCEDURES AND RECOMMENDATIONS.
10. PRIOR TO APPLICATION OF BONDING AGENT, CLEAN FACE OF EXISTING FOUNDATION SUCH THAT IT IS FREE FROM ALL DIRT, DEBRIS, AND FOREIGN MATTER.

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax: 330.572.2101

at&t

REV	DATE	DESCRIPTION

27074 - BRISTOL CENTER
371 TERRYVILLE AVE.
BRISTOL, CT 06010

PROJECT NOTES

ISSUED FOR:	
PERMIT	08/15/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
JS	BAB

JOB NO. 2013723.01.27074.02

N-01

NV_CT54XC710

ANTENNA SCHEDULE

ELEVATION	STATUS	ANTENNA	MOUNT	COAX
168'-0"	EXISTING	(6) 800-10121	(1) 12.5' LP PLATFORM	(12) 1-5/8"
	EXISTING	(1) SBNH-1D6565C		(2) 7/8" DC POWER
	EXISTING	(1) P65-17-XLH-RR		(1) 1/2" FIBER
	EXISTING	(1) AM-X-CD-16-65-00T		(1) 3/8" RET
	EXISTING	(6) LGP 21401 TMAS		
	EXISTING	(6) RBS 6801		
	EXISTING	(1) DC6-48-60-18-8F		
	EXISTING	(6) 860 10025		
	FUTURE	(3) AM-X-CD-16-65-00T		(6) 1-5/8"
158'-0"	EXISTING	(9) DB980F90T4E-M	(3) 12' T-ARMS	(9) 1-5/8"
	PROPOSED	(2) P40-16-XLPP-RR-A		(3) 1-1/4" HYBRIFLEX
	PROPOSED	(1) APXVSPP18-C-A20		
	PROPOSED	(3) 1900 MHz RRH		
	PROPOSED	(3) 800 MHz RRH		
148'-0"	EXISTING	(3) APXV18-206517S-C	(3) PIPE MOUNTS	(6) 1-5/8"
140'-0"	EXISTING	(6) LPD-8513	(1) 13' LP PLATFORM	(12) 1-5/8"
	EXISTING	(2) BXA 70080/6CF-4		
	EXISTING	(2) BXA 171085-12BF		
	EXISTING	(1) BXA 70063/4CF		
	EXISTING	(1) BXA 171063/8BF		
	EXISTING	(6) FD9R6004/C-3L		
128'-0"	EXISTING	(3) APXV18-209014-C	(1) 13' LP PLATFORM	(12) 1-5/8"
	EXISTING	(3) APX16DWV-16DWV-S-E-ACU		
	EXISTING	(6) TWIN DUAL DUPLEX TMAS		
70'-0"	PROPOSED	(1) GPS UNIT	(1) PIPE MOUNTS	(1) 1/2"

MODIFICATION SCHEDULE

SYMBOL	ELEVATION	MEMBER TYPE	EXISTING MEMBER	NEW MEMBER	NOTES
(A)	0'-0"±	REBAR	CAISSON FOUNDATION	(4) #11 REBAR	INSTALL NEW REBAR INTO EXISTING TOWER FOUNDATION. SEE SECTION A/F-01 FOR MORE INFORMATION.

ELEV: 168'-6"±
TOP OF TOWER

ELEV: 130'-6"±
SLIP JOINT

ELEV: 84'-9"±
SLIP JOINT

ELEV: 43'-10"±
SLIP JOINT

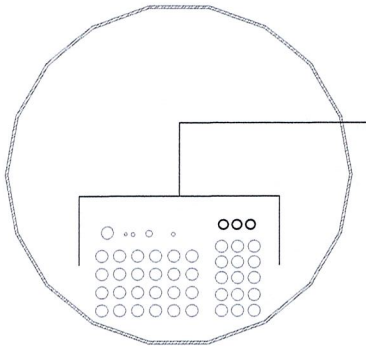
ELEV: 0'-0"±
TOWER BASE

A

DETAIL 1
1/8"=1'-0"
1 S-01

AXIAL: 62K
SHEAR: 4K
MOMENT: 564 k-ft
TORQUE: 0 kip-ft
REACTIONS- 28 mph WIND- 1.0000 IN. ICE

AXIAL: 44K
SHEAR: 26K
MOMENT: 3193 k-ft
TORQUE: 2 kip-ft
REACTIONS- 80 mph



(EXISTING)
(12) 1-5/8" COAX TO 168 FT LEVEL
(2) 7/8" DC POWER TO 168 FT LEVEL
(1) 1/2" FIBER TO 168 FT LEVEL
(1) 3/8" RET CABLE TO 168 FT LEVEL
(9) 1-5/8" COAX TO 158 FT LEVEL
(6) 1-5/8" COAX TO 148 FT LEVEL
(12) 1-5/8" COAX TO 140 FT LEVEL
(12) 1-5/8" COAX TO 128 FT LEVEL
(1) 1/2" COAX TO 70 FT LEVEL

(PROPOSED)
(3) 1-1/4" HYBRIFLEX TO 158 FT LEVEL

NORTH

COAX LAYOUT
N.T.S.

STATE OF CONNECTICUT
JOHN K. VARGA
PROFESSIONAL ENGINEER

GPD GROUP
Gluck, Pyle, Schirmer, Burns & DeGeare, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

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REV	DATE	DESCRIPTION

27074 - BRISTOL CENTER
371 TERRYVILLE AVE.
BRISTOL, CT 06010

TOWER ELEVATION & MODIFICATION SCHEDULE

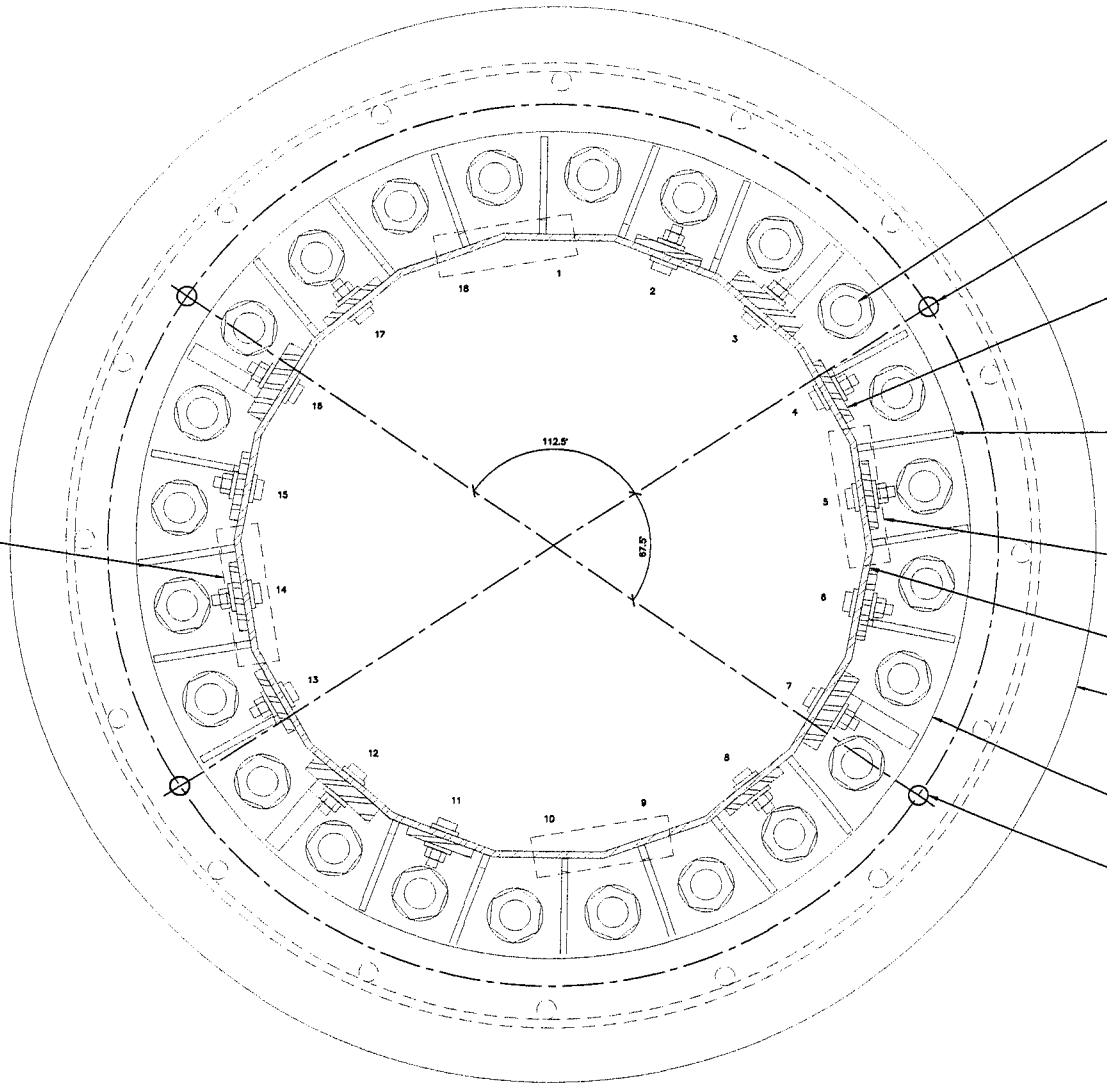
ISSUED FOR:	
PERMIT	08/15/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
JG	BAB

JOB NO. 2013723.01.27074.02

S-01

NV_CT54XC710



SECTION A F-01
3"=1'-0"

GPD GROUP
Glass, Pyle, Schomer, Burns & Deitsman, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100
Fax 330.572.2101
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REV	DATE	DESCRIPTION

27074 - BRISTOL CENTER
371 TERRYVILLE AVE.
BRISTOL, CT 06010

FOUNDATION SECTION

ISSUED FOR:	
PERMIT	08/15/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
JS	BAB

JOB NO.
2013723.01.27074.01

F-01

NV_CT54XC710

MODIFICATION INSPECTION CHECKLIST

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

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MODIFICATION INSPECTION REPORT
– DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MODIFICATION INSPECTION REPORT

MODIFICATION INSPECTION NOTES:

GENERAL

1. THE MODIFICATION INSPECTION 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.
2. THE MODIFICATION INSPECTION IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MODIFICATION INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTENT RESIDES WITH THE ENGINEER OF RECORD AT ALL TIMES.
3. **TO ENSURE THAT THE REQUIREMENTS OF THE MODIFICATION INSPECTION ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MODIFICATION INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO OR PAYMENT IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. CONTACT LISTED ON THE TITLE SHEET SHALL BE CONTACTED IF SPECIFIC INSPECTOR CONTACT INFORMATION IS NOT KNOWN.**

MODIFICATION INSPECTOR

1. THE MODIFICATION INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO OR PAYMENT FOR THE MODIFICATION INSPECTION TO:
   - REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST
   - WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
   - DISCUSS ANY SITE SPECIFIC INSPECTIONS OR CONCERNS
2. THE MODIFICATION 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 MODIFICATION INSPECTION REPORT.

GENERAL CONTRACTOR

1. THE GC IS REQUIRED TO CONTACT THE MODIFICATION INSPECTOR AS SOON AS RECEIVING A PO OR PAYMENT FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO:
   - REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST
   - WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MODIFICATION INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
   - BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS
2. THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST.

RECOMMENDATIONS

1. THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MODIFICATION INSPECTION REPORT:
   - IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MODIFICATION INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MODIFICATION INSPECTION TO BE CONDUCTED.
   - THE GC AND MODIFICATION INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
   - WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MODIFICATION 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 MODIFICATION INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
   - WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MODIFICATION INSPECTOR ON-SITE DURING THE MODIFICATION INSPECTION TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MODIFICATION INSPECTION. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MODIFICATION INSPECTION CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MODIFICATION INSPECTION

1. IF THE GC AND MODIFICATION INSPECTOR AGREE TO A DATE ON WHICH THE MODIFICATION INSPECTION WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, THE TOWER OWNER 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.). 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 MODIFICATION INSPECTION

1. IF THE MODIFICATION INSTALLATION WOULD FAIL THE MODIFICATION INSPECTION ("FAILED MODIFICATION INSPECTION"), 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 MODIFICATION INSPECTION.
   - OR, WITH TOWER OWNER'S APPROVAL, THE GC MAY WORK WITH THE ENGINEER OF RECORD TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

VERIFICATION INSPECTIONS

1. TOWER OWNER RESERVES THE RIGHT TO CONDUCT A VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MODIFICATION INSPECTION(S) ON TOWER MODIFICATION PROJECTS.
2. VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MODIFICATION INSPECTION" OR "PASS AS NOTED MODIFICATION INSPECTION" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS

1. BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS ARE TO BE TAKEN AND INCLUDED IN THE MODIFICATION INSPECTION 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
   - ANY OTHER PHOTOS DEEMED RELEVANT TO SHOW COMPLETE DETAILS OF MODIFICATIONS
2. PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

GPD GROUP
Gibus, Pyle, Schirmer, Burns & Dettmann, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

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REV	DATE	DESCRIPTION

27074 - BRISTOL CENTER
371 TERRYVILLE AVE.
BRISTOL, CT 06010

MODIFICATION INSPECTION CHECKLIST

ISSUED FOR:	
PERMIT	08/15/13
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
JG	BAB

JOB NO. 2013723.01.27074.02

MI-01

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

Sprint Existing Facility

Site ID: CT54XC710

North Bristol
371 Terryville Avenue
Bristol, CT 06010

September 27, 2013

EBI Project Number: 69130124

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

EBI Consulting
environmental | engineering | due diligence

September 27, 2013

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site: **CT54XC710 – North Bristol**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 371 Terryville Avenue, Bristol, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the cellular band is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 371 Terryville Avenue, Bristol, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

1) 4 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antenna used in this modeling is the RFS APXVSPP18-C-A20 and the Powerwave P40-16-XLPP-RR-A. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXVSPP18-C-A20 has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. The Powerwave P40-16-XLPP-RR-A has a 15.9 dBd gain value at its main lobe at 1900 MHz and 14.2 dBd at its main lobe for 850 MHz. All `calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

6) The antenna mounting height centerline of the proposed antennas is **158 feet** above ground level (AGL)
7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Site ID	CT54XC710 - North Bristol
Site Addresss	371 Terryville Avenue, Bristol, CT, 06010
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Powerwave	P40-16-XLPP-RR-A	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	158	152	1/2 "	0.5	0	2773.8948	43.16272	4.31627%
1a	Powerwave	P40-16-XLPP-RR-A	RRH	850 MHz	CDMA / LTE	20	1	20	14.2	158	152	1/2 "	0.5	0	468.84576	7.295395	1.28667%
														Sector total Power Density Value:		5.603%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	Powerwave	P40-16-XLPP-RR-A	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	158	152	1/2 "	0.5	0	2773.8948	43.16272	4.31627%
2a	Powerwave	P40-16-XLPP-RR-A	RRH	850 MHz	CDMA / LTE	20	1	20	14.2	158	152	1/2 "	0.5	0	468.84576	7.295395	1.28667%
														Sector total Power Density Value:		5.603%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	158	152	1/2 "	0.5	0	2773.8948	43.16272	4.31627%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	158	152	1/2 "	0.5	0	389.96892	6.068045	1.07020%
														Sector total Power Density Value:		5.386%	

Site Composite MPE %	
Carrier	MPE %
Sprint	16.592%
MetroPCS	5.000%
AT&T	13.150%
Verizon Wireless	16.930%
T-Mobile	5.170%
Total Site MPE %	**56.842%**

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Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **16.592% (5.603% each from sectors 1 and 2 and 5.386% from sector 3)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **56.842%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803