Crown Castle
3530 Toringdon Way
Suite 300
Charlotte, NC 28277

Tel: 704-405-6600

www.crowncastle.com

April 10, 2014

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

RE: **T-Mobile-Exempt Modification - Crown Site BU: 806368**
T-Mobile Site ID: CT11248A
Located at: 366 South Three Mile Road, Glastonbury, CT 06033

Dear Ms. Bachman:

This letter and exhibits are submitted on behalf of T-Mobile. T-Mobile is making modifications to certain existing sites in its Connecticut system in order to implement their Modernization technology. Please accept this letter and exhibits as notification, pursuant to § 16-50j-73 of the Regulations of Connecticut State Agencies ("R.C.S.A."), of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In compliance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mr. Richard J. Johnson, Manager for the Town of Glastonbury.

T-Mobile plans to modify the existing wireless communications facility owned by Crown Castle and located at **366 South Three Mile Road, Glastonbury, CT 06033**. Attached are a compound plan and elevation depicting the planned changes (Exhibit-1), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-2). Also included is a power density table report reflecting the modification to T-Mobile's operations at the site (Exhibit-3).

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") § 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 the R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. T-Mobile's replacement antennas will be located at the same elevation on the existing tower.

2. There will be no proposed modifications to the ground and no extension of boundaries.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative General Power Density table report for T-Mobile's modified facility is included as Exhibit-3.

5. A Structural Modification Report confirming that the tower and foundation can support Sprint's proposed modifications is included as Exhibit-2.

For the foregoing reasons, T-Mobile respectfully submits the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Donna Neal.

Sincerely,

Jeff Barbadora
Real Estate Specialist

Enclosure

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: Mr. Richard J. Johnson, Manager
Town of Glastonbury
Town Hall
2155 Main Street
Glastonbury, CT 06033

T-Mobile

NORTHEAST LLC.

SITE NAME: **GLASTONBURY**

SITE ID NUMBER: **CT11248A**

SITE ADDRESS: 366 SOUTH THREE MILE ROAD
GLASTONBURY, CT 06033

PROJECT SUMMARY

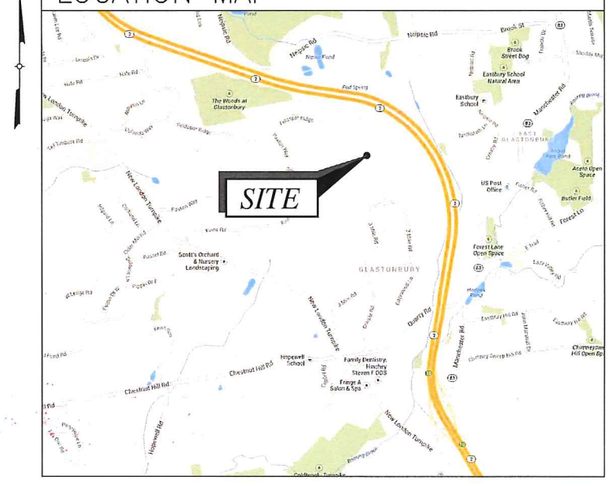
SITE ID NUMBER:	CT11248A
SITE NAME:	GLASTONBURY
CROWN BU#:	806368
SITE ADDRESS:	366 SOUTH THREE MILE ROAD GLASTONBURY, CT 06033
COUNTY:	HARTFORD
PROPERTY OWNER:	CROWN CASTLE USA
APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 0602 PHONE: (800) 692-7100
ENGINEER/ SURVEYOR/ STRUCTURAL ENG:	TECTONIC ENGINEERING CONSULTANTS P.C. 1279 ROUTE 300 NEWBURGH, NY 12550
CONTACT: PHONE:	TAMMY NOSEK (845) 567-6656 EXT. 2807
SITE ACQUISITION:	CROWN CASTLE 1200 MACARTHUR BLVD SUITE 200 MAHWAH, NJ 07430
CONTACT: PHONE:	PAUL HUGHES (585) 259-7604
PARCEL INFO:	18/7060/S0035
LATITUDE: (NAD 83)	41.69359° N
LONGITUDE: (NAD 83)	72.54737° W

SITE DIRECTIONS

HEAD NORTHEAST ON GRIFFIN RD S TOWARD W NEWBERRY RD. TAKE THE 1ST RIGHT ONTO W NEWBERRY RD. TURN LEFT ONTO WOODLAND AVE. TAKE THE 1ST RIGHT ONTO CT-187 S-BLUE HILLS AVE. TURN LEFT ONTO CT-178 E-E WINTONBURY AVE. TURN RIGHT TO MERGE ONTO I-91 S TOWARD HARTFORD. TAKE EXIT 30 ON THE LEFT FOR INTERSTATE 84 E TOWARD CONNECTICUT 2-EAST HARTFORD-NEW LONDON. MERGE ONTO I-84 E. TAKE EXIT 55 TO MERGE ONTO CT-2 E TOWARD NORWICH-NEW LONDON-I-84 E. TAKE EXIT 10 FOR CT-83 TOWARD E GLASTONBURY-MANCHESTER. TURN RIGHT ONTO CT-83 S-MANCHESTER RD. TURN RIGHT ONTO NEW LONDON TURNPIKE. TAKE THE 2ND RIGHT ONTO 3 MILE RD. DESTINATION WILL BE ON THE LEFT.

LOCATION MAP

SCALE: NTS



SHEET INDEX

SHEET NO	DESCRIPTION	REV NO
T-1	TITLE SHEET	1
A-1	SITE PLAN	1
A-2	EQUIPMENT LAYOUT PLANS	1
A-3	ELEVATION & DETAIL	1
A-4	ANTENNA LAYOUT PLANS & DETAILS	1
A-5	DETAILS	1
A-6	DETAILS	1
A-7	NOTES	1
A-8	NOTES	1

THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL ITEMS HAVE BEEN ADDRESSED AND EACH OF THE DRAWINGS HAS BEEN REVISED AND ISSUED "FOR CONSTRUCTION".

Know what's **below.** **Call** before you dig.

CONFIGURATION
2C
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

0 1 2 3
ORIGINAL SIZE IN INCHES

TECTONIC
• PLANNING • CONSTRUCTION MANAGEMENT
• ENGINEERING
• SURVEYING
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T-Mobile
T-MOBILE NORTHEAST LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
PHONE: (860) 692-7100

CROWN CASTLE

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
7061.CT11248A	JQ

REV	DATE	REVISION	DRAWN BY
0	04/07/14	FOR COMMENT	SF
1	04/09/14	FOR CONSTRUCTION	MP

ISSUED BY _____ DATE _____

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
No. 25406
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

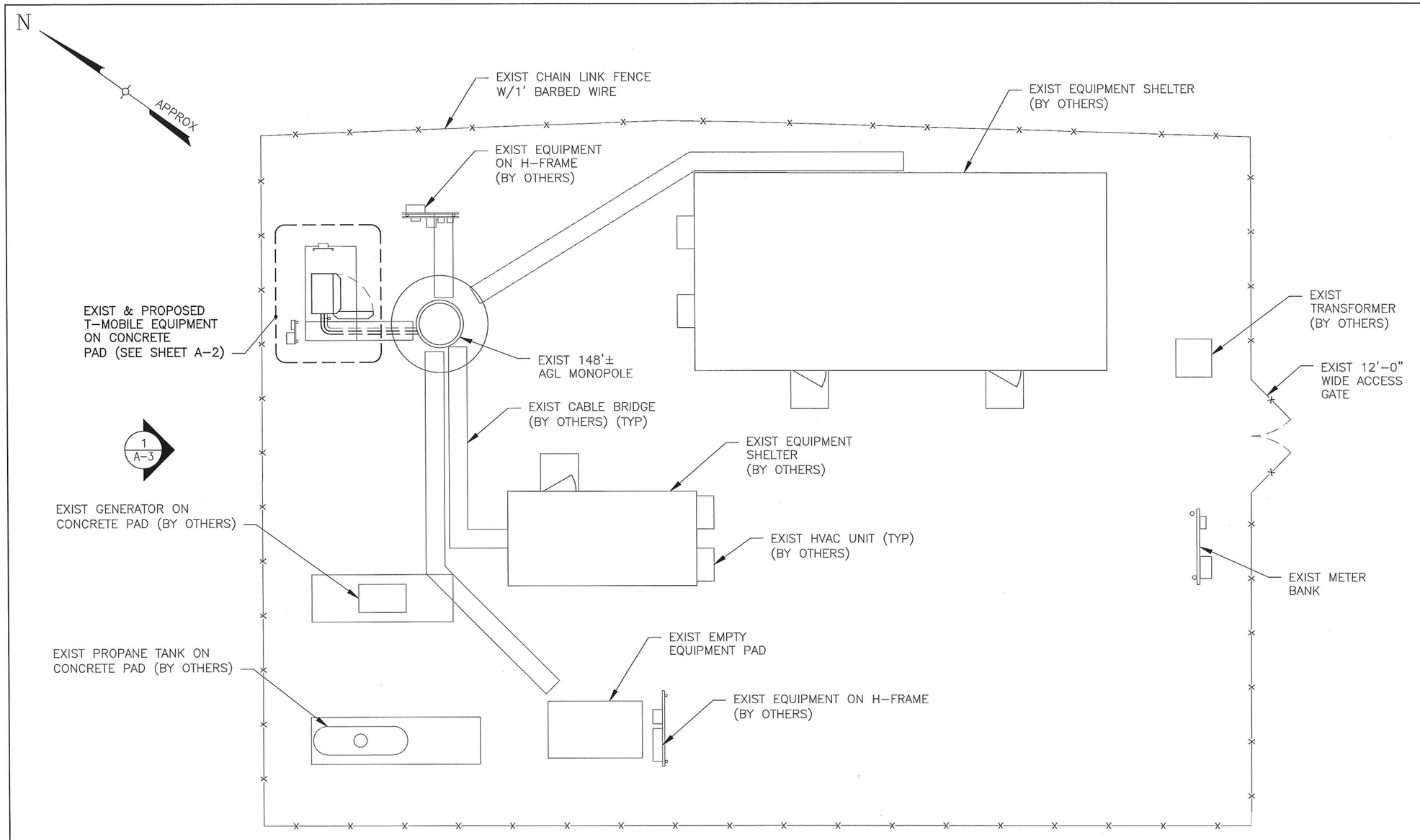
CT11248A
GLASTONBURY
366 SOUTH THREE MILE RD.
GLASTONBURY, CT 06033

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



NOTES:

1. CONTRACTOR SHALL FIELD VERIFY THE ADEQUACY TO ROUTE THE HCS 9x18 MLE (FIBER) CABLE ALONG THE INTERIOR OF THE MONOPOLE PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO MATCH ANTENNA AZIMUTHS AND DOWNTILTS TO EXISTING CONDITION AND NOTIFY RF ENGINEER OF ANY DISCREPANCY.
3. LOCK & TAG BREAKERS FOR ALL EQUIPMENT BEING TURNED OFF (WHEN APPLICABLE).
4. CONTRACTOR TO RE-VERIFY CABLE LENGTHS PRIOR TO CONSTRUCTION.
5. SEE RFDS FOR FINAL EQUIPMENT CONFIGURATION.

1 A-1 SITE PLAN

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

CONFIGURATION
2C
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

0 1 2 3

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SHEET TITLE

SITE PLAN

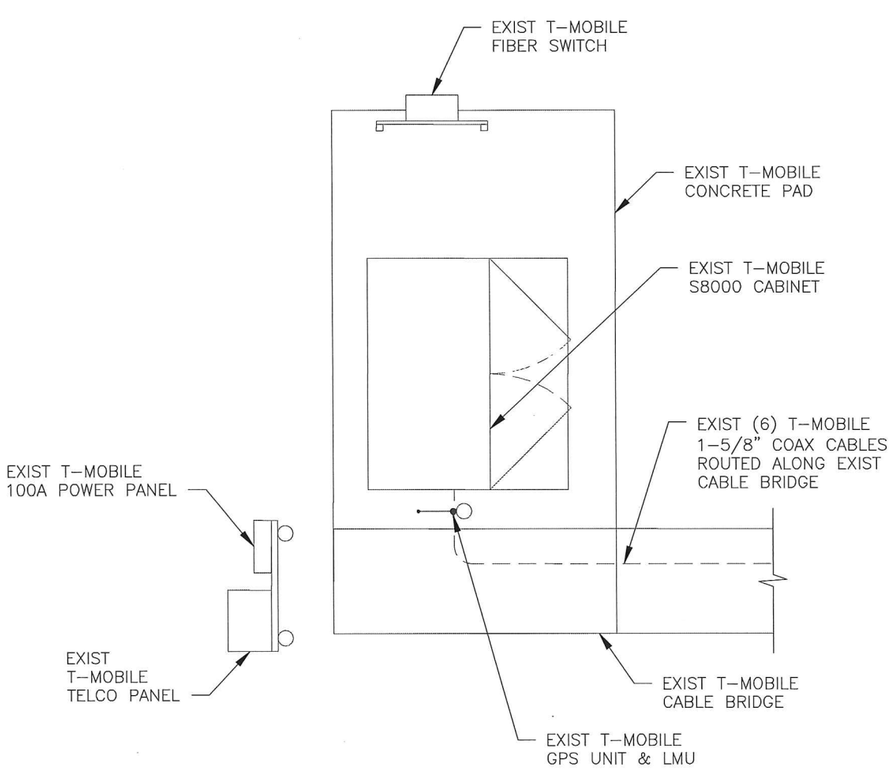
SHEET NUMBER

A-1

N

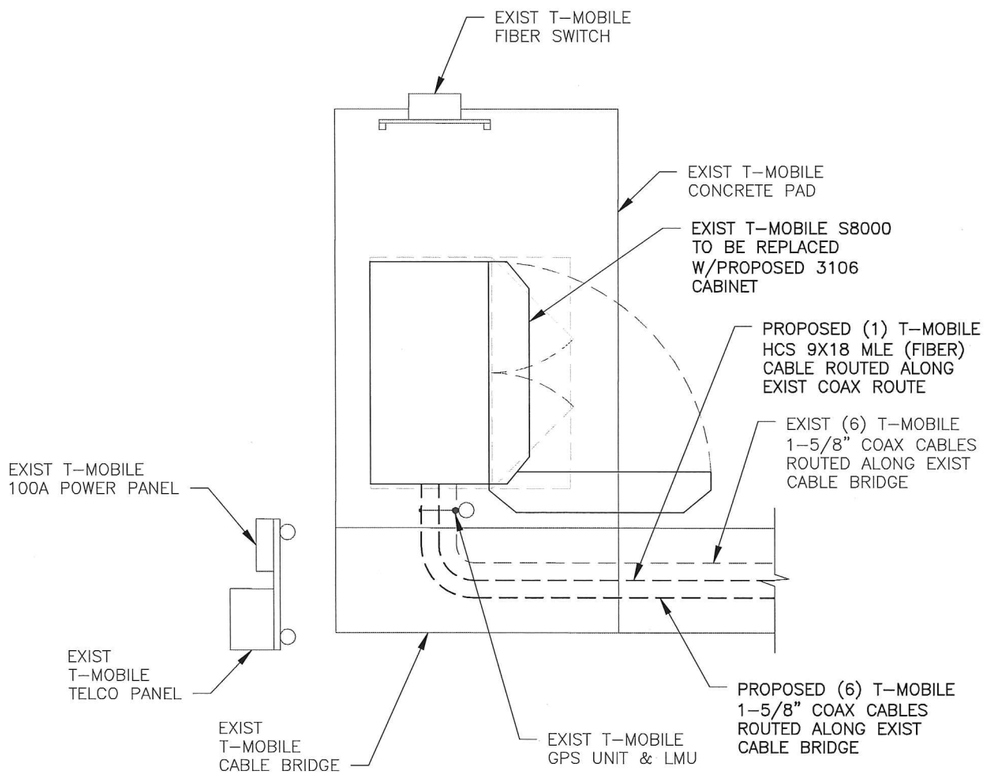
APPROX

HCS LENGTH			
FROM EQUIPMENT CABINET TO ANTENNA			
SECTOR	ALPHA	BETA	GAMMA
LENGTH	140'±	140'±	140'±
SIZE	1"		
HCS 9x18 MLE			



1 / A–2 EXIST EQUIPMENT PLAN

SCALE: 3/8" = 1'–0'



2 / A–2 PROPOSED EQUIPMENT PLAN

SCALE: 3/8" = 1'–0'

CONFIGURATION
2C
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

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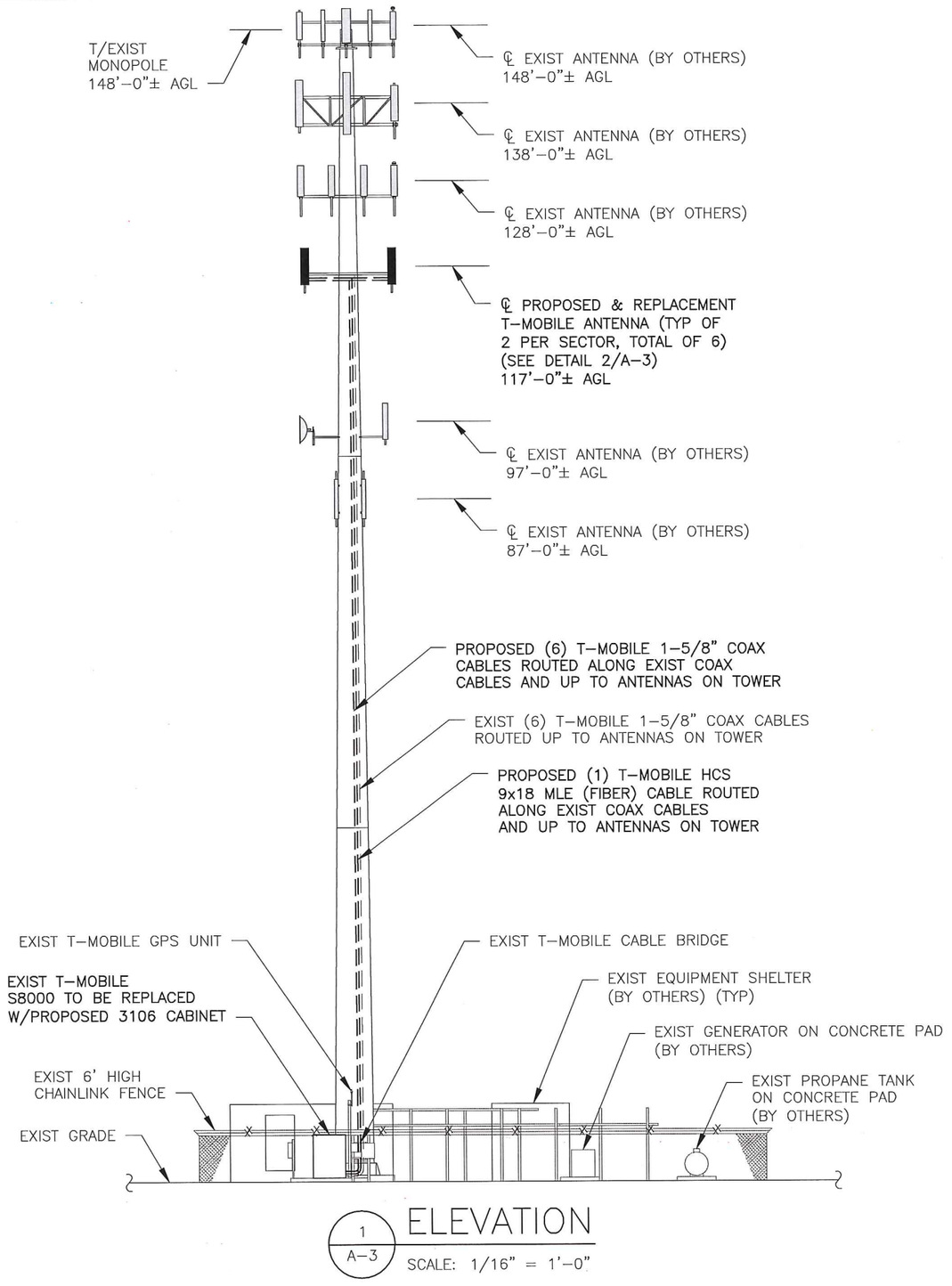
SHEET TITLE

EQUIPMENT LAYOUT PLANS

SHEET NUMBER

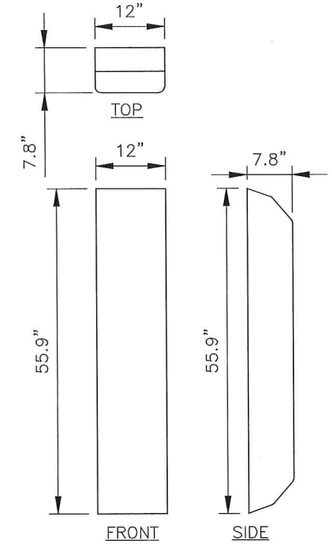
A–2



1 / A-3 ELEVATION

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

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



AIR 21

2 / A-3 DETAIL

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

ELEVATION NOTE:

ELEVATION OF EXIST MONOPOLE HAS BEEN ARBITRARILY ASSIGNED AS EL 648'-0"±. THIS IS APPROXIMATELY 148'-0"± ABOVE GRADE WHICH WAS ESTIMATED AS EL 500'-0"± TAKEN FROM U.S.G.S. QUAD MAP, AND DOES NOT NECESSARILY CORRESPOND TO ACTUAL ELEVATION ABOVE SEA LEVEL. ALL OTHER ELEVATIONS INDICATED WERE DETERMINED ON THIS BASIS.

CONFIGURATION

2C

REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

0 1 2 3

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CROWN CASTLE

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RF _____
CONSTRUCTION _____
OPERATIONS _____
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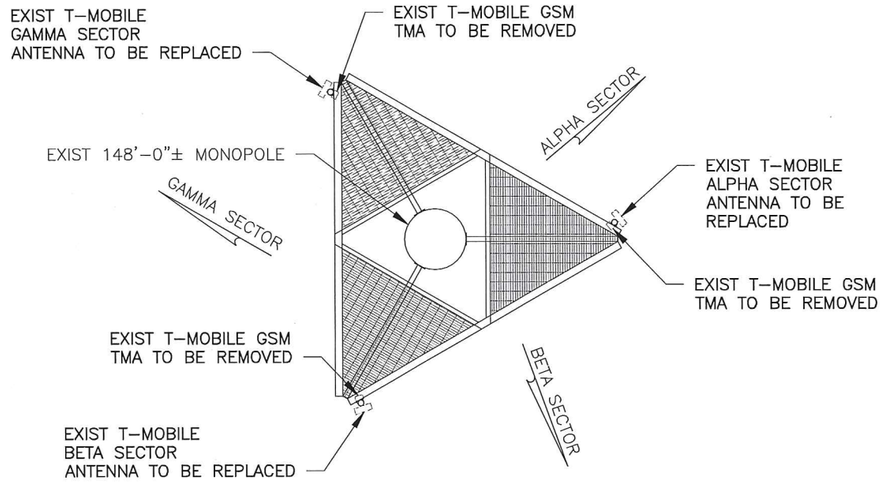
366 SOUTH THREE MILE RD.
GLASTONBURY, CT 06033

SHEET TITLE

ELEVATION & DETAIL

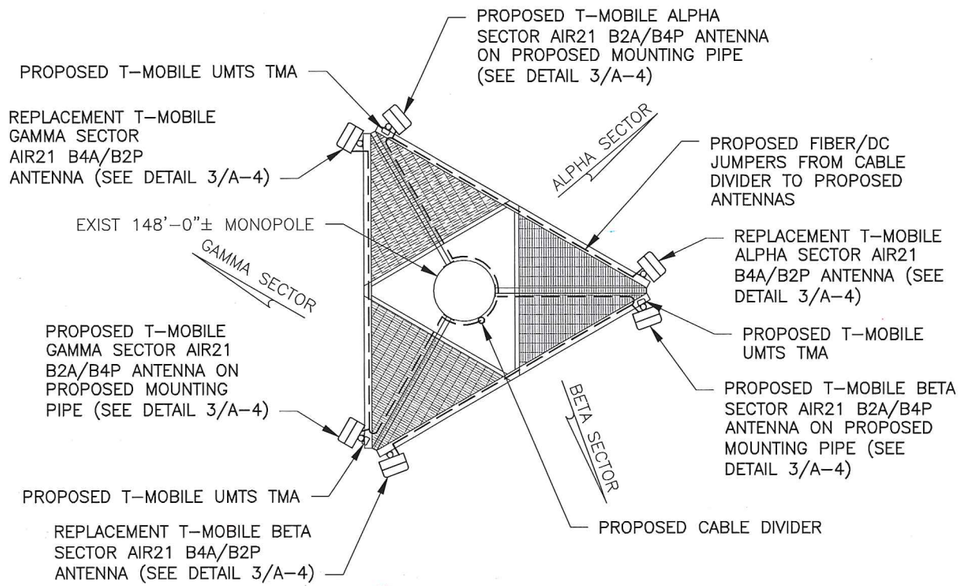
SHEET NUMBER

A-3



1 / A–4 EXIST ANTENNA PLAN

SCALE: 3/16" = 1'–0"



2 / A–4 PROPOSED ANTENNA PLAN

SCALE: 3/16" = 1'–0"

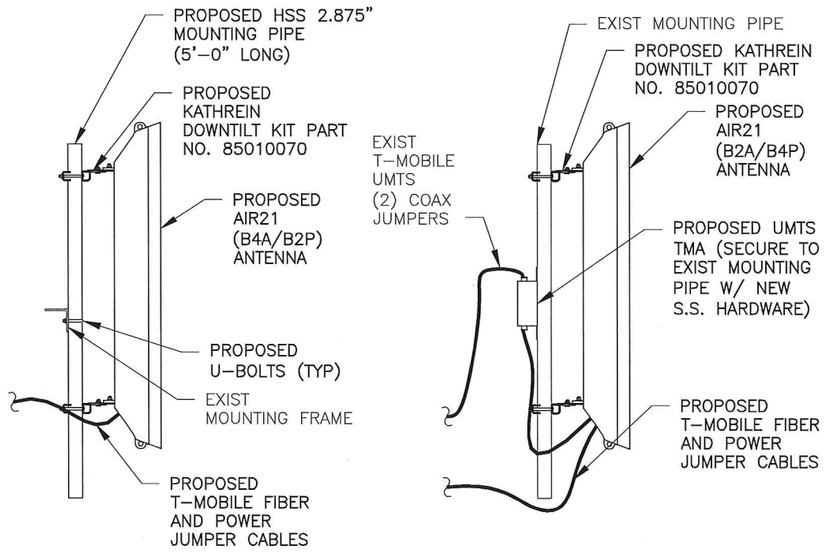
THE PROPOSED INSTALLATION, EXISTING MOUNTS & EXISTING MONOPOLE SHALL BE STRUCTURALLY ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT (TO BE COORDINATED BY OTHERS).

EXIST ANTENNA SCHEDULE

SECTOR	MAKE	QUANTITY	MODEL#	SIZE
SECTOR A	ANDREW	1	RR90–17–02DP	56.0x8.0x2.8
SECTOR B	ANDREW	1	RR90–17–02DP	56.0x8.0x2.8
SECTOR B	ANDREW	1	RR90–17–02DP	56.0x8.0x2.8

PROPOSED ANTENNA SCHEDULE

SECTOR	MAKE	QUANTITY	MODEL#	SIZE
ALPHA	ERICSSON	1	AIR21 B2A/B4P	12x8x56
	ERICSSON	1	AIR21 B4A/B2P	12x8x56
BETA	ERICSSON	1	AIR21 B2A/B4P	12x8x56
	ERICSSON	1	AIR21 B4A/B2P	12x8x56
GAMMA	ERICSSON	1	AIR21 B2A/B4P	12x8x56
	ERICSSON	1	AIR21 B4A/B2P	12x8x56



3 / A–4 ANTENNA DETAIL

SCALE: 1/2" = 1'–0"

CONFIGURATION
2C
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

0 1 2 3

ORIGINAL SIZE IN INCHES

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Fax: (845) 567–8703

T–Mobile

T–MOBILE NORTHEAST LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
PHONE: (860) 692–7100

CROWN CASTLE

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

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ISSUED BY | DATE

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
No. 25406
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

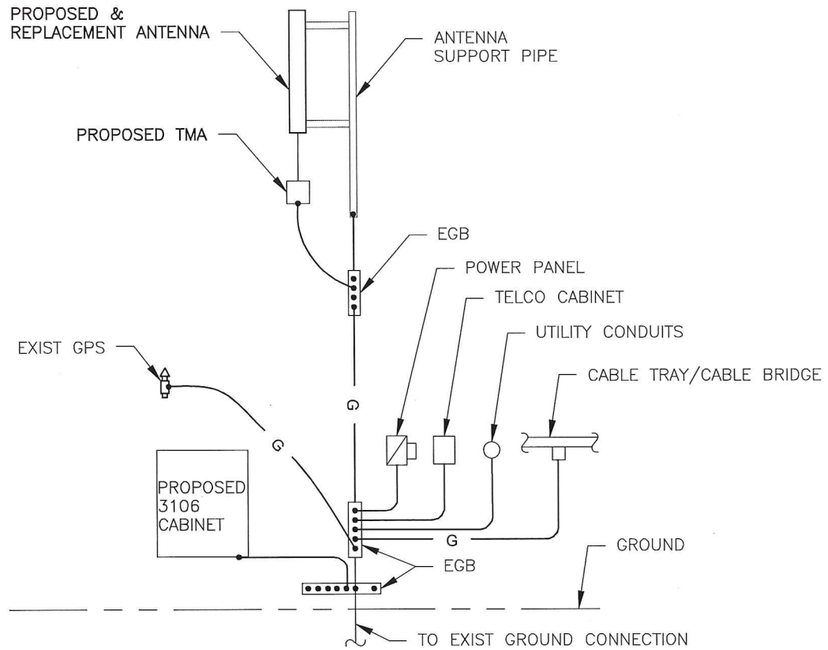
CT11248A
GLASTONBURY
366 SOUTH THREE MILE RD.
GLASTONBURY, CT 06033

SHEET TITLE

ANTENNA LAYOUT PLANS & DETAILS

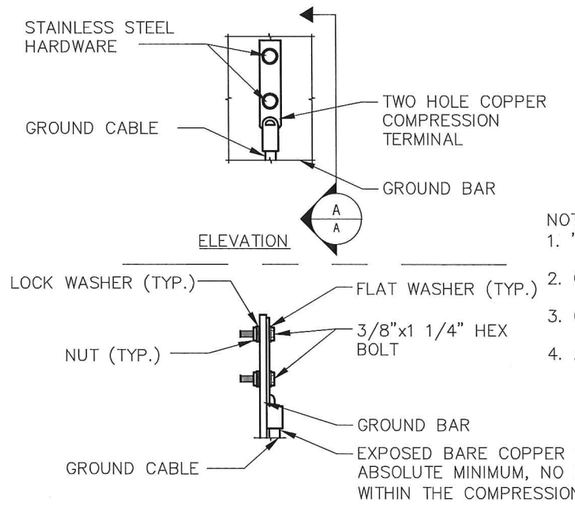
SHEET NUMBER

A–4



1 / A–5 GROUNDING RISER DIAGRAM

SCALE: NTS

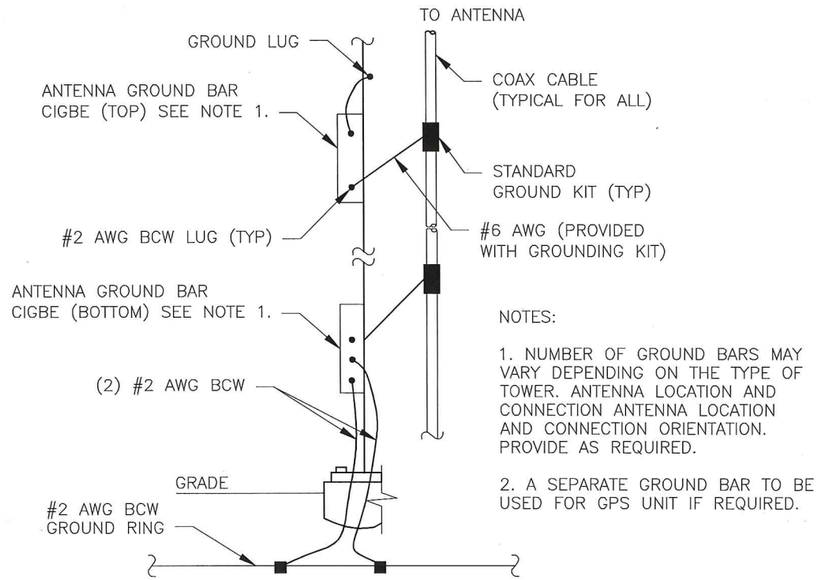


SECTION "A–A"

NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.
4. ALL GROUND LUGS MUST NE HEAT SHRUNK AT WIRE/LUG CONNECTION.

2 / A–5 GROUNDING BAR CONN. DETAIL

SCALE: NTS



NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.

2. A SEPARATE GROUND BAR TO BE USED FOR GPS UNIT IF REQUIRED.

3 / A–5 ANTENNA CABLE GROUNDING

SCALE: NTS

CONFIGURATION
2C
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

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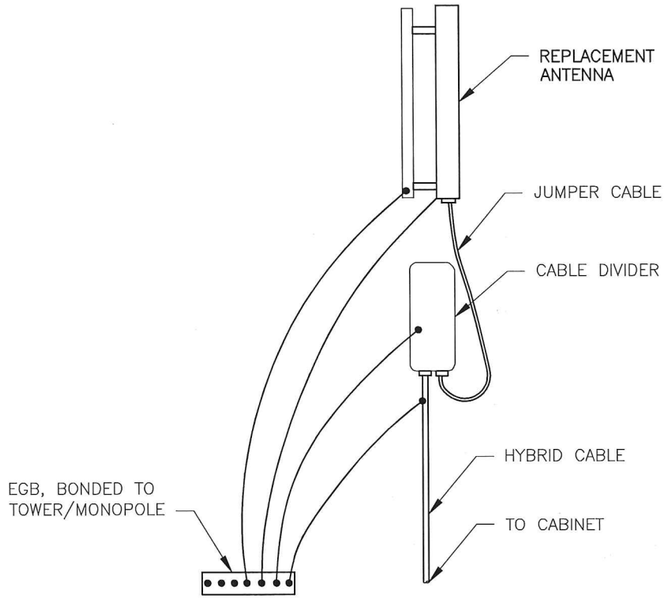
SHEET TITLE

DETAILS

SHEET NUMBER

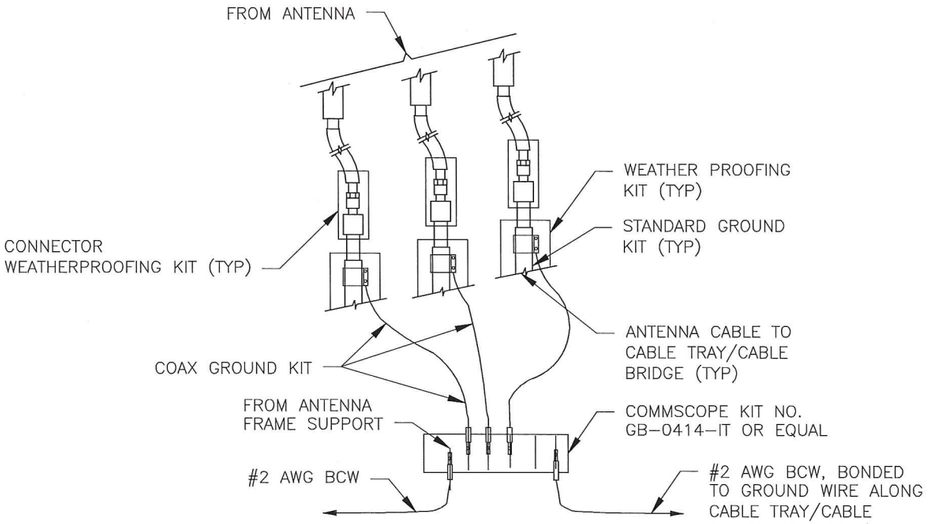
A–5



HYBRID CABLE CONNECTION AND GROUNDING DETAIL

1 / A-6

SCALE: NTS

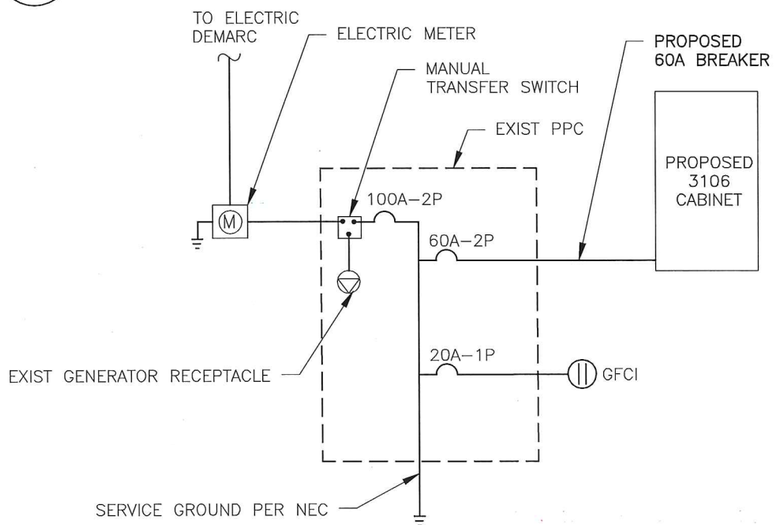


NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

2 / A-6

SCALE: NTS



NOTE: CONTRACTOR TO VERIFY EXISTING CONDUCTORS ARE #6AWG OR LARGER FOR 60A CIRCUIT

ONE-LINE POWER DIAGRAM

3 / A-6

SCALE: NTS

CONFIGURATION

2C

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SHEET TITLE

DETAILS

SHEET NUMBER

A-6

GENERAL NOTES

1. CONTRACTOR SHALL NOT COMMENCE ANY WORK UNTIL HE OBTAINS, AT HIS OWN EXPENSE, ALL INSURANCE REQUIRED BY T–MOBILE, THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
2. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH OF THE DRAWINGS HAVE BEEN REVISED TO INDICATE "ISSUED FOR PERMIT"
3. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
4. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES OR OTHER PUBLIC AUTHORITIES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
6. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THIS PROJECT IN ACCORDANCE WITH THE OVERALL INTENT OF THESE DRAWINGS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
8. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. POWER TO THE FACILITY IS MONITORED BY AN EXISTING METER.
11. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
12. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
13. IF ANY PIPING EXISTS BENEATH THE SITE AREA, CONTRACTOR MUST LOCATE IT AND CONTACT OWNER'S REPRESENTATIVE.
14. THE CONSTRUCTION CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL CONSTRUCTION MEANS AND METHODS. THE CONSTRUCTION CONTRACTOR IS ALSO RESPONSIBLE FOR ALL JOB SITE SAFETY.
15. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.
16. THE CONTRACTOR IS TO REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUB–CONTRACTORS AND RELATED PARTIES. THE SUB–CONTRACTOR SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
17. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
18. ALL MATERIAL PROVIDED BY T–MOBILE IS TO BE REVIEWED BY THE CONTRACTOR AND ALL APPLICABLE SUB–CONTRACTORS PRIOR TO INSTALLATION. ANY DEFICIENCIES TO PROVIDE MATERIALS SHALL BE BROUGHT TO THE CONSTRUCTION MANAGER'S ATTENTION IMMEDIATELY.
19. THE MATERIALS INSTALLED SHALL MEET REQUIREMENTS OF CONTRACTORS DOCUMENTS. NO SUBSTITUTIONS ARE ALLOWED.
20. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER APPROVAL.

GENERAL NOTES

21. THE CONTRACTOR SHALL RECEIVE CLARIFICATION AND AUTHORIZATION IN WRITING TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONSTRUCTION DOCUMENTS.
22. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
23. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST–ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAND PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
24. THE CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
26. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS MAY TAKE PRECEDENCE.
27. THE CONTRACTOR SHALL REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
28. THE CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITIONS AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
29. BEFORE FINAL ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT, TEMPORARY WORK, UNUSED AND USELESS MATERIALS, RUBBISH AND TEMPORARY STRUCTURES.
30. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2005 CONNECTICUT STATE BUILDING CODE (INCLUDING AMENDMENTS) AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
31. CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
32. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT AND APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
33. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
34. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.

CONFIGURATION

2C

REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

0 1 2 3

ORIGINAL SIZE IN INCHES

TECTONIC

- PLANNING
- ENGINEERING
- SURVEYING
- CONSTRUCTION MANAGEMENT

TECTONIC Engineering & Survey Consultants P.C.
1279 ROUTE 300
NEWBURGH, NY 12550
Phone: (845) 567–6656
Fax: (845) 567–8703

T–Mobile
T–MOBILE NORTHEAST LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
PHONE: (860) 692–7100

CROWN CASTLE

APPROVALS

LANDLORD _____
RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

PROJECT NUMBER	DESIGNED BY
7061.CT11248A	JQ

REV	DATE	REVISION	DRAWN BY
0	04/07/14	FOR COMMENT	SF
1	04/09/14	FOR CONSTRUCTION	MP

ISSUED BY	DATE

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
No. 25406
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

CT11248A
GLASTONBURY
366 SOUTH THREE MILE RD.
GLASTONBURY, CT 06033

SHEET TITLE

NOTES

SHEET NUMBER

A–7

GROUNDING NOTES

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
2. ALL GROUNDING WORK SHALL BE IN ACCORDANCE WITH T–MOBILE STANDARD PRACTICE.
3. ALL BUS CONNECTORS SHALL BE TWO–HOLE, LONG–BARREL TYPE COMPRESSION LUGS, T&B OR EQUAL, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS, AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
4. ALL CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS, T&B #TBM 8 OR EQUIVALENT.
5. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON–OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
6. ALL COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON–OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
7. ALL BENDS SHALL BE AS SHALLOW AS POSSIBLE, WITH NO TURN SHORTER THAN AN 8–INCH NOMINAL RADIUS.
8. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS, OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 10 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
10. ALL ROOF TOP ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 GROUND WIRE CONNECTED TO THE NEAREST GROUND BUS. ALL CONNECTIONS ARE TO BE CAD–WELDED IF POSSIBLE.
11. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE PROJECT MANAGER.
12. GROUNDING CONNECTION TO TRAVEL IN A DOWNWARD DIRECTION.
13. ALL EXPOSED #2 WIRE MUST BE TINN NOT BTW.
14. TECTONIC TAKES NO RESPONSIBILITY OR LIABILITY FOR THE GROUNDING SYSTEM AS SHOWN ON THIS SITE. THIS IS A STANDARD GROUNDING SYSTEM.

CONFIGURATION

2C

REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

0 1 2 3

ORIGINAL SIZE IN INCHES

TECTONIC

• PLANNING • CONSTRUCTION MANAGEMENT
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CROWN CASTLE

APPROVALS

LANDLORD _____
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ANTONIO A. GUALTIERI
No. 25406
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

CT11248A
GLASTONBURY
366 SOUTH THREE MILE RD.
GLASTONBURY, CT 06033

SHEET TITLE

NOTES

SHEET NUMBER

A–8

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 600 • Columbus, Ohio 43215-3708

Date: **March 24, 2014**

Patrick Byrum
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J Ford and Company
250 E. Broad Street, Suite 600
Columbus, OH 43215
614.221.6679

Subject: **Structural Analysis Report**

Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11248A
	Carrier Site Name:	Glastonbury
Crown Castle Designation:	**Crown Castle BU Number:**	806368
	Crown Castle Site Name:	HRT 049B 943215
	Crown Castle JDE Job Number:	268415
	Crown Castle Work Order Number:	731210
	Crown Castle Application Number:	222737 Rev. 0
Engineering Firm Designation:	**Paul J Ford and Company Project Number:**	37513-2359 R1
Site Data:	**374 Three Mile Rd., GLASTONBURY, Hartford County, CT** **Latitude *41° 41' 36.93"*, Longitude *-72° 32' 50.11"*** **145 Foot - Monopole Tower**	

Dear Patrick Byrum,

Paul J Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 629405, in accordance with application 222737, revision 0.

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

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

The structural analysis was performed for this tower in accordance with the requirements of the 2005 Connecticut Building Code and the TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 inch ice thickness and 50 mph under service loads.

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

Respectfully submitted by:

Jason C. Martin, E.I. LJM
Structural Designer

STATE OF CONNECTICUT
KEVIN P. BAUMAN
NO. 17891
LICENSED
PROFESSIONAL ENGINEER

3.24.2014

tnxTower Report - version 6.1.4.1

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 600 • Columbus, Ohio 43215-3708

Date: **March 24, 2014**

Patrick Byrum
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J Ford and Company
250 E. Broad Street, Suite 600
Columbus, OH 43215
614.221.6679

Subject: Structural Analysis Report

Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11248A
	Carrier Site Name:	Glastonbury
Crown Castle Designation:	**Crown Castle BU Number:**	806368
	Crown Castle Site Name:	HRT 049B 943215
	Crown Castle JDE Job Number:	268415
	Crown Castle Work Order Number:	731210
	Crown Castle Application Number:	222737 Rev. 0
Engineering Firm Designation:	**Paul J Ford and Company Project Number:**	37513-2359 R1
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	Latitude *41° 41' 36.93"*, Longitude *-72° 32' 50.11"*	
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We at *Paul J Ford and Company* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Jason C. Martin, E.I.
Structural Designer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 145 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in January of 1997. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F. This monopole has been modified to include base plate stiffeners per the referenced reinforcing drawings by GPD dated 3/8/2005 (See assumption #5).

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of the 2005 Connecticut Building Code and the TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
116.0	117.0	6	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	7	1-5/8	--
		3	ericsson	KRY 112 144/1			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
147.0	150.0	1	unknown	GPS	1	1/2	5
	148.0	3		RRH2x40-AWS	1	1-5/8	2
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		3	antel	BXA-171063-12CF-EDIN-2 w/ Mount Pipe			
		3	antel	BXA-171063-8BF-2 w/ Mount Pipe	12	1-5/8	1
		1	antel	BXA-70063-6CF-EDIN-6 w/ Mount Pipe			
		2	antel	LPA-80063/6CF w/ Mount Pipe			
		4	swedcom	SC-E 6014 rev2 w/ Mount Pipe			
		2	swedcom	SLCP 2x6014 w/ Mount Pipe			
	147.0	1	tower mounts	Platform Mount [LP 1001-1]			
	145.0	6	rfs celwave	FD9R6004/2C-3L			
137.0	138.0	3	Comm. Comp	DTMABP7819VG12A	1 1 2 12	3/8 1/2 3/4 1-1/1	1
		6	ericsson	RRUS-11			
		2	kmw comm	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		3	powerwave	7020.00			
		3	powerwave	7770.00 w/ Mount Pipe			
		6	powerwave	LGP13519			
		4	powerwave	P65-17-XLH-RR w/ Mount Pipe			
		3	powerwave	TT19-08BP111-001			
		1	raycap	DC6-48-60-18-8F			
	137.0	1	tower mounts	Platform Mount [LP 1001-1]			
126.0	130.0	2	gps	GPS_A	12	1-1/4	1
	128.0	12	decibel	DB844G65ZAXY w/ Mount Pipe			
	126.0	1	tower mounts	Platform Mount [LP 601-1]			
116.0	117.0	3	andrew	RR90-17-02DPL2 w/ Mount Pipe	--	--	5
		6	ericsson	KRY 112 71			
	116.0	1	tower mounts	Platform Mount [LP 601-1]	6	1-5/8	1
95.0	97.0	1	ems wireless	RR65-18-02DP w/ Mount Pipe	3	1-1/4	1
	96.0	1	repeater technologies	DA1900-39			
	95.0	2	tower mounts	Side Arm Mount [SO 701-1]			
87.0	87.0	3	allgon	7250.02 w/ Mount Pipe	6	1-1/4	3,4
		1	tower mounts	Pipe Mount [PM 601-3]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Abandoned Equipment
4) Abandoned Equipment – Coax To Be Removed
5) Equipment To Be Removed – Not Considered in this Analysis

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, 12/16/1996	262197	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	EEI, 2310, 03/25/1997	974245	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEI, 2310, 01/10/1997	262188	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2005078.57, 03/08/2005	1037241	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Crown, 440146, 09/30/2011	2969149	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) At the time of this analysis, sufficient foundation information was not available at CCI sites. However, we were able to obtain a copy of the original monopole design. This drawing contained the original foundation design reactions. Based on these reactions we were able to compare to the current analysis. By doing this we have assumed the existing foundation was properly designed to handle the loading from the original monopole design.
5) The existing monopole base plate has been reinforced using a Crown-approved system in accordance with the above referenced documents. However, in this analysis we found that the existing base plate without modifications has adequate capacity and therefore, we did not consider the existing base plate stiffeners in the strength calculations

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	145 - 92.5	Pole	TP35.64x20.5x0.3438	1	-16.34	1948.09	64.4	Pass
L2	92.5 - 44.71	Pole	TP48.61x33.5106x0.4375	2	-28.81	3390.15	68.7	Pass
L3	44.71 - 0	Pole	TP60.5x45.8529x0.4688	3	-47.23	4563.49	71.6	Pass
							Summary	
						Pole (L3)	71.6	Pass
						Rating =	71.6	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	68.0	Pass
1	Base Plate	0	81.1	Pass
1,2	Base Foundation (Compared w/ Design Loads)	0	78.7	Pass

Structure Rating (max from all components) =	81.1%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.
2) Foundation capacity determined by comparing analysis reactions to original design reactions.

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

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

1. Tower is located in Hartford County, Connecticut.
2. Basic wind speed of 80.00 mph.
3. Nominal ice thickness of 1.0000 in.
4. Ice thickness is considered to increase with height.
5. Ice density of 56.00 pcf.
6. A wind speed of 37.60 mph is used in combination with ice.
7. Deflections calculated using a wind speed of 60.00 mph.
8. A non-linear (P-delta) analysis was used.
9. Pressures are calculated at each section.
10. Stress ratio used in pole design is 1.333.
11. Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	145.0000-92.5000	52.5000	5.00	12	20.5000	35.6400	0.3438	1.3750	A572-65 (65 ksi)
L2	92.5000-44.7100	52.7900	6.58	12	33.5106	48.6100	0.4375	1.7500	A572-65 (65 ksi)
L3	44.7100-0.0000	51.2900		12	45.8529	60.5000	0.4688	1.8750	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	21.2232	22.3104	1156.9477	7.2159	10.6190	108.9507	2344.2898	10.9805	4.5728	13.303
	36.8972	39.0685	6212.5548	12.6361	18.4615	336.5137	12588.3202	19.2283	8.6303	25.106
L2	36.1733	46.5917	6504.9566	11.8402	17.3585	374.7421	13180.8057	22.9310	7.8083	17.848
	50.3248	67.8630	20100.9894	17.2458	25.1800	798.2925	40730.0543	33.4001	11.8550	27.097

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L3	49.4158	68.5018	18009.2984	16.2475	23.7518	758.2281	36491.7212	33.7145	11.0323	23.536
	62.6342	90.6097	41678.8054	21.4912	31.3390	1329.9341	84452.5593	44.5953	14.9578	31.91

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 145.0000-92.5000				1	1	1		
L2 92.5000-44.7100				1	1	1		
L3 44.7100-0.0000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
HB158-1-08U8-S8J18(1-5/8)	C	No	CaAa (Out Of Face)	145.0000 - 0.0000	1	No Ice	0.1980	1.30
						1/2" Ice	0.2980	2.81
						1" Ice	0.3980	4.94
						2" Ice	0.5980	11.02
						4" Ice	0.9980	30.52
HJ7-50A(1-5/8")	C	No	Inside Pole	145.0000 - 0.0000	12	No Ice	0.0000	1.04
						1/2" Ice	0.0000	1.04
						1" Ice	0.0000	1.04
						2" Ice	0.0000	1.04
						4" Ice	0.0000	1.04
***								
FB-L98B-002-75000(3/8")	C	No	Inside Pole	137.0000 - 0.0000	1	No Ice	0.0000	0.06
						1/2" Ice	0.0000	0.06
						1" Ice	0.0000	0.06
						2" Ice	0.0000	0.06
						4" Ice	0.0000	0.06
LCF12-50J(1/2)	C	No	Inside Pole	137.0000 - 0.0000	1	No Ice	0.0000	0.15
						1/2" Ice	0.0000	0.15
						1" Ice	0.0000	0.15
						2" Ice	0.0000	0.15
						4" Ice	0.0000	0.15
WR-VG86ST-BRD(3/4)	C	No	Inside Pole	137.0000 - 0.0000	2	No Ice	0.0000	0.59
						1/2" Ice	0.0000	0.59
						1" Ice	0.0000	0.59
						2" Ice	0.0000	0.59
						4" Ice	0.0000	0.59
LCF114-50J(1-1/4")	C	No	Inside Pole	137.0000 - 0.0000	12	No Ice	0.0000	0.70
						1/2" Ice	0.0000	0.70
						1" Ice	0.0000	0.70
						2" Ice	0.0000	0.70
						4" Ice	0.0000	0.70
***								
LDF6-50A(1-1/4")	C	No	Inside Pole	126.0000 - 0.0000	12	No Ice	0.0000	0.66
						1/2" Ice	0.0000	0.66
						1" Ice	0.0000	0.66
						2" Ice	0.0000	0.66
						4" Ice	0.0000	0.66
***								
LDF7-50A(1-5/8")	C	No	Inside Pole	116.0000 - 0.0000	7	No Ice	0.0000	0.82
						1/2" Ice	0.0000	0.82
						1" Ice	0.0000	0.82
						2" Ice	0.0000	0.82
						4" Ice	0.0000	0.82
LDF7-50A(1-5/8")	C	No	Inside Pole	116.0000 - 0.0000	6	No Ice	0.0000	0.82
						1/2" Ice	0.0000	0.82
						1" Ice	0.0000	0.82

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
						2" Ice	0.0000	0.82
						4" Ice	0.0000	0.82
***								
LDF6-50A(1-1/4")	C	No	CaAa (Out Of Face)	95.0000 - 0.0000	3	No Ice	0.0000	0.66
						1/2" Ice	0.0000	1.91
						1" Ice	0.0000	3.78
						2" Ice	0.0000	9.33
						4" Ice	0.0000	27.78
***								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	145.0000-92.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	10.395	1.68
L2	92.5000-44.7100	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	9.462	2.11
L3	44.7100-0.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	8.853	1.97

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	145.0000-92.5000	A	1.164	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	22.615	1.95
L2	92.5000-44.7100	A	1.090	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	20.586	2.91
L3	44.7100-0.0000	A	1.000	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	18.603	2.65

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	145.0000-92.5000	-0.2371	0.1369	-0.4416	0.2550
L2	92.5000-44.7100	-0.2434	0.1405	-0.4744	0.2739
L3	44.7100-0.0000	-0.2464	0.1423	-0.4773	0.2755

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice	5.0290	5.2887	0.04
						1/2" Ice	5.5830	6.4594	0.09
						1" Ice	6.1033	7.3479	0.14
						2" Ice	7.1662	9.1478	0.27
							9.4380	12.9475	0.68

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice			
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.0290 5.5830 6.1033 7.1662 9.4380	5.2887 6.4594 7.3479 9.1478 12.9475	0.04 0.09 0.14 0.27 0.68
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.0290 5.5830 6.1033 7.1662 9.4380	5.2887 6.4594 7.3479 9.1478 12.9475	0.04 0.09 0.14 0.27 0.68
RRH2x40-AWS	A	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000	2.0229 2.2440 2.4738 2.9592 4.0339	0.04 0.06 0.09 0.15 0.31
RRH2x40-AWS	B	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000	2.0229 2.2440 2.4738 2.9592 4.0339	0.04 0.06 0.09 0.15 0.31
RRH2x40-AWS	C	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0000 0.0000 0.0000 0.0000	2.0229 2.2440 2.4738 2.9592 4.0339	0.04 0.06 0.09 0.15 0.31
DB-T1-6Z-8AB-0Z	A	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.6000 5.9154 6.2395 6.9136 8.3654	2.3333 2.5580 2.7914 3.2840 4.3728	0.04 0.08 0.12 0.21 0.45
BXA-171063-8BF-2 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.1789 3.5550 3.9637 4.8533 6.7671	3.3530 3.9709 4.5951 5.8933 8.8855	0.03 0.06 0.10 0.19 0.49
BXA-171063-8BF-2 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.1789 3.5550 3.9637 4.8533 6.7671	3.3530 3.9709 4.5951 5.8933 8.8855	0.03 0.06 0.10 0.19 0.49
BXA-171063-8BF-2 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.1789 3.5550 3.9637 4.8533 6.7671	3.3530 3.9709 4.5951 5.8933 8.8855	0.03 0.06 0.10 0.19 0.49
(2) SC-E 6014 rev2 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.7829 4.1817 4.5912 5.4423 7.2927	4.3959 5.0091 5.6403 6.9563 9.8967	0.03 0.07 0.12 0.22 0.54
(2) SC-E 6014 rev2 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice	3.7829 4.1817 4.5912 5.4423	4.3959 5.0091 5.6403 6.9563	0.03 0.07 0.12 0.22

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice 4" Ice	7.2927	9.8967	0.54
(2) LPA-80063/6CF w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.5771 11.2413 11.8720 13.1633 15.8657	10.6706 11.9322 12.9107 14.9215 19.1577	0.05 0.14 0.25 0.48 1.09
SLCP 2x6014 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.4514 7.9606 8.4698 9.5191 11.7421	6.9545 7.7563 8.5195 10.0997 13.4750	0.04 0.10 0.18 0.34 0.80
SLCP 2x6014 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.4514 7.9606 8.4698 9.5191 11.7421	6.9545 7.7563 8.5195 10.0997 13.4750	0.04 0.10 0.18 0.34 0.80
BXA-70063-6CF-EDIN-6 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.9686 8.6091 9.2158 10.4591 13.0655	5.8008 6.9529 7.8191 9.6015 13.3662	0.04 0.10 0.17 0.34 0.80
(2) FD9R6004/2C-3L	A	From Leg	4.0000 0.00 -2.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.3665 0.4506 0.5433 0.7546 1.2808	0.0846 0.1362 0.1965 0.3430 0.7396	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	B	From Leg	4.0000 0.00 -2.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.3665 0.4506 0.5433 0.7546 1.2808	0.0846 0.1362 0.1965 0.3430 0.7396	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	C	From Leg	4.0000 0.00 -2.00	0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.3665 0.4506 0.5433 0.7546 1.2808	0.0846 0.1362 0.1965 0.3430 0.7396	0.00 0.01 0.01 0.02 0.06
Platform Mount [LP 1001-1]	C	None		0.0000	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	47.7000 59.5000 71.3000 94.9000 142.1000	47.7000 59.5000 71.3000 94.9000 142.1000	3.02 3.62 4.22 5.43 7.85
***									
7770.00 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	137.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.1194 6.6258 7.1283 8.1643 10.3599	4.2543 5.0137 5.7109 7.1553 10.4117	0.06 0.10 0.16 0.29 0.66
7770.00 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	137.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.1194 6.6258 7.1283 8.1643 10.3599	4.2543 5.0137 5.7109 7.1553 10.4117	0.06 0.10 0.16 0.29 0.66
7770.00 w/ Mount Pipe	C	From Leg	4.0000 0.00	0.0000	137.0000	No Ice 1/2"	6.1194 6.6258	4.2543 5.0137	0.06 0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.00			Ice	7.1283	5.7109	0.16
						1" Ice	8.1643	7.1553	0.29
						2" Ice	10.3599	10.4117	0.66
						4" Ice			
(2) LGP13519	A	From Leg	4.0000	0.0000	137.0000	No Ice	0.3379	0.2074	0.01
			0.00			1/2"	0.4220	0.2804	0.01
			1.00			Ice	0.5147	0.3621	0.01
						1" Ice	0.7260	0.5513	0.02
						2" Ice	1.2523	1.0335	0.07
						4" Ice			
(2) LGP13519	B	From Leg	4.0000	0.0000	137.0000	No Ice	0.3379	0.2074	0.01
			0.00			1/2"	0.4220	0.2804	0.01
			1.00			Ice	0.5147	0.3621	0.01
						1" Ice	0.7260	0.5513	0.02
						2" Ice	1.2523	1.0335	0.07
						4" Ice			
(2) LGP13519	C	From Leg	4.0000	0.0000	137.0000	No Ice	0.3379	0.2074	0.01
			0.00			1/2"	0.4220	0.2804	0.01
			1.00			Ice	0.5147	0.3621	0.01
						1" Ice	0.7260	0.5513	0.02
						2" Ice	1.2523	1.0335	0.07
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.0000	0.0000	137.0000	No Ice	8.4975	6.3042	0.07
			0.00			1/2"	9.1490	7.4790	0.14
			1.00			Ice	9.7672	8.3676	0.21
						1" Ice	11.0311	10.1785	0.38
						2" Ice	13.6786	14.0237	0.87
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.0000	0.0000	137.0000	No Ice	8.4975	6.3042	0.07
			0.00			1/2"	9.1490	7.4790	0.14
			1.00			Ice	9.7672	8.3676	0.21
						1" Ice	11.0311	10.1785	0.38
						2" Ice	13.6786	14.0237	0.87
						4" Ice			
P65-17-XLH-RR w/ Mount Pipe	A	From Leg	4.0000	0.0000	137.0000	No Ice	11.8229	9.0563	0.09
			0.00			1/2"	12.5940	10.6186	0.18
			1.00			Ice	13.3752	12.2051	0.28
						1" Ice	14.9400	14.6968	0.51
						2" Ice	18.3336	19.6430	1.14
						4" Ice			
P65-17-XLH-RR w/ Mount Pipe	B	From Leg	4.0000	0.0000	137.0000	No Ice	11.8229	9.0563	0.09
			0.00			1/2"	12.5940	10.6186	0.18
			1.00			Ice	13.3752	12.2051	0.28
						1" Ice	14.9400	14.6968	0.51
						2" Ice	18.3336	19.6430	1.14
						4" Ice			
(2) P65-17-XLH-RR w/ Mount Pipe	C	From Leg	4.0000	0.0000	137.0000	No Ice	11.8229	9.0563	0.09
			0.00			1/2"	12.5940	10.6186	0.18
			1.00			Ice	13.3752	12.2051	0.28
						1" Ice	14.9400	14.6968	0.51
						2" Ice	18.3336	19.6430	1.14
						4" Ice			
TT19-08BP111-001	A	From Leg	4.0000	0.0000	137.0000	No Ice	0.6362	0.5156	0.02
			0.00			1/2"	0.7474	0.6187	0.02
			1.00			Ice	0.8672	0.7304	0.03
						1" Ice	1.1328	0.9796	0.05
						2" Ice	1.7678	1.5819	0.12
						4" Ice			
TT19-08BP111-001	B	From Leg	4.0000	0.0000	137.0000	No Ice	0.6362	0.5156	0.02
			0.00			1/2"	0.7474	0.6187	0.02
			1.00			Ice	0.8672	0.7304	0.03
						1" Ice	1.1328	0.9796	0.05
						2" Ice	1.7678	1.5819	0.12
						4" Ice			
TT19-08BP111-001	C	From Leg	4.0000	0.0000	137.0000	No Ice	0.6362	0.5156	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2"	0.7474	0.6187	0.02
			1.00			Ice	0.8672	0.7304	0.03
						1" Ice	1.1328	0.9796	0.05
						2" Ice	1.7678	1.5819	0.12
						4" Ice			
7020.00	A	From Leg	4.0000	0.0000	137.0000	No Ice	0.1191	0.2042	0.00
			0.00			1/2"	0.1714	0.2791	0.01
			1.00			Ice	0.2323	0.3627	0.01
						1" Ice	0.3801	0.5559	0.02
						2" Ice	0.7793	1.0459	0.07
						4" Ice			
7020.00	B	From Leg	4.0000	0.0000	137.0000	No Ice	0.1191	0.2042	0.00
			0.00			1/2"	0.1714	0.2791	0.01
			1.00			Ice	0.2323	0.3627	0.01
						1" Ice	0.3801	0.5559	0.02
						2" Ice	0.7793	1.0459	0.07
						4" Ice			
7020.00	C	From Leg	4.0000	0.0000	137.0000	No Ice	0.1191	0.2042	0.00
			0.00			1/2"	0.1714	0.2791	0.01
			1.00			Ice	0.2323	0.3627	0.01
						1" Ice	0.3801	0.5559	0.02
						2" Ice	0.7793	1.0459	0.07
						4" Ice			
DTMABP7819VG12A	A	From Leg	4.0000	0.0000	137.0000	No Ice	1.1389	0.3907	0.02
			0.00			1/2"	1.2835	0.4884	0.03
			1.00			Ice	1.4368	0.5947	0.04
						1" Ice	1.7693	0.8334	0.06
						2" Ice	2.5380	1.4144	0.14
						4" Ice			
DTMABP7819VG12A	B	From Leg	4.0000	0.0000	137.0000	No Ice	1.1389	0.3907	0.02
			0.00			1/2"	1.2835	0.4884	0.03
			1.00			Ice	1.4368	0.5947	0.04
						1" Ice	1.7693	0.8334	0.06
						2" Ice	2.5380	1.4144	0.14
						4" Ice			
DTMABP7819VG12A	C	From Leg	4.0000	0.0000	137.0000	No Ice	1.1389	0.3907	0.02
			0.00			1/2"	1.2835	0.4884	0.03
			1.00			Ice	1.4368	0.5947	0.04
						1" Ice	1.7693	0.8334	0.06
						2" Ice	2.5380	1.4144	0.14
						4" Ice			
DC6-48-60-18-8F	A	From Leg	4.0000	0.0000	137.0000	No Ice	2.5667	2.5667	0.02
			0.00			1/2"	2.7978	2.7978	0.04
			1.00			Ice	3.0377	3.0377	0.07
						1" Ice	3.5432	3.5432	0.13
						2" Ice	4.6580	4.6580	0.30
						4" Ice			
(2) RRUS-11	A	From Leg	1.0000	0.0000	137.0000	No Ice	3.2486	1.3726	0.05
			0.00			1/2"	3.4905	1.5510	0.07
			1.00			Ice	3.7411	1.7380	0.09
						1" Ice	4.2682	2.1381	0.15
						2" Ice	5.4260	3.0418	0.31
						4" Ice			
(2) RRUS-11	B	From Leg	1.0000	0.0000	137.0000	No Ice	3.2486	1.3726	0.05
			0.00			1/2"	3.4905	1.5510	0.07
			1.00			Ice	3.7411	1.7380	0.09
						1" Ice	4.2682	2.1381	0.15
						2" Ice	5.4260	3.0418	0.31
						4" Ice			
(2) RRUS-11	C	From Leg	1.0000	0.0000	137.0000	No Ice	3.2486	1.3726	0.05
			0.00			1/2"	3.4905	1.5510	0.07
			1.00			Ice	3.7411	1.7380	0.09
						1" Ice	4.2682	2.1381	0.15
						2" Ice	5.4260	3.0418	0.31
						4" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Platform Mount [LP 1001-1]	C	None		0.0000	137.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	47.7000 59.5000 71.3000 94.9000 142.1000	47.7000 59.5000 71.3000 94.9000 142.1000	3.02 3.62 4.22 5.43 7.85
***									
(4) DB844G65ZAXY w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.0000	126.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9042 5.3460 5.7972 6.7311 8.7345	4.9208 5.5962 6.2837 7.7123 10.8330	0.03 0.08 0.13 0.26 0.62
(4) DB844G65ZAXY w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.0000	126.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9042 5.3460 5.7972 6.7311 8.7345	4.9208 5.5962 6.2837 7.7123 10.8330	0.03 0.08 0.13 0.26 0.62
(4) DB844G65ZAXY w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.0000	126.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9042 5.3460 5.7972 6.7311 8.7345	4.9208 5.5962 6.2837 7.7123 10.8330	0.03 0.08 0.13 0.26 0.62
GPS_A	A	From Leg	4.0000 0.00 4.00	0.0000	126.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.2975 0.3739 0.4589 0.6549 1.1506	0.2975 0.3739 0.4589 0.6549 1.1506	0.00 0.00 0.01 0.02 0.08
GPS_A	B	From Leg	4.0000 0.00 4.00	0.0000	126.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.2975 0.3739 0.4589 0.6549 1.1506	0.2975 0.3739 0.4589 0.6549 1.1506	0.00 0.00 0.01 0.02 0.08
Platform Mount [LP 601-1]	C	None		0.0000	126.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	28.4700 33.5900 38.7100 48.9500 69.4300	28.4700 33.5900 38.7100 48.9500 69.4300	1.12 1.51 1.91 2.69 4.26
8-ft Ladder	C	None		0.0000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.0000 9.7300 11.1900 13.9800 18.8900	7.0700 9.7300 11.1900 13.9800 18.8900	0.04 0.07 0.08 0.11 0.15
***									
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	116.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.8253 7.3471 7.8632 8.9261 11.1755	5.6424 6.4800 7.2567 8.8640 12.2932	0.11 0.17 0.23 0.38 0.81
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	116.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.8253 7.3471 7.8632 8.9261 11.1755	5.6424 6.4800 7.2567 8.8640 12.2932	0.11 0.17 0.23 0.38 0.81
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	116.0000	No Ice 1/2" Ice	6.8253 7.3471 7.8632	5.6424 6.4800 7.2567	0.11 0.17 0.23

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	8.9261	8.8640	0.38
						2" Ice	11.1755	12.2932	0.81
						4" Ice			
KRY 112 144/1	A	From Leg	4.0000 0.00 1.00	0.0000	116.0000	No Ice	0.4083	0.2042	0.01
						1/2" Ice	0.4969	0.2733	0.01
						1" Ice	0.5941	0.3511	0.02
						2" Ice	0.8145	0.5326	0.03
						4" Ice	1.3590	0.9992	0.08
KRY 112 144/1	B	From Leg	4.0000 0.00 1.00	0.0000	116.0000	No Ice	0.4083	0.2042	0.01
						1/2" Ice	0.4969	0.2733	0.01
						1" Ice	0.5941	0.3511	0.02
						2" Ice	0.8145	0.5326	0.03
						4" Ice	1.3590	0.9992	0.08
KRY 112 144/1	C	From Leg	4.0000 0.00 1.00	0.0000	116.0000	No Ice	0.4083	0.2042	0.01
						1/2" Ice	0.4969	0.2733	0.01
						1" Ice	0.5941	0.3511	0.02
						2" Ice	0.8145	0.5326	0.03
						4" Ice	1.3590	0.9992	0.08
Platform Mount [LP 601-1]	C	None		0.0000	116.0000	No Ice	28.4700	28.4700	1.12
						1/2" Ice	33.5900	33.5900	1.51
						1" Ice	38.7100	38.7100	1.91
						2" Ice	48.9500	48.9500	2.69
						4" Ice	69.4300	69.4300	4.26
8-ft Ladder	C	None		0.0000	114.0000	No Ice	5.0000	7.0700	0.04
						1/2" Ice	9.7300	9.7300	0.07
						1" Ice	11.1900	11.1900	0.08
						2" Ice	13.9800	13.9800	0.11
						4" Ice	18.8900	18.8900	0.15
***									
RR65-18-02DP w/ Mount Pipe	B	From Leg	2.0000 0.00 2.00	0.0000	95.0000	No Ice	4.5931	3.3194	0.03
						1/2" Ice	5.0883	4.0888	0.07
						1" Ice	5.5778	4.7844	0.12
						2" Ice	6.5876	6.2255	0.22
						4" Ice	8.7306	9.3076	0.56
Side Arm Mount [SO 701-1]	B	None		0.0000	95.0000	No Ice	0.8500	1.6700	0.07
						1/2" Ice	1.1400	2.3400	0.08
						1" Ice	1.4300	3.0100	0.09
						2" Ice	2.0100	4.3500	0.12
						4" Ice	3.1700	7.0300	0.18
Side Arm Mount [SO 701-1]	C	None		0.0000	95.0000	No Ice	0.8500	1.6700	0.07
						1/2" Ice	1.1400	2.3400	0.08
						1" Ice	1.4300	3.0100	0.09
						2" Ice	2.0100	4.3500	0.12
						4" Ice	3.1700	7.0300	0.18
Ice Shield 1.5' x 2.0'	C	None		0.0000	97.0000	No Ice	0.3500	0.4667	0.03
						1/2" Ice	0.4840	0.6395	0.04
						1" Ice	0.6265	0.8210	0.06
						2" Ice	0.9377	1.2099	0.12
						4" Ice	1.6636	2.0914	0.27
***									
7250.02 w/ Mount Pipe	A	From Leg	1.0000 0.00 0.00	0.0000	87.0000	No Ice	4.2362	3.3238	0.04
						1/2" Ice	4.7096	4.3022	0.07
						1" Ice	5.1662	5.0504	0.12
						2" Ice	6.1061	6.5968	0.22
						4" Ice	8.3213	9.8896	0.56

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
7250.02 w/ Mount Pipe	B	From Leg	1.0000 0.00 0.00	0.0000	87.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.2362 4.7096 5.1662 6.1061 8.3213	3.3238 4.3022 5.0504 6.5968 9.8896	0.04 0.07 0.12 0.22 0.56
7250.02 w/ Mount Pipe	C	From Leg	1.0000 0.00 0.00	0.0000	87.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.2362 4.7096 5.1662 6.1061 8.3213	3.3238 4.3022 5.0504 6.5968 9.8896	0.04 0.07 0.12 0.22 0.56
Pipe Mount [PM 601-3]	C	None		0.0000	87.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.3900 5.4800 6.5700 8.7500 13.1100	4.3900 5.4800 6.5700 8.7500 13.1100	0.20 0.24 0.28 0.36 0.53
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
DA1900-39	C	Paraboloid w/o Radome	From Leg	1.0000 0.00 1.00	30.0000		95.0000	3.5417	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	9.8500 10.3200 10.7900 11.7300 13.6000	0.05 0.10 0.15 0.26 0.47

Tower Pressures - No Ice

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % 	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 145.0000-92.5000	116.7975	1.435	23.46	122.806	A	0.000	122.806	122.806	100.00	0.000	0.000
					B	0.000	122.806		100.00	0.000	0.000
					C	0.000	122.806		100.00	0.000	10.395
L2 92.5000-44.7100	67.9006	1.229	20.02	166.370	A	0.000	166.370	166.370	100.00	0.000	0.000
					B	0.000	166.370		100.00	0.000	0.000
					C	0.000	166.370		100.00	0.000	9.462
L3 44.7100-0.0000	21.4903	1	16.40	201.627	A	0.000	201.627	201.627	100.00	0.000	0.000
					B	0.000	201.627		100.00	0.000	0.000
					C	0.000	201.627		100.00	0.000	8.853

Tower Pressure - With Ice

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 145.0000-92.5000	116.7975	1.435	5.18	1.1638	132.989	A	0.000	132.989	132.989	100.00	0.000	0.000
						B	0.000	132.989		100.00	0.000	0.000
						C	0.000	132.989		100.00	0.000	22.615
L2 92.5000-44.7100	67.9006	1.229	4.42	1.0904	175.640	A	0.000	175.640	175.640	100.00	0.000	0.000
						B	0.000	175.640		100.00	0.000	0.000
						C	0.000	175.640		100.00	0.000	20.586
L3 44.7100-0.0000	21.4903	1	3.62	1.0000	209.753	A	0.000	209.753	209.753	100.00	0.000	0.000
						B	0.000	209.753		100.00	0.000	0.000
						C	0.000	209.753		100.00	0.000	18.603

Tower Pressure - Service

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 145.0000-92.5000	116.7975	1.435	13.19	122.806	A	0.000	122.806	122.806	100.00	0.000	0.000
					B	0.000	122.806		100.00	0.000	0.000
					C	0.000	122.806		100.00	0.000	10.395
L2 92.5000-44.7100	67.9006	1.229	11.26	166.370	A	0.000	166.370	166.370	100.00	0.000	0.000
					B	0.000	166.370		100.00	0.000	0.000
					C	0.000	166.370		100.00	0.000	9.462
L3 44.7100-0.0000	21.4903	1	9.23	201.627	A	0.000	201.627	201.627	100.00	0.000	0.000
					B	0.000	201.627		100.00	0.000	0.000
					C	0.000	201.627		100.00	0.000	8.853

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	29.65					
Bracing Weight	0.00					
Total Member Self-Weight	29.65			0.31	0.86	
Total Weight	47.25			0.31	0.86	
Wind 0 deg - No Ice		0.04	-37.25	-3800.95	-5.51	-2.90
Wind 30 deg - No Ice		19.18	-32.26	-3293.10	-1954.08	-1.04
Wind 60 deg - No Ice		32.71	-18.58	-1898.99	-3332.20	0.28
Wind 90 deg - No Ice		37.65	-0.04	-6.49	-3835.22	1.54
Wind 120 deg - No Ice		32.67	18.52	1887.84	-3325.41	2.58
Wind 150 deg - No Ice		19.12	32.22	3286.93	-1942.31	3.37
Wind 180 deg - No Ice		-0.04	37.25	3801.57	8.08	2.89
Wind 210 deg - No Ice		-18.74	32.34	3301.36	1913.48	2.05
Wind 240 deg - No Ice		-32.42	18.74	1914.59	3306.18	0.60
Wind 270 deg - No Ice		-37.47	0.04	7.10	3819.33	-1.32
Wind 300 deg - No Ice		-32.38	-18.67	-1902.21	3299.38	-2.75
Wind 330 deg - No Ice		-18.67	-32.30	-3293.94	1901.71	-3.30
Member Ice	8.12					
Total Weight Ice	69.60			2.22	4.90	
Wind 0 deg - Ice		0.00	-10.33	-1091.53	4.60	-0.85
Wind 30 deg - Ice		5.29	-8.95	-944.71	-553.27	-0.33
Wind 60 deg - Ice		9.04	-5.15	-543.24	-950.17	0.08
Wind 90 deg - Ice		10.42	-0.00	1.82	-1095.56	0.47
Wind 120 deg - Ice		9.04	5.15	546.98	-949.77	0.78

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 150 deg - Ice		5.29	8.94	948.75	-552.58	0.99
Wind 180 deg - Ice		-0.00	10.33	1095.97	5.40	0.85
Wind 210 deg - Ice		-5.18	8.97	951.02	552.71	0.58
Wind 240 deg - Ice		-8.97	5.19	551.34	953.18	0.14
Wind 270 deg - Ice		-10.37	0.00	2.62	1101.05	-0.41
Wind 300 deg - Ice		-8.97	-5.19	-546.21	952.78	-0.82
Wind 330 deg - Ice		-5.18	-8.96	-946.18	552.02	-0.97
Total Weight	47.25			0.31	0.86	
Wind 0 deg - Service		0.02	-20.95	-2138.25	-3.32	-1.63
Wind 30 deg - Service		10.79	-18.15	-1852.58	-1099.39	-0.58
Wind 60 deg - Service		18.40	-10.45	-1068.39	-1874.58	0.16
Wind 90 deg - Service		21.18	-0.02	-3.86	-2157.53	0.87
Wind 120 deg - Service		18.38	10.42	1061.70	-1870.76	1.45
Wind 150 deg - Service		10.75	18.12	1848.69	-1092.77	1.89
Wind 180 deg - Service		-0.02	20.95	2138.17	4.32	1.63
Wind 210 deg - Service		-10.54	18.19	1856.80	1076.11	1.15
Wind 240 deg - Service		-18.23	10.54	1076.75	1859.50	0.34
Wind 270 deg - Service		-21.08	0.02	3.79	2148.15	-0.74
Wind 300 deg - Service		-18.21	-10.50	-1070.20	1855.68	-1.55
Wind 330 deg - Service		-10.50	-18.17	-1853.05	1069.49	-1.85

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice
15	Dead+Wind 0 deg+Ice
16	Dead+Wind 30 deg+Ice
17	Dead+Wind 60 deg+Ice
18	Dead+Wind 90 deg+Ice
19	Dead+Wind 120 deg+Ice
20	Dead+Wind 150 deg+Ice
21	Dead+Wind 180 deg+Ice
22	Dead+Wind 210 deg+Ice
23	Dead+Wind 240 deg+Ice
24	Dead+Wind 270 deg+Ice
25	Dead+Wind 300 deg+Ice
26	Dead+Wind 330 deg+Ice
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	145 - 92.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-31.71	1.97	-0.04
			Max. Mx	11	-16.34	846.50	-2.93
			Max. My	2	-16.34	-2.76	849.87
			Max. Vy	5	24.38	-845.93	3.13
			Max. Vx	8	24.45	3.31	-849.65
			Max. Torque	8			-2.58
L2	92.5 - 44.71	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-48.00	3.19	-1.20
			Max. Mx	5	-28.81	-2162.85	4.84
			Max. My	8	-28.82	5.71	-2148.91
			Max. Vy	5	31.50	-2162.85	4.84
			Max. Vx	8	31.10	5.71	-2148.91
			Max. Torque	7			-3.22
L3	44.71 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-70.35	4.96	-2.23
			Max. Mx	5	-47.23	-3935.51	6.72
			Max. My	8	-47.23	8.33	-3901.30
			Max. Vy	5	37.68	-3935.51	6.72
			Max. Vx	8	37.28	8.33	-3901.30
			Max. Torque	7			-3.38

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	70.35	-0.00	0.00
	Max. H_x	11	47.25	37.47	-0.04
	Max. H_z	2	47.25	-0.04	37.25
	Max. M_x	2	3900.67	-0.04	37.25
	Max. M_z	5	3935.51	-37.65	0.04
	Max. Torsion	13	3.27	18.67	32.30
	Min. Vert	30	47.25	-21.18	0.02
	Min. H_x	5	47.25	-37.65	0.04
	Min. H_z	8	47.25	0.04	-37.25
	Min. M_x	8	-3901.30	0.04	-37.25
	Min. M_z	11	-3919.32	37.47	-0.04
	Min. Torsion	7	-3.38	-19.12	-32.22

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	47.25	-0.00	0.00	0.31	0.86	0.00
Dead+Wind 0 deg - No Ice	47.25	0.04	-37.25	-3900.67	-5.72	-2.89
Dead+Wind 30 deg - No Ice	47.25	19.18	-32.26	-3379.59	-2005.12	-1.06
Dead+Wind 60 deg - No Ice	47.25	32.71	-18.58	-1948.93	-3419.41	0.24
Dead+Wind 90 deg - No Ice	47.25	37.65	-0.04	-6.72	-3935.51	1.51
Dead+Wind 120 deg - No Ice	47.25	32.67	18.52	1937.39	-3412.41	2.57
Dead+Wind 150 deg - No Ice	47.25	19.12	32.22	3373.21	-1992.97	3.38
Dead+Wind 180 deg - No Ice	47.25	-0.04	37.25	3901.30	8.33	2.89
Dead+Wind 210 deg - No Ice	47.25	-18.74	32.34	3388.03	1963.68	2.04
Dead+Wind 240 deg - No Ice	47.25	-32.42	18.74	1964.87	3392.87	0.60
Dead+Wind 270 deg - No Ice	47.25	-37.47	0.04	7.34	3919.32	-1.31
Dead+Wind 300 deg - No Ice	47.25	-32.38	-18.67	-1952.09	3385.86	-2.73
Dead+Wind 330 deg - No Ice	47.25	-18.67	-32.30	-3380.41	1951.52	-3.27
Dead+Ice	70.35	0.00	-0.00	2.23	4.96	-0.00
Dead+Wind 0 deg+Ice	70.35	0.00	-10.33	-1144.80	4.88	-0.88
Dead+Wind 30 deg+Ice	70.35	5.29	-8.95	-990.83	-580.04	-0.36

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 60 deg+Ice	70.35	9.04	-5.15	-569.78	-996.31	0.06
Dead+Wind 90 deg+Ice	70.35	10.42	-0.00	1.88	-1148.79	0.47
Dead+Wind 120 deg+Ice	70.35	9.04	5.15	573.66	-995.88	0.79
Dead+Wind 150 deg+Ice	70.35	5.29	8.94	995.02	-579.30	1.02
Dead+Wind 180 deg+Ice	70.35	-0.00	10.33	1149.42	5.74	0.88
Dead+Wind 210 deg+Ice	70.35	-5.18	8.96	997.39	579.70	0.60
Dead+Wind 240 deg+Ice	70.35	-8.97	5.19	578.21	999.66	0.15
Dead+Wind 270 deg+Ice	70.35	-10.37	0.00	2.74	1154.72	-0.41
Dead+Wind 300 deg+Ice	70.35	-8.97	-5.19	-572.85	999.24	-0.84
Dead+Wind 330 deg+Ice	70.35	-5.18	-8.96	-992.34	578.95	-1.00
Dead+Wind 0 deg - Service	47.25	0.02	-20.95	-2195.00	-2.83	-1.63
Dead+Wind 30 deg - Service	47.25	10.79	-18.15	-1901.89	-1128.07	-0.60
Dead+Wind 60 deg - Service	47.25	18.40	-10.45	-1096.71	-1924.03	0.14
Dead+Wind 90 deg - Service	47.25	21.18	-0.02	-3.64	-2214.36	0.86
Dead+Wind 120 deg - Service	47.25	18.37	10.42	1090.49	-1920.08	1.45
Dead+Wind 150 deg - Service	47.25	10.75	18.12	1898.56	-1121.22	1.90
Dead+Wind 180 deg - Service	47.25	-0.02	20.95	2195.63	5.08	1.63
Dead+Wind 210 deg - Service	47.25	-10.54	18.19	1906.90	1105.54	1.16
Dead+Wind 240 deg - Service	47.25	-18.23	10.54	1105.95	1909.87	0.34
Dead+Wind 270 deg - Service	47.25	-21.07	0.02	4.27	2206.02	-0.74
Dead+Wind 300 deg - Service	47.25	-18.21	-10.50	-1098.48	1905.92	-1.54
Dead+Wind 330 deg - Service	47.25	-10.50	-18.17	-1902.32	1098.69	-1.85

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-47.25	0.00	0.00	47.25	0.00	0.000%
2	0.04	-47.25	-37.25	-0.04	47.25	37.25	0.001%
3	19.18	-47.25	-32.26	-19.18	47.25	32.26	0.000%
4	32.71	-47.25	-18.58	-32.71	47.25	18.58	0.000%
5	37.65	-47.25	-0.04	-37.65	47.25	0.04	0.001%
6	32.67	-47.25	18.52	-32.67	47.25	-18.52	0.000%
7	19.12	-47.25	32.22	-19.12	47.25	-32.22	0.000%
8	-0.04	-47.25	37.25	0.04	47.25	-37.25	0.001%
9	-18.74	-47.25	32.34	18.74	47.25	-32.34	0.000%
10	-32.42	-47.25	18.74	32.42	47.25	-18.74	0.000%
11	-37.47	-47.25	0.04	37.47	47.25	-0.04	0.001%
12	-32.38	-47.25	-18.67	32.38	47.25	18.67	0.000%
13	-18.67	-47.25	-32.30	18.67	47.25	32.30	0.000%
14	0.00	-70.35	0.00	-0.00	70.35	0.00	0.001%
15	0.00	-70.35	-10.33	-0.00	70.35	10.33	0.001%
16	5.29	-70.35	-8.95	-5.29	70.35	8.95	0.001%
17	9.04	-70.35	-5.15	-9.04	70.35	5.15	0.001%
18	10.42	-70.35	-0.00	-10.42	70.35	0.00	0.001%
19	9.04	-70.35	5.15	-9.04	70.35	-5.15	0.001%
20	5.29	-70.35	8.94	-5.29	70.35	-8.94	0.001%
21	-0.00	-70.35	10.33	0.00	70.35	-10.33	0.001%
22	-5.18	-70.35	8.97	5.18	70.35	-8.96	0.001%
23	-8.97	-70.35	5.19	8.97	70.35	-5.19	0.001%
24	-10.37	-70.35	0.00	10.37	70.35	-0.00	0.001%
25	-8.97	-70.35	-5.19	8.97	70.35	5.19	0.001%
26	-5.18	-70.35	-8.96	5.18	70.35	8.96	0.001%
27	0.02	-47.25	-20.95	-0.02	47.25	20.95	0.004%
28	10.79	-47.25	-18.15	-10.79	47.25	18.15	0.001%
29	18.40	-47.25	-10.45	-18.40	47.25	10.45	0.001%
30	21.18	-47.25	-0.02	-21.18	47.25	0.02	0.004%
31	18.38	-47.25	10.42	-18.37	47.25	-10.42	0.001%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
32	10.75	-47.25	18.12	-10.75	47.25	-18.12	0.001%
33	-0.02	-47.25	20.95	0.02	47.25	-20.95	0.004%
34	-10.54	-47.25	18.19	10.54	47.25	-18.19	0.001%
35	-18.23	-47.25	10.54	18.23	47.25	-10.54	0.001%
36	-21.08	-47.25	0.02	21.07	47.25	-0.02	0.004%
37	-18.21	-47.25	-10.50	18.21	47.25	10.50	0.001%
38	-10.50	-47.25	-18.17	10.50	47.25	18.17	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	11	0.00000001	0.00007252
3	Yes	13	0.00000001	0.00004305
4	Yes	13	0.00000001	0.00004335
5	Yes	11	0.00000001	0.00005343
6	Yes	13	0.00000001	0.00004470
7	Yes	13	0.00000001	0.00004121
8	Yes	11	0.00000001	0.00007731
9	Yes	13	0.00000001	0.00004505
10	Yes	13	0.00000001	0.00004284
11	Yes	11	0.00000001	0.00005464
12	Yes	13	0.00000001	0.00004099
13	Yes	13	0.00000001	0.00004537
14	Yes	6	0.00000001	0.00000920
15	Yes	11	0.00000001	0.00002658
16	Yes	11	0.00000001	0.00002319
17	Yes	11	0.00000001	0.00002543
18	Yes	11	0.00000001	0.00002510
19	Yes	11	0.00000001	0.00003050
20	Yes	11	0.00000001	0.00002117
21	Yes	11	0.00000001	0.00002669
22	Yes	11	0.00000001	0.00003028
23	Yes	11	0.00000001	0.00002478
24	Yes	11	0.00000001	0.00002527
25	Yes	11	0.00000001	0.00002190
26	Yes	11	0.00000001	0.00003261
27	Yes	10	0.00008453	0.00014339
28	Yes	11	0.00000001	0.00011565
29	Yes	11	0.00000001	0.00011937
30	Yes	10	0.00008446	0.00013101
31	Yes	11	0.00000001	0.00012899
32	Yes	11	0.00000001	0.00010720
33	Yes	10	0.00008453	0.00014530
34	Yes	11	0.00000001	0.00012922
35	Yes	11	0.00000001	0.00011616
36	Yes	10	0.00008449	0.00013088
37	Yes	11	0.00000001	0.00010746
38	Yes	11	0.00000001	0.00013286

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	145 - 92.5	38.886	29	2.5052	0.0127
L2	97.5 - 44.71	16.927	29	1.7252	0.0036
L3	51.29 - 0	4.486	29	0.8162	0.0012

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.0000	BXA-171063-12CF-EDIN-2 w/ Mount Pipe	29	38.886	2.5052	0.0130	22343
137.0000	7770.00 w/ Mount Pipe	29	34.874	2.3824	0.0112	13964
126.0000	(4) DB844G65ZAXY w/ Mount Pipe	29	29.458	2.2107	0.0087	5879
124.0000	8-ft Ladder	29	28.496	2.1789	0.0083	5318
116.0000	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	29	24.745	2.0488	0.0066	3851
114.0000	8-ft Ladder	29	23.837	2.0155	0.0063	3602
97.0000	Ice Shield 1.5' x 2.0'	29	16.737	1.7159	0.0036	2388
96.0000	DA1900-39	29	16.360	1.6971	0.0035	2377
95.0000	RR65-18-02DP w/ Mount Pipe	29	15.989	1.6782	0.0033	2374
87.0000	7250.02 w/ Mount Pipe	29	13.199	1.5230	0.0026	2428

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	145 - 92.5	69.033	4	4.4491	0.0224
L2	97.5 - 44.71	30.066	4	3.0647	0.0063
L3	51.29 - 0	7.970	4	1.4502	0.0020

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.0000	BXA-171063-12CF-EDIN-2 w/ Mount Pipe	4	69.033	4.4491	0.0232	12687
137.0000	7770.00 w/ Mount Pipe	4	61.914	4.2310	0.0199	7929
126.0000	(4) DB844G65ZAXY w/ Mount Pipe	4	52.305	3.9263	0.0155	3337
124.0000	8-ft Ladder	4	50.597	3.8698	0.0147	3019
116.0000	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	4	43.942	3.6390	0.0118	2184
114.0000	8-ft Ladder	4	42.329	3.5800	0.0111	2043
97.0000	Ice Shield 1.5' x 2.0'	4	29.728	3.0481	0.0064	1353
96.0000	DA1900-39	4	29.060	3.0148	0.0062	1346
95.0000	RR65-18-02DP w/ Mount Pipe	4	28.401	2.9812	0.0059	1344
87.0000	7250.02 w/ Mount Pipe	4	23.447	2.7056	0.0046	1374

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	145 - 92.5 (1)	TP35.64x20.5x0.3438	52.5000	0.0000	0.0	39.000	37.4725	-16.34	1461.43	0.011
L2	92.5 - 44.71 (2)	TP48.61x33.5106x0.4375	52.7900	0.0000	0.0	39.000	65.2117	-28.81	2543.25	0.011
L3	44.71 - 0 (3)	TP60.5x45.8529x0.4688	51.2900	0.0000	0.0	37.783	90.6097	-47.23	3423.47	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	145 - 92.5 (1)	TP35.64x20.5x0.3438	851.58	33.023	39.000	0.847	0.00	0.000	39.000	0.000
L2	92.5 - 44.71 (2)	TP48.61x33.5106x0.4375	2164.95	35.257	39.000	0.904	0.00	0.000	39.000	0.000
L3	44.71 - 0 (3)	TP60.5x45.8529x0.4688	3935.82	35.513	37.783	0.940	0.00	0.000	37.783	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	145 - 92.5 (1)	TP35.64x20.5x0.3438	24.49	0.653	26.000	0.051	1.99	0.036	26.000	0.001
L2	92.5 - 44.71 (2)	TP48.61x33.5106x0.4375	31.47	0.483	26.000	0.038	0.24	0.002	26.000	0.000
L3	44.71 - 0 (3)	TP60.5x45.8529x0.4688	37.64	0.415	26.000	0.032	0.24	0.001	26.000	0.000

Pole Interaction Design Data

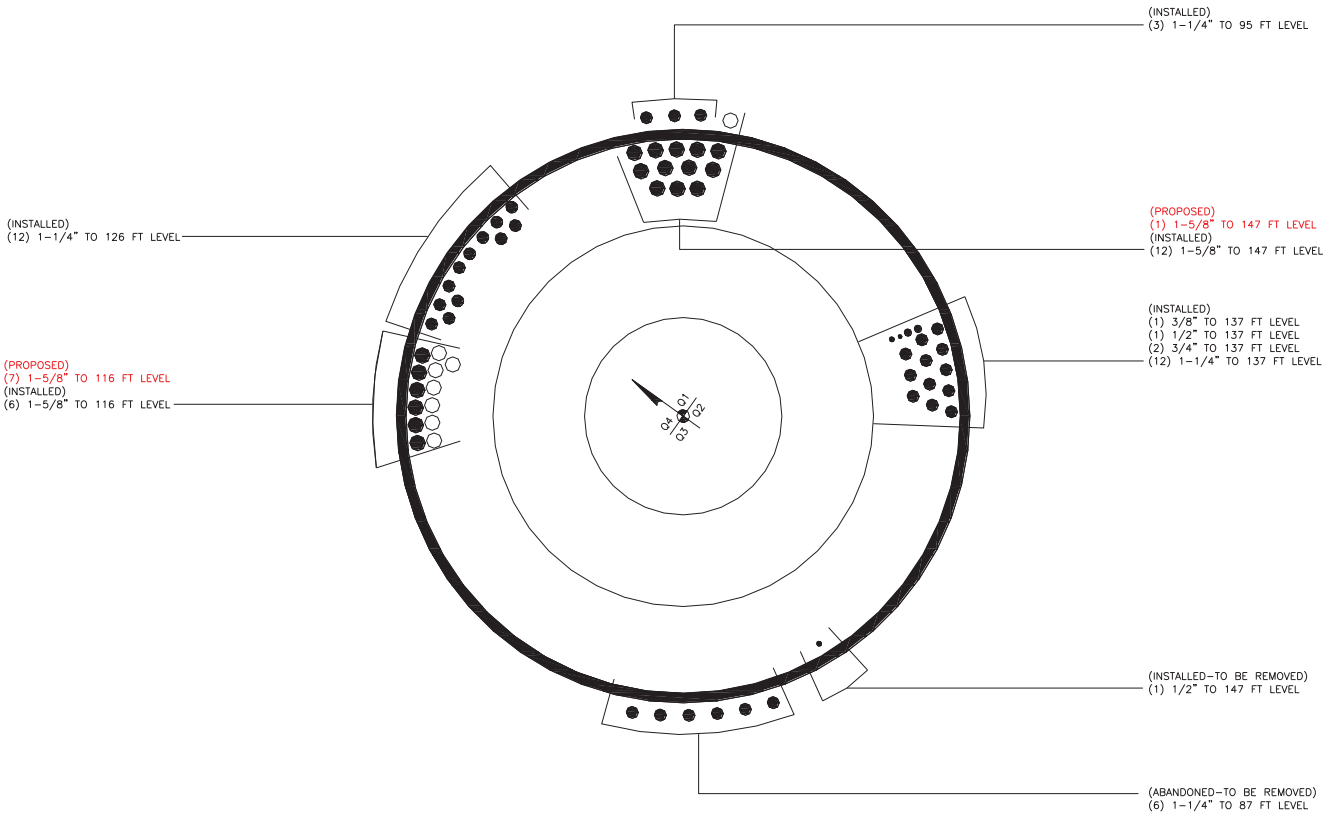
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	145 - 92.5 (1)	0.011	0.847	0.000	0.051	0.001	0.859 ✔	1.333	H1-3+VT ✔
L2	92.5 - 44.71 (2)	0.011	0.904	0.000	0.038	0.000	0.916 ✔	1.333	H1-3+VT ✔
L3	44.71 - 0 (3)	0.014	0.940	0.000	0.032	0.000	0.954 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	145 - 92.5	Pole	TP35.64x20.5x0.3438	1	-16.34	1948.09	64.4	Pass
L2	92.5 - 44.71	Pole	TP48.61x33.5106x0.4375	2	-28.81	3390.15	68.7	Pass
L3	44.71 - 0	Pole	TP60.5x45.8529x0.4688	3	-47.23	4563.49	71.6	Pass
							Summary	
						Pole (L3)	71.6	Pass
						RATING =	**71.6**	**Pass**

APPENDIX B

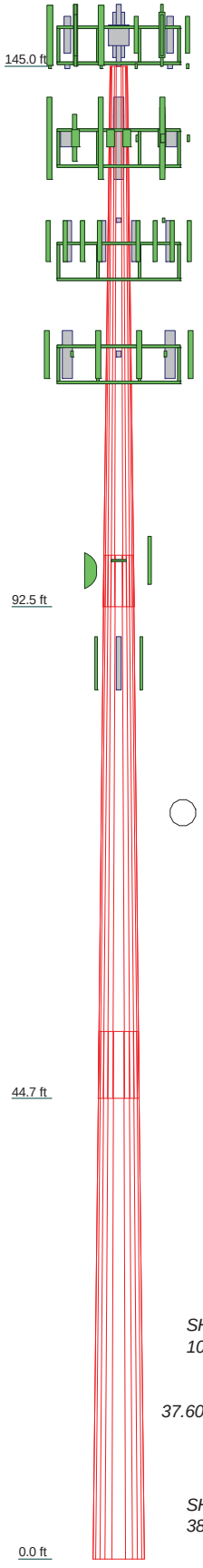
BASE LEVEL DRAWING

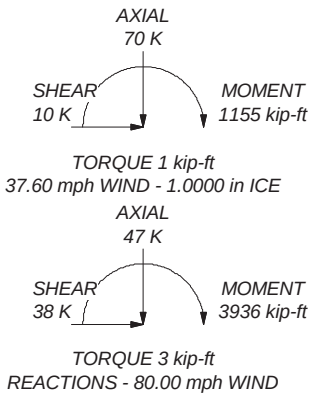


APPENDIX C

ADDITIONAL CALCULATIONS

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	52.5000	12	0.3438	5.0000	20.5000	35.6400		5.5
2	52.7900	12	0.4375	6.5800	33.5106	48.6100	A572-65	10.3
3	51.2900	12	0.4688		45.8529	60.5000		13.9
								29.6





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	147	TT19-08BP111-001	137
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	147	7020.00	137
BXA-171063-12CF-EDIN-2 w/ Mount Pipe	147	7020.00	137
RRH2x40-AWS	147	7020.00	137
RRH2x40-AWS	147	DTMABP7819VG12A	137
RRH2x40-AWS	147	DTMABP7819VG12A	137
DB-T1-6Z-8AB-0Z	147	DTMABP7819VG12A	137
BXA-171063-8BF-2 w/ Mount Pipe	147	DC6-48-60-18-8F	137
BXA-171063-8BF-2 w/ Mount Pipe	147	(2) RRUS-11	137
BXA-171063-8BF-2 w/ Mount Pipe	147	(2) RRUS-11	137
(2) SC-E 6014 rev2 w/ Mount Pipe	147	(2) RRUS-11	137
(2) SC-E 6014 rev2 w/ Mount Pipe	147	Platform Mount [LP 1001-1]	137
(2) LPA-80063/6CF w/ Mount Pipe	147	(4) DB844G65ZAXY w/ Mount Pipe	126
SLCP 2x6014 w/ Mount Pipe	147	(4) DB844G65ZAXY w/ Mount Pipe	126
SLCP 2x6014 w/ Mount Pipe	147	(4) DB844G65ZAXY w/ Mount Pipe	126
BXA-70063-6CF-EDIN-6 w/ Mount Pipe	147	GPS_A	126
(2) FD9R6004/2C-3L	147	GPS_A	126
(2) FD9R6004/2C-3L	147	Platform Mount [LP 601-1]	126
(2) FD9R6004/2C-3L	147	8-ft Ladder	124
Platform Mount [LP 1001-1]	147	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
7770.00 w/ Mount Pipe	137	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
7770.00 w/ Mount Pipe	137	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
7770.00 w/ Mount Pipe	137	KRY 112 144/1	116
(2) LGP13519	137	KRY 112 144/1	116
(2) LGP13519	137	KRY 112 144/1	116
(2) LGP13519	137	Platform Mount [LP 601-1]	116
AM-X-CD-16-65-00T-RET w/ Mount Pipe	137	8-ft Ladder	114
AM-X-CD-16-65-00T-RET w/ Mount Pipe	137	Ice Shield 1.5' x 2.0'	97
P65-17-XLH-RR w/ Mount Pipe	137	Side Arm Mount [SO 701-1]	95
P65-17-XLH-RR w/ Mount Pipe	137	Side Arm Mount [SO 701-1]	95
(2) P65-17-XLH-RR w/ Mount Pipe	137	RR65-18-02DP w/ Mount Pipe	95
TT19-08BP111-001	137	DA1900-39	95
TT19-08BP111-001	137	7250.02 w/ Mount Pipe	87
		7250.02 w/ Mount Pipe	87
		Pipe Mount [PM 601-3]	87
		7250.02 w/ Mount Pipe	87

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.00 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 37.60 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60.00 mph wind.
5. TOWER RATING: 71.6%

Paul J Ford and Company
250 E. Broad Street, Suite 600
Columbus, OH 43215
Phone: 614.221.6679
FAX: 614.448.4105

Job:	***Ex. 145-ft Monopole in Hartford Co., CT***		
Project:	***PJF: 37513-2359 R1 (BU: 806368)***		
Client: Crown Castle	Drawn by: Jason Martin, E.I.	App'd:	
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS	
Path: G:\TOWER\375_Crown_Castle\2013\37513-2359 BU 806368\WO 731210 BU 806368 (Phase 7B06)\1.TNX & Additional Calcs\37513-2359 R1.eri		Dwg No. E-1	

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#:	*806368*
Site Name:	
App #:	
Pole Manufacturer:	*Other*

Reactions		
Moment:	3936	ft-kips
Axial:	47	kips
Shear:	38	kips

Anchor Rod Data		
Qty:	20	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	70	in

Plate Data		
Diam:	76.5	in
Thick:	2.25	in
Grade:	60	ksi
Single-Rod B-eff:	9.73	in

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

Pole Data		
Diam:	60.5	in
Thick:	0.46875	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Results

Maximum Rod Tension:	132.6	Kips	Rigid
Allowable Tension:	195.0	Kips	Service, ASD
Anchor Rod Stress Ratio:	68.0%	**Pass**	Fty*ASIF

Base Plate Results Flexural Check

Base Plate Stress:	48.7	ksi	Rigid
Allowable Plate Stress:	60.0	ksi	Service ASD
Base Plate Stress Ratio:	81.1%	**Pass**	0.75*Fy*ASIF
			Y.L. Length: 35.21

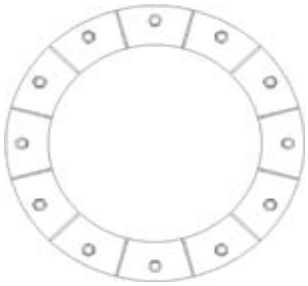
n/a

Stiffener Results

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

Pole Results

Pole Punching Shear Check:	n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

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

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 600 • Columbus, Ohio 43215-3708

By	JCM	Date	3/24/2014
Project	37513-2359 R1		
Client	CCI		
PROJ#	879129		

Foundation Comparison

Reactions	Original Design	Current Analysis	Ratio
Moment (ft-kips)	5001.4	3936.0	78.7%
Shear (kips)	44.6	38.0	85.2%
Axial (kips)	50.6	47.0	92.9%

Note: Although the shear capacity is at 85.2% and the Axial capacity is at 92.9%, the moment reaction is the governing criteria for a monopole drilled shaft foundation, therefore, the overall capacity for this foundation 78.7%.

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

T-Mobile Existing Facility

Site ID: CT11248A
Glastonbury

366 South Three Mile Road
Glastonbury, CT 06033

April 4, 2014

EBI Project Number: 62142257

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

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April 4, 2014

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Re: Emissions Values for Site: **CT11248A – Glastonbury**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 366 South Three Mile Road, Glastonbury, CT, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located 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 (µW/cm2). The general population exposure limit for the cellular band is 567 µW/cm2, and the general population exposure limit for the PCS and AWS bands is 1000 µW/cm2. 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 T-Mobile Wireless antenna facility located at 366 South Three Mile Road, Glastonbury, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, the actual antenna pattern gain value in the direction of the sample area was used. For this report the sample point is a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (1935.000 MHz—to 1945.000 MHz) were considered for each sector of the proposed installation.
2) 2 UMTS channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation.
3) 2 LTE channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation.
4) 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.
5) 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.
6) The antenna used in this modeling is the Ericsson AIR21 for LTE, UMTS and GSM. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.6 dBd gain value at its main lobe. Actual antenna gain values were used for all calculations as per the manufacturers specifications.

7) The antenna mounting height centerline of the proposed antennas is **117 feet** above ground level (AGL).
8) 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 calculations were done with respect to uncontrolled / general public threshold limits

Site ID	CT11248A - Glastonbury
Site Addresss	366 South Three Mile Road, Glastonbury, CT 06033
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Status	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	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	117	111	None	0	0	48.326044	1.410072	0.14101%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	117	111	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	117	111	1-5/8"	0	0	24.163022	0.705036	0.07050%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	117	111	1-5/8"	0	0	24.163022	0.705036	0.07050%
														Sector total Power Density Value:		0.282%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Status	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	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	117	111	None	0	0	48.326044	1.410072	0.14101%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	117	111	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	117	111	1-5/8"	0	0	24.163022	0.705036	0.07050%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	117	111	1-5/8"	0	0	24.163022	0.705036	0.07050%
														Sector total Power Density Value:		0.282%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Status	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	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	117	111	None	0	0	48.326044	1.410072	0.14101%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	117	111	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	117	111	1-5/8"	0	0	24.163022	0.705036	0.07050%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	117	111	1-5/8"	0	0	24.163022	0.705036	0.07050%
														Sector total Power Density Value:		0.282%	

Site Composite MPE %

Carrier	MPE %
T-Mobile	0.846%
XM	33.400%
AT&T	21.390%
Nextel	3.590%
Sprint	0.420%
Verizon	20.840%
Total Site MPE %	**80.486%**

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 T-Mobile facility are **0.282% (0.846% from each sector)** 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 **80.486%** 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

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