Crown Castle
3530 Toringdon Way
Suite 300
Charlotte, NC 28277

Tel: 704-405-6600

www.crowncastle.com

April 11, 2014

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

RE: **T-Mobile-Exempt Modification - Crown Site BU: 876343**
T-Mobile Site ID: CT11027D
Located at: 1919 Boston Post Road, Guilford, CT 06437

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. Joseph S. Mazza, First Selectman of the Town of Guilford.

T-Mobile plans to modify the existing wireless communications facility owned by Crown Castle and located at **1919 Boston Post Road, Guilford, CT 06437**. 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. Joseph S. Mazza, First Selectman
Town of Guilford
31 Park Street
Guilford, CT 06437

T-Mobile

NORTHEAST LLC.

SITE NAME: CT027/SPRINT GUILFORD

SITE ID NUMBER: CT11027D

SITE ADDRESS: 1919 BOSTON POST ROAD
GUILFORD, CT 064737

PROJECT SUMMARY

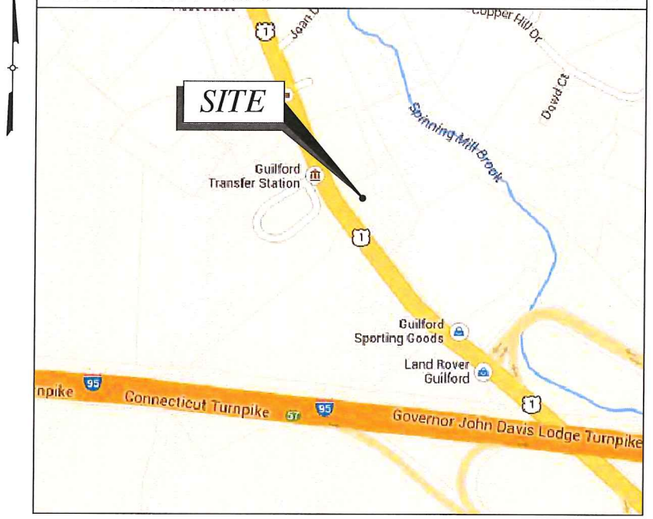
SITE ID NUMBER:	CT11027D
SITE NAME:	CT027/SPRINT GUILFORD
CROWN BU#:	876343
SITE ADDRESS:	1919 BOSTON POST ROAD GUILFORD, CT 06437
COUNTY:	NEW HAVEN
PROPERTY OWNER:	CROWN CASTLE
APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 PHONE: (800) 692-7100
ENGINEER/ SURVEYOR/ STRUCTURAL 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:	079035
LATITUDE: (NAD 83)	41.30037° N
LONGITUDE: (NAD 83)	72.70766° 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. CONTINUE TO FOLLOW CT-178 E. TURN RIGHT TO MERGE ONTO I-91 S TOWARD HARTFORD. TAKE EXIT 14 FOR E CENTER ST TOWARD CT-150/WALLINGFORD. TURN RIGHT ONTO E CENTER ST. TAKE THE 1ST LEFT ONTO S AIRLINE RD. TAKE THE 1ST LEFT ONTO CT-150 S/WOODHOUSE AVE. CONTINUE ONTO CT-22 E/CLINTONVILLE RD. TURN RIGHT ONTO CT-22 E. TURN LEFT ONTO CT-22 E/CT-80 E/FOXON RD. TURN RIGHT ONTO CT-22 E/NOTCH HILL RD. TURN LEFT ONTO U.S. 1 N/BOSTON POST 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".

811 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
- 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.CT11027D	JQ

REV	DATE	REVISION	DRAWN BY
0	04/10/14	FOR COMMENT	MP
1	04/11/14	FOR CONSTRUCTION	MJR

ISSUED BY _____ DATE _____

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

SITE INFORMATION

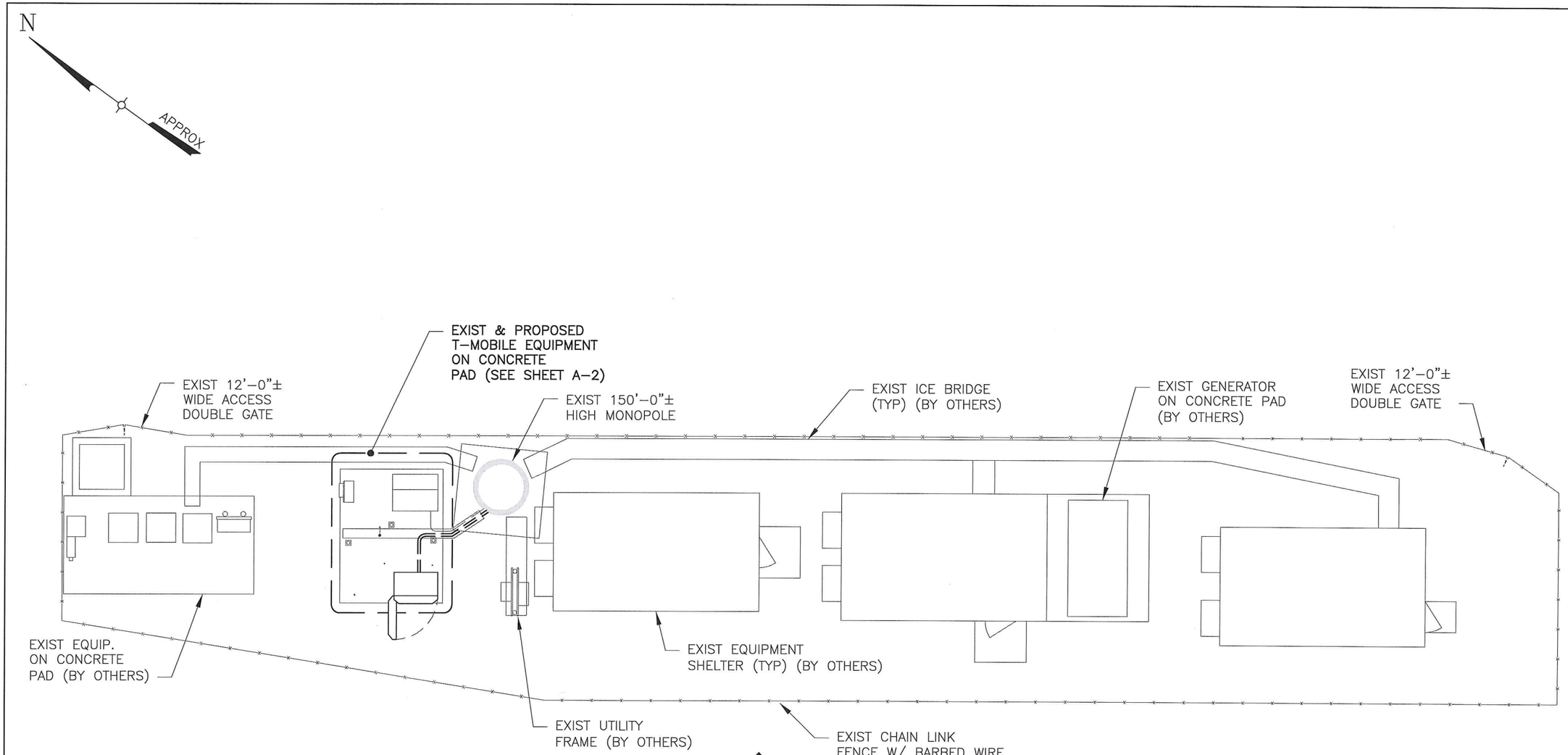
CT11027D
CT027/SPRINT GUILFORD
1919 BOSTON POST ROAD
GUILFORD, CT 06437

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



1 / A–3

1 / A–1 SITE PLAN

SCALE: 3/32" = 1'–0'

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY THE ADEQUACY TO ROUTE THE HCS 9x18 MLE (FIBER) CABLE ALONG THE INSIDE 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.

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

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CT11027D
CT027/SPRINT GUILFORD
1919 BOSTON POST ROAD
GUILFORD, CT 06437

SHEET TITLE

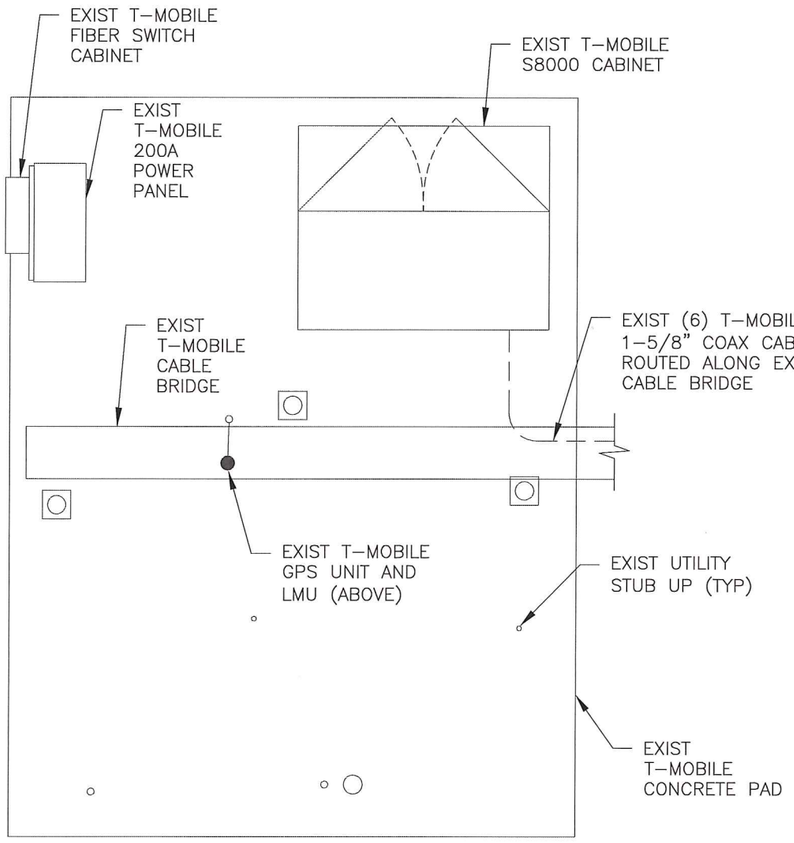
SITE PLAN

SHEET NUMBER

A–1

N

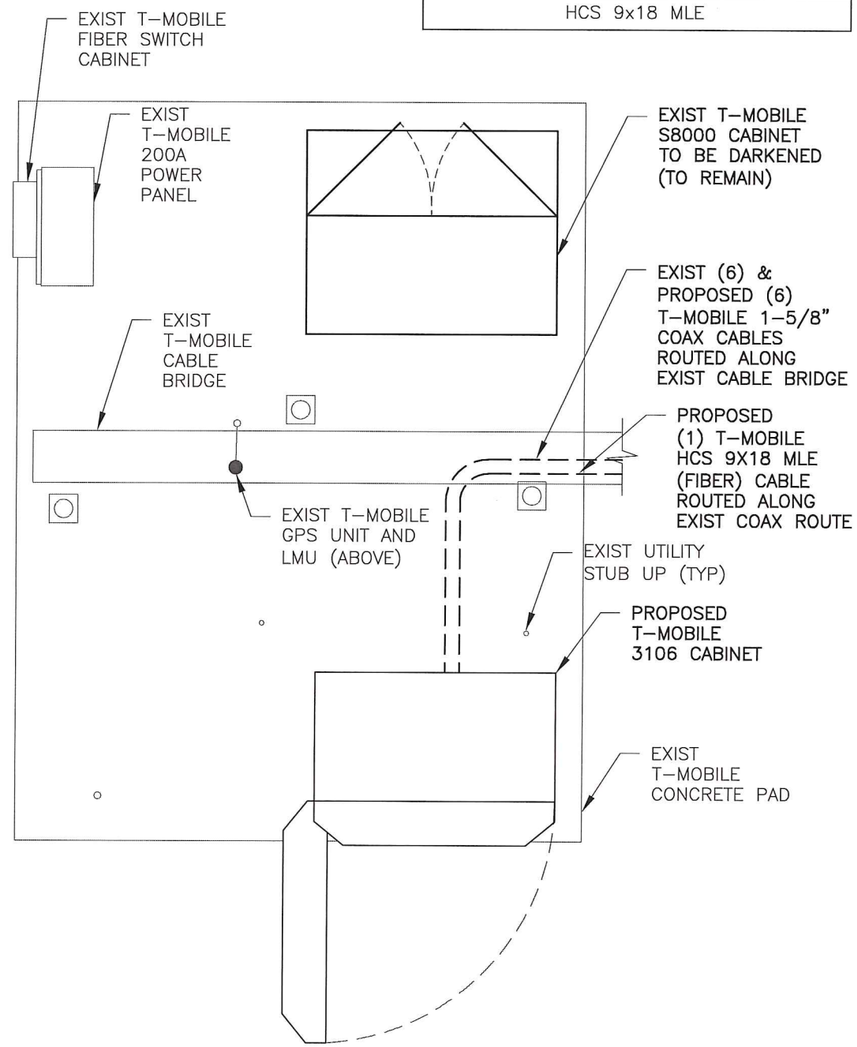
APPROX



1 / A–2 EXIST EQUIPMENT PLAN

SCALE: 3/8" = 1'–0'

HCS LENGTH			
FROM EQUIPMENT CABINET TO ANTENNA			
SECTOR	ALPHA	BETA	GAMMA
LENGTH	180'±	180'±	180'±
SIZE	1"		
HCS 9x18 MLE			



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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LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

CT11027D
CT027/SPRINT GUILFORD
1919 BOSTON POST ROAD
GUILFORD, CT 06437

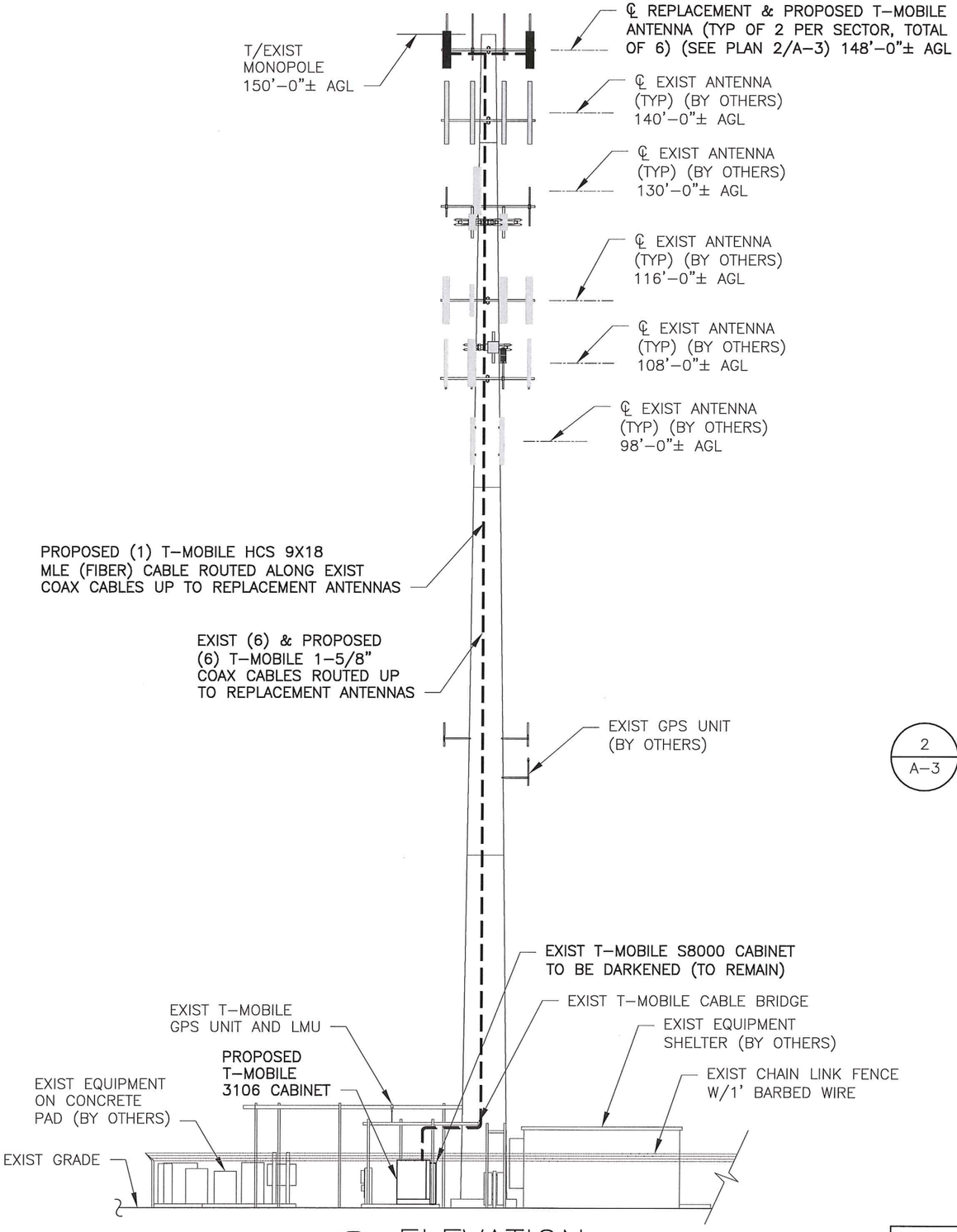
SHEET TITLE

EQUIPMENT LAYOUT PLANS

SHEET NUMBER

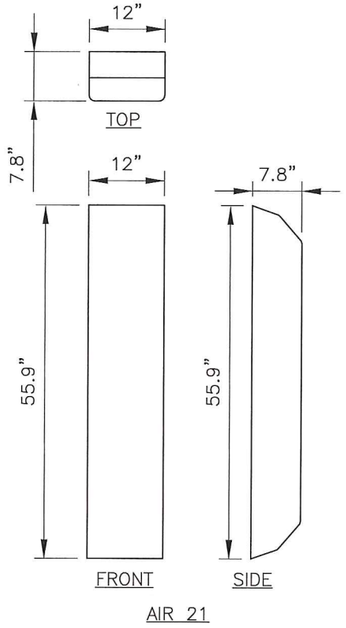
A–2

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).



1/A-3 ELEVATION

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



AIR 21

2/A-3 ANTENNA DETAIL

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

ELEVATION NOTE:

ELEVATION OF EXIST MONOPOLE HAS BEEN ARBITRARILY ASSIGNED AS EL 255'-0"±. THIS IS APPROXIMATELY 150'-0"± ABOVE GRADE WHICH WAS ESTIMATED AS EL 105'-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.

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BLOOMFIELD, CT 06002
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CROWN CASTLE

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RF _____
CONSTRUCTION _____
OPERATIONS _____
SITE ACQ. _____

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ANTONIO A. GUALTIERI
No. 25406
LICENSED PROFESSIONAL ENGINEER

SITE INFORMATION

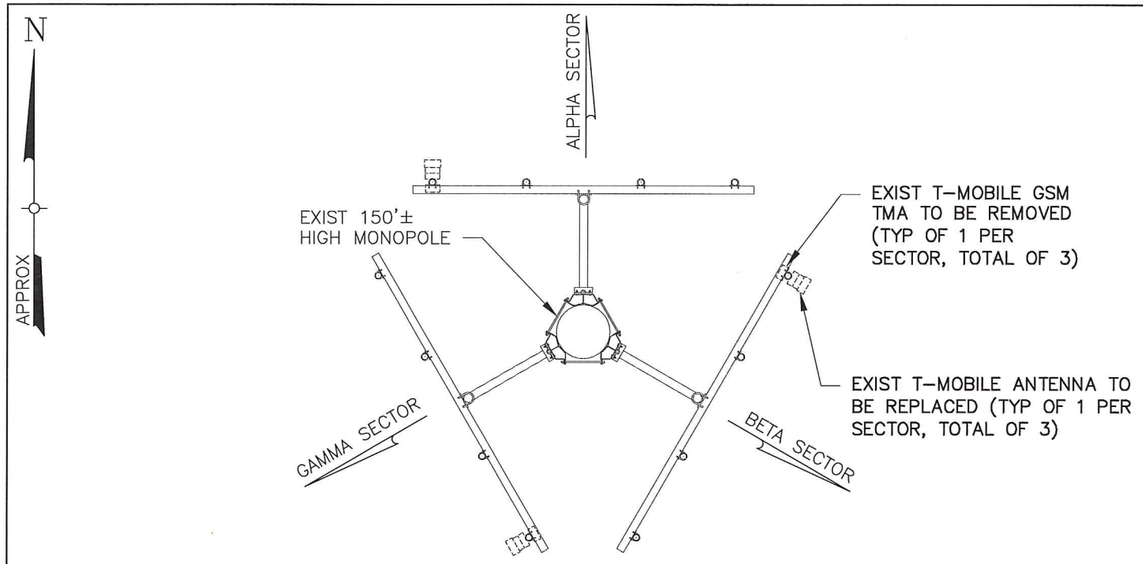
CT11027D
CT027/SPRINT GUILFORD
1919 BOSTON POST ROAD
GUILFORD, CT 06437

SHEET TITLE

ELEVATION & DETAIL

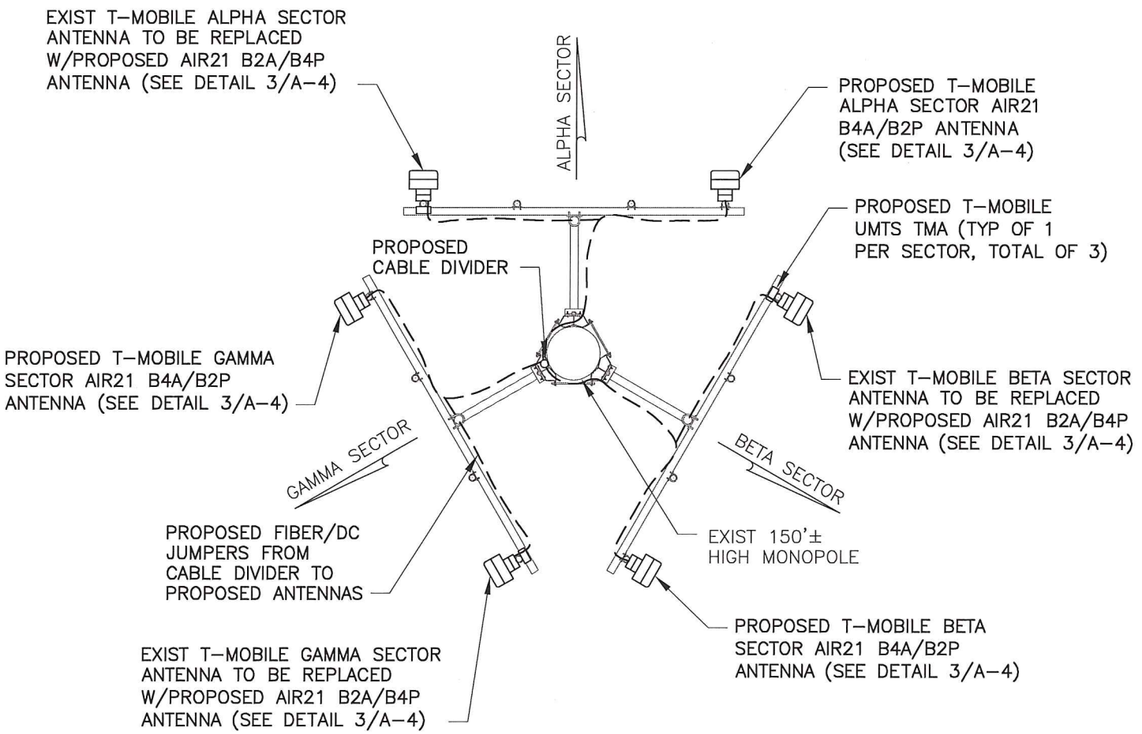
SHEET NUMBER

A-3



1 / A-4 EXIST ANTENNA PLAN

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



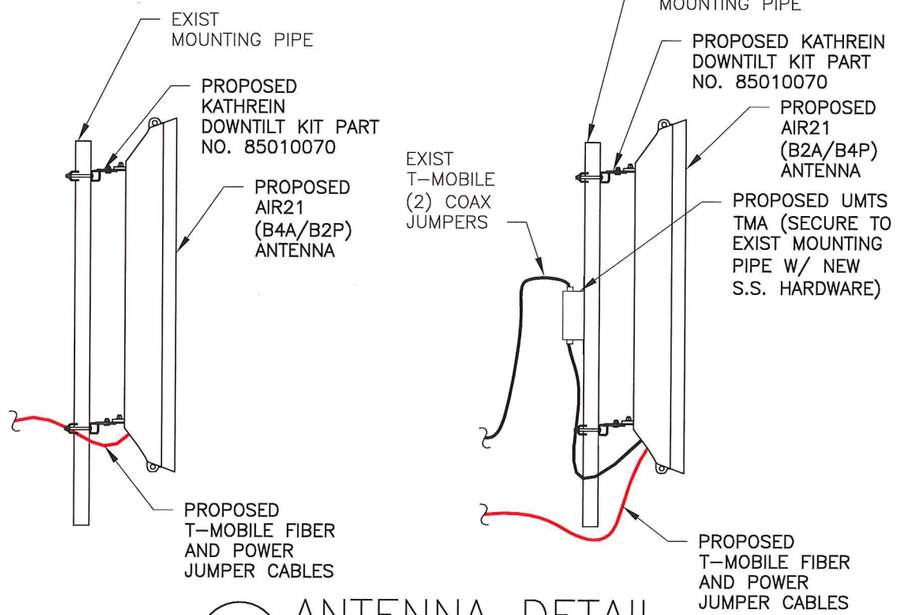
2 / A-4 PROPOSED ANTENNA PLAN

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
ALPHA	EMS	1	RR90_17_02DP	56x8x2.8
BETA	EMS	1	RR90_17_02DP	56x8x2.8
GAMMA	EMS	1	RR90_17_02DP	56x8x2.8

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.

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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. _____

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7061.CT11027D	JQ

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ISSUED BY | DATE

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

SITE INFORMATION

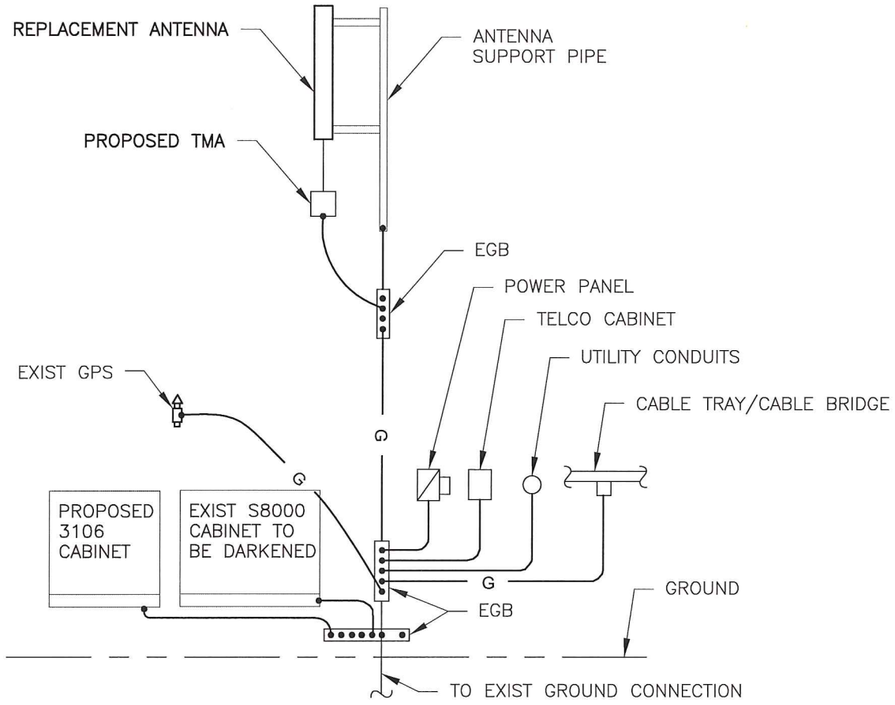
CT11027D
CT027/SPRINT GUILFORD
1919 BOSTON POST ROAD
GUILFORD, CT 06437

SHEET TITLE

ANTENNA LAYOUT PLANS & DETAILS

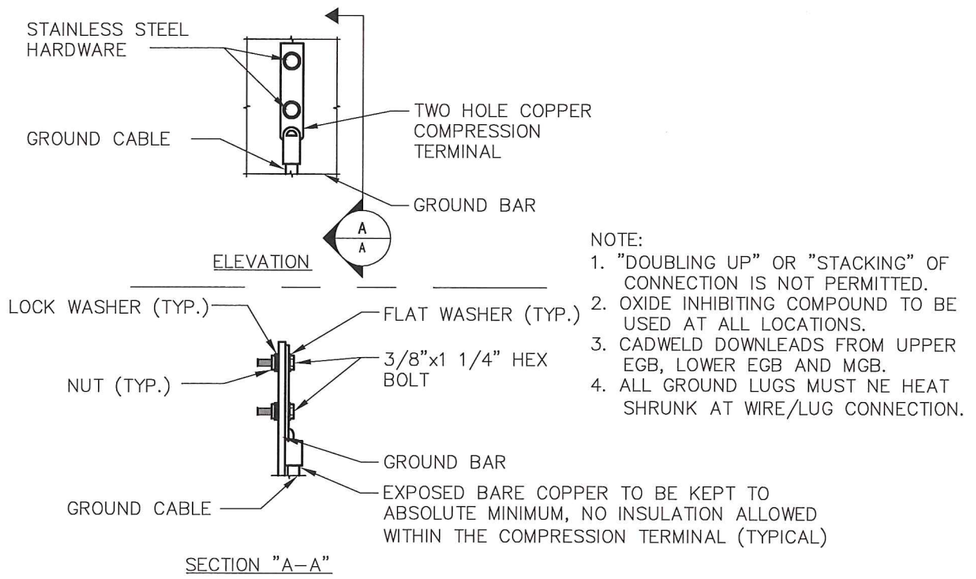
SHEET NUMBER

A-4



1 / A–5 GROUNDING RISER DIAGRAM

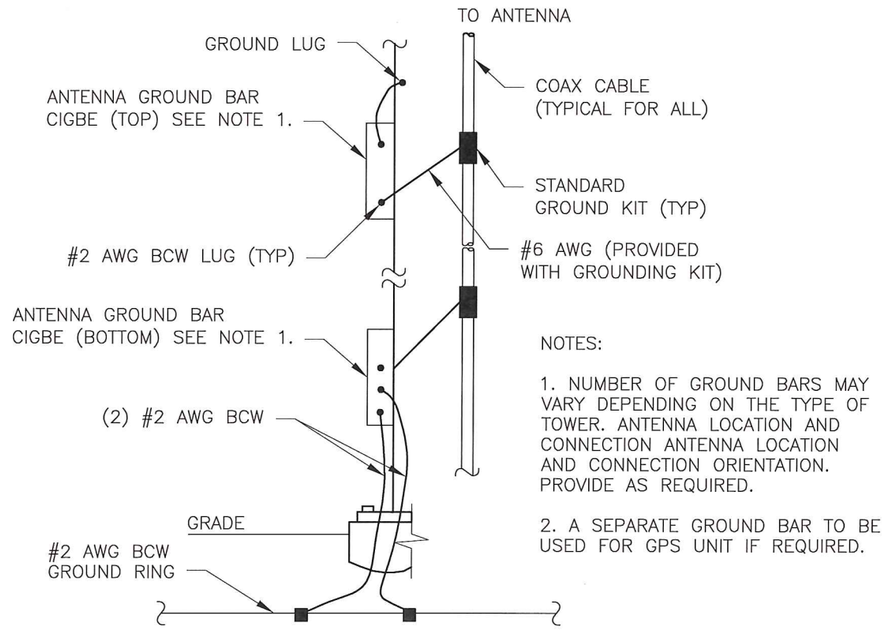
SCALE: NTS



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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CROWN CASTLE

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ANTONIO A. GUNTER
No. 25406
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SITE INFORMATION

CT11027D
CT027/SPRINT GUILFORD
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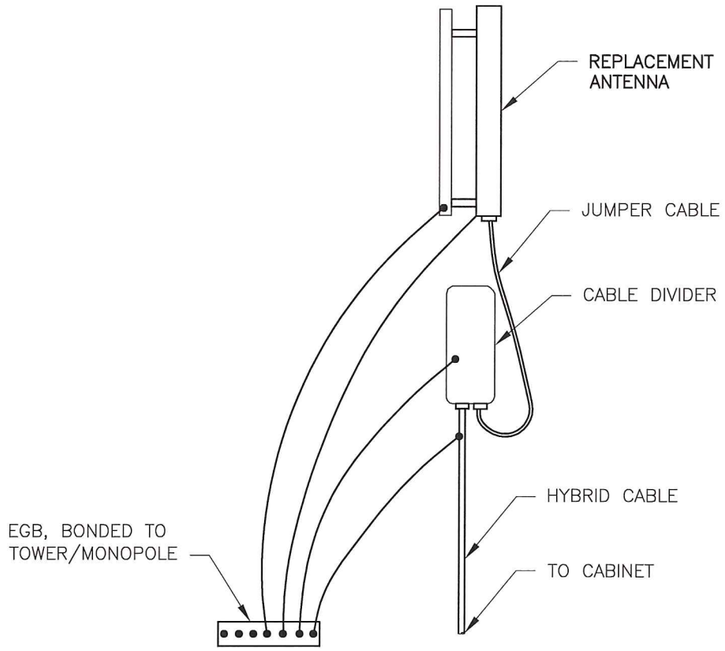
SHEET TITLE

DETAILS

SHEET NUMBER

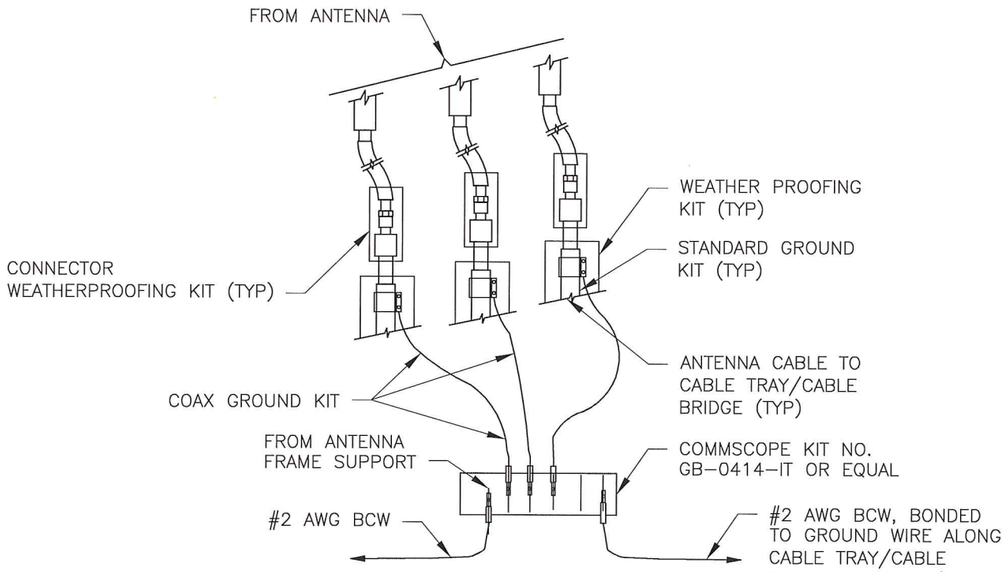
A–5



HYBRID CABLE CONNECTION AND GROUNDING DETAIL

1 / A-6

SCALE: NTS

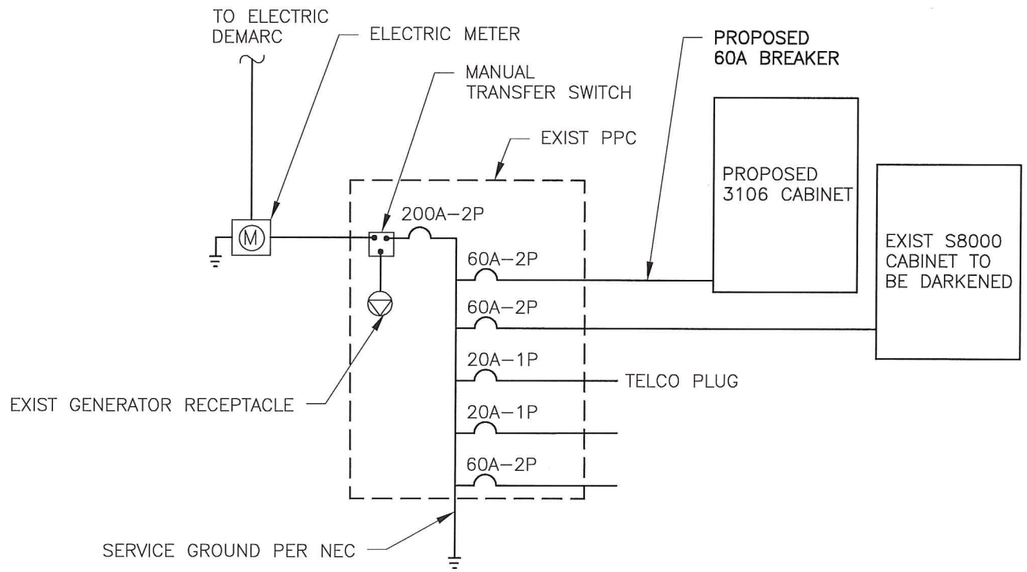


NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

2 / A-6

SCALE: NTS



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.CT11027D	JQ

REV	DATE	REVISION	DRAWN BY
0	04/10/14	FOR COMMENT	MP
1	04/11/14	FOR CONSTRUCTION	MJR

ISSUED BY _____ DATE _____

SITE INFORMATION

CT11027D
CT027/SPRINT GUILFORD
1919 BOSTON POST ROAD
GUILFORD, CT 06437

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
- ENGINEERING
- SURVEYING
- CONSTRUCTION MANAGEMENT

TECTONIC Engineering & Survey Consultants P.C.

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BLOOMFIELD, CT 06002
PHONE: (860) 692–7100

CROWN CASTLE

APPROVALS

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

PROJECT NUMBER	DESIGNED BY
7061.CT11027D	JQ

REV	DATE	REVISION	DRAWN BY
0	04/10/14	FOR COMMENT	MP
1	04/11/14	FOR CONSTRUCTION	MJR

ISSUED BY	DATE

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

SITE INFORMATION

CT11027D
CT027/SPRINT GUILFORD
1919 BOSTON POST ROAD
GUILFORD, CT 06437

SHEET TITLE

NOTES

SHEET NUMBER

A–8

March 24, 2014

Darcy Tarr
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6589

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

Subject: **Structural Analysis Report**

Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	N/A
	Carrier Site Name:	Guilford 2 Relo, CT
Crown Castle Designation:	**Crown Castle BU Number:**	876343
	Crown Castle Site Name:	Guilford West Stone Property
	Crown Castle JDE Job Number:	267456
	Crown Castle Work Order Number:	726201
	Crown Castle Application Number:	225950 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	84701.004.01
Site Data:	**1919 Boston Post Rd., Guilford, New Haven County, CT**	
	Latitude *41° 18' 1.27"*, Longitude *-72° 42' 29.13"*	
	149 Foot - Monopole Tower	

Dear Darcy Tarr,

B+T Group 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 628426, in accordance with application 225950, 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:

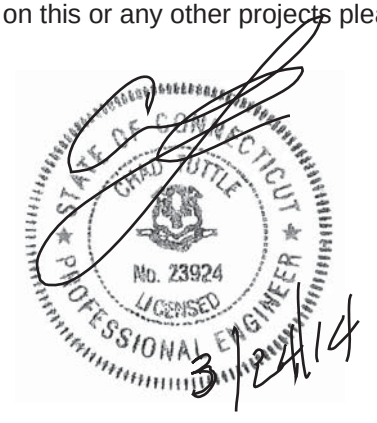
LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and IBC 2006 based upon a wind speed of 85 mph fastest mile.

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

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

Respectfully submitted by:
B+T Engineering, Inc.



John Landon
Project Engineer

Chad E. Tuttle, P.E.
President

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 149 ft Monopole tower designed by EEI in June of 2008. The tower was originally designed for a wind speed of 115 mph per TIA-222-G.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 37.6 mph with 0.75 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
148.0	148.0	3	Ericsson	ERICSSON AIR 21 B2A B4P	7	1 5/8	--
		3	Ericsson	ERICSSON AIR 21 B4A B2P			
		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
148.0	148.0	**3**	**EMS Wireless**	**RR90-17-02DP**	**--**	**--**	**3**
		6	**Ericsson**	**KR 112 71/1**			
		1	--	Sector Mount [SM 901-3]	6	1 5/8	1
139.0	140.0	12	Decibel	DB848H90E-XY	12	1 1/4	1
	139.0	1	--	Sector Mount [SM 901-3]			
128.0	130.0	3	Alcatel Lucent	TD-RRH8x20-25	1	5/8	2
		3	Rfs Celwave	APXVTM14-C-120			
		3	Rfs Celwave	APXVSPP18-C-A20	3	1 1/4	1
	128.0	3	Alcatel Lucent	800 External Notch Filter			
		9	Rfs Celwave	ACU-A20-N			
		1	--	Sector Mount [SM 901-3]			
128.0	130.0	3	Alcatel Lucent	800MHZ RRH	--	--	1
	126.0	3	Alcatel Lucent	1900MHz RRH (65MHz)			
	128.0	1	--	Side Arm Mount [SO 102-3]			
116.0	118.0	3	Alcatel Lucent	RRH2x40-AWS	1	5/8	2
		3	Antel	BXA-171063-12CF-EDIN-2			
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z			
		4	Andrew	DB846F65ZAXY	12 1	1 5/8 1/2	1
		1	Antel	BXA-171063-12BF			
		1	Antel	BXA-171063-8BF-2			
		1	Antel	BXA-171085-12BF-2			
		3	Antel	BXA-70063/6CF-2			
		2	Decibel	DB846H80E-SX			
		1	Maxrad	GPS-TMG-26NMS			

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	6	Rfs Celwave	FD9R6004/2C-3L			
		1	--	Sector Mount [SM 901-3]			
110.0	110.0	3	Ericsson	RRUS 11	--	--	1
		1	--	Side Arm Mount [SO 102-3]			
106.0	108.0	3	Ericsson	RRUS-11	12 2 1	1 5/8 3/4 3/8	1
		1	Kmw Com.	AM-X-CD-14-65-00T-RET			
		2	Kmw Com.	AM-X-CD-16-65-00T-RET			
		6	Powerwave	7200.40			
		12	Powerwave	LGP 21403			
		1	Raycap	DC6-48-60-18-8F			
	106.0	1	--	Sector Mount [SM 901-3]			
98.0	98.0	3	Rfs Celwave	APXV18-206517S-C	6	1 5/8	1
55.0	57.0	1	Lucent	KS24019-L112A	1	1/2	1
	55.0	1	--	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150	150	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
140	140	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
130	130	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
120	120	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
110	110	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	T-Mobile Co-Locate Rev # 0	225950	CCI Sites
Tower Manufacturing Drawings	EEI, Project No:15475	2302343	CCI Sites
Tower Foundation Drawings	EEI, Project No:15475	2302348	CCI Sites
Geotech Report	Terracon, Project No:J2085178	2302346	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 03/11/2014	CCI Sites

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	149 - 135.08	Pole	TP26.743x22x0.188	1	-4.109	781.111	9.6	Pass
L2	135.08 - 92.2	Pole	TP40.914x25.06x0.25	2	-15.727	1576.126	64.6	Pass
L3	92.2 - 45.24	Pole	TP56.356x38.51x0.313	3	-26.230	2591.019	77.3	Pass
L4	45.24 - 0	Pole	TP71x53.171x0.375	4	-44.303	3890.107	73.0	Pass
							Summary	
						Pole (L3)	77.3	Pass
						RATING =	77.3	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	44.5	Pass
1	Base Plate	Base	44.6	Pass
1	Base Foundation	Base	90.3	Pass

Structure Rating (max from all components) =	90.3%

Notes:
1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
2) The percent capacities shown above (excluding foundations) include the 1/3 increase in allowable stresses as allowed by TIA/EIA-222-F.

4.1) Recommendations

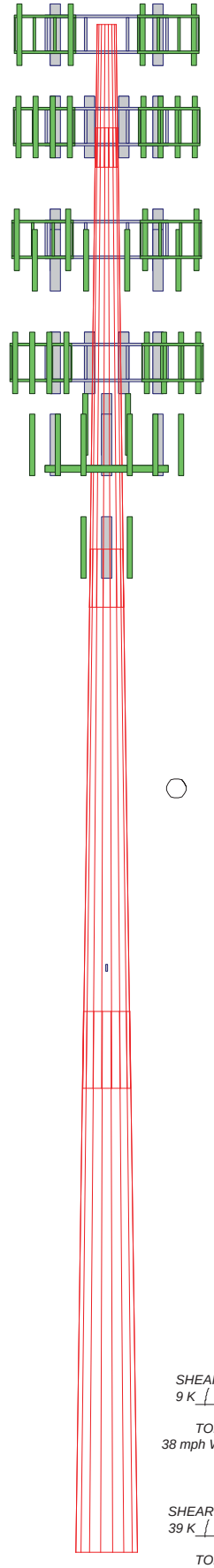
The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	13.920	18	0.188	3.840	22.000	26.743		0.7
2	46.720	18	0.250	5.610	25.060	40.914		4.1
3	52.570	18	0.313	7.540	38.510	56.356	A572-65	8.4
4	52.780	18	0.375		53.171	71.000		13.2
								26.4

149.0 ft
135.1 ft
92.2 ft
45.2 ft
0.0 ft



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (P)	148
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (P)	148
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (P)	148
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (P)	148
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (P)	148
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (P)	148
KRY 112 144/1 (P)	148
KRY 112 144/1 (P)	148
KRY 112 144/1 (P)	148
(2) 7' x 2" Pipe Mount (E)	148
(2) 7' x 2" Pipe Mount (E)	148
(2) 7' x 2" Pipe Mount (E)	148
Sector Mount [SM 901-3] (E)	148
(4) DB848H90E-XY w/ Mount Pipe (E)	139
(4) DB848H90E-XY w/ Mount Pipe (E)	139
(4) DB848H90E-XY w/ Mount Pipe (E)	139
Sector Mount [SM 901-3] (E)	139
APXVSPP18-C-A20 w/ Mount Pipe (E)	128
APXVSPP18-C-A20 w/ Mount Pipe (E)	128
APXVSPP18-C-A20 w/ Mount Pipe (E)	128
(3) ACU-A20-N (E)	128
(3) ACU-A20-N (E)	128
(3) ACU-A20-N (E)	128
800 EXTERNAL NOTCH FILTER (E)	128
800 EXTERNAL NOTCH FILTER (E)	128
800 EXTERNAL NOTCH FILTER (E)	128
APXVTM14-C-120 w/ Mount Pipe (R)	128
APXVTM14-C-120 w/ Mount Pipe (R)	128
APXVTM14-C-120 w/ Mount Pipe (R)	128
TD-RRH8x20-25 (R)	128
TD-RRH8x20-25 (R)	128
TD-RRH8x20-25 (R)	128
(2) 7' x 2" Pipe Mount (E)	128
(2) 7' x 2" Pipe Mount (E)	128
(2) 7' x 2" Pipe Mount (E)	128
Sector Mount [SM 901-3] (E)	128
1900MHz RRH (65MHz) w/Mount pipe (E)	128
1900MHz RRH (65MHz) w/Mount pipe (E)	128
1900MHz RRH (65MHz) w/Mount pipe (E)	128
800MHZ RRH (E)	128
800MHZ RRH (E)	128
800MHZ RRH (E)	128
6' x 2" Mount Pipe (E)	128
6' x 2" Mount Pipe (E)	128
6' x 2" Mount Pipe (E)	128
Side Arm Mount [SO 102-3] (E)	128
(2) DB846F65ZAXY w/ Mount Pipe (E)	116
(2) DB846F65ZAXY w/ Mount Pipe (E)	116
(2) DB846H80E-SX w/ Mount Pipe (E)	116

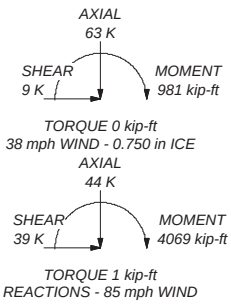
TYPE	ELEVATION
BXA-171063-8BF-2 w/ Mount Pipe (E)	116
BXA-171085-12BF-2 w/ Mount Pipe (E)	116
BXA-171063-12BF w/ Mount Pipe (E)	116
BXA-70063/6CF-2 w/ Mount Pipe (E)	116
BXA-70063/6CF-2 w/ Mount Pipe (E)	116
BXA-70063/6CF-2 w/ Mount Pipe (E)	116
GPS-TMG-26NMS (E)	116
(2) FD9R6004/2C-3L (E)	116
(2) FD9R6004/2C-3L (E)	116
(2) FD9R6004/2C-3L (E)	116
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	116
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	116
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	116
DB-T1-6Z-8AB-0Z (R)	116
RRH2x40-AWS (R)	116
RRH2x40-AWS (R)	116
RRH2x40-AWS (R)	116
Sector Mount [SM 901-3] (E)	116
RRUS 11 (E)	110
RRUS 11 (E)	110
RRUS 11 (E)	110
4' x 2" Pipe Mount (E)	110
4' x 2" Pipe Mount (E)	110
4' x 2" Pipe Mount (E)	110
Side Arm Mount [SO 102-3) (E)	110
(2) 7200.40 w/ Mount Pipe (E)	106
(2) 7200.40 w/ Mount Pipe (E)	106
(2) 7200.40 w/ Mount Pipe (E)	106
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	106
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	106
AM-X-CD-14-65-00T-RET w/ Mount Pipe (E)	106
DC6-48-60-18-8F (E)	106
(4) LGP 21403 (E)	106
(4) LGP 21403 (E)	106
(4) LGP 21403 (E)	106
RRUS-11 (E)	106
RRUS-11 (E)	106
RRUS-11 (E)	106
7'x2" Pipe Mount (E)	106
7'x2" Pipe Mount (E)	106
7'x2" Pipe Mount (E)	106
Sector Mount [SM 901-3] (E)	106
APXV18-206517S-C w/ Mount Pipe (E)	98
APXV18-206517S-C w/ Mount Pipe (E)	98
APXV18-206517S-C w/ Mount Pipe (E)	98
KS24019-L112A (E)	55
Side Arm Mount [SO 701-1] (E)	55

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 77.3%



B+T Group
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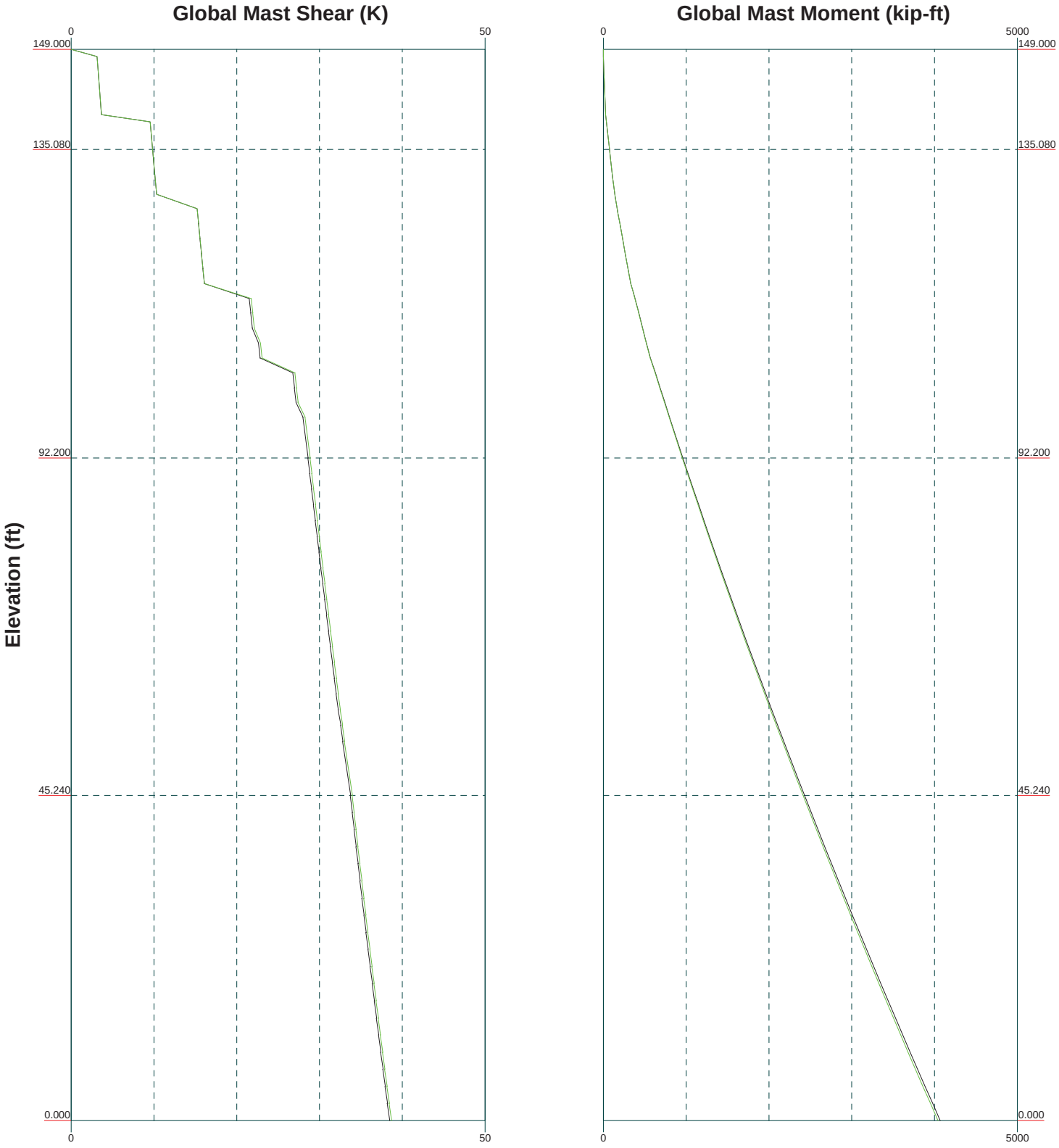
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job:	84701.004.01- GUILFORD WEST STONE PROPERTY,CT (BU# 87634		
Project:			
Client: Crown Casstle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS	
Path:		Dwg No. E-1	

TIA/EIA-222-F - 85 mph/38 mph 0.750 in Ice

Maximum Values

Vx Vz Mx Mz



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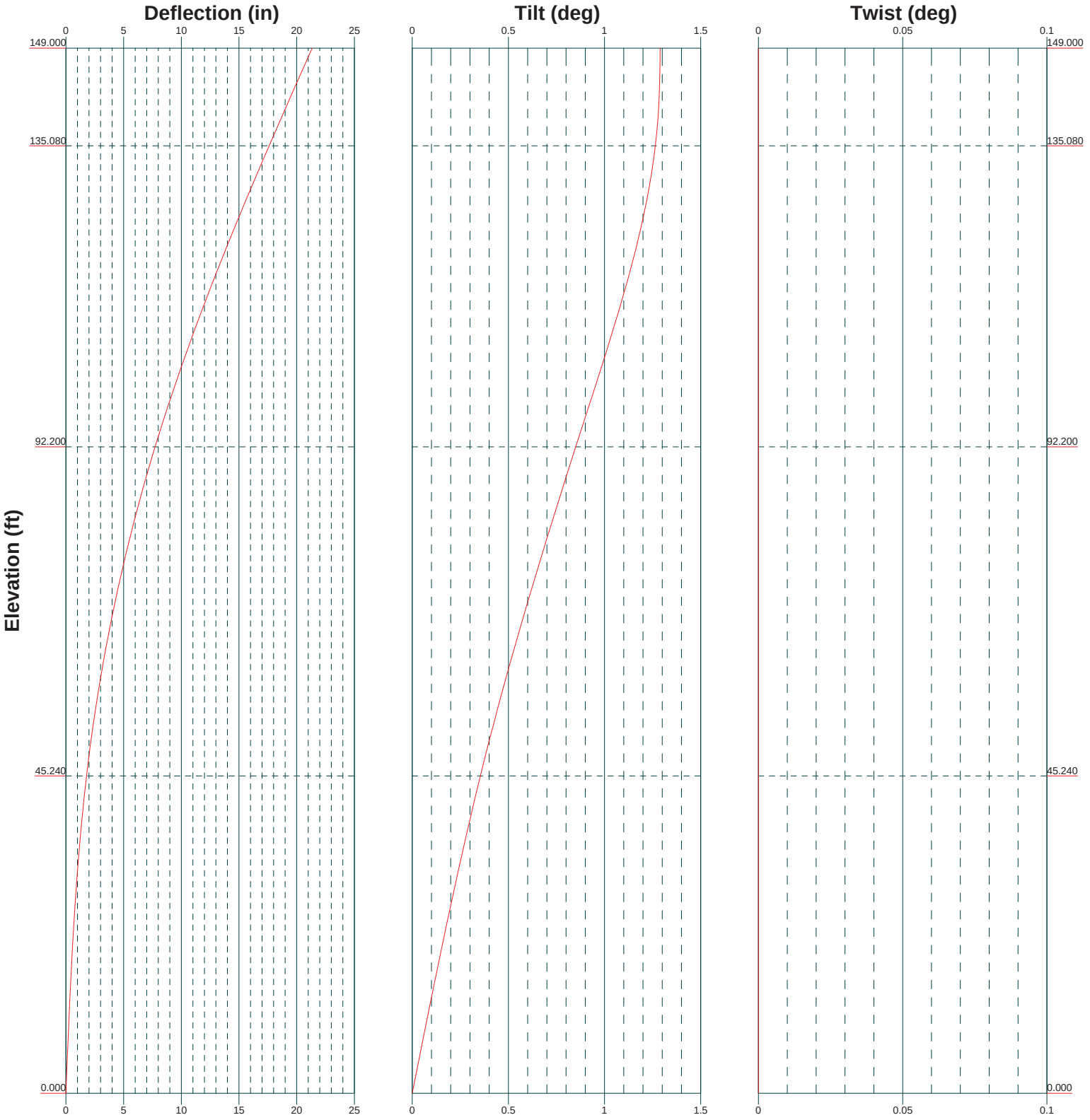
Project:			
Client: Crown Casstle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS	
Path:		Dwg No. E-4	

TIA/EIA-222-F - Service - 50 mph

Maximum Values



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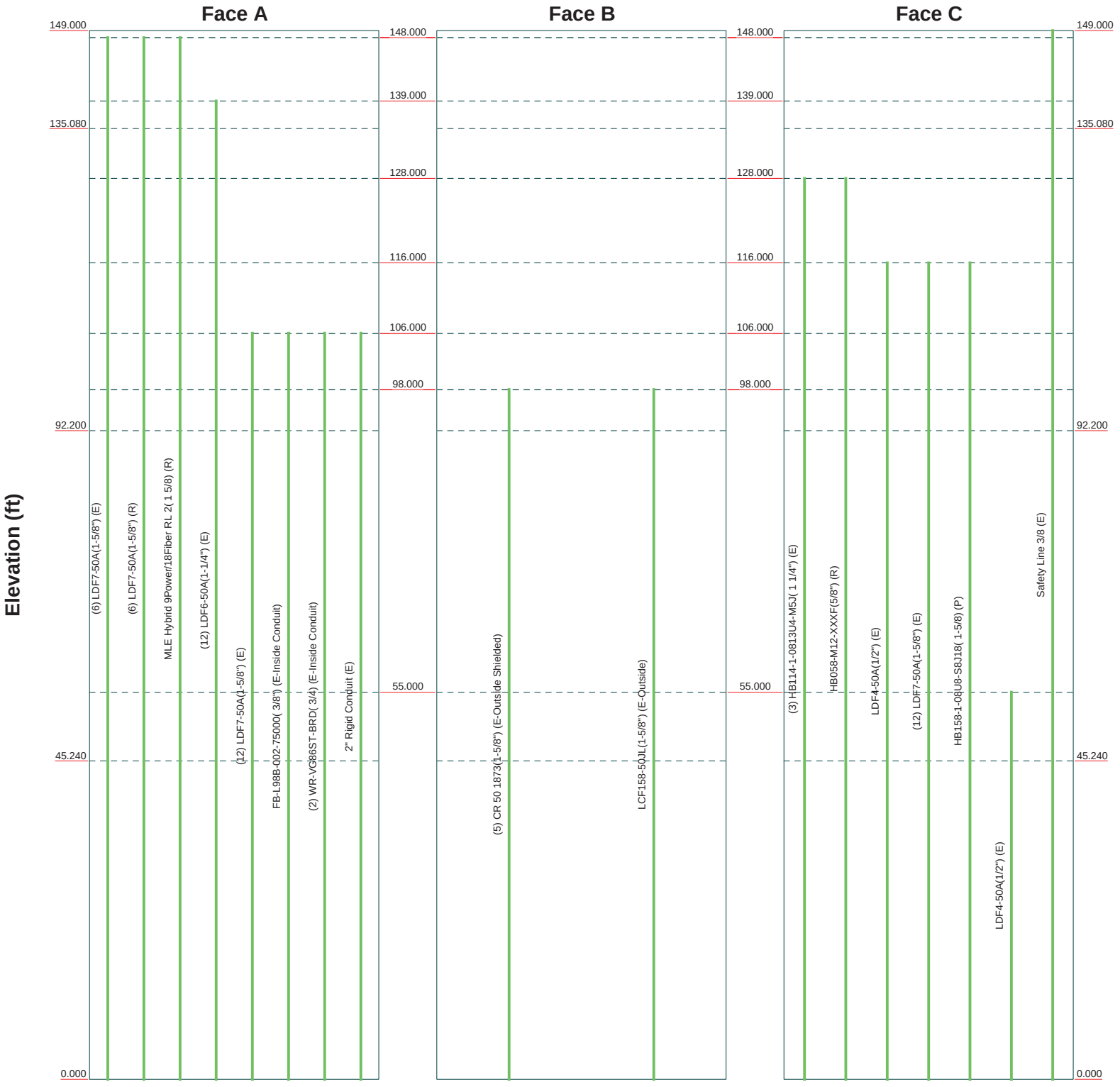
Job: *84701.004.01- GUILFORD WEST STONE PROPERTY,CT (BU# 87634*		
Project:		
Client: Crown Casstle	Drawn by: J. Landon	App'd:
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS
Path:		Dwg No. E-5

Feed Line Distribution Chart
0' - 149'

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



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Job: ***84701.004.01- GUILFORD WEST STONE PROPERTY,CT (BU# 87634***		
Project:		
Client: Crown Casstle	Drawn by: J. Landon	App'd:
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS
Path:		Dwg No. E-7

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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 New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °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.

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	149.000-135.080	13.920	3.840	18	22.000	26.743	0.188	0.750	A572-65 (65 ksi)
L2	135.080-92.200	46.720	5.610	18	25.060	40.914	0.250	1.000	A572-65 (65 ksi)
L3	92.200-45.240	52.570	7.540	18	38.510	56.356	0.313	1.250	A572-65 (65 ksi)
L4	45.240-0.000	52.780		18	53.171	71.000	0.375	1.500	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	22.339	12.981	780.301	7.743	11.176	69.819	1561.628	6.492	3.542	18.891
	27.155	15.804	1408.005	9.427	13.585	103.641	2817.863	7.903	4.377	23.343
L2	26.769	19.686	1530.873	8.807	12.730	120.255	3063.760	9.845	3.970	15.882
	41.545	32.267	6740.950	14.436	20.784	324.327	13490.769	16.137	6.761	27.044
L3	41.038	37.888	6984.147	13.560	19.563	357.003	13977.485	18.947	6.228	19.929
	57.225	55.588	22058.204	19.895	28.629	770.489	44145.432	27.799	9.369	29.98
L4	56.578	62.841	22130.424	18.743	27.011	819.309	44289.967	31.426	8.698	23.195
	72.095	84.061	52972.567	25.072	36.068	1468.686	106014.838	42.039	11.836	31.563

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 149.000-135.080				1	1	1		
L2 135.080-92.200				1	1	1		
L3 92.200-45.240				1	1	1		
L4 45.240-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
$$$										

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 klf
LDF7-50A(1-5/8") (E)	A	No	Inside Pole	148.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
LDF7-50A(1-5/8") (P)	A	No	Inside Pole	148.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
MLE Hybrid 9Power/18Fiber RL 2(1	A	No	Inside Pole	148.000 - 0.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
5/8)						1" Ice	0.000	0.001
(P)						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
$$$								
LDF6-50A(1-1/4")	A	No	Inside Pole	139.000 - 0.000	12	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
$$$								
HB114-1-0813U4-M5J(1 1/4")	C	No	Inside Pole	128.000 - 0.000	3	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
HB058-M12-XXXF(5/8")	C	No	CaAa (Out Of Face)	128.000 - 0.000	1	No Ice	0.084	0.000
						1/2" Ice	0.184	0.001
(R)						1" Ice	0.284	0.002
						2" Ice	0.484	0.007
						4" Ice	0.884	0.024
$$$								
LDF4-50A(1/2")	C	No	Inside Pole	116.000 - 0.000	1	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF7-50A(1-5/8")	C	No	Inside Pole	116.000 - 0.000	12	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
HB158-1-08U8-S8J18(1-5/8)	C	No	Inside Pole	116.000 - 0.000	1	No Ice	0.000	0.001
(R)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
$$$								
LDF7-50A(1-5/8")	A	No	Inside Pole	106.000 - 0.000	12	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
FB-L98B-002-75000(3/8")	A	No	Inside Pole	106.000 - 0.000	1	No Ice	0.000	0.000
(E-Inside Conduit)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	A	No	Inside Pole	106.000 - 0.000	2	No Ice	0.000	0.001
(E-Inside Conduit)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
2" Rigid Conduit	A	No	Inside Pole	106.000 - 0.000	1	No Ice	0.000	0.003
(E)						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.003
						2" Ice	0.000	0.003
						4" Ice	0.000	0.003
$$$								
CR 50 1873(1-5/8")	B	No	CaAa (Out Of Face)	98.000 - 0.000	5	No Ice	0.000	0.001
(E-Outside Shielded)						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030
LCF158-50JL(1-5/8") (E-Outside)	B	No	CaAa (Out Of Face)	98.000 - 0.000	1	No Ice	0.198	0.001
						1/2" Ice	0.298	0.002
						1" Ice	0.398	0.004
						2" Ice	0.598	0.010
						4" Ice	0.998	0.030
$$$								
LDF4-50A(1/2") (E)	C	No	Inside Pole	55.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
$$$								
Safety Line 3/8 (E)	C	No	CaAa (Out Of Face)	149.000 - 0.000	1	No Ice	0.037	0.000
						1/2" Ice	0.137	0.001
						1" Ice	0.238	0.001
						2" Ice	0.437	0.002
						4" Ice	0.838	0.004
$$$								

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	149.000-135.080	A	0.000	0.000	0.000	0.000	0.172
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.522	0.003
L2	135.080-92.200	A	0.000	0.000	0.000	0.000	0.999
		B	0.000	0.000	0.000	1.148	0.027
		C	0.000	0.000	0.000	4.615	0.416
L3	92.200-45.240	A	0.000	0.000	0.000	0.000	1.536
		B	0.000	0.000	0.000	9.298	0.219
		C	0.000	0.000	0.000	5.706	0.722
L4	45.240-0.000	A	0.000	0.000	0.000	0.000	1.480
		B	0.000	0.000	0.000	8.958	0.211
		C	0.000	0.000	0.000	5.497	0.701

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	149.000-135.080	A	0.893	0.000	0.000	0.000	0.000	0.172
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	3.009	0.016
L2	135.080-92.200	A	0.869	0.000	0.000	0.000	0.000	0.999
		B		0.000	0.000	0.000	2.185	0.138
		C		0.000	0.000	0.000	18.674	0.526
L3	92.200-45.240	A	0.818	0.000	0.000	0.000	0.000	1.536
		B		0.000	0.000	0.000	17.458	1.088
		C		0.000	0.000	0.000	22.025	0.854
L4	45.240-0.000	A	0.750	0.000	0.000	0.000	0.000	1.480
		B		0.000	0.000	0.000	16.359	0.990

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
		C		0.000	0.000	0.000	20.299	0.819

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	149.000-135.080	-0.048	0.028	-0.238	0.137
L2	135.080-92.200	-0.097	0.102	-0.405	0.308
L3	92.200-45.240	0.092	0.222	-0.102	0.507
L4	45.240-0.000	0.094	0.226	-0.096	0.515

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
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (P)	A	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (P)	B	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (P)	C	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (P)	A	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (P)	B	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (P)	C	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
KRY 112 144/1	A	From Leg	4.000	0.000	148.000	No Ice	0.408	0.204	0.011

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
(P)			0.000			1/2" Ice	0.497	0.273	0.014
			0.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	B	From Leg	4.000	0.000	148.000	No Ice	0.408	0.204	0.011
(P)			0.000			1/2" Ice	0.497	0.273	0.014
			0.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	C	From Leg	4.000	0.000	148.000	No Ice	0.408	0.204	0.011
(P)			0.000			1/2" Ice	0.497	0.273	0.014
			0.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
(2) 7' x 2" Pipe Mount	A	From Leg	4.000	0.000	148.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	B	From Leg	4.000	0.000	148.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	C	From Leg	4.000	0.000	148.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
Sector Mount [SM 901-3]	C	None		0.000	148.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
(4) DB848H90E-XY w/	A	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(E)			1.000			1" Ice	8.816	13.564	0.219
						2" Ice	10.151	15.911	0.419
						4" Ice	12.921	20.786	0.995
(4) DB848H90E-XY w/	B	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(E)			1.000			1" Ice	8.816	13.564	0.219
						2" Ice	10.151	15.911	0.419
						4" Ice	12.921	20.786	0.995
(4) DB848H90E-XY w/	C	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(E)			1.000			1" Ice	8.816	13.564	0.219
						2" Ice	10.151	15.911	0.419
						4" Ice	12.921	20.786	0.995
Sector Mount [SM 901-3]	C	None		0.000	139.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
APXVSPP18-C-A20 w/	A	From Leg	4.000	0.000	128.000	No Ice	8.498	6.946	0.083

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
Mount Pipe			0.000			1/2" Ice	9.149	8.127	0.151
(E)			2.000			1" Ice	9.767	9.021	0.227
						2" Ice	11.031	10.844	0.406
						4" Ice	13.679	14.851	0.909
APXVSPP18-C-A20 w/	B	From Leg	4.000	0.000	128.000	No Ice	8.498	6.946	0.083
Mount Pipe			0.000			1/2" Ice	9.149	8.127	0.151
(E)			2.000			1" Ice	9.767	9.021	0.227
						2" Ice	11.031	10.844	0.406
						4" Ice	13.679	14.851	0.909
APXVSPP18-C-A20 w/	C	From Leg	4.000	0.000	128.000	No Ice	8.498	6.946	0.083
Mount Pipe			0.000			1/2" Ice	9.149	8.127	0.151
(E)			2.000			1" Ice	9.767	9.021	0.227
						2" Ice	11.031	10.844	0.406
						4" Ice	13.679	14.851	0.909
(3) ACU-A20-N	A	From Leg	4.000	0.000	128.000	No Ice	0.078	0.136	0.001
(E)			0.000			1/2" Ice	0.121	0.189	0.002
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
(3) ACU-A20-N	B	From Leg	4.000	0.000	128.000	No Ice	0.078	0.136	0.001
(E)			0.000			1/2" Ice	0.121	0.189	0.002
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
(3) ACU-A20-N	C	From Leg	4.000	0.000	128.000	No Ice	0.078	0.136	0.001
(E)			0.000			1/2" Ice	0.121	0.189	0.002
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
800 EXTERNAL NOTCH	A	From Leg	4.000	0.000	128.000	No Ice	0.770	0.375	0.011
FILTER			0.000			1/2" Ice	0.890	0.465	0.017
(E)			0.000			1" Ice	1.018	0.563	0.024
						2" Ice	1.301	0.787	0.045
						4" Ice	1.970	1.337	0.114
800 EXTERNAL NOTCH	B	From Leg	4.000	0.000	128.000	No Ice	0.770	0.375	0.011
FILTER			0.000			1/2" Ice	0.890	0.465	0.017
(E)			0.000			1" Ice	1.018	0.563	0.024
						2" Ice	1.301	0.787	0.045
						4" Ice	1.970	1.337	0.114
800 EXTERNAL NOTCH	C	From Leg	4.000	0.000	128.000	No Ice	0.770	0.375	0.011
FILTER			0.000			1/2" Ice	0.890	0.465	0.017
(E)			0.000			1" Ice	1.018	0.563	0.024
						2" Ice	1.301	0.787	0.045
						4" Ice	1.970	1.337	0.114
APXVTM14-C-120 w/	A	From Leg	4.000	0.000	128.000	No Ice	7.134	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.662	5.754	0.131
(R)			2.000			1" Ice	8.183	6.472	0.193
						2" Ice	9.256	8.010	0.338
						4" Ice	11.526	11.412	0.752
APXVTM14-C-120 w/	B	From Leg	4.000	0.000	128.000	No Ice	7.134	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.662	5.754	0.131
(R)			2.000			1" Ice	8.183	6.472	0.193
						2" Ice	9.256	8.010	0.338
						4" Ice	11.526	11.412	0.752
APXVTM14-C-120 w/	C	From Leg	4.000	0.000	128.000	No Ice	7.134	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.662	5.754	0.131
(R)			2.000			1" Ice	8.183	6.472	0.193

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	9.256	8.010	0.338
						4" Ice	11.526	11.412	0.752
TD-RRH8x20-25	A	From Leg	4.000	0.000	128.000	No Ice	4.720	1.703	0.070
(R)			0.000			1/2" Ice	5.014	1.920	0.097
			2.000			1" Ice	5.316	2.145	0.128
						2" Ice	5.948	2.622	0.201
						4" Ice	7.314	3.680	0.397
TD-RRH8x20-25	B	From Leg	4.000	0.000	128.000	No Ice	4.720	1.703	0.070
(R)			0.000			1/2" Ice	5.014	1.920	0.097
			2.000			1" Ice	5.316	2.145	0.128
						2" Ice	5.948	2.622	0.201
						4" Ice	7.314	3.680	0.397
TD-RRH8x20-25	C	From Leg	4.000	0.000	128.000	No Ice	4.720	1.703	0.070
(R)			0.000			1/2" Ice	5.014	1.920	0.097
			2.000			1" Ice	5.316	2.145	0.128
						2" Ice	5.948	2.622	0.201
						4" Ice	7.314	3.680	0.397
(2) 7' x 2" Pipe Mount	A	From Leg	4.000	0.000	128.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	B	From Leg	4.000	0.000	128.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	C	From Leg	4.000	0.000	128.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
Sector Mount [SM 901-3]	C	None		0.000	128.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
1900MHz RRH (65MHz)	A	From Leg	4.000	0.000	128.000	No Ice	2.698	2.929	0.064
w/Mount pipe			0.000			1/2" Ice	2.936	3.255	0.090
(E)			-2.000			1" Ice	3.183	3.600	0.121
						2" Ice	3.703	4.350	0.196
						4" Ice	4.846	6.088	0.412
1900MHz RRH (65MHz)	B	From Leg	4.000	0.000	128.000	No Ice	2.698	2.929	0.064
w/Mount pipe			0.000			1/2" Ice	2.936	3.255	0.090
(E)			-2.000			1" Ice	3.183	3.600	0.121
						2" Ice	3.703	4.350	0.196
						4" Ice	4.846	6.088	0.412
1900MHz RRH (65MHz)	C	From Leg	4.000	0.000	128.000	No Ice	2.698	2.929	0.064
w/Mount pipe			0.000			1/2" Ice	2.936	3.255	0.090
(E)			-2.000			1" Ice	3.183	3.600	0.121
						2" Ice	3.703	4.350	0.196
						4" Ice	4.846	6.088	0.412
800MHZ RRH	A	From Leg	4.000	0.000	128.000	No Ice	2.490	2.068	0.053
(E)			0.000			1/2" Ice	2.706	2.271	0.074
			2.000			1" Ice	2.931	2.481	0.098
						2" Ice	3.407	2.928	0.157

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	4.462	3.927	0.318
800MHZ RRH	B	From Leg	4.000	0.000	128.000	No Ice	2.490	2.068	0.053
(E)			0.000			1/2" Ice	2.706	2.271	0.074
			2.000			1" Ice	2.931	2.481	0.098
						2" Ice	3.407	2.928	0.157
						4" Ice	4.462	3.927	0.318
800MHZ RRH	C	From Leg	4.000	0.000	128.000	No Ice	2.490	2.068	0.053
(E)			0.000			1/2" Ice	2.706	2.271	0.074
			2.000			1" Ice	2.931	2.481	0.098
						2" Ice	3.407	2.928	0.157
						4" Ice	4.462	3.927	0.318
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Side Arm Mount [SO 102-3)	C	None		0.000	128.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
						2" Ice	4.920	4.920	0.201
						4" Ice	6.840	6.840	0.321
$$$									
(2) DB846F65ZAXY w/	A	From Leg	4.000	0.000	116.000	No Ice	7.271	7.821	0.047
Mount Pipe			0.000			1/2" Ice	7.877	9.010	0.114
(E)			2.000			1" Ice	8.484	9.912	0.189
						2" Ice	9.724	11.812	0.367
						4" Ice	12.325	15.978	0.867
(2) DB846F65ZAXY w/	C	From Leg	4.000	0.000	116.000	No Ice	7.271	7.821	0.047
Mount Pipe			0.000			1/2" Ice	7.877	9.010	0.114
(E)			2.000			1" Ice	8.484	9.912	0.189
						2" Ice	9.724	11.812	0.367
						4" Ice	12.325	15.978	0.867
(2) DB846H80E-SX w/	B	From Leg	4.000	0.000	116.000	No Ice	5.331	7.735	0.041
Mount Pipe			0.000			1/2" Ice	5.888	8.930	0.099
(E)			2.000			1" Ice	6.412	9.843	0.165
						2" Ice	7.481	11.711	0.323
						4" Ice	9.828	15.894	0.782
BXA-171063-8BF-2 w/	A	From Leg	4.000	0.000	116.000	No Ice	3.179	3.353	0.029
Mount Pipe			0.000			1/2" Ice	3.555	3.971	0.061
(E)			2.000			1" Ice	3.964	4.595	0.099
						2" Ice	4.853	5.893	0.193
						4" Ice	6.767	8.885	0.488
BXA-171085-12BF-2 w/	B	From Leg	4.000	0.000	116.000	No Ice	4.971	5.228	0.040
Mount Pipe			0.000			1/2" Ice	5.521	6.389	0.086
(E)			2.000			1" Ice	6.036	7.261	0.139
						2" Ice	7.091	9.046	0.271
						4" Ice	9.359	12.817	0.671

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-171063-12BF w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.971 5.521 6.036 7.091 9.359	5.228 6.389 7.261 9.046 12.817	0.040 0.086 0.139 0.271 0.671
BXA-70063/6CF-2 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.101 0.168 0.327 0.787
BXA-70063/6CF-2 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.101 0.168 0.327 0.787
BXA-70063/6CF-2 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.101 0.168 0.327 0.787
GPS-TMG-26NMS (E)	B	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.156 0.213 0.279 0.437 0.857	0.156 0.213 0.279 0.437 0.857	0.001 0.002 0.005 0.014 0.052
(2) FD9R6004/2C-3L (E)	A	From Leg	4.000 0.000 0.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (E)	B	From Leg	4.000 0.000 0.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (E)	C	From Leg	4.000 0.000 0.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	A	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.029 5.583 6.103 7.166 9.438	5.289 6.459 7.348 9.148 12.947	0.041 0.087 0.140 0.273 0.677
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	B	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.029 5.583 6.103 7.166 9.438	5.289 6.459 7.348 9.148 12.947	0.041 0.087 0.140 0.273 0.677
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (R)	C	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.029 5.583 6.103 7.166 9.438	5.289 6.459 7.348 9.148 12.947	0.041 0.087 0.140 0.273 0.677
DB-T1-6Z-8AB-0Z (R)	A	From Leg	4.000 0.000	0.000	116.000	No Ice 1/2" Ice	5.600 5.915	2.333 2.558	0.044 0.080

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
			2.000			1" Ice	6.240	2.791	0.120
						2" Ice	6.914	3.284	0.213
						4" Ice	8.365	4.373	0.455
RRH2x40-AWS	A	From Leg	4.000	0.000	116.000	No Ice	2.522	1.589	0.044
(R)			0.000			1/2" Ice	2.753	1.795	0.061
			2.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
RRH2x40-AWS	B	From Leg	4.000	0.000	116.000	No Ice	2.522	1.589	0.044
(R)			0.000			1/2" Ice	2.753	1.795	0.061
			2.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
RRH2x40-AWS	C	From Leg	4.000	0.000	116.000	No Ice	2.522	1.589	0.044
(R)			0.000			1/2" Ice	2.753	1.795	0.061
			2.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
Sector Mount [SM 901-3]	C	None		0.000	116.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
RRUS 11	A	From Leg	1.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			0.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS 11	B	From Leg	1.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			0.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS 11	C	From Leg	1.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			0.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
4' x 2" Pipe Mount	A	From Leg	0.500	0.000	110.000	No Ice	0.866	0.866	0.015
(E)			0.000			1/2" Ice	1.111	1.111	0.022
			0.000			1" Ice	1.365	1.365	0.032
						2" Ice	1.901	1.901	0.062
						4" Ice	3.228	3.228	0.161
4' x 2" Pipe Mount	B	From Leg	0.500	0.000	110.000	No Ice	0.866	0.866	0.015
(E)			0.000			1/2" Ice	1.111	1.111	0.022
			0.000			1" Ice	1.365	1.365	0.032
						2" Ice	1.901	1.901	0.062
						4" Ice	3.228	3.228	0.161
4' x 2" Pipe Mount	C	From Leg	0.500	0.000	110.000	No Ice	0.866	0.866	0.015
(E)			0.000			1/2" Ice	1.111	1.111	0.022
			0.000			1" Ice	1.365	1.365	0.032
						2" Ice	1.901	1.901	0.062
						4" Ice	3.228	3.228	0.161
Side Arm Mount [SO 102-3]	C	None		0.000	110.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141

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
						2" Ice	4.920	4.920	0.201
						4" Ice	6.840	6.840	0.321
$$$									
(2) 7200.40 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.354 4.900 5.411 6.458 8.655	4.612 5.772 6.645 8.424 12.183	0.049 0.090 0.137 0.258 0.634
(2) 7200.40 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.354 4.900 5.411 6.458 8.655	4.612 5.772 6.645 8.424 12.183	0.049 0.090 0.137 0.258 0.634
(2) 7200.40 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.354 4.900 5.411 6.458 8.655	4.612 5.772 6.645 8.424 12.183	0.049 0.090 0.137 0.258 0.634
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.139 0.212 0.385 0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.139 0.212 0.385 0.874
AM-X-CD-14-65-00T-RET w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.744 6.198 6.661 7.618 9.668	4.015 4.633 5.276 6.678 9.744	0.035 0.080 0.131 0.254 0.610
DC6-48-60-18-8F (E)	A	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.567 2.798 3.038 3.543 4.658	2.567 2.798 3.038 3.543 4.658	0.019 0.041 0.067 0.129 0.299
(4) LGP 21403 (E)	A	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.288 1.445 1.611 1.969 2.788	0.364 0.479 0.602 0.874 1.522	0.014 0.021 0.030 0.055 0.135
(4) LGP 21403 (E)	B	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.288 1.445 1.611 1.969 2.788	0.364 0.479 0.602 0.874 1.522	0.014 0.021 0.030 0.055 0.135
(4) LGP 21403 (E)	C	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.288 1.445 1.611 1.969 2.788	0.364 0.479 0.602 0.874 1.522	0.014 0.021 0.030 0.055 0.135
RRUS-11 (E)	A	From Leg	4.000 0.000 2.000	0.000	106.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.249 3.491 3.741 4.268	1.373 1.551 1.738 2.138	0.048 0.068 0.092 0.150

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
						4" Ice	5.426	3.042	0.310
RRUS-11	B	From Leg	4.000	0.000	106.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS-11	C	From Leg	4.000	0.000	106.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
7'x2" Pipe Mount	A	From Leg	4.000	0.000	106.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.039
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
7'x2" Pipe Mount	B	From Leg	4.000	0.000	106.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.039
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
7'x2" Pipe Mount	C	From Leg	4.000	0.000	106.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.039
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
Sector Mount [SM 901-3]	C	None		0.000	106.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
APXV18-206517S-C w/	A	From Leg	1.000	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	B	From Leg	1.000	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	C	From Leg	1.000	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
$$$									
KS24019-L112A	A	From Leg	2.000	0.000	55.000	No Ice	0.156	0.156	0.005
(E)			0.000			1/2" Ice	0.225	0.225	0.007
			2.000			1" Ice	0.302	0.302	0.009
						2" Ice	0.484	0.484	0.018
						4" Ice	0.951	0.951	0.056
Side Arm Mount [SO 701-1]	A	From Leg	1.000	0.000	55.000	No Ice	0.850	1.670	0.065
(E)			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
						2" Ice	2.010	4.350	0.121

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
$$$						4" Ice	3.170	7.030	0.177

Load Combinations

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

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 135.08	21.340	28	1.291	0.001
L2	138.92 - 92.2	18.623	28	1.279	0.001
L3	97.81 - 45.24	8.815	28	0.919	0.001
L4	52.78 - 0	2.383	28	0.421	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	28	21.069	1.291	0.001	29712
139.000	(4) DB848H90E-XY w/ Mount Pipe	28	18.644	1.279	0.001	15464
128.000	APXVSPP18-C-A20 w/ Mount Pipe	28	15.766	1.225	0.001	9516
116.000	(2) DB846F65ZAXY w/ Mount Pipe	28	12.802	1.122	0.001	6830
110.000	RRUS 11	28	11.410	1.059	0.001	5985
106.000	(2) 7200.40 w/ Mount Pipe	28	10.522	1.015	0.001	5529
98.000	APXV18-206517S-C w/ Mount Pipe	28	8.852	0.922	0.001	4860
55.000	KS24019-L112A	28	2.584	0.443	0.000	4967

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 135.08	61.570	2	3.727	0.003
L2	138.92 - 92.2	53.732	2	3.690	0.003
L3	97.81 - 45.24	25.442	2	2.653	0.002
L4	52.78 - 0	6.881	2	1.216	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	60.788	3.725	0.003	10383
139.000	(4) DB848H90E-XY w/ Mount Pipe	2	53.794	3.690	0.003	5403
128.000	APXVSPP18-C-A20 w/ Mount Pipe	2	45.492	3.535	0.003	3321
116.000	(2) DB846F65ZAXY w/ Mount Pipe	2	36.943	3.239	0.002	2382
110.000	RRUS 11	2	32.929	3.057	0.002	2086
106.000	(2) 7200.40 w/ Mount Pipe	2	30.367	2.928	0.002	1927
98.000	APXV18-206517S-C w/ Mount Pipe	2	25.551	2.660	0.002	1692
55.000	KS24019-L112A	2	7.461	1.279	0.001	1722

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	149 - 135.08 (1)	TP26.743x22x0.188	13.920	0.000	0.0	39.000	15.025	-4.109	585.980	0.007
L2	135.08 - 92.2 (2)	TP40.914x25.06x0.25	46.720	0.000	0.0	38.444	30.756	-15.727	1182.390	0.013
L3	92.2 - 45.24 (3)	TP56.356x38.51x0.313	52.570	0.000	0.0	36.640	53.049	-26.230	1943.750	0.013
L4	45.24 - 0 (4)	TP71x53.171x0.375	52.780	0.000	0.0	34.716	84.061	-44.303	2918.310	0.015

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	149 - 135.08 (1)	TP26.743x22x0.188	36.691	4.702	39.000	0.121	0.000	0.000	39.000	0.000
L2	135.08 - 92.2 (2)	TP40.914x25.06x0.25	798.887	32.543	38.444	0.847	0.000	0.000	38.444	0.000
L3	92.2 - 45.24 (3)	TP56.356x38.51x0.313	2176.692	37.233	36.640	1.016	0.000	0.000	36.640	0.000
L4	45.24 - 0 (4)	TP71x53.171x0.375	4068.733	33.244	34.716	0.958	0.000	0.000	34.716	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	149 - 135.08 (1)	TP26.743x22x0.188	9.540	0.635	26.000	0.049	0.002	0.000	26.000	0.000
L2	135.08 - 92.2 (2)	TP40.914x25.06x0.25	28.262	0.919	26.000	0.071	0.453	0.009	26.000	0.000
L3	92.2 - 45.24 (3)	TP56.356x38.51x0.313	33.035	0.623	26.000	0.048	0.479	0.004	26.000	0.000
L4	45.24 - 0 (4)	TP71x53.171x0.375	38.708	0.460	26.000	0.035	0.048	0.000	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	149 - 135.08 (1)	0.007	0.121	0.000	0.049	0.000	0.128 ✔	1.333	H1-3+VT ✔
L2	135.08 - 92.2	0.013	0.847	0.000	0.071	0.000	0.861	1.333	H1-3+VT ✔

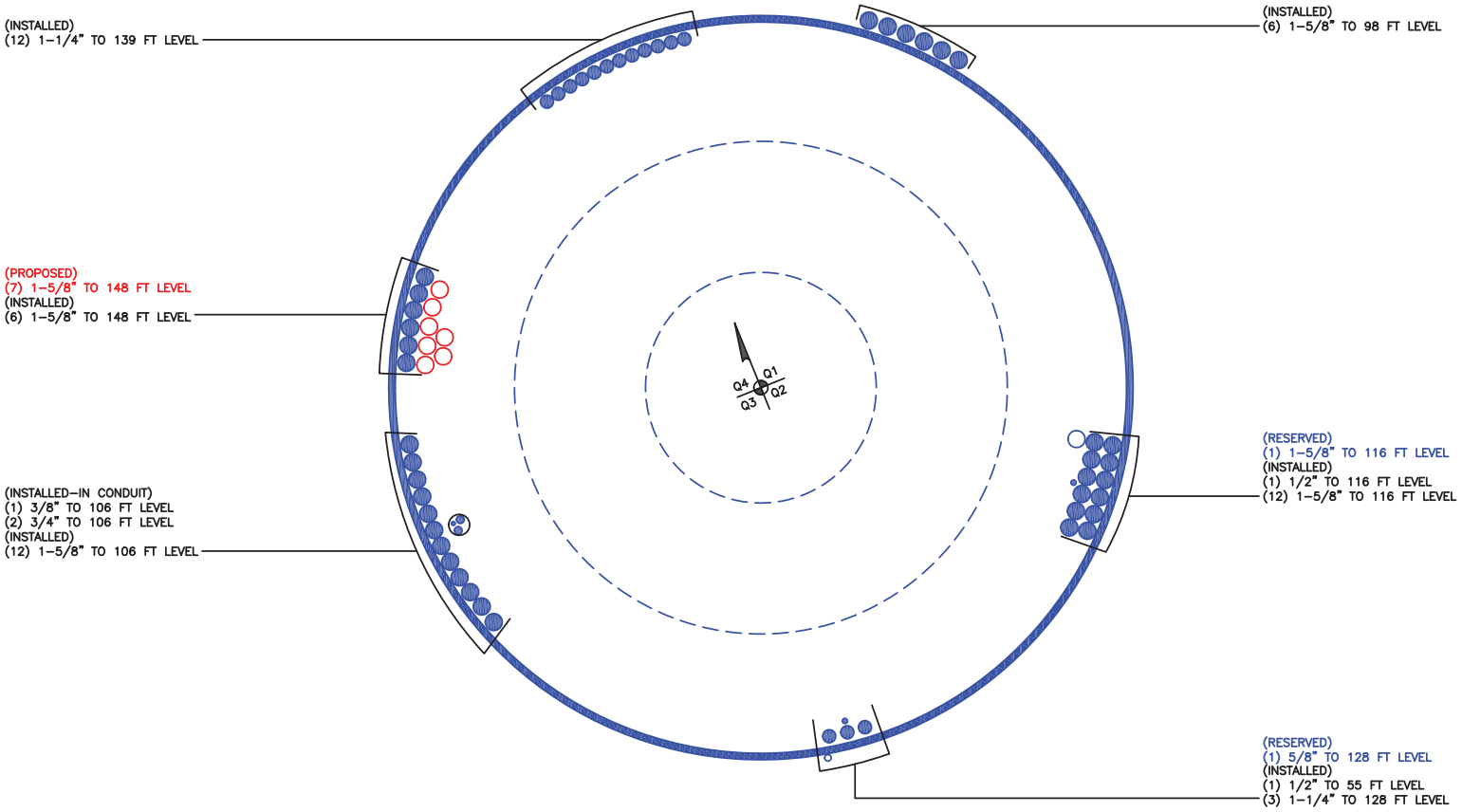
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(2)						✔		
L3	92.2 - 45.24 (3)	0.013	1.016	0.000	0.048	0.000	1.030 ✔	1.333	H1-3+VT ✔
L4	45.24 - 0 (4)	0.015	0.958	0.000	0.035	0.000	0.973 ✔	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	149 - 135.08	Pole	TP26.743x22x0.188	1	-4.109	781.111	9.6	Pass
L2	135.08 - 92.2	Pole	TP40.914x25.06x0.25	2	-15.727	1576.126	64.6	Pass
L3	92.2 - 45.24	Pole	TP56.356x38.51x0.313	3	-26.230	2591.019	77.3	Pass
L4	45.24 - 0	Pole	TP71x53.171x0.375	4	-44.303	3890.107	73.0	Pass
							Summary	
						Pole (L3)	77.3	Pass
						RATING =	**77.3**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876343

APPENDIX C

ADDITIONAL CALCULATIONS

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

TIA Rev F

Site Data

BU#:	*876343*
Site Name:	*GUILFORD WEST STONE*
App #:	*216659 Rev # 1*
Pole Manufacturer:	*Other*

Reactions		
Moment:	4069	ft-kips
Axial:	44	kips
Shear:	39	kips

Anchor Rod Data		
Qty:	28	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	79	in

Plate Data		
Diam:	85	in
Thick:	2.75	in
Grade:	50	ksi
Single-Rod B-eff:	8.05	in

Stiffener Data (Welding at both sides)		
Config:	0	*
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:	71	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"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:	86.7	Kips	Rigid
Allowable Tension:	195.0	Kips	Service, ASD
Anchor Rod Stress Ratio:	44.5%	**Pass**	Fty*ASIF

Base Plate Results

	Flexural Check		Rigid
Base Plate Stress:	22.3	ksi	Service ASD
Allowable Plate Stress:	50.0	ksi	0.75*Fy*ASIF
Base Plate Stress Ratio:	44.6%	**Pass**	Y.L. Length: 34.64

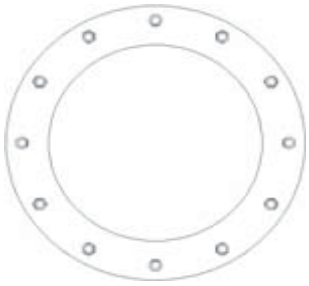
n/a

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

Monopole Pier and Pad Foundation

Note: Do not use this spreadsheet for CCI-direct projects

Site # : 876343

Site Name: GUILFORD WEST STONE P

TIA-222 Revision: F

Design Reactions		
Shear, **S**:	39	kips
Moment, **M**:	4069	ft-kips
Tower Height, **H**:	149	ft
Tower Weight, **Wt**:	44	kips
Base Diameter, **BD**:	5.92	ft

Foundation Dimensions		
Depth, **D**:	12	ft
Pad Width, **W**:	30	ft
Neglected Depth, **N**:	3.33	ft
Thickness, **T**:	3.00	ft
Pier Diameter, **Pd**:	8.50	ft
Ext. Above Grade, **E**:	1.00	ft
BP Dist. Above Pier:	3	in.
Clear Cover, **Cc**:	3.0	in

Soil Properties		
Soil Unit Weight, **γ**:	0.120	kcf
Ult. Bearing Capacity, Bc:	10.7	ksf
Angle of Friction, **Φ**:	30	deg
Cohesion, **Co**:	0.000	ksf
Passive Pressure, **Pp**:	0.000	ksf
Base Friction, **μ**:	0.30	

Material Properties		
Rebar Yield Strength, **Fy**:	60000	psi
Concrete Strength, **F'c**:	3000	psi
Concrete Unit Weight, **δc**:	0.150	kcf
Seismic Zone, **z**:	1	

Rebar Properties		
Pier Rebar Size, **Sp**:	9	
Pier Rebar Quanity, **mp**:	48	41
Pad Rebar Size, **Spad**:	8	
Pad Rebar Quanity, **mpad**:	34	15
Pier Tie Size, **St**:	4	3
Tie Quanity, **mt**:	20	9

Design Checks	Capacity/ Availability	Demand/ Limits	Check
Req'd Pier Diam.(ft)	8.5	7.916666667	**OK**
Overturning (ft-kips)	13875.74	4069.00	**29.3%**
Shear Capacity (kips)	273.06	39.00	**14.3%**
Bearing (ksf)	8.03	2.83	**35.3%**
Pad Shear - 1-way (kips)	961.25	867.80	**90.3%**
Pad Shear - 2-way (kips)	2256.51	201.05	**8.9%**
Pad Moment Capacity (k-ft)	3822.18	1854.28	**48.5%**
Pier Moment Capacity (k-ft)	7256.27	4459.00	**61.5%**

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

T-Mobile Existing Facility

Site ID: CT11027D

CT027 / Sprint Guilford

1919 Boston Post Road
Guilford, CT 06437

April 3, 2014

EBI PROJECT NUMBER: 62142254

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

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April 3, 2014

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

Re: Emissions Values for Site: **CT11027D - CT027 / Sprint Guilford**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 1919 Boston Post Road, Guilford, 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 1919 Boston Post Road, Guilford, 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 / 1980.000 MHz—to 1985.000 MHz) were considered for each sector of the proposed installation.
2) 2 UMTS channels (2110.000 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 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 **148 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 calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT11027D - CT027 / Sprint Guilford
Site Addresss	1919 Boston Post Road, Guilford, CT 06437
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	148	142	None	0	0	48.326044	0.86161	0.08616%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	148	142	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	148	142	1-5/8"	0	0	24.163022	0.430805	0.04308%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	148	142	1-5/8"	0	0	24.163022	0.430805	0.04308%
														Sector total Power Density Value:		0.172%	

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	148	142	None	0	0	48.326044	0.86161	0.08616%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	148	142	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	148	142	1-5/8"	0	0	24.163022	0.430805	0.04308%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	148	142	1-5/8"	0	0	24.163022	0.430805	0.04308%
														Sector total Power Density Value:		0.172%	

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	148	142	None	0	0	48.326044	0.86161	0.08616%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	148	142	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	148	142	1-5/8"	0	0	24.163022	0.430805	0.04308%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	148	142	1-5/8"	0	0	24.163022	0.430805	0.04308%
														Sector total Power Density Value:		0.172%	

Site Composite MPE %

Carrier	MPE %
T-Mobile	0.517%
Verizon Wireless	29.610%
AT&T	27.560%
MetroPCS	6.420%
Nextel	2.910%
Sprint	14.670%
Total Site MPE %	**81.687%**

Per New Sprint EME report dated 3/10/14 by EBI

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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 T-Mobile facility are **0.517% (0.172% 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 **81.687%** 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 within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director

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