Tuesday, December 4, 2018

Connecticut Siting Council
Executive Director / Staff Attorney
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification — 168 Katoona Lane Stamford CT, 06902 — SITE ID: CT03XC337S18.2

To Whom It May Concern:

- SAC Wireless, on behalf of Sprint, is requesting the necessary approvals from Connecticut Siting Council (CSC) our scope of work for an existing Sprint facility located at – 168 Katoona Lane Stamford, CT 06902. Scope of work is as follows:
    - Sprint is proposing to remove three (3) radios and swap three (3) existing antennas with three (3) new antennas and associated cabling. Install an equipment cabinet within Sprints existing leased space. Please see construction drawings for in-depth scope of work.
    - Site is located at the coordinates (Lat/Long): 41.05272499, -73.56281388
    - The underlying property owner of the site is American Tower Corporation
- RF Engineers have determined this minor modification is required to help increase the network for the residents and the workforce within the local jurisdiction by offering faster data transfer speeds, fewer dropped calls and higher capacity.
- CSC, please e-mail me any receipts for application fees and/or fees due after plan review, prior to permit issuance (check number 77298 for $625). Or please stamp this cover letter confirming that check number 77298 was used towards the submittal fee for this Sprint project at address: 168 Katoona Lane Stamford CT, 06902 (CT03XC337). If any questions or concerns arise, please contact me at (312) 971-7583.
- We greatly appreciate your help with this proposed Sprint facility upgrade.

CC:

City of Stamford
Mayor –
David R. Martin
Stamford Government Center
888 Washington Boulevard
10th Floor
Stamford, CT 06901

City of Stamford Zoning Officer –
David W. Woods, PhD, AICP
Stamford Government Center
888 Washington Boulevard
7th Floor
Stamford, CT 06901

City of Stamford Chief Building Official –
Bharat Gami
Stamford Government Center
888 Washington Boulevard
7th Floor
Stamford, CT 06901

Underlying Property Owner –
Maeve Carroll
American Tower Corp.
10 Presidential Way
Woburn, MA 01801

Luzmaria Guzman | Zoning & Permitting Specialist| O: (312) 858 - 3641
SAC Wireless, 540 W Madison, 9th Floor, Chicago IL 60661
matthew.spaccapaniccia@sacw.com | www.sacw.com

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postage and Fees
$

Postmark Here

Sent To: Maeve Carroll
Street and Apt. No., or PO Box No.: 10 Presidential Way
City, State, ZIP+4®: Woburn, MA 01801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Total Postage and Fees
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Sent To: David R. Martin
Street and Apt. No., or PO Box No.: 888 Washington Boulevard 10th Floor
City, State, ZIP+4®: Stamford, CT 06901

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postage and Fees
$

Postmark Here

Sent To: Bharat Gami
Street and Apt. No., or PO Box No.: 888 Washington Boulevard 7th Floor
City, State, ZIP+4®: Stamford, CT 06901

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
David R. Martin
City of Stamford Mayor
Stamford Government Center
888 Washington Boulevard 10th Floor
Stamford, CT 06901

9590 9402 2320 6225 5917 91

2. Article Number *(Transfer from service label)*
7016 1370 0001 6047 5727

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Bharat Gami
City of Stamford Chief Building Official
Stamford Government Center
888 Washington Boulevard 7th Floor
Stamford, CT 06901

9590 9402 2320 6225 5917 77

2. Article Number *(Transfer from service label)*
7016 1370 0001 6047 5703

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Maeve Carroll
American Towers Corp.
10 Presidential Way
Woburn, MA 01801

9590 9402 2320 6225 5917 60

2. Article Number *(Transfer from service label)*
7016 1370 0001 6047 5697

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION
A. Signature
X
B. Received by *(Printed Nam*
D. Is delivery address different
If YES, enter delivery addr
3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Deliver
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Deli
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)

SENDER: COMPLETE THIS SECTION
- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
David W. Woods
City of Stamford Zoning Officer
Stamford Government Center
888 Washington Boulevard 7th Floor
Stamford, CT 06901

9590 9402 2320 6225 5917 84

2. Article Number *(Transfer from service label)*
7016 1370 0001 6047 5710

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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Total Postage and Fees
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Sent To: David W. Woods
Street and Apt. No., or PO Box No.: 888 Washington Boulevard 7th Floor
City, State, ZIP+4®: Stamford, CT 06901

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

CITY OF STAMFORD, CONNECTICUT
Building Department
888 Washington Blvd.
Stamford, CT 06901

CITY OF STAMFORD, CONNECTICUT

Building Department

Inspections, Permitting & Code Compliance

Inspection Line: (203) 977-6660 (X-1581)
Questions: (203) 977-5700
Fax Number: (203) 977-4163
WebSite: www.cityofstamford.org

D & A CONSTRUCTION
7 SYCAMORE WAY
Branford, CT 06405

Building Permit
BP-2011-0578

PARCEL	
Parcel Id	000-0370
Card	N 016
Lot	A
Owner	American Towers Inc
Location	168 Catoona Lane

Building Permit Issued On: 07/28/2011

APPLICATION	
Application id	71977
Dated	7/28/2011
Applicant	D & A CONSTRUCTION
Job Category	437 Alter. to Coml. Bldg.
Use Group	UA14
Const. Type	5B
Fee Type	Commercial
Dwelling Type	Commercial Building
Units Now	
Units To Be	
Est. Cost	$9,000.00

Application for Building Permit is Approved and the permission is hereby granted to perform the following work:
ANTENNA UPGRADE (SPRINT)
At - 168 CATOONA LANE
By Contractor - D & A CONSTRUCTION License Number -

ROBERT D. DEMARCO
CHIEF BUILDING OFFICIAL

Robert D. Demarco
Chief Building Official

PAYMENT SUMMARY

Invoice#	Due Date	Fee Description	UseGrp	Rate	Est. Cost	Fee Due	Tax Due	Date Paid	Check#	Fee Paid	Tax Paid
68953	07/28/2011	Permit Fee	UA14	C16	9,000.00	144.00	2.34	07/28/2011	015288	144.00	2.34
BALANCE: $0.00					TOTAL DUE: $146.34					TOTAL PAID: $146.34	

NOTE 1. Permit is void if work is not started within six (6) months of issuance and permit will also become void if work is suspended for six (6) months after it has commenced.

2. This permit may be Revoked by the City of Stamford upon violation of any of its rules and regulations.

Sprint®

TM

PROJECT: SPRINT MASSIVE MIMO

SITE CASCADE: CT03XC337

SITE NAME: ATC TOWER

AUGMENT ID: CT03XC337S18.2

SITE ADDRESS: 168 CATOONA LANE
STAMFORD, CT 06902

SITE TYPE: 300' SELF-SUPPORT TOWER

DRAWING DESCRIPTION: FINAL CDs

Sprint
201 STATE ROUTE 17 NORTH
RUTHERFORD, NJ 07070
TEL: (201) 684-4000
FAX: (201) 684-4223

SAC WIRELESS A NOKIA™ COMPANY
540 W. MADISON ST.
9TH FLOOR
CHICAGO, IL 60661
www.sacw.com
312.895.4977

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-277-0070
FAX : 847-277-0080
AE@westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-277-0070
FAX : 847-277-0080
JBANKS@WESTCHESTERSERVICES.COM

SITE INFORMATION

PROPERTY OWNER:
AMERICAN TOWER
116 HUNTINGTON AVE, 11TH FLOOR
BOSTON, MA 02116

SITE ADDRESS:
168 CATOONA LANE
STAMFORD, CT 06902

COUNTY:
FAIRFIELD

LATITUDE (NAD83):
41° 03' 9.8" N (41.052725°)

LONGITUDE (NAD83):
73° 33' 46.1" W (-73.562814°)

PARCEL ID:
MAP: 119 BLOCK: 283 LOT: A
PARCEL ID#: 000-0370

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

CURRENT ZONING:
R-5

CONSTRUCTION TYPE:
2B

OCCUPANCY USE GROUP:
U

ZONING ADDRESS:
168 CATOONA LANE
STAMFORD, CT 06902

ELECTRIC PROVIDER:
CONNECTICUT LIGHT & POWER
(800) 246-2000

BACKHAUL PROVIDER:
AT&T (800) 246-2020

SPRINT CM:
AHMED BASHIR

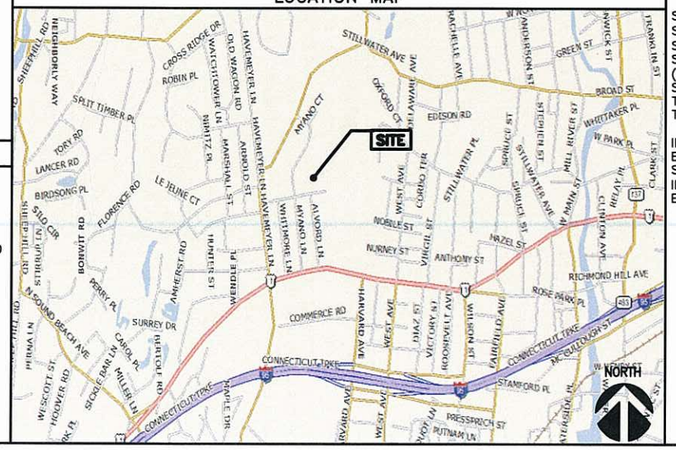
DIRECTIONS

FROM LAGUARDIA INTERNATIONAL AIRPORT, NY:

1. HEAD EAST. TAKE THE RAMP ONTO GRAND CENTRAL PKWY. TAKE EXIT 9E FOR NY-25A/NORTHERN BLVD/WHITESTONE EXPWY TOWARD INTERSTATE 678.
2. MERGE ONTO I-678 N. TAKE EXIT 15 TOWARD 20 AVE. MERGE ONTO WHITESTONE EXPY.
3. MERGE ONTO I-678 N VIA THE RAMP TO WHITESTONE BRIDGE/BRONX.
4. FOLLOW SIGNS FOR HUTCHINSON PKWY N/I-95 S/I-278 W/G WASHINGTON BRIDGE/MANHATTAN.
5. TAKE EXIT 6 FOR INTERSTATE 95 N TOWARD NEW HAVEN. EXIT 6 FOR HARVARD AVE.
6. TURN LEFT ON HARVARD AVE. TURN LEFT ON W MAIN ST. TURN RIGHT ONTO ALVORD LN.
7. CONTINUE STRAIGHT ONTO CATOONA LN.
8. DESTINATION WILL BE ON NORTH SIDE OF STREET.

AREA MAP

LOCATION MAP



PROJECT DESCRIPTION

EXISTING SPRINT EQUIPMENT TO BE REMOVED:

- REMOVE (3) EXISTING SPRINT 2.5 GHz ANTENNAS
- REMOVE (3) EXISTING SPRINT 2.5 GHz RADIOS
- REMOVE 1" CONDUIT W/(3) ETHERNET & FIBER CABLES

NEW SPRINT EQUIPMENT TO BE INSTALLED:

- INSTALL (3) NEW 2.5 GHz AIRSCALE MAA 64T64R 128AE B41 120W AAHC ANTENNAS
- INSTALL (3) NEW 0.82" HYBRID FIBER TRUNK CABLES, (9) NEW FIBER JUMPER CABLES AND (3) NEW SOOW POWER JUMPER CABLES (PER SPRINT GUIDELINES)
- INSTALL (1) NEW mMIMO JUNCTION BOX
- INSTALL (1) NEW SPRINT 9712U CABINET
- INSTALL (2) NEW mMIMO AIRSCALE BBU IN NEW 9712U CABINET
- INSTALL (1) NEW mMIMO AIRSCALE BBU IN EXISTING MMBTS CABINET

APPLICABLE CODES

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT OF THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

- 2015 INTERNATIONAL BUILDING CODE
- 2015 MECHANICAL CODE
- NFPA 780-LIGHTNING PROTECTION CODE
- 2015 UNIFORM BUILDING CODE
- 2014 NATIONAL ELECTRICAL CODE
- 2016 CONNECTICUT STATE BUILDING CODE
- 2016 CONNECTICUT STATE FIRE SAFETY CODE
- NFPA 70-2014 EDITION AS AMENDED BY THE STATE OF CONNECTICUT

SUBCONTRACTOR'S WORK SHALL COMPLY WITH LATEST EDITION OF THE FOLLOWING STANDARDS. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81 GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT.

811
Know what's **below.**
Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG
TOLL FREE: 1-800-922-4455 OR
www.cbyd.com
CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

DRAWING INDEX

SHEET NO:	SHEET TITLE	REV
T-1	TITLE SHEET	1
T-2	SPRINT CONSTRUCTION SPECIFICATIONS (REFERENCE)	1
T-3	SPRINT SPECIFICATIONS	1
C-1	PARCEL MAP	1
C-1.1	SITE PLANS	1
C-2	TOWER ELEVATION - SOUTHEAST	1
C-3	ANTENNA LAYOUTS	1
C-4	EQUIPMENT DETAILS	1
C-5	EQUIPMENT DETAILS	1
C-6	IMPLEMENTATION DETAIL	1
C-7	ELECTRICAL DETAILS	1
C-8	GROUNDING DETAILS	1

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

APPROVALS

SIGNER	SIGNATURE	DATE
SPRINT CONSTRUCTION MANAGER		
SPRINT OPERATIONS MANAGER		
SPRINT RF ENGINEER		
LANDLORD		

NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT
JOHN M. BANKS
REGISTERED ARCHITECT
NO SEAL
DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

SECTION 01 100 – SCOPE OF WORK

THE WORK:

THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE CONSTRUCTION DRAWINGS AND ASSOCIATED OUTLINE SPECIFICATIONS AND THE SITE ACTION PLAN, DESCRIBE THE WORK TO BE PERFORMED BY THIS CONSTRUCTION CONTRACTOR (SUPPLIER).

PRECEDENCE:

SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

SITE FAMILIARITY:

CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

ON–SITE SUPERVISION:

THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

DRAWINGS REQUIRED AT JOBSITE:

THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

1. THE JOBSITE DRAWINGS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE UPLOADED TO SPRINTVISION UNDER THE HEADING OF "AS–BUILT" DRAWINGS.
2. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

FURNISHED MATERIALS:

COMPANY FURNISHED MATERIALS AND EQUIPMENT TO BE INSTALLED BY THE CONTRACTOR IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

RECEIPT OF MATERIAL AND EQUIPMENT:

1. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
   A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
   B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
   C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
   D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY–FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
   E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
   F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF–LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

DELIVERABLES:

1. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.
2. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

SECTION 01 300 – CELL SITE CONSTRUCTION

NOTICE TO PROCEED (NTP):

1. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S ISSUANCE OF THE WORK ORDER/PO.
2. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

GENERAL REQUIREMENTS FOR CONSTRUCTION:

1. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
2. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED AND "BROOM CLEANED" AND CLEAR OF DEBRIS.
3. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
   A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
   B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
4. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.

SECTION 01 400 – TESTS, INSPECTIONS, SUBMITTALS, AND PROJECT CLOSEOUT

TESTS AND INSPECTIONS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
2. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. COAX SWEEPS AND FIBER TESTS.
   B. POST CONSTRUCTION HEIGHT VERIFICATION, AZIMUTH AND DOWN TILT USING ELECTRONIC COMMERCIAL MADE–FOR–THE–PURPOSE ANTENNA ALIGNMENT TOOL SUCH AS SUNSIGHT INSTRUMENTS ANTENNA ALIGNMENT TOOL OR SPRINT APPROVED EQUAL.
   C. CONCRETE BREAK TESTS.
   D. SITE RESISTANCE TO EARTH TEST.
   E. STRUCTURAL BACKFILL COMPACTION TESTS.
   F. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
   G. ADDITIONAL TESTING AS REQUIRED ELSEWHERE IN THIS SPECIFICATION.

SUBMITTALS:

1. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.
2. UPLOAD THE FOLLOWING TO SPRINTVISION AS APPLICABLE INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. CONCRETE MIX–DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
   B. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
   C. CHEMICAL GROUNDING SYSTEM.
   D. REINFORCEMENT CERTIFICATIONS.
   E. STRUCTURAL BACKFILL TEST RESULTS.
   F. SWEEP AND FIBER TESTS.
   G. ANTENNA AZIMUTH AND DOWN–TILT VERIFICATION.
   H. POST CONSTRUCTION HEIGHT VERIFICATION.
   I. ADDITIONAL SUBMITTALS MAY BE REQUIRED FOR SPECIAL CONSTRUCTION OR MINOR MATERIALS.
3. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

SECTION 11 700 – ANTENNA ASSEMBLY, REMOTE RADIO UNITS AND CABLE INSTALLATION

SUMMARY:

THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRU'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE AND WAVEGUIDE. ALL COAXIAL CABLE AND ASSOCIATED HARDWARE SHALL BE INSTALLED BY OR UNDER THE DIRECT SUPERVISION OF MANUFACTURER TRAINED AND CERTIFIED PERSONNEL.

ANTENNAS AND REMOTE RADIO UNITS (RRU):

INSTALL EQUIPMENT FURNISHED BY COMPANY. REFER TO THE DRAWINGS FOR TYPES AND QUANTITIES OF PANEL AND MICROWAVE ANTENNAS AND RRUS TO BE INSTALLED.

MISCELLANEOUS RF EQUIPMENT:

INSTALL COMBINERS, FILTERS, COUPLERS, AND AMPLIFIERS, FURNISHED BY COMPANY, PER MANUFACTURERS' RECOMMENDATIONS.

JUMPERS AND CONNECTORS:

FURNISH AND INSTALL 1/2" COAX JUMPER CABLES BETWEEN THE RRU'S AND ANTENNAS. JUMPERS SHALL BE TYPE LDF 4, FLC 12–50, CR 540, OR FXL 540. JUMPERS BETWEEN THE RRU'S AND ANTENNAS OR TOWER TOP AMPLIFIERS SHALL CONSIST OF 1/2 INCH FOAM DIELECTRIC, OUTDOOR RATED COAXIAL CABLE. SUPER–FLEX CABLES AND JUMPERS MAY BE USED ON A LIMITED BASIS WHERE NEEDED AND ONLY IN ENCLOSED LOCATIONS. DO NOT USE SUPER–FLEX OUTDOORS.

HYBRID AND COAXIAL CABLE:

INSTALL HYBRID DC/FIBER CABLE AND COAXIAL CABLES, INCLUDING CONNECTORS, JUMPERS, AND CABLE TERMINATING DEVICES FURNISHED BY COMPANY. CABLE SHALL BE DELIVERED TO THE JOB SITE OR TO THE COMPANY'S DESIGNATED LOCATION. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

RF DATA SHEETS:

RF DATA INFORMATION ON THE DRAWINGS WILL PROVIDE A COMPLETE LIST OF EQUIPMENT FURNISHED BY COMPANY TO BE INSTALLED BY CONTRACTOR.

REMOTE ELECTRICAL TILT (RET) CABLES:

FURNISH INSTALL RET CABLE AND CONNECTORS BETWEEN RRU AND ANTENNAS. CABLE SHALL BE AS REQUIRED BY MANUFACTURER.

ANTENNA MOUNTS:

1. FURNISH AND INSTALL ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.
2. EXCEPT AS OTHERWISE REQUIRED, BALLAST MOUNTS FOR ROOFTOP APPLICATIONS SHALL BE VALMONT/MICROFLECT NO. 31–99540 (12 FOOT SEPARATION) OR SPRINT APPROVED EQUAL.
3. FACADE–MOUNTED ANTENNAS SHALL COMPLY WITH SITE–SPECIFIC MOUNTING REQUIREMENTS INDICATED ON THE DRAWINGS.

HYBRID AND COAXIAL CABLE INSTALLATION:

1. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL COAXIAL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. THE ROUTING OF THE CABLES SHALL BE CHECKED FOR INTERFERENCE WITH OTHER TOWER APPURTENANCES BEFORE INSTALLATION AND VERTICAL WAVEGUIDE/COAX HANGERS SHALL BE INSTALLED ON THE TOWER WAVEGUIDE LADDER.
3. CABLES SHALL BE HOISTED, CONNECTED TO THE RRU/ANTENNA FEED, SECURED TO THE HANGERS, AND ORIENTED TO PROVIDE THE CORRECT ENTRANCE PLANE TO THE EQUIPMENT CABINET. THE FIELD TERMINATED CABLES SHALL THEN BE CUT TO THE APPROPRIATE LENGTH TO REACH THE EQUIPMENT. FOR FACTORY TERMINATED CABLES, COIL ANY EXCESS IN A HORIZONTAL PLANE UNDER THE ICE BRIDGE OR GROUND PLATFORM AND SECURE TO MINIMIZE VANDALISM RISK.
4. CABLES SHALL BE GROUNDED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND MANUFACTURER'S REQUIREMENTS.
5. CABLES SHALL BE ROUTED IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS. IF POSSIBLE, CABLES SHALL BE ROUTED ON THE INSIDE OF MONOPOLES OR DOWN THE WAVEGUIDE LADDER IN A MANNER THAT WILL PREVENT OBSTRUCTION OF THE CLIMBING LADDER. ADDITIONALLY, THE CABLES SHALL BE POSITIONED IN THE BEST POSSIBLE LOCATION TO PROTECT IT FROM DAMAGE. THE BENDING RADIUS OF THE CABLES HALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS.
6. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION. THE COMPANY WILL FURNISH TO THE CONTRACTOR PORT ASSIGNMENTS, IF APPLICABLE, PRIOR TO WAVEGUIDE INSTALLATION.
   A. WAVEGUIDE LADDER (LATTICE TOWERS ONLY): WAVEGUIDE LADDERS SHALL BE USED TO SUPPORT ALL COAXIAL CABLE, MICROWAVE WAVEGUIDE CABLE AND ANY BASEBAND CABLE ON THE TOWER). ONE LADDER, 18 CABLES WIDE, SHALL BE MOUNTED ON THE TOWER PER THE TOWER STRUCTURAL REQUIREMENTS. THE RUNGS ON THE WAVEGUIDE LADDERS SHALL BE SPACED A MAXIMUM OF 4 FEET APART.
   B. ICE BRIDGE: AS SHOWN ON THE DRAWINGS, PROVIDE AN ICE BRIDGE BETWEEN THE TOWER AND THE SHELTER OR GROUND CABINETS TO SUPPORT ALL CABLING. USE STAINLESS STEEL SNAP–IN TYPE HANGERS OR COAX BLOCKS WITH GROMMETS TO SUPPORT CABLES ON THE ICE BRIDGE. PROVIDE A DRIP LOOP IN ALL CABLING BETWEEN THE BASE OF THE TOWER AND THE ICE BRIDGE.
   C. FASTENING CABLES: CABLES SHALL BE RAISED ON THE TOWER USING PROPERLY SIZED

SPLIT TYPE, LACE–UP HOISTING SOCKS ATTACHED TO EACH CABLE EVERY 200FT EXCEPT AS OTHERWISE REQUIRED BY MANUFACTURER. INSIDE MONOPOLES, ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE TOWER USING A HOISTING SOCK AT THE TOP OF THE TOWER. FOR MONOPOLE TOWERS WITH SUPPORTING MEANS AT MIDPOINT, PROVIDE ADDITIONAL HOISTING SOCK. ON LATTICE TOWERS OR FOR CABLES MOUNTED ON THE OUTSIDE OF MONOPOLES, USE STAINLESS STEEL (NON MAGNETIC) SNAP IN TYPE CABLE HANGERS OR COAX BLOCKS WITH GROMMETS AT EACH WAVE GUIDE LADDER RUNG. DO NOT DRILL HOLES IN TOWER MEMBERS, USE ANGLE MEMBER ADAPTERS AND STAINLESS STEEL BUTTERFLY CLIPS, TO ATTACH CABLING TO TOWER. MAKE SURE THAT THERE IS NO STRAIN ON ANY CABLE CONNECTOR DUE TO THE CABLE WEIGHT. CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN A NEAT AND ORDERLY MANNER. AVOID TWISTING AND CROSSOVERS IN THE BUILDING, ALONG THE TOWER FACE, AND WAVEGUIDE RACEWAYS. EXCEPT INSIDE MONOPOLES, SECURE CABLE AT MAXIMUM SPACING OF 36" ON CENTER HORIZONTALLY AND 48" ON CENTER VERTICALLY, EXCEPT AS OTHERWISE REQUIRED BY CABLE MANUFACTURER MAKING SURE THAT THE CABLE WEIGHT IS EQUALLY DISTRIBUTED AND NO STRAIN IS PLACED ON CONNECTORS OR ANTENNAS. HOIST CABLE USING PROPER HOISTING GRIPS. HOIST SLOWLY AND CAREFULLY. PREVENT KINKING AND SNAGS WHEN AROUND TOWER MEMBERS. BEND CABLE SLOWLY AT THE MAXIMUM PRACTICAL BEND RADIUS CONSISTENT WITH GOOD INSTALLATION PRACTICE. AVOID USING MINIMUM CABLE BENDS.

a. SUPPORT INDIVIDUAL FIBER AND DC POWER CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA) AT TOWER TOP, INSIDE MMBTS, AND AT ANY INTERMEDIATE FIBER/DC DISTRIBUTION BOXES.

b. SUPPORT FIBER BUNDLES USING 1/2" VELCRO STRAPS OF THE REQUIRED LENGTH ON 18" CENTERS. VELCRO STRAPS SHALL BE OIL, UV AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR EQUAL.

c. SUPPORT DC BUNDLES ON 18" CENTERS WITH ZIP–TIES OF ADEQUATE LENGTH. ZIP–TIES SHALL BE UV STABILIZED, BLACK NYLON WITH A TENSILE STRENGTH OF 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.

D. BENDING RADIUS: CABLES SHALL NOT EXCEED THE MINIMUM BENDING RADIUS AS DETERMINED BY THE CABLE MANUFACTURER.

E. TERMINATION AT SHELTER AND ENTRY PLATE:

a. ALL CABLING SHALL ENTER THE BUILDING THROUGH THE WAVEGUIDE ENTRY PLATE AND BE PROPERLY WEATHER SEALED WITH A CABLE BOOT FABRICATED FOR THE SIZE OF THE CABLE OR WITH ROXTEC BLOCKS. CABLE BOOTS ARE NOT TO BE CUT TO FIT IN THE FIELD. COAXIAL CABLES SHALL BE TERMINATED WITHIN 18 INCHES INSIDE THE SHELTER AND FITTED WITH A SURGE SUPPRESSOR.

b. CABLE PORT ASSIGNMENTS FOR SHELTER SITES: CABLES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND CONSISTENT WITH TS–0200.

F. GROUNDING OF CABLES: ALL CABLES SHALL BE GROUNDED AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.

G. CABLE CONNECTIONS:

a. CLEAN FIBER CONNECTORS AS REQUIRED IN EL–0568.

b. FOR FIELD FABRICATIONS USE ONLY CABLE CONNECTORS RECOMMENDED BY THE CABLE MANUFACTURER AND REQUIRED BY THE EQUIPMENT BEING CONNECTED.

c. EXCEPT AS OTHERWISE REQUIRED, CONNECTORS FOR ALL MAIN STATION ANTENNA CABLES SHALL BE 7/16 DIN.

d. d.EXCEPT AS OTHERWISE REQUIRED, CONNECTORS FOR GPS ANTENNAS SHALL BE TYPE N.

e. CONNECTORS FOR MICROWAVE ANTENNAS, UNLESS OTHERWISE NOTED, SHALL BE TYPE N.

f. INSTALL AND TIGHTEN CONNECTORS PER MANUFACTURER'S INSTRUCTIONS.

H. COLOR CODING OF CABLES: COMPLY WITH TS–0200 AND THE RF DATA SHEETS ON THE DRAWINGS.

I. ALPHA–NUMERIC LABELING OF CABLES: COMPLY WITH EN–2012–001.

WEATHERPROOFING CONNECTORS AND GROUND KITS:

1. ALL COAX CONNECTORS, FIBER CONNECTORS AND INSTALLED CABLE GROUND KITS SHALL BE WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. SPRINTS PREFERENCE IS THE USE OF MATERIAL CALLED OUT IN ITEM 1 BELOW. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.

A. WEATHER PROOFING BOOTS FROM APPROVED VENDORS SUCH AS 3M, AMPHENOL, RFS, FCT MOLEX, JMA AND COMMSCOPE. SUBSTITUTIONS WILL NOT BE ALLOWED.

B. COLD SHRINK: ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CXS SERIES OR EQUAL.

C. SELF–AMALGAMATING TAPE: CLEAN SURFACES. APPLY A DOUBLE WRAP OF SELF–AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF–AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF–AMALGAMATING TAPE.

D. HEAT SHRINK TUBING REQUIRING OPEN FLAME ON THE SITE IS NOT ACCEPTABLE.

WEATHERPROOFING CONNECTORS AND GROUND KITS:

SUMMARY:

1. THIS SECTION SPECIFIES MMBS AND RELATED EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR.
2. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND LABOR REQUIRED FOR INSTALLATION OF THE MMBS CABINET AND RELATED EQUIPMENT.
3. ALL WORK PROVIDED BY CONTRACTOR SHALL BE IN COMPLIANCE WITH THE CONSTRUCTION DRAWINGS AND DETAILS, SITE SPECIFIC CONTRACT DOCUMENTS, AND THESE SPECIFICATIONS.

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NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT · JOHN M. BANKS · LICENSED ARCHITECT · NO. 10437 · SEAL
DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
SPRINT CONSTRUCTION SPECIFICATIONS

SHEET NUMBER
T-2

SECTION 26 100 – BASIC ELECTRICAL REQUIREMENTS

SUMMARY:
THIS SECTION SPECIFIES BASIC ELECTRICAL REQUIREMENTS FOR SYSTEMS AND COMPONENTS.

QUALITY ASSURANCE:
1. ALL EQUIPMENT FURNISHED BY DIVISION 26 SHALL CARRY UL LABELS AND LISTINGS WHERE SUCH LABELS AND LISTINGS ARE AVAILABLE IN THE INDUSTRY.
2. MANUFACTURERS OF EQUIPMENT SHALL HAVE A MINIMUM OF THREE YEARS' EXPERIENCE WITH THEIR EQUIPMENT INSTALLED AND OPERATING IN THE FIELD IN A USE SIMILAR TO THE PROPOSED USE FOR THIS PROJECT.

SUPPORTING DEVICES:
1. FURNISH AND INSTALL STEEL SUPPORTS AND FRAMES CONNECTED WITH WELDS AND/OR MACHINE BOLTS WITH WOOD BACK PANELS FOR MOUNTING ALL ELECTRICAL EQUIPMENT INCLUDING PANEL BOARDS, SWITCHES, STARTERS, CONTACTORS, AND CONTROLS AS REQUIRED AND AS APPROVED BY THE ENGINEER.
2. FURNISH AND INSTALL ANGLE IRON FRAMES BOLTED TO FLOOR OR WALL FOR MOUNTING ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER DIVISIONS TO BE INSTALLED BY DIVISION 26 WHERE NECESSARY.
3. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
   a. ALLIED TUBE AND CONDUIT
   b. B–LINE SYSTEMS
   c. UNISTRUT DIVERSIFIED PRODUCTS
   d. THOMAS & BETTS
4. COATINGS: SUPPORTS, SUPPORT HARDWARE, AND FASTENERS SHALL BE PROTECTED WITH ZINC COATING OR WITH TREATMENT OF EQUIVALENT CORROSION RESISTANCE USING APPROVED ALTERNATIVE TREATMENT, FINISH, OR INHERENT MATERIAL CHARACTERISTICS. PRODUCTS FOR USE OUTDOORS SHALL BE HOT–DIP GALVANIZED.
5. RACEWAY SUPPORTS: CLEVIS HANGERS, RISER CLAMPS, CONDUIT STRAPS, THREADED C–CLAMPS WITH RETAINERS, CEILING TRAPEZE HANGERS, WALL BRACKETS, AND SPRING STEEL CLAMPS.
6. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:
   a. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
   b. TOGGLE BOLTS: ALL STEEL SPRINGHEAD TYPE.
   c. POWER–DRIVEN THREADED STUDS: HEAT–TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
   d. FASTEN BY MEANS OF WOOD SCREWS ON WOOD,
   e. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
   f. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING–TENSION CLAMPS ON STEEL.
   g. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
   h. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
   i. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

SUPPORTING DEVICES:

1. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.
2. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.
3. RACEWAY SUPPORTS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS FOR SELECTION AND INSTALLATION OF SUPPORTS.
4. THE STRENGTH OF EACH SUPPORT SHALL BE ADEQUATE TO CARRY THE PRESENT AND FUTURE LOAD MULTIPLIED BY A SAFETY FACTOR OF AT LEAST FOUR. WHERE THIS DETERMINATION RESULTS IN A SAFETY ALLOWANCE OF LESS THAN 200 POUNDS, PROVIDE ADDITIONAL STRENGTH UNTIL THERE IS A MINIMUM OF 200 POUNDS SAFETY ALLOWANCE IN THE STRENGTH OF EACH SUPPORT.
5. INSTALL INDIVIDUAL AND MULTIPLE (TRAPEZE) RACEWAY HANGERS AND RISER CLAMPS AS NECESSARY TO SUPPORT THE RACEWAYS. PROVIDE U–BOLTS, CLAMPS, ATTACHMENTS, AND OTHER HARDWARE NECESSARY FOR HANGER ASSEMBLY AND FOR SECURING HANGER RODS AND CONDUITS.
6. SUPPORT PARALLEL RUNS OF HORIZONTAL RACEWAYS TOGETHER ON TRAPEZE–TYPE HANGERS.
7. SUPPORT MISCELLANEOUS ELECTRICAL COMPONENTS AS REQUIRED TO PRODUCE THE SAME STRUCTURAL SAFETY FACTORS AS SPECIFIED FOR RACEWAY SUPPORTS. INSTALL METAL CHANNEL RACKS FOR MOUNTING CABINETS, PANEL BOARDS, DISCONNECTS, CONTROL ENCLOSURES, PULL BOXES, JUNCTION BOXES, TRANSFORMERS AND OTHER DEVICES.
8. IN OPEN OVERHEAD SPACES, CAST BOXES THREADED TO RACEWAYS NEED NOT BE SUPPORTED SEPARATELY EXCEPT WHERE USED FOR FIXTURE SUPPORT. SUPPORT SHEET METAL BOXES DIRECTLY FROM THE BUILDING STRUCTURE OR BY BAR HANGERS. WHERE BAR HANGERS ARE USED, ATTACH THE BAR TO RACEWAYS ON OPPOSITE SIDES OF THE BOX AND SUPPORT THE RACEWAY WITH A LISTED TYPE OF FASTENER NOT MORE THAN 24" (600 MM) FROM THE BOX.
9. INSTALL CONDUIT SEALING FITTINGS FOR CONDUIT PENETRATIONS OF CONCRETE WALL EXTERIOR OR BELOW GRADE AS SPECIFIED OR REQUIRED BY CODE.
10. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:
    a. FASTEN BY MEANS OF WOOD SCREWS ON WOOD,
    b. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
    c. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
    d. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING–TENSION CLAMPS ON STEEL.
    e. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
    f. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
    g. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.
11. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.
12. USE VIBRATION AND SHOCK–RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:
1. DURING TRENCH BACKFILLING, FOR EXTERIOR UNDERGROUND POWER, CONTROLS, SIGNAL, AND COMMUNICATIONS LINES, INSTALL CONTINUOUS UNDERGROUND PLASTIC LINE MARKER, LOCATED DIRECTLY ABOVE THE LINE AT A BURIAL DEPTH OF 2 FEET BELOW FINISHED GRADE. INSTALL TWO LINE MARKERS 6" IN FROM THE EDGE OF EACH TRENCH WHERE THE TRENCH EXCEEDS 16" IN WIDTH. INSTALL LINE MARKERS FOR ALL UNDERGROUND ELECTRICAL TRENCHES REGARDLESS OF VOLTAGE OR MATERIAL.
2. PROVIDE TYPED CIRCUIT SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF PANEL BOARDS.
3. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANEL BOARD.

SECTION 26 200 – ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:
1. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS, AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW–C–581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND AND SHALL BE GROUNDED PER CURRENT NEC SPECIFICATIONS. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER, WHO SHALL HAVE A MINIMUM OF FIVE YEARS' EXPERIENCE PRODUCING THE MATERIAL.
2. EXTERIOR UNDERGROUND CONDUIT SHALL BE POLYVINYLCHLORIDE (PVC) SCHEDULE 80 OR DIRECT BURIAL RATED. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR EQUAL. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER, WHO SHALL HAVE A MINIMUM OF FIVE YEARS' EXPERIENCE PRODUCING THE MATERIAL.
3. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN CONCEALED SPACES ABOVE CEILINGS OR WITHIN WALLS AND EXPOSED IN SPRINT SHELTERS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO–GALVANIZED OR HOT–DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW–C–563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR EQUAL.
4. FLEXIBLE CONDUIT IS NOT INTENDED TO FULLY REPLACE RIGID CONDUIT IN A CIRCUIT. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) IS ONLY PERMISSIBLE FOR MAKING FINAL CONNECTIONS TO CABINETS AND ENCLOSURES. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6 FEET IN LENGTH. THE LENGTH OF THE FLEXIBLE CONDUIT CAN BE BROKEN UP INTO TWO 3 FOOT LENGTHS WITH 3 FEET AT EITHER END. LIQUIDTIGHT FLEXIBLE NON–METALLIC CONDUIT (LFNC) IS PERMISSIBLE ONLY FOR DEDICATED GROUNDING CONDUITS SUCH AS GROUNDING CONNECTIONS TO TOWERS, STEEL STRUCTURES, GROUND BARS, CABINET GROUND POINTS, ETC. FLEXIBLE CONDUITS SHALL NOT BE USED WHERE SUBJECT TO MECHANICAL DAMAGE AND SHALL BE SUPPORTED AS REQUIRED BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE (HYSPAN) OR UNIVERSAL METAL HOSE, SOUTHWIRE, OR EQUAL. LIQUIDTIGHT FLEXIBLE CONDUIT (LMFC) SHALL BE UL LISTED, OIL RESISTANT, SUNLIGHT RESISTANT, WATERPROOF, AND TEMPERATURE RATED –30C TO +80C.
5. CONDUITS MUST BE SUPPORTED WITHIN 12" OF THE CONNECTION TO CABINETS AND ENCLOSURES TO REDUCE THE STRAIN ON FITTINGS. CONDUITS MUST BE ADEQUATELY SUPPORTED AT 24" CENTERS FOR HORIZONTAL RUNS AND 36" CENTERS FOR VERTICAL RUNS AND MUST BE PROTECTED FROM PHYSICAL DAMAGE. CONDUITS MUST NOT BE ROUTED OVER PLATFORMS AND SLABS AS THIS CREATES A WORKER TRIP HAZARD AND HAS RESULTED IN OSHA REPORTABLE ACCIDENTS, WORKER INJURIES, AND EXCESSIVE LIABILITY FOR SPRINT. CONDUITS MUST ALSO NOT BE IS INSTALLED WITHIN EQUIPMENT AND PERSONNEL INGRESS OR EGRESS PATHWAYS AND IS NOT PERMISSIBLE WITHIN THE OSHA REQUIRED WORKING SPACES IN FRONT OF OR BEHIND CABINETS AND ENCLOSURES.
6. ALL FITTINGS USED FOR CONNECTION TO CABINETS AND ENCLOSURES MUST BE METALLIC AND INCLUDE PLASTIC BUSHINGS TO PREVENT CABLE JACKET ABRASION.
7. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH.

BOXES AND COVERS:
1. PULL AND JUNCTION BOXES SHALL BE SIZED IN ACCORDANCE WITH NEC REQUIREMENTS AND SHALL BE INSTALLED SO THAT THE CONDUCTORS IN THEM ARE ACCESSIBLE WITHOUT REMOVING ANY PART OF THE STRUCTURE.
2. INTERIOR SWITCH AND OUTLET BOXES FLUSH MOUNTED IN FINISHED AREAS SHALL BE CODE GAUGE PRESSED PLATED STEEL, MIDLAND ROSS OR APPROVED EQUAL, SUITABLE FOR THE DEVICE TO BE INSTALLED. COVERS SHALL BE AS HEREINAFTER SPECIFIED IN PARAGRAPH "DEVICE PLATES IN FINISHED AREAS."
3. DEVICE AND PULL BOXES SURFACE–MOUNTED ABOVE ACCESSIBLE CEILINGS AND WITHIN UNFINISHED ENCLOSED MECHANICAL ROOMS SHALL BE AS SPECIFIED ABOVE SIZED FOR THE CONDUCTORS WITHIN AND SHALL HAVE PRESSED PLATED STEEL SCREW ATTACHED COVERS.
4. INTERIOR SWITCH, AND OUTLET BOXES SURFACE MOUNTED IN UNFINISHED INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, THREADED, SUITABLE FOR THE DEVICE TO BE INSTALLED, CROUSE–HINDS FS/FD SERIES OR APPROVED EQUAL. COVERS SHALL BE SCREW ATTACHED PLATED IRON ALLOY SUITABLE FOR THE BOX AND DEVICE. SWITCH PLATE COVERS SHALL BE "GUARDED" STYLE.
5. PULL AND JUNCTION BOXES, ABOVE GRADE, EXTERIOR TO THE BUILDING AND IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, THREADED, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE–HINDS WAB SERIES OR EQUAL.
6. PULL BOXES IN EARTH SHALL BE FIBERGLASS OR COMPOSITE, OPEN BOTTOM COFFINS, INSTALLED IN EARTH ON GRAVEL BEDS AS INDICATED ON THE DRAWINGS AND RATED FOR PEDESTRIAN OR VEHICULAR TRAFFIC AS REQUIRED.
7. CONDUIT OUTLET BODIES AND CONDULETS SHALL BE PLATED, THREADED, CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE–HINDS FORM 8 OR EQUAL.
8. EXTERIOR SWITCH AND OUTLET BOXES SHALL BE RECESSED MOUNTED EXCEPT AS NOTED, CAST ALUMINUM OR PLATED CAST ALLOY WITH WET LOCATION, CROUSE–HINDS SERIES WLRD COVERS, OR EQUAL. MASONRY BOXES MOUNTED RECESSED IN EXTERIOR WALL SHALL BE FURNISHED WITH WEATHERPROOF COVERS.
9. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE–HINDS, COOPER, ADALET, APPLETON, O–Z GEDNEY, OR RACO.

GROUNDING:
1. ELECTRICAL SERVICES, CIRCUITS AND SYSTEMS, ENCLOSURES AND EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. GROUNDING SHALL BE PROVIDED AS INDICATED FOR FEEDER, BRANCH CIRCUIT, CONTROL, AND INSTRUMENT CIRCUITS.
3. EQUIPMENT GROUNDING CONDUCTOR: FURNISH AND INSTALL A SEPARATE INSULATED GREEN WIRE GROUNDING CONDUCTOR IN CONDUIT WITH CIRCUIT CONDUCTORS FOR ALL FEEDERS AND BRANCH CIRCUITS.
4. SEPARATELY DERIVED AC SYSTEMS THAT ARE REQUIRED TO BE GROUNDED BY THE NEC SHALL BE GROUNDED IN ACCORDANCE WITH PARAGRAPH 250–26 OF THE NEC.
5. FURNISH AND INSTALL INSULATED COPPER GROUND CONDUCTORS IN CONDUIT FROM MAIN ELECTRICAL SERVICE EQUIPMENT OR ELECTRICAL ROOM GROUND BUS AND CONNECT TO MAIN METALLIC WATER SERVICE ENTRANCE (IF AVAILABLE) WITH GROUND CLAMPS. CONNECT GROUND CONDUCTOR TO THE STREET SIDE OF WATER MAIN WHERE A DIELECTRIC MAIN WATER FITTING IS INSTALLED.
6. FURNISH AND INSTALL GROUND FAULT PROTECTION WHERE REQUIRED BY CODE AND AS REQUIRED BY THE SPECIFICATIONS AND DRAWINGS. INSTALLATION OF GROUND FAULT PROTECTION SHALL BE IN ACCORDANCE WITH NEC.
7. FURNISH AND INSTALL SUPPLEMENTAL CELL SITE GROUNDING SYSTEMS AS INDICATED ON THE DRAWINGS.

EXISTING STRUCTURE:
1. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE–ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.
2. EXISTING EQUIPMENT THAT IS NOT TO BE REUSED SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE COMPANY IF COMPANY WISHES TO RETAIN OWNERSHIP OF SAME. IF NOT, EQUIPMENT SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
3. WHEN EXISTING CONDUIT, WIRING OR ANY OUTLET, RECEPTACLE, SWITCH, ETC., THAT IS TO BE UTILIZED IN THE COMPLETED PROJECT CONFLICTS WITH CONSTRUCTION, IT SHALL BE RELOCATED AND RECONNECTED TO MAINTAIN THE DESIRED SERVICE.
4. THIS CONTRACTOR SHALL GIVE FULL COOPERATION IN THE SCHEDULING AND PROCEDURE OF WORK. SERVICE SHALL NOT BE INTERRUPTED WITHOUT APPROVAL OF THE COMPANY.

CONDUIT AND CONDUCTOR INSTALLATION:
1. CONDUIT SHALL BE SIZED AS REQUIRED BY NEC AND SHALL BE INSTALLED CONTINUOUS AND COMPLETE FROM OUTLET TO OUTLET, PANELS AND JUNCTION BOXES.
   a. IN ORDER TO CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE

PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES IN EXPOSED LOCATIONS EXCEPT AS OTHERWISE INDICATED, AND IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE.
   b. OTHER CHANGES IN DIRECTION SHALL BE MADE WITH TRADE ELBOWS, KEEPING CONDUITS

GROUPED IN TIGHT ENVELOPES FOLLOWING THE LINES OF THE STRUCTURE AND MAINTAINING CLOSE PROXIMITY TO THE STRUCTURE EXCEPT AS OTHERWISE INDICATED, AND IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE.
   c. ROUTE CONDUITS ACCORDING TO THE ENVELOPES, AREAS, DETAILS AND SECTIONS, IF

ANY, IDENTIFIED ON THE DRAWINGS.
2. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CONDUITS SHALL BE CONCEALED IN FINISHED AREAS. CONDUIT SHALL BE EXPOSED IN UNFINISHED AREAS.
3. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. CONDUIT SHALL BE INSTALLED AS REQUIRED BY THE DESIGN OF THE STRUCTURE AND PLACED IN CONCRETE FORMS SO AS NOT TO INTERFERE WITH REINFORCING OR STRENGTH OF SLABS, JOISTS OR BEAMS. CONDUIT SHALL CLEAR ALL PIPES AND DUCTS AND DEPRESSIONS IN FLOORS. PERMISSION OF ENGINEER SHALL BE OBTAINED AS TO LOCATION OF CONDUIT IN REINFORCED CONCRETE SLABS, JOISTS AND BEAMS.
4. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING.
5. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
6. EMT CONDUITS (IF ALLOWED) SHALL HAVE APPROVED EMT THREADED TYPE BOX CONNECTORS AND COUPLINGS. SET SCREW CONNECTORS AND COUPLINGS SHALL NOT BE ACCEPTABLE.
7. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE. WHERE MORE THAN ONE CONDUCTOR IS INSTALLED IN THE SAME CONDUIT ALL CONDUCTORS WITHIN THE CONDUIT SHALL BE PULLED SIMULTANEOUSLY. PULL SHALL NOT DEFORM CONDUCTORS. APPROVED TYPE LUBRICANT MAY BE USED IN PULLING CONDUCTORS WHERE REQUIRED.
8. SPLICES AND TAPS SHALL BE KEPT TO A MINIMUM AND MADE IN ACCORDANCE WITH THE NEC.
9. WHERE CONDUIT CROSSES AN EXPANSION JOINT, AN EXPANSION AND DEFLECTION FITTING SHALL BE INSTALLED IN THE CONDUIT.
10. PROVIDE "MULE TAPE" PULL STRING IN ALL EMPTY CONDUITS.
11. PVC CONDUITS SHALL BE INSTALLED USING FITTINGS, SOLVENTS, GLUES, AND METHODOLOGY AS RECOMMENDED BY THE MANUFACTURER.
12. PROVIDE ADEQUATE LENGTH OF CONDUCTORS WITHIN ELECTRICAL ENCLOSURES AND TRAIN THE CONDUCTORS TO TERMINAL POINTS WITH NO EXCESS. DO NOT BEND CONDUCTORS SHARPER THAN EIGHT TIMES THE CABLE OUTSIDE DIAMETER. MAKE TERMINATIONS SO THERE IS NO BARE CONDUCTOR AT THE TERMINAL. BUNDLE MULTIPLE CONDUCTORS, WITH CONDUCTORS LARGER THAN NO. 10 AWG IN INDIVIDUAL CIRCUIT BUNDLES.
13. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS TO COMPLY WITH TIGHTENING TORQUES SPECIFIED IN UL 486A AND 486B.

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NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT JOHN M. BANKS SEAL REGISTERED ARCHITECT
DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
SPRINT CONSTRUCTION SPECIFICATIONS

SHEET NUMBER
T-3

OVERALL SITE PLAN

0 3" 6"

SCALE: 3/16"=1'-0" (11x17)
(OR) 3/8"=1'-0" (22x34)

2

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DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT
JOHN M. BANKS
LICENSED ARCHITECT

DATED: 09/04/18 SEAL EXP. DATE: 07/31/19

SITE NAME

ATC TOWER

SITE NUMBER

CT03XC337

SITE LOCATION

168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID

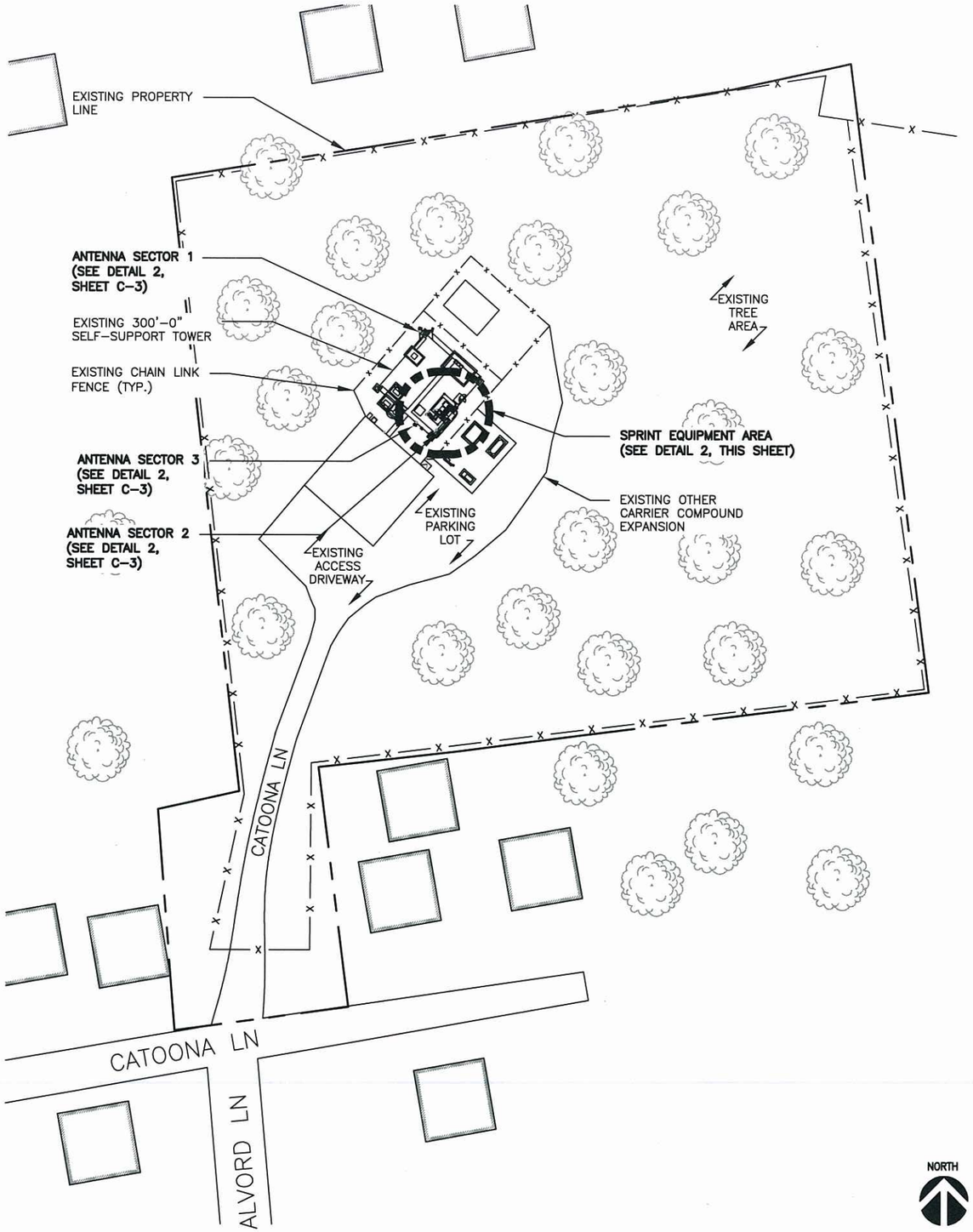
CT03XC337S18.2

SHEET TITLE

PARCEL MAP

SHEET NUMBER

C-1

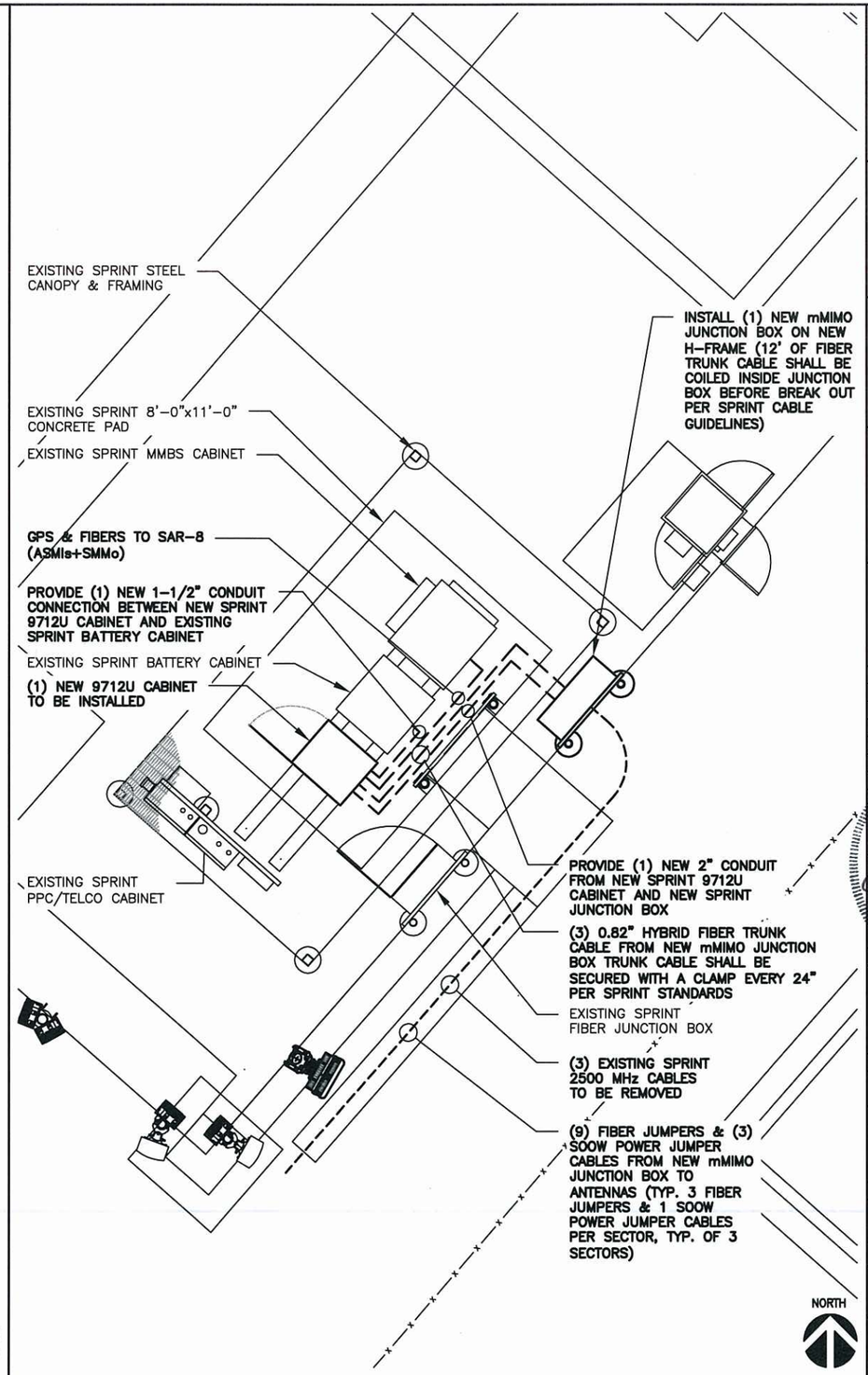


OVERALL SITE PLAN

0 5' 15' 30'

SCALE: 1"=30'-0" (11x17)
(OR) 2"=30'-0" (22x34)

1



NEW EQUIPMENT PLAN

0 3' 6'

SCALE: 3/16"=1'-0" (11x17)
(OR) 3/8"=1'-0" (22x34)

2

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CHECKED BY:		JMB
JOB NUMBER:		CT03XC337
ARCHITECT:		JOHN BANKS

STATE OF ILLINOIS JOHN M. BANKS 10137 LICENSED ARCHITECT SEAL

DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME

ATC TOWER

SITE NUMBER

CT03XC337

SITE LOCATION

168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID

CT03XC337S18.2

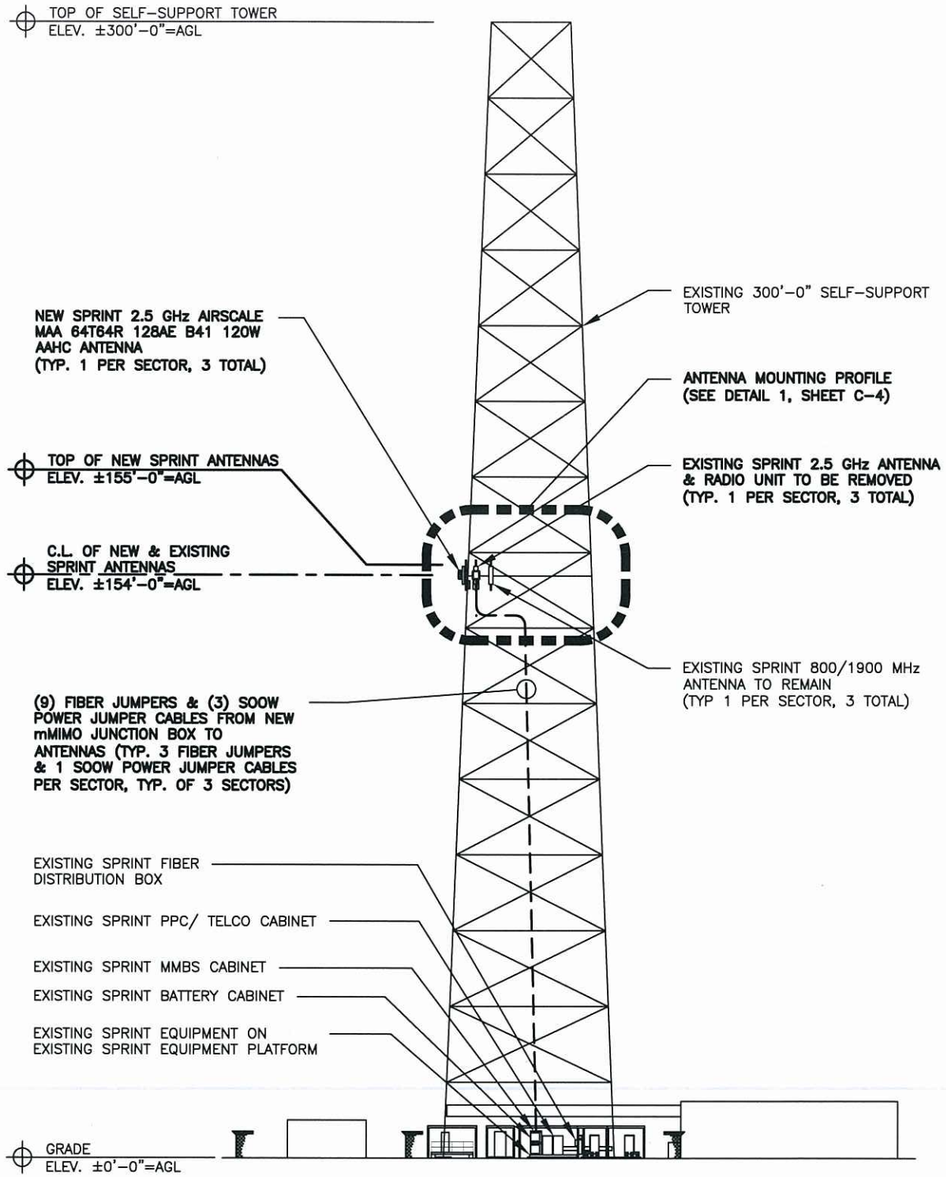
SHEET TITLE

SITE PLANS

SHEET NUMBER

C-1.1

- TOWER STRUCTURAL CALCULATIONS PREPARED BY OTHERS. CONTRACTOR TO VERIFY WITH PROJECT MANAGER TO OBTAIN A COPY
- CONTRACTOR TO REFER TO TOWER STRUCTURAL CALCULATIONS FOR ADDITIONAL LOADS. NO ERECTION OR MODIFICATION OF TOWER SHALL BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.



TOWER ELEVATION – SOUTHEAST

0 10' 20' 40'

SCALE: 1"=40'-0" (11x17)
(OR) 2"=40'-0" (22x34)

1

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ARCHITECT:	JOHN M. BANKS

STATE OF CONNECTICUT
JOHN M. BANKS
DATED: 09/04/18
SEAL
EXP. DATE: 07/31/19
LICENSED ARCHITECT

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

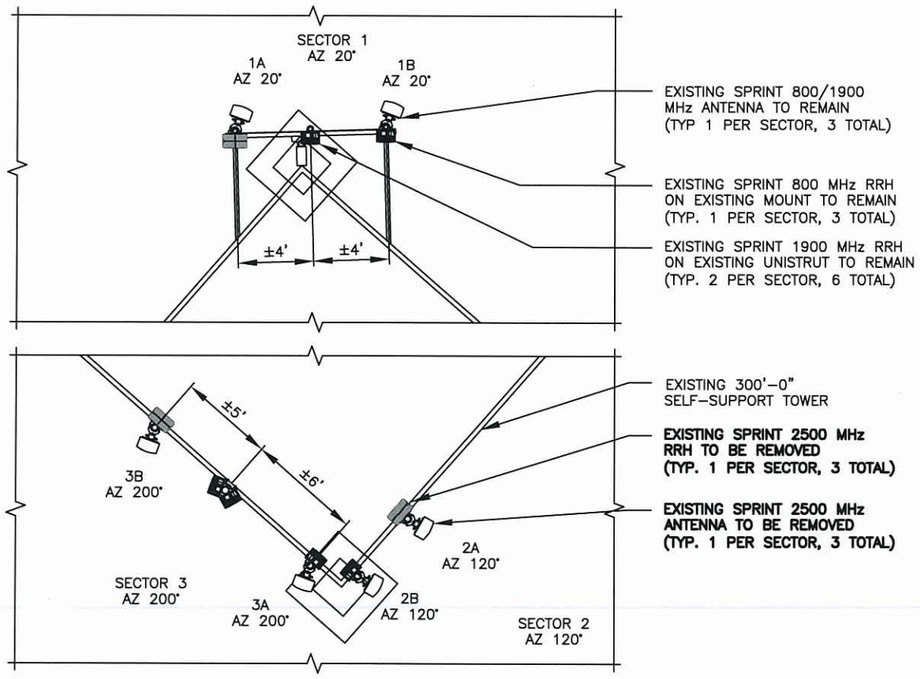
AUGMENT ID
CT03XC337S18.2

SHEET TITLE
TOWER ELEVATION - SOUTHEAST

SHEET NUMBER
C-2

EXISTING ANTENNA AND CABLE SCHEDULE

LOCATION		AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL #	# OF RRH	CABLE SIZE	CABLE LENGTH
SECTOR 1	1A	20°	154'-0"	EXISTING-TO BE REMOVED	2500 MHz	RFS APXVTM14-C-I20	2500 MHz-1	1" CONDUIT W/(3) ETHERNET & FIBER CABLES TO BE REMOVED	±300'
	1B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	1C	20°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±300'
SECTOR 2	2A	120°	154'-0"	EXISTING-TO BE REMOVED	2500 MHz	RFS APXVTM14-C-I20	2500 MHz-1	1" CONDUIT W/(3) ETHERNET & FIBER CABLES TO BE REMOVED	±240'
	2B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	2C	120°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±240'
SECTOR 3	3A	200°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±210'
	3B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	3C	200°	154'-0"	EXISTING-TO BE REMOVED	2500 MHz	RFS APXVTM14-C-I20	2500 MHz-1	1" CONDUIT W/(3) ETHERNET & FIBER CABLES TO BE REMOVED	±210'



NORTH

NOTE:
ALL ANTENNA AZIMUTHS BASED ON TRUE NORTH AS SPECIFIED BY RFDS, LATEST REVISION

EXISTING ANTENNA PLAN

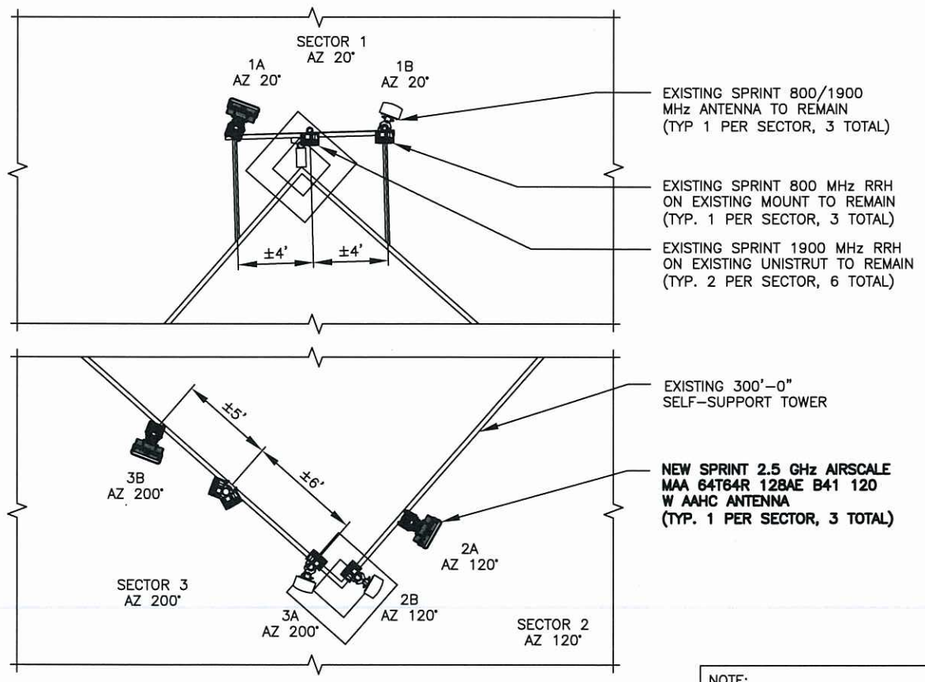
0 4' 8'

SCALE: 1/8"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

NEW ANTENNA AND CABLE SCHEDULE

LOCATION		AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL #	# OF RRH	CABLE SIZE	CABLE LENGTH
SECTOR 1	1A	20°	154'-0"	NEW	2500 MHz	AIRSCALE MAA 64T64R 128AE B41 120W AAHC	INTEGRATED	0.82" HYBRID	±15'
	1B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	1C	20°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±267'
SECTOR 2	2A	120°	154'-0"	NEW	2500 MHz	AIRSCALE MAA 64T64R 128AE B41 120W AAHC	INTEGRATED	0.82" HYBRID	±15'
	2B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	2C	120°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±209'
SECTOR 3	3A	200°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±209'
	3B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	3C	200°	154'-0"	NEW	2500 MHz	AIRSCALE MAA 64T64R 128AE B41 120W AAHC	INTEGRATED	0.82" HYBRID	±15'
									±45'



NORTH

NOTE:
1. THE AAHC WILL REQUIRE A 40A CIRCUIT BREAKER.

NOTE:
1. ANTENNA AZIMUTHS BASED ON TRUE NORTH AS SPECIFIED BY RFDS, LATEST REVISION
2. ALL SPRINT ANTENNAS TO BE 4'-0" CL PIPE TO PIPE.

PROPOSED ANTENNA PLAN

0 4' 8'

SCALE: 1/8"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

2

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DRAWN BY:	JCS
CHECKED BY:	JMB
JOB NUMBER:	CT03XC337
ARCHITECT:	JOHN BANKS

STATE OF CONNECTICUT · JOHN M. BANKS · No. 10677 · REGISTERED ARCHITECT

DATED: 09/04/18 SEAL: EXP. DATE: 07/31/19

SITE NAME

ATC TOWER

SITE NUMBER

CT03XC337

SITE LOCATION

168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID

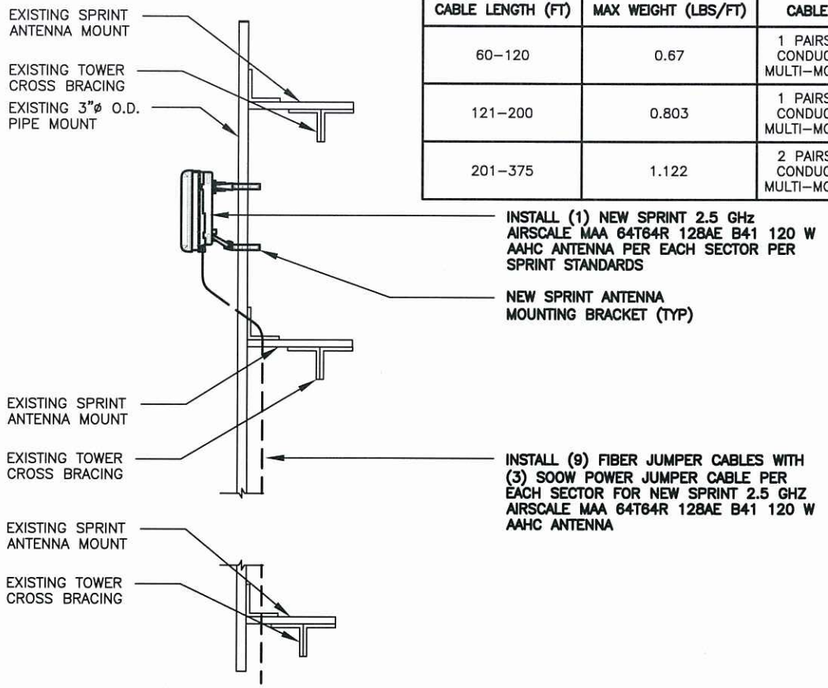
CT03XC337S18.2

SHEET TITLE

ANTENNA LAYOUTS

SHEET NUMBER

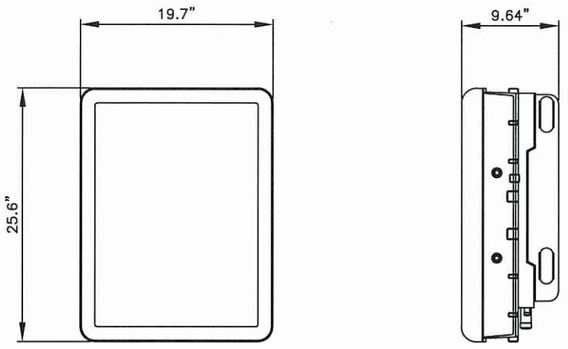
C-3

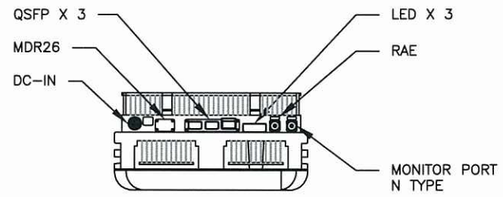


SPRINT CABLE GUIDELINES FOR CELL SITES

CABLE LENGTH (FT)	MAX WEIGHT (LBS/FT)	CABLE DESCRIPTION	MAX DIAMETER (IN.)
60–120	0.67	1 PAIRS OF 6AWG DC CONDUCTORS WITH 16 MULTI–MODE FIBER PAIRS	0.82
121–200	0.803	1 PAIRS OF 4AWG DC CONDUCTORS WITH 16 MULTI–MODE FIBER PAIRS	0.92
201–375	1.122	2 PAIRS OF 4AWG DC CONDUCTORS WITH 16 MULTI–MODE FIBER PAIRS	1.01

ANTENNA MOUNTING PROFILE VIEW — SCALE N.T.S. — 1





NOKIA – AIRSCALE MAA 64T64R 128AE B41 120W AAHC
WEIGHT (FULLY EQUIPPED): 103.6 LBS
SIZE (HXWXD): 25.6X19.7X9.64 IN.

ANTENNA DETAIL — SCALE N.T.S. — 2

NOT USED — SCALE N.T.S. — 3

NOT USED — SCALE N.T.S. — 4

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BARRINGTON, IL 60010
TELEPHONE: 847–277–0070
FAX : 847–277–0080
JBANKS@WESTCHESTERSERVICES.COM

NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT — JOHN M. BANKS — LICENSED ARCHITECT
DATED: 09/04/18 SEAL EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

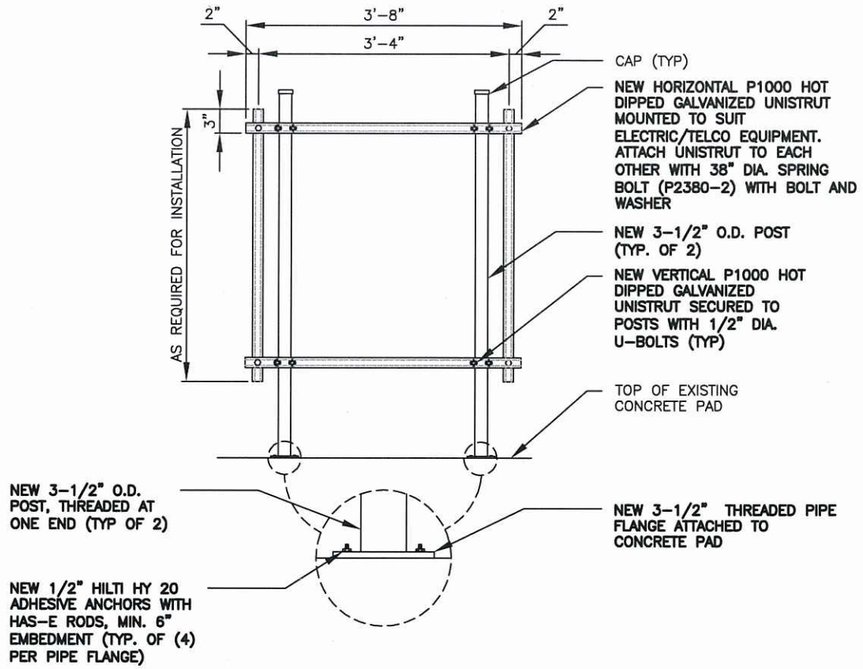
SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

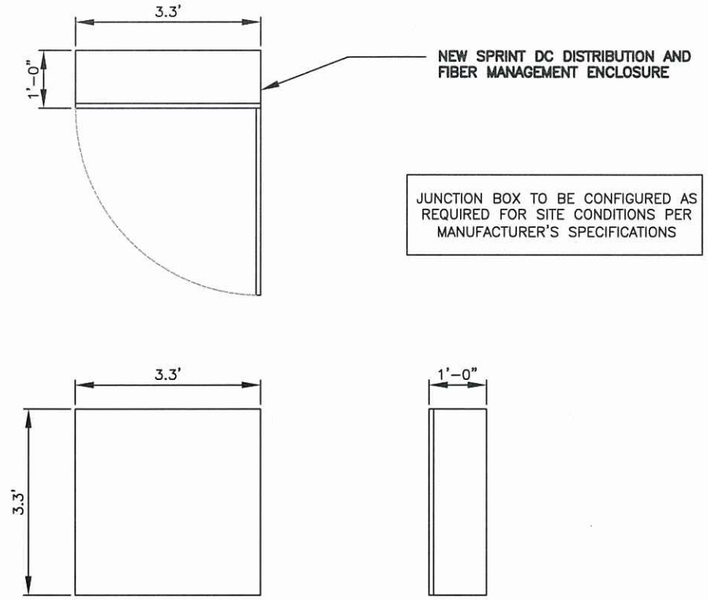
AUGMENT ID
CT03XC337S18.2

SHEET TITLE
EQUIPMENT DETAILS

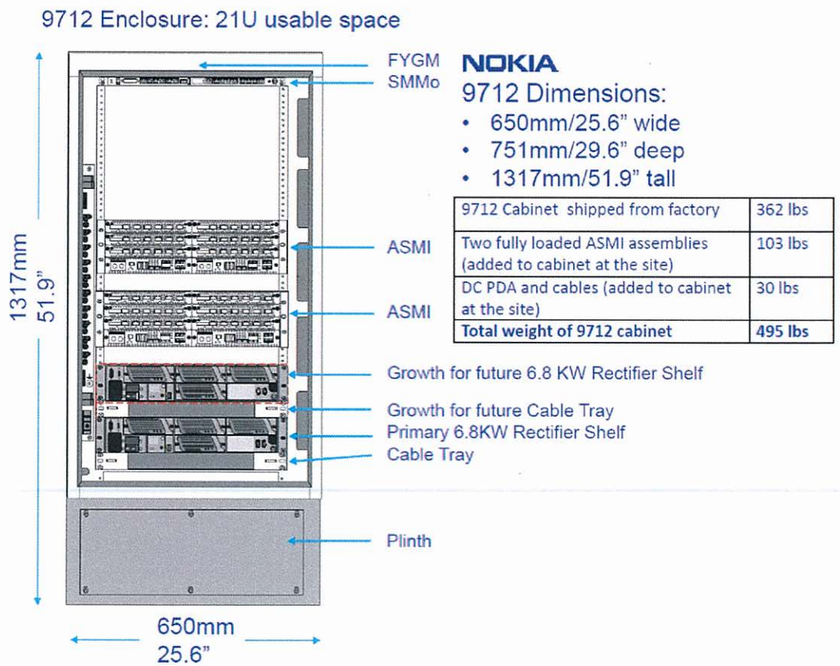
SHEET NUMBER
C-4



DC DISTRIBUTION & FIBER MGMT ENCLOSURE MOUNTING DETAIL | SCALE N.T.S. | 1



DC DISTRIBUTION & FIBER MGMT ENCLOSURE DETAIL | SCALE N.T.S. | 2



9712 Cabinet shipped from factory	362 lbs
Two fully loaded ASMI assemblies (added to cabinet at the site)	103 lbs
DC PDA and cables (added to cabinet at the site)	30 lbs
Total weight of 9712 cabinet	**495 lbs**

9712U CABINET DETAIL | SCALE N.T.S. | 3

NOT USED | SCALE N.T.S. | 4

Sprint
201 STATE ROUTE 17 NORTH
RUTHERFORD, NJ 07070
TEL: (201) 684-4000
FAX: (201) 684-4223

SAC WIRELESS A NOKIA COMPANY
540 W. MADISON ST.
9TH FLOOR
CHICAGO, IL 60661
www.sacw.com
312.895.4977

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NO.	DATE	DESCRIPTION
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0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: GT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT JOHN M. BANKS LICENSED ARCHITECT
DATED: 09/04/18 SEAL EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

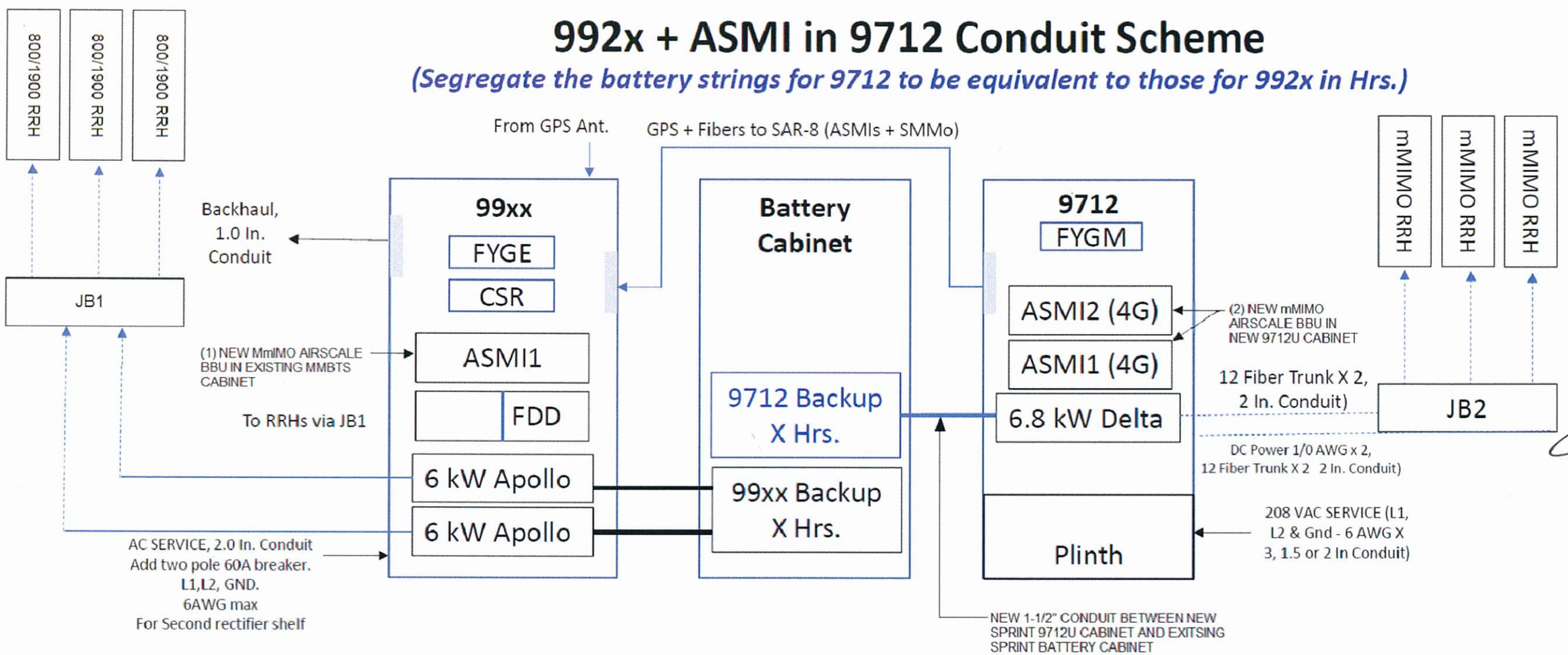
AUGMENT ID
CT03XC337S18.2

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-5

992x + ASMI in 9712 Conduit Scheme

(Segregate the battery strings for 9712 to be equivalent to those for 992x in Hrs.)



IMPLEMENTATION DETAIL

SCALE N.T.S.

1

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NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF ILLINOIS · JOHN M. BANKS · LICENSED ARCHITECT · NO. 10137 · SEAL

DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

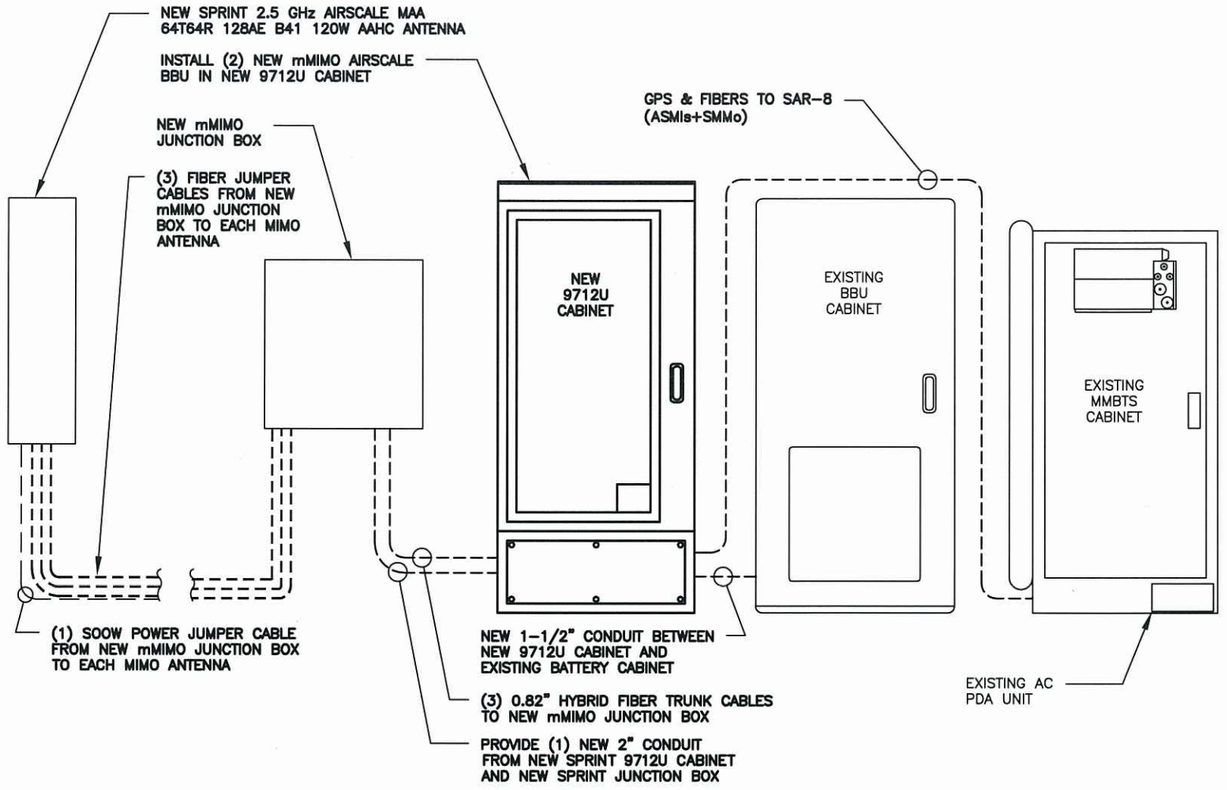
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-6

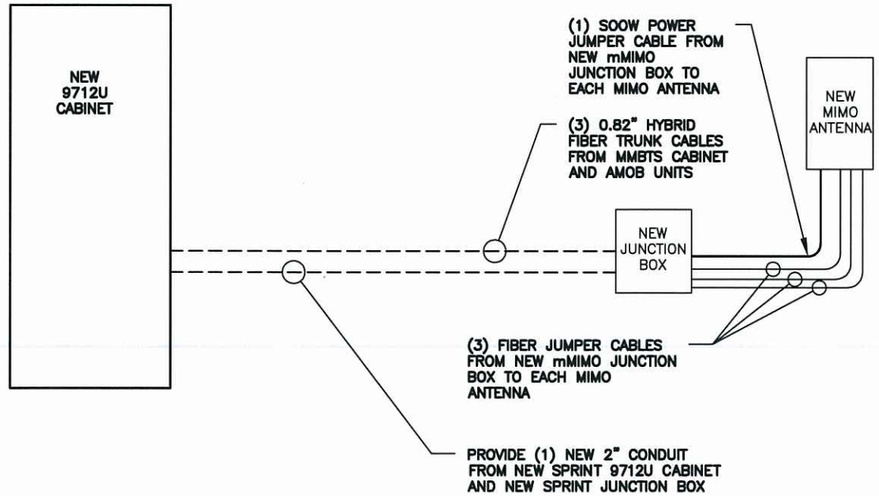
ELECTRICAL NOTES:

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
3. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
4. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
5. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS OR LB'S FOR ALL CONDUITS 2" OR LARGER.
6. ALL CONDUIT TERMINATION'S SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
7. ALL WIRE SHALL BE TYPE THHN/THWN, SOLID, ANNEALED COPPER UP TO SIZE #10 AWG (#8 AND LARGER SHALL BE CONCENTRIC) 75 DEGREE C, (167 DEGREES F), 98% CONDUCTIVITY, MINIMUM #12.
8. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.
9. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
10. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION TO CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
11. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
12. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
13. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.
14. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM (NO EXCEPTIONS.)
15. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS WITH DISABILITIES ACT AS ADOPTED BY THE APPLICABLE STATE.
16. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTION MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.
17. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE DRAWINGS). LOCATION OF ALL OUTLET, BOXES, ETC., AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.

ELECTRICAL NOTES | SCALE N.T.S. | 1



EQUIPMENT UTILITY ELEVATION VIEW | SCALE N.T.S. | 2



ONE-LINE DIAGRAM | SCALE N.T.S. | 3

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NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF ILLINOIS JOHN M. BANKS LICENSED ARCHITECT NO. 10137 SEAL/ITECT
DATED: 05/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

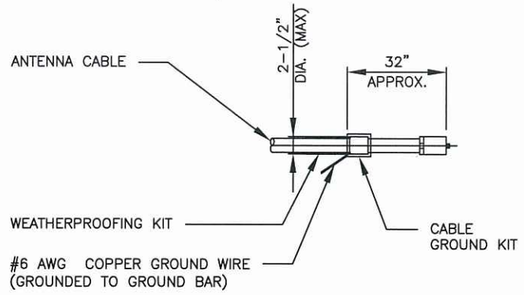
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
C-7

GROUNDING NOTES:

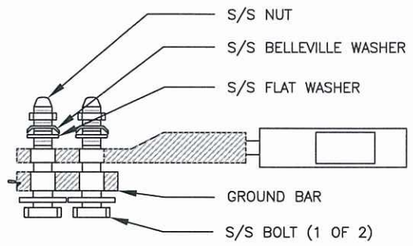
1. ALL GROUNDING SYSTEM CONDUCTORS AND CONNECTIONS BELOW GRADE SHALL BE THERMAL WELDS AT GROUND RODS AND AT A MINIMUM OF 36" BELOW GRADE.
2. ALL INSTALLATIONS SHALL BE FIELD VERIFIED.
3. ALL GROUND WIRE SHALL BE #2 AWG BARE COPPER TINNED UNLESS NOTED OTHERWISE.
4. ALL GROUND WIRES SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
5. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF GROUND RODS AND GROUND RING WITH FOUNDATION AND UNDERGROUND CONDUIT.
6. EACH EQUIPMENT CABINET SHALL BE CONNECTED WITH (2) #2 AWG INSULATED SOLID TINNED COPPER WIRE TO GROUND BAR. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS.
7. ANTENNA GROUND KITS SHALL BE FURNISHED BY SPRINT AND INSTALLED BY CONTRACTOR.
8. KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL GROUNDING CONNECTIONS.
9. ALL EXOTHERMIC CONNECTS SHALL BE INSTALLED UTILIZING THE PROPER CONNECTION/MOLD AND MATERIALS FOR THE PARTICULAR APPLICATION.
10. ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH A LOCK WASHER UNDER THE NUT. HARDWARE FOR BOLTED CONNECTIONS SHALL BE A MINIMUM OF 3/8" DIAMETER AND SHALL BE STAINLESS STEEL.
11. GROUNDING WIRE SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS OR SUPPORTS TO PRECLUDE ESTABLISHING A "CHOKE" POINT.
12. PLASTIC CLIPS OR METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTORS SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
13. STANDARD BUS BARS (CIGBE AND MIGB) SHALL BE FURNISHED AND INSTALLED. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD.
14. THE GROUNDING CONNECTION TO THE POWER AND TELCO SECTIONS OF THE PPC CABINET SHALL BE MADE BY CONNECTING A CONDUCTOR FROM THE GROUND RING TO THE FACTORY FURNISHED BUS BAR IN EACH COMPARTMENT.
15. THE CONTRACTOR SHALL SUPPLY SPRINT AND NIH/ORF WITH RESULTS FROM PRE-CONSTRUCTION (CO-LO ONLY) AND POST-CONSTRUCTION OHM TESTING (GROUND) RESULTS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A "FALL OF POTENTIAL" TEST ON THE NEW SUPPLEMENTAL GROUND FIELD PRIOR TO FINAL CONNECTION OF THE GROUNDING SYSTEM TO EQUIPMENT. THE TEST SHALL BE PERFORMED BY A QUALIFIED AND CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER AND NIH/ORF FOR REVIEW. THE GROUND SYSTEM RESISTANCE TO EARTH GROUND SHALL NOT EXCEED FIVE (5) OHMS. IF THE GROUND TEST EXCEEDS THE MAXIMUM OF 5 OHMS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL GROUND CONNECTIONS AS REQUIRED TO MEET THE 5 OHMS MAXIMUM.

ELECTRICAL NOTES | SCALE N.T.S. | 1



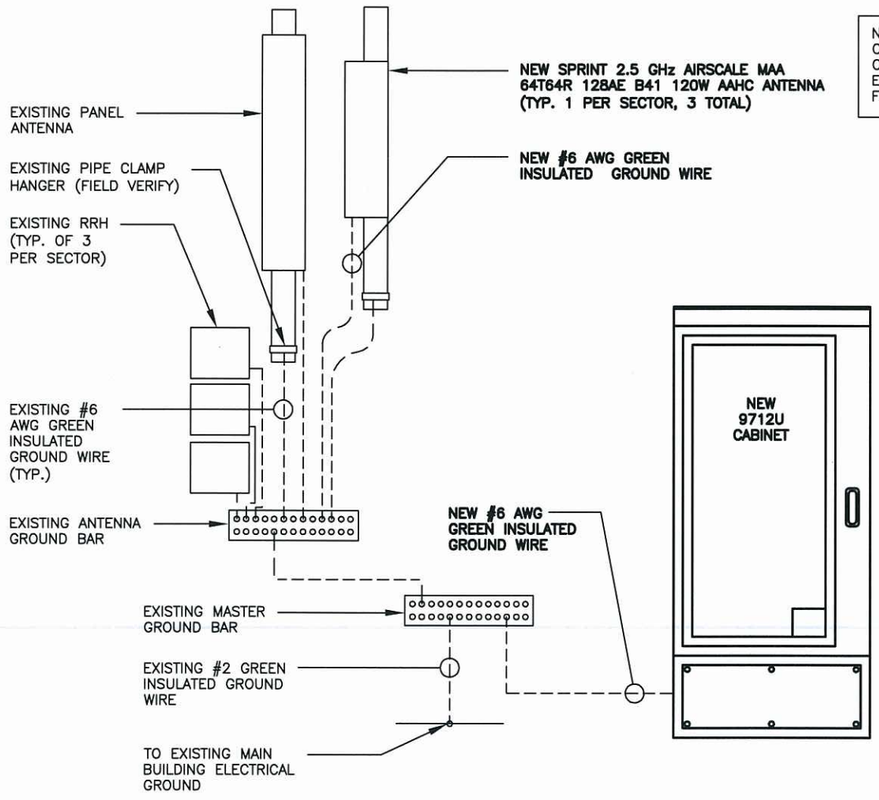
NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

CABLE GROUNDING DETAIL | SCALE N.T.S. | 2



NOTES:
1. PROVIDE 2-HOLE, LONG BARREL,TINNED SOLID COPPER LUGS WHEREVER LUGS ARE SHOWN. ERICO B-122-CE PREFERRED WITH CADWELD TYPE GL CONNECTION. THOMAS AND BETTS 54800BE SERIES WHERE CRIMP CONNECTOR IS REQUIRED.
2. ALL CRIMP CONNECTIONS MUST BE MADE USING HYDRAULIC TOOLS AND THREE POINT HEXAGONAL COMPRESSION MOLDS ON LONG BARREL LUGS.
3. ALL MECHANICAL CONNECTIONS MUST BE MADE USING THOMAS AND BETTS "KOPR-SHIELD". COAT ALL WIRES BEFORE LUGGING. COAT ALL SURFACES BEFORE CONNECTING.
4. ALL HARDWARE 18/8 STAINLESS STEEL INCLUDING BELLEVILLE, COAT ALL SURFACES WITH "KOPR-SHIELD" BEFORE MATING.
5. FOR GROUNDING BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH "KOPR-SHIELD".
6. NO SLOTTED HOLES ON BUS BAR OR LUGS ARE PERMITTED.
7. ALL LUG SHANKS AND LEAD JOINTS SHALL HAVE HEAT SHRINK MATERIAL

TWO-HOLE LUG | SCALE N.T.S. | 3



NOTES:
CONTRACTOR TO USE MECHANICAL CONNECTION FOR GROUNDING OF NEW EQUIPMENT AND CADWELD CONNECTION FOR GROUNDING OF ALL MOUNT PIPES.

GROUNDING RISER DIAGRAM | SCALE N.T.S. | 4

Sprint
201 STATE ROUTE 17 NORTH
RUTHERFORD, NJ 07070
TEL: (201) 684-4000
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NO.	DATE	DESCRIPTION
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0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY:	JCS
CHECKED BY:	JMB
JOB NUMBER:	CT03XC337
ARCHITECT:	JOHN BANKS

STATE OF CONNECTICUT JOHN M. BANKS LICENSED ARCHITECT SEAL
DATED: 08/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
C-8

Sprint®

TM

PROJECT: SPRINT MASSIVE MIMO

SITE CASCADE: CT03XC337

SITE NAME: ATC TOWER

AUGMENT ID: CT03XC337S18.2

SITE ADDRESS: 168 CATOONA LANE
STAMFORD, CT 06902

SITE TYPE: 300' SELF-SUPPORT TOWER

DRAWING DESCRIPTION: FINAL CDs

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201 STATE ROUTE 17 NORTH
RUTHERFORD, NJ 07070
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SITE INFORMATION

PROPERTY OWNER:
AMERICAN TOWER
116 HUNTINGTON AVE, 11TH FLOOR
BOSTON, MA 02116

SITE ADDRESS:
168 CATOONA LANE
STAMFORD, CT 06902

COUNTY:
FAIRFIELD

LATITUDE (NAD83):
41° 03' 9.8" N (41.052725°)

LONGITUDE (NAD83):
73° 33' 46.1" W (-73.562814°)

PARCEL ID:
MAP: 119 BLOCK: 283 LOT: A
PARCEL ID#: 000-0370

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

CURRENT ZONING:
R-5

CONSTRUCTION TYPE:
2B

OCCUPANCY USE GROUP:
U

ZONING ADDRESS:
168 CATOONA LANE
STAMFORD, CT 06902

ELECTRIC PROVIDER:
CONNECTICUT LIGHT & POWER
(800) 246-2000

BACKHAUL PROVIDER:
AT&T (800) 246-2020

SPRINT CM:
AHMED BASHIR

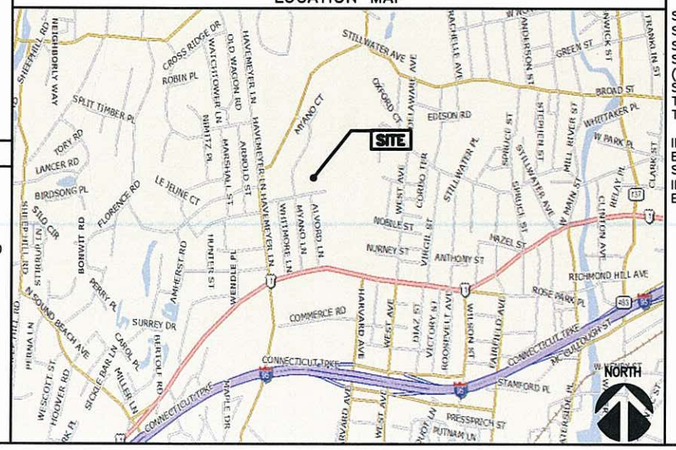
DIRECTIONS

FROM LAGUARDIA INTERNATIONAL AIRPORT, NY:

1. HEAD EAST. TAKE THE RAMP ONTO GRAND CENTRAL PKWY. TAKE EXIT 9E FOR NY-25A/NORTHERN BLVD/WHITESTONE EXPWY TOWARD INTERSTATE 678.
2. MERGE ONTO I-678 N. TAKE EXIT 15 TOWARD 20 AVE. MERGE ONTO WHITESTONE EXPY.
3. MERGE ONTO I-678 N VIA THE RAMP TO WHITESTONE BRIDGE/BRONX.
4. FOLLOW SIGNS FOR HUTCHINSON PKWY N/I-95 S/I-278 W/G WASHINGTON BRIDGE/MANHATTAN.
5. TAKE EXIT 6 FOR INTERSTATE 95 N TOWARD NEW HAVEN. EXIT 6 FOR HARVARD AVE.
6. TURN LEFT ON HARVARD AVE. TURN LEFT ON W MAIN ST. TURN RIGHT ONTO ALVORD LN.
7. CONTINUE STRAIGHT ONTO CATOONA LN.
8. DESTINATION WILL BE ON NORTH SIDE OF STREET.

AREA MAP

LOCATION MAP



PROJECT DESCRIPTION

EXISTING SPRINT EQUIPMENT TO BE REMOVED:

- REMOVE (3) EXISTING SPRINT 2.5 GHz ANTENNAS
- REMOVE (3) EXISTING SPRINT 2.5 GHz RADIOS
- REMOVE 1" CONDUIT W/(3) ETHERNET & FIBER CABLES

NEW SPRINT EQUIPMENT TO BE INSTALLED:

- INSTALL (3) NEW 2.5 GHz AIRSCALE MAA 64T64R 128AE B41 120W AAHC ANTENNAS
- INSTALL (3) NEW 0.82" HYBRID FIBER TRUNK CABLES, (9) NEW FIBER JUMPER CABLES AND (3) NEW SOOW POWER JUMPER CABLES (PER SPRINT GUIDELINES)
- INSTALL (1) NEW mMIMO JUNCTION BOX
- INSTALL (1) NEW SPRINT 9712U CABINET
- INSTALL (2) NEW mMIMO AIRSCALE BBU IN NEW 9712U CABINET
- INSTALL (1) NEW mMIMO AIRSCALE BBU IN EXISTING MMBTS CABINET

APPLICABLE CODES

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT OF THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

- 2015 INTERNATIONAL BUILDING CODE
- 2015 MECHANICAL CODE
- NFPA 780-LIGHTNING PROTECTION CODE
- 2015 UNIFORM BUILDING CODE
- 2014 NATIONAL ELECTRICAL CODE
- 2016 CONNECTICUT STATE BUILDING CODE
- 2016 CONNECTICUT STATE FIRE SAFETY CODE
- NFPA 70-2014 EDITION AS AMENDED BY THE STATE OF CONNECTICUT

SUBCONTRACTOR'S WORK SHALL COMPLY WITH LATEST EDITION OF THE FOLLOWING STANDARDS. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81 GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT.

811
Know what's **below.**
Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG
TOLL FREE: 1-800-922-4455 OR
www.cbyd.com
CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

DRAWING INDEX

SHEET NO:	SHEET TITLE	REV
T-1	TITLE SHEET	1
T-2	SPRINT CONSTRUCTION SPECIFICATIONS (REFERENCE)	1
T-3	SPRINT SPECIFICATIONS	1
C-1	PARCEL MAP	1
C-1.1	SITE PLANS	1
C-2	TOWER ELEVATION - SOUTHEAST	1
C-3	ANTENNA LAYOUTS	1
C-4	EQUIPMENT DETAILS	1
C-5	EQUIPMENT DETAILS	1
C-6	IMPLEMENTATION DETAIL	1
C-7	ELECTRICAL DETAILS	1
C-8	GROUNDING DETAILS	1

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

APPROVALS

SIGNER	SIGNATURE	DATE
SPRINT CONSTRUCTION MANAGER		
SPRINT OPERATIONS MANAGER		
SPRINT RF ENGINEER		
LANDLORD		

NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT
JOHN M. BANKS
REGISTERED ARCHITECT
NO SEAL
DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

SECTION 01 100 – SCOPE OF WORK

THE WORK:
THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE CONSTRUCTION DRAWINGS AND ASSOCIATED OUTLINE SPECIFICATIONS AND THE SITE ACTION PLAN, DESCRIBE THE WORK TO BE PERFORMED BY THIS CONSTRUCTION CONTRACTOR (SUPPLIER).

PRECEDENCE:
SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

SITE FAMILIARITY:
CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

ON–SITE SUPERVISION:
THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

DRAWINGS REQUIRED AT JOBSITE:
THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

1. THE JOBSITE DRAWINGS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE UPLOADED TO SPRINTVISION UNDER THE HEADING OF "AS–BUILT" DRAWINGS.
2. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

FURNISHED MATERIALS:
COMPANY FURNISHED MATERIALS AND EQUIPMENT TO BE INSTALLED BY THE CONTRACTOR IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

RECEIPT OF MATERIAL AND EQUIPMENT:

1. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
   - A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
   - B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
   - C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
   - D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY–FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
   - E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
   - F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF–LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

DELIVERABLES:

1. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.
2. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

SECTION 01 300 – CELL SITE CONSTRUCTION

NOTICE TO PROCEED (NTP):

1. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S ISSUANCE OF THE WORK ORDER/PO.
2. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

GENERAL REQUIREMENTS FOR CONSTRUCTION:

1. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
2. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED AND "BROOM CLEANED" AND CLEAR OF DEBRIS.
3. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
   - A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
   - B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
4. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.

SECTION 01 400 – TESTS, INSPECTIONS, SUBMITTALS, AND PROJECT CLOSEOUT

TESTS AND INSPECTIONS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
2. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   - A. COAX SWEEPS AND FIBER TESTS.
   - B. POST CONSTRUCTION HEIGHT VERIFICATION, AZIMUTH AND DOWN TILT USING ELECTRONIC COMMERCIAL MADE–FOR–THE–PURPOSE ANTENNA ALIGNMENT TOOL SUCH AS SUNSIGHT INSTRUMENTS ANTENNA ALIGNMENT TOOL OR SPRINT APPROVED EQUAL.
   - C. CONCRETE BREAK TESTS.
   - D. SITE RESISTANCE TO EARTH TEST.
   - E. STRUCTURAL BACKFILL COMPACTION TESTS.
   - F. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
   - G. ADDITIONAL TESTING AS REQUIRED ELSEWHERE IN THIS SPECIFICATION.

SUBMITTALS:

1. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.
2. UPLOAD THE FOLLOWING TO SPRINTVISION AS APPLICABLE INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   - A. CONCRETE MIX–DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
   - B. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
   - C. CHEMICAL GROUNDING SYSTEM.
   - D. REINFORCEMENT CERTIFICATIONS.
   - E. STRUCTURAL BACKFILL TEST RESULTS.
   - F. SWEEP AND FIBER TESTS.
   - G. ANTENNA AZIMUTH AND DOWN–TILT VERIFICATION.
   - H. POST CONSTRUCTION HEIGHT VERIFICATION.
   - I. ADDITIONAL SUBMITTALS MAY BE REQUIRED FOR SPECIAL CONSTRUCTION OR MINOR MATERIALS.
3. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

SECTION 11 700 – ANTENNA ASSEMBLY, REMOTE RADIO UNITS AND CABLE INSTALLATION

SUMMARY:
THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRU'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE AND WAVEGUIDE. ALL COAXIAL CABLE AND ASSOCIATED HARDWARE SHALL BE INSTALLED BY OR UNDER THE DIRECT SUPERVISION OF MANUFACTURER TRAINED AND CERTIFIED PERSONNEL.

ANTENNAS AND REMOTE RADIO UNITS (RRU):
INSTALL EQUIPMENT FURNISHED BY COMPANY. REFER TO THE DRAWINGS FOR TYPES AND QUANTITIES OF PANEL AND MICROWAVE ANTENNAS AND RRUS TO BE INSTALLED.

MISCELLANEOUS RF EQUIPMENT:
INSTALL COMBINERS, FILTERS, COUPLERS, AND AMPLIFIERS, FURNISHED BY COMPANY, PER MANUFACTURERS' RECOMMENDATIONS.

JUMPERS AND CONNECTORS:
FURNISH AND INSTALL 1/2" COAX JUMPER CABLES BETWEEN THE RRU'S AND ANTENNAS. JUMPERS SHALL BE TYPE LDF 4, FLC 12–50, CR 540, OR FXL 540. JUMPERS BETWEEN THE RRU'S AND ANTENNAS OR TOWER TOP AMPLIFIERS SHALL CONSIST OF 1/2 INCH FOAM DIELECTRIC, OUTDOOR RATED COAXIAL CABLE. SUPER–FLEX CABLES AND JUMPERS MAY BE USED ON A LIMITED BASIS WHERE NEEDED AND ONLY IN ENCLOSED LOCATIONS. DO NOT USE SUPER–FLEX OUTDOORS.

HYBRID AND COAXIAL CABLE:
INSTALL HYBRID DC/FIBER CABLE AND COAXIAL CABLES, INCLUDING CONNECTORS, JUMPERS, AND CABLE TERMINATING DEVICES FURNISHED BY COMPANY. CABLE SHALL BE DELIVERED TO THE JOB SITE OR TO THE COMPANY'S DESIGNATED LOCATION. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

RF DATA SHEETS:
RF DATA INFORMATION ON THE DRAWINGS WILL PROVIDE A COMPLETE LIST OF EQUIPMENT FURNISHED BY COMPANY TO BE INSTALLED BY CONTRACTOR.

REMOTE ELECTRICAL TILT (RET) CABLES:
FURNISH INSTALL RET CABLE AND CONNECTORS BETWEEN RRU AND ANTENNAS. CABLE SHALL BE AS REQUIRED BY MANUFACTURER.

ANTENNA MOUNTS:

1. FURNISH AND INSTALL ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.
2. EXCEPT AS OTHERWISE REQUIRED, BALLAST MOUNTS FOR ROOFTOP APPLICATIONS SHALL BE VALMONT/MICROFLECT NO. 31–99540 (12 FOOT SEPARATION) OR SPRINT APPROVED EQUAL.
3. FACADE–MOUNTED ANTENNAS SHALL COMPLY WITH SITE–SPECIFIC MOUNTING REQUIREMENTS INDICATED ON THE DRAWINGS.

HYBRID AND COAXIAL CABLE INSTALLATION:

1. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL COAXIAL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. THE ROUTING OF THE CABLES SHALL BE CHECKED FOR INTERFERENCE WITH OTHER TOWER APPURTENANCES BEFORE INSTALLATION AND VERTICAL WAVEGUIDE/COAX HANGERS SHALL BE INSTALLED ON THE TOWER WAVEGUIDE LADDER.
3. CABLES SHALL BE HOISTED, CONNECTED TO THE RRU/ANTENNA FEED, SECURED TO THE HANGERS, AND ORIENTED TO PROVIDE THE CORRECT ENTRANCE PLANE TO THE EQUIPMENT CABINET. THE FIELD TERMINATED CABLES SHALL THEN BE CUT TO THE APPROPRIATE LENGTH TO REACH THE EQUIPMENT. FOR FACTORY TERMINATED CABLES, COIL ANY EXCESS IN A HORIZONTAL PLANE UNDER THE ICE BRIDGE OR GROUND PLATFORM AND SECURE TO MINIMIZE VANDALISM RISK.
4. CABLES SHALL BE GROUNDED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND MANUFACTURER'S REQUIREMENTS.
5. CABLES SHALL BE ROUTED IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS. IF POSSIBLE, CABLES SHALL BE ROUTED ON THE INSIDE OF MONOPOLES OR DOWN THE WAVEGUIDE LADDER IN A MANNER THAT WILL PREVENT OBSTRUCTION OF THE CLIMBING LADDER. ADDITIONALLY, THE CABLES SHALL BE POSITIONED IN THE BEST POSSIBLE LOCATION TO PROTECT IT FROM DAMAGE. THE BENDING RADIUS OF THE CABLES HALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS.
6. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION. THE COMPANY WILL FURNISH TO THE CONTRACTOR PORT ASSIGNMENTS, IF APPLICABLE, PRIOR TO WAVEGUIDE INSTALLATION.
   - A. WAVEGUIDE LADDER (LATTICE TOWERS ONLY): WAVEGUIDE LADDERS SHALL BE USED TO SUPPORT ALL COAXIAL CABLE, MICROWAVE WAVEGUIDE CABLE AND ANY BASEBAND CABLE ON THE TOWER). ONE LADDER, 18 CABLES WIDE, SHALL BE MOUNTED ON THE TOWER PER THE TOWER STRUCTURAL REQUIREMENTS. THE RUNGS ON THE WAVEGUIDE LADDERS SHALL BE SPACED A MAXIMUM OF 4 FEET APART.
   - B. ICE BRIDGE: AS SHOWN ON THE DRAWINGS, PROVIDE AN ICE BRIDGE BETWEEN THE TOWER AND THE SHELTER OR GROUND CABINETS TO SUPPORT ALL CABLING. USE STAINLESS STEEL SNAP–IN TYPE HANGERS OR COAX BLOCKS WITH GROMMETS TO SUPPORT CABLES ON THE ICE BRIDGE. PROVIDE A DRIP LOOP IN ALL CABLING BETWEEN THE BASE OF THE TOWER AND THE ICE BRIDGE.
   - C. FASTENING CABLES: CABLES SHALL BE RAISED ON THE TOWER USING PROPERLY SIZED SPLIT TYPE, LACE–UP HOISTING SOCKS ATTACHED TO EACH CABLE EVERY 200FT EXCEPT AS OTHERWISE REQUIRED BY MANUFACTURER. INSIDE MONOPOLES, ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE TOWER USING A HOISTING SOCK AT THE TOP OF THE TOWER. FOR MONOPOLE TOWERS WITH SUPPORTING MEANS AT MIDPOINT, PROVIDE ADDITIONAL HOISTING SOCK. ON LATTICE TOWERS OR FOR CABLES MOUNTED ON THE OUTSIDE OF MONOPOLES, USE STAINLESS STEEL (NON MAGNETIC) SNAP IN TYPE CABLE HANGERS OR COAX BLOCKS WITH GROMMETS AT EACH WAVE GUIDE LADDER RUNG. DO NOT DRILL HOLES IN TOWER MEMBERS, USE ANGLE MEMBER ADAPTERS AND STAINLESS STEEL BUTTERFLY CLIPS, TO ATTACH CABLING TO TOWER. MAKE SURE THAT THERE IS NO STRAIN ON ANY CABLE CONNECTOR DUE TO THE CABLE WEIGHT. CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN A NEAT AND ORDERLY MANNER. AVOID TWISTING AND CROSSOVERS IN THE BUILDING, ALONG THE TOWER FACE, AND WAVEGUIDE RACEWAYS. EXCEPT INSIDE MONOPOLES, SECURE CABLE AT MAXIMUM SPACING OF 36" ON CENTER HORIZONTALLY AND 48" ON CENTER VERTICALLY, EXCEPT AS OTHERWISE REQUIRED BY CABLE MANUFACTURER MAKING SURE THAT THE CABLE WEIGHT IS EQUALLY DISTRIBUTED AND NO STRAIN IS PLACED ON CONNECTORS OR ANTENNAS. HOIST CABLE USING PROPER HOISTING GRIPS. HOIST SLOWLY AND CAREFULLY. PREVENT KINKING AND SNAGS WHEN AROUND TOWER MEMBERS. BEND CABLE SLOWLY AT THE MAXIMUM PRACTICAL BEND RADIUS CONSISTENT WITH GOOD INSTALLATION PRACTICE. AVOID USING MINIMUM CABLE BENDS.

a. SUPPORT INDIVIDUAL FIBER AND DC POWER CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA) AT TOWER TOP, INSIDE MMBTS, AND AT ANY INTERMEDIATE FIBER/DC DISTRIBUTION BOXES.
b. SUPPORT FIBER BUNDLES USING 1/2" VELCRO STRAPS OF THE REQUIRED LENGTH ON 18" CENTERS. VELCRO STRAPS SHALL BE OIL, UV AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR EQUAL.
c. SUPPORT DC BUNDLES ON 18" CENTERS WITH ZIP–TIES OF ADEQUATE LENGTH. ZIP–TIES SHALL BE UV STABILIZED, BLACK NYLON WITH A TENSILE STRENGTH OF 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.

D. BENDING RADIUS: CABLES SHALL NOT EXCEED THE MINIMUM BENDING RADIUS AS DETERMINED BY THE CABLE MANUFACTURER.

E. TERMINATION AT SHELTER AND ENTRY PLATE:

a. ALL CABLING SHALL ENTER THE BUILDING THROUGH THE WAVEGUIDE ENTRY PLATE AND BE PROPERLY WEATHER SEALED WITH A CABLE BOOT FABRICATED FOR THE SIZE OF THE CABLE OR WITH ROXTEC BLOCKS. CABLE BOOTS ARE NOT TO BE CUT TO FIT IN THE FIELD. COAXIAL CABLES SHALL BE TERMINATED WITHIN 18 INCHES INSIDE THE SHELTER AND FITTED WITH A SURGE SUPPRESSOR.
b. CABLE PORT ASSIGNMENTS FOR SHELTER SITES: CABLES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND CONSISTENT WITH TS–0200.

F. GROUNDING OF CABLES: ALL CABLES SHALL BE GROUNDED AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.

G. CABLE CONNECTIONS:

a. CLEAN FIBER CONNECTORS AS REQUIRED IN EL–0568.
b. FOR FIELD FABRICATIONS USE ONLY CABLE CONNECTORS RECOMMENDED BY THE CABLE MANUFACTURER AND REQUIRED BY THE EQUIPMENT BEING CONNECTED.
c. EXCEPT AS OTHERWISE REQUIRED, CONNECTORS FOR ALL MAIN STATION ANTENNA CABLES SHALL BE 7/16 DIN.
d. d.EXCEPT AS OTHERWISE REQUIRED, CONNECTORS FOR GPS ANTENNAS SHALL BE TYPE N.
e. CONNECTORS FOR MICROWAVE ANTENNAS, UNLESS OTHERWISE NOTED, SHALL BE TYPE N.
f. INSTALL AND TIGHTEN CONNECTORS PER MANUFACTURER'S INSTRUCTIONS.

H. COLOR CODING OF CABLES: COMPLY WITH TS–0200 AND THE RF DATA SHEETS ON THE DRAWINGS.

I. ALPHA–NUMERIC LABELING OF CABLES: COMPLY WITH EN–2012–001.

WEATHERPROOFING CONNECTORS AND GROUND KITS:

1. ALL COAX CONNECTORS, FIBER CONNECTORS AND INSTALLED CABLE GROUND KITS SHALL BE WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. SPRINTS PREFERENCE IS THE USE OF MATERIAL CALLED OUT IN ITEM 1 BELOW. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.
   - A. WEATHER PROOFING BOOTS FROM APPROVED VENDORS SUCH AS 3M, AMPHENOL, RFS, FCT MOLEX, JMA AND COMMSCOPE. SUBSTITUTIONS WILL NOT BE ALLOWED.
   - B. COLD SHRINK: ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CXS SERIES OR EQUAL.
   - C. SELF–AMALGAMATING TAPE: CLEAN SURFACES. APPLY A DOUBLE WRAP OF SELF–AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF–AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF–AMALGAMATING TAPE.
   - D. HEAT SHRINK TUBING REQUIRING OPEN FLAME ON THE SITE IS NOT ACCEPTABLE.

WEATHERPROOFING CONNECTORS AND GROUND KITS:

SUMMARY:

1. THIS SECTION SPECIFIES MMBS AND RELATED EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR.
2. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND LABOR REQUIRED FOR INSTALLATION OF THE MMBS CABINET AND RELATED EQUIPMENT.
3. ALL WORK PROVIDED BY CONTRACTOR SHALL BE IN COMPLIANCE WITH THE CONSTRUCTION DRAWINGS AND DETAILS, SITE SPECIFIC CONTRACT DOCUMENTS, AND THESE SPECIFICATIONS.

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NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

SEAL: STATE OF CONNECTICUT – JOHN M. BANKS – LICENSED ARCHITECT – NO. 10437
DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
SPRINT CONSTRUCTION SPECIFICATIONS

SHEET NUMBER
T-2

SECTION 26 100 – BASIC ELECTRICAL REQUIREMENTS

SUMMARY:
THIS SECTION SPECIFIES BASIC ELECTRICAL REQUIREMENTS FOR SYSTEMS AND COMPONENTS.

QUALITY ASSURANCE:
1. ALL EQUIPMENT FURNISHED BY DIVISION 26 SHALL CARRY UL LABELS AND LISTINGS WHERE SUCH LABELS AND LISTINGS ARE AVAILABLE IN THE INDUSTRY.
2. MANUFACTURERS OF EQUIPMENT SHALL HAVE A MINIMUM OF THREE YEARS' EXPERIENCE WITH THEIR EQUIPMENT INSTALLED AND OPERATING IN THE FIELD IN A USE SIMILAR TO THE PROPOSED USE FOR THIS PROJECT.

SUPPORTING DEVICES:
1. FURNISH AND INSTALL STEEL SUPPORTS AND FRAMES CONNECTED WITH WELDS AND/OR MACHINE BOLTS WITH WOOD BACK PANELS FOR MOUNTING ALL ELECTRICAL EQUIPMENT INCLUDING PANEL BOARDS, SWITCHES, STARTERS, CONTACTORS, AND CONTROLS AS REQUIRED AND AS APPROVED BY THE ENGINEER.
2. FURNISH AND INSTALL ANGLE IRON FRAMES BOLTED TO FLOOR OR WALL FOR MOUNTING ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER DIVISIONS TO BE INSTALLED BY DIVISION 26 WHERE NECESSARY.
3. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
   a. ALLIED TUBE AND CONDUIT
   b. B–LINE SYSTEMS
   c. UNISTRUT DIVERSIFIED PRODUCTS
   d. THOMAS & BETTS
4. COATINGS: SUPPORTS, SUPPORT HARDWARE, AND FASTENERS SHALL BE PROTECTED WITH ZINC COATING OR WITH TREATMENT OF EQUIVALENT CORROSION RESISTANCE USING APPROVED ALTERNATIVE TREATMENT, FINISH, OR INHERENT MATERIAL CHARACTERISTICS. PRODUCTS FOR USE OUTDOORS SHALL BE HOT–DIP GALVANIZED.
5. RACEWAY SUPPORTS: CLEVIS HANGERS, RISER CLAMPS, CONDUIT STRAPS, THREADED C–CLAMPS WITH RETAINERS, CEILING TRAPEZE HANGERS, WALL BRACKETS, AND SPRING STEEL CLAMPS.
6. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:
   a. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
   b. TOGGLE BOLTS: ALL STEEL SPRINGHEAD TYPE.
   c. POWER–DRIVEN THREADED STUDS: HEAT–TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
   d. FASTEN BY MEANS OF WOOD SCREWS ON WOOD,
   e. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
   f. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING–TENSION CLAMPS ON STEEL.
   g. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
   h. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
   i. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

SUPPORTING DEVICES:

1. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.
2. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.
3. RACEWAY SUPPORTS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS FOR SELECTION AND INSTALLATION OF SUPPORTS.
4. THE STRENGTH OF EACH SUPPORT SHALL BE ADEQUATE TO CARRY THE PRESENT AND FUTURE LOAD MULTIPLIED BY A SAFETY FACTOR OF AT LEAST FOUR. WHERE THIS DETERMINATION RESULTS IN A SAFETY ALLOWANCE OF LESS THAN 200 POUNDS, PROVIDE ADDITIONAL STRENGTH UNTIL THERE IS A MINIMUM OF 200 POUNDS SAFETY ALLOWANCE IN THE STRENGTH OF EACH SUPPORT.
5. INSTALL INDIVIDUAL AND MULTIPLE (TRAPEZE) RACEWAY HANGERS AND RISER CLAMPS AS NECESSARY TO SUPPORT THE RACEWAYS. PROVIDE U–BOLTS, CLAMPS, ATTACHMENTS, AND OTHER HARDWARE NECESSARY FOR HANGER ASSEMBLY AND FOR SECURING HANGER RODS AND CONDUITS.
6. SUPPORT PARALLEL RUNS OF HORIZONTAL RACEWAYS TOGETHER ON TRAPEZE–TYPE HANGERS.
7. SUPPORT MISCELLANEOUS ELECTRICAL COMPONENTS AS REQUIRED TO PRODUCE THE SAME STRUCTURAL SAFETY FACTORS AS SPECIFIED FOR RACEWAY SUPPORTS. INSTALL METAL CHANNEL RACKS FOR MOUNTING CABINETS, PANEL BOARDS, DISCONNECTS, CONTROL ENCLOSURES, PULL BOXES, JUNCTION BOXES, TRANSFORMERS AND OTHER DEVICES.
8. IN OPEN OVERHEAD SPACES, CAST BOXES THREADED TO RACEWAYS NEED NOT BE SUPPORTED SEPARATELY EXCEPT WHERE USED FOR FIXTURE SUPPORT. SUPPORT SHEET METAL BOXES DIRECTLY FROM THE BUILDING STRUCTURE OR BY BAR HANGERS. WHERE BAR HANGERS ARE USED, ATTACH THE BAR TO RACEWAYS ON OPPOSITE SIDES OF THE BOX AND SUPPORT THE RACEWAY WITH A LISTED TYPE OF FASTENER NOT MORE THAN 24" (600 MM) FROM THE BOX.
9. INSTALL CONDUIT SEALING FITTINGS FOR CONDUIT PENETRATIONS OF CONCRETE WALL EXTERIOR OR BELOW GRADE AS SPECIFIED OR REQUIRED BY CODE.
10. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:
    a. FASTEN BY MEANS OF WOOD SCREWS ON WOOD,
    b. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
    c. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
    d. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING–TENSION CLAMPS ON STEEL.
    e. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
    f. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
    g. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.
11. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.
12. USE VIBRATION AND SHOCK–RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:
1. DURING TRENCH BACKFILLING, FOR EXTERIOR UNDERGROUND POWER, CONTROLS, SIGNAL, AND COMMUNICATIONS LINES, INSTALL CONTINUOUS UNDERGROUND PLASTIC LINE MARKER, LOCATED DIRECTLY ABOVE THE LINE AT A BURIAL DEPTH OF 2 FEET BELOW FINISHED GRADE. INSTALL TWO LINE MARKERS 6" IN FROM THE EDGE OF EACH TRENCH WHERE THE TRENCH EXCEEDS 16" IN WIDTH. INSTALL LINE MARKERS FOR ALL UNDERGROUND ELECTRICAL TRENCHES REGARDLESS OF VOLTAGE OR MATERIAL.
2. PROVIDE TYPED CIRCUIT SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF PANEL BOARDS.
3. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANEL BOARD.

SECTION 26 200 – ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:
1. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS, AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW–C–581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND AND SHALL BE GROUNDED PER CURRENT NEC SPECIFICATIONS. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER, WHO SHALL HAVE A MINIMUM OF FIVE YEARS' EXPERIENCE PRODUCING THE MATERIAL.
2. EXTERIOR UNDERGROUND CONDUIT SHALL BE POLYVINYLCHLORIDE (PVC) SCHEDULE 80 OR DIRECT BURIAL RATED. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR EQUAL. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER, WHO SHALL HAVE A MINIMUM OF FIVE YEARS' EXPERIENCE PRODUCING THE MATERIAL.
3. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN CONCEALED SPACES ABOVE CEILINGS OR WITHIN WALLS AND EXPOSED IN SPRINT SHELTERS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO–GALVANIZED OR HOT–DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW–C–563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR EQUAL.
4. FLEXIBLE CONDUIT IS NOT INTENDED TO FULLY REPLACE RIGID CONDUIT IN A CIRCUIT. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) IS ONLY PERMISSIBLE FOR MAKING FINAL CONNECTIONS TO CABINETS AND ENCLOSURES. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6 FEET IN LENGTH. THE LENGTH OF THE FLEXIBLE CONDUIT CAN BE BROKEN UP INTO TWO 3 FOOT LENGTHS WITH 3 FEET AT EITHER END. LIQUIDTIGHT FLEXIBLE NON–METALLIC CONDUIT (LFNC) IS PERMISSIBLE ONLY FOR DEDICATED GROUNDING CONDUITS SUCH AS GROUNDING CONNECTIONS TO TOWERS, STEEL STRUCTURES, GROUND BARS, CABINET GROUND POINTS, ETC. FLEXIBLE CONDUITS SHALL NOT BE USED WHERE SUBJECT TO MECHANICAL DAMAGE AND SHALL BE SUPPORTED AS REQUIRED BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE (HYSPAN) OR UNIVERSAL METAL HOSE, SOUTHWIRE, OR EQUAL. LIQUIDTIGHT FLEXIBLE CONDUIT (LMFC) SHALL BE UL LISTED, OIL RESISTANT, SUNLIGHT RESISTANT, WATERPROOF, AND TEMPERATURE RATED –30C TO +80C.
5. CONDUITS MUST BE SUPPORTED WITHIN 12" OF THE CONNECTION TO CABINETS AND ENCLOSURES TO REDUCE THE STRAIN ON FITTINGS. CONDUITS MUST BE ADEQUATELY SUPPORTED AT 24" CENTERS FOR HORIZONTAL RUNS AND 36" CENTERS FOR VERTICAL RUNS AND MUST BE PROTECTED FROM PHYSICAL DAMAGE. CONDUITS MUST NOT BE ROUTED OVER PLATFORMS AND SLABS AS THIS CREATES A WORKER TRIP HAZARD AND HAS RESULTED IN OSHA REPORTABLE ACCIDENTS, WORKER INJURIES, AND EXCESSIVE LIABILITY FOR SPRINT. CONDUITS MUST ALSO NOT BE IS INSTALLED WITHIN EQUIPMENT AND PERSONNEL INGRESS OR EGRESS PATHWAYS AND IS NOT PERMISSIBLE WITHIN THE OSHA REQUIRED WORKING SPACES IN FRONT OF OR BEHIND CABINETS AND ENCLOSURES.
6. ALL FITTINGS USED FOR CONNECTION TO CABINETS AND ENCLOSURES MUST BE METALLIC AND INCLUDE PLASTIC BUSHINGS TO PREVENT CABLE JACKET ABRASION.
7. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH.

BOXES AND COVERS:
1. PULL AND JUNCTION BOXES SHALL BE SIZED IN ACCORDANCE WITH NEC REQUIREMENTS AND SHALL BE INSTALLED SO THAT THE CONDUCTORS IN THEM ARE ACCESSIBLE WITHOUT REMOVING ANY PART OF THE STRUCTURE.
2. INTERIOR SWITCH AND OUTLET BOXES FLUSH MOUNTED IN FINISHED AREAS SHALL BE CODE GAUGE PRESSED PLATED STEEL, MIDLAND ROSS OR APPROVED EQUAL, SUITABLE FOR THE DEVICE TO BE INSTALLED. COVERS SHALL BE AS HEREINAFTER SPECIFIED IN PARAGRAPH "DEVICE PLATES IN FINISHED AREAS."
3. DEVICE AND PULL BOXES SURFACE–MOUNTED ABOVE ACCESSIBLE CEILINGS AND WITHIN UNFINISHED ENCLOSED MECHANICAL ROOMS SHALL BE AS SPECIFIED ABOVE SIZED FOR THE CONDUCTORS WITHIN AND SHALL HAVE PRESSED PLATED STEEL SCREW ATTACHED COVERS.
4. INTERIOR SWITCH, AND OUTLET BOXES SURFACE MOUNTED IN UNFINISHED INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, THREADED, SUITABLE FOR THE DEVICE TO BE INSTALLED, CROUSE–HINDS FS/FD SERIES OR APPROVED EQUAL. COVERS SHALL BE SCREW ATTACHED PLATED IRON ALLOY SUITABLE FOR THE BOX AND DEVICE. SWITCH PLATE COVERS SHALL BE "GUARDED" STYLE.
5. PULL AND JUNCTION BOXES, ABOVE GRADE, EXTERIOR TO THE BUILDING AND IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, THREADED, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE–HINDS WAB SERIES OR EQUAL.
6. PULL BOXES IN EARTH SHALL BE FIBERGLASS OR COMPOSITE, OPEN BOTTOM COFFINS, INSTALLED IN EARTH ON GRAVEL BEDS AS INDICATED ON THE DRAWINGS AND RATED FOR PEDESTRIAN OR VEHICULAR TRAFFIC AS REQUIRED.
7. CONDUIT OUTLET BODIES AND CONDULETS SHALL BE PLATED, THREADED, CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE–HINDS FORM 8 OR EQUAL.
8. EXTERIOR SWITCH AND OUTLET BOXES SHALL BE RECESSED MOUNTED EXCEPT AS NOTED, CAST ALUMINUM OR PLATED CAST ALLOY WITH WET LOCATION, CROUSE–HINDS SERIES WLRD COVERS, OR EQUAL. MASONRY BOXES MOUNTED RECESSED IN EXTERIOR WALL SHALL BE FURNISHED WITH WEATHERPROOF COVERS.
9. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE–HINDS, COOPER, ADALET, APPLETON, O–Z GEDNEY, OR RACO.

GROUNDING:
1. ELECTRICAL SERVICES, CIRCUITS AND SYSTEMS, ENCLOSURES AND EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. GROUNDING SHALL BE PROVIDED AS INDICATED FOR FEEDER, BRANCH CIRCUIT, CONTROL, AND INSTRUMENT CIRCUITS.
3. EQUIPMENT GROUNDING CONDUCTOR: FURNISH AND INSTALL A SEPARATE INSULATED GREEN WIRE GROUNDING CONDUCTOR IN CONDUIT WITH CIRCUIT CONDUCTORS FOR ALL FEEDERS AND BRANCH CIRCUITS.
4. SEPARATELY DERIVED AC SYSTEMS THAT ARE REQUIRED TO BE GROUNDED BY THE NEC SHALL BE GROUNDED IN ACCORDANCE WITH PARAGRAPH 250–26 OF THE NEC.
5. FURNISH AND INSTALL INSULATED COPPER GROUND CONDUCTORS IN CONDUIT FROM MAIN ELECTRICAL SERVICE EQUIPMENT OR ELECTRICAL ROOM GROUND BUS AND CONNECT TO MAIN METALLIC WATER SERVICE ENTRANCE (IF AVAILABLE) WITH GROUND CLAMPS. CONNECT GROUND CONDUCTOR TO THE STREET SIDE OF WATER MAIN WHERE A DIELECTRIC MAIN WATER FITTING IS INSTALLED.
6. FURNISH AND INSTALL GROUND FAULT PROTECTION WHERE REQUIRED BY CODE AND AS REQUIRED BY THE SPECIFICATIONS AND DRAWINGS. INSTALLATION OF GROUND FAULT PROTECTION SHALL BE IN ACCORDANCE WITH NEC.
7. FURNISH AND INSTALL SUPPLEMENTAL CELL SITE GROUNDING SYSTEMS AS INDICATED ON THE DRAWINGS.

EXISTING STRUCTURE:
1. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE–ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.
2. EXISTING EQUIPMENT THAT IS NOT TO BE REUSED SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE COMPANY IF COMPANY WISHES TO RETAIN OWNERSHIP OF SAME. IF NOT, EQUIPMENT SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
3. WHEN EXISTING CONDUIT, WIRING OR ANY OUTLET, RECEPTACLE, SWITCH, ETC., THAT IS TO BE UTILIZED IN THE COMPLETED PROJECT CONFLICTS WITH CONSTRUCTION, IT SHALL BE RELOCATED AND RECONNECTED TO MAINTAIN THE DESIRED SERVICE.
4. THIS CONTRACTOR SHALL GIVE FULL COOPERATION IN THE SCHEDULING AND PROCEDURE OF WORK. SERVICE SHALL NOT BE INTERRUPTED WITHOUT APPROVAL OF THE COMPANY.

CONDUIT AND CONDUCTOR INSTALLATION:
1. CONDUIT SHALL BE SIZED AS REQUIRED BY NEC AND SHALL BE INSTALLED CONTINUOUS AND COMPLETE FROM OUTLET TO OUTLET, PANELS AND JUNCTION BOXES.
   a. IN ORDER TO CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE

PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES IN EXPOSED LOCATIONS EXCEPT AS OTHERWISE INDICATED, AND IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE.
   b. OTHER CHANGES IN DIRECTION SHALL BE MADE WITH TRADE ELBOWS, KEEPING CONDUITS

GROUPED IN TIGHT ENVELOPES FOLLOWING THE LINES OF THE STRUCTURE AND MAINTAINING CLOSE PROXIMITY TO THE STRUCTURE EXCEPT AS OTHERWISE INDICATED, AND IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE.
   c. ROUTE CONDUITS ACCORDING TO THE ENVELOPES, AREAS, DETAILS AND SECTIONS, IF

ANY, IDENTIFIED ON THE DRAWINGS.
2. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CONDUITS SHALL BE CONCEALED IN FINISHED AREAS. CONDUIT SHALL BE EXPOSED IN UNFINISHED AREAS.
3. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. CONDUIT SHALL BE INSTALLED AS REQUIRED BY THE DESIGN OF THE STRUCTURE AND PLACED IN CONCRETE FORMS SO AS NOT TO INTERFERE WITH REINFORCING OR STRENGTH OF SLABS, JOISTS OR BEAMS. CONDUIT SHALL CLEAR ALL PIPES AND DUCTS AND DEPRESSIONS IN FLOORS. PERMISSION OF ENGINEER SHALL BE OBTAINED AS TO LOCATION OF CONDUIT IN REINFORCED CONCRETE SLABS, JOISTS AND BEAMS.
4. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING.
5. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
6. EMT CONDUITS (IF ALLOWED) SHALL HAVE APPROVED EMT THREADED TYPE BOX CONNECTORS AND COUPLINGS. SET SCREW CONNECTORS AND COUPLINGS SHALL NOT BE ACCEPTABLE.
7. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE. WHERE MORE THAN ONE CONDUCTOR IS INSTALLED IN THE SAME CONDUIT ALL CONDUCTORS WITHIN THE CONDUIT SHALL BE PULLED SIMULTANEOUSLY. PULL SHALL NOT DEFORM CONDUCTORS. APPROVED TYPE LUBRICANT MAY BE USED IN PULLING CONDUCTORS WHERE REQUIRED.
8. SPLICES AND TAPS SHALL BE KEPT TO A MINIMUM AND MADE IN ACCORDANCE WITH THE NEC.
9. WHERE CONDUIT CROSSES AN EXPANSION JOINT, AN EXPANSION AND DEFLECTION FITTING SHALL BE INSTALLED IN THE CONDUIT.
10. PROVIDE "MULE TAPE" PULL STRING IN ALL EMPTY CONDUITS.
11. PVC CONDUITS SHALL BE INSTALLED USING FITTINGS, SOLVENTS, GLUES, AND METHODOLOGY AS RECOMMENDED BY THE MANUFACTURER.
12. PROVIDE ADEQUATE LENGTH OF CONDUCTORS WITHIN ELECTRICAL ENCLOSURES AND TRAIN THE CONDUCTORS TO TERMINAL POINTS WITH NO EXCESS. DO NOT BEND CONDUCTORS SHARPER THAN EIGHT TIMES THE CABLE OUTSIDE DIAMETER. MAKE TERMINATIONS SO THERE IS NO BARE CONDUCTOR AT THE TERMINAL. BUNDLE MULTIPLE CONDUCTORS, WITH CONDUCTORS LARGER THAN NO. 10 AWG IN INDIVIDUAL CIRCUIT BUNDLES.
13. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS TO COMPLY WITH TIGHTENING TORQUES SPECIFIED IN UL 486A AND 486B.

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NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT JOHN M. BANKS SEAL REGISTERED ARCHITECT
DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
SPRINT CONSTRUCTION SPECIFICATIONS

SHEET NUMBER
T-3

OVERALL SITE PLAN

0 3" 6"

SCALE: 3/16"=1'-0" (11x17)
(OR) 3/8"=1'-0" (22x34)

2

Sprint

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STATE OF CONNECTICUT
JOHN M. BANKS
LICENSED ARCHITECT

DATED: 09/04/18 SEAL EXP. DATE: 07/31/19

SITE NAME

ATC TOWER

SITE NUMBER

CT03XC337

SITE LOCATION

168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID

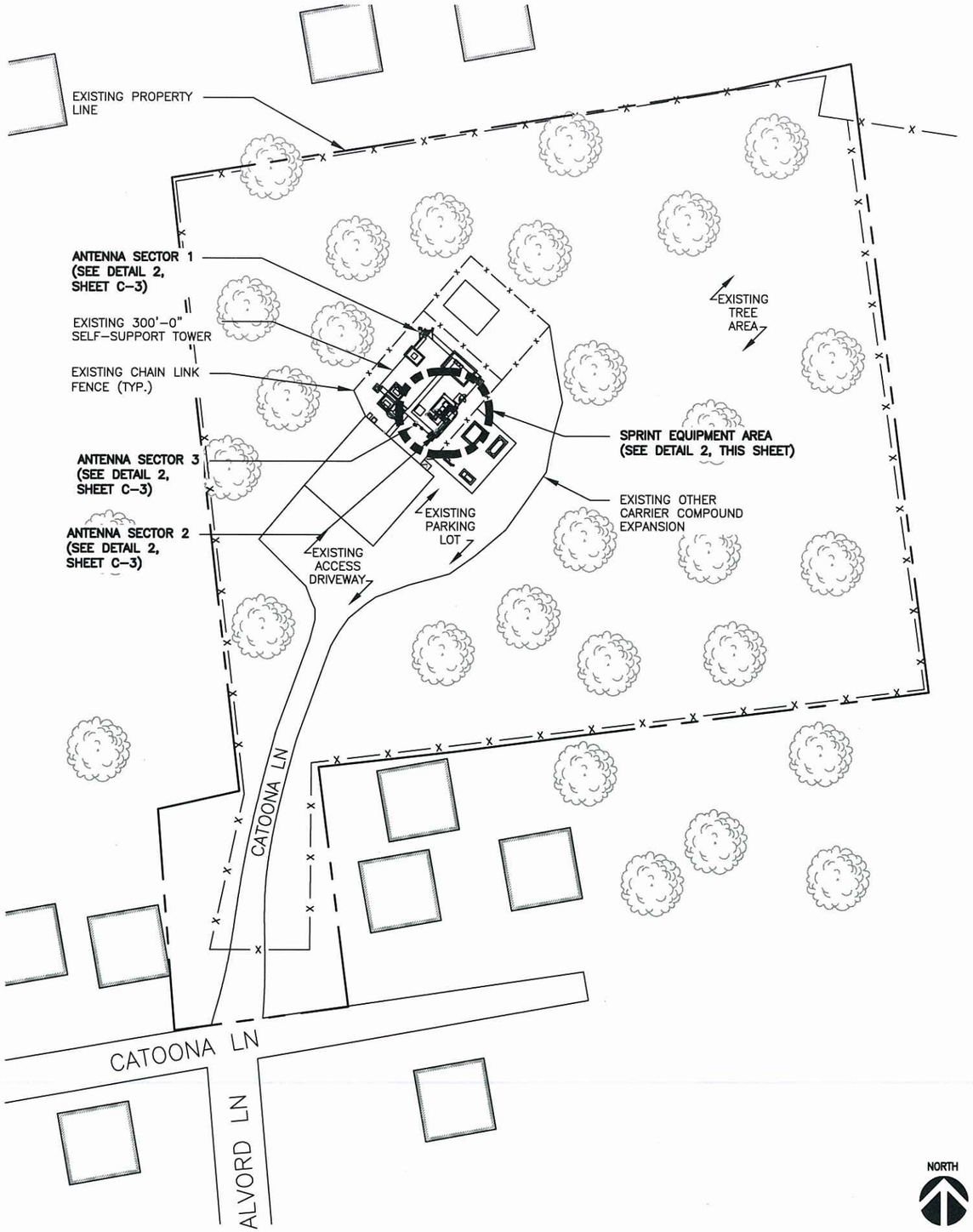
CT03XC337S18.2

SHEET TITLE

PARCEL MAP

SHEET NUMBER

C-1

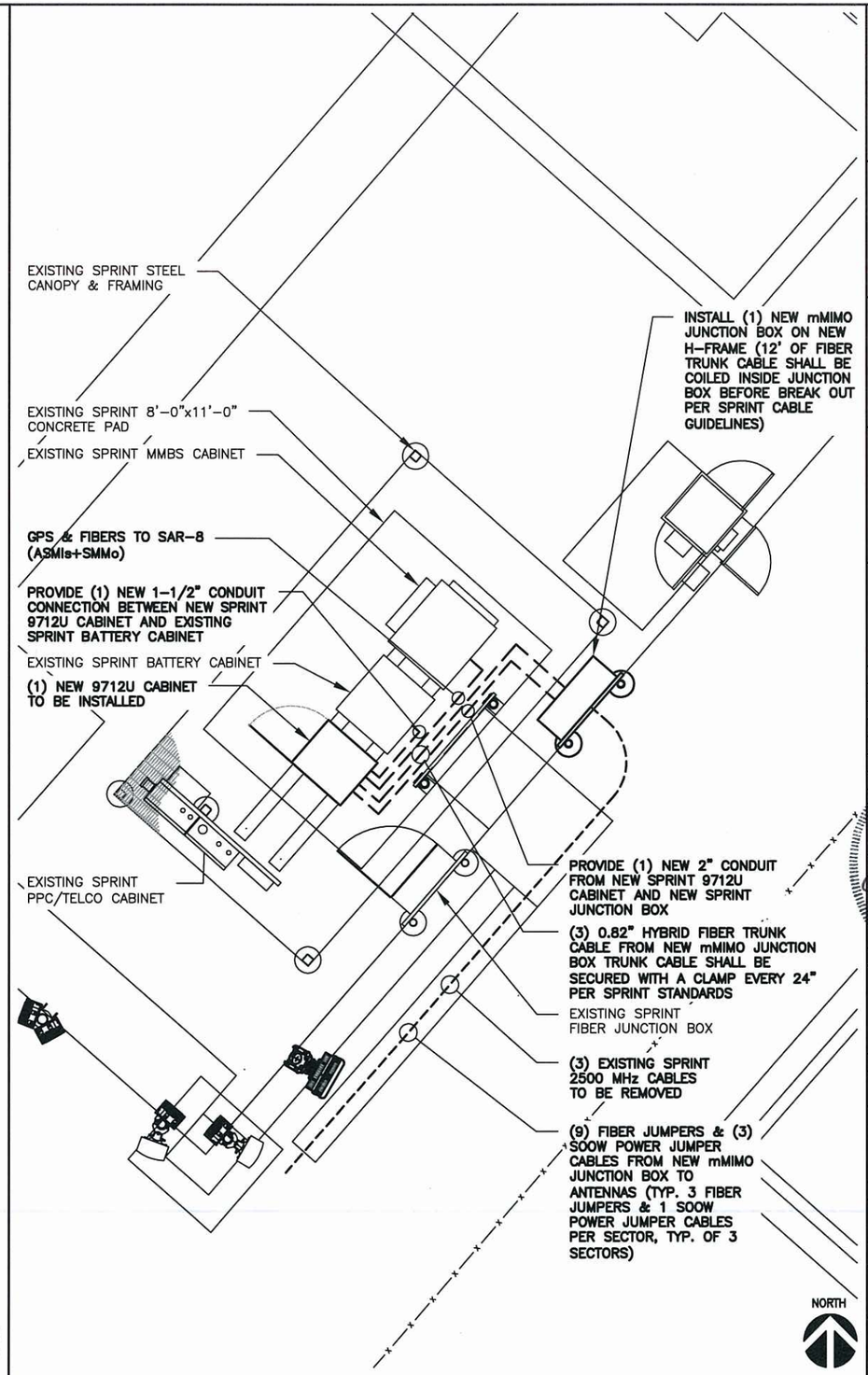


OVERALL SITE PLAN

0 5' 15' 30'

SCALE: 1"=30'-0" (11x17)
(OR) 2"=30'-0" (22x34)

1



NEW EQUIPMENT PLAN

0 3' 6'

SCALE: 3/16"=1'-0" (11x17)
(OR) 3/8"=1'-0" (22x34)

2

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CHECKED BY:		JMB
JOB NUMBER:		CT03XC337
ARCHITECT:		JOHN BANKS

STATE OF ILLINOIS JOHN M. BANKS 10137 LICENSED ARCHITECT SEAL

DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME

ATC TOWER

SITE NUMBER

CT03XC337

SITE LOCATION

168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID

CT03XC337S18.2

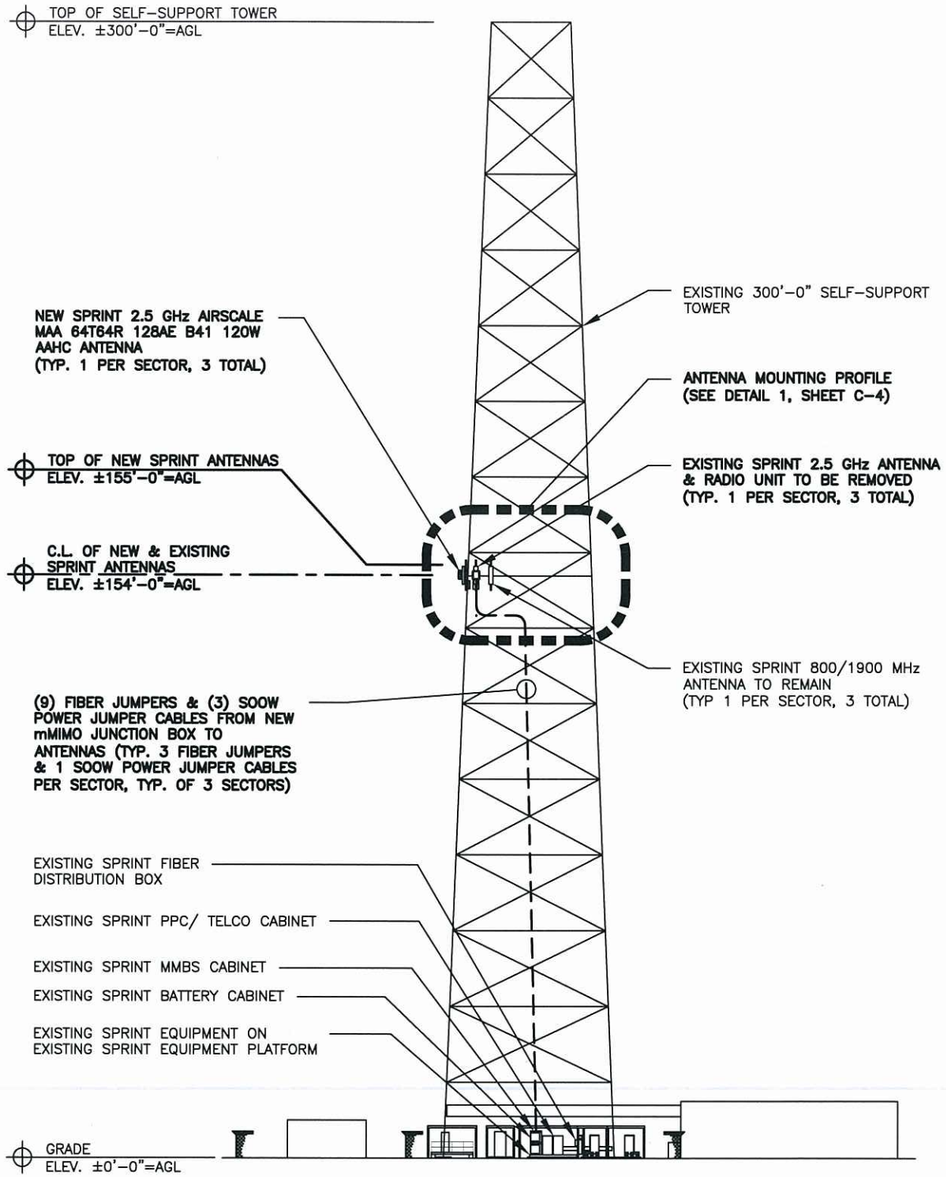
SHEET TITLE

SITE PLANS

SHEET NUMBER

C-1.1

- TOWER STRUCTURAL CALCULATIONS PREPARED BY OTHERS. CONTRACTOR TO VERIFY WITH PROJECT MANAGER TO OBTAIN A COPY
- CONTRACTOR TO REFER TO TOWER STRUCTURAL CALCULATIONS FOR ADDITIONAL LOADS. NO ERECTION OR MODIFICATION OF TOWER SHALL BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.



TOWER ELEVATION – SOUTHEAST

0 10' 20' 40'

SCALE: 1"=40'-0" (11x17)
(OR) 2"=40'-0" (22x34)

1

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STATE OF CONNECTICUT
JOHN M. BANKS
DATED: 09/04/18
SEAL
EXP. DATE: 07/31/19
LICENSED ARCHITECT

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STAMFORD, CT 06902

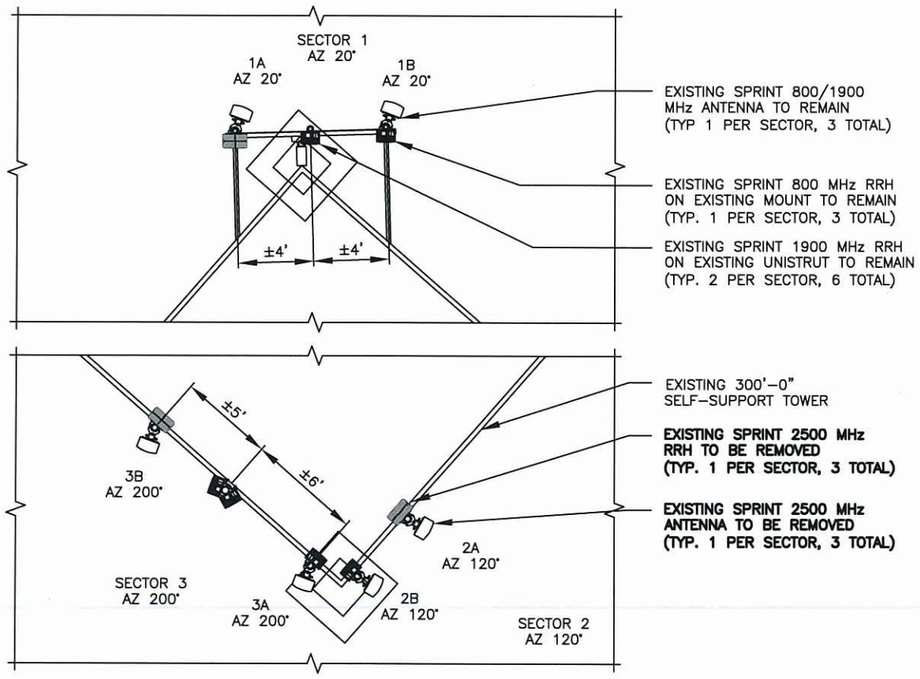
AUGMENT ID
CT03XC337S18.2

SHEET TITLE
TOWER ELEVATION - SOUTHEAST

SHEET NUMBER
C-2

EXISTING ANTENNA AND CABLE SCHEDULE

LOCATION		AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL #	# OF RRH	CABLE SIZE	CABLE LENGTH
SECTOR 1	1A	20°	154'-0"	EXISTING-TO BE REMOVED	2500 MHz	RFS APXVTM14-C-I20	2500 MHz-1	1" CONDUIT W/(3) ETHERNET & FIBER CABLES TO BE REMOVED	±300'
	1B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	1C	20°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±300'
SECTOR 2	2A	120°	154'-0"	EXISTING-TO BE REMOVED	2500 MHz	RFS APXVTM14-C-I20	2500 MHz-1	1" CONDUIT W/(3) ETHERNET & FIBER CABLES TO BE REMOVED	±240'
	2B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	2C	120°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±240'
SECTOR 3	3A	200°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±210'
	3B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	3C	200°	154'-0"	EXISTING-TO BE REMOVED	2500 MHz	RFS APXVTM14-C-I20	2500 MHz-1	1" CONDUIT W/(3) ETHERNET & FIBER CABLES TO BE REMOVED	±210'



NORTH

NOTE:
ALL ANTENNA AZIMUTHS BASED ON TRUE NORTH AS SPECIFIED BY RFDS, LATEST REVISION

EXISTING ANTENNA PLAN

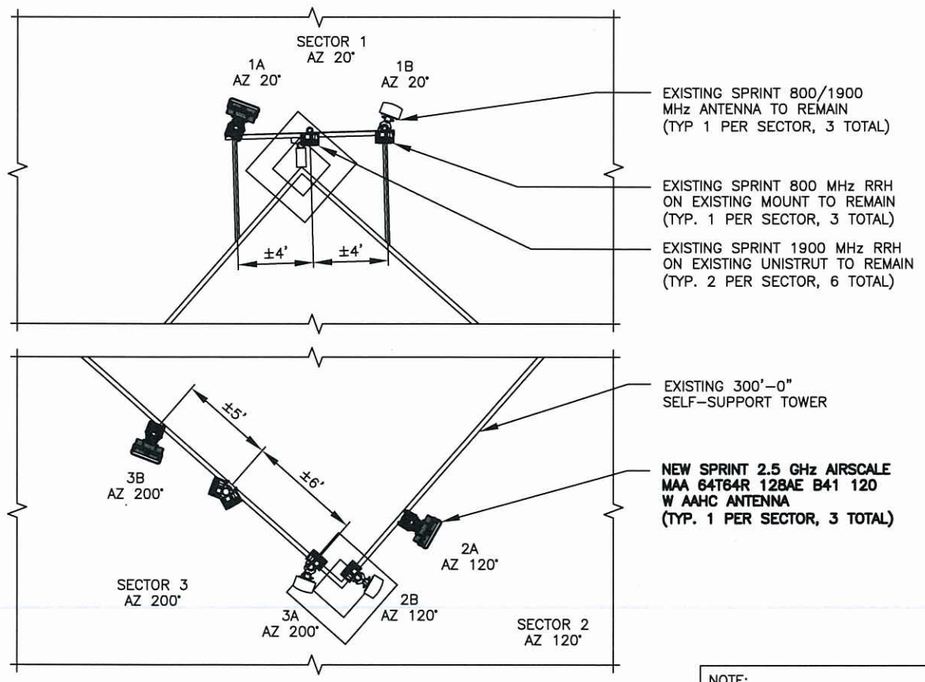
0 4' 8'

SCALE: 1/8"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

NEW ANTENNA AND CABLE SCHEDULE

LOCATION		AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL #	# OF RRH	CABLE SIZE	CABLE LENGTH
SECTOR 1	1A	20°	154'-0"	NEW	2500 MHz	AIRSCALE MAA 64T64R 128AE B41 120W AAHC	INTEGRATED	0.82" HYBRID	±15'
	1B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	1C	20°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±267'
SECTOR 2	2A	120°	154'-0"	NEW	2500 MHz	AIRSCALE MAA 64T64R 128AE B41 120W AAHC	INTEGRATED	0.82" HYBRID	±15'
	2B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	2C	120°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±209'
SECTOR 3	3A	200°	154'-0"	EXISTING	800/1900 MHz	RFS APXVSPP18-C-A20	800 MHz-1	N/A	±209'
	3B	N/A	N/A	N/A	N/A	N/A	1900 MHz-2	N/A	N/A
	3C	200°	154'-0"	NEW	2500 MHz	AIRSCALE MAA 64T64R 128AE B41 120W AAHC	INTEGRATED	0.82" HYBRID	±15'
									±45'



NORTH

NOTE:
1. THE AAHC WILL REQUIRE A 40A CIRCUIT BREAKER.

NOTE:
1. ANTENNA AZIMUTHS BASED ON TRUE NORTH AS SPECIFIED BY RFDS, LATEST REVISION
2. ALL SPRINT ANTENNAS TO BE 4'-0" CL PIPE TO PIPE.

PROPOSED ANTENNA PLAN

0 4' 8'

SCALE: 1/8"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

2

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201 STATE ROUTE 17 NORTH
RUTHERFORD, NJ 07070
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NO.	DATE	DESCRIPTION
1	09.04.18	PERMIT/CONSTRUCTION
0	07.27.18	PERMIT/CONSTRUCTION

DRAWN BY:	JCS
CHECKED BY:	JMB
JOB NUMBER:	CT03XC337
ARCHITECT:	JOHN BANKS

STATE OF CONNECTICUT · JOHN M. BANKS · No. 10677 · REGISTERED ARCHITECT

DATED: 09/04/18 SEAL: EXP. DATE: 07/31/19

SITE NAME

ATC TOWER

SITE NUMBER

CT03XC337

SITE LOCATION

168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID

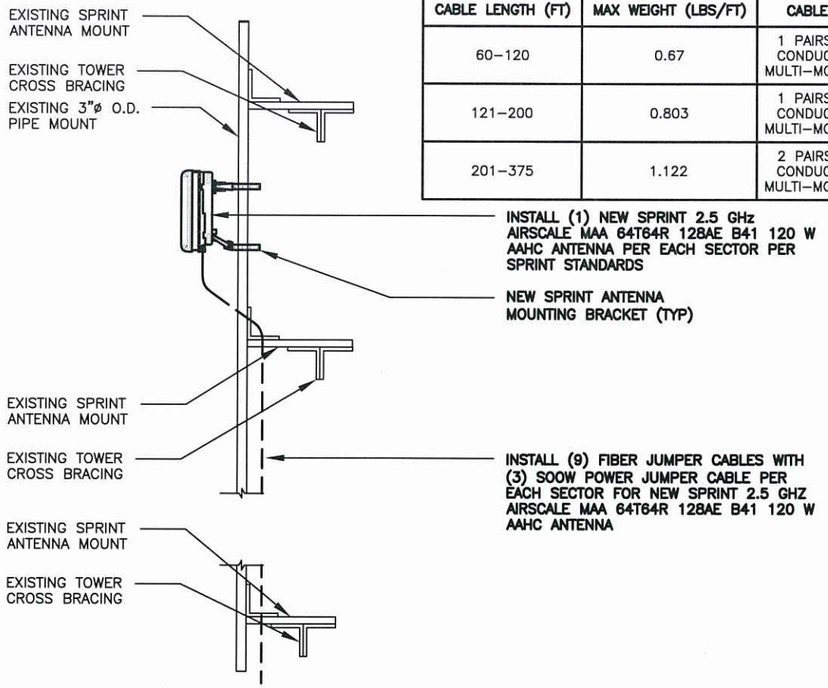
CT03XC337S18.2

SHEET TITLE

ANTENNA LAYOUTS

SHEET NUMBER

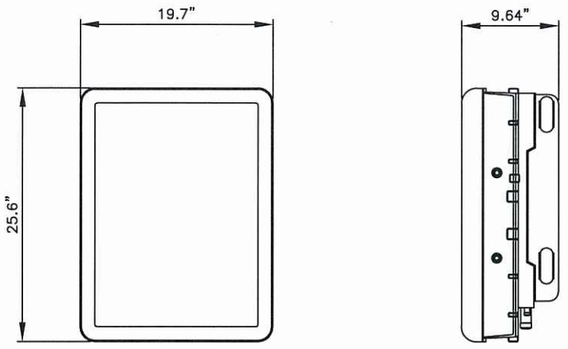
C-3

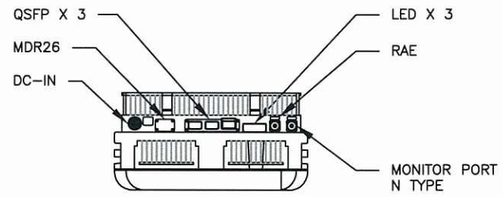


SPRINT CABLE GUIDELINES FOR CELL SITES

CABLE LENGTH (FT)	MAX WEIGHT (LBS/FT)	CABLE DESCRIPTION	MAX DIAMETER (IN.)
60–120	0.67	1 PAIRS OF 6AWG DC CONDUCTORS WITH 16 MULTI–MODE FIBER PAIRS	0.82
121–200	0.803	1 PAIRS OF 4AWG DC CONDUCTORS WITH 16 MULTI–MODE FIBER PAIRS	0.92
201–375	1.122	2 PAIRS OF 4AWG DC CONDUCTORS WITH 16 MULTI–MODE FIBER PAIRS	1.01

ANTENNA MOUNTING PROFILE VIEW — SCALE N.T.S. — 1





NOKIA – AIRSCALE MAA 64T64R 128AE B41 120W AAHC
WEIGHT (FULLY EQUIPPED): 103.6 LBS
SIZE (HXWXD): 25.6X19.7X9.64 IN.

ANTENNA DETAIL — SCALE N.T.S. — 2

NOT USED — SCALE N.T.S. — 3

NOT USED — SCALE N.T.S. — 4

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STATE OF CONNECTICUT — JOHN M. BANKS — LICENSED ARCHITECT
DATED: 09/04/18 SEAL EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

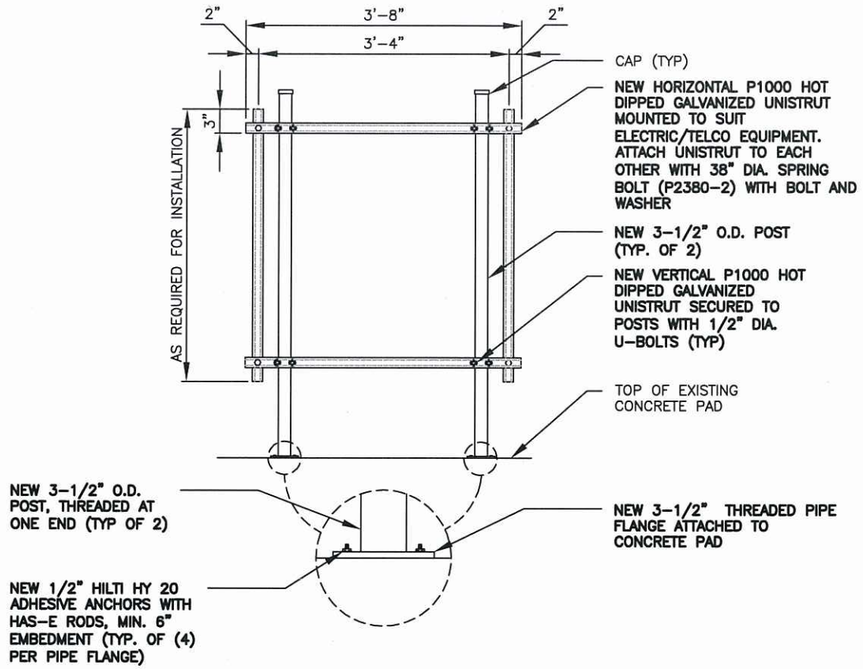
SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

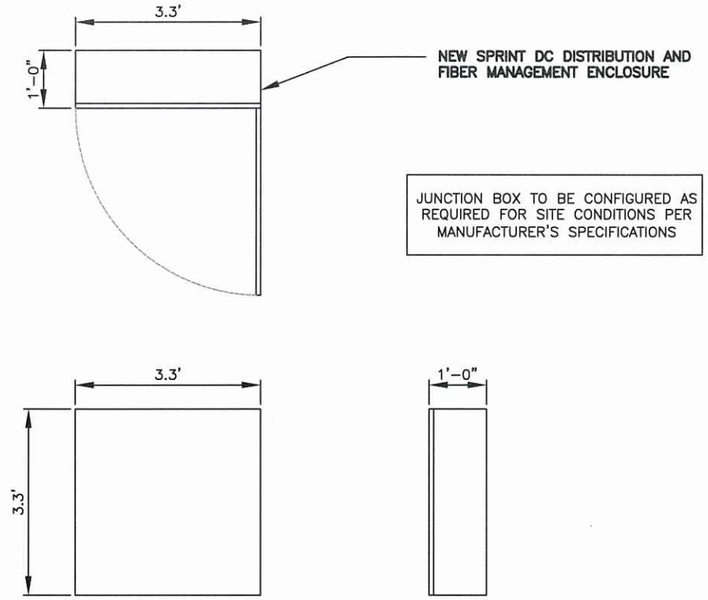
AUGMENT ID
CT03XC337S18.2

SHEET TITLE
EQUIPMENT DETAILS

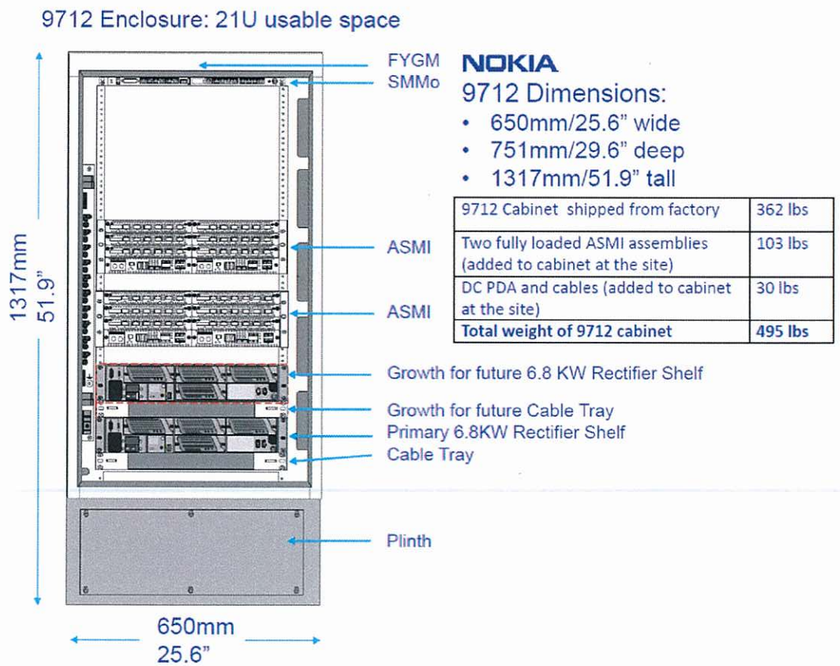
SHEET NUMBER
C-4



DC DISTRIBUTION & FIBER MGMT ENCLOSURE MOUNTING DETAIL | SCALE N.T.S. | 1



DC DISTRIBUTION & FIBER MGMT ENCLOSURE DETAIL | SCALE N.T.S. | 2



9712 Cabinet shipped from factory	362 lbs
Two fully loaded ASMI assemblies (added to cabinet at the site)	103 lbs
DC PDA and cables (added to cabinet at the site)	30 lbs
Total weight of 9712 cabinet	**495 lbs**

9712U CABINET DETAIL | SCALE N.T.S. | 3

NOT USED | SCALE N.T.S. | 4

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ARCHITECT: JOHN BANKS

STATE OF CONNECTICUT JOHN M. BANKS LICENSED ARCHITECT
DATED: 09/04/18 SEAL EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

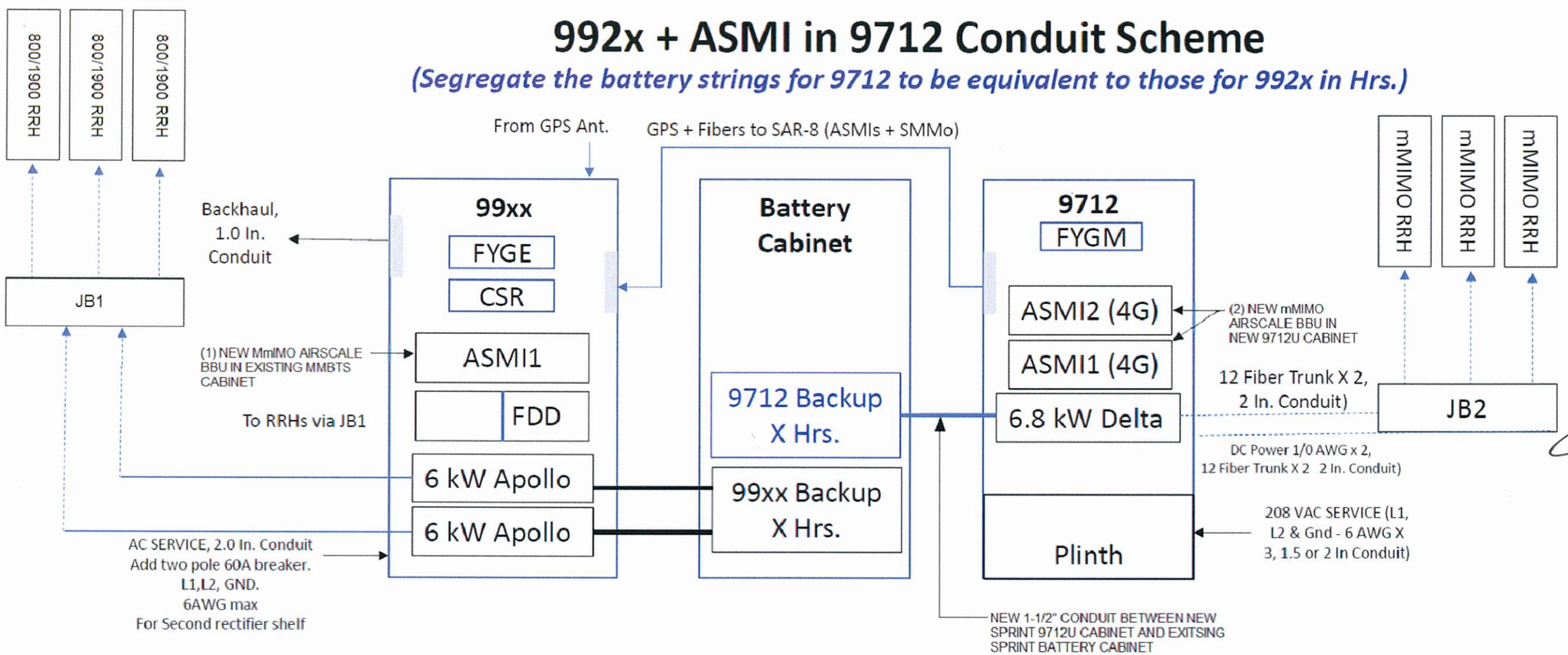
AUGMENT ID
CT03XC337S18.2

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-5

992x + ASMI in 9712 Conduit Scheme

(Segregate the battery strings for 9712 to be equivalent to those for 992x in Hrs.)



IMPLEMENTATION DETAIL

SCALE N.T.S.

1

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CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF ILLINOIS · JOHN M. BANKS · LICENSED ARCHITECT · NO. 10137 · SEAL

DATED: 09/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

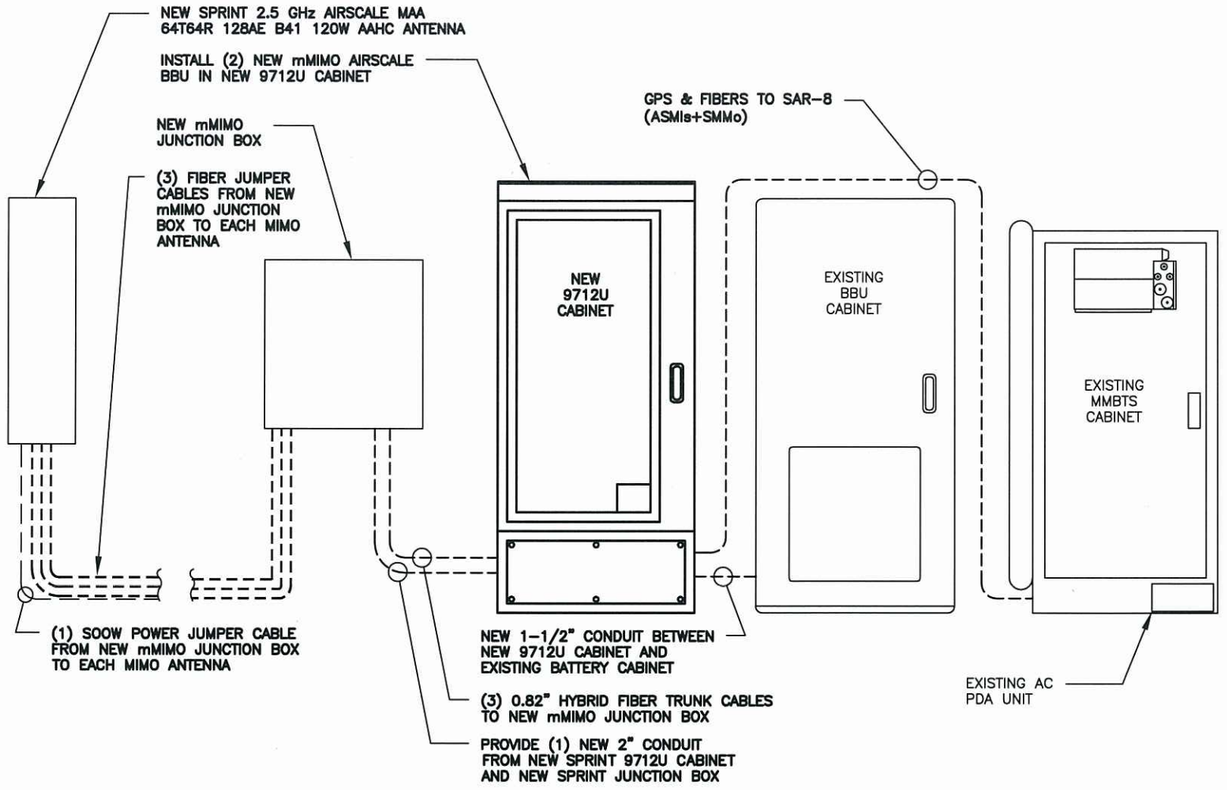
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-6

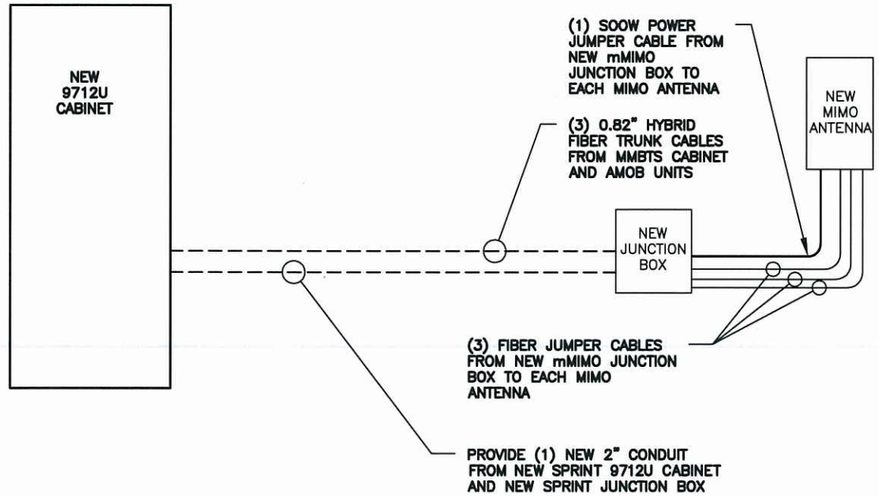
ELECTRICAL NOTES:

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
3. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
4. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
5. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS OR LB'S FOR ALL CONDUITS 2" OR LARGER.
6. ALL CONDUIT TERMINATION'S SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
7. ALL WIRE SHALL BE TYPE THHN/THWN, SOLID, ANNEALED COPPER UP TO SIZE #10 AWG (#8 AND LARGER SHALL BE CONCENTRIC) 75 DEGREE C, (167 DEGREES F), 98% CONDUCTIVITY, MINIMUM #12.
8. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.
9. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
10. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION TO CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
11. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
12. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
13. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.
14. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM (NO EXCEPTIONS.)
15. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS WITH DISABILITIES ACT AS ADOPTED BY THE APPLICABLE STATE.
16. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTION MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.
17. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE DRAWINGS). LOCATION OF ALL OUTLET, BOXES, ETC., AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.

ELECTRICAL NOTES | SCALE N.T.S. | 1



EQUIPMENT UTILITY ELEVATION VIEW | SCALE N.T.S. | 2



ONE-LINE DIAGRAM | SCALE N.T.S. | 3

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DRAWN BY: JCS
CHECKED BY: JMB
JOB NUMBER: CT03XC337
ARCHITECT: JOHN BANKS

STATE OF ILLINOIS JOHN M. BANKS LICENSED ARCHITECT NO. 10137 SEAL/ITECT
DATED: 05/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

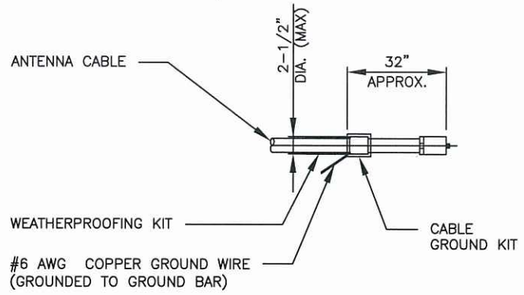
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
C-7

GROUNDING NOTES:

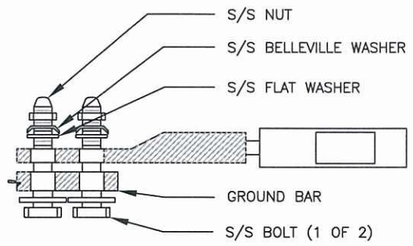
1. ALL GROUNDING SYSTEM CONDUCTORS AND CONNECTIONS BELOW GRADE SHALL BE THERMAL WELDS AT GROUND RODS AND AT A MINIMUM OF 36" BELOW GRADE.
2. ALL INSTALLATIONS SHALL BE FIELD VERIFIED.
3. ALL GROUND WIRE SHALL BE #2 AWG BARE COPPER TINNED UNLESS NOTED OTHERWISE.
4. ALL GROUND WIRES SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
5. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF GROUND RODS AND GROUND RING WITH FOUNDATION AND UNDERGROUND CONDUIT.
6. EACH EQUIPMENT CABINET SHALL BE CONNECTED WITH (2) #2 AWG INSULATED SOLID TINNED COPPER WIRE TO GROUND BAR. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS.
7. ANTENNA GROUND KITS SHALL BE FURNISHED BY SPRINT AND INSTALLED BY CONTRACTOR.
8. KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL GROUNDING CONNECTIONS.
9. ALL EXOTHERMIC CONNECTS SHALL BE INSTALLED UTILIZING THE PROPER CONNECTION/MOLD AND MATERIALS FOR THE PARTICULAR APPLICATION.
10. ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH A LOCK WASHER UNDER THE NUT. HARDWARE FOR BOLTED CONNECTIONS SHALL BE A MINIMUM OF 3/8" DIAMETER AND SHALL BE STAINLESS STEEL.
11. GROUNDING WIRE SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS OR SUPPORTS TO PRECLUDE ESTABLISHING A "CHOKE" POINT.
12. PLASTIC CLIPS OR METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTORS SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
13. STANDARD BUS BARS (CIGBE AND MIGB) SHALL BE FURNISHED AND INSTALLED. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD.
14. THE GROUNDING CONNECTION TO THE POWER AND TELCO SECTIONS OF THE PPC CABINET SHALL BE MADE BY CONNECTING A CONDUCTOR FROM THE GROUND RING TO THE FACTORY FURNISHED BUS BAR IN EACH COMPARTMENT.
15. THE CONTRACTOR SHALL SUPPLY SPRINT AND NIH/ORF WITH RESULTS FROM PRE-CONSTRUCTION (CO-LO ONLY) AND POST-CONSTRUCTION OHM TESTING (GROUND) RESULTS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A "FALL OF POTENTIAL" TEST ON THE NEW SUPPLEMENTAL GROUND FIELD PRIOR TO FINAL CONNECTION OF THE GROUNDING SYSTEM TO EQUIPMENT. THE TEST SHALL BE PERFORMED BY A QUALIFIED AND CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER AND NIH/ORF FOR REVIEW. THE GROUND SYSTEM RESISTANCE TO EARTH GROUND SHALL NOT EXCEED FIVE (5) OHMS. IF THE GROUND TEST EXCEEDS THE MAXIMUM OF 5 OHMS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL GROUND CONNECTIONS AS REQUIRED TO MEET THE 5 OHMS MAXIMUM.

ELECTRICAL NOTES | SCALE N.T.S. | 1



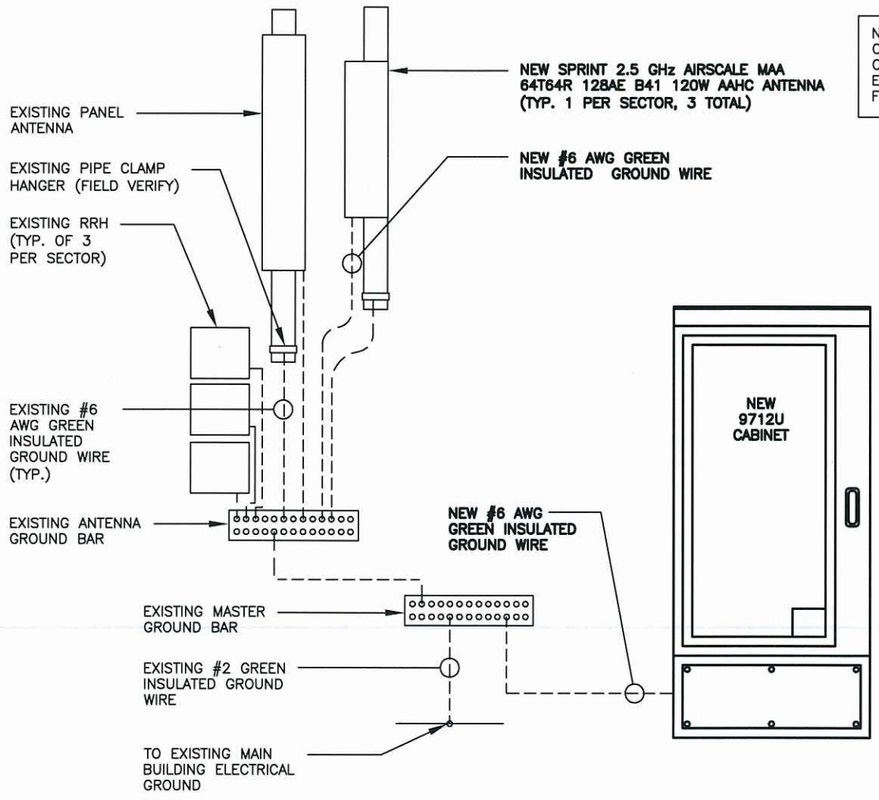
NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

CABLE GROUNDING DETAIL | SCALE N.T.S. | 2



NOTES:
1. PROVIDE 2-HOLE, LONG BARREL,TINNED SOLID COPPER LUGS WHEREVER LUGS ARE SHOWN. ERICO B-122-CE PREFERRED WITH CADWELD TYPE GL CONNECTION. THOMAS AND BETTS 54800BE SERIES WHERE CRIMP CONNECTOR IS REQUIRED.
2. ALL CRIMP CONNECTIONS MUST BE MADE USING HYDRAULIC TOOLS AND THREE POINT HEXAGONAL COMPRESSION MOLDS ON LONG BARREL LUGS.
3. ALL MECHANICAL CONNECTIONS MUST BE MADE USING THOMAS AND BETTS "KOPR-SHIELD". COAT ALL WIRES BEFORE LUGGING. COAT ALL SURFACES BEFORE CONNECTING.
4. ALL HARDWARE 18/8 STAINLESS STEEL INCLUDING BELLEVILLE, COAT ALL SURFACES WITH "KOPR-SHIELD" BEFORE MATING.
5. FOR GROUNDING BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH "KOPR-SHIELD".
6. NO SLOTTED HOLES ON BUS BAR OR LUGS ARE PERMITTED.
7. ALL LUG SHANKS AND LEAD JOINTS SHALL HAVE HEAT SHRINK MATERIAL

TWO-HOLE LUG | SCALE N.T.S. | 3



NOTES:
CONTRACTOR TO USE MECHANICAL CONNECTION FOR GROUNDING OF NEW EQUIPMENT AND CADWELD CONNECTION FOR GROUNDING OF ALL MOUNT PIPES.

GROUNDING RISER DIAGRAM | SCALE N.T.S. | 4

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DRAWN BY:	JCS
CHECKED BY:	JMB
JOB NUMBER:	CT03XC337
ARCHITECT:	JOHN BANKS

STATE OF CONNECTICUT JOHN M. BANKS LICENSED ARCHITECT SEAL
DATED: 08/04/18 EXP. DATE: 07/31/19

SITE NAME
ATC TOWER

SITE NUMBER
CT03XC337

SITE LOCATION
168 CATOONA LANE
STAMFORD, CT 06902

AUGMENT ID
CT03XC337S18.2

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
C-8

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Structural Analysis Report

Structure	:	**300 ft Self Supported AT&T TAG Tower**
ATC Site Name	:	**Stamford (Katoona), CT**
ATC Site Number	:	**88018**
Engineering Number	:	**OAA729246_C3_01**
Proposed Carrier	:	**Sprint Nextel**
Carrier Site Name	:	**ATC Tower**
Carrier Site Number	:	**CT03XC337**
Site Location	:	**Catoona Lane** **Stamford, CT 06902-4573** **41.052800,-73.563000**
County	:	**Fairfield**
Date	:	**May 9, 2018**
Max Usage	:	**94%**
Result	:	**Pass**

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer II

Robert D. Barrett

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft self supported AT&T tag tower to reflect the change in loading by Sprint Nextel.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Eng. #73123451, dated September 28, 2005
Foundation Drawing	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Geotechnical Report	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Modifications	ATC Eng. #42439132, dated September 26, 2008 ATC Eng. #44209632, dated December 2, 2009

Analysis

The tower was analyzed using Power Line Systems, Inc. tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	93 mph (3-Second Gust, V_{asd}) / 120 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
300.0	338.0	1	TX RX Systems 101-68-10-X-03N	Platform w/ Handrails	(1) 1 1/4" Coax	Marcus Comm.
	324.0	1	15' Omni-Grid		(1) 1 5/8" Coax	
	320.0	1	12' Omni		-	Other
	311.0	1	Radio/ODU		(1) 7/8" Coax	Marcus Comm.
		1	4' Std. Dish			
	307.0	1	Radio/ODU		(1) 1/2" Coax	Other
		1	3' HP Dish			
	303.0	3	DragonWave Horizon Compact		(5) 7/8" Coax	Clearwire
		3	DragonWave A-ANT-18G-2-C			
275.0	275.0	1	Rohde & Schwarz ADD090	Side Arm	(2) 7/8" Coax	US Dept Of Homeland Security
270.0	270.0	1	Dielectric TLP-08M-2E	Side Arms	-	Other
		2	Til-Tek TA-2350-DAB		(1) 1 5/8" Coax	Sirius XM Radio
268.0	268.0	3	Ericsson AIR 21, 1.3 M, B2A B4P	Sector Frames	(15) 1 5/8" Coax (3) 7/8" Fiber	T-Mobile
		3	Ericsson AIR-32 B2A/B66Aa			
		3	Andrew LNX-6515DS-VTM			
		3	RFS ATMAA1412D-1A20			
		3	Ericsson RRUS 11 B12			
260.0	260.0	-	-	-	(1) EW20	Sirius XM Radio
250.0	250.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept Of Homeland Security
246.0	246.0	1	Sinclair SC381-HL	Side Arm	(1) 7/8" Coax	
235.0	235.0	6	CCI TPX-070821	Sector Frames	(12) 1 5/8" Coax (4) 0.74" 8 AWG 7 (2) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk	AT&T Mobility
		6	Powerwave TT19-08BP111-001			
		2	Raycap DC2-48-60-0-9E			
		1	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 4426 B66			
		3	Ericsson RRUS 4478 B14			
		6	Ericsson RRUS A2			
		3	Ericsson RRUS-11 800 MHz			
		3	Ericsson RRUS 32			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS E2 B29			
		3	Ericsson RRUS-11			
		3	Powerwave 7770.00			
		3	Andrew SBNHH-1D65A			
		3	CCI OPA-65R-LCUU-H4			
		3	KMW EPBQ-654L8H6-L2			
222.0	222.0	12	Decibel DB844H90E-XY	Sector Frames	(15) 1 5/8" Coax	Sprint Nextel
207.0	207.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept Of Homeland Security
200.0	200.0	2	TX RX Systems 101-68-10-X-03N	Side Arms	(2) 1 1/4" Coax	Marcus Comm.
193.0	193.0	2	Antel BCD-87010 ___	Side Arms	(3) 7/8" Coax	Spok Holdings
		1	30" x 30" Reflector	Leg		

Existing and Reserved Equipment (Continued)

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
175.0	175.0	1	12" x 12" Junction Box	Leg	-	Clearwire
171.0	171.0	3	NextNet BTS-2500	T-Arms	(6) 5/16" Coax (2) 2" Conduit	
165.0	165.0	15	RCU	Leg	(12) 1 5/8" Coax (1) 3/8" RET Control Cable (1) 3/8" Coax	Metro PCS
		6	Kathrein 800 10504			
150.0	150.0	3	Alcatel-Lucent ALU 800MHz External Notch Filter	Sector Frames	(3) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	RFS IBC1900HB-2			
		3	Alcatel-Lucent 800 MHz RRH			
		6	Alcatel-Lucent 1900MHz RRH			
		3	RFS APXVSPP18-C-A20			
139.0	139.0	1	Antel BCD-87010 ___ 4°	Side Arm	(1) 7/8" Coax	Sensus USA
135.0	135.0	1	L-com HG908U-PRO	Stand-Off	(1) 0.38" Cat 5e (1) 1/2" Coax	Senet
130.0	130.0	1	Tycon ENC-DC	Side Arm	-	
120.0	120.0	1	Channel Master Type 120	Stand-Off	(1) 1/2" Coax	Spok Holdings
107.0	107.0	1	TX RX Systems 101-68-10-X-03N	Side Arm	(1) 1 1/4" Coax	Marcus Comm.
92.0	92.0	3	Alcatel-Lucent RRH2X60-1900A-4R	Sector Frames	(3) 1 1/4" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield			
		3	RFS DB-T1-6Z-8AB-0Z			
		6	Andrew SBNHH-1D65B			
		6	72" x 14" Panel			
22.0	22.0	1	Til-Tek TA-2324-LHCP	Leg	(1) 7/8" Coax	Sirius XM Radio
6.0	6.0	1	Trimble Acutime 2000	Leg	(1) 1/2" Coax (1) 1/4" Coax	Spok Holdings
		1	Channel Master Type 120			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	-	(1) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	RFS APXVTM14-C-I20			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	3	Nokia 2.5G MAA - AAHC(64T64R)	Sector Frames	(1) 1.7" Hybrid	Sprint Nextel

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax alongside existing Sprint Nextel coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	76%	Pass
Diagonals	86%	Pass
Truss Diagonals	92%	Pass
Horizontals	81%	Pass
Truss Horizontals	94%	Pass
Anchor Bolts	51%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	337.8	87%
Axial (Kips)	474.2	5%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

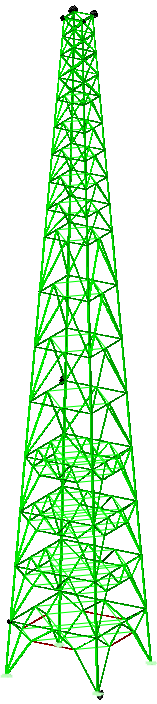
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

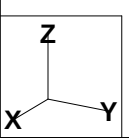
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

American Tower Corp., Project: "2018.05.09 - Sprint Nextel - OAA729246_C3_01"
Tower Version 15.00, 7:55:00 PM Wednesday, May 09, 2018
Undeformed geometry displayed





Project Name : 88018 - Stamford (Katoona), CT
Project Notes: OAA729246_C3_01 - Sprint Nextel
Project File : N:\L2 - ATC\88018\2018.05.09 - Sprint Nextel - OAA729246_C3_01\2018.05.09 - Sprint Nextel - OAA729246_C3_01.tow
Date run   : 7:40:18 PM Wednesday, May 09, 2018
by   : Tower Version 15.00
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

The model has 0 warnings.

Member check option: ANSI/TIA 222-G-1
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: n:\l2 - atc\88018\2018.05.09 - sprint nextel - oaa729246_c3_01\2018.05.09 - sprint nextel - oaa729246_c3_01.eia

*** Analysis Results:

Maximum element usage is 94.45% for Angle "LH 3X" in load case "W -45"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	0P	-45.66	-22.05	-343.43	50.71	-0.91	-5.33	5.41	-2.13	0.00
W 0	0X	-43.81	22.48	-333.33	49.24	0.57	-5.05	5.08	2.25	0.00
W 0	0XY	-34.29	-14.83	207.82	37.36	0.51	-5.59	5.61	2.06	0.00
W 0	0Y	-35.26	13.86	203.92	37.89	-0.35	-5.89	5.90	-2.02	0.00
W 180	0P	35.35	13.62	201.01	37.88	-0.34	5.96	5.97	1.92	0.00
W 180	0X	34.17	-14.36	201.27	37.07	0.52	5.69	5.71	-2.07	0.00
W 180	0XY	43.92	22.36	-330.48	49.29	0.56	5.15	5.18	-2.26	0.00
W 180	0Y	45.36	-21.59	-336.81	50.24	-0.91	5.40	5.48	2.26	0.00
W 45	0P	-47.10	-47.22	-474.19	66.70	3.45	-3.43	4.87	0.13	0.00
W 45	0X	-20.05	-11.65	-63.75	23.19	4.61	-3.63	5.87	3.12	0.00
W 45	0XY	-39.05	-39.14	337.75	55.29	4.40	-4.37	6.20	-0.00	0.00
W 45	0Y	-11.47	-20.22	-64.82	23.24	3.66	-4.58	5.86	-3.12	0.00
W -45	0P	-21.36	12.43	-69.98	24.72	-4.85	-3.85	6.20	-3.18	0.00
W -45	0X	-45.65	47.39	-466.03	65.80	-3.70	-3.22	4.90	0.01	0.00
W -45	0XY	-10.72	19.58	-62.70	22.33	-3.54	-4.36	5.62	3.14	0.00
W -45	0Y	-39.62	38.35	333.69	55.14	-4.28	-4.59	6.27	0.03	0.00
W 90	0P	-22.01	-45.95	-343.64	50.95	5.36	0.92	5.44	2.25	0.00
W 90	0X	13.88	-35.41	204.45	38.03	5.92	0.35	5.93	2.02	0.00
W 90	0XY	-14.83	-34.32	207.71	37.39	5.60	-0.51	5.62	-2.06	0.00
W 90	0Y	22.55	-43.86	-333.53	49.32	5.06	-0.56	5.09	-2.25	0.00
W -90	0P	13.62	35.74	201.48	38.24	-5.98	0.33	5.98	-2.04	0.00
W -90	0X	-21.58	45.50	-337.76	50.36	-5.42	0.93	5.50	-2.26	0.00
W -90	0XY	22.43	43.88	-330.53	49.28	-5.14	-0.54	5.16	2.26	0.00
W -90	0Y	-14.44	34.16	201.79	37.09	-5.68	-0.52	5.70	2.07	0.00
W 0 Ice	0P	-20.36	-14.09	-197.95	24.76	-1.50	-0.14	1.50	-0.57	0.00
W 0 Ice	0X	-19.60	14.16	-192.22	24.19	1.36	-0.06	1.36	0.58	0.00
W 0 Ice	0XY	-1.97	3.28	-39.53	3.83	1.39	-2.80	3.12	0.57	0.00
W 0 Ice	0Y	-1.97	-3.47	-43.75	3.99	-1.43	-2.88	3.21	-0.55	0.00
W 180 Ice	0P	1.96	-3.86	-48.31	4.32	-1.41	2.97	3.29	0.55	0.00
W 180 Ice	0X	1.98	3.64	-44.85	4.14	1.40	2.92	3.24	-0.59	0.00
W 180 Ice	0XY	19.67	13.94	-187.68	24.11	1.34	0.18	1.35	-0.59	0.00
W 180 Ice	0Y	20.25	-13.71	-192.60	24.46	-1.51	0.23	1.52	0.60	0.00
W 45 Ice	0P	-21.27	-21.31	-235.71	30.11	-0.30	0.31	0.43	0.02	0.00
W 45 Ice	0X	-12.91	4.65	-117.94	13.73	2.50	0.32	2.52	0.85	0.00
W 45 Ice	0XY	-3.49	-3.52	-2.07	4.95	2.49	-2.48	3.51	-0.00	0.00
W 45 Ice	0Y	4.68	-12.93	-117.72	13.75	-0.32	-2.49	2.51	-0.85	0.00
W -45 Ice	0P	-13.52	-4.52	-122.82	14.26	-2.62	0.25	2.63	-0.87	0.00
W -45 Ice	0X	-20.68	21.33	-230.42	29.71	0.17	0.37	0.41	-0.01	0.00
W -45 Ice	0XY	4.69	12.82	-113.85	13.65	0.26	-2.42	2.43	0.87	0.00
W -45 Ice	0Y	-3.41	3.38	-6.35	4.80	-2.54	-2.54	3.59	0.02	0.00
W 90 Ice	0P	-14.07	-20.44	-198.01	24.81	0.16	1.51	1.51	0.59	0.00
W 90 Ice	0X	-3.48	-1.99	-44.07	4.01	2.89	1.44	3.23	0.55	0.00
W 90 Ice	0XY	3.30	-1.99	-39.56	3.85	2.80	-1.39	3.13	-0.57	0.00
W 90 Ice	0Y	14.17	-19.59	-191.80	24.18	0.06	-1.35	1.35	-0.58	0.00
W -90 Ice	0P	-3.84	2.01	-48.20	4.34	-2.97	1.42	3.29	-0.57	0.00
W -90 Ice	0X	-13.72	20.30	-193.26	24.50	-0.23	1.52	1.53	-0.60	0.00
W -90 Ice	0XY	13.97	19.64	-187.68	24.10	-0.17	-1.33	1.34	0.59	0.00
W -90 Ice	0Y	3.60	2.00	-44.30	4.12	-2.91	-1.40	3.23	0.59	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Origin Joint	Joint Member	Leg Force In Leg Dir. (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg - Res. (kips)	Residual Shear Horizontal To Leg - Long. (kips)	Residual Shear Horizontal To Leg - Tran. (kips)	Total Long. Force (kips)	Total Tran. Force (kips)	Total Vert. Force (kips)
W 0	0P	1P L 1P	346.288	24.450	24.499	24.484	0.870	-45.66	-22.05	-343.43
W 0	0X	1X L 1X	336.140	23.285	23.337	23.257	-1.927	-43.81	22.48	-333.33
W 0	0XY	1XY L 1XY	-210.051	21.523	21.571	21.477	2.011	-34.29	-14.83	207.82
W 0	0Y	1Y L 1Y	-206.169	22.673	22.721	22.685	-1.285	-35.26	13.86	203.92
W 180	0P	1P L 1P	-203.256	22.938	22.986	-22.953	-1.224	35.35	13.62	201.01
W 180	0X	1X L 1X	-203.487	21.799	21.848	-21.760	1.950	34.17	-14.36	201.27
W 180	0XY	1XY L 1XY	333.303	23.572	23.624	-23.540	-1.985	43.92	22.36	-330.48
W 180	0Y	1Y L 1Y	339.645	24.556	24.605	-24.592	0.819	45.36	-21.59	-336.81
W 45	0P	1P L 1P	478.190	25.249	25.345	17.860	17.982	-47.10	-47.22	-474.19
W 45	0X	1X L 1X	64.028	22.418	22.418	16.119	15.579	-20.05	-11.65	-63.75
W 45	0XY	1XY L 1XY	-341.281	25.739	25.836	18.223	18.315	-39.05	-39.14	337.75
W 45	0Y	1Y L 1Y	65.117	22.413	22.413	15.467	16.220	-11.47	-20.22	-64.82
W -45	0P	1P L 1P	70.259	23.901	23.901	17.050	-16.750	-21.36	12.43	-69.98
W -45	0X	1X L 1X	469.981	25.084	25.179	16.914	-18.652	-45.65	47.39	-466.03
W -45	0XY	1XY L 1XY	63.007	21.444	21.444	14.587	-15.718	-10.72	19.58	-62.70
W -45	0Y	1Y L 1Y	-337.218	25.946	26.044	19.041	-17.769	-39.62	38.35	333.69
W 90	0P	1P L 1P	346.517	24.720	24.770	0.814	24.756	-22.01	-45.95	-343.64
W 90	0X	1X L 1X	-206.706	22.791	22.838	-1.273	22.803	13.88	-35.41	204.45
W 90	0XY	1XY L 1XY	-209.944	21.562	21.611	2.025	21.516	-14.83	-34.32	207.71
W 90	0Y	1Y L 1Y	336.349	23.326	23.378	-1.981	23.294	22.55	-43.86	-333.53
W -90	0P	1P L 1P	-203.754	23.292	23.341	-1.198	-23.310	13.62	35.74	201.48
W -90	0X	1X L 1X	340.608	24.634	24.684	0.754	-24.672	-21.58	45.50	-337.76
W -90	0XY	1XY L 1XY	333.350	23.536	23.588	-2.051	-23.499	22.43	43.88	-330.53
W -90	0Y	1Y L 1Y	-204.017	21.760	21.809	1.992	-21.718	-14.44	34.16	201.79
W 0 Ice	0P	1P L 1P	199.316	8.344	8.367	8.152	1.884	-20.36	-14.09	-197.95
W 0 Ice	0X	1X L 1X	193.565	8.064	8.088	7.751	-2.310	-19.60	14.16	-192.22
W 0 Ice	0XY	1XY L 1XY	39.460	4.485	4.490	4.409	-0.846	-1.97	3.28	-39.53
W 0 Ice	0Y	1Y L 1Y	43.673	4.729	4.735	4.672	0.770	-1.97	-3.47	-43.75
W 180 Ice	0P	1P L 1P	48.246	5.006	5.012	-4.935	0.876	1.96	-3.86	-48.31
W 180 Ice	0X	1X L 1X	44.777	4.823	4.829	-4.750	-0.870	1.98	3.64	-44.85
W 180 Ice	0XY	1XY L 1XY	189.038	8.414	8.439	-8.100	-2.366	19.67	13.94	-187.68
W 180 Ice	0Y	1Y L 1Y	193.959	8.548	8.571	-8.372	1.835	20.25	-13.71	-192.60
W 45 Ice	0P	1P L 1P	237.439	9.519	9.555	6.734	6.778	-21.27	-21.31	-235.71
W 45 Ice	0X	1X L 1X	118.569	6.219	6.222	5.642	2.623	-12.91	4.65	-117.94
W 45 Ice	0XY	1XY L 1XY	1.634	5.113	5.133	3.614	3.645	-3.49	-3.52	-2.07
W 45 Ice	0Y	1Y L 1Y	118.355	6.226	6.229	2.582	5.669	4.68	-12.93	-117.72
W -45 Ice	0P	1P L 1P	123.462	6.686	6.688	5.951	-3.053	-13.52	-4.52	-122.82
W -45 Ice	0X	1X L 1X	232.131	9.585	9.621	6.473	-7.118	-20.68	21.33	-230.42
W -45 Ice	0XY	1XY L 1XY	114.493	6.245	6.248	2.329	-5.798	4.69	12.82	-113.85
W -45 Ice	0Y	1Y L 1Y	5.913	5.336	5.356	3.805	-3.770	-3.41	3.38	-6.35
W 90 Ice	0P	1P L 1P	199.378	8.409	8.432	1.856	8.225	-14.07	-20.44	-198.01
W 90 Ice	0X	1X L 1X	43.991	4.766	4.772	0.766	4.710	-3.48	-1.99	-44.07
W 90 Ice	0XY	1XY L 1XY	39.496	4.507	4.512	-0.857	4.430	3.30	-1.99	-39.56
W 90 Ice	0Y	1Y L 1Y	193.152	8.086	8.110	-2.338	7.766	14.17	-19.59	-191.80
W -90 Ice	0P	1P L 1P	48.129	5.056	5.062	0.868	-4.987	-3.84	2.01	-48.20
W -90 Ice	0X	1X L 1X	194.620	8.553	8.576	1.805	-8.383	-13.72	20.30	-193.26
W -90 Ice	0XY	1XY L 1XY	189.034	8.393	8.417	-2.397	-8.069	13.97	19.64	-187.68
W -90 Ice	0Y	1Y L 1Y	44.234	4.801	4.807	-0.868	-4.728	3.60	2.00	-44.30

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Torsional Moment (ft-k)	Resultant Moment (ft-k)	Transverse Force (kips)	Longitudinal Force (kips)	Vertical Force (kips)
W 0	321.922	-25035.415	97.018	25037.484	0.532	159.026	265.012
W 180	151.415	24599.905	-95.137	24600.371	-0.033	-158.802	265.012
W 45	18699.343	-18650.026	-0.921	26410.015	118.233	117.673	265.012
W -45	-18226.171	-18560.832	149.608	26013.415	-117.757	117.355	265.012
W 90	25054.657	-307.528	-107.384	25056.544	159.544	0.411	265.012
W -90	-24646.082	-173.626	111.694	24646.694	-159.279	-0.037	265.012
W 0 Ice	228.800	-7058.465	23.281	7062.172	0.112	43.909	473.441
W 180 Ice	192.864	6603.887	-22.868	6606.703	-0.007	-43.863	473.441
W 45 Ice	5368.776	-5378.760	-0.648	7599.659	33.109	32.993	473.441
W -45 Ice	-4947.229	-5359.861	35.813	7294.052	-33.003	32.928	473.441
W 90 Ice	7042.122	-246.218	-25.993	7046.425	44.013	0.086	473.441
W -90 Ice	-6634.078	-217.998	26.817	6637.659	-43.954	-0.008	473.441

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Face Area (ft^2)	Af Face Adjust Factor	Ar Face Adjust Factor	Dead Load Factor
291.4-300.0	300.000	291.417	8	20	9.00	10.06	81.79	1.1220	1.1220	1.346
282.8-291.4	291.417	282.834	8	16	10.06	11.12	90.88	1.2150	1.2150	1.458
272.7-282.8	282.834	272.667	8	16	11.12	12.37	119.40	1.1970	1.1970	1.436

262.5-272.7	272.667	262.500	12	24	12.37	13.63	132.15	1.2030	1.2030	1.444
250.0-262.5	262.500	250.000	16	24	13.63	15.17	179.95	1.2010	1.2010	1.441
237.5-250.0	250.000	237.500	16	24	15.17	16.71	199.22	1.2070	1.2070	1.449
225.0-237.5	237.500	225.000	16	24	16.71	18.25	218.49	1.2130	1.2130	1.456
212.5-225.0	225.000	212.500	16	24	18.25	19.79	237.76	1.2190	1.2190	1.463
200.0-212.5	212.500	200.000	16	24	19.79	21.33	257.03	1.2250	1.2250	1.470
175.0-200.0	200.000	175.000	16	24	21.33	24.42	571.87	1.2320	1.2320	1.479
150.0-175.0	175.000	150.000	16	24	24.42	27.50	648.96	1.2570	1.2570	1.509
125.0-150.0	150.000	125.000	16	24	27.50	30.58	726.04	1.2660	1.2660	1.519
100.0-125.0	125.000	100.000	20	32	30.58	33.67	803.13	1.2790	1.2790	1.535
75.00-100.0	100.000	75.000	36	76	33.67	36.75	880.21	1.2760	1.2760	1.531
50.00-75.00	75.000	50.000	36	76	36.75	39.83	957.29	1.2790	1.2790	1.535
25.00-50.00	50.000	25.000	32	68	39.83	42.92	1034.38	1.2820	1.2820	1.539
0.000-25.00	25.000	0.000	20	40	42.92	46.00	1111.46	1.3210	1.3210	1.586

Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/r Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/r	KL/r	Length Comp. Member (ft)	Curve No.	No. Of Bolts Comp.
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	75.66	Comp	75.66	L 1P	-416.651	W 45	464.114	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	71.33	Comp	71.33	L 2P	-354.290	W 45	464.114	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	65.99	Comp	65.99	L 3P	-306.246	W 45	464.114	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	36.0	61.57	Comp	61.57	L 4P	-256.206	W 45	416.121	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	70.89	Comp	70.89	L 5P	-245.030	W 45	345.671	0.000	0.000	0.333	0.333	0.333	63.93	63.93	25.095	1	0
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	58.69	Comp	58.69	L 6P	-202.890	W 45	345.671	0.000	0.000	0.333	0.333	0.333	63.93	63.93	25.095	1	0
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	54.04	Comp	54.04	L 7P	-161.961	W 45	299.714	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	49.26	Comp	49.26	L 8P	-124.024	W 45	251.771	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	47.57	Comp	47.57	L 9P	-104.617	W 45	219.900	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.547	1	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	38.50	Comp	38.50	L 10P	-84.665	W 45	219.900	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.547	1	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	40.32	Comp	40.32	L 11P	-67.796	W 45	168.148	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	30.88	Comp	30.88	L 12P	-51.927	W 45	168.148	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	27.57	Comp	27.57	L 13P	-36.607	W 45	132.797	0.000	0.000	0.500	0.500	0.500	63.26	63.26	12.547	1	0
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	25.88	Comp	25.88	L 14P	-28.613	W 45	110.546	0.000	0.000	0.500	0.500	0.500	62.10	62.10	10.206	1	0
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	15.95	Comp	15.95	L 15P	-17.630	W 45	110.546	0.000	0.000	0.500	0.500	0.500	62.10	62.10	10.206	1	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	10.82	Comp	10.82	L 16P	-9.188	W 45	84.920	0.000	0.000	0.500	0.500	0.500	52.01	52.01	8.616	1	0
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	5.62	Comp	5.62	L 17P	-4.775	W 45	84.920	0.000	0.000	0.500	0.500	0.500	52.01	52.01	8.616	1	0
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	36.0	78.16	Comp	78.16	D 2X	-47.832	W -90	61.196	0.000	0.000	0.310	0.920	0.310	124.62	122.84	21.786	6	0
Diag S2	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	36.0	84.17	Comp	84.17	D 4X	-53.442	W -90	63.493	0.000	0.000	0.310	0.620	0.310	94.31	94.31	20.916	1	0
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	86.43	Comp	86.43	D 6X	-52.922	W -90	48.311	0.000	0.000	0.333	0.667	0.333	111.82	111.82	20.550	1	0
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	85.86	Comp	85.86	D 8X	-53.316	W -90	49.384	0.000	0.000	0.333	0.667	0.333	109.94	109.94	20.204	1	0
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	72.35	Comp	72.35	D 9X	-32.974	W -90	45.574	0.000	0.000	0.333	0.667	0.333	134.71	129.05	30.178	6	0
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	68.76	Comp	68.76	D 11X	-32.316	W -90	46.997	0.000	0.000	0.333	0.667	0.333	131.00	126.76	29.346	6	0
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	61.68	Comp	61.68	D 13X	-29.813	W -90	48.336	0.000	0.000	0.333	0.667	0.333	127.55	124.64	28.573	6	0
Diag S8	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	64.86	Comp	64.86	D 15X	-28.215	W -90	43.503	0.000	0.000	0.333	0.667	0.333	140.20	132.43	27.864	6	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	34.76	Comp	34.76	D 18Y	-16.189	W 180	46.570	0.000	0.000	0.320	0.590	0.320	97.87	97.87	16.451	1	0
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	57.72	Comp	57.72	D 20P	-14.721	W 0	25.507	0.000	0.000	0.500	1.000	0.500	160.96	145.19	15.962	6	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	75.62	Comp	75.62	D 22P	-13.593	W 0	17.975	0.000	0.000	0.480	0.960	0.480	190.92	163.61	15.495	6	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	65.51	Comp	65.51	D 23P	-11.574	W 90	17.669	0.000	0.000	0.500	1.000	0.500	193.21	165.03	15.054	6	0
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	59.50	Comp	59.50	D 25P	-10.942	W 90	18.390	0.000	0.000	0.500	1.000	0.500	187.90	161.76	14.641	6	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	37.65	Comp	37.65	D 28X	-7.154	W -90	19.003	0.000	0.000	0.520	0.520	0.520	148.48	141.74	16.514	5	0
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	21.49	Comp	21.49	D 29Y	-4.494	W 180	20.914	0.000	0.000	0.520	0.520	0.520	139.78	135.11	15.546	5	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	16.92	Comp	16.92	D 31P	-2.884	W 0	17.044	0.000	0.000	0.520	0.520	0.520	143.77	138.16	13.640	5	0
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	12.89	Comp	12.89	D 33P	-2.414	W 0	18.723	0.000	0.000	0.520	0.520	0.520	135.30	131.69	12.836	5	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	80.63	Comp	80.63	H 1P	-38.235	W -90	47.419	0.000	0.000	0.480	0.480	0.480	113.39	113.39	21.458	1	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	55.70	Comp	55.70	H 3P	-39.236	W -90	70.437	0.000	0.000	0.500	0.500	0.500	73.09	73.09	13.278	1	0
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	49.38	Comp	49.38	H 5P	-36.268	W -90	73.448	0.000	0.000	0.500	0.500	0.500	67.43	67.43	12.250	1	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	77.24	Comp	77.24	H 7P	-33.995	W -90	44.013	0.000	0.000	0.470	0.940	0.470	112.02	112.02	11.222	1	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	74.43	Comp	74.43	H 9P	-16.122	W -90	21.660	0.000	0.000	1.000	1.000	1.000	194.18	165.62	15.292	6	0
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	58.28	Comp	58.28	H 11P	-14.679	W -90	25.190	0.000	0.000	1.000	1.000	1.000	174.60	153.58	13.750	6	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	61.85	Comp	61.85	H 13P	-12.462	W -90	20.147	0.000	0.000	1.000	1.000	1.000	190.51	163.36	12.208	6	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	45.80	Comp	45.80	H 16P	-11.158	W 180	24.360	0.000	0.000	1.000	1.000	1.000	166.45	148.57	10.667	6	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	36.34	Comp	36.34	H 18P	-9.804	W 180	26.980	0.000	0.000	1.000	1.000	1.000	154.42	141.17	9.896	6	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	27.48	Comp	27.48	H 20Y	-8.255	W 0	30.046	0.000	0.000	1.000	1.000	1.000	142.39	133.77	9.125	6	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.09	Comp	22.09	H 22Y	-7.349	W 0	33.265	0.000	0.000	1.000	1.000	1.000	130.36	126.37	8.354	6	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	17.01	Comp	17.01	H 23P	-6.277	W -90	36.894	0.000	0.000	1.000	1.000	1.000	118.34	118.34	7.583	1	0
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	11.16	Comp	11.16	H 25X	-4.749	W 90	42.534	0.000	0.000	1.000	1.000	1.000	106.31	106.31	6.813	1	0
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	6.02	Tens	5.74	H 27Y	-0.531	W 0	9.254	0.000	0.000	0.500	1.000	0.500	197.15	178.83	12.371	5	0
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.67	Tens	0.58	H 29Y	-0.238	W 0	40.911	0.000	0.000	0.500	1.000	0.500	118.06	118.06	11.117	1	0
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.34	Tens	0.00	H 32X	0.000		13.023	0.000	0.000	0.500	1.000	0.500	160.30	150.75	10.059	5	0
Horiz 17	C8x11.5	CHN	C8x11.5	36.0	1.06	Comp	1.06	H 33P	-0.316	W -90	29.726	0.000	0.000	1.000	1.000	1.000	172.80	160.27	9.000	5	0
LD 1	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	66.83	Comp	66.83	LD 1X	-19.264	W -90	28.827	0.000	0.000	0.850	0.850	0.850	146.95	136.57	12.836	6	0
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	77.03	Comp	77.03	LD 3X	-50.522	W -90	65.590	0.000	0.000	0.820	0.820	0.820	98.68	98.68	12.836	1	0
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	91.97	Comp	91.97	LD 7X	-25.283	W -45	24.372	0.000	0.000	0.870	0.870	0.870	153.35	140.51	11.516	6	0
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	85.71	Comp	85.71	LD 9X	-34.846	W -90	40.657	0.000	0.000	0.800	0.800	0.800	100.25	100.25	8.187	1	0
LD 6	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	72.29	Comp	72.29	LD 11P	-37.780	W -90	52.263	0.000	0.000	0.840	0.840	0.840	104.93	104.93	9.681	1	0
LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	57.93	Comp	57.93	LD 13X	-24.912	W -45	43.005	0.000	0.000	0.865	0.865	0.865	122.12	121.30	10.941	6	0
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	85.13	Comp	85.13	LD 15X	-34.354	W -90	40.354	0.000	0.000	0.820	0.820	0.820	100.96	100.96	8.044	1	0
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	83.81	Comp	83.81	LD 17P	-36.927	W -90	44.061	0.000	0.000	0.820	0.820	0.820	103.11	103.11	9.336	1	0
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	55.33	Comp	55.33	LD 19X	-25.653	W -45	46.365	0.000	0.000	0.860	0.860	0.860	115.26	115.26	10.387	1	0
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	83.59	Comp	83.59	LD 21X	-34.342	W -90	41.083	0.000	0.000	0.820	0.820	0.820	99.26	99.26	7.909	1	0
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	36.0	69.56	Comp	69.56	LD 23P	-36.074	W -90	51.857	0.000	0.000	0.850	0.850	0.850	122.01	121.24	9.008	6	0
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	11.70	Tens	0.00	LH 2X	0.000		0.001	0.000	0.000	100.000	100.000	100.000	34196.55	21077.08	21.458	6	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	94.45	Comp	94.45	LH 3X	-28.969	W -45	24.347	0.000	0.000	1.000	2.000	1.000	178.89	156.22	10.808	6	0
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	36.0	68.56	Comp	68.56	LH 5X	-27.651	W -45	40.333	0.000	0.000	1.000	2.000	1.000	163.34	146.66	10.005	6	0
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	61.96	Comp	61.96	LH 7X	-27.338	W -45	44.123	0.000	0.000	0.998	1.995	0.998	138.55	131.41	9.202	6	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 11XY	-1.150	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.33	2.33	19.445	1	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes	Hole Diameter (in)
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	75.66	Comp	52.58	L 1XY	285.015	W 45	542.051	0.000	0.000	0.000	25.095	0	0.000	0
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	71.33	Comp	45.77	L 2XY	248.109	W 45	542.051	0.000	0.000	0.000	25.095	0	0.000	0
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	65.99	Comp	39.44	L 3XY	213.807	W 45	542.051	0.000	0.000	0.000	25.095	0	0.000	0
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	36.0	61.57	Comp	36.94	L 4XY	179.525	W 45	485.999	0.000	0.000	0.000	25.095	0	0.000	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	70.89	Comp	40.84	L 5XY	175.064	W 45	428.651	0.000	0.000	0.000	25.095	0	0.000	0
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	58.69	Comp	33.38	L 6XY	143.097	W 45	428.651	0.000	0.000	0.000	25.095	0	0.000	0
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	54.04	Comp	30.32	L 7XY	112.388	W 45	370.655	0.000	0.000	0.000	25.095	0	0.000	0
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	49.26	Comp	26.40	L 8XY	82.207	W 45	311.364	0.000	0.000	0.000	25.095	0	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	47.57	Comp	24.94	L 9XY	68.213	W 45	273.456	0.000	0.000	0.000	12.547	0	0.000	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	38.50	Comp	19.84	L 10XY	54.249	W 45	273.456	0.000	0.000	0.000	12.547	0	0.000	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	40.32	Comp	19.66	L 11XY	40.962	W 45	208.332	0.000	0.000	0.000	12.547	0	0.000	0
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	30.88	Comp	13.91	L 12XY	28.980	W 45	208.332	0.000	0.000	0.000	12.547	0	0.000	0
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	27.57	Comp	10.70	L 13XY	17.549	W 45	163.944	0.000	0.000	0.000	12.547	0	0.000	0
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	25.88	Comp	9.76	L 14XY	13.217	W 45	135.432	0.000	0.000	0.000	10.206	0	0.000	0
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	15.95	Comp	4.30	L 15XY	5.820	W 45	135.432	0.000	0.000	0.000	10.206	0	0.000	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	10.82	Comp	2.42	L 16XY	2.377	W 45	98.172	0.000	0.000	0.000	8.616	0	0.000	0
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	5.62	Comp	0.00	L 17Y	0.000		98.172	0.000	0.000	0.000	8.616	0	0.000	0
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	36.0	78.16	Comp	31.27	D 2P	42.355	W -90	135.432	0.000	0.000	0.000	21.786	0	0.000	0
Diag S2	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	36.0	84.17	Comp	44.82	D 4P	45.450	W -90	101.412	0.000	0.000	0.000	20.916	0	0.000	0
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	86.43	Comp	48.66	D 6P	45.403	W -90	93.312	0.000	0.000	0.000	20.550	0	0.000	0
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	85.86	Comp	48.01	D 8P	44.801	W -90	93.312	0.000	0.000	0.000	20.204	0	0.000	0
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	72.35	Comp	27.79	D 9P	30.430	W -90	109.512	0.000	0.000	0.000	30.178	0	0.000	0
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	68.76	Comp	27.17	D 11P	29.751	W -90	109.512	0.000	0.000	0.000	29.346	0	0.000	0
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	61.68	Comp	25.22	D 13P	27.620	W -90	109.512	0.000	0.000	0.000	28.573	0	0.000	0
Diag S8	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	64.86	Comp	24.42	D 15P	26.744	W -90	109.512	0.000	0.000	0.000	27.864	0	0.000	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	34.76	Comp	19.55	D 18P	15.078	W 180	77.112	0.000	0.000	0.000	16.451	0	0.000	0
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	57.72	Comp	17.85	D 20Y	13.763	W 0	77.112	0.000	0.000	0.000	15.962	0	0.000	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	75.62	Comp	18.53	D 22Y	12.785	W 0	69.012	0.000	0.000	0.000	15.495	0	0.000	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	65.51	Comp	15.74	D 23X	10.860	W 90	69.012	0.000	0.000	0.000	15.054	0	0.000	0
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	59.50	Comp	14.88	D 25X	10.267	W 90	69.012	0.000	0.000	0.000	14.641	0	0.000	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	37.65	Comp	10.15	D 28X	5.557	W 90	54.756	0.000	0.000	0.000	16.514	0	0.000	0
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	21.49	Comp	6.04	D 30XY	3.310	W 90	54.756	0.000	0.000	0.000	15.546	0	0.000	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	16.92	Comp	4.34	D 32XY	2.023	W 90	46.656	0.000	0.000	0.000	13.640	0	0.000	0
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	12.89	Comp	3.47	D 33Y	1.620	W 0	46.656	0.000	0.000	0.000	12.836	0	0.000	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	80.63	Comp	44.50	H 1X	41.524	W -90	93.312	0.000	0.000	0.000	21.458	0	0.000	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	55.70	Comp	47.23	H 3X	44.069	W -90	93.312	0.000	0.000	0.000	13.278	0	0.000	0
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	49.38	Comp	44.53	H 5X	41.555	W -90	93.312	0.000	0.000	0.000	12.250	0	0.000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	77.24	Comp	43.85	H 7P	37.367	W 90	85.212	0.000	0.000	0.000	11.222	0	0.000	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	74.43	Comp	19.73	H 9P	16.809	W 90	85.212	0.000	0.000	0.000	15.292	0	0.000	0
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	58.28	Comp	17.62	H 11P	15.016	W 90	85.212	0.000	0.000	0.000	13.750	0	0.000	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	61.85	Comp	16.35	H 13X	12.605	W -90	77.112	0.000	0.000	0.000	12.208	0	0.000	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	45.80	Comp	14.88	H 16P	11.475	W 0	77.112	0.000	0.000	0.000	10.667	0	0.000	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	36.34	Comp	12.81	H 18P	9.882	W 0	77.112	0.000	0.000	0.000	9.896	0	0.000	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	27.48	Comp	11.01	H 20P	8.491	W 0	77.112	0.000	0.000	0.000	9.125	0	0.000	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.09	Comp	9.61	H 22P	7.413	W 0	77.112	0.000	0.000	0.000	8.354	0	0.000	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	17.01	Comp	8.30	H 23P	6.401	W 90	77.112	0.000	0.000	0.000	7.583	0	0.000	0
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	11.16	Comp	7.58	H 25X	5.843	W -90	77.112	0.000	0.000	0.000	6.813	0	0.000	0
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	6.02	Tens	6.02	H 28P	2.556	W 45	42.444	0.000	0.000	0.000	12.371	0	0.000	0
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.67	Tens	1.67	H 29P	1.427	W 0	85.212	0.000	0.000	0.000	11.117	0	0.000	0
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.34	Tens	2.34	H 31P	0.991	W 0	42.444	0.000	0.000	0.000	10.059	0	0.000	0
Horiz 17	C8x11.5	CHN	C8x11.5	36.0	1.06	Comp	0.50	H 33P	0.544	W 90	109.512	0.000	0.000	0.000	9.000	0	0.000	0
LD 1	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	66.83	Comp	25.92	LD 2Y	19.990	W -45	77.112	0.000	0.000	0.000	12.836	0	0.000	0
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	77.03	Comp	42.60	LD 3P	46.656	W -90	109.512	0.000	0.000	0.000	12.836	0	0.000	0
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	91.97	Comp	32.50	LD 7P	22.427	W -90	69.012	0.000	0.000	0.000	11.516	0	0.000	0
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	85.71	Comp	43.81	LD 9P	30.233	W -90	69.012	0.000	0.000	0.000	8.187	0	0.000	0
LD 6	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	72.29	Comp	41.70	LD 11X	38.912	W -90	93.312	0.000	0.000	0.000	9.681	0	0.000	0
LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	57.93	Comp	23.54	LD 14Y	21.966	W -45	93.312	0.000	0.000	0.000	10.941	0	0.000	0

LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	85.13	Comp	43.89	LD 15P	30.286	W -90	69.012	0.000	0.000	0.000	8.044	0	0.000	0
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	83.81	Comp	49.15	LD 17X	37.897	W -90	77.112	0.000	0.000	0.000	9.336	0	0.000	0
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	55.33	Comp	23.42	LD 20Y	21.851	W -45	93.312	0.000	0.000	0.000	10.387	0	0.000	0
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	83.59	Comp	43.28	LD 21P	29.865	W -90	69.012	0.000	0.000	0.000	7.909	0	0.000	0
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	36.0	69.56	Comp	32.87	LD 23X	36.951	W -90	112.428	0.000	0.000	0.000	9.008	0	0.000	0
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	11.70	Tens	11.70	LH 2X	9.967	W 90	85.212	0.000	0.000	0.000	21.458	0	0.000	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	94.45	Comp	29.14	LH 3P	24.830	W -90	85.212	0.000	0.000	0.000	10.808	0	0.000	0
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	36.0	68.56	Comp	19.05	LH 6Y	23.698	W -45	124.416	0.000	0.000	0.000	10.005	0	0.000	0
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	61.96	Comp	20.70	LH 8Y	22.664	W -45	109.512	0.000	0.000	0.000	9.202	0	0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 11X	0.949	W -45	0.324	0.000	0.000	0.000	19.445	0	0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
W 0	91.95	LH 4P	Angle
W 180	92.37	LH 4Y	Angle
W 45	91.34	LH 3P	Angle
W -45	94.45	LH 3X	Angle
W 90	92.36	LH 3P	Angle
W -90	92.70	LH 3X	Angle
W 0 Ice	34.73	LH 4P	Angle
W 180 Ice	35.62	LH 4Y	Angle
W 45 Ice	38.58	L 1P	Angle
W -45 Ice	37.62	L 1X	Angle
W 90 Ice	34.91	LH 3P	Angle
W -90 Ice	35.69	LH 3X	Angle

*** Weight of structure (lbs):

Weight of Angles*Section DLF:	146562.4
Weight of Equipment:	1109.0
Total:	147671.4

*** End of Report

Site #:	88018			Engineer:	RDB	Windspeed:	No Ice:	93 mph	Ice:	50 mph			Taper:	-0.123333		Taper Change:	300	ft				
Name:	Stamford (Katoona), CT			Date:	05/09/18	Carrier	Sprint Nextel						FW @ Base:	46.00	ft	FW @ Top:	9	ft				

Spreadsheet Version Last Updated: 11/12/2014

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)	# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
0	XY-Symmetry	23	23	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed		3	7.033	25	1	1	0	46	3
1	XY-Symmetry	21.45833333	21.45833333	25	Free	Free	Free	Free	Free	Free		2	7.033	25	2	2	25	42.91666667	3
2	XY-Symmetry	19.91666667	19.91666667	50	Free	Free	Free	Free	Free	Free		2	7.033	25	2	3	50	39.83333333	3
3	XY-Symmetry	18.375	18.375	75	Free	Free	Free	Free	Free	Free		2	7.033	25	2	4	75	36.75	3
4	XY-Symmetry	16.83333333	16.83333333	100	Free	Free	Free	Free	Free	Free				25	A	5	100	33.66666667	2
5	XY-Symmetry	15.29166667	15.29166667	125	Free	Free	Free	Free	Free	Free				25	A	6	125	30.58333333	2
6	XY-Symmetry	13.75	13.75	150	Free	Free	Free	Free	Free	Free				25	A	7	150	27.5	2
7	XY-Symmetry	12.20833333	12.20833333	175	Free	Free	Free	Free	Free	Free				25	A	8	175	24.41666667	2
8	XY-Symmetry	10.66666667	10.66666667	200	Free	Free	Free	Free	Free	Free				12.5	A	9	200	21.33333333	1
9	XY-Symmetry	9.895833333	9.895833333	212.5	Free	Free	Free	Free	Free	Free				12.5	A	10	212.5	19.79166667	1
10	XY-Symmetry	9.125	9.125	225	Free	Free	Free	Free	Free	Free				12.5	A	11	225	18.25	1
11	XY-Symmetry	8.354166667	8.354166667	237.5	Free	Free	Free	Free	Free	Free				12.5	A	12	237.5	16.70833333	1
12	XY-Symmetry	7.583333333	7.583333333	250	Free	Free	Free	Free	Free	Free				12.5	A	13	250	15.16666667	1
13	XY-Symmetry	6.8125	6.8125	262.5	Free	Free	Free	Free	Free	Free		1		10.167	X	14	262.5	13.625	1
14	XY-Symmetry	6.185535	6.185535	272.667	Free	Free	Free	Free	Free	Free		1		10.167	X	15	272.667	12.37107	1
15	XY-Symmetry	5.55857	5.55857	282.834	Free	Free	Free	Free	Free	Free		1		8.583	X	16	282.834	11.11714	1
16	XY-Symmetry	5.029285	5.029285	291.417	Free	Free	Free	Free	Free	Free				8.583	X	17	291.417	10.05857	1
17	XY-Symmetry	4.5	4.5	300	Free	Free	Free	Free	Free	Free						18	300	9	
A1	Y-Symmetry	21.45833333	0	25	Free	Free	Free	Free	Free	Free									
A2	X-Symmetry	0	21.45833333	25	Free	Free	Free	Free	Free	Free									
A3	XY-Symmetry	19.91666667	6.638888889	50	Free	Free	Free	Free	Free	Free									
A4	XY-Symmetry	6.638888889	19.91666667	50	Free	Free	Free	Free	Free	Free									
A5	XY-Symmetry	18.375	6.125	75	Free	Free	Free	Free	Free	Free									
A6	XY-Symmetry	6.125	18.375	75	Free	Free	Free	Free	Free	Free									
A7	XY-Symmetry	16.83333333	5.611111111	100	Free	Free	Free	Free	Free	Free									
A8	XY-Symmetry	5.611111111	16.83333333	100	Free	Free	Free	Free	Free	Free									
A9	Y-Symmetry	15.29166667	0	125	Free	Free	Free	Free	Free	Free									
A10	X-Symmetry	0	15.29166667	125	Free	Free	Free	Free	Free	Free									
A11	Y-Symmetry	13.75	0	150	Free	Free	Free	Free	Free	Free									
A12	X-Symmetry	0	13.75	150	Free	Free	Free	Free	Free	Free									
A13	Y-Symmetry	12.20833333	0	175	Free	Free	Free	Free	Free	Free									
A14	X-Symmetry	0	12.20833333	175	Free	Free	Free	Free	Free	Free									
A15	Y-Symmetry	10.66666667	0	200	Free	Free	Free	Free	Free	Free									
A16	X-Symmetry	0	10.66666667	200	Free	Free	Free	Free	Free	Free									
A17	Y-Symmetry	9.895833333	0	212.5	Free	Free	Free	Free	Free	Free									
A18	X-Symmetry	0	9.895833333	212.5	Free	Free	Free	Free	Free	Free									
A19	Y-Symmetry	9.125	0	225	Free	Free	Free	Free	Free	Free									
A20	X-Symmetry	0	9.125	225	Free	Free	Free	Free	Free	Free									
A21	Y-Symmetry	8.354166667	0	237.5	Free	Free	Free	Free	Free	Free									
A22	X-Symmetry	0	8.354166667	237.5	Free	Free	Free	Free	Free	Free									
A23	Y-Symmetry	7.583333333	0	250	Free	Free	Free	Free	Free	Free									
A24	X-Symmetry	0	7.583333333	250	Free	Free	Free	Free	Free	Free									
A25	Y-Symmetry	6.8125	0	262.5	Free	Free	Free	Free	Free	Free									
A26	X-Symmetry	0	6.8125	262.5	Free	Free	Free	Free	Free	Free									
H1	XY-Symmetry	21.892035	10.72916667	17.967	Free	Free	Free	Free	Free	Free									
H2	XY-Symmetry	10.72916667	21.892035	17.967	Free	Free	Free	Free	Free	Free									
H5	XY-Symmetry	20.35036833	10.807895	42.967	Free	Free	Free	Free	Free	Free									
H6	XY-Symmetry	10.807895	20.35036833	42.967	Free	Free	Free	Free	Free	Free									
H7	Y-Symmetry	20.35036833	0	42.967	Free	Free	Free	Free	Free	Free									
H8	X-Symmetry	0	20.35036833	42.967	Free	Free	Free	Free	Free	Free									
H9	XY-Symmetry	18.80870167	10.00487167	67.967	Free	Free	Free	Free	Free	Free									
H10	XY-Symmetry	10.00487167	18.80870167	67.967	Free	Free	Free	Free	Free	Free									
H11	Y-Symmetry	18.80870167	0	67.967	Free	Free	Free	Free	Free	Free									
H12	X-Symmetry	0	18.80870167	67.967	Free	Free	Free	Free	Free	Free									
H13	XY-Symmetry	17.267035	9.201848333	92.967	Free	Free	Free	Free	Free	Free									
H14	XY-Symmetry	9.201848333	17.267035	92.967	Free	Free	Free	Free	Free	Free									
H15	Y-Symmetry	17.267035	0	92.967	Free	Free	Free	Free	Free	Free									
H16	X-Symmetry	0	17.267035	92.967	Free	Free	Free	Free	Free	Free									

NOTES	
Types:	
1:	Built up Horizs. w/ A
2:	Built up Horizs. w/ M
A:	Typical A brace
X:	Typical X brace
Drop:	Use only for types 1 & 2

# Sections:	17

Legs

Site No.:	88018
Engineer:	RDB
Date:	05/09/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter or Length *(in)*	Thickness [2] *(in)*	F_Y *(ksi)*
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1	36
5	100.0-125.0	L	8	0.875	36
6	125.0-150.0	L	8	0.875	36
7	150.0-175.0	L	8	0.75	36
8	175.0-200.0	L	8	0.625	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.75	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.5625	36
13	250.0-262.5	L	6	0.4375	36
14	262.5-272.7	L	5	0.4375	36
15	272.7-282.8	L	5	0.4375	36
16	282.8-291.4	L	5	0.3125	36
17	291.4-300.0	L	5	0.3125	36

Notes:

[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Leg

[2] For Solid Round Leg Shapes Thickness Equals Zero.

[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88018
Engineer:	RDB
Date:	05/09/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.3125	36	
2	25.00-50.00	2L		3	3.5	0.25	36	
3	50.00-75.00	2L		2.5	3.5	0.25	36	
4	75.00-100.0	2L		2.5	3.5	0.25	36	
5	100.0-125.0	2L		3	4	0.25	36	
6	125.0-150.0	2L		3	4	0.25	36	
7	150.0-175.0	2L		3	4	0.25	36	
8	175.0-200.0	2L		3.5	3.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-262.5	2L		2.5	2	0.25	36	
14	262.5-272.7	L		3.5	3.5	0.25	36	
15	272.7-282.8	L		3.5	3.5	0.25	36	
16	282.8-291.4	L		3	3	0.25	36	
17	291.4-300.0	L		3	3	0.25	36	

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88018
Engineer:	RDB
Date:	05/09/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	
1	0.000-25.00	2L		3.5	2.5	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3.5	2.5	0.25	36	
4	75.00-100.0	2L		3	2.5	0.25	36	
5	100.0-125.0	2L		3	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		2.5	2.5	0.25	36	
8	175.0-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-262.5	2L		2.5	2.5	0.25	36	
14	262.5-272.7	L		3	2.5	0.25	36	
15	272.7-282.8	2L		3	2.5	0.25	36	
16	282.8-291.4	L		3	2.5	0.25	36	
17	291.4-300.0	C		8	11.5		36	

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88018
Engineer:	RDB
Date:	05/09/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.
Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*
1	0.000-25.00	2L		3	2	0.25	36
2	0.000-25.00	2L		4	3	0.25	36
3	25.00-50.00	2L		2.5	2	0.25	36
4	25.00-50.00	2L		2.5	2	0.25	36
5	25.00-50.00	2L		3	3	0.25	36
6	50.00-75.00	2L		3	3	0.25	36
7	50.00-75.00	2L		2.5	2	0.25	36
8	50.00-75.00	2L		3	2	0.25	36
9	75.00-100.0	2L		3	3	0.25	36
10	75.00-100.0	2L		2.5	2	0.25	36
11	75.00-100.0	2L		2.5	2.5	0.375	36

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88018
Engineer:	RDB
Date:	05/09/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	Is Horiz. Tension Only? *(Y/N)*
1	0.000-25.00	2L		2.5	3	0.25	36	Y
2	25.00-50.00	2L		2.5	3	0.25	36	
3	50.00-75.00	2L		2.5	3	0.375	36	
4	75.00-100.0	2L		3.5	3.5	0.25	36	

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Coax (p. 1 of 2)

Orig by MED, Improved by ABL. Last update 6/25/13 MED

Site No.:	88018
Engineer:	RDB
Date:	05/09/18
Carrier:	Sprint Nextel

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
1 Ladder	0	300	1	Flat	1.5	6.0	6	Yes	Yes
2 Short Ladder	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	Yes
3 Short Ladder	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	Yes
5 WG	5	300	1	Flat	1.5	6.0	6	Yes	Yes
6 WG	5	272	1	Flat	1.5	6.0	6	Yes	Yes
7 WG	5	235	1	Flat	1.5	6.0	6	Yes	Yes
8 WG	5	223	1	Flat	1.5	6.0	6	Yes	Yes
9 WG	5	160	1	Flat	1.5	6.0	6	Yes	Yes
10 Marcus Communications LLC	5	300	1	Round	1.55	4.9	0.63	Yes	Yes
11 Marcus Communications LLC	5	300	1	Round	1.98	6.2	0.82	Yes	Yes
12 Marcus Communications LLC	5	300	1	Round	1.09	3.4	0.33	Yes	Yes
13 Other	5	300	1	Round	0.63	2.0	0.15	Yes	Yes
14 Clearwire Corporation	5	300	5	Round	1.09	3.4	0.33	Yes	Yes
15 US Dept Of Homeland Security	5	275	2	Round	1.09	3.4	0.33	Yes	Yes
16 Sirius XM Radio Inc.	5	270	1	Round	1.98	6.2	0.82	Yes	Yes
17 T-Mobile	5	268	1	Flat	7.065	37.7	12.3	Yes	Yes
18 T-Mobile	5	268	3	Round	0.88	2.8	0.68	Yes	Yes
19 Sirius XM Radio Inc.	5	260	1	Round	5.02	15.8	1.85	Yes	Yes
20 US Dept Of Homeland Security	5	250	1	Round	1.09	3.4	0.33	Yes	Yes
21 US Dept Of Homeland Security	5	246	1	Round	1.09	3.4	0.33	Yes	Yes
22 AT&T Mobility	5	235	1	Flat	7.065	37.7	9.84	Yes	Yes
23 AT&T Mobility	5	235	2	Round	0.39	1.2	0.17	No	No
24 AT&T Mobility	5	235	2	Round	0.78	2.5	0.59	Yes	Yes
25 AT&T Mobility	5	235	4	Round	0.74	2.3	0.49	No	No
26 Sprint Nextel	5	222	1	Flat	7.065	37.7	12.3	Yes	Yes
27 US Dept Of Homeland Security	5	207	1	Round	1.09	3.4	0.33	Yes	Yes
28 Marcus Communications LLC	5	200	2	Round	1.55	4.9	0.63	Yes	Yes
29 Spok Holdings, Inc.	5	193	2	Round	1.09	3.4	0.33	Yes	Yes
30 Spok Holdings, Inc.	5	193	1	Round	1.09	3.4	0.33	Yes	Yes
31 Clearwire Corporation	5	171	2	Round	2.38	7.5	3.65	Yes	Yes
32 Clearwire Corporation	5	171	6	Round	0.31	1.0	0.05	Yes	Yes
33 Metro PCS Inc	5	165	1	Flat	7.065	37.7	9.84	Yes	Yes
34 Metro PCS Inc	5	165	1	Round	0.38	1.2	0.23	Yes	Yes
35 Metro PCS Inc	5	165	1	Round	0.44	1.4	0.08	Yes	Yes
36 Sprint Nextel	5	150	3	Round	1.54	4.8	1	Yes	Yes
37 Sprint Nextel	5	150	1	Round	1.7	5.3	1.78	Yes	Yes
38 Sensus USA Inc.	5	139	1	Round	1.09	3.4	0.33	Yes	Yes
39 Senet, Inc.	5	135	1	Round	0.38	1.2	0.23	Yes	Yes
40 Senet, Inc.	5	135	1	Round	0.63	2.0	0.2	Yes	Yes
41 Spok Holdings, Inc.	5	120	1	Round	0.63	2.0	0.2	Yes	Yes
42 Marcus Communications LLC	5	107	1	Round	1.55	4.9	0.6	Yes	Yes
43 Verizon Wireless	5	92	3	Round	1.54	4.8	1.0	Yes	Yes
44 Sirius XM Radio Inc.	5	22	1	Round	1.09	3.4	0.3	Yes	Yes
45 Spok Holdings, Inc.	0	6	1	Round	0.63	2.0	0.2	Yes	Yes
46 Spok Holdings, Inc.	0	6	1	Round	0.34	1.1	0.1	Yes	Yes

Coax (p. 2 of 2)

Site No.:	88018
Engineer:	RDB
Date:	05/09/18
Carrier:	Sprint Nextel

Exposure B | α | 7 $k_{z\,max}$ | 2.01

Tia Code: TIA-222-G **Topo Cat:** 1 | z_g | 1200 $k_{z\,min}$ | 0.7

f | K_e | 0.9 K_t

Description	From (ft)	To (ft)	Quantity	Face # (1-4, A-D)	Coax Width (in)	Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include in Wind Load (Yes/No)
Ladder	0	300	1	B	1.50	Flat	100	1	Flat	1	1	6.0	6	Yes	Yes
Short Ladder	8.3333	33.3333	2	1	1.50	Flat	100	1	Flat	2	1	6.0	6	Yes	Yes
Short Ladder	8.3333	33.3333	2	3	1.50	Flat	100	1	Flat	2	1	6.0	6	Yes	Yes
								1						No	No
WG	5	300	1	2	1.50	Flat	100	1	Flat	1	1	6.0	6	Yes	Yes
WG	5	272	1	3	1.50	Flat	100	1	Flat	1	1	6.0	6	Yes	Yes
WG	5	235	1	1	1.50	Flat	100	1	Flat	1	1	6.0	6	Yes	Yes
WG	5	223	1	2	1.50	Flat	100	1	Flat	1	1	6.0	6	Yes	Yes
WG	5	160	1	1	1.50	Flat	100	1	Flat	1	1	6.0	6	Yes	Yes
Marcus Communications LLC	5	300	1	B	1.55	Ind	100	1	Round	1	1	4.9	0.63	Yes	Yes
Marcus Communications LLC	5	300	1	B	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
Marcus Communications LLC	5	300	1	B	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
Other	5	300	1	B	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
Clearwire Corporation	5	300	5	2	1.09	Ind	100	1	Round	5	1	3.4	0.33	Yes	Yes
US Dept Of Homeland Security	5	275	2	2	1.09	Ind	100	1	Round	2	1	3.4	0.33	Yes	Yes
Sirius XM Radio Inc.	5	270	1	4	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
T-Mobile	5	268	15	4	1.98	Block	33	0.5	Flat	5	3	37.7	12.3	Yes	Yes
T-Mobile	5	268	3	4	0.88	Ind	100	1	Round	3	1	2.8	0.68	Yes	Yes
Sirius XM Radio Inc.	5	260	1	4	5.02	Ind	100	1	Round	1	1	15.8	1.85	Yes	Yes
US Dept Of Homeland Security	5	250	1	2	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
US Dept Of Homeland Security	5	246	1	2	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
AT&T Mobility	5	235	12	1	1.98	Block	50	0.5	Flat	6	2	37.7	9.84	Yes	Yes
AT&T Mobility	5	235	2	1	0.39	Ind	100	1	Round	2	1	1.2	0.17	No	No
AT&T Mobility	5	235	2	1	0.78	Ind	100	1	Round	2	1	2.5	0.59	Yes	Yes
AT&T Mobility	5	235	4	1	0.74	Ind	100	1	Round	4	1	2.3	0.49	No	No
Sprint Nextel	5	222	15	2	1.98	Block	33	0.5	Flat	5	3	37.7	12.3	Yes	Yes
US Dept Of Homeland Security	5	207	1	2	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
Marcus Communications LLC	5	200	2	B	1.55	Ind	100	1	Round	2	1	4.9	0.63	Yes	Yes
Spok Holdings, Inc.	5	193	2	B	1.09	Ind	100	1	Round	2	1	3.4	0.33	Yes	Yes
Spok Holdings, Inc.	5	193	1	B	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
Clearwire Corporation	5	171	2	2	2.38	Ind	100	1	Round	2	1	7.5	3.65	Yes	Yes
Clearwire Corporation	5	171	6	2	0.31	Ind	100	1	Round	6	1	1.0	0.05	Yes	Yes
Metro PCS Inc	5	165	12	1	1.98	Block	50	0.5	Flat	6	2	37.7	9.84	Yes	Yes
Metro PCS Inc	5	165	1	1	0.38	Ind	100	1	Round	1	1	1.2	0.23	Yes	Yes
Metro PCS Inc	5	165	1	1	0.44	Ind	100	1	Round	1	1	1.4	0.08	Yes	Yes
Sprint Nextel	5	150	3	2	1.54	Ind	100	1	Round	3	1	4.8	1	Yes	Yes
Sprint Nextel	5	150	1	2	1.70	Ind	100	1	Round	1	1	5.3	1.78	Yes	Yes
Sensus USA Inc.	5	139	1	B	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
Senet, Inc.	5	135	1	3	0.38	Ind	100	1	Round	1	1	1.2	0.23	Yes	Yes
Senet, Inc.	5	135	1	3	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
Spok Holdings, Inc.	5	120	1	B	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
Marcus Communications LLC	5	107	1	B	1.55	Ind	100	1	Round	1	1	4.9	0.63	Yes	Yes
Verizon Wireless	5	92	3	4	1.54	Ind	100	1	Round	3	1	4.8	1	Yes	Yes
Sirius XM Radio Inc.	5	22	1	4	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
Spok Holdings, Inc.	0	6	1	B	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
Spok Holdings, Inc.	0	6	1	B	0.34	Ind	100	1	Round	1	1	1.1	0.06	Yes	Yes
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No

Dishes

Site No.:	88018
Engineer:	RDB
Date:	05/09/18
Carrier:	Sprint Nextel

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Number	Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Staus
1	311	4	51.4	S	XY	
2	307	3	0	H	Y	
3	303	2	90	H	XY	
4	303	2	180	H	X	
5	303	2	270	H	P	
6	120	4	90	S	XY	
7	22	2	197	R	X	
8	6	4	270	S	P	
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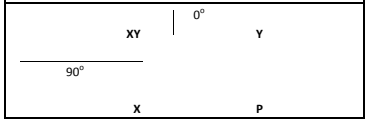
Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle *(deg)*
4' STD 1 @ 311'	17XY	4 ft STD Dish	51.4
3' HP 2 @ 307'	17Y	3 ft HP Dish	0
2' HP 3 @ 303'	17XY	2 ft HP Dish	90
2' HP 4 @ 303'	17X	2 ft HP Dish	180
2' HP 5 @ 303'	17P	2 ft HP Dish	270
4' STD 6 @ 120'	5XY	4 ft STD Dish	90
2' RAD 7 @ 22'	1X	2 ft RAD Dish	197
4' STD 8 @ 6'	0P	4 ft STD Dish	270

Joint Orientation



Site #:	88018
Name:	Sprint Nextel

Engineer:	RDB
Date:	05/09/18

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
L 1	Leg S1		XY-Symmetry	0P	1P	1	4	0.28132	0.28132	0.28132
L 2	Leg S2		XY-Symmetry	1P	2P	1	4	0.28132	0.28132	0.28132
L 3	Leg S3		XY-Symmetry	2P	3P	1	4	0.28132	0.28132	0.28132
L 4	Leg S4		XY-Symmetry	3P	4P	1	4	0.28132	0.28132	0.28132
L 5	Leg S5		XY-Symmetry	4P	5P	1	4	0.333333333	0.333333333	0.333333333
L 6	Leg S6		XY-Symmetry	5P	6P	1	4	0.333333333	0.333333333	0.333333333
L 7	Leg S7		XY-Symmetry	6P	7P	1	4	0.333333333	0.333333333	0.333333333
L 8	Leg S8		XY-Symmetry	7P	8P	1	4	0.333333333	0.333333333	0.333333333
L 9	Leg S9		XY-Symmetry	8P	9P	1	4	0.5	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P	1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P	1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P	1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P	1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P	1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P	1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P	1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P	1	4	0.5	0.5	0.5
D 1	Diag S1		XY-Symmetry	0P	H2P	1	6	0.31	0.92	0.31
D 2	Diag S1		XY-Symmetry	0P	H1P	1	6	0.31	0.92	0.31
D 3	Diag S2		XY-Symmetry	1P	H6P	1	6	0.31	0.62	0.31
D 4	Diag S2		XY-Symmetry	1P	H5P	1	6	0.31	0.62	0.31
D 5	Diag S3		XY-Symmetry	2P	H10P	1	6	0.333333333	0.666666667	0.333333333
D 6	Diag S3		XY-Symmetry	2P	H9P	1	6	0.333333333	0.666666667	0.333333333
D 7	Diag S4		XY-Symmetry	3P	H14P	1	6	0.333333333	0.666666667	0.333333333
D 8	Diag S4		XY-Symmetry	3P	H13P	1	6	0.333333333	0.666666667	0.333333333
D 9	Diag S5		XY-Symmetry	4P	A9P	1	6	0.333333333	0.666666667	0.333333333
D 10	Diag S5		XY-Symmetry	4P	A10P	1	6	0.333333333	0.666666667	0.333333333
D 11	Diag S6		XY-Symmetry	5P	A11P	1	6	0.333333333	0.666666667	0.333333333
D 12	Diag S6		XY-Symmetry	5P	A12P	1	6	0.333333333	0.666666667	0.333333333
D 13	Diag S7		XY-Symmetry	6P	A13P	1	6	0.333333333	0.666666667	0.333333333
D 14	Diag S7		XY-Symmetry	6P	A14P	1	6	0.333333333	0.666666667	0.333333333
D 15	Diag S8		XY-Symmetry	7P	A15P	1	6	0.333333333	0.666666667	0.333333333
D 16	Diag S8		XY-Symmetry	7P	A16P	1	6	0.333333333	0.666666667	0.333333333
D 17	Diag S9		XY-Symmetry	8P	A17P	1	6	0.32	0.59	0.32
D 18	Diag S9		XY-Symmetry	8P	A18P	1	6	0.32	0.59	0.32
D 19	Diag S10		XY-Symmetry	9P	A19P	1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P	1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P	1	6	0.48	0.96	0.48
D 22	Diag S11		XY-Symmetry	10P	A22P	1	6	0.48	0.96	0.48
D 23	Diag S12		XY-Symmetry	11P	A23P	1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P	1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P	1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P	1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	14Y	2	5	0.52	0.52	0.52
D 28	Diag S14		XY-Symmetry	13P	14X	2	5	0.52	0.52	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y	2	5	0.52	0.52	0.52
D 30	Diag S15		XY-Symmetry	14P	15X	2	5	0.52	0.52	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y	2	5	0.52	0.52	0.52
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	0.52	0.52	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y	2	5	0.52	0.52	0.52
D 34	Diag S17		XY-Symmetry	16P	17X	2	5	0.52	0.52	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.48	0.48	0.48
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.48	0.48	0.48
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	0.47	0.94	0.47
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	0.47	0.94	0.47
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 12	Horiz 6		XY-Symmetry	6P	A12P	1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P	1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P	1	6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P	1	6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P	1	6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P	1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P	1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P	1	6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P	1	6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P	1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P	1	6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P	1	6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P	1	6	1	1	1
H 27	Horiz 14		Y-Symmetry	14P	14X	3	5	0.5	1	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y	3	5	0.5	1	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X	1	6	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y	1	6	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X	3	5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y	3	5	0.5	1	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X	3	5	1	1	1
H 34	Horiz 17		X-Symmetry	17P	17Y	3	5	1	1	1
H 37	Horiz 2		Y-Symmetry	A3P	A3X	1	6	0.5	1	0.5
H 38	Horiz 2		X-Symmetry	A4P	A4Y	1	6	0.5	1	0.5
H 39	Horiz 3		Y-Symmetry	A5P	A5X	1	6	0.5	1	0.5
H 40	Horiz 3		X-Symmetry	A6P	A6Y	1	6	0.5	1	0.5
H 41	Horiz 4		Y-Symmetry	A7P	A7X	1	6	0.5	1	0.5
H 42	Horiz 4		X-Symmetry	A8P	A8Y	1	6	0.5	1	0.5
LH 1	LH 1		Y-Symmetry	H1P	H1X	1	6	100	100	100
LH 2	LH 1		X-Symmetry	H2P	H2Y	1	6	100	100	100
LH 3	LH 2		XY-Symmetry	H5P	H7P	1	6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P	1	6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P	1	6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P	1	6	1	2	1
LH 7	LH 4		XY-Symmetry	H13P	H15P	1	6	0.998	1.995	0.998
LH 8	LH 4		XY-Symmetry	H14P	H16P	1	6	0.998	1.995	0.998
LD 1	LD 1		XY-Symmetry	H1P	1P	1	6	0.85	0.85	0.85
LD 2	LD 1		XY-Symmetry	H2P	1P	1	6	0.85	0.85	0.85
LD 3	LD 2		XY-Symmetry	H1P	A1P	1	6	0.82	0.82	0.82
LD 4	LD 2		XY-Symmetry	H2P	A2P	1	6	0.82	0.82	0.82
LD 7	LD 4		XY-Symmetry	H5P	2P	1	6	0.87	0.87	0.87
LD 8	LD 4		XY-Symmetry	H6P	2P	1	6	0.87	0.87	0.87
LD 9	LD 5		XY-Symmetry	H5P	A3P	1	6	0.8	0.8	0.8
LD 10	LD 5		XY-Symmetry	H6P	A4P	1	6	0.8	0.8	0.8
LD 11	LD 6		XY-Symmetry	A3P	H7P	1	6	0.84	0.84	0.84
LD 12	LD 6		XY-Symmetry	A4P	H8P	1	6	0.84	0.84	0.84
LD 13	LD 7		XY-Symmetry	H9P	3P	1	6	0.865	0.865	0.865
LD 14	LD 7		XY-Symmetry	H10P	3P	1	6	0.865	0.865	0.865
LD 15	LD 8		XY-Symmetry	H9P	A5P	1	6	0.82	0.82	0.82
LD 16	LD 8		XY-Symmetry	H10P	A6P	1	6	0.82	0.82	0.82
LD 17	LD 9		XY-Symmetry	A5P	H11P	1	6	0.82	0.82	0.82
LD 18	LD 9		XY-Symmetry	A6P	H12P	1	6	0.82	0.82	0.82
LD 19	LD 10		XY-Symmetry	H13P	4P	1	6	0.86	0.86	0.86
LD 20	LD 10		XY-Symmetry	H14P	4P	1	6	0.86	0.86	0.86
LD 21	LD 11		XY-Symmetry	H13P	A7P	1	6	0.82	0.82	0.82
LD 22	LD 11		XY-Symmetry	H14P	A8P	1	6	0.82	0.82	0.82
LD 23	LD 12		XY-Symmetry	A7P	H15P	1	6	0.85	0.85	0.85
LD 24	LD 12		XY-Symmetry	A8P	H16P	1	6	0.85	0.85	0.85
BR 1	DUM 1		XY-Symmetry	A1P	A2P	1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P	1	4	1	1	1

Task:	Determine Point Loads	
Tower Height:	300	ft
Gh:	0.85	
Wind Speed:	92.9516003	mph, Vasd
Ice Wind Speed:	50	
Ice Density:	56	
Tower Type:	S	

Ice Thick:	0.75	in
Topographic Category (1-4):	1	
Exposure Category (B-D):	B	
Structure Class (1-3):	2	
Height of Crest (H) if Topo Cat. >1:	0	ft
Load Factor; Wind:	1.6	
Load Factor; Dead:	1.2	

Site No.:	88018
Engineer:	RDB
Date:	05/09/2018
Carrier:	Sprint Nextel

No.	Carrier	Elevation (ft)	Quantity	# of Azimuths		Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction	C_AA_C (ft^2)	Weight (k)	Ka
1		300	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		300	1	4			Platform w/ HR						1.000	80.00	9.00	1
2		283	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		283	1	4			Catwalk						1.000	70.00	8.00	1
3		212.5	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		212.5	1	3			Access Platform						1.000	45.00	5.00	1
4		100	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		100	1	3			Access Platform						1.000	45.00	5.00	1
5																1
																1
6	Marcus Communications LLC	338	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Marcus Communications LLC	338	1	1		TX RX Systems	101-68-10-X-03N						1.000	5.53	0.07	1
7	Marcus Communications LLC	324	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Marcus Communications LLC	324	1	1			15' Omni-Grid						1.000	13.41	0.08	1
8	Other	320	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	320	1	1			12' Omni						1.000	3.60	0.04	1
9	Marcus Communications LLC	311	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Marcus Communications LLC	311	1	1			Radio/ODU						0.500	1.60	0.03	1
10	Other	307	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	307	1	1			Radio/ODU						0.500	1.60	0.03	1
11	Clearwire Corporation	303	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Clearwire Corporation	303	1	1		DragonWave	Horizon Compact						0.500	0.43	0.01	1
12	US Dept Of Homeland Security	275	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	US Dept Of Homeland Security	275	1	1			Round Side Arm						1.000	5.20	0.15	1
13	US Dept Of Homeland Security	275	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	US Dept Of Homeland Security	275	1	1		Rohde & Schwarz	ADD090						1.000	20.76	0.09	1
14	Other	270	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	270	1	1		Dielectric	TLP-08M-2E						1.000	22.75	0.13	1
15	Other	270	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	270	1	1			Round Side Arm						1.000	5.20	0.15	1
16	Sirius XM Radio Inc.	270	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Sirius XM Radio Inc.	270	2	2		Til-Tek	TA-2350-DAB						1.000	1.34	0.02	1
17	Sirius XM Radio Inc.	270	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Sirius XM Radio Inc.	270	2	2			Round Side Arm						0.900	5.20	0.15	0.9
18	T-Mobile	268	3	3		Ericsson	AIR 21, 1.3 M, B2A B4P	56	12	8	83	F	0.710			0.8
	T-Mobile	268	3	3		Ericsson	AIR-32 B2A/B66Aa						0.710	6.51	0.13	0.8
19	T-Mobile	268	3	3		Andrew	LNX-6515DS-VTM	96.3	11.9	7.1	51.3	F	0.700			0.8
	T-Mobile	268	3	3		RFS	ATMAA1412D-1A20						0.500	1.00	0.01	0.8
20	T-Mobile	268	3	3		Ericsson	RRUS 11 B12	19.7	17	7.2	50.7	F	0.500			0.8
	T-Mobile	268	3	3			Flat Sector Frame						0.670	17.90	0.40	0.75
21	US Dept Of Homeland Security	250	1	1		Sinclair	SC281-L	251	5	5	79	R	1.000			1
	US Dept Of Homeland Security	250	1	1			Round Side Arm						1.000	5.20	0.15	1
22	US Dept Of Homeland Security	246	1	1		Sinclair	SC381-HL	148.3	4.5	4.5	47	R	1.000			1
	US Dept Of Homeland Security	246	1	1			Round Side Arm						1.000	5.20	0.15	1
23	AT&T Mobility	235	3	3		Powerwave Allgon	7770	55	11	5	35	F	0.650			0.8
	AT&T Mobility	235	3	3		Andrew	SBNHH-1D65A						0.690	5.80	0.04	0.8
24	AT&T Mobility	235	3	3		CCI	OPA-65R-LCUU-H4	48	14.8	7.4	57	F	0.660			0.8
	AT&T Mobility	235	1	3			(42) Diplexer/TTA/BOB/RET/RRU						0.500	74.92	1.44	0.8
25	AT&T Mobility	235	3	3		KMW	EPBQ-654L8H6-L2	73	21	6.3	72.8	F	0.610			0.8
	AT&T Mobility	235	3	3			Flat Sector Frame						0.670	17.90	0.40	0.75
26	Sprint Nextel	222	12	3		Decibel	DB844H90E-XY	48	6.5	8	14	F	0.740			0.8
	Sprint Nextel	222	3	3			Flat Sector Frame						0.670	17.90	0.40	0.75
27	US Dept Of Homeland Security	207	1	1		Sinclair	SC281-L	251	5	5	79	R	1.000			1
	US Dept Of Homeland Security	207	1	1			Round Side Arm						1.000	5.20	0.15	1
28	Marcus Communications LLC	200	2	2		TX RX Systems	101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000			1
	Marcus Communications LLC	200	2	2			Round Side Arm						0.900	5.20	0.15	0.9
29	Spok Holdings, Inc.	193	2	2		Antel	BCD-87010 ___	134	2.6	2.6	26.5	R	1.000			1
	Spok Holdings, Inc.	193	2	2			Round Side Arm						0.900	5.20	0.15	0.9
30	Spok Holdings, Inc.	193	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Spok Holdings, Inc.	193	1	1			30" x 30" Reflector						1.000	7.50	0.03	1
31	Clearwire Corporation	175	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Clearwire Corporation	175	1	1			12" x 12" Junction Box						1.000	1.20	0.01	1
32	Clearwire Corporation	171	3	3		NextNet	BTS-2500	19.3	11.3	5.1	35	F	0.500			0.8
	Clearwire Corporation	171	3	3		Argus	LLPX310R						0.630	4.29	0.03	0.8
33	Clearwire Corporation	171	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Clearwire Corporation	171	3	3			Flat T-Arm						0.670	12.90	0.25	0.75
34	Sprint Nextel	150	3	3	Proposed	Nokia	2.5G MAA - AAHC(64T64R)	25.6	19.7	9.6	103.6	F	0.640			0.8
	Sprint Nextel	150	1	3			(15) Filter/Diplexer/RRU						0.500	31.68	0.57	0.8
35	Sprint Nextel	150	3	3		RFS	APXVSPP18-C-A20	72	11.8	7	57	F	0.690			0.8
	Sprint Nextel	150	3	3			Flat Sector Frame						0.750	17.90	0.40	0.75
36	Sensus USA Inc.	139	1	1		Antel	BCD-87010 ___ 4°	134	2.6	2.6	26.5	R	1.000			1
	Sensus USA Inc.	139	1	1			Round Side Arm						1.000	5.20	0.15	1
37	Senet, Inc.	135	1	1		L-com	HG908U-PRO	63	1.5	1.5	3.8	R	1.000			1
	Senet, Inc.	135	1	1			Round Side Arm						1.000	5.20	0.15	1
38	Senet, Inc.	130	1	1		Tycon	ENC-DC	11	8.5	3	4	F	1.000			1
	Senet, Inc.	130	1	1			Stand-Off						1.000	2.50	0.08	1
39	Marcus Communications LLC	107	1	1		TX RX Systems	101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000			1
	Marcus Communications LLC	107	1	1			Round Side Arm						1.000	5.20	0.15	1
40	Verizon Wireless	92	6	3		Andrew	SBNHH-1D65B	72.7	11.9	7.1	50.7	F	0.690			0.8
	Verizon Wireless	92	1	3			(12) RRU/BOB						0.500	33.87	0.63	0.8
41	Verizon Wireless	92	6	3			72" x 14" Panel	72	14	7	45	F	0.670			0.8
	Verizon Wireless	92	3	3			Flat Sector Frame						0.670	17.90	0.40	0.75
42	-	42	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	-	42	4	4			Ice Shield						1.000	6.00	0.15	1
43	Spok Holdings, Inc.	6	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Spok Holdings, Inc.	6	1	1		Trimble	Acutime 2000						1.000	0.30	0.00	1
44																1
																1
45																1
																1
46																1
																1
47																1
																1
48																1
																1
49																1
																1
50																1
																1

No.	Elevation	C_AA_C	C_AA_C (Ice)	Force	Force (Ice)	Weight	Weight (Ice)	60 Azi	Force	F (Ice)	Height	Sum of Forces (No I	
	(ft)	*(ft^2)*	*(ft^2)*	*(lb)*	*(lb)*	*(lb)*	*(lb)*	**Mult.**	**mean**	**mean**	Flag	60 Azi.	180 Azi.
1	300	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**			
	300	80.00	108.00	2766.817	675.492	10800	14040	**1.00**	**1521.75**	**371.52**	1.5033333	2766.817067	
2	283	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5033343		
	283	70.00	94.50	2380.948	581.286	9600	12480	**1.00**	**1309.52**	**319.71**	1.5035336	2380.948376	
3	212.5	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5035346		
	212.5	45.00	60.75	1410.307	344.313	6000	7800	**1.00**	**775.67**	**189.37**	1.5047059	1410.307249	
4	100	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5047069		
	100	45.00	60.75	1137.058	277.602	6000	7800	**1.00**	**625.38**	**152.68**	1.5100000	1137.05799	
5								**1.00**			1.5100010		
								1.00					
6	338	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**			
	338	5.53	7.47	197.886	48.312	84	109	**1.00**	**108.84**	**26.57**	1.5029586	197.8856442	
7	324	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5029596		
	324	13.41	18.10	474.099	115.747	90	117	**1.00**	**260.75**	**63.66**	1.5030864	474.0988274	
8	320	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5030874		
	320	3.60	4.86	126.824	30.963	48	62	**1.00**	**69.75**	**17.03**	1.5031250	126.8239182	
9	311	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5031260		
	311	0.80	1.08	27.954	6.825	36	47	**1.00**	**15.37**	**3.75**	1.5032154	27.95430955	
10	307	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5032164		
	307	0.80	1.08	27.851	6.800	36	47	**1.00**	**15.32**	**3.74**	1.5032573	27.85110819	
11	303	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5032583		
	303	0.22	0.29	7.457	1.821	13	17	**1.00**	**4.10**	**1.00**	1.5033003	7.456990624	
12	275	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5033013		
	275	5.20	7.02	175.427	42.829	180	234	**1.00**	**96.48**	**23.56**	1.5033013	175.4272562	
13	275	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5033023		
	275	20.76	28.03	700.360	170.986	106	138	**1.00**	**385.20**	**94.04**	1.5036364	875.7868408	
14	270	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5036374		
	270	22.75	30.71	763.481	186.397	156	203	**1.00**	**419.91**	**102.52**	1.5037037	763.4811011	
15	270	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5037047		
	270	5.20	7.02	174.510	42.605	180	234	**1.00**	**95.98**	**23.43**	1.5037037	937.9910671	
16	270	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5037047		
	270	2.68	3.62	89.940	21.958	36	47	**1.00**	**49.47**	**12.08**	1.5037037	1027.930819	
17	270	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5037047		
	270	9.36	12.64	282.706	69.020	360	468	**1.00**	**155.49**	**37.96**	1.5037037	1310.636964	
18	268	10.31	12.86	345.203	77.882	299	564	**1.00**	**189.86**	**42.84**	1.5037047		
	268	13.87	18.72	371.488	90.695	476	619	**1.00**	**204.32**	**49.88**	1.5037313	716.6914318	
19	268	19.20	21.56	643.123	130.555	185	563	**1.00**	**353.72**	**71.81**	1.5037323		
	268	1.50	2.03	40.186	9.811	47	61	**1.00**	**22.10**	**5.40**	1.5037313	1400.000689	
20	268	3.35	4.58	112.153	27.711	183	309	**1.00**	**61.68**	**15.24**	1.5037323		
	268	35.98	48.57	903.659	220.620	1440	1872	**1.00**	**497.01**	**121.34**	1.5037313	2415.812532	
21	250	10.46	13.68	343.344	81.202	95	615	**1.00**	**188.84**	**44.66**	1.5037323		
	250	5.20	7.02	170.715	41.678	180	234	**1.00**	**93.89**	**22.92**	1.5040000	514.0587784	
22	246	5.56	7.49	181.735	44.237	56	340	**1.00**	**99.95**	**24.33**	1.5040010		
	246	5.20	7.02	169.930	41.487	180	234	**1.00**	**93.46**	**22.82**	1.5040650	351.6645299	
23	235	8.59	10.71	277.170	62.480	126	322	**1.00**	**152.44**	**34.36**	1.5040660		
	235	12.01	16.21	309.797	75.634	147	191	**1.00**	**170.39**	**41.60**	1.5042553	586.967591	
24	235	9.64	12.43	310.785	72.479	205	443	**1.00**	**170.93**	**39.86**	1.5042563		
	235	37.46	50.57	966.601	235.987	1726	2243	**1.00**	**531.63**	**129.79**	1.5042553	1864.353462	
25	235	19.38	23.86	625.052	139.169	262	701	**1.00**	**343.78**	**76.54**	1.5042563		
	235	35.98	48.57	870.362	212.491	1440	1872	**1.00**	**478.70**	**116.87**	1.5042553	3359.7675	
26	222	26.52	32.48	841.643	186.394	202	371	**1.00**	**462.90**	**102.52**	1.5042563		
	222	35.98	48.57	856.325	209.064	1440	1872	**1.00**	**470.98**	**114.98**	1.5045045	1697.967451	
27	207	10.46	13.68	325.319	76.939	95	604	**1.00**	**178.93**	**42.32**	1.5045055		
	207	5.20	7.02	161.752	39.490	180	234	**1.00**	**88.96**	**21.72**	1.5048309	487.0716767	
28	200	11.06	15.93	340.670	88.708	168	482	**1.00**	**187.37**	**48.79**	1.5048319		
	200	9.36	12.64	259.476	63.349	360	468	**1.00**	**142.71**	**34.84**	1.5050000	600.1458282	
29	193	5.81	9.26	177.045	51.055	64	236	**1.00**	**97.38**	**28.08**	1.5050010		
	193	9.36	12.64	256.848	62.707	360	468	**1.00**	**141.27**	**34.49**	1.5051813	433.8935049	
30	193	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5051823		
	193	7.50	10.13	228.675	55.829	36	47	**1.00**	**125.77**	**30.71**	1.5051813	662.5687569	
31	175	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5051823		
	175	1.20	1.62	35.579	8.686	12	16	**1.00**	**19.57**	**4.78**	1.5057143	35.57875845	
32	171	2.18	3.11	64.236	16.545	126	210	**1.00**	**35.33**	**9.10**	1.5057153		
	171	8.11	10.95	191.051	46.643	103	134	**1.00**	**105.08**	**25.65**	1.5058480	255.2867387	
33	171	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5058490		
	171	25.93	35.00	572.779	139.839	900	1170	**1.00**	**315.03**	**76.91**	1.5058480	828.066216	
34	150	6.46	8.58	183.146	44.020	373	577	**1.00**	**100.73**	**24.21**	1.5058490		
	150	15.84	21.38	359.523	87.774	683	888	**1.00**	**197.74**	**48.28**	1.5066667	542.6695676	
35	150	13.29	15.74	377.014	80.752	205	484	**1.00**	**207.36**	**44.41**	1.5066677		
	150	40.28	54.37	856.996	209.227	1440	1872	**1.00**	**471.35**	**115.08**	1.5066667	1776.679138	
36	139	2.90	4.63	80.599	23.242	32	192	**1.00**	**44.33**	**12.78**	1.5066677		
	139	5.20	7.02	144.356	35.243	180	234	**1.00**	**79.40**	**19.38**	1.5071942	224.9547542	
37	135	0.79	1.51	21.680	7.508	5	57	**1.00**	**11.92**	**4.13**	1.5071952		
	135	5.20	7.02	143.157	34.950	180	234	**1.00**	**78.74**	**19.22**	1.5074074	164.8366753	
38	130	0.78	1.22	21.221	5.986	5	31	**1.00**	**11.67**	**3.29**	1.5074084		
	130	2.50	3.38	68.087	16.623	96	125	**1.00**	**37.45**	**9.14**	1.5076923	89.30768555	
39	107	5.53	7.96	142.459	37.095	84	360	**1.00**	**78.35**	**20.40**	1.5076933		
	107	5.20	7.02	133.958	32.705	180	234	**1.00**	**73.68**	**17.99**	1.5093458	276.4172789	
40	92	27.07	32.02	667.887	142.855	365	667	**1.00**	**367.34**	**78.57**	1.5093468		
	92	16.94	22.86	334.271	81.609	756	983	**1.00**	**183.85**	**44.89**	1.5108696	1002.158293	
41	92	29.66	35.62	731.771	158.939	324	642	**1.00**	**402.47**	**87.42**	1.5108706		
	92	35.98	48.57	665.785	162.545	1440	1872	**1.00**	**366.18**	**89.40**	1.5108696	2399.71479	
42	42	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5108706		
	42	24.00	32.40	473.302	115.552	720	936	**1.00**	**260.32**	**63.55**	1.5238095	473.3019375	
43	6	0.00	0.00	0.000	0.000	0	0	**1.00**	**0.00**	**0.00**	1.5238105		
	6	0.30	0.41	5.369	1.311			**1.00**	**2.95**	**0.72**	1.6666667	5.369462784	
44					#VALUE!			**1.00**	**#VALUE!**	**#VALUE!**	1.6666677		
								1.00	**#VALUE!**	**#VALUE!**	1.6666677	#VALUE!	
45					#VALUE!			**1.00**	**#VALUE!**	**#VALUE!**	1.6666687		
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47					#VALUE!			**1.00**	**#VALUE!**	**#VALUE!**	1.6666707		
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48					#VALUE!			**1.00**	**#VALUE!**	**#VALUE!**	1.6666717		
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								1.00	**#VALUE!**	**#VALUE!**	1.6666737	#VALUE!	

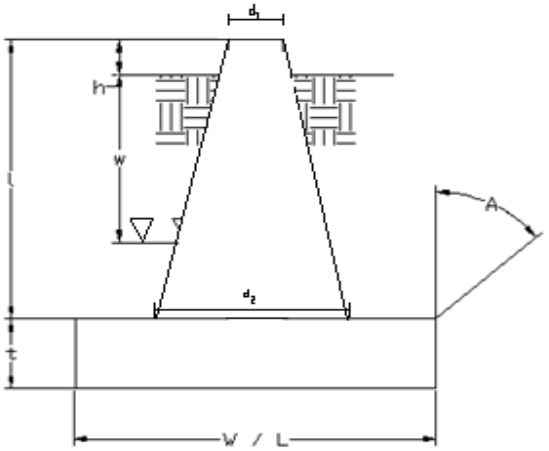
Foundation

Site No.:	88018
Engineer:	RDB
Date:	05/09/18
Carrier:	Sprint Nextel

Design Loads (Factored)

Compression/Leg:	474.19	k
Uplift/Leg:	337.75	k
Shear/Leg	66.70	k

Face Width @ Top of Pier (d_1):	4.00	ft
Face Width @ Bottom of Pier (d_2):	8.00	ft
Total Length of Pier (l):	8.00	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	18.00	ft
Length of Pad (L):	18.00	ft
Thickness of Pad (t):	3.00	ft
Water Table Depth (w):	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	100.0	pcf
Unit Weight of Soil (Below Water Table):	37.6	pcf
Friction Angle of Uplift (A):	20	°
Ultimate Compressive Bearing Pressure:	40000	psf
Ultimate Skin Friction:	197	psf



Volume Pier (Total):	298.67	ft³
Volume Pad (Total):	972.00	ft³
Volume Soil (Total):	2935.41	ft³
Volume Pier (Buoyant):	0.00	ft³
Volume Pad (Buoyant):	0.00	ft³
Volume Soil (Buoyant):	0.00	ft³
Weight Pier:	44.80	k
Weight Pad:	145.80	k
Weight Soil:	293.54	k
Uplift Skin Friction:	31.91	k

Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
387.04	0.87	**OK**

Axial Check

ϕs Axial Resistance (k)	Ratio	Result
9720.00	0.05	**OK**

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	6
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.51	**OK**

SAC/Sprint Massive MiMo
CT03XC337
168 Catoona Lane
Stamford, CT 06902

Photo Simulations
09/11/18

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
Before – North

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
After – North

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
Before – East

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
After – East

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
Before – South

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
After – South

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
Before – West

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

Sprint CT03XC337
After – West

WESTCHESTER SERVICES L.L.C.◆604 FOX GLEN◆BARRINGTON, ILLINOIS 60010
847/277-0070 Main◆847/277-0080 Facsimile◆e-mail: ae@westchesterservices.com

WATERFORD

RF EMISSIONS COMPLIANCE REPORT

Sprint

Site: CT03XC337
168 Catoona Lane
Stamford, CT

Latitude/Longitude:
41.052793/-73.563084

October 31, 2018

Report Status:

The Site Is 1.691% of GP Limit
(<1% of OP Limit)

Prepared By:

NIERTool.com

ENGINEERING STATEMENT CONFIRMING COMPLIANCE
With Radiofrequency Radiation Exposure Limits

Compliance Statement

Subject site COMPLIES with Radiofrequency Radiation Exposure Limits of 47 C.F.R. §§ 1.1307(b)(3) and 1.1310.

Technical Framework: Basis for Compliance Statement

The compliance framework is derived from the Federal Communications Commission (FCC) Rules and Regulations for preventing human exposure in excess of the applicable Maximum Permissible Exposure ("MPE") limits listed in Table 1 of 47 C.F.R. § 1.1310. Calculations using input data provided to Waterford by client or client's representative numerically confirm the subject site can operate at a 100% duty cycle without exceeding the FCC MPE limits in areas of uncontrolled access.

At this site, the radiofrequency (RF) power density resulting from each transmitter at any location may be expressed as a percentage of the frequency-specific limits and added to determine if 100% of the exposure limit has been exceeded. The FCC Rules define two tiers of permissible exposure differentiated by the situation in which the exposure takes place and/or the status of the individuals who are subject to exposure. General Population / Uncontrolled exposure limits apply to those situations in which persons may not be aware of the presence of electromagnetic energy, where exposure is not employment-related, or where persons cannot exercise control over their exposure. Occupational / Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment, have been made fully aware of the potential for exposure, and can exercise control over their exposure. Based on the criteria for these classifications, continuous exposure to RF power density levels below the FCC General Population limits is not hazardous. The FCC General Population limits are 5 times more restrictive than the Occupational limits.

	Limits for General Population/ Uncontrolled Exposure		*Limits for Occupational/ Controlled Exposure*	
Frequency (MHz)	Power Density (mW/cm^2)	Averaging Time (minutes)	Power Density (mW/cm^2)	Averaging Time (minutes)
30-300	0.2	30	1	6
300-1500	f/1500	30	f/300	6
1500-100,000	1.0	30	5.0	6

In situations where the predicted MPE exceeds the General Population threshold in an accessible area because of emissions from multiple transmitters, FCC licensees that contribute greater than 5% of the aggregate MPE share responsibility for mitigation.

For any location where radiofrequency (RF) power densities exceed 100% MPE of the General Population limits, access controls with appropriate RF alerting signage must be available to be visible upon approach from any direction to provide notification of potential conditions within these areas. Subject to other site security requirements,occupational personnel should be trained in RF safety and equipped with personal

protective equipment (e.g. RF personal monitor) designed for safe work in the vicinity of RF emitters. Waterford Consultants, LLC recommends that any work activity in these designated areas or in front of any transmitting antennas be coordinated with the wireless operators.

Predictive Modeling

Based on the computational guidelines set forth in FCC Office of Engineering and Technology, Bulletin 65 ("OET65"), Waterford Consultants, LLC has developed software to predict the overall MPE possible at any particular location given the spatial orientation and operating parameters of multiple RF sources. These theoretical results represent worst-case predictions as emitters are assumed to be operating at 100% duty cycle.

The tabular analysis in this report calculates the spatial peak power density produced at ground level from each RF emitter. The far field power density in milliWatts per square centimeter is expressed as $S_{ff} = 33.4 \times ERP / R^2$ where ERP is the Effective Radiated Power along a specific azimuth in Watts and R is the distance from the antenna radiation center in meters. The antenna manufacturer's horizontal and vertical radiation patterns have been considered in determining the ERP in any direction. This computation is based on the maximum ERP and includes a 1.6-fold increase in field strength due to ground reflection. The result provides a conservative estimate of spatially averaged power density at ground level and may be higher than predicted MPE in the graphical plots described below.

As the limits are frequency dependent, the contribution of any RF source at a specific location may be expressed as a percentage of the FCC General Population MPE limits at the associated operating frequency. The percentage contributions from all RF sources are added to determine the overall exposure level. If this result is less than 100%, the predicted cumulative exposure level is below the General Population limits set forth in the FCC Rules. The cumulative MPE depicted on the summary page is the summation of maximum MPE values for each emitter regardless of antenna orientation.

A graphical plot of calculated spatially averaged RF power density, based on the Cylindrical Model as described in OET65, predicts spatially averaged MPE conditions at areas in near proximity to the antenna. In the vertical display, predicted MPE is depicted at the center of the 6 ft vertical zone that a person could occupy.

Qualifications of Waterford

Within the technical and regulatory framework detailed above, Waterford created computer modeling tools that operate on data provided by Waterford clients and client representatives. In developing these tools, Waterford has employed recognized and generally accepted good engineering practices. Only clients and client representatives are authorized to provide input data through the Waterford web portal. In securing that authorization, clients and client representatives warrant the accuracy of all input data.

Waterford Consultants, LLC attests to the accuracy of the engineering calculations. Waterford also attests that the results of those engineering calculations are correctly summarized in this report.

Certification

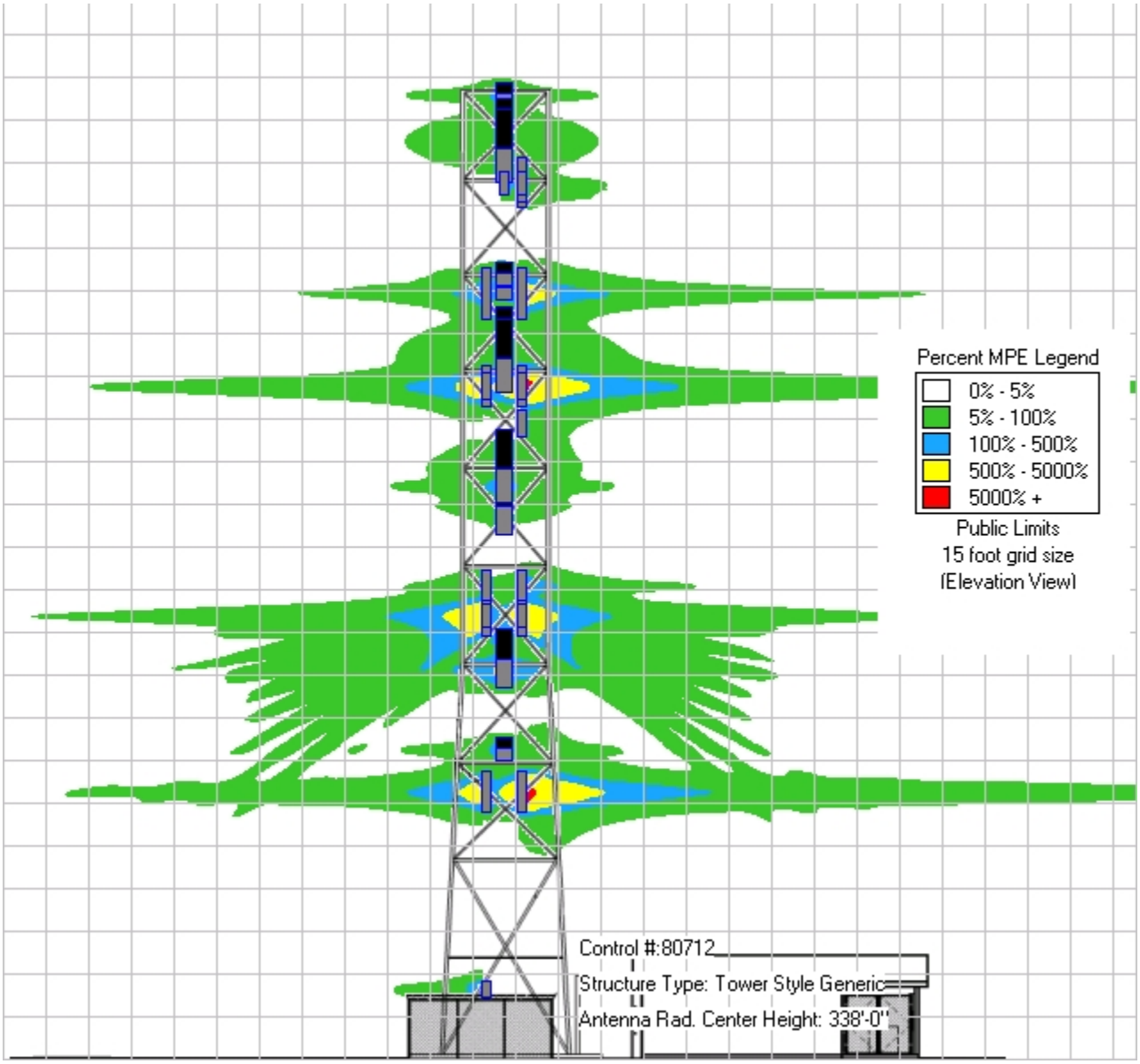
My stamp and signature on the cover indicates that I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Sprint
CT03XC337
Site Summary

Source	Predicted Power Density, % of Limit (GP)
AT&T Mobility 700 MHz	< 1 %
AT&T Mobility 850 MHz	< 1 %
AT&T Mobility 1900 MHz	< 1 %
Clearwire 11000 MHz	< 1 %
Clearwire 18000 MHz	< 1 %
Marcus Communications 18000 MHz	< 1 %
Marcus Communications 850 MHz	< 1 %
Marcus Communications 150 MHz	< 1 %
Metro PCS 1900 MHz	< 1 %
Metro PCS 2100 MHz	< 1 %
Senet 850 MHz	< 1 %
Sensus USA 450 MHz	< 1 %
Sirius XM Radio 150 MHz	< 1 %
Sirius XM Radio 23000 MHz	< 1 %
Spok Holdings 450 MHz	< 1 %
Sprint 850 MHz	< 1 %
Sprint 1900 MHz	< 1 %
Sprint 2500 MHz	1.6 %
T-Mobile 2100 MHz	< 1 %
T-Mobile 1900 MHz	< 1 %
T-Mobile 700 MHz	< 1 %
Unknown 18000 MHz	< 1 %
Unknown 90.1 MHz	< 1 %
Unknown 850 MHz	< 1 %
US Dept Of Homeland Security 450 MHz	< 1 %
US Dept Of Homeland Security 850 MHz	< 1 %
Verizon 700 MHz	< 1 %
Verizon 2100 MHz	< 1 %
Verizon 850 MHz	1.6 %
Verizon 1900 MHz	< 1 %
Sum of Listed Sources	6.2%

ELEVATION DETAIL

Predicted MPE depicted at the center of the 6 ft vertical zone that a person could occupy



AT&T Mobility
CT03XC337
Summary

Frequency:	700 (MHz)
Limit (GP)	466 µW/cm^2
Maximum power density at ground level:	0.3 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.1 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
COMMSCOPE SBNHH-1D65A 00DT 0700	235	0	0	2400	0.3	0.1
COMMSCOPE SBNHH-1D65A 00DT 0700	235	120	0	2400	0.3	0.1
COMMSCOPE SBNHH-1D65A 00DT 0700	235	240	0	2400	0.3	0.1
KMW EPBQ-654L8H6-L2 02DT 700	235	0	0	2800	0.2	0
KMW EPBQ-654L8H6-L2 02DT 700	235	120	0	2800	0.2	0
KMW EPBQ-654L8H6-L2 02DT 700	235	240	0	2800	0.2	0

AT&T Mobility
CT03XC337
Summary

Frequency:	850 (MHz)
Limit (GP)	566 µW/cm^2
Maximum power density at ground level:	0.3 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.1 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
POWERWAVE 7770 00 00DT 850	235	0	0	3700	0.3	0.1
POWERWAVE 7770 00 00DT 850	235	120	0	3700	0.3	0.1
POWERWAVE 7770 00 00DT 850	235	240	0	3700	0.3	0.1

AT&T Mobility
CT03XC337
Summary

Frequency:	1900	(MHz)
Limit (GP)	1000	µW/cm^2
Maximum power density at ground level:	1.2	µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.1	%

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
CCI OPA-65R-LCUU-H4-00DT 1900	235	0	0	10200	1.2	0.1
CCI OPA-65R-LCUU-H4-00DT 1900	235	120	0	10200	1.2	0.1
CCI OPA-65R-LCUU-H4-00DT 1900	235	240	0	10200	1.2	0.1

Clearwire
CT03XC337
Summary

Frequency:	11000 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
COMMSCOPE VHLPX4-11W 11000	303	0	0	3282	0	0

Clearwire
CT03XC337
Summary

Frequency:	18000 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
ANDREW VHLP2-18 18000	303	120	0	1641	0	0

Marcus Communications
CT03XC337
Summary

Frequency:	18000 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
ANDREW VHLP4-18 18000	311	0	0	1641	0	0

Marcus Communications
CT03XC337
Summary

Frequency:	850 (MHz)
Limit (GP)	566 µW/cm^2
Maximum power density at ground level:	0.1 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 12FT 850	324	0	0	1000	0.1	0

Marcus Communications
CT03XC337
Summary

Frequency:	150 (MHz)
Limit (GP)	200 µW/cm^2
Maximum power density at ground level:	0.5 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.2 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 150	338	0	0	100	0	0
GENERIC OMNI 150	200	0	0	100	0.1	0.1
GENERIC OMNI 150	107	0	0	100	0.5	0.2

Metro PCS
CT03XC337
Summary

Frequency:	1900 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0.1 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
KATHREIN 80010504V01 00DT 1900	165	0	0	1500	0.1	0
KATHREIN 80010504V01 00DT 1900	165	120	0	1500	0.1	0
KATHREIN 80010504V01 00DT 1900	165	240	0	1500	0.1	0

Metro PCS
CT03XC337
Summary

Frequency:	2100 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
KATHREIN 80010504V01 00DT 2100	165	0	0	1000	0	0
KATHREIN 80010504V01 00DT 2100	165	120	0	1000	0	0
KATHREIN 80010504V01 00DT 2100	165	240	0	1000	0	0

Senet
CT03XC337
Summary

Frequency:	850 (MHz)
Limit (GP)	566 µW/cm^2
Maximum power density at ground level:	0.7 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.1 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 5FT 850	135	0	0	1000	0.7	0.1

Sensus USA
CT03XC337
Summary

Frequency:	450 (MHz)
Limit (GP)	300 µW/cm^2
Maximum power density at ground level:	0.3 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.1 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 9.5FT 450	139	0	0	100	0.3	0.1

Sirius XM Radio
CT03XC337
Summary

Frequency:	150 (MHz)
Limit (GP)	200 µW/cm^2
Maximum power density at ground level:	0.1 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 150	270	0	0	100	0.1	0

Sirius XM Radio
CT03XC337
Summary

Frequency:	23000 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	1.8 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.2 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
TIL-TEK TA-2324-LHCP 2300	22	180	0	631	1.8	0.2

Spok Holdings
CT03XC337
Summary

Frequency:	450 (MHz)
Limit (GP)	300 µW/cm^2
Maximum power density at ground level:	0.2 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.1 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 9.5FT 450	193	0	0	100	0.2	0.1

Sprint
CT03XC337
Summary

Frequency:	1900	(MHz)
Limit (GP)	1000	µW/cm^2
Maximum power density at ground level:	0.2	µW/cm^2
Highest percentage of Maximum Exposure Limit:	0	%

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
RFS APXVSPP18-C-A20-00DT 1900	154	20	0	6300	0.2	0
RFS APXVSPP18-C-A20-00DT 1900	154	120	0	6300	0.2	0
RFS APXVSPP18-C-A20-00DT 1900	154	200	0	6300	0.2	0

Sprint
CT03XC337
Summary

Frequency:	2500	(MHz)
Limit (GP)	1000	µW/cm^2
Maximum power density at ground level:	16.4	µW/cm^2
Highest percentage of Maximum Exposure Limit:	1.6	%

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
Nokia SON Nokia AAHC 64T64R PRELIM	154	20	0	4258	16.4	1.6
Nokia SON Nokia AAHC 64T64R PRELIM	154	120	0	4258	16.4	1.6
Nokia SON Nokia AAHC 64T64R PRELIM	154	200	0	4258	16.4	1.6

T-Mobile
CT03XC337
Summary

Frequency:	2100 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
ERICSSON AIR 32 00DT 2100	268	0	0	3900	0	0
ERICSSON AIR 32 00DT 2100	268	120	0	3900	0	0
ERICSSON AIR 32 00DT 2100	268	240	0	3900	0	0

T-Mobile
CT03XC337
Summary

Frequency:	1900 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0.1 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
ERICSSON AIR 21 00DT 1900	268	0	0	6200	0.1	0
ERICSSON AIR 21 00DT 1900	268	120	0	6200	0.1	0
ERICSSON AIR 21 00DT 1900	268	240	0	6200	0.1	0

T-Mobile
CT03XC337
Summary

Frequency:	700 (MHz)
Limit (GP)	466 µW/cm^2
Maximum power density at ground level:	0 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
COMMSCOPE LNX-6515DS-VTM 00DT 0700	268	0	0	1400	0	0
COMMSCOPE LNX-6515DS-VTM 00DT 0700	268	120	0	1400	0	0
COMMSCOPE LNX-6515DS-VTM 00DT 0700	268	240	0	1400	0	0

Unknown
CT03XC337
Summary

Frequency:	18000 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	0 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC MICROWAVE 3FT 18000	307	0	0	1641	0	0

Unknown
CT03XC337
Summary

Frequency:	90.1 (MHz)
Limit (GP)	200 µW/cm^2
Maximum power density at ground level:	0.1 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC						
2Bay 1/2-spaced Omni	307	0	0	250	0.1	0

Unknown
CT03XC337
Summary

Frequency:	850 (MHz)
Limit (GP)	566 µW/cm^2
Maximum power density at ground level:	0.1 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 12FT 850	320	0	0	1000	0.1	0

US Dept Of Homeland Security
CT03XC337
Summary

Frequency:	450 (MHz)
Limit (GP)	300 µW/cm^2
Maximum power density at ground level:	0.1 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 450	275	0	0	100	0.1	0

US Dept Of Homeland Security
CT03XC337
Summary

Frequency:	850 (MHz)
Limit (GP)	566 µW/cm^2
Maximum power density at ground level:	0.3 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.1 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC OMNI 12FT 850	250	0	0	1000	0.2	0
GENERIC OMNI 12FT 850	246	0	0	1000	0.2	0
GENERIC OMNI 12FT 850	207	0	0	1000	0.3	0.1

Verizon
CT03XC337
Summary

Frequency:	700 (MHz)
Limit (GP)	466 µW/cm^2
Maximum power density at ground level:	2.9 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.6 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
COMMSCOPE SBNHH-1D65B 00DT 0700	92	0	0	5500	2.9	0.6
COMMSCOPE SBNHH-1D65B 00DT 0700	92	120	0	5500	2.9	0.6
COMMSCOPE SBNHH-1D65B 00DT 0700	92	240	0	5500	2.9	0.6

Verizon
CT03XC337
Summary

Frequency:	2100 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	4.2 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.4 %

Make / Model	Height(ft)	Orient°	DT°	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
COMMSCOPE SBNHH-1D65B 00DT 2100	92	0	0	11600	4.2	0.4
COMMSCOPE SBNHH-1D65B 00DT 2100	92	120	0	11600	4.2	0.4
COMMSCOPE SBNHH-1D65B 00DT 2100	92	240	0	11600	4.2	0.4

Verizon
CT03XC337
Summary

Frequency:	850 (MHz)
Limit (GP)	566 µW/cm^2
Maximum power density at ground level:	9 µW/cm^2
Highest percentage of Maximum Exposure Limit:	1.6 %

Make / Model	Height(ft)	Orientº	DTº	ERP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC PANEL 6FT 00DT 850	92	0	0	7400	9	1.6
GENERIC PANEL 6FT 00DT 850	92	120	0	7400	9	1.6
GENERIC PANEL 6FT 00DT 850	92	240	0	7400	9	1.6

Verizon
CT03XC337
Summary

Frequency:	1900 (MHz)
Limit (GP)	1000 µW/cm^2
Maximum power density at ground level:	6.9 µW/cm^2
Highest percentage of Maximum Exposure Limit:	0.7 %

Make / Model	Height(ft)	Orientº	DTº	EiRP(W)	Max Power Density (µW/cm^2)	Percent of Limit (GP)
GENERIC PANEL 6FT 00DT 1900	92	0	0	10200	6.9	0.7
GENERIC PANEL 6FT 00DT 1900	92	120	0	10200	6.9	0.7
GENERIC PANEL 6FT 00DT 1900	92	240	0	10200	6.9	0.7

AT&T Mobility
CT03XC337
COMMSCOPE - SBNHH-1D65A 00DT 0700 0° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	2400	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	2400.00	13450.2	13452.2	0.005	0.001
5	0.80	1996.23	2683.5	2693.7	0.1	0.02
10	3.80	1000.49	1331.5	1352.0	0.2	0.04
20	14.50	85.15	645.0	686.5	0.06	0.01
30	14.20	91.25	406.6	469.5	0.15	0.03
35	20.20	22.92	335.3	409.3	0.05	0.01
40	34.60	0.83	279.8	365.3	0.002	0.0005
45	18.70	32.38	234.8	332.0	0.11	0.02
50	15.10	74.17	197.0	306.5	0.28	0.06
55	15.60	66.10	164.4	286.6	0.29	0.06
60	17.90	38.92	135.5	271.1	0.19	0.04
65	21.20	18.21	109.5	259.1	0.1	0.02
70	26.50	5.37	85.5	249.8	0.03	0.007
71	27.60	4.17	80.8	248.3	0.02	0.005
72	28.50	3.39	76.3	246.9	0.02	0.004
73	29.10	2.95	71.8	245.5	0.02	0.004
74	29.40	2.76	67.3	244.2	0.02	0.004
75	29.40	2.76	62.9	243.0	0.02	0.004
76	29.40	2.76	58.5	242.0	0.02	0.004
77	29.40	2.76	54.2	240.9	0.02	0.004
78	29.60	2.63	49.9	240.0	0.02	0.004
79	30.00	2.40	45.6	239.2	0.02	0.003
80	30.60	2.09	41.4	238.4	0.01	0.003
81	31.50	1.70	37.2	237.7	0.01	0.002
82	32.80	1.26	33.0	237.1	0.008	0.002
83	34.40	0.87	28.8	236.5	0.006	0.001
84	36.60	0.53	24.7	236.1	0.003	0.0007
85	39.40	0.28	20.5	235.7	0.002	0.0004
86	43.10	0.12	16.4	235.3	0.0008	0.0002
87	45.50	0.07	12.3	235.1	0.0004	0.0001
88	43.00	0.12	8.2	234.9	0.0008	0.0002
89	39.50	0.27	4.1	234.8	0.002	0.0004
90	36.80	0.50	0.0	234.8	0.003	0.0007

AT&T Mobility
CT03XC337
COMMSCOPE - SBNHH-1D65A 00DT 0700 120° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	2400	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	2400.00	13450.2	13452.2	0.005	0.001
5	0.80	1996.23	2683.5	2693.7	0.1	0.02
10	3.80	1000.49	1331.5	1352.0	0.2	0.04
20	14.50	85.15	645.0	686.5	0.06	0.01
30	14.20	91.25	406.6	469.5	0.15	0.03
35	20.20	22.92	335.3	409.3	0.05	0.01
40	34.60	0.83	279.8	365.3	0.002	0.0005
45	18.70	32.38	234.8	332.0	0.11	0.02
50	15.10	74.17	197.0	306.5	0.28	0.06
55	15.60	66.10	164.4	286.6	0.29	0.06
60	17.90	38.92	135.5	271.1	0.19	0.04
65	21.20	18.21	109.5	259.1	0.1	0.02
70	26.50	5.37	85.5	249.8	0.03	0.007
71	27.60	4.17	80.8	248.3	0.02	0.005
72	28.50	3.39	76.3	246.9	0.02	0.004
73	29.10	2.95	71.8	245.5	0.02	0.004
74	29.40	2.76	67.3	244.2	0.02	0.004
75	29.40	2.76	62.9	243.0	0.02	0.004
76	29.40	2.76	58.5	242.0	0.02	0.004
77	29.40	2.76	54.2	240.9	0.02	0.004
78	29.60	2.63	49.9	240.0	0.02	0.004
79	30.00	2.40	45.6	239.2	0.02	0.003
80	30.60	2.09	41.4	238.4	0.01	0.003
81	31.50	1.70	37.2	237.7	0.01	0.002
82	32.80	1.26	33.0	237.1	0.008	0.002
83	34.40	0.87	28.8	236.5	0.006	0.001
84	36.60	0.53	24.7	236.1	0.003	0.0007
85	39.40	0.28	20.5	235.7	0.002	0.0004
86	43.10	0.12	16.4	235.3	0.0008	0.0002
87	45.50	0.07	12.3	235.1	0.0004	0.0001
88	43.00	0.12	8.2	234.9	0.0008	0.0002
89	39.50	0.27	4.1	234.8	0.002	0.0004
90	36.80	0.50	0.0	234.8	0.003	0.0007

AT&T Mobility
CT03XC337
COMMSCOPE - SBNHH-1D65A 00DT 0700 240° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	2400	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	2400.00	13450.2	13452.2	0.005	0.001
5	0.80	1996.23	2683.5	2693.7	0.1	0.02
10	3.80	1000.49	1331.5	1352.0	0.2	0.04
20	14.50	85.15	645.0	686.5	0.06	0.01
30	14.20	91.25	406.6	469.5	0.15	0.03
35	20.20	22.92	335.3	409.3	0.05	0.01
40	34.60	0.83	279.8	365.3	0.002	0.0005
45	18.70	32.38	234.8	332.0	0.11	0.02
50	15.10	74.17	197.0	306.5	0.28	0.06
55	15.60	66.10	164.4	286.6	0.29	0.06
60	17.90	38.92	135.5	271.1	0.19	0.04
65	21.20	18.21	109.5	259.1	0.1	0.02
70	26.50	5.37	85.5	249.8	0.03	0.007
71	27.60	4.17	80.8	248.3	0.02	0.005
72	28.50	3.39	76.3	246.9	0.02	0.004
73	29.10	2.95	71.8	245.5	0.02	0.004
74	29.40	2.76	67.3	244.2	0.02	0.004
75	29.40	2.76	62.9	243.0	0.02	0.004
76	29.40	2.76	58.5	242.0	0.02	0.004
77	29.40	2.76	54.2	240.9	0.02	0.004
78	29.60	2.63	49.9	240.0	0.02	0.004
79	30.00	2.40	45.6	239.2	0.02	0.003
80	30.60	2.09	41.4	238.4	0.01	0.003
81	31.50	1.70	37.2	237.7	0.01	0.002
82	32.80	1.26	33.0	237.1	0.008	0.002
83	34.40	0.87	28.8	236.5	0.006	0.001
84	36.60	0.53	24.7	236.1	0.003	0.0007
85	39.40	0.28	20.5	235.7	0.002	0.0004
86	43.10	0.12	16.4	235.3	0.0008	0.0002
87	45.50	0.07	12.3	235.1	0.0004	0.0001
88	43.00	0.12	8.2	234.9	0.0008	0.0002
89	39.50	0.27	4.1	234.8	0.002	0.0004
90	36.80	0.50	0.0	234.8	0.003	0.0007

AT&T Mobility
CT03XC337
KMW - EPBQ-654L8H6-L2 02DT 700 0° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	2800	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	2736.26	13450.2	13452.2	0.005	0.001
5	0.60	2438.70	2683.5	2693.7	0.12	0.03
10	4.50	993.48	1331.5	1352.0	0.2	0.04
20	20.90	22.76	645.0	686.5	0.02	0.004
30	26.00	7.03	406.6	469.5	0.01	0.002
35	17.00	55.87	335.3	409.3	0.12	0.03
40	16.90	57.17	279.8	365.3	0.15	0.03
45	21.70	18.93	234.8	332.0	0.06	0.01
50	27.20	5.33	197.0	306.5	0.02	0.004
55	25.90	7.20	164.4	286.6	0.03	0.007
60	26.70	5.99	135.5	271.1	0.03	0.006
65	28.80	3.69	109.5	259.1	0.02	0.004
70	32.80	1.47	85.5	249.8	0.008	0.002
71	35.10	0.87	80.8	248.3	0.005	0.001
72	36.70	0.60	76.3	246.9	0.004	0.0008
73	38.60	0.39	71.8	245.5	0.002	0.0005
74	43.60	0.12	67.3	244.2	0.0007	0.0002
75	46.60	0.06	62.9	243.0	0.0004	0.00008
76	47.10	0.05	58.5	242.0	0.0003	0.00007
77	45.00	0.09	54.2	240.9	0.0006	0.0001
78	41.60	0.19	49.9	240.0	0.001	0.0003
79	40.50	0.25	45.6	239.2	0.002	0.0003
80	39.30	0.33	41.4	238.4	0.002	0.0004
81	39.00	0.35	37.2	237.7	0.002	0.0005
82	38.80	0.37	33.0	237.1	0.002	0.0005
83	38.90	0.36	28.8	236.5	0.002	0.0005
84	39.30	0.33	24.7	236.1	0.002	0.0005
85	39.50	0.31	20.5	235.7	0.002	0.0004
86	40.10	0.27	16.4	235.3	0.002	0.0004
87	40.30	0.26	12.3	235.1	0.002	0.0004
88	40.60	0.24	8.2	234.9	0.002	0.0003
89	40.70	0.24	4.1	234.8	0.002	0.0003
90	40.80	0.23	0.0	234.8	0.002	0.0003

AT&T Mobility
CT03XC337
KMW - EPBQ-654L8H6-L2 02DT 700 120° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	2800	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	2736.26	13450.2	13452.2	0.005	0.001
5	0.60	2438.70	2683.5	2693.7	0.12	0.03
10	4.50	993.48	1331.5	1352.0	0.2	0.04
20	20.90	22.76	645.0	686.5	0.02	0.004
30	26.00	7.03	406.6	469.5	0.01	0.002
35	17.00	55.87	335.3	409.3	0.12	0.03
40	16.90	57.17	279.8	365.3	0.15	0.03
45	21.70	18.93	234.8	332.0	0.06	0.01
50	27.20	5.33	197.0	306.5	0.02	0.004
55	25.90	7.20	164.4	286.6	0.03	0.007
60	26.70	5.99	135.5	271.1	0.03	0.006
65	28.80	3.69	109.5	259.1	0.02	0.004
70	32.80	1.47	85.5	249.8	0.008	0.002
71	35.10	0.87	80.8	248.3	0.005	0.001
72	36.70	0.60	76.3	246.9	0.004	0.0008
73	38.60	0.39	71.8	245.5	0.002	0.0005
74	43.60	0.12	67.3	244.2	0.0007	0.0002
75	46.60	0.06	62.9	243.0	0.0004	0.00008
76	47.10	0.05	58.5	242.0	0.0003	0.00007
77	45.00	0.09	54.2	240.9	0.0006	0.0001
78	41.60	0.19	49.9	240.0	0.001	0.0003
79	40.50	0.25	45.6	239.2	0.002	0.0003
80	39.30	0.33	41.4	238.4	0.002	0.0004
81	39.00	0.35	37.2	237.7	0.002	0.0005
82	38.80	0.37	33.0	237.1	0.002	0.0005
83	38.90	0.36	28.8	236.5	0.002	0.0005
84	39.30	0.33	24.7	236.1	0.002	0.0005
85	39.50	0.31	20.5	235.7	0.002	0.0004
86	40.10	0.27	16.4	235.3	0.002	0.0004
87	40.30	0.26	12.3	235.1	0.002	0.0004
88	40.60	0.24	8.2	234.9	0.002	0.0003
89	40.70	0.24	4.1	234.8	0.002	0.0003
90	40.80	0.23	0.0	234.8	0.002	0.0003

AT&T Mobility
CT03XC337
KMW - EPBQ-654L8H6-L2 02DT 700 240° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	2800	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	2736.26	13450.2	13452.2	0.005	0.001
5	0.60	2438.70	2683.5	2693.7	0.12	0.03
10	4.50	993.48	1331.5	1352.0	0.2	0.04
20	20.90	22.76	645.0	686.5	0.02	0.004
30	26.00	7.03	406.6	469.5	0.01	0.002
35	17.00	55.87	335.3	409.3	0.12	0.03
40	16.90	57.17	279.8	365.3	0.15	0.03
45	21.70	18.93	234.8	332.0	0.06	0.01
50	27.20	5.33	197.0	306.5	0.02	0.004
55	25.90	7.20	164.4	286.6	0.03	0.007
60	26.70	5.99	135.5	271.1	0.03	0.006
65	28.80	3.69	109.5	259.1	0.02	0.004
70	32.80	1.47	85.5	249.8	0.008	0.002
71	35.10	0.87	80.8	248.3	0.005	0.001
72	36.70	0.60	76.3	246.9	0.004	0.0008
73	38.60	0.39	71.8	245.5	0.002	0.0005
74	43.60	0.12	67.3	244.2	0.0007	0.0002
75	46.60	0.06	62.9	243.0	0.0004	0.00008
76	47.10	0.05	58.5	242.0	0.0003	0.00007
77	45.00	0.09	54.2	240.9	0.0006	0.0001
78	41.60	0.19	49.9	240.0	0.001	0.0003
79	40.50	0.25	45.6	239.2	0.002	0.0003
80	39.30	0.33	41.4	238.4	0.002	0.0004
81	39.00	0.35	37.2	237.7	0.002	0.0005
82	38.80	0.37	33.0	237.1	0.002	0.0005
83	38.90	0.36	28.8	236.5	0.002	0.0005
84	39.30	0.33	24.7	236.1	0.002	0.0005
85	39.50	0.31	20.5	235.7	0.002	0.0004
86	40.10	0.27	16.4	235.3	0.002	0.0004
87	40.30	0.26	12.3	235.1	0.002	0.0004
88	40.60	0.24	8.2	234.9	0.002	0.0003
89	40.70	0.24	4.1	234.8	0.002	0.0003
90	40.80	0.23	0.0	234.8	0.002	0.0003

AT&T Mobility
CT03XC337
POWERWAVE - 7770 00 00DT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	3700	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	3615.78	13450.2	13452.2	0.007	0.001
5	1.30	2742.85	2683.5	2693.7	0.14	0.02
10	5.70	995.87	1331.5	1352.0	0.2	0.03
20	16.70	79.11	645.0	686.5	0.06	0.01
30	17.20	70.50	406.6	469.5	0.11	0.02
35	39.10	0.46	335.3	409.3	0.001	0.0002
40	19.00	46.58	279.8	365.3	0.13	0.02
45	16.00	92.94	234.8	332.0	0.3	0.05
50	16.60	80.95	197.0	306.5	0.31	0.05
55	19.50	41.51	164.4	286.6	0.18	0.03
60	24.20	14.07	135.5	271.1	0.07	0.01
65	29.80	3.87	109.5	259.1	0.02	0.004
70	33.00	1.85	85.5	249.8	0.01	0.002
71	33.00	1.85	80.8	248.3	0.01	0.002
72	33.20	1.77	76.3	246.9	0.01	0.002
73	33.10	1.81	71.8	245.5	0.01	0.002
74	33.10	1.81	67.3	244.2	0.01	0.002
75	33.10	1.81	62.9	243.0	0.01	0.002
76	33.30	1.73	58.5	242.0	0.01	0.002
77	33.30	1.73	54.2	240.9	0.01	0.002
78	33.50	1.65	49.9	240.0	0.01	0.002
79	33.60	1.62	45.6	239.2	0.01	0.002
80	33.70	1.58	41.4	238.4	0.01	0.002
81	34.00	1.47	37.2	237.7	0.01	0.002
82	34.00	1.47	33.0	237.1	0.01	0.002
83	34.30	1.38	28.8	236.5	0.009	0.002
84	34.50	1.31	24.7	236.1	0.008	0.001
85	34.90	1.20	20.5	235.7	0.008	0.001
86	35.10	1.14	16.4	235.3	0.007	0.001
87	35.20	1.12	12.3	235.1	0.007	0.001
88	35.40	1.07	8.2	234.9	0.007	0.001
89	35.70	1.00	4.1	234.8	0.006	0.001
90	36.00	0.93	0.0	234.8	0.006	0.001

AT&T Mobility
CT03XC337
POWERWAVE - 7770 00 00DT 850 120° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	3700	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	3615.78	13450.2	13452.2	0.007	0.001
5	1.30	2742.85	2683.5	2693.7	0.14	0.02
10	5.70	995.87	1331.5	1352.0	0.2	0.03
20	16.70	79.11	645.0	686.5	0.06	0.01
30	17.20	70.50	406.6	469.5	0.11	0.02
35	39.10	0.46	335.3	409.3	0.001	0.0002
40	19.00	46.58	279.8	365.3	0.13	0.02
45	16.00	92.94	234.8	332.0	0.3	0.05
50	16.60	80.95	197.0	306.5	0.31	0.05
55	19.50	41.51	164.4	286.6	0.18	0.03
60	24.20	14.07	135.5	271.1	0.07	0.01
65	29.80	3.87	109.5	259.1	0.02	0.004
70	33.00	1.85	85.5	249.8	0.01	0.002
71	33.00	1.85	80.8	248.3	0.01	0.002
72	33.20	1.77	76.3	246.9	0.01	0.002
73	33.10	1.81	71.8	245.5	0.01	0.002
74	33.10	1.81	67.3	244.2	0.01	0.002
75	33.10	1.81	62.9	243.0	0.01	0.002
76	33.30	1.73	58.5	242.0	0.01	0.002
77	33.30	1.73	54.2	240.9	0.01	0.002
78	33.50	1.65	49.9	240.0	0.01	0.002
79	33.60	1.62	45.6	239.2	0.01	0.002
80	33.70	1.58	41.4	238.4	0.01	0.002
81	34.00	1.47	37.2	237.7	0.01	0.002
82	34.00	1.47	33.0	237.1	0.01	0.002
83	34.30	1.38	28.8	236.5	0.009	0.002
84	34.50	1.31	24.7	236.1	0.008	0.001
85	34.90	1.20	20.5	235.7	0.008	0.001
86	35.10	1.14	16.4	235.3	0.007	0.001
87	35.20	1.12	12.3	235.1	0.007	0.001
88	35.40	1.07	8.2	234.9	0.007	0.001
89	35.70	1.00	4.1	234.8	0.006	0.001
90	36.00	0.93	0.0	234.8	0.006	0.001

AT&T Mobility
CT03XC337
POWERWAVE - 7770 00 00DT 850 240° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	3700	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	3615.78	13450.2	13452.2	0.007	0.001
5	1.30	2742.85	2683.5	2693.7	0.14	0.02
10	5.70	995.87	1331.5	1352.0	0.2	0.03
20	16.70	79.11	645.0	686.5	0.06	0.01
30	17.20	70.50	406.6	469.5	0.11	0.02
35	39.10	0.46	335.3	409.3	0.001	0.0002
40	19.00	46.58	279.8	365.3	0.13	0.02
45	16.00	92.94	234.8	332.0	0.3	0.05
50	16.60	80.95	197.0	306.5	0.31	0.05
55	19.50	41.51	164.4	286.6	0.18	0.03
60	24.20	14.07	135.5	271.1	0.07	0.01
65	29.80	3.87	109.5	259.1	0.02	0.004
70	33.00	1.85	85.5	249.8	0.01	0.002
71	33.00	1.85	80.8	248.3	0.01	0.002
72	33.20	1.77	76.3	246.9	0.01	0.002
73	33.10	1.81	71.8	245.5	0.01	0.002
74	33.10	1.81	67.3	244.2	0.01	0.002
75	33.10	1.81	62.9	243.0	0.01	0.002
76	33.30	1.73	58.5	242.0	0.01	0.002
77	33.30	1.73	54.2	240.9	0.01	0.002
78	33.50	1.65	49.9	240.0	0.01	0.002
79	33.60	1.62	45.6	239.2	0.01	0.002
80	33.70	1.58	41.4	238.4	0.01	0.002
81	34.00	1.47	37.2	237.7	0.01	0.002
82	34.00	1.47	33.0	237.1	0.01	0.002
83	34.30	1.38	28.8	236.5	0.009	0.002
84	34.50	1.31	24.7	236.1	0.008	0.001
85	34.90	1.20	20.5	235.7	0.008	0.001
86	35.10	1.14	16.4	235.3	0.007	0.001
87	35.20	1.12	12.3	235.1	0.007	0.001
88	35.40	1.07	8.2	234.9	0.007	0.001
89	35.70	1.00	4.1	234.8	0.006	0.001
90	36.00	0.93	0.0	234.8	0.006	0.001

AT&T Mobility
CT03XC337
CCI - OPA-65R-LCUU-H4-00DT 1900 0° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	10200	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.16	9831.06	13450.2	13452.2	0.01	0.001
5	4.31	3780.95	2683.5	2693.7	0.11	0.01
10	32.31	5.99	1331.5	1352.0	0.0007	0.00007
20	29.40	11.71	645.0	686.5	0.005	0.0005
30	10.33	945.37	406.6	469.5	0.94	0.09
35	10.35	941.02	335.3	409.3	1.23	0.12
40	15.82	267.06	279.8	365.3	0.44	0.04
45	29.49	11.48	234.8	332.0	0.02	0.002
50	39.66	1.10	197.0	306.5	0.003	0.0003
55	38.12	1.57	164.4	286.6	0.004	0.0004
60	33.72	4.34	135.5	271.1	0.01	0.001
65	30.44	9.22	109.5	259.1	0.03	0.003
70	31.52	7.19	85.5	249.8	0.03	0.003
71	32.22	6.12	80.8	248.3	0.02	0.002
72	33.09	5.01	76.3	246.9	0.02	0.002
73	34.16	3.92	71.8	245.5	0.01	0.001
74	35.40	2.94	67.3	244.2	0.01	0.001
75	36.75	2.15	62.9	243.0	0.008	0.0008
76	38.16	1.56	58.5	242.0	0.006	0.0006
77	39.55	1.13	54.2	240.9	0.004	0.0004
78	40.79	0.85	49.9	240.0	0.003	0.0003
79	41.95	0.65	45.6	239.2	0.003	0.0003
80	43.38	0.47	41.4	238.4	0.002	0.0002
81	45.36	0.30	37.2	237.7	0.001	0.0001
82	47.75	0.17	33.0	237.1	0.0007	0.00007
83	49.81	0.10	28.8	236.5	0.0004	0.00004
84	50.76	0.08	24.7	236.1	0.0003	0.00003
85	50.23	0.09	20.5	235.7	0.0004	0.00004
86	48.90	0.13	16.4	235.3	0.0005	0.00005
87	48.15	0.15	12.3	235.1	0.0006	0.00006
88	48.81	0.13	8.2	234.9	0.0005	0.00005
89	51.48	0.07	4.1	234.8	0.0003	0.00003
90	57.61	0.02	0.0	234.8	0.00008	0.00001

AT&T Mobility
CT03XC337
CCI - OPA-65R-LCUU-H4-00DT 1900 120° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	10200	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.16	9831.06	13450.2	13452.2	0.01	0.001
5	4.31	3780.95	2683.5	2693.7	0.11	0.01
10	32.31	5.99	1331.5	1352.0	0.0007	0.00007
20	29.40	11.71	645.0	686.5	0.005	0.0005
30	10.33	945.37	406.6	469.5	0.94	0.09
35	10.35	941.02	335.3	409.3	1.23	0.12
40	15.82	267.06	279.8	365.3	0.44	0.04
45	29.49	11.48	234.8	332.0	0.02	0.002
50	39.66	1.10	197.0	306.5	0.003	0.0003
55	38.12	1.57	164.4	286.6	0.004	0.0004
60	33.72	4.34	135.5	271.1	0.01	0.001
65	30.44	9.22	109.5	259.1	0.03	0.003
70	31.52	7.19	85.5	249.8	0.03	0.003
71	32.22	6.12	80.8	248.3	0.02	0.002
72	33.09	5.01	76.3	246.9	0.02	0.002
73	34.16	3.92	71.8	245.5	0.01	0.001
74	35.40	2.94	67.3	244.2	0.01	0.001
75	36.75	2.15	62.9	243.0	0.008	0.0008
76	38.16	1.56	58.5	242.0	0.006	0.0006
77	39.55	1.13	54.2	240.9	0.004	0.0004
78	40.79	0.85	49.9	240.0	0.003	0.0003
79	41.95	0.65	45.6	239.2	0.003	0.0003
80	43.38	0.47	41.4	238.4	0.002	0.0002
81	45.36	0.30	37.2	237.7	0.001	0.0001
82	47.75	0.17	33.0	237.1	0.0007	0.00007
83	49.81	0.10	28.8	236.5	0.0004	0.00004
84	50.76	0.08	24.7	236.1	0.0003	0.00003
85	50.23	0.09	20.5	235.7	0.0004	0.00004
86	48.90	0.13	16.4	235.3	0.0005	0.00005
87	48.15	0.15	12.3	235.1	0.0006	0.00006
88	48.81	0.13	8.2	234.9	0.0005	0.00005
89	51.48	0.07	4.1	234.8	0.0003	0.00003
90	57.61	0.02	0.0	234.8	0.00008	0.00001

AT&T Mobility
CT03XC337
CCI - OPA-65R-LCUU-H4-00DT 1900 240° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	10200	Height (feet)	235	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.16	9831.06	13450.2	13452.2	0.01	0.001
5	4.31	3780.95	2683.5	2693.7	0.11	0.01
10	32.31	5.99	1331.5	1352.0	0.0007	0.00007
20	29.40	11.71	645.0	686.5	0.005	0.0005
30	10.33	945.37	406.6	469.5	0.94	0.09
35	10.35	941.02	335.3	409.3	1.23	0.12
40	15.82	267.06	279.8	365.3	0.44	0.04
45	29.49	11.48	234.8	332.0	0.02	0.002
50	39.66	1.10	197.0	306.5	0.003	0.0003
55	38.12	1.57	164.4	286.6	0.004	0.0004
60	33.72	4.34	135.5	271.1	0.01	0.001
65	30.44	9.22	109.5	259.1	0.03	0.003
70	31.52	7.19	85.5	249.8	0.03	0.003
71	32.22	6.12	80.8	248.3	0.02	0.002
72	33.09	5.01	76.3	246.9	0.02	0.002
73	34.16	3.92	71.8	245.5	0.01	0.001
74	35.40	2.94	67.3	244.2	0.01	0.001
75	36.75	2.15	62.9	243.0	0.008	0.0008
76	38.16	1.56	58.5	242.0	0.006	0.0006
77	39.55	1.13	54.2	240.9	0.004	0.0004
78	40.79	0.85	49.9	240.0	0.003	0.0003
79	41.95	0.65	45.6	239.2	0.003	0.0003
80	43.38	0.47	41.4	238.4	0.002	0.0002
81	45.36	0.30	37.2	237.7	0.001	0.0001
82	47.75	0.17	33.0	237.1	0.0007	0.00007
83	49.81	0.10	28.8	236.5	0.0004	0.00004
84	50.76	0.08	24.7	236.1	0.0003	0.00003
85	50.23	0.09	20.5	235.7	0.0004	0.00004
86	48.90	0.13	16.4	235.3	0.0005	0.00005
87	48.15	0.15	12.3	235.1	0.0006	0.00006
88	48.81	0.13	8.2	234.9	0.0005	0.00005
89	51.48	0.07	4.1	234.8	0.0003	0.00003
90	57.61	0.02	0.0	234.8	0.00008	0.00001

Clearwire
CT03XC337
COMMSCOPE - VHLPX4-11W 11000 0° Sector

Maximum Exposure Limit - 11000 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	3282	Height (feet)	303	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	3.50	1466.02	17342.2	17344.8	0.001	0.0001
5	25.00	10.38	3460.0	3473.2	0.0002	0.00002
10	31.00	2.61	1716.7	1743.2	0.0002	0.00002
20	38.50	0.46	831.7	885.1	0.0001	0.00001
30	42.00	0.21	524.3	605.4	0.0001	0.00001
35	43.10	0.16	432.3	527.8	0.0001	0.00001
40	44.30	0.12	360.8	470.9	0.0001	0.00001
45	45.40	0.10	302.7	428.1	0.0001	0.00001
50	46.50	0.07	254.0	395.1	0.0001	0.00001
55	47.60	0.06	212.0	369.6	0.00009	0.00001
60	48.80	0.04	174.8	349.5	0.00008	0.00001
65	49.90	0.03	141.1	334.0	0.00006	0.00001
70	51.00	0.03	110.2	322.1	0.00006	0.00001
71	51.50	0.02	104.2	320.1	0.00005	0
72	51.90	0.02	98.4	318.3	0.00004	0
73	52.40	0.02	92.6	316.5	0.00004	0
74	52.80	0.02	86.8	314.9	0.00004	0
75	53.30	0.02	81.1	313.4	0.00004	0
76	53.70	0.01	75.5	312.0	0.00003	0
77	54.20	0.01	69.9	310.7	0.00003	0
78	54.60	0.01	64.3	309.5	0.00002	0
79	55.10	0.01	58.8	308.4	0.00002	0
80	55.50	0.01	53.4	307.4	0.00002	0
81	56.00	0.01	47.9	306.5	0.00002	0
82	56.40	0.01	42.6	305.7	0.00002	0
83	56.90	0.01	37.2	305.0	0.00002	0
84	57.30	0.01	31.8	304.4	0.00002	0
85	57.80	0.01	26.5	303.9	0.00002	0
86	58.20	0.01	21.2	303.4	0.00002	0
87	58.70	0.00	15.9	303.1	0.00001	0
88	59.10	0.00	10.6	302.9	0.00001	0
89	59.60	0.00	5.3	302.8	0.00001	0
90	60.00	0.00	0.0	302.7	0.00001	0

Clearwire
CT03XC337
ANDREW - VHLP2-18 18000 120° Sector

Maximum Exposure Limit - 18000 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1641	Height (feet)	303	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	2.80	861.21	17342.2	17344.8	0.0006	0.00006
5	25.00	5.19	3460.0	3473.2	0.0001	0.00001
10	31.00	1.30	1716.7	1743.2	0.0001	0.00001
20	36.72	0.35	831.7	885.1	0.0001	0.00001
30	42.00	0.10	524.3	605.4	0.00006	0.00001
35	42.00	0.10	432.3	527.8	0.00008	0.00001
40	42.00	0.10	360.8	470.9	0.0001	0.00001
45	42.00	0.10	302.7	428.1	0.0001	0.00001
50	42.00	0.10	254.0	395.1	0.0001	0.00001
55	43.00	0.08	212.0	369.6	0.0001	0.00001
60	44.00	0.07	174.8	349.5	0.0001	0.00001
65	47.12	0.03	141.1	334.0	0.00006	0.00001
70	50.25	0.01	110.2	322.1	0.00003	0
71	50.88	0.01	104.2	320.1	0.00003	0
72	51.50	0.01	98.4	318.3	0.00002	0
73	52.12	0.01	92.6	316.5	0.00002	0
74	52.75	0.01	86.8	314.9	0.00002	0
75	53.38	0.01	81.1	313.4	0.00002	0
76	54.00	0.01	75.5	312.0	0.00001	0
77	54.62	0.00	69.9	310.7	0.00001	0
78	55.25	0.00	64.3	309.5	0.00001	0
79	55.88	0.00	58.8	308.4	0.00001	0
80	56.50	0.00	53.4	307.4	0.00001	0
81	57.20	0.00	47.9	306.5	0.00001	0
82	57.90	0.00	42.6	305.7	0.00001	0
83	58.60	0.00	37.2	305.0	0	0
84	59.30	0.00	31.8	304.4	0	0
85	60.00	0.00	26.5	303.9	0	0
86	60.70	0.00	21.2	303.4	0	0
87	61.40	0.00	15.9	303.1	0	0
88	62.10	0.00	10.6	302.9	0	0
89	62.80	0.00	5.3	302.8	0	0
90	63.50	0.00	0.0	302.7	0	0

Marcus Communications
CT03XC337
ANDREW - VHLP4-18 18000 0° Sector

Maximum Exposure Limit - 18000 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1641	Height (feet)	311	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	14.92	52.86	17800.0	17802.8	0.00004	0
5	32.00	1.04	3551.3	3564.9	0.00002	0
10	42.00	0.10	1762.1	1789.3	0.00001	0
20	46.00	0.04	853.6	908.4	0.00001	0
30	46.00	0.04	538.2	621.4	0.00002	0
35	46.00	0.04	443.7	541.7	0.00003	0
40	46.00	0.04	370.3	483.4	0.00004	0
45	47.00	0.03	310.7	439.4	0.00004	0
50	48.00	0.03	260.7	405.6	0.00004	0
55	51.50	0.01	217.6	379.3	0.00002	0
60	55.00	0.00	179.4	358.8	0.00001	0
65	55.00	0.00	144.9	342.8	0.00001	0
70	55.66	0.00	113.1	330.6	0.00001	0
71	56.31	0.00	107.0	328.6	0.00001	0
72	56.97	0.00	101.0	326.7	0.00001	0
73	57.63	0.00	95.0	324.9	0.00001	0
74	58.28	0.00	89.1	323.2	0	0
75	58.94	0.00	83.3	321.7	0	0
76	59.60	0.00	77.5	320.2	0	0
77	60.26	0.00	71.7	318.9	0	0
78	60.91	0.00	66.0	317.7	0	0
79	61.57	0.00	60.4	316.5	0	0
80	62.23	0.00	54.8	315.5	0	0
81	62.88	0.00	49.2	314.6	0	0
82	63.54	0.00	43.7	313.7	0	0
83	64.20	0.00	38.2	313.0	0	0
84	64.86	0.00	32.6	312.4	0	0
85	65.51	0.00	27.2	311.9	0	0
86	66.17	0.00	21.7	311.5	0	0
87	66.83	0.00	16.3	311.1	0	0
88	67.48	0.00	10.9	310.9	0	0
89	68.14	0.00	5.4	310.8	0	0
90	68.80	0.00	0.0	310.7	0	0

Marcus Communications
CT03XC337
GENERIC - OMNI 12FT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	1000	Height (feet)	324	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.90	812.83	18544.1	18546.9	0.0008	0.0001
5	9.50	112.20	3699.8	3713.9	0.003	0.0005
10	12.90	51.29	1835.7	1864.0	0.005	0.001
20	22.90	5.13	889.3	946.4	0.002	0.0004
30	17.90	16.22	560.6	647.4	0.01	0.002
35	17.70	16.98	462.3	564.3	0.02	0.003
40	21.10	7.76	385.8	503.6	0.01	0.002
45	32.70	0.54	323.7	457.8	0.001	0.0002
50	16.00	25.12	271.6	422.5	0.05	0.009
55	20.00	10.00	226.6	395.1	0.02	0.004
60	16.80	20.89	186.9	373.8	0.05	0.01
65	16.40	22.91	151.0	357.2	0.06	0.01
70	18.20	15.14	117.8	344.5	0.05	0.008
71	17.30	18.62	111.5	342.3	0.06	0.01
72	16.20	23.99	105.2	340.4	0.07	0.01
73	15.50	28.18	99.0	338.5	0.09	0.02
74	14.70	33.88	92.8	336.7	0.11	0.02
75	14.40	36.31	86.7	335.1	0.12	0.02
76	14.10	38.90	80.7	333.6	0.13	0.02
77	14.00	39.81	74.7	332.2	0.13	0.02
78	14.10	38.90	68.8	330.9	0.13	0.02
79	14.20	38.02	62.9	329.8	0.13	0.02
80	14.60	34.67	57.1	328.7	0.12	0.02
81	15.00	31.62	51.3	327.7	0.11	0.02
82	15.70	26.92	45.5	326.9	0.09	0.02
83	16.40	22.91	39.7	326.1	0.08	0.01
84	17.10	19.50	34.0	325.5	0.07	0.01
85	18.10	15.49	28.3	324.9	0.05	0.01
86	19.40	11.48	22.6	324.5	0.04	0.007
87	20.40	9.12	17.0	324.1	0.03	0.006
88	21.90	6.46	11.3	323.9	0.02	0.004
89	23.40	4.57	5.6	323.8	0.02	0.003
90	25.30	2.95	0.0	323.7	0.01	0.002

Marcus Communications
CT03XC337
GENERIC - OMNI 150 0° Sector

Maximum Exposure Limit - 150 (MHz)
(Limit (GP)): 200 µW/cm^2

ERP (Watts)	100	Height (feet)	338	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	100.00	19345.4	19348.3	0.0001	0.00005
5	0.00	100.00	3859.6	3874.4	0.002	0.001
10	0.20	95.50	1915.1	1944.6	0.01	0.005
20	1.00	79.43	927.8	987.3	0.03	0.01
30	2.50	56.23	584.9	675.4	0.04	0.02
35	3.40	45.71	482.3	588.7	0.05	0.02
40	4.40	36.31	402.4	525.3	0.05	0.02
45	5.60	27.54	337.7	477.5	0.04	0.02
50	6.80	20.89	283.3	440.8	0.04	0.02
55	8.00	15.85	236.5	412.2	0.03	0.02
60	9.20	12.02	194.9	389.9	0.03	0.01
65	10.70	8.51	157.4	372.6	0.02	0.01
70	12.30	5.89	122.9	359.4	0.02	0.008
71	12.60	5.50	116.3	357.1	0.02	0.008
72	13.00	5.01	109.7	355.1	0.01	0.007
73	13.30	4.68	103.2	353.1	0.01	0.007
74	13.80	4.17	96.8	351.3	0.01	0.006
75	14.40	3.63	90.5	349.6	0.01	0.005
76	14.80	3.31	84.2	348.0	0.01	0.005
77	15.20	3.02	78.0	346.6	0.01	0.005
78	15.80	2.63	71.8	345.2	0.008	0.004
79	16.30	2.34	65.6	344.0	0.007	0.004
80	16.80	2.09	59.5	342.9	0.006	0.003
81	17.60	1.74	53.5	341.9	0.005	0.003
82	18.00	1.58	47.4	341.0	0.005	0.002
83	18.70	1.35	41.5	340.2	0.004	0.002
84	19.50	1.12	35.5	339.5	0.003	0.002
85	20.20	0.96	29.5	339.0	0.003	0.001
86	20.90	0.81	23.6	338.5	0.003	0.001
87	21.40	0.72	17.7	338.1	0.002	0.001
88	22.10	0.62	11.8	337.9	0.002	0.001
89	22.70	0.54	5.9	337.7	0.002	0.0008
90	23.10	0.49	0.0	337.7	0.002	0.0008

Marcus Communications
CT03XC337
GENERIC - OMNI 150 0° Sector

Maximum Exposure Limit - 150 (MHz)
(Limit (GP)): 200 µW/cm^2

ERP (Watts)	100	Height (feet)	200	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	100.00	11447.0	11448.7	0.0003	0.0001
5	0.00	100.00	2283.8	2292.6	0.007	0.003
10	0.20	95.50	1133.2	1150.7	0.03	0.01
20	1.00	79.43	549.0	584.2	0.08	0.04
30	2.50	56.23	346.1	399.6	0.13	0.06
35	3.40	45.71	285.4	348.4	0.14	0.07
40	4.40	36.31	238.1	310.9	0.14	0.07
45	5.60	27.54	199.8	282.6	0.12	0.06
50	6.80	20.89	167.7	260.8	0.11	0.06
55	8.00	15.85	139.9	243.9	0.1	0.05
60	9.20	12.02	115.4	230.7	0.08	0.04
65	10.70	8.51	93.2	220.5	0.06	0.03
70	12.30	5.89	72.7	212.6	0.05	0.02
71	12.60	5.50	68.8	211.3	0.04	0.02
72	13.00	5.01	64.9	210.1	0.04	0.02
73	13.30	4.68	61.1	208.9	0.04	0.02
74	13.80	4.17	57.3	207.8	0.03	0.02
75	14.40	3.63	53.5	206.9	0.03	0.02
76	14.80	3.31	49.8	205.9	0.03	0.01
77	15.20	3.02	46.1	205.1	0.03	0.01
78	15.80	2.63	42.5	204.3	0.02	0.01
79	16.30	2.34	38.8	203.5	0.02	0.01
80	16.80	2.09	35.2	202.9	0.02	0.01
81	17.60	1.74	31.7	202.3	0.02	0.008
82	18.00	1.58	28.1	201.8	0.01	0.007
83	18.70	1.35	24.5	201.3	0.01	0.006
84	19.50	1.12	21.0	200.9	0.01	0.005
85	20.20	0.96	17.5	200.6	0.009	0.004
86	20.90	0.81	14.0	200.3	0.007	0.004
87	21.40	0.72	10.5	200.1	0.007	0.003
88	22.10	0.62	7.0	199.9	0.006	0.003
89	22.70	0.54	3.5	199.8	0.005	0.002
90	23.10	0.49	0.0	199.8	0.004	0.002

Marcus Communications
CT03XC337
GENERIC - OMNI 150 0° Sector

Maximum Exposure Limit - 150 (MHz)
(Limit (GP)): 200 µW/cm^2

ERP (Watts)	100	Height (feet)	107	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	100.00	6124.1	6125.0	0.001	0.0005
5	0.00	100.00	1221.9	1226.5	0.02	0.01
10	0.20	95.50	606.2	615.6	0.09	0.05
20	1.00	79.43	293.7	312.6	0.29	0.15
30	2.50	56.23	185.1	213.8	0.44	0.22
35	3.40	45.71	152.7	186.4	0.47	0.24
40	4.40	36.31	127.4	166.3	0.47	0.24
45	5.60	27.54	106.9	151.2	0.43	0.22
50	6.80	20.89	89.7	139.5	0.39	0.19
55	8.00	15.85	74.8	130.5	0.33	0.17
60	9.20	12.02	61.7	123.4	0.28	0.14
65	10.70	8.51	49.8	117.9	0.22	0.11
70	12.30	5.89	38.9	113.7	0.16	0.08
71	12.60	5.50	36.8	113.1	0.15	0.08
72	13.00	5.01	34.7	112.4	0.14	0.07
73	13.30	4.68	32.7	111.8	0.13	0.07
74	13.80	4.17	30.6	111.2	0.12	0.06
75	14.40	3.63	28.6	110.7	0.11	0.05
76	14.80	3.31	26.6	110.2	0.1	0.05
77	15.20	3.02	24.7	109.7	0.09	0.05
78	15.80	2.63	22.7	109.3	0.08	0.04
79	16.30	2.34	20.8	108.9	0.07	0.04
80	16.80	2.09	18.9	108.6	0.06	0.03
81	17.60	1.74	16.9	108.2	0.05	0.03
82	18.00	1.58	15.0	107.9	0.05	0.02
83	18.70	1.35	13.1	107.7	0.04	0.02
84	19.50	1.12	11.2	107.5	0.03	0.02
85	20.20	0.96	9.4	107.3	0.03	0.01
86	20.90	0.81	7.5	107.2	0.03	0.01
87	21.40	0.72	5.6	107.1	0.02	0.01
88	22.10	0.62	3.7	107.0	0.02	0.01
89	22.70	0.54	1.9	106.9	0.02	0.008
90	23.10	0.49	0.0	106.9	0.02	0.008

Metro PCS
CT03XC337
KATHREIN - 80010504V01 00DT 1900 0° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1500	Height (feet)	165	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	1500.00	9443.7	9445.2	0.004	0.0004
5	4.90	485.39	1884.2	1891.3	0.03	0.003
10	21.10	11.64	934.9	949.3	0.003	0.0003
20	21.50	10.62	452.9	482.0	0.01	0.001
30	47.20	0.03	285.5	329.7	0.00006	0.00001
35	18.80	19.77	235.4	287.4	0.05	0.005
40	20.00	15.00	196.5	256.5	0.05	0.005
45	25.90	3.85	164.8	233.1	0.02	0.002
50	26.50	3.36	138.3	215.2	0.02	0.002
55	27.50	2.67	115.4	201.2	0.01	0.001
60	24.50	5.32	95.2	190.4	0.03	0.003
65	24.90	4.85	76.9	181.9	0.03	0.003
70	24.70	5.08	60.0	175.4	0.04	0.004
71	24.90	4.85	56.8	174.3	0.04	0.004
72	25.70	4.04	53.6	173.3	0.03	0.003
73	26.80	3.13	50.4	172.4	0.02	0.002
74	28.20	2.27	47.3	171.5	0.02	0.002
75	29.40	1.72	44.2	170.7	0.01	0.001
76	30.10	1.47	41.1	169.9	0.01	0.001
77	30.00	1.50	38.1	169.2	0.01	0.001
78	29.50	1.68	35.0	168.5	0.01	0.001
79	29.00	1.89	32.1	167.9	0.01	0.001
80	29.00	1.89	29.1	167.4	0.01	0.001
81	29.80	1.57	26.1	166.9	0.01	0.001
82	31.20	1.14	23.2	166.5	0.01	0.001
83	33.40	0.69	20.2	166.1	0.005	0.0005
84	35.80	0.39	17.3	165.7	0.003	0.0003
85	37.50	0.27	14.4	165.5	0.002	0.0002
86	38.00	0.24	11.5	165.3	0.002	0.0002
87	37.30	0.28	8.6	165.1	0.002	0.0002
88	35.80	0.39	5.7	164.9	0.003	0.0003
89	34.30	0.56	2.9	164.9	0.005	0.0005
90	33.30	0.70	0.0	164.8	0.006	0.0006

Metro PCS
CT03XC337
KATHREIN - 80010504V01 00DT 1900 120° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1500	Height (feet)	165	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	1500.00	9443.7	9445.2	0.004	0.0004
5	4.90	485.39	1884.2	1891.3	0.03	0.003
10	21.10	11.64	934.9	949.3	0.003	0.0003
20	21.50	10.62	452.9	482.0	0.01	0.001
30	47.20	0.03	285.5	329.7	0.00006	0.00001
35	18.80	19.77	235.4	287.4	0.05	0.005
40	20.00	15.00	196.5	256.5	0.05	0.005
45	25.90	3.85	164.8	233.1	0.02	0.002
50	26.50	3.36	138.3	215.2	0.02	0.002
55	27.50	2.67	115.4	201.2	0.01	0.001
60	24.50	5.32	95.2	190.4	0.03	0.003
65	24.90	4.85	76.9	181.9	0.03	0.003
70	24.70	5.08	60.0	175.4	0.04	0.004
71	24.90	4.85	56.8	174.3	0.04	0.004
72	25.70	4.04	53.6	173.3	0.03	0.003
73	26.80	3.13	50.4	172.4	0.02	0.002
74	28.20	2.27	47.3	171.5	0.02	0.002
75	29.40	1.72	44.2	170.7	0.01	0.001
76	30.10	1.47	41.1	169.9	0.01	0.001
77	30.00	1.50	38.1	169.2	0.01	0.001
78	29.50	1.68	35.0	168.5	0.01	0.001
79	29.00	1.89	32.1	167.9	0.01	0.001
80	29.00	1.89	29.1	167.4	0.01	0.001
81	29.80	1.57	26.1	166.9	0.01	0.001
82	31.20	1.14	23.2	166.5	0.01	0.001
83	33.40	0.69	20.2	166.1	0.005	0.0005
84	35.80	0.39	17.3	165.7	0.003	0.0003
85	37.50	0.27	14.4	165.5	0.002	0.0002
86	38.00	0.24	11.5	165.3	0.002	0.0002
87	37.30	0.28	8.6	165.1	0.002	0.0002
88	35.80	0.39	5.7	164.9	0.003	0.0003
89	34.30	0.56	2.9	164.9	0.005	0.0005
90	33.30	0.70	0.0	164.8	0.006	0.0006

Metro PCS
CT03XC337
KATHREIN - 80010504V01 00DT 1900 240° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1500	Height (feet)	165	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	1500.00	9443.7	9445.2	0.004	0.0004
5	4.90	485.39	1884.2	1891.3	0.03	0.003
10	21.10	11.64	934.9	949.3	0.003	0.0003
20	21.50	10.62	452.9	482.0	0.01	0.001
30	47.20	0.03	285.5	329.7	0.00006	0.00001
35	18.80	19.77	235.4	287.4	0.05	0.005
40	20.00	15.00	196.5	256.5	0.05	0.005
45	25.90	3.85	164.8	233.1	0.02	0.002
50	26.50	3.36	138.3	215.2	0.02	0.002
55	27.50	2.67	115.4	201.2	0.01	0.001
60	24.50	5.32	95.2	190.4	0.03	0.003
65	24.90	4.85	76.9	181.9	0.03	0.003
70	24.70	5.08	60.0	175.4	0.04	0.004
71	24.90	4.85	56.8	174.3	0.04	0.004
72	25.70	4.04	53.6	173.3	0.03	0.003
73	26.80	3.13	50.4	172.4	0.02	0.002
74	28.20	2.27	47.3	171.5	0.02	0.002
75	29.40	1.72	44.2	170.7	0.01	0.001
76	30.10	1.47	41.1	169.9	0.01	0.001
77	30.00	1.50	38.1	169.2	0.01	0.001
78	29.50	1.68	35.0	168.5	0.01	0.001
79	29.00	1.89	32.1	167.9	0.01	0.001
80	29.00	1.89	29.1	167.4	0.01	0.001
81	29.80	1.57	26.1	166.9	0.01	0.001
82	31.20	1.14	23.2	166.5	0.01	0.001
83	33.40	0.69	20.2	166.1	0.005	0.0005
84	35.80	0.39	17.3	165.7	0.003	0.0003
85	37.50	0.27	14.4	165.5	0.002	0.0002
86	38.00	0.24	11.5	165.3	0.002	0.0002
87	37.30	0.28	8.6	165.1	0.002	0.0002
88	35.80	0.39	5.7	164.9	0.003	0.0003
89	34.30	0.56	2.9	164.9	0.005	0.0005
90	33.30	0.70	0.0	164.8	0.006	0.0006

Metro PCS
CT03XC337
KATHREIN - 80010504V01 00DT 2100 0° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1000	Height (feet)	165	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	1000.00	9443.7	9445.2	0.002	0.0002
5	5.50	281.84	1884.2	1891.3	0.02	0.002
10	20.40	9.12	934.9	949.3	0.002	0.0002
20	27.50	1.78	452.9	482.0	0.002	0.0002
30	21.40	7.24	285.5	329.7	0.01	0.001
35	19.00	12.59	235.4	287.4	0.03	0.003
40	24.30	3.72	196.5	256.5	0.01	0.001
45	25.30	2.95	164.8	233.1	0.01	0.001
50	21.20	7.59	138.3	215.2	0.04	0.004
55	21.80	6.61	115.4	201.2	0.04	0.004
60	21.80	6.61	95.2	190.4	0.04	0.004
65	23.80	4.17	76.9	181.9	0.03	0.003
70	29.40	1.15	60.0	175.4	0.008	0.0008
71	31.40	0.72	56.8	174.3	0.005	0.0005
72	33.70	0.43	53.6	173.3	0.003	0.0003
73	36.20	0.24	50.4	172.4	0.002	0.0002
74	38.20	0.15	47.3	171.5	0.001	0.0001
75	39.40	0.12	44.2	170.7	0.0009	0.00009
76	39.60	0.11	41.1	169.9	0.0008	0.00008
77	39.70	0.11	38.1	169.2	0.0008	0.00008
78	40.10	0.10	35.0	168.5	0.0008	0.00008
79	41.20	0.08	32.1	167.9	0.0006	0.00006
80	42.70	0.05	29.1	167.4	0.0004	0.00004
81	43.90	0.04	26.1	166.9	0.0003	0.00003
82	43.80	0.04	23.2	166.5	0.0003	0.00003
83	42.20	0.06	20.2	166.1	0.0005	0.00005
84	40.00	0.10	17.3	165.7	0.0008	0.00008
85	38.20	0.15	14.4	165.5	0.001	0.0001
86	37.40	0.18	11.5	165.3	0.001	0.0001
87	37.80	0.17	8.6	165.1	0.001	0.0001
88	39.70	0.11	5.7	164.9	0.0009	0.00009
89	43.50	0.05	2.9	164.9	0.0004	0.00004
90	51.70	0.01	0.0	164.8	0.00006	0.00001

Metro PCS
CT03XC337
KATHREIN - 80010504V01 00DT 2100 120° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1000	Height (feet)	165	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	1000.00	9443.7	9445.2	0.002	0.0002
5	5.50	281.84	1884.2	1891.3	0.02	0.002
10	20.40	9.12	934.9	949.3	0.002	0.0002
20	27.50	1.78	452.9	482.0	0.002	0.0002
30	21.40	7.24	285.5	329.7	0.01	0.001
35	19.00	12.59	235.4	287.4	0.03	0.003
40	24.30	3.72	196.5	256.5	0.01	0.001
45	25.30	2.95	164.8	233.1	0.01	0.001
50	21.20	7.59	138.3	215.2	0.04	0.004
55	21.80	6.61	115.4	201.2	0.04	0.004
60	21.80	6.61	95.2	190.4	0.04	0.004
65	23.80	4.17	76.9	181.9	0.03	0.003
70	29.40	1.15	60.0	175.4	0.008	0.0008
71	31.40	0.72	56.8	174.3	0.005	0.0005
72	33.70	0.43	53.6	173.3	0.003	0.0003
73	36.20	0.24	50.4	172.4	0.002	0.0002
74	38.20	0.15	47.3	171.5	0.001	0.0001
75	39.40	0.12	44.2	170.7	0.0009	0.00009
76	39.60	0.11	41.1	169.9	0.0008	0.00008
77	39.70	0.11	38.1	169.2	0.0008	0.00008
78	40.10	0.10	35.0	168.5	0.0008	0.00008
79	41.20	0.08	32.1	167.9	0.0006	0.00006
80	42.70	0.05	29.1	167.4	0.0004	0.00004
81	43.90	0.04	26.1	166.9	0.0003	0.00003
82	43.80	0.04	23.2	166.5	0.0003	0.00003
83	42.20	0.06	20.2	166.1	0.0005	0.00005
84	40.00	0.10	17.3	165.7	0.0008	0.00008
85	38.20	0.15	14.4	165.5	0.001	0.0001
86	37.40	0.18	11.5	165.3	0.001	0.0001
87	37.80	0.17	8.6	165.1	0.001	0.0001
88	39.70	0.11	5.7	164.9	0.0009	0.00009
89	43.50	0.05	2.9	164.9	0.0004	0.00004
90	51.70	0.01	0.0	164.8	0.00006	0.00001

Metro PCS
CT03XC337
KATHREIN - 80010504V01 00DT 2100 240° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1000	Height (feet)	165	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	1000.00	9443.7	9445.2	0.002	0.0002
5	5.50	281.84	1884.2	1891.3	0.02	0.002
10	20.40	9.12	934.9	949.3	0.002	0.0002
20	27.50	1.78	452.9	482.0	0.002	0.0002
30	21.40	7.24	285.5	329.7	0.01	0.001
35	19.00	12.59	235.4	287.4	0.03	0.003
40	24.30	3.72	196.5	256.5	0.01	0.001
45	25.30	2.95	164.8	233.1	0.01	0.001
50	21.20	7.59	138.3	215.2	0.04	0.004
55	21.80	6.61	115.4	201.2	0.04	0.004
60	21.80	6.61	95.2	190.4	0.04	0.004
65	23.80	4.17	76.9	181.9	0.03	0.003
70	29.40	1.15	60.0	175.4	0.008	0.0008
71	31.40	0.72	56.8	174.3	0.005	0.0005
72	33.70	0.43	53.6	173.3	0.003	0.0003
73	36.20	0.24	50.4	172.4	0.002	0.0002
74	38.20	0.15	47.3	171.5	0.001	0.0001
75	39.40	0.12	44.2	170.7	0.0009	0.00009
76	39.60	0.11	41.1	169.9	0.0008	0.00008
77	39.70	0.11	38.1	169.2	0.0008	0.00008
78	40.10	0.10	35.0	168.5	0.0008	0.00008
79	41.20	0.08	32.1	167.9	0.0006	0.00006
80	42.70	0.05	29.1	167.4	0.0004	0.00004
81	43.90	0.04	26.1	166.9	0.0003	0.00003
82	43.80	0.04	23.2	166.5	0.0003	0.00003
83	42.20	0.06	20.2	166.1	0.0005	0.00005
84	40.00	0.10	17.3	165.7	0.0008	0.00008
85	38.20	0.15	14.4	165.5	0.001	0.0001
86	37.40	0.18	11.5	165.3	0.001	0.0001
87	37.80	0.17	8.6	165.1	0.001	0.0001
88	39.70	0.11	5.7	164.9	0.0009	0.00009
89	43.50	0.05	2.9	164.9	0.0004	0.00004
90	51.70	0.01	0.0	164.8	0.00006	0.00001

Senet
CT03XC337
GENERIC - OMNI 5FT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	1000	Height (feet)	135	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	1000.00	7726.7	7727.9	0.006	0.001
5	1.00	794.33	1541.6	1547.4	0.12	0.02
10	4.60	346.74	764.9	776.7	0.21	0.04
20	18.60	13.80	370.5	394.3	0.03	0.006
30	8.80	131.83	233.6	269.8	0.65	0.11
35	10.90	81.28	192.6	235.1	0.53	0.09
40	15.00	31.62	160.7	209.8	0.26	0.05
45	19.00	12.59	134.9	190.7	0.12	0.02
50	22.20	6.03	113.2	176.0	0.07	0.01
55	25.30	2.95	94.4	164.6	0.04	0.007
60	24.20	3.80	77.9	155.7	0.06	0.01
65	21.70	6.76	62.9	148.8	0.11	0.02
70	20.70	8.51	49.1	143.5	0.15	0.03
71	20.40	9.12	46.4	142.7	0.16	0.03
72	20.70	8.51	43.8	141.8	0.15	0.03
73	20.90	8.13	41.2	141.0	0.15	0.03
74	20.90	8.13	38.7	140.3	0.15	0.03
75	21.10	7.76	36.1	139.6	0.14	0.03
76	21.30	7.41	33.6	139.0	0.14	0.02
77	21.90	6.46	31.1	138.4	0.12	0.02
78	22.40	5.75	28.7	137.9	0.11	0.02
79	22.90	5.13	26.2	137.4	0.1	0.02
80	23.80	4.17	23.8	136.9	0.08	0.01
81	24.40	3.63	21.4	136.5	0.07	0.01
82	25.40	2.88	19.0	136.2	0.06	0.01
83	26.40	2.29	16.6	135.9	0.04	0.008
84	27.80	1.66	14.2	135.6	0.03	0.006
85	29.80	1.05	11.8	135.4	0.02	0.004
86	31.80	0.66	9.4	135.2	0.01	0.002
87	34.60	0.35	7.1	135.0	0.007	0.001
88	38.00	0.16	4.7	134.9	0.003	0.0006
89	38.00	0.16	2.4	134.9	0.003	0.0006
90	38.00	0.16	0.0	134.9	0.003	0.0006

Sensus USA
CT03XC337
GENERIC - OMNI 9.5FT 450 0° Sector

Maximum Exposure Limit - 450 (MHz)
(Limit (GP)): 300 µW/cm^2

ERP (Watts)	100	Height (feet)	139	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.20	95.50	7955.6	7956.9	0.0005	0.0002
5	1.70	67.61	1587.2	1593.3	0.01	0.003
10	6.10	24.55	787.6	799.7	0.01	0.005
20	13.10	4.90	381.5	406.0	0.01	0.004
30	6.60	21.88	240.5	277.7	0.1	0.03
35	10.30	9.33	198.3	242.1	0.06	0.02
40	16.70	2.14	165.5	216.0	0.02	0.005
45	20.50	0.89	138.9	196.4	0.008	0.003
50	12.60	5.50	116.5	181.3	0.06	0.02
55	8.20	15.14	97.2	169.5	0.19	0.06
60	6.60	21.88	80.2	160.4	0.31	0.1
65	6.80	20.89	64.8	153.2	0.32	0.11
70	8.20	15.14	50.6	147.8	0.25	0.08
71	8.60	13.80	47.8	146.9	0.23	0.08
72	9.00	12.59	45.1	146.0	0.21	0.07
73	9.40	11.48	42.5	145.2	0.2	0.07
74	10.00	10.00	39.8	144.5	0.17	0.06
75	10.50	8.91	37.2	143.8	0.16	0.05
76	11.00	7.94	34.6	143.1	0.14	0.05
77	11.60	6.92	32.1	142.5	0.12	0.04
78	12.40	5.75	29.5	142.0	0.1	0.03
79	13.00	5.01	27.0	141.5	0.09	0.03
80	13.90	4.07	24.5	141.0	0.07	0.02
81	14.60	3.47	22.0	140.6	0.06	0.02
82	15.70	2.69	19.5	140.2	0.05	0.02
83	16.50	2.24	17.1	139.9	0.04	0.01
84	18.10	1.55	14.6	139.6	0.03	0.01
85	19.00	1.26	12.1	139.4	0.02	0.008
86	20.20	0.96	9.7	139.2	0.02	0.006
87	22.30	0.59	7.3	139.0	0.01	0.004
88	23.50	0.45	4.9	138.9	0.008	0.003
89	24.20	0.38	2.4	138.9	0.007	0.002
90	24.70	0.34	0.0	138.9	0.006	0.002

Sirius XM Radio
CT03XC337
GENERIC - OMNI 150 0° Sector

Maximum Exposure Limit - 150 (MHz)
(Limit (GP)): 200 µW/cm^2

ERP (Watts)	100	Height (feet)	270	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	100.00	15453.4	15455.8	0.0002	0.00008
5	0.00	100.00	3083.1	3094.9	0.004	0.002
10	0.20	95.50	1529.8	1553.3	0.01	0.007
20	1.00	79.43	741.1	788.7	0.05	0.02
30	2.50	56.23	467.2	539.5	0.07	0.03
35	3.40	45.71	385.2	470.3	0.07	0.04
40	4.40	36.31	321.5	419.6	0.07	0.04
45	5.60	27.54	269.8	381.5	0.07	0.03
50	6.80	20.89	226.3	352.1	0.06	0.03
55	8.00	15.85	188.9	329.3	0.05	0.03
60	9.20	12.02	155.7	311.5	0.04	0.02
65	10.70	8.51	125.8	297.6	0.03	0.02
70	12.30	5.89	98.2	287.0	0.03	0.01
71	12.60	5.50	92.9	285.3	0.02	0.01
72	13.00	5.01	87.6	283.6	0.02	0.01
73	13.30	4.68	82.5	282.1	0.02	0.01
74	13.80	4.17	77.4	280.6	0.02	0.01
75	14.40	3.63	72.3	279.3	0.02	0.008
76	14.80	3.31	67.3	278.0	0.02	0.008
77	15.20	3.02	62.3	276.8	0.01	0.007
78	15.80	2.63	57.3	275.8	0.01	0.006
79	16.30	2.34	52.4	274.8	0.01	0.006
80	16.80	2.09	47.6	273.9	0.01	0.005
81	17.60	1.74	42.7	273.1	0.008	0.004
82	18.00	1.58	37.9	272.4	0.008	0.004
83	18.70	1.35	33.1	271.8	0.007	0.003
84	19.50	1.12	28.3	271.2	0.005	0.003
85	20.20	0.96	23.6	270.8	0.005	0.002
86	20.90	0.81	18.9	270.4	0.004	0.002
87	21.40	0.72	14.1	270.1	0.004	0.002
88	22.10	0.62	9.4	269.9	0.003	0.002
89	22.70	0.54	4.7	269.8	0.003	0.001
90	23.10	0.49	0.0	269.8	0.002	0.001

Sirius XM Radio
CT03XC337
TIL-TEK - TA-2324-LHCP 2300 180° Sector

Maximum Exposure Limit - 23000 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	631	Height (feet)	22	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	631.00	1259.2	1259.4	0.09	0.009
5	1.60	436.55	251.2	252.2	1.51	0.15
10	6.70	134.91	124.6	126.6	1.85	0.18
20	19.50	7.08	60.4	64.3	0.38	0.04
30	23.50	2.82	38.1	44.0	0.32	0.03
35	24.30	2.34	31.4	38.3	0.35	0.04
40	24.40	2.29	26.2	34.2	0.43	0.04
45	25.60	1.74	22.0	31.1	0.4	0.04
50	28.20	0.96	18.4	28.7	0.26	0.03
55	32.20	0.38	15.4	26.8	0.12	0.01
60	37.60	0.11	12.7	25.4	0.04	0.004
65	42.20	0.04	10.2	24.2	0.01	0.001
70	42.90	0.03	8.0	23.4	0.01	0.001
71	42.70	0.03	7.6	23.3	0.01	0.001
72	42.40	0.04	7.2	23.1	0.02	0.002
73	41.90	0.04	6.7	23.0	0.02	0.002
74	41.50	0.04	6.3	22.9	0.02	0.002
75	41.20	0.05	5.9	22.8	0.02	0.002
76	41.00	0.05	5.5	22.6	0.02	0.002
77	40.90	0.05	5.1	22.6	0.02	0.002
78	40.60	0.05	4.7	22.5	0.02	0.002
79	40.40	0.06	4.3	22.4	0.03	0.003
80	40.30	0.06	3.9	22.3	0.03	0.003
81	40.30	0.06	3.5	22.2	0.03	0.003
82	40.30	0.06	3.1	22.2	0.03	0.003
83	40.40	0.06	2.7	22.1	0.03	0.003
84	40.50	0.06	2.3	22.1	0.03	0.003
85	40.70	0.05	1.9	22.1	0.02	0.002
86	40.80	0.05	1.5	22.0	0.02	0.002
87	41.10	0.05	1.1	22.0	0.02	0.002
88	41.30	0.05	0.8	22.0	0.02	0.002
89	41.60	0.04	0.4	22.0	0.02	0.002
90	42.00	0.04	0.0	22.0	0.02	0.002

Spok Holdings
CT03XC337
GENERIC - OMNI 9.5FT 450 0° Sector

Maximum Exposure Limit - 450 (MHz)
(Limit (GP)): 300 µW/cm^2

ERP (Watts)	100	Height (feet)	193	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.20	95.50	11046.3	11048.0	0.0003	0.0001
5	1.70	67.61	2203.9	2212.3	0.005	0.002
10	6.10	24.55	1093.5	1110.4	0.007	0.002
20	13.10	4.90	529.8	563.7	0.006	0.002
30	6.60	21.88	334.0	385.6	0.05	0.02
35	10.30	9.33	275.4	336.2	0.03	0.01
40	16.70	2.14	229.8	300.0	0.009	0.003
45	20.50	0.89	192.8	272.7	0.004	0.001
50	12.60	5.50	161.8	251.7	0.03	0.01
55	8.20	15.14	135.0	235.4	0.1	0.03
60	6.60	21.88	111.3	222.6	0.16	0.05
65	6.80	20.89	89.9	212.7	0.17	0.06
70	8.20	15.14	70.2	205.2	0.13	0.04
71	8.60	13.80	66.4	203.9	0.12	0.04
72	9.00	12.59	62.7	202.8	0.11	0.04
73	9.40	11.48	59.0	201.6	0.1	0.03
74	10.00	10.00	55.3	200.6	0.09	0.03
75	10.50	8.91	51.7	199.6	0.08	0.03
76	11.00	7.94	48.1	198.7	0.07	0.02
77	11.60	6.92	44.5	197.9	0.06	0.02
78	12.40	5.75	41.0	197.1	0.05	0.02
79	13.00	5.01	37.5	196.4	0.05	0.02
80	13.90	4.07	34.0	195.8	0.04	0.01
81	14.60	3.47	30.5	195.2	0.03	0.01
82	15.70	2.69	27.1	194.7	0.03	0.009
83	16.50	2.24	23.7	194.3	0.02	0.007
84	18.10	1.55	20.3	193.9	0.01	0.005
85	19.00	1.26	16.9	193.5	0.01	0.004
86	20.20	0.96	13.5	193.3	0.01	0.003
87	22.30	0.59	10.1	193.1	0.006	0.002
88	23.50	0.45	6.7	192.9	0.004	0.001
89	24.20	0.38	3.4	192.8	0.004	0.001
90	24.70	0.34	0.0	192.8	0.003	0.001

Sprint
CT03XC337
ANDREW - DB844H90E-XY 00DT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	0	Height (feet)	222	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)

Sprint
CT03XC337
RFS - APXVSPP18-C-A20-00DT 850 20° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	2500	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.13	2426.28	8814.2	8815.5	0.01	0.002
5	2.39	1441.92	1758.5	1765.3	0.17	0.03
10	10.86	205.09	872.5	886.0	0.09	0.02
20	16.11	61.23	422.7	449.8	0.11	0.02
30	19.08	30.90	266.5	307.7	0.12	0.02
35	20.56	21.98	219.7	268.2	0.11	0.02
40	28.29	3.71	183.4	239.4	0.02	0.004
45	23.63	10.84	153.8	217.6	0.08	0.01
50	24.74	8.39	129.1	200.9	0.07	0.01
55	34.24	0.94	107.7	187.8	0.01	0.002
60	35.67	0.68	88.8	177.7	0.008	0.001
65	32.42	1.43	71.8	169.8	0.02	0.003
70	32.93	1.27	56.0	163.7	0.02	0.003
71	33.18	1.20	53.0	162.7	0.02	0.003
72	33.57	1.10	50.0	161.8	0.02	0.003
73	34.09	0.98	47.0	160.9	0.01	0.002
74	34.76	0.84	44.1	160.0	0.01	0.002
75	35.49	0.70	41.2	159.3	0.01	0.002
76	36.11	0.61	38.4	158.6	0.009	0.002
77	36.40	0.57	35.5	157.9	0.008	0.001
78	36.18	0.60	32.7	157.3	0.009	0.002
79	35.55	0.70	29.9	156.7	0.01	0.002
80	34.73	0.84	27.1	156.2	0.01	0.002
81	33.95	1.01	24.4	155.8	0.01	0.003
82	33.32	1.16	21.6	155.3	0.02	0.003
83	32.91	1.28	18.9	155.0	0.02	0.003
84	32.72	1.34	16.2	154.7	0.02	0.004
85	32.78	1.32	13.5	154.4	0.02	0.004
86	33.08	1.23	10.8	154.2	0.02	0.003
87	33.62	1.09	8.1	154.1	0.02	0.003
88	34.40	0.91	5.4	153.9	0.01	0.002
89	35.42	0.72	2.7	153.9	0.01	0.002
90	36.70	0.54	0.0	153.8	0.008	0.001

Sprint
CT03XC337
RFS - APXVSPP18-C-A20-00DT 850 120° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	2500	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.13	2426.28	8814.2	8815.5	0.01	0.002
5	2.39	1441.92	1758.5	1765.3	0.17	0.03
10	10.86	205.09	872.5	886.0	0.09	0.02
20	16.11	61.23	422.7	449.8	0.11	0.02
30	19.08	30.90	266.5	307.7	0.12	0.02
35	20.56	21.98	219.7	268.2	0.11	0.02
40	28.29	3.71	183.4	239.4	0.02	0.004
45	23.63	10.84	153.8	217.6	0.08	0.01
50	24.74	8.39	129.1	200.9	0.07	0.01
55	34.24	0.94	107.7	187.8	0.01	0.002
60	35.67	0.68	88.8	177.7	0.008	0.001
65	32.42	1.43	71.8	169.8	0.02	0.003
70	32.93	1.27	56.0	163.7	0.02	0.003
71	33.18	1.20	53.0	162.7	0.02	0.003
72	33.57	1.10	50.0	161.8	0.02	0.003
73	34.09	0.98	47.0	160.9	0.01	0.002
74	34.76	0.84	44.1	160.0	0.01	0.002
75	35.49	0.70	41.2	159.3	0.01	0.002
76	36.11	0.61	38.4	158.6	0.009	0.002
77	36.40	0.57	35.5	157.9	0.008	0.001
78	36.18	0.60	32.7	157.3	0.009	0.002
79	35.55	0.70	29.9	156.7	0.01	0.002
80	34.73	0.84	27.1	156.2	0.01	0.002
81	33.95	1.01	24.4	155.8	0.01	0.003
82	33.32	1.16	21.6	155.3	0.02	0.003
83	32.91	1.28	18.9	155.0	0.02	0.003
84	32.72	1.34	16.2	154.7	0.02	0.004
85	32.78	1.32	13.5	154.4	0.02	0.004
86	33.08	1.23	10.8	154.2	0.02	0.003
87	33.62	1.09	8.1	154.1	0.02	0.003
88	34.40	0.91	5.4	153.9	0.01	0.002
89	35.42	0.72	2.7	153.9	0.01	0.002
90	36.70	0.54	0.0	153.8	0.008	0.001

Sprint
CT03XC337
RFS - APXVSPP18-C-A20-00DT 850 200° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	2500	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.13	2426.28	8814.2	8815.5	0.01	0.002
5	2.39	1441.92	1758.5	1765.3	0.17	0.03
10	10.86	205.09	872.5	886.0	0.09	0.02
20	16.11	61.23	422.7	449.8	0.11	0.02
30	19.08	30.90	266.5	307.7	0.12	0.02
35	20.56	21.98	219.7	268.2	0.11	0.02
40	28.29	3.71	183.4	239.4	0.02	0.004
45	23.63	10.84	153.8	217.6	0.08	0.01
50	24.74	8.39	129.1	200.9	0.07	0.01
55	34.24	0.94	107.7	187.8	0.01	0.002
60	35.67	0.68	88.8	177.7	0.008	0.001
65	32.42	1.43	71.8	169.8	0.02	0.003
70	32.93	1.27	56.0	163.7	0.02	0.003
71	33.18	1.20	53.0	162.7	0.02	0.003
72	33.57	1.10	50.0	161.8	0.02	0.003
73	34.09	0.98	47.0	160.9	0.01	0.002
74	34.76	0.84	44.1	160.0	0.01	0.002
75	35.49	0.70	41.2	159.3	0.01	0.002
76	36.11	0.61	38.4	158.6	0.009	0.002
77	36.40	0.57	35.5	157.9	0.008	0.001
78	36.18	0.60	32.7	157.3	0.009	0.002
79	35.55	0.70	29.9	156.7	0.01	0.002
80	34.73	0.84	27.1	156.2	0.01	0.002
81	33.95	1.01	24.4	155.8	0.01	0.003
82	33.32	1.16	21.6	155.3	0.02	0.003
83	32.91	1.28	18.9	155.0	0.02	0.003
84	32.72	1.34	16.2	154.7	0.02	0.004
85	32.78	1.32	13.5	154.4	0.02	0.004
86	33.08	1.23	10.8	154.2	0.02	0.003
87	33.62	1.09	8.1	154.1	0.02	0.003
88	34.40	0.91	5.4	153.9	0.01	0.002
89	35.42	0.72	2.7	153.9	0.01	0.002
90	36.70	0.54	0.0	153.8	0.008	0.001

Sprint
CT03XC337
RFS - APXVSPP18-C-A20-00DT 1900 20° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	6300	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.36	5798.84	8814.2	8815.5	0.02	0.002
5	10.85	518.01	1758.5	1765.3	0.04	0.004
10	18.58	87.37	872.5	886.0	0.02	0.002
20	21.70	42.59	422.7	449.8	0.05	0.005
30	32.94	3.20	266.5	307.7	0.007	0.0007
35	20.12	61.28	219.7	268.2	0.19	0.02
40	23.68	27.00	183.4	239.4	0.1	0.01
45	29.99	6.31	153.8	217.6	0.03	0.003
50	35.50	1.78	129.1	200.9	0.01	0.001
55	37.11	1.23	107.7	187.8	0.008	0.0008
60	31.53	4.43	88.8	177.7	0.03	0.003
65	39.01	0.79	71.8	169.8	0.006	0.0006
70	36.58	1.39	56.0	163.7	0.01	0.001
71	36.47	1.42	53.0	162.7	0.01	0.001
72	36.78	1.32	50.0	161.8	0.01	0.001
73	37.21	1.20	47.0	160.9	0.01	0.001
74	37.55	1.11	44.1	160.0	0.01	0.001
75	37.80	1.05	41.2	159.3	0.01	0.001
76	37.96	1.01	38.4	158.6	0.009	0.0009
77	38.03	0.99	35.5	157.9	0.009	0.0009
78	38.05	0.99	32.7	157.3	0.009	0.0009
79	38.16	0.96	29.9	156.7	0.009	0.0009
80	38.49	0.89	27.1	156.2	0.008	0.0008
81	39.09	0.77	24.4	155.8	0.007	0.0007
82	39.76	0.67	21.6	155.3	0.006	0.0006
83	40.09	0.62	18.9	155.0	0.006	0.0006
84	39.84	0.66	16.2	154.7	0.006	0.0006
85	39.29	0.74	13.5	154.4	0.007	0.0007
86	38.74	0.84	10.8	154.2	0.008	0.0008
87	38.31	0.93	8.1	154.1	0.009	0.0009
88	37.99	1.00	5.4	153.9	0.01	0.001
89	37.78	1.05	2.7	153.9	0.01	0.001
90	37.81	1.05	0.0	153.8	0.01	0.001

Sprint
CT03XC337
RFS - APXVSPP18-C-A20-00DT 1900 120° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	6300	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.36	5798.84	8814.2	8815.5	0.02	0.002
5	10.85	518.01	1758.5	1765.3	0.04	0.004
10	18.58	87.37	872.5	886.0	0.02	0.002
20	21.70	42.59	422.7	449.8	0.05	0.005
30	32.94	3.20	266.5	307.7	0.007	0.0007
35	20.12	61.28	219.7	268.2	0.19	0.02
40	23.68	27.00	183.4	239.4	0.1	0.01
45	29.99	6.31	153.8	217.6	0.03	0.003
50	35.50	1.78	129.1	200.9	0.01	0.001
55	37.11	1.23	107.7	187.8	0.008	0.0008
60	31.53	4.43	88.8	177.7	0.03	0.003
65	39.01	0.79	71.8	169.8	0.006	0.0006
70	36.58	1.39	56.0	163.7	0.01	0.001
71	36.47	1.42	53.0	162.7	0.01	0.001
72	36.78	1.32	50.0	161.8	0.01	0.001
73	37.21	1.20	47.0	160.9	0.01	0.001
74	37.55	1.11	44.1	160.0	0.01	0.001
75	37.80	1.05	41.2	159.3	0.01	0.001
76	37.96	1.01	38.4	158.6	0.009	0.0009
77	38.03	0.99	35.5	157.9	0.009	0.0009
78	38.05	0.99	32.7	157.3	0.009	0.0009
79	38.16	0.96	29.9	156.7	0.009	0.0009
80	38.49	0.89	27.1	156.2	0.008	0.0008
81	39.09	0.77	24.4	155.8	0.007	0.0007
82	39.76	0.67	21.6	155.3	0.006	0.0006
83	40.09	0.62	18.9	155.0	0.006	0.0006
84	39.84	0.66	16.2	154.7	0.006	0.0006
85	39.29	0.74	13.5	154.4	0.007	0.0007
86	38.74	0.84	10.8	154.2	0.008	0.0008
87	38.31	0.93	8.1	154.1	0.009	0.0009
88	37.99	1.00	5.4	153.9	0.01	0.001
89	37.78	1.05	2.7	153.9	0.01	0.001
90	37.81	1.05	0.0	153.8	0.01	0.001

Sprint
CT03XC337
RFS - APXVSPP18-C-A20-00DT 1900 200° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	6300	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.36	5798.84	8814.2	8815.5	0.02	0.002
5	10.85	518.01	1758.5	1765.3	0.04	0.004
10	18.58	87.37	872.5	886.0	0.02	0.002
20	21.70	42.59	422.7	449.8	0.05	0.005
30	32.94	3.20	266.5	307.7	0.007	0.0007
35	20.12	61.28	219.7	268.2	0.19	0.02
40	23.68	27.00	183.4	239.4	0.1	0.01
45	29.99	6.31	153.8	217.6	0.03	0.003
50	35.50	1.78	129.1	200.9	0.01	0.001
55	37.11	1.23	107.7	187.8	0.008	0.0008
60	31.53	4.43	88.8	177.7	0.03	0.003
65	39.01	0.79	71.8	169.8	0.006	0.0006
70	36.58	1.39	56.0	163.7	0.01	0.001
71	36.47	1.42	53.0	162.7	0.01	0.001
72	36.78	1.32	50.0	161.8	0.01	0.001
73	37.21	1.20	47.0	160.9	0.01	0.001
74	37.55	1.11	44.1	160.0	0.01	0.001
75	37.80	1.05	41.2	159.3	0.01	0.001
76	37.96	1.01	38.4	158.6	0.009	0.0009
77	38.03	0.99	35.5	157.9	0.009	0.0009
78	38.05	0.99	32.7	157.3	0.009	0.0009
79	38.16	0.96	29.9	156.7	0.009	0.0009
80	38.49	0.89	27.1	156.2	0.008	0.0008
81	39.09	0.77	24.4	155.8	0.007	0.0007
82	39.76	0.67	21.6	155.3	0.006	0.0006
83	40.09	0.62	18.9	155.0	0.006	0.0006
84	39.84	0.66	16.2	154.7	0.006	0.0006
85	39.29	0.74	13.5	154.4	0.007	0.0007
86	38.74	0.84	10.8	154.2	0.008	0.0008
87	38.31	0.93	8.1	154.1	0.009	0.0009
88	37.99	1.00	5.4	153.9	0.01	0.001
89	37.78	1.05	2.7	153.9	0.01	0.001
90	37.81	1.05	0.0	153.8	0.01	0.001

Sprint
CT03XC337
Nokia - SON Nokia AAHC 64T64R PRELIM 20° Sector

Maximum Exposure Limit - 2500 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	4258	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	4258.00	8814.2	8815.5	0.01	0.001
5	0.00	4258.00	1758.5	1765.3	0.3	0.03
10	0.00	4258.00	872.5	886.0	1.19	0.12
20	0.00	4258.00	422.7	449.8	4.62	0.46
30	0.00	4258.00	266.5	307.7	9.88	0.99
35	0.00	4258.00	219.7	268.2	13	1.3
40	0.00	4258.00	183.4	239.4	16.32	1.63
45	0.80	3541.65	153.8	217.6	16.43	1.64
50	3.90	1734.62	129.1	200.9	9.44	0.94
55	10.10	416.11	107.7	187.8	2.59	0.26
60	19.60	46.69	88.8	177.7	0.32	0.03
65	21.10	33.05	71.8	169.8	0.25	0.03
70	21.10	33.05	56.0	163.7	0.27	0.03
71	21.30	31.56	53.0	162.7	0.26	0.03
72	21.40	30.84	50.0	161.8	0.26	0.03
73	21.10	33.05	47.0	160.9	0.28	0.03
74	20.90	34.61	44.1	160.0	0.3	0.03
75	21.10	33.05	41.2	159.3	0.29	0.03
76	21.30	31.56	38.4	158.6	0.28	0.03
77	21.40	30.84	35.5	157.9	0.27	0.03
78	21.10	33.05	32.7	157.3	0.29	0.03
79	20.90	34.61	29.9	156.7	0.31	0.03
80	21.10	33.05	27.1	156.2	0.3	0.03
81	21.30	31.56	24.4	155.8	0.29	0.03
82	21.40	30.84	21.6	155.3	0.28	0.03
83	21.10	33.05	18.9	155.0	0.3	0.03
84	20.90	34.61	16.2	154.7	0.32	0.03
85	21.10	33.05	13.5	154.4	0.3	0.03
86	21.30	31.56	10.8	154.2	0.29	0.03
87	21.80	28.13	8.1	154.1	0.26	0.03
88	21.60	29.46	5.4	153.9	0.27	0.03
89	21.50	30.14	2.7	153.9	0.28	0.03
90	21.50	30.14	0.0	153.8	0.28	0.03

Sprint
CT03XC337
Nokia - SON Nokia AAHC 64T64R PRELIM 120° Sector

Maximum Exposure Limit - 2500 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	4258	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	4258.00	8814.2	8815.5	0.01	0.001
5	0.00	4258.00	1758.5	1765.3	0.3	0.03
10	0.00	4258.00	872.5	886.0	1.19	0.12
20	0.00	4258.00	422.7	449.8	4.62	0.46
30	0.00	4258.00	266.5	307.7	9.88	0.99
35	0.00	4258.00	219.7	268.2	13	1.3
40	0.00	4258.00	183.4	239.4	16.32	1.63
45	0.80	3541.65	153.8	217.6	16.43	1.64
50	3.90	1734.62	129.1	200.9	9.44	0.94
55	10.10	416.11	107.7	187.8	2.59	0.26
60	19.60	46.69	88.8	177.7	0.32	0.03
65	21.10	33.05	71.8	169.8	0.25	0.03
70	21.10	33.05	56.0	163.7	0.27	0.03
71	21.30	31.56	53.0	162.7	0.26	0.03
72	21.40	30.84	50.0	161.8	0.26	0.03
73	21.10	33.05	47.0	160.9	0.28	0.03
74	20.90	34.61	44.1	160.0	0.3	0.03
75	21.10	33.05	41.2	159.3	0.29	0.03
76	21.30	31.56	38.4	158.6	0.28	0.03
77	21.40	30.84	35.5	157.9	0.27	0.03
78	21.10	33.05	32.7	157.3	0.29	0.03
79	20.90	34.61	29.9	156.7	0.31	0.03
80	21.10	33.05	27.1	156.2	0.3	0.03
81	21.30	31.56	24.4	155.8	0.29	0.03
82	21.40	30.84	21.6	155.3	0.28	0.03
83	21.10	33.05	18.9	155.0	0.3	0.03
84	20.90	34.61	16.2	154.7	0.32	0.03
85	21.10	33.05	13.5	154.4	0.3	0.03
86	21.30	31.56	10.8	154.2	0.29	0.03
87	21.80	28.13	8.1	154.1	0.26	0.03
88	21.60	29.46	5.4	153.9	0.27	0.03
89	21.50	30.14	2.7	153.9	0.28	0.03
90	21.50	30.14	0.0	153.8	0.28	0.03

Sprint
CT03XC337
Nokia - SON Nokia AAHC 64T64R PRELIM 200° Sector

Maximum Exposure Limit - 2500 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	4258	Height (feet)	154	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	4258.00	8814.2	8815.5	0.01	0.001
5	0.00	4258.00	1758.5	1765.3	0.3	0.03
10	0.00	4258.00	872.5	886.0	1.19	0.12
20	0.00	4258.00	422.7	449.8	4.62	0.46
30	0.00	4258.00	266.5	307.7	9.88	0.99
35	0.00	4258.00	219.7	268.2	13	1.3
40	0.00	4258.00	183.4	239.4	16.32	1.63
45	0.80	3541.65	153.8	217.6	16.43	1.64
50	3.90	1734.62	129.1	200.9	9.44	0.94
55	10.10	416.11	107.7	187.8	2.59	0.26
60	19.60	46.69	88.8	177.7	0.32	0.03
65	21.10	33.05	71.8	169.8	0.25	0.03
70	21.10	33.05	56.0	163.7	0.27	0.03
71	21.30	31.56	53.0	162.7	0.26	0.03
72	21.40	30.84	50.0	161.8	0.26	0.03
73	21.10	33.05	47.0	160.9	0.28	0.03
74	20.90	34.61	44.1	160.0	0.3	0.03
75	21.10	33.05	41.2	159.3	0.29	0.03
76	21.30	31.56	38.4	158.6	0.28	0.03
77	21.40	30.84	35.5	157.9	0.27	0.03
78	21.10	33.05	32.7	157.3	0.29	0.03
79	20.90	34.61	29.9	156.7	0.31	0.03
80	21.10	33.05	27.1	156.2	0.3	0.03
81	21.30	31.56	24.4	155.8	0.29	0.03
82	21.40	30.84	21.6	155.3	0.28	0.03
83	21.10	33.05	18.9	155.0	0.3	0.03
84	20.90	34.61	16.2	154.7	0.32	0.03
85	21.10	33.05	13.5	154.4	0.3	0.03
86	21.30	31.56	10.8	154.2	0.29	0.03
87	21.80	28.13	8.1	154.1	0.26	0.03
88	21.60	29.46	5.4	153.9	0.27	0.03
89	21.50	30.14	2.7	153.9	0.28	0.03
90	21.50	30.14	0.0	153.8	0.28	0.03

T-Mobile
CT03XC337
ERICSSON - AIR 32 00DT 2100 0° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	3900	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.20	3724.47	15338.9	15341.3	0.003	0.0003
5	6.20	935.54	3060.3	3072.0	0.02	0.002
10	21.60	26.98	1518.4	1541.9	0.002	0.0002
20	24.00	15.53	735.6	782.8	0.006	0.0006
30	28.10	6.04	463.7	535.5	0.005	0.0005
35	22.50	21.93	382.4	466.8	0.02	0.002
40	26.60	8.53	319.1	416.5	0.01	0.001
45	35.50	1.10	267.7	378.6	0.002	0.0002
50	25.40	11.25	224.7	349.5	0.02	0.002
55	24.50	13.84	187.5	326.8	0.03	0.003
60	22.60	21.43	154.6	309.2	0.05	0.005
65	23.20	18.67	124.8	295.4	0.05	0.005
70	29.00	4.91	97.4	284.9	0.01	0.001
71	30.50	3.47	92.2	283.2	0.01	0.001
72	32.00	2.46	87.0	281.5	0.007	0.0007
73	33.60	1.70	81.9	280.0	0.005	0.0005
74	35.70	1.05	76.8	278.5	0.003	0.0003
75	38.30	0.58	71.8	277.2	0.002	0.0002
76	41.20	0.30	66.8	276.0	0.0009	0.00009
77	42.70	0.21	61.8	274.8	0.0006	0.00006
78	42.00	0.25	56.9	273.7	0.0007	0.00007
79	41.10	0.30	52.0	272.7	0.0009	0.00009
80	40.70	0.33	47.2	271.9	0.001	0.0001
81	40.90	0.32	42.4	271.1	0.001	0.0001
82	41.20	0.30	37.6	270.4	0.0009	0.00009
83	41.80	0.26	32.9	269.8	0.0008	0.00008
84	42.50	0.22	28.1	269.2	0.0007	0.00007
85	43.80	0.16	23.4	268.8	0.0005	0.00005
86	45.20	0.12	18.7	268.4	0.0004	0.00004
87	46.30	0.09	14.0	268.1	0.0003	0.00003
88	45.90	0.10	9.4	267.9	0.0003	0.00003
89	44.40	0.14	4.7	267.8	0.0004	0.00004
90	42.80	0.20	0.0	267.7	0.0006	0.00006

T-Mobile
CT03XC337
ERICSSON - AIR 32 00DT 2100 120° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	3900	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.20	3724.47	15338.9	15341.3	0.003	0.0003
5	6.20	935.54	3060.3	3072.0	0.02	0.002
10	21.60	26.98	1518.4	1541.9	0.002	0.0002
20	24.00	15.53	735.6	782.8	0.006	0.0006
30	28.10	6.04	463.7	535.5	0.005	0.0005
35	22.50	21.93	382.4	466.8	0.02	0.002
40	26.60	8.53	319.1	416.5	0.01	0.001
45	35.50	1.10	267.7	378.6	0.002	0.0002
50	25.40	11.25	224.7	349.5	0.02	0.002
55	24.50	13.84	187.5	326.8	0.03	0.003
60	22.60	21.43	154.6	309.2	0.05	0.005
65	23.20	18.67	124.8	295.4	0.05	0.005
70	29.00	4.91	97.4	284.9	0.01	0.001
71	30.50	3.47	92.2	283.2	0.01	0.001
72	32.00	2.46	87.0	281.5	0.007	0.0007
73	33.60	1.70	81.9	280.0	0.005	0.0005
74	35.70	1.05	76.8	278.5	0.003	0.0003
75	38.30	0.58	71.8	277.2	0.002	0.0002
76	41.20	0.30	66.8	276.0	0.0009	0.00009
77	42.70	0.21	61.8	274.8	0.0006	0.00006
78	42.00	0.25	56.9	273.7	0.0007	0.00007
79	41.10	0.30	52.0	272.7	0.0009	0.00009
80	40.70	0.33	47.2	271.9	0.001	0.0001
81	40.90	0.32	42.4	271.1	0.001	0.0001
82	41.20	0.30	37.6	270.4	0.0009	0.00009
83	41.80	0.26	32.9	269.8	0.0008	0.00008
84	42.50	0.22	28.1	269.2	0.0007	0.00007
85	43.80	0.16	23.4	268.8	0.0005	0.00005
86	45.20	0.12	18.7	268.4	0.0004	0.00004
87	46.30	0.09	14.0	268.1	0.0003	0.00003
88	45.90	0.10	9.4	267.9	0.0003	0.00003
89	44.40	0.14	4.7	267.8	0.0004	0.00004
90	42.80	0.20	0.0	267.7	0.0006	0.00006

T-Mobile
CT03XC337
ERICSSON - AIR 32 00DT 2100 240° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	3900	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.20	3724.47	15338.9	15341.3	0.003	0.0003
5	6.20	935.54	3060.3	3072.0	0.02	0.002
10	21.60	26.98	1518.4	1541.9	0.002	0.0002
20	24.00	15.53	735.6	782.8	0.006	0.0006
30	28.10	6.04	463.7	535.5	0.005	0.0005
35	22.50	21.93	382.4	466.8	0.02	0.002
40	26.60	8.53	319.1	416.5	0.01	0.001
45	35.50	1.10	267.7	378.6	0.002	0.0002
50	25.40	11.25	224.7	349.5	0.02	0.002
55	24.50	13.84	187.5	326.8	0.03	0.003
60	22.60	21.43	154.6	309.2	0.05	0.005
65	23.20	18.67	124.8	295.4	0.05	0.005
70	29.00	4.91	97.4	284.9	0.01	0.001
71	30.50	3.47	92.2	283.2	0.01	0.001
72	32.00	2.46	87.0	281.5	0.007	0.0007
73	33.60	1.70	81.9	280.0	0.005	0.0005
74	35.70	1.05	76.8	278.5	0.003	0.0003
75	38.30	0.58	71.8	277.2	0.002	0.0002
76	41.20	0.30	66.8	276.0	0.0009	0.00009
77	42.70	0.21	61.8	274.8	0.0006	0.00006
78	42.00	0.25	56.9	273.7	0.0007	0.00007
79	41.10	0.30	52.0	272.7	0.0009	0.00009
80	40.70	0.33	47.2	271.9	0.001	0.0001
81	40.90	0.32	42.4	271.1	0.001	0.0001
82	41.20	0.30	37.6	270.4	0.0009	0.00009
83	41.80	0.26	32.9	269.8	0.0008	0.00008
84	42.50	0.22	28.1	269.2	0.0007	0.00007
85	43.80	0.16	23.4	268.8	0.0005	0.00005
86	45.20	0.12	18.7	268.4	0.0004	0.00004
87	46.30	0.09	14.0	268.1	0.0003	0.00003
88	45.90	0.10	9.4	267.9	0.0003	0.00003
89	44.40	0.14	4.7	267.8	0.0004	0.00004
90	42.80	0.20	0.0	267.7	0.0006	0.00006

T-Mobile
CT03XC337
ERICSSON - AIR 21 00DT 1900 0° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	6200	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.12	6031.03	15338.9	15341.3	0.006	0.0006
5	4.92	1997.06	3060.3	3072.0	0.05	0.005
10	18.56	86.38	1518.4	1541.9	0.008	0.0008
20	26.95	12.51	735.6	782.8	0.004	0.0004
30	24.22	23.46	463.7	535.5	0.02	0.002
35	23.18	29.81	382.4	466.8	0.03	0.003
40	32.85	3.22	319.1	416.5	0.004	0.0004
45	38.73	0.83	267.7	378.6	0.001	0.0001
50	27.49	11.05	224.7	349.5	0.02	0.002
55	25.96	15.72	187.5	326.8	0.03	0.003
60	29.64	6.73	154.6	309.2	0.02	0.002
65	27.04	12.26	124.8	295.4	0.03	0.003
70	24.73	20.86	97.4	284.9	0.06	0.006
71	24.77	20.67	92.2	283.2	0.06	0.006
72	24.85	20.29	87.0	281.5	0.06	0.006
73	24.95	19.83	81.9	280.0	0.06	0.006
74	25.10	19.16	76.8	278.5	0.05	0.005
75	25.32	18.22	71.8	277.2	0.05	0.005
76	25.67	16.80	66.8	276.0	0.05	0.005
77	26.18	14.94	61.8	274.8	0.04	0.004
78	26.84	12.83	56.9	273.7	0.04	0.004
79	27.58	10.83	52.0	272.7	0.03	0.003
80	28.29	9.19	47.2	271.9	0.03	0.003
81	28.88	8.02	42.4	271.1	0.02	0.002
82	29.34	7.22	37.6	270.4	0.02	0.002
83	29.78	6.52	32.9	269.8	0.02	0.002
84	30.30	5.78	28.1	269.2	0.02	0.002
85	30.95	4.98	23.4	268.8	0.02	0.002
86	31.73	4.16	18.7	268.4	0.01	0.001
87	32.47	3.51	14.0	268.1	0.01	0.001
88	33.02	3.09	9.4	267.9	0.01	0.001
89	33.29	2.91	4.7	267.8	0.009	0.0009
90	33.41	2.83	0.0	267.7	0.009	0.0009

T-Mobile
CT03XC337
ERICSSON - AIR 21 00DT 1900 120° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	6200	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.12	6031.03	15338.9	15341.3	0.006	0.0006
5	4.92	1997.06	3060.3	3072.0	0.05	0.005
10	18.56	86.38	1518.4	1541.9	0.008	0.0008
20	26.95	12.51	735.6	782.8	0.004	0.0004
30	24.22	23.46	463.7	535.5	0.02	0.002
35	23.18	29.81	382.4	466.8	0.03	0.003
40	32.85	3.22	319.1	416.5	0.004	0.0004
45	38.73	0.83	267.7	378.6	0.001	0.0001
50	27.49	11.05	224.7	349.5	0.02	0.002
55	25.96	15.72	187.5	326.8	0.03	0.003
60	29.64	6.73	154.6	309.2	0.02	0.002
65	27.04	12.26	124.8	295.4	0.03	0.003
70	24.73	20.86	97.4	284.9	0.06	0.006
71	24.77	20.67	92.2	283.2	0.06	0.006
72	24.85	20.29	87.0	281.5	0.06	0.006
73	24.95	19.83	81.9	280.0	0.06	0.006
74	25.10	19.16	76.8	278.5	0.05	0.005
75	25.32	18.22	71.8	277.2	0.05	0.005
76	25.67	16.80	66.8	276.0	0.05	0.005
77	26.18	14.94	61.8	274.8	0.04	0.004
78	26.84	12.83	56.9	273.7	0.04	0.004
79	27.58	10.83	52.0	272.7	0.03	0.003
80	28.29	9.19	47.2	271.9	0.03	0.003
81	28.88	8.02	42.4	271.1	0.02	0.002
82	29.34	7.22	37.6	270.4	0.02	0.002
83	29.78	6.52	32.9	269.8	0.02	0.002
84	30.30	5.78	28.1	269.2	0.02	0.002
85	30.95	4.98	23.4	268.8	0.02	0.002
86	31.73	4.16	18.7	268.4	0.01	0.001
87	32.47	3.51	14.0	268.1	0.01	0.001
88	33.02	3.09	9.4	267.9	0.01	0.001
89	33.29	2.91	4.7	267.8	0.009	0.0009
90	33.41	2.83	0.0	267.7	0.009	0.0009

T-Mobile
CT03XC337
ERICSSON - AIR 21 00DT 1900 240° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	6200	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.12	6031.03	15338.9	15341.3	0.006	0.0006
5	4.92	1997.06	3060.3	3072.0	0.05	0.005
10	18.56	86.38	1518.4	1541.9	0.008	0.0008
20	26.95	12.51	735.6	782.8	0.004	0.0004
30	24.22	23.46	463.7	535.5	0.02	0.002
35	23.18	29.81	382.4	466.8	0.03	0.003
40	32.85	3.22	319.1	416.5	0.004	0.0004
45	38.73	0.83	267.7	378.6	0.001	0.0001
50	27.49	11.05	224.7	349.5	0.02	0.002
55	25.96	15.72	187.5	326.8	0.03	0.003
60	29.64	6.73	154.6	309.2	0.02	0.002
65	27.04	12.26	124.8	295.4	0.03	0.003
70	24.73	20.86	97.4	284.9	0.06	0.006
71	24.77	20.67	92.2	283.2	0.06	0.006
72	24.85	20.29	87.0	281.5	0.06	0.006
73	24.95	19.83	81.9	280.0	0.06	0.006
74	25.10	19.16	76.8	278.5	0.05	0.005
75	25.32	18.22	71.8	277.2	0.05	0.005
76	25.67	16.80	66.8	276.0	0.05	0.005
77	26.18	14.94	61.8	274.8	0.04	0.004
78	26.84	12.83	56.9	273.7	0.04	0.004
79	27.58	10.83	52.0	272.7	0.03	0.003
80	28.29	9.19	47.2	271.9	0.03	0.003
81	28.88	8.02	42.4	271.1	0.02	0.002
82	29.34	7.22	37.6	270.4	0.02	0.002
83	29.78	6.52	32.9	269.8	0.02	0.002
84	30.30	5.78	28.1	269.2	0.02	0.002
85	30.95	4.98	23.4	268.8	0.02	0.002
86	31.73	4.16	18.7	268.4	0.01	0.001
87	32.47	3.51	14.0	268.1	0.01	0.001
88	33.02	3.09	9.4	267.9	0.01	0.001
89	33.29	2.91	4.7	267.8	0.009	0.0009
90	33.41	2.83	0.0	267.7	0.009	0.0009

T-Mobile
CT03XC337
COMMSCOPE - LNX-6515DS-VTM 00DT 0700 0° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	1400	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	1368.13	15338.9	15341.3	0.002	0.0004
5	3.30	654.83	3060.3	3072.0	0.02	0.005
10	20.80	11.65	1518.4	1541.9	0.002	0.0004
20	18.70	18.89	735.6	782.8	0.01	0.002
30	33.40	0.64	463.7	535.5	0.0008	0.0002
35	27.70	2.38	382.4	466.8	0.004	0.0008
40	29.30	1.64	319.1	416.5	0.003	0.0007
45	28.10	2.17	267.7	378.6	0.005	0.001
50	26.20	3.36	224.7	349.5	0.01	0.002
55	29.30	1.64	187.5	326.8	0.006	0.001
60	35.60	0.38	154.6	309.2	0.001	0.0003
65	33.80	0.58	124.8	295.4	0.002	0.0005
70	30.80	1.16	97.4	284.9	0.005	0.001
71	30.60	1.22	92.2	283.2	0.005	0.001
72	30.50	1.25	87.0	281.5	0.006	0.001
73	30.50	1.25	81.9	280.0	0.006	0.001
74	30.70	1.19	76.8	278.5	0.006	0.001
75	31.00	1.11	71.8	277.2	0.005	0.001
76	31.40	1.01	66.8	276.0	0.005	0.001
77	31.90	0.90	61.8	274.8	0.004	0.001
78	32.40	0.80	56.9	273.7	0.004	0.0008
79	33.10	0.69	52.0	272.7	0.003	0.0007
80	33.80	0.58	47.2	271.9	0.003	0.0006
81	34.60	0.49	42.4	271.1	0.002	0.0005
82	35.30	0.41	37.6	270.4	0.002	0.0004
83	35.90	0.36	32.9	269.8	0.002	0.0004
84	36.50	0.31	28.1	269.2	0.002	0.0003
85	36.90	0.29	23.4	268.8	0.001	0.0003
86	37.30	0.26	18.7	268.4	0.001	0.0003
87	37.40	0.25	14.0	268.1	0.001	0.0003
88	37.50	0.25	9.4	267.9	0.001	0.0003
89	37.50	0.25	4.7	267.8	0.001	0.0003
90	37.80	0.23	0.0	267.7	0.001	0.0002

T-Mobile
CT03XC337
COMMSCOPE - LNX-6515DS-VTM 00DT 0700 120° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	1400	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	1368.13	15338.9	15341.3	0.002	0.0004
5	3.30	654.83	3060.3	3072.0	0.02	0.005
10	20.80	11.65	1518.4	1541.9	0.002	0.0004
20	18.70	18.89	735.6	782.8	0.01	0.002
30	33.40	0.64	463.7	535.5	0.0008	0.0002
35	27.70	2.38	382.4	466.8	0.004	0.0008
40	29.30	1.64	319.1	416.5	0.003	0.0007
45	28.10	2.17	267.7	378.6	0.005	0.001
50	26.20	3.36	224.7	349.5	0.01	0.002
55	29.30	1.64	187.5	326.8	0.006	0.001
60	35.60	0.38	154.6	309.2	0.001	0.0003
65	33.80	0.58	124.8	295.4	0.002	0.0005
70	30.80	1.16	97.4	284.9	0.005	0.001
71	30.60	1.22	92.2	283.2	0.005	0.001
72	30.50	1.25	87.0	281.5	0.006	0.001
73	30.50	1.25	81.9	280.0	0.006	0.001
74	30.70	1.19	76.8	278.5	0.006	0.001
75	31.00	1.11	71.8	277.2	0.005	0.001
76	31.40	1.01	66.8	276.0	0.005	0.001
77	31.90	0.90	61.8	274.8	0.004	0.001
78	32.40	0.80	56.9	273.7	0.004	0.0008
79	33.10	0.69	52.0	272.7	0.003	0.0007
80	33.80	0.58	47.2	271.9	0.003	0.0006
81	34.60	0.49	42.4	271.1	0.002	0.0005
82	35.30	0.41	37.6	270.4	0.002	0.0004
83	35.90	0.36	32.9	269.8	0.002	0.0004
84	36.50	0.31	28.1	269.2	0.002	0.0003
85	36.90	0.29	23.4	268.8	0.001	0.0003
86	37.30	0.26	18.7	268.4	0.001	0.0003
87	37.40	0.25	14.0	268.1	0.001	0.0003
88	37.50	0.25	9.4	267.9	0.001	0.0003
89	37.50	0.25	4.7	267.8	0.001	0.0003
90	37.80	0.23	0.0	267.7	0.001	0.0002

T-Mobile
CT03XC337
COMMSCOPE - LNX-6515DS-VTM 00DT 0700 240° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	1400	Height (feet)	268	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	1368.13	15338.9	15341.3	0.002	0.0004
5	3.30	654.83	3060.3	3072.0	0.02	0.005
10	20.80	11.65	1518.4	1541.9	0.002	0.0004
20	18.70	18.89	735.6	782.8	0.01	0.002
30	33.40	0.64	463.7	535.5	0.0008	0.0002
35	27.70	2.38	382.4	466.8	0.004	0.0008
40	29.30	1.64	319.1	416.5	0.003	0.0007
45	28.10	2.17	267.7	378.6	0.005	0.001
50	26.20	3.36	224.7	349.5	0.01	0.002
55	29.30	1.64	187.5	326.8	0.006	0.001
60	35.60	0.38	154.6	309.2	0.001	0.0003
65	33.80	0.58	124.8	295.4	0.002	0.0005
70	30.80	1.16	97.4	284.9	0.005	0.001
71	30.60	1.22	92.2	283.2	0.005	0.001
72	30.50	1.25	87.0	281.5	0.006	0.001
73	30.50	1.25	81.9	280.0	0.006	0.001
74	30.70	1.19	76.8	278.5	0.006	0.001
75	31.00	1.11	71.8	277.2	0.005	0.001
76	31.40	1.01	66.8	276.0	0.005	0.001
77	31.90	0.90	61.8	274.8	0.004	0.001
78	32.40	0.80	56.9	273.7	0.004	0.0008
79	33.10	0.69	52.0	272.7	0.003	0.0007
80	33.80	0.58	47.2	271.9	0.003	0.0006
81	34.60	0.49	42.4	271.1	0.002	0.0005
82	35.30	0.41	37.6	270.4	0.002	0.0004
83	35.90	0.36	32.9	269.8	0.002	0.0004
84	36.50	0.31	28.1	269.2	0.002	0.0003
85	36.90	0.29	23.4	268.8	0.001	0.0003
86	37.30	0.26	18.7	268.4	0.001	0.0003
87	37.40	0.25	14.0	268.1	0.001	0.0003
88	37.50	0.25	9.4	267.9	0.001	0.0003
89	37.50	0.25	4.7	267.8	0.001	0.0003
90	37.80	0.23	0.0	267.7	0.001	0.0002

Unknown
CT03XC337
GENERIC - MICROWAVE 3FT 18000 0° Sector

Maximum Exposure Limit - 18000 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	1641	Height (feet)	307	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	5.90	421.80	17571.1	17573.8	0.0003	0.00003
5	26.00	4.12	3505.6	3519.0	0.00007	0.00001
10	32.00	1.04	1739.4	1766.2	0.00007	0.00001
20	38.00	0.26	842.7	896.7	0.00007	0.00001
30	42.00	0.10	531.2	613.4	0.00006	0.00001
35	42.00	0.10	438.0	534.7	0.00008	0.00001
40	42.00	0.10	365.5	477.2	0.0001	0.00001
45	42.00	0.10	306.7	433.7	0.0001	0.00001
50	42.00	0.10	257.3	400.4	0.0001	0.00001
55	44.16	0.06	214.8	374.4	0.0001	0.00001
60	47.76	0.03	177.1	354.1	0.00005	0
65	51.36	0.01	143.0	338.4	0.00002	0
70	54.96	0.00	111.6	326.4	0.00001	0
71	55.68	0.00	105.6	324.4	0.00001	0
72	56.40	0.00	99.6	322.5	0.00001	0
73	57.12	0.00	93.8	320.7	0.00001	0
74	57.84	0.00	88.0	319.1	0.00001	0
75	58.56	0.00	82.2	317.5	0	0
76	59.28	0.00	76.5	316.1	0	0
77	60.00	0.00	70.8	314.8	0	0
78	60.00	0.00	65.2	313.5	0	0
79	60.00	0.00	59.6	312.4	0	0
80	60.00	0.00	54.1	311.5	0	0
81	60.00	0.00	48.6	310.5	0	0
82	60.00	0.00	43.1	309.7	0	0
83	60.00	0.00	37.7	309.0	0	0
84	60.00	0.00	32.3	308.4	0	0
85	60.00	0.00	26.8	307.9	0	0
86	60.00	0.00	21.5	307.4	0	0
87	60.00	0.00	16.1	307.1	0	0
88	60.00	0.00	10.7	306.9	0	0
89	60.00	0.00	5.3	306.8	0	0
90	66.00	0.00	0.0	306.7	0	0

Unknown
CT03XC337
GENERIC - 2Bay 1/2-spaced Omni 0° Sector

Maximum Exposure Limit - 90.1 (MHz)
(Limit (GP)): 200 µW/cm^2

ERP (Watts)	250	Height (feet)	307	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.01	249.42	17571.1	17573.8	0.0003	0.0001
5	0.11	243.75	3505.6	3519.0	0.007	0.004
10	0.45	225.39	1739.4	1766.2	0.03	0.01
20	1.83	164.04	842.7	896.7	0.07	0.04
30	4.19	95.27	531.2	613.4	0.09	0.05
35	5.78	66.06	438.0	534.7	0.08	0.04
40	7.66	42.85	365.5	477.2	0.07	0.03
45	9.90	25.58	306.7	433.7	0.05	0.02
50	12.51	14.03	257.3	400.4	0.03	0.02
55	15.60	6.89	214.8	374.4	0.02	0.009
60	19.25	2.97	177.1	354.1	0.009	0.004
65	23.61	1.09	143.0	338.4	0.003	0.002
70	29.12	0.31	111.6	326.4	0.001	0.0005
71	30.46	0.22	105.6	324.4	0.0008	0.0004
72	31.70	0.17	99.6	322.5	0.0006	0.0003
73	33.15	0.12	93.8	320.7	0.0004	0.0002
74	34.42	0.09	88.0	319.1	0.0003	0.0002
75	35.92	0.06	82.2	317.5	0.0002	0.0001
76	37.72	0.04	76.5	316.1	0.0002	0.00008
77	39.17	0.03	70.8	314.8	0.0001	0.00005
78	41.94	0.02	65.2	313.5	0.00006	0.00003
79	43.10	0.01	59.6	312.4	0.00005	0.00002
80	46.02	0.01	54.1	311.5	0.00002	0.00001
81	47.96	0.00	48.6	310.5	0.00001	0.00001
82	50.46	0.00	43.1	309.7	0.00001	0
83	53.98	0.00	37.7	309.0	0	0
84	60.00	0.00	32.3	308.4	0	0
85	60.00	0.00	26.8	307.9	0	0
86	60.00	0.00	21.5	307.4	0	0
87	60.00	0.00	16.1	307.1	0	0
88	60.00	0.00	10.7	306.9	0	0
89	60.00	0.00	5.3	306.8	0	0
90	60.00	0.00	0.0	306.7	0	0

Unknown
CT03XC337
GENERIC - OMNI 12FT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	1000	Height (feet)	320	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.90	812.83	18315.2	18317.9	0.0009	0.0002
5	9.50	112.20	3654.1	3668.0	0.003	0.0005
10	12.90	51.29	1813.1	1841.0	0.005	0.001
20	22.90	5.13	878.3	934.7	0.002	0.0004
30	17.90	16.22	553.7	639.4	0.01	0.003
35	17.70	16.98	456.6	557.3	0.02	0.003
40	21.10	7.76	381.0	497.4	0.01	0.002
45	32.70	0.54	319.7	452.1	0.001	0.0002
50	16.00	25.12	268.2	417.3	0.05	0.01
55	20.00	10.00	223.9	390.3	0.02	0.004
60	16.80	20.89	184.6	369.2	0.06	0.01
65	16.40	22.91	149.1	352.8	0.07	0.01
70	18.20	15.14	116.4	340.2	0.05	0.008
71	17.30	18.62	110.1	338.1	0.06	0.01
72	16.20	23.99	103.9	336.2	0.08	0.01
73	15.50	28.18	97.7	334.3	0.09	0.02
74	14.70	33.88	91.7	332.6	0.11	0.02
75	14.40	36.31	85.7	331.0	0.12	0.02
76	14.10	38.90	79.7	329.5	0.13	0.02
77	14.00	39.81	73.8	328.1	0.13	0.02
78	14.10	38.90	67.9	326.8	0.13	0.02
79	14.20	38.02	62.1	325.7	0.13	0.02
80	14.60	34.67	56.4	324.6	0.12	0.02
81	15.00	31.62	50.6	323.7	0.11	0.02
82	15.70	26.92	44.9	322.8	0.09	0.02
83	16.40	22.91	39.2	322.1	0.08	0.01
84	17.10	19.50	33.6	321.5	0.07	0.01
85	18.10	15.49	28.0	320.9	0.05	0.01
86	19.40	11.48	22.3	320.5	0.04	0.007
87	20.40	9.12	16.8	320.1	0.03	0.006
88	21.90	6.46	11.2	319.9	0.02	0.004
89	23.40	4.57	5.6	319.8	0.02	0.003
90	25.30	2.95	0.0	319.7	0.01	0.002

US Dept Of Homeland Security
CT03XC337
GENERIC - OMNI 450 0° Sector

Maximum Exposure Limit - 450 (MHz)
(Limit (GP)): 300 µW/cm^2

ERP (Watts)	100	Height (feet)	275	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.00	100.00	15739.6	15742.0	0.0001	0.00005
5	0.50	89.13	3140.3	3152.3	0.003	0.001
10	1.80	66.07	1558.1	1582.2	0.01	0.003
20	6.40	22.91	754.8	803.3	0.01	0.004
30	13.60	4.37	475.9	549.5	0.005	0.002
35	19.90	1.02	392.4	479.0	0.002	0.0005
40	18.60	1.38	327.4	427.4	0.003	0.001
45	11.60	6.92	274.7	388.5	0.02	0.005
50	8.60	13.80	230.5	358.7	0.04	0.01
55	7.10	19.50	192.4	335.4	0.06	0.02
60	6.70	21.38	158.6	317.3	0.08	0.03
65	7.20	19.05	128.1	303.1	0.07	0.02
70	8.10	15.49	100.0	292.4	0.07	0.02
71	8.40	14.45	94.6	290.6	0.06	0.02
72	8.90	12.88	89.3	288.9	0.06	0.02
73	9.20	12.02	84.0	287.3	0.05	0.02
74	9.50	11.22	78.8	285.8	0.05	0.02
75	10.50	8.91	73.6	284.4	0.04	0.01
76	10.80	8.32	68.5	283.1	0.04	0.01
77	11.50	7.08	63.4	282.0	0.03	0.01
78	12.30	5.89	58.4	280.9	0.03	0.009
79	13.20	4.79	53.4	279.9	0.02	0.007
80	13.80	4.17	48.5	279.0	0.02	0.006
81	14.80	3.31	43.5	278.1	0.02	0.005
82	16.00	2.51	38.6	277.4	0.01	0.004
83	17.30	1.86	33.7	276.8	0.009	0.003
84	19.00	1.26	28.9	276.2	0.006	0.002
85	20.30	0.93	24.0	275.8	0.004	0.001
86	22.50	0.56	19.2	275.4	0.003	0.0009
87	24.10	0.39	14.4	275.1	0.002	0.0006
88	24.90	0.32	9.6	274.9	0.002	0.0005
89	24.20	0.38	4.8	274.8	0.002	0.0006
90	22.40	0.58	0.0	274.7	0.003	0.001

US Dept Of Homeland Security
CT03XC337
GENERIC - OMNI 12FT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	1000	Height (feet)	250	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.90	812.83	14308.7	14310.9	0.001	0.0003
5	9.50	112.20	2854.8	2865.6	0.005	0.0009
10	12.90	51.29	1416.5	1438.3	0.009	0.002
20	22.90	5.13	686.2	730.2	0.003	0.0006
30	17.90	16.22	432.6	499.5	0.02	0.004
35	17.70	16.98	356.7	435.4	0.03	0.006
40	21.10	7.76	297.6	388.5	0.02	0.003
45	32.70	0.54	249.8	353.2	0.002	0.0003
50	16.00	25.12	209.6	326.0	0.08	0.01
55	20.00	10.00	174.9	304.9	0.04	0.007
60	16.80	20.89	144.2	288.4	0.09	0.02
65	16.40	22.91	116.5	275.6	0.11	0.02
70	18.20	15.14	90.9	265.8	0.08	0.01
71	17.30	18.62	86.0	264.1	0.1	0.02
72	16.20	23.99	81.2	262.6	0.13	0.02
73	15.50	28.18	76.3	261.2	0.15	0.03
74	14.70	33.88	71.6	259.8	0.18	0.03
75	14.40	36.31	66.9	258.6	0.2	0.03
76	14.10	38.90	62.3	257.4	0.21	0.04
77	14.00	39.81	57.7	256.3	0.22	0.04
78	14.10	38.90	53.1	255.3	0.21	0.04
79	14.20	38.02	48.6	254.4	0.21	0.04
80	14.60	34.67	44.0	253.6	0.19	0.03
81	15.00	31.62	39.6	252.9	0.18	0.03
82	15.70	26.92	35.1	252.2	0.15	0.03
83	16.40	22.91	30.7	251.6	0.13	0.02
84	17.10	19.50	26.2	251.1	0.11	0.02
85	18.10	15.49	21.9	250.7	0.09	0.02
86	19.40	11.48	17.5	250.4	0.07	0.01
87	20.40	9.12	13.1	250.1	0.05	0.01
88	21.90	6.46	8.7	249.9	0.04	0.007
89	23.40	4.57	4.4	249.8	0.03	0.005
90	25.30	2.95	0.0	249.8	0.02	0.003

US Dept Of Homeland Security
CT03XC337
GENERIC - OMNI 12FT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	1000	Height (feet)	246	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.90	812.83	14079.8	14081.9	0.001	0.0003
5	9.50	112.20	2809.1	2819.8	0.005	0.0009
10	12.90	51.29	1393.8	1415.3	0.01	0.002
20	22.90	5.13	675.2	718.6	0.004	0.0006
30	17.90	16.22	425.7	491.5	0.02	0.004
35	17.70	16.98	351.0	428.5	0.03	0.006
40	21.10	7.76	292.9	382.3	0.02	0.003
45	32.70	0.54	245.8	347.6	0.002	0.0003
50	16.00	25.12	206.2	320.8	0.09	0.02
55	20.00	10.00	172.1	300.0	0.04	0.007
60	16.80	20.89	141.9	283.8	0.09	0.02
65	16.40	22.91	114.6	271.2	0.11	0.02
70	18.20	15.14	89.4	261.5	0.08	0.01
71	17.30	18.62	84.6	259.9	0.1	0.02
72	16.20	23.99	79.9	258.4	0.13	0.02
73	15.50	28.18	75.1	257.0	0.15	0.03
74	14.70	33.88	70.5	255.7	0.19	0.03
75	14.40	36.31	65.8	254.4	0.2	0.04
76	14.10	38.90	61.3	253.3	0.22	0.04
77	14.00	39.81	56.7	252.2	0.22	0.04
78	14.10	38.90	52.2	251.2	0.22	0.04
79	14.20	38.02	47.8	250.4	0.22	0.04
80	14.60	34.67	43.3	249.5	0.2	0.04
81	15.00	31.62	38.9	248.8	0.18	0.03
82	15.70	26.92	34.5	248.2	0.16	0.03
83	16.40	22.91	30.2	247.6	0.13	0.02
84	17.10	19.50	25.8	247.1	0.11	0.02
85	18.10	15.49	21.5	246.7	0.09	0.02
86	19.40	11.48	17.2	246.4	0.07	0.01
87	20.40	9.12	12.9	246.1	0.05	0.01
88	21.90	6.46	8.6	245.9	0.04	0.007
89	23.40	4.57	4.3	245.8	0.03	0.005
90	25.30	2.95	0.0	245.8	0.02	0.003

US Dept Of Homeland Security
CT03XC337
GENERIC - OMNI 12FT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	1000	Height (feet)	207	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.90	812.83	11847.6	11849.4	0.002	0.0004
5	9.50	112.20	2363.7	2372.8	0.007	0.001
10	12.90	51.29	1172.8	1190.9	0.01	0.002
20	22.90	5.13	568.2	604.6	0.005	0.0009
30	17.90	16.22	358.2	413.6	0.03	0.006
35	17.70	16.98	295.3	360.5	0.05	0.008
40	21.10	7.76	246.5	321.7	0.03	0.005
45	32.70	0.54	206.8	292.5	0.002	0.0004
50	16.00	25.12	173.5	269.9	0.12	0.02
55	20.00	10.00	144.8	252.5	0.06	0.01
60	16.80	20.89	119.4	238.8	0.13	0.02
65	16.40	22.91	96.4	228.2	0.16	0.03
70	18.20	15.14	75.3	220.1	0.11	0.02
71	17.30	18.62	71.2	218.7	0.14	0.02
72	16.20	23.99	67.2	217.5	0.18	0.03
73	15.50	28.18	63.2	216.2	0.22	0.04
74	14.70	33.88	59.3	215.1	0.26	0.05
75	14.40	36.31	55.4	214.1	0.28	0.05
76	14.10	38.90	51.6	213.1	0.31	0.05
77	14.00	39.81	47.7	212.2	0.32	0.06
78	14.10	38.90	44.0	211.4	0.31	0.06
79	14.20	38.02	40.2	210.7	0.31	0.05
80	14.60	34.67	36.5	210.0	0.28	0.05
81	15.00	31.62	32.7	209.4	0.26	0.05
82	15.70	26.92	29.1	208.8	0.22	0.04
83	16.40	22.91	25.4	208.4	0.19	0.03
84	17.10	19.50	21.8	207.9	0.16	0.03
85	18.10	15.49	18.1	207.6	0.13	0.02
86	19.40	11.48	14.5	207.3	0.1	0.02
87	20.40	9.12	10.8	207.1	0.08	0.01
88	21.90	6.46	7.2	206.9	0.05	0.01
89	23.40	4.57	3.6	206.8	0.04	0.007
90	25.30	2.95	0.0	206.8	0.02	0.004

Verizon
CT03XC337
COMMSCOPE - SBNHH-1D65B 00DT 0700 0° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	5500	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	5374.80	5265.6	5266.4	0.07	0.01
5	2.10	3391.27	1050.6	1054.6	1.1	0.23
10	9.50	617.11	521.3	529.3	0.79	0.17
20	12.50	309.29	252.5	268.7	1.54	0.33
30	21.60	38.05	159.2	183.8	0.4	0.09
35	22.20	33.14	131.3	160.2	0.46	0.1
40	23.60	24.01	109.5	143.0	0.42	0.09
45	23.60	24.01	91.9	130.0	0.51	0.11
50	17.90	89.20	77.1	120.0	2.23	0.48
55	17.30	102.42	64.4	112.2	2.92	0.63
60	19.30	64.62	53.1	106.1	2.06	0.44
65	23.00	27.57	42.8	101.4	0.96	0.21
70	27.30	10.24	33.5	97.8	0.38	0.08
71	28.10	8.52	31.7	97.2	0.32	0.07
72	28.90	7.08	29.9	96.7	0.27	0.06
73	29.70	5.90	28.1	96.1	0.23	0.05
74	30.60	4.79	26.3	95.6	0.19	0.04
75	31.60	3.81	24.6	95.1	0.15	0.03
76	32.80	2.89	22.9	94.7	0.12	0.02
77	34.10	2.14	21.2	94.3	0.09	0.02
78	35.50	1.55	19.5	94.0	0.06	0.01
79	37.20	1.05	17.9	93.6	0.04	0.01
80	38.90	0.71	16.2	93.3	0.03	0.006
81	40.50	0.49	14.6	93.0	0.02	0.004
82	41.50	0.39	12.9	92.8	0.02	0.003
83	41.60	0.38	11.3	92.6	0.02	0.003
84	40.70	0.47	9.6	92.4	0.02	0.004
85	39.20	0.66	8.0	92.3	0.03	0.006
86	37.40	1.00	6.4	92.1	0.04	0.01
87	35.70	1.48	4.8	92.0	0.06	0.01
88	34.10	2.14	3.2	92.0	0.09	0.02
89	32.90	2.82	1.6	91.9	0.12	0.03
90	31.90	3.55	0.0	91.9	0.15	0.03

Verizon
CT03XC337
COMMSCOPE - SBNHH-1D65B 00DT 0700 120° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	5500	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	5374.80	5265.6	5266.4	0.07	0.01
5	2.10	3391.27	1050.6	1054.6	1.1	0.23
10	9.50	617.11	521.3	529.3	0.79	0.17
20	12.50	309.29	252.5	268.7	1.54	0.33
30	21.60	38.05	159.2	183.8	0.4	0.09
35	22.20	33.14	131.3	160.2	0.46	0.1
40	23.60	24.01	109.5	143.0	0.42	0.09
45	23.60	24.01	91.9	130.0	0.51	0.11
50	17.90	89.20	77.1	120.0	2.23	0.48
55	17.30	102.42	64.4	112.2	2.92	0.63
60	19.30	64.62	53.1	106.1	2.06	0.44
65	23.00	27.57	42.8	101.4	0.96	0.21
70	27.30	10.24	33.5	97.8	0.38	0.08
71	28.10	8.52	31.7	97.2	0.32	0.07
72	28.90	7.08	29.9	96.7	0.27	0.06
73	29.70	5.90	28.1	96.1	0.23	0.05
74	30.60	4.79	26.3	95.6	0.19	0.04
75	31.60	3.81	24.6	95.1	0.15	0.03
76	32.80	2.89	22.9	94.7	0.12	0.02
77	34.10	2.14	21.2	94.3	0.09	0.02
78	35.50	1.55	19.5	94.0	0.06	0.01
79	37.20	1.05	17.9	93.6	0.04	0.01
80	38.90	0.71	16.2	93.3	0.03	0.006
81	40.50	0.49	14.6	93.0	0.02	0.004
82	41.50	0.39	12.9	92.8	0.02	0.003
83	41.60	0.38	11.3	92.6	0.02	0.003
84	40.70	0.47	9.6	92.4	0.02	0.004
85	39.20	0.66	8.0	92.3	0.03	0.006
86	37.40	1.00	6.4	92.1	0.04	0.01
87	35.70	1.48	4.8	92.0	0.06	0.01
88	34.10	2.14	3.2	92.0	0.09	0.02
89	32.90	2.82	1.6	91.9	0.12	0.03
90	31.90	3.55	0.0	91.9	0.15	0.03

Verizon
CT03XC337
COMMSCOPE - SBNHH-1D65B 00DT 0700 240° Sector

Maximum Exposure Limit - 700 (MHz)
(Limit (GP)): 466 µW/cm^2

ERP (Watts)	5500	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.10	5374.80	5265.6	5266.4	0.07	0.01
5	2.10	3391.27	1050.6	1054.6	1.1	0.23
10	9.50	617.11	521.3	529.3	0.79	0.17
20	12.50	309.29	252.5	268.7	1.54	0.33
30	21.60	38.05	159.2	183.8	0.4	0.09
35	22.20	33.14	131.3	160.2	0.46	0.1
40	23.60	24.01	109.5	143.0	0.42	0.09
45	23.60	24.01	91.9	130.0	0.51	0.11
50	17.90	89.20	77.1	120.0	2.23	0.48
55	17.30	102.42	64.4	112.2	2.92	0.63
60	19.30	64.62	53.1	106.1	2.06	0.44
65	23.00	27.57	42.8	101.4	0.96	0.21
70	27.30	10.24	33.5	97.8	0.38	0.08
71	28.10	8.52	31.7	97.2	0.32	0.07
72	28.90	7.08	29.9	96.7	0.27	0.06
73	29.70	5.90	28.1	96.1	0.23	0.05
74	30.60	4.79	26.3	95.6	0.19	0.04
75	31.60	3.81	24.6	95.1	0.15	0.03
76	32.80	2.89	22.9	94.7	0.12	0.02
77	34.10	2.14	21.2	94.3	0.09	0.02
78	35.50	1.55	19.5	94.0	0.06	0.01
79	37.20	1.05	17.9	93.6	0.04	0.01
80	38.90	0.71	16.2	93.3	0.03	0.006
81	40.50	0.49	14.6	93.0	0.02	0.004
82	41.50	0.39	12.9	92.8	0.02	0.003
83	41.60	0.38	11.3	92.6	0.02	0.003
84	40.70	0.47	9.6	92.4	0.02	0.004
85	39.20	0.66	8.0	92.3	0.03	0.006
86	37.40	1.00	6.4	92.1	0.04	0.01
87	35.70	1.48	4.8	92.0	0.06	0.01
88	34.10	2.14	3.2	92.0	0.09	0.02
89	32.90	2.82	1.6	91.9	0.12	0.03
90	31.90	3.55	0.0	91.9	0.15	0.03

Verizon
CT03XC337
COMMSCOPE - SBNHH-1D65B 00DT 2100 0° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	11600	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.60	10103.18	5265.6	5266.4	0.08	0.008
5	18.50	163.85	1050.6	1054.6	0.03	0.003
10	22.90	59.50	521.3	529.3	0.05	0.005
20	25.10	35.84	252.5	268.7	0.11	0.01
30	29.00	14.60	159.2	183.8	0.09	0.01
35	13.70	494.83	131.3	160.2	4.23	0.42
40	19.20	139.47	109.5	143.0	1.5	0.15
45	31.50	8.21	91.9	130.0	0.11	0.01
50	20.80	96.49	77.1	120.0	1.47	0.15
55	19.80	121.46	64.4	112.2	2.12	0.21
60	25.00	36.68	53.1	106.1	0.72	0.07
65	32.30	6.83	42.8	101.4	0.15	0.01
70	43.80	0.49	33.5	97.8	0.01	0.001
71	39.50	1.30	31.7	97.2	0.03	0.003
72	36.00	2.91	29.9	96.7	0.07	0.007
73	33.80	4.84	28.1	96.1	0.12	0.01
74	32.40	6.67	26.3	95.6	0.16	0.02
75	31.60	8.03	24.6	95.1	0.19	0.02
76	31.40	8.40	22.9	94.7	0.21	0.02
77	31.70	7.84	21.2	94.3	0.19	0.02
78	32.30	6.83	19.5	94.0	0.17	0.02
79	32.60	6.38	17.9	93.6	0.16	0.02
80	32.30	6.83	16.2	93.3	0.17	0.02
81	31.50	8.21	14.6	93.0	0.21	0.02
82	30.70	9.87	12.9	92.8	0.25	0.03
83	30.60	10.10	11.3	92.6	0.26	0.03
84	31.30	8.60	9.6	92.4	0.22	0.02
85	32.60	6.38	8.0	92.3	0.16	0.02
86	34.10	4.51	6.4	92.1	0.12	0.01
87	35.10	3.58	4.8	92.0	0.09	0.01
88	36.00	2.91	3.2	92.0	0.08	0.008
89	37.10	2.26	1.6	91.9	0.06	0.006
90	38.20	1.75	0.0	91.9	0.05	0.005

Verizon
CT03XC337
COMMSCOPE - SBNHH-1D65B 00DT 2100 120° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	11600	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.60	10103.18	5265.6	5266.4	0.08	0.008
5	18.50	163.85	1050.6	1054.6	0.03	0.003
10	22.90	59.50	521.3	529.3	0.05	0.005
20	25.10	35.84	252.5	268.7	0.11	0.01
30	29.00	14.60	159.2	183.8	0.09	0.01
35	13.70	494.83	131.3	160.2	4.23	0.42
40	19.20	139.47	109.5	143.0	1.5	0.15
45	31.50	8.21	91.9	130.0	0.11	0.01
50	20.80	96.49	77.1	120.0	1.47	0.15
55	19.80	121.46	64.4	112.2	2.12	0.21
60	25.00	36.68	53.1	106.1	0.72	0.07
65	32.30	6.83	42.8	101.4	0.15	0.01
70	43.80	0.49	33.5	97.8	0.01	0.001
71	39.50	1.30	31.7	97.2	0.03	0.003
72	36.00	2.91	29.9	96.7	0.07	0.007
73	33.80	4.84	28.1	96.1	0.12	0.01
74	32.40	6.67	26.3	95.6	0.16	0.02
75	31.60	8.03	24.6	95.1	0.19	0.02
76	31.40	8.40	22.9	94.7	0.21	0.02
77	31.70	7.84	21.2	94.3	0.19	0.02
78	32.30	6.83	19.5	94.0	0.17	0.02
79	32.60	6.38	17.9	93.6	0.16	0.02
80	32.30	6.83	16.2	93.3	0.17	0.02
81	31.50	8.21	14.6	93.0	0.21	0.02
82	30.70	9.87	12.9	92.8	0.25	0.03
83	30.60	10.10	11.3	92.6	0.26	0.03
84	31.30	8.60	9.6	92.4	0.22	0.02
85	32.60	6.38	8.0	92.3	0.16	0.02
86	34.10	4.51	6.4	92.1	0.12	0.01
87	35.10	3.58	4.8	92.0	0.09	0.01
88	36.00	2.91	3.2	92.0	0.08	0.008
89	37.10	2.26	1.6	91.9	0.06	0.006
90	38.20	1.75	0.0	91.9	0.05	0.005

Verizon
CT03XC337
COMMSCOPE - SBNHH-1D65B 00DT 2100 240° Sector

Maximum Exposure Limit - 2100 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	11600	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.60	10103.18	5265.6	5266.4	0.08	0.008
5	18.50	163.85	1050.6	1054.6	0.03	0.003
10	22.90	59.50	521.3	529.3	0.05	0.005
20	25.10	35.84	252.5	268.7	0.11	0.01
30	29.00	14.60	159.2	183.8	0.09	0.01
35	13.70	494.83	131.3	160.2	4.23	0.42
40	19.20	139.47	109.5	143.0	1.5	0.15
45	31.50	8.21	91.9	130.0	0.11	0.01
50	20.80	96.49	77.1	120.0	1.47	0.15
55	19.80	121.46	64.4	112.2	2.12	0.21
60	25.00	36.68	53.1	106.1	0.72	0.07
65	32.30	6.83	42.8	101.4	0.15	0.01
70	43.80	0.49	33.5	97.8	0.01	0.001
71	39.50	1.30	31.7	97.2	0.03	0.003
72	36.00	2.91	29.9	96.7	0.07	0.007
73	33.80	4.84	28.1	96.1	0.12	0.01
74	32.40	6.67	26.3	95.6	0.16	0.02
75	31.60	8.03	24.6	95.1	0.19	0.02
76	31.40	8.40	22.9	94.7	0.21	0.02
77	31.70	7.84	21.2	94.3	0.19	0.02
78	32.30	6.83	19.5	94.0	0.17	0.02
79	32.60	6.38	17.9	93.6	0.16	0.02
80	32.30	6.83	16.2	93.3	0.17	0.02
81	31.50	8.21	14.6	93.0	0.21	0.02
82	30.70	9.87	12.9	92.8	0.25	0.03
83	30.60	10.10	11.3	92.6	0.26	0.03
84	31.30	8.60	9.6	92.4	0.22	0.02
85	32.60	6.38	8.0	92.3	0.16	0.02
86	34.10	4.51	6.4	92.1	0.12	0.01
87	35.10	3.58	4.8	92.0	0.09	0.01
88	36.00	2.91	3.2	92.0	0.08	0.008
89	37.10	2.26	1.6	91.9	0.06	0.006
90	38.20	1.75	0.0	91.9	0.05	0.005

Verizon
CT03XC337
GENERIC - PANEL 6FT 00DT 850 0° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	7400	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.14	7165.26	5265.6	5266.4	0.09	0.02
5	2.89	3803.93	1050.6	1054.6	1.23	0.22
10	16.16	179.15	521.3	529.3	0.23	0.04
20	16.04	184.18	252.5	268.7	0.92	0.16
30	20.87	60.57	159.2	183.8	0.64	0.11
35	22.21	44.49	131.3	160.2	0.62	0.11
40	22.36	42.98	109.5	143.0	0.76	0.13
45	22.30	43.57	91.9	130.0	0.93	0.16
50	30.30	6.90	77.1	120.0	0.17	0.03
55	28.02	11.68	64.4	112.2	0.33	0.06
60	21.16	56.65	53.1	106.1	1.81	0.32
65	16.83	153.54	42.8	101.4	5.37	0.95
70	15.05	231.33	33.5	97.8	8.69	1.53
71	14.99	234.55	31.7	97.2	8.92	1.57
72	15.02	232.93	29.9	96.7	8.96	1.58
73	15.15	226.06	28.1	96.1	8.8	1.55
74	15.35	215.89	26.3	95.6	8.49	1.5
75	15.61	203.34	24.6	95.1	8.08	1.43
76	15.90	190.21	22.9	94.7	7.62	1.35
77	16.20	177.51	21.2	94.3	7.17	1.27
78	16.46	167.20	19.5	94.0	6.81	1.2
79	16.67	159.31	17.9	93.6	6.53	1.15
80	16.81	154.25	16.2	93.3	6.37	1.12
81	16.88	151.79	14.6	93.0	6.3	1.11
82	16.90	151.09	12.9	92.8	6.31	1.11
83	16.90	151.09	11.3	92.6	6.33	1.12
84	16.91	150.74	9.6	92.4	6.34	1.12
85	16.96	149.01	8.0	92.3	6.29	1.11
86	17.06	145.62	6.4	92.1	6.17	1.09
87	17.23	140.03	4.8	92.0	5.94	1.05
88	17.45	133.12	3.2	92.0	5.66	1
89	17.70	125.67	1.6	91.9	5.35	0.94
90	17.96	118.37	0.0	91.9	5.04	0.89

Verizon
CT03XC337
GENERIC - PANEL 6FT 00DT 850 120° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	7400	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.14	7165.26	5265.6	5266.4	0.09	0.02
5	2.89	3803.93	1050.6	1054.6	1.23	0.22
10	16.16	179.15	521.3	529.3	0.23	0.04
20	16.04	184.18	252.5	268.7	0.92	0.16
30	20.87	60.57	159.2	183.8	0.64	0.11
35	22.21	44.49	131.3	160.2	0.62	0.11
40	22.36	42.98	109.5	143.0	0.76	0.13
45	22.30	43.57	91.9	130.0	0.93	0.16
50	30.30	6.90	77.1	120.0	0.17	0.03
55	28.02	11.68	64.4	112.2	0.33	0.06
60	21.16	56.65	53.1	106.1	1.81	0.32
65	16.83	153.54	42.8	101.4	5.37	0.95
70	15.05	231.33	33.5	97.8	8.69	1.53
71	14.99	234.55	31.7	97.2	8.92	1.57
72	15.02	232.93	29.9	96.7	8.96	1.58
73	15.15	226.06	28.1	96.1	8.8	1.55
74	15.35	215.89	26.3	95.6	8.49	1.5
75	15.61	203.34	24.6	95.1	8.08	1.43
76	15.90	190.21	22.9	94.7	7.62	1.35
77	16.20	177.51	21.2	94.3	7.17	1.27
78	16.46	167.20	19.5	94.0	6.81	1.2
79	16.67	159.31	17.9	93.6	6.53	1.15
80	16.81	154.25	16.2	93.3	6.37	1.12
81	16.88	151.79	14.6	93.0	6.3	1.11
82	16.90	151.09	12.9	92.8	6.31	1.11
83	16.90	151.09	11.3	92.6	6.33	1.12
84	16.91	150.74	9.6	92.4	6.34	1.12
85	16.96	149.01	8.0	92.3	6.29	1.11
86	17.06	145.62	6.4	92.1	6.17	1.09
87	17.23	140.03	4.8	92.0	5.94	1.05
88	17.45	133.12	3.2	92.0	5.66	1
89	17.70	125.67	1.6	91.9	5.35	0.94
90	17.96	118.37	0.0	91.9	5.04	0.89

Verizon
CT03XC337
GENERIC - PANEL 6FT 00DT 850 240° Sector

Maximum Exposure Limit - 850 (MHz)
(Limit (GP)): 566 µW/cm^2

ERP (Watts)	7400	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	ERP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.14	7165.26	5265.6	5266.4	0.09	0.02
5	2.89	3803.93	1050.6	1054.6	1.23	0.22
10	16.16	179.15	521.3	529.3	0.23	0.04
20	16.04	184.18	252.5	268.7	0.92	0.16
30	20.87	60.57	159.2	183.8	0.64	0.11
35	22.21	44.49	131.3	160.2	0.62	0.11
40	22.36	42.98	109.5	143.0	0.76	0.13
45	22.30	43.57	91.9	130.0	0.93	0.16
50	30.30	6.90	77.1	120.0	0.17	0.03
55	28.02	11.68	64.4	112.2	0.33	0.06
60	21.16	56.65	53.1	106.1	1.81	0.32
65	16.83	153.54	42.8	101.4	5.37	0.95
70	15.05	231.33	33.5	97.8	8.69	1.53
71	14.99	234.55	31.7	97.2	8.92	1.57
72	15.02	232.93	29.9	96.7	8.96	1.58
73	15.15	226.06	28.1	96.1	8.8	1.55
74	15.35	215.89	26.3	95.6	8.49	1.5
75	15.61	203.34	24.6	95.1	8.08	1.43
76	15.90	190.21	22.9	94.7	7.62	1.35
77	16.20	177.51	21.2	94.3	7.17	1.27
78	16.46	167.20	19.5	94.0	6.81	1.2
79	16.67	159.31	17.9	93.6	6.53	1.15
80	16.81	154.25	16.2	93.3	6.37	1.12
81	16.88	151.79	14.6	93.0	6.3	1.11
82	16.90	151.09	12.9	92.8	6.31	1.11
83	16.90	151.09	11.3	92.6	6.33	1.12
84	16.91	150.74	9.6	92.4	6.34	1.12
85	16.96	149.01	8.0	92.3	6.29	1.11
86	17.06	145.62	6.4	92.1	6.17	1.09
87	17.23	140.03	4.8	92.0	5.94	1.05
88	17.45	133.12	3.2	92.0	5.66	1
89	17.70	125.67	1.6	91.9	5.35	0.94
90	17.96	118.37	0.0	91.9	5.04	0.89

Verizon
CT03XC337
GENERIC - PANEL 6FT 00DT 1900 0° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	10200	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.57	8945.41	5265.6	5266.4	0.07	0.007
5	17.52	180.55	1050.6	1054.6	0.04	0.004
10	19.05	126.94	521.3	529.3	0.1	0.01
20	18.40	147.43	252.5	268.7	0.45	0.04
30	25.05	31.89	159.2	183.8	0.21	0.02
35	26.10	25.04	131.3	160.2	0.21	0.02
40	12.01	642.10	109.5	143.0	6.9	0.69
45	16.75	215.58	91.9	130.0	2.8	0.28
50	40.76	0.86	77.1	120.0	0.01	0.001
55	31.82	6.71	64.4	112.2	0.12	0.01
60	28.18	15.51	53.1	106.1	0.3	0.03
65	28.62	14.01	42.8	101.4	0.3	0.03
70	28.78	13.50	33.5	97.8	0.31	0.03
71	28.52	14.34	31.7	97.2	0.33	0.03
72	28.41	14.71	29.9	96.7	0.35	0.03
73	28.53	14.31	28.1	96.1	0.34	0.03
74	28.90	13.14	26.3	95.6	0.32	0.03
75	29.50	11.44	24.6	95.1	0.28	0.03
76	30.30	9.52	22.9	94.7	0.23	0.02
77	31.21	7.72	21.2	94.3	0.19	0.02
78	32.19	6.16	19.5	94.0	0.15	0.02
79	33.25	4.82	17.9	93.6	0.12	0.01
80	34.44	3.67	16.2	93.3	0.09	0.01
81	35.78	2.69	14.6	93.0	0.07	0.007
82	37.19	1.95	12.9	92.8	0.05	0.005
83	38.44	1.46	11.3	92.6	0.04	0.004
84	39.19	1.23	9.6	92.4	0.03	0.003
85	39.22	1.22	8.0	92.3	0.03	0.003
86	38.73	1.37	6.4	92.1	0.04	0.004
87	38.18	1.55	4.8	92.0	0.04	0.004
88	38.08	1.59	3.2	92.0	0.04	0.004
89	38.80	1.35	1.6	91.9	0.03	0.003
90	40.74	0.86	0.0	91.9	0.02	0.002

Verizon
CT03XC337
GENERIC - PANEL 6FT 00DT 1900 120° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	10200	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.57	8945.41	5265.6	5266.4	0.07	0.007
5	17.52	180.55	1050.6	1054.6	0.04	0.004
10	19.05	126.94	521.3	529.3	0.1	0.01
20	18.40	147.43	252.5	268.7	0.45	0.04
30	25.05	31.89	159.2	183.8	0.21	0.02
35	26.10	25.04	131.3	160.2	0.21	0.02
40	12.01	642.10	109.5	143.0	6.9	0.69
45	16.75	215.58	91.9	130.0	2.8	0.28
50	40.76	0.86	77.1	120.0	0.01	0.001
55	31.82	6.71	64.4	112.2	0.12	0.01
60	28.18	15.51	53.1	106.1	0.3	0.03
65	28.62	14.01	42.8	101.4	0.3	0.03
70	28.78	13.50	33.5	97.8	0.31	0.03
71	28.52	14.34	31.7	97.2	0.33	0.03
72	28.41	14.71	29.9	96.7	0.35	0.03
73	28.53	14.31	28.1	96.1	0.34	0.03
74	28.90	13.14	26.3	95.6	0.32	0.03
75	29.50	11.44	24.6	95.1	0.28	0.03
76	30.30	9.52	22.9	94.7	0.23	0.02
77	31.21	7.72	21.2	94.3	0.19	0.02
78	32.19	6.16	19.5	94.0	0.15	0.02
79	33.25	4.82	17.9	93.6	0.12	0.01
80	34.44	3.67	16.2	93.3	0.09	0.01
81	35.78	2.69	14.6	93.0	0.07	0.007
82	37.19	1.95	12.9	92.8	0.05	0.005
83	38.44	1.46	11.3	92.6	0.04	0.004
84	39.19	1.23	9.6	92.4	0.03	0.003
85	39.22	1.22	8.0	92.3	0.03	0.003
86	38.73	1.37	6.4	92.1	0.04	0.004
87	38.18	1.55	4.8	92.0	0.04	0.004
88	38.08	1.59	3.2	92.0	0.04	0.004
89	38.80	1.35	1.6	91.9	0.03	0.003
90	40.74	0.86	0.0	91.9	0.02	0.002

Verizon
CT03XC337
GENERIC - PANEL 6FT 00DT 1900 240° Sector

Maximum Exposure Limit - 1900 (MHz)
(Limit (GP)): 1000 µW/cm^2

EiRP (Watts)	10200	Height (feet)	92	Downtilt (Degrees)	0

Depression Angle	Relative dB	EiRP (Watts) in direction	Dist From Structure(ft)	Dist From Antenna(ft)	Power Density (µW/cm^2)	Percent of Limit (GP)
1	0.57	8945.41	5265.6	5266.4	0.07	0.007
5	17.52	180.55	1050.6	1054.6	0.04	0.004
10	19.05	126.94	521.3	529.3	0.1	0.01
20	18.40	147.43	252.5	268.7	0.45	0.04
30	25.05	31.89	159.2	183.8	0.21	0.02
35	26.10	25.04	131.3	160.2	0.21	0.02
40	12.01	642.10	109.5	143.0	6.9	0.69
45	16.75	215.58	91.9	130.0	2.8	0.28
50	40.76	0.86	77.1	120.0	0.01	0.001
55	31.82	6.71	64.4	112.2	0.12	0.01
60	28.18	15.51	53.1	106.1	0.3	0.03
65	28.62	14.01	42.8	101.4	0.3	0.03
70	28.78	13.50	33.5	97.8	0.31	0.03
71	28.52	14.34	31.7	97.2	0.33	0.03
72	28.41	14.71	29.9	96.7	0.35	0.03
73	28.53	14.31	28.1	96.1	0.34	0.03
74	28.90	13.14	26.3	95.6	0.32	0.03
75	29.50	11.44	24.6	95.1	0.28	0.03
76	30.30	9.52	22.9	94.7	0.23	0.02
77	31.21	7.72	21.2	94.3	0.19	0.02
78	32.19	6.16	19.5	94.0	0.15	0.02
79	33.25	4.82	17.9	93.6	0.12	0.01
80	34.44	3.67	16.2	93.3	0.09	0.01
81	35.78	2.69	14.6	93.0	0.07	0.007
82	37.19	1.95	12.9	92.8	0.05	0.005
83	38.44	1.46	11.3	92.6	0.04	0.004
84	39.19	1.23	9.6	92.4	0.03	0.003
85	39.22	1.22	8.0	92.3	0.03	0.003
86	38.73	1.37	6.4	92.1	0.04	0.004
87	38.18	1.55	4.8	92.0	0.04	0.004
88	38.08	1.59	3.2	92.0	0.04	0.004
89	38.80	1.35	1.6	91.9	0.03	0.003
90	40.74	0.86	0.0	91.9	0.02	0.002