



Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

July 1, 2020

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

RE: Notice of Exempt Modification for AT&T - 842423
10 Northridge Drive, Windham, CT 06256
Latitude: 41° 44' 23.53" / Longitude: -72° 10' 22.47"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 81-foot mount on the existing 86.7-foot Monopole Tower, located at 10 North Ridge Drive, Windham, CT. The property is owned by Walmart Real Estate Business Trust and the Tower is owned by Crown Castle. AT&T now intends to remove and replace three (3) existing antennas with three (3) new antennas. AT&T also proposes to install three (3) new antennas as well for a final configuration of twelve (12) antennas. The new antennas will be installed at the 81-ft level of the tower. AT&T is also proposes tower mount modifications as shown on the enclosed Mount Analysis.

The facility was approved by the Connecticut Siting Council in Docket No. 275 on April 26, 2004. The approval was given with conditions which this exempt modification follows.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Victor Funderburk, Mayor for the Town of Windham, Matthew Vertefeull, Director of Code Enforcement, Walmart Real Estate Business Trust as the property owner and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

The Foundation for a Wireless World.

CrownCastle.com

Melanie A. Bachman

Page 2

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

Anne Marie Zsamba
Site Acquisition Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
(201) 236-9224
AnneMarie.Zsamba@crowncastle.com

Attachments

cc:

Victor Funderburk, Mayor (*via email only to mayorfunderburk@windhamct.com*)
Windham Town Hall
979 Main Street
Willimantic, CT 06226

Matthew Vertefeull, Director of Code Enforcement (*via email only to codedirector@windhamct.com*)
Windham Town Hall
979 Main Street
Willimantic, CT 06226

Walmart Real Estate Business Trust
Tax#0555 Store 01-2022
PO BOX 8050 MS 0555
Bentonville, AR 72716

Crown Castle, Tower Owner

ORIGIN ID: ONHA
RICHARD ZAJAC
CROWN CASTLE
629 KAYLEIGH DR
WEBSTER, NY 14580
UNITED STATES US

(585) 445-5896

SHIP DATE: 01 JUL 20
ACTWGT: 1.00 LB
CAD: 104924194INNET4220

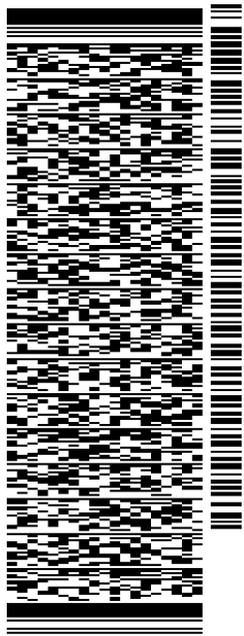
BILL SENDER

TO **WALMART REAL ESTATE BUSINESS TRUST**

PO BOX 8050 MS 0555

BENTONVILLE AR 72716

(201) 236-9224 REF: 1734.7880
INV: DEPT:
PO:



J201120042401uv

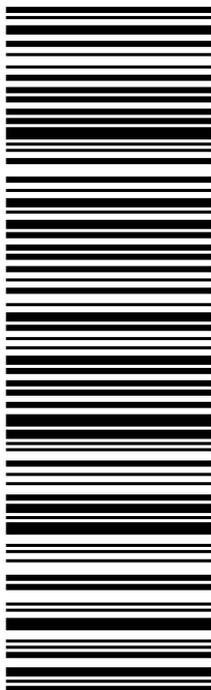
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THU - 02 JUL 10:30A
PRIORITY OVERNIGHT

XH ROGA

72716
AR-US TUL



After printing this label:

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From: Zsamba, Anne Marie
To: codedirector@windhamct.com
Subject: Notice of Exempt Modification - 10 North Ridge Road, Windham - AT&T - 842423
Date: Wednesday, July 1, 2020 12:53:00 PM
Attachments: [EM-AT&T-10 NORTH RIDGE DR WINDHAM-842423_notice.pdf](#)

Dear Mr. Vertefeull:

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today July 1, 2020.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable. If you could kindly confirm receipt. Thank you.

Best,
Anne Marie Zsamba

ANNE MARIE ZSAMBA
Site Acquisition Specialist
T: (201) 236-9224
M: (518) 350-3639
F: (724) 416-6112

CROWN CASTLE
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
CrownCastle.com

From: [Zsamba, Anne Marie](#)
To: mayorfunderburk@windhamct.com
Subject: Notice of Exempt Modification - 10 North Ridge Road, Windham - AT&T - 842423
Date: Wednesday, July 1, 2020 12:54:00 PM
Attachments: [EM-AT&T-10 NORTH RIDGE DR WINDHAM-842423_notice.pdf](#)

Dear Mayor Funderburk:

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today July 1, 2020.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable. If you could kindly confirm receipt. Thank you.

Best,
Anne Marie Zsamba

ANNE MARIE ZSAMBA
Site Acquisition Specialist
T: (201) 236-9224
M: (518) 350-3639
F: (724) 416-6112

CROWN CASTLE
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
CrownCastle.com

Exhibit A

Original Facility Approval



CONNECTICUT SITING COUNCIL

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Melanie Bachman,
Executive Director

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Decisions

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DOCKET NO. 275 – AT&T Wireless PCS, LLC d/b/a AT&T Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 10 North Ridge Road, Windham, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		April 26, 2004

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to AT&T Wireless PCS d/b/a AT&T Wireless for the construction, maintenance and operation of a wireless telecommunications facility at 10 North Ridge Road, Windham, Connecticut. The Council approves the Alternative 1 tower configuration.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS LLC, Omnipoint Communications, Inc. and other entities, both public and private, but such tower shall not exceed 107 feet above ground level. Antennas and lighting mounted on the tower shall not exceed a total height of 109 feet above ground level. Tower lighting shall consist of a single steady red beacon.
2. Construction activities shall be limited to the period of mid-August to mid-May to avoid the nesting season of rare birds that may utilize the site.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. a detailed site development plan that depicts the location of the access road, compound, tower, utility line, erosion and sedimentation control features, and landscaping;
 - b. specifications for the tower, tower foundation, antennas, equipment building, and security fence; and
 - c. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
4. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided tower space is available and such antennas are compatible with the structural integrity of the tower.
5. Prior to the commencement of operation, the Certificate Holder shall provide to the Council a worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall submit a revised electromagnetic radio frequency power density report to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

6. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

7. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant and the Willimantic Chronicle.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

-

<u>Applicant</u> AT&T Wireless PCS, LLC d/b/a AT&T Wireless	<u>Its Representative</u> Christopher B. Fisher, Esq. Cuddy & Feder LLP 90 Maple Avenue White Plains, New York 10601
<u>Intervenor</u> Omnipoint Communications, Inc.	<u>Its Representative</u> Stephen J. Humes LeBoeuf, Lamb, Greene & MacRae, LLP Goodwin Square Asylum Street Hartford, CT 06103

Content Last Modified on 5/3/2004 7:50:48 AM

Ten Franklin Square New Britain, CT 06051 / 860- 827-2935

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Exhibit B

Property Card

Property Card: 10 NORTHRIDGE DR
Town of Windham, CT



Parcel Information	
Parcel ID: 5-3-225-21 Vision ID: 5636 Owner: WALMART REAL ESTATE BUSINESS Co-Owner: TRUST Mailing Address: TAX #0555 STORE 01-2022 PO BOX 8050 MS 0555 BENTONVILLE, AR 72716	Map: 5-3 Lot: 225-21 Use Description: Commercial Zone: C4 Land Area in Acres: 24.4
Sale History	Assessed Value
Book/Page: 910/ 48 Sale Date: 3/2/2006 Sale Price: \$0	Land: \$1,214,980 Buildings: \$6,727,390 Total: \$7,942,370

Building Details: Building # 1		
	Model: Commercial Living Area: 167328 Appr. Year Built: 1993 Style: Retail Stories: 1.0 Occupancy: 1	Int Wall Desc 1: Int Wall Desc 2: Ext Wall Desc 1: Concrete/mas Ext Wall Desc 2: 01 Roof Cover: Roof Structure: 01
	No. Total Rooms: No. Bedrooms: No. Baths: No. Half Baths:	Heat Type: Heat Fuel: A/C Type: Central



www.cai-tech.com

Data shown on this report is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this report.



Exhibit C

Construction Drawings



AT&T SITE NUMBER: CTL01042
AT&T SITE NAME: WINDHAM NORTH RIDGE ROAD
AT&T FA CODE: 10065747
AT&T PACE NUMBER: MRCTB045210, MRCTB045152,
 MRCTB045232, MRCTB045325,
 MRCTB045330, MRCTB045237
SITE TYPE: MONOPOLE

BUSINESS UNIT #: 842423
SITE ADDRESS: 10 NORTH RIDGE DRIVE
 WINDHAM, CT 06256
COUNTY: WINDHAM
TOWER HEIGHT: 86'-8"

PROJECT: AT&T LTE 4C/5C/6C/4TX4RX/5G NR



SITE INFORMATION

CROWN CASTLE USA INC. WINDHAM NORTH RIDGE ROAD
 SITE NAME:
 SITE ADDRESS: 10 NORTH RIDGE DRIVE
 WINDHAM, CT 06256
 COUNTY: WINDHAM
 AREA OF CONSTRUCTION: EXISTING
 LATITUDE: 41.7398611
 LONGITUDE: -72.1729069
 LAT/LONG TYPE: NAD83
 OCCUPANCY CLASSIFICATION: U
 TYPE OF CONSTRUCTION: IIB
 A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
 TOWER OWNER: CROWN CASTLE
 2000 CORPORATE DRIVE
 CANONSBURG, PA 15317
 CARRIER/APPLICANT: AT&T MOBILITY
 ONE AT&T WAY
 BEDMINSTER, NJ 07921
 CROWN CASTLE USA INC.
 APPLICATION ID: 509319

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN
C-2	EQUIPMENT PLAN
C-3	TOWER ELEVATIONS
C-4	ANTENNA ORIENTATION
C-5	ANTENNA SCHEDULE
C-6	ANTENNA AND RRH SPECS.
C-7	ANTENNA AND RRH DETAIL
C-8	PLUMBING DIAGRAM
C-9	COLOR CODE STANDARD
G-1	GROUNDING DETAILS
G-2	GROUNDING DETAILS
S1	MOUNT MODIFICATION

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.

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO PROPOSE AN ANTENNA MODIFICATION ON AN EXISTING WIRELESS SITE.

- TOWER SCOPE OF WORK**
- REMOVE (3) CCI OPA-65R-LCUU-H8 ANTENNAS
 - REMOVE (3) ERICSSON RRUS-11 B12 RRHS
 - REMOVE (3) ERICSSON RRUS-12 B2 + RRUS-A2 B25 RRHS
 - REMOVE (6) COAX CABLES
 - MODIFY EXISTING MOUNT PER MOUNT MODIFICATION REPORT BY B+T GROUP, DATED APRIL 10, 2020
 - RELOCATE EXISTING MASTS TO MEET AT&T MINIMUM SPACING REQUIREMENTS
 - INSTALL (3) CCI OPA65R-BU8DA ANTENNAS
 - INSTALL (3) CCI DMP65R-BU8DA ANTENNAS
 - INSTALL (3) ERICSSON RRUS-E2 B29 RRHS
 - INSTALL (3) ERICSSON 4478 B14 RRHS
 - INSTALL (3) ERICSSON 4449 B5/B12 RRHS
 - INSTALL (3) ERICSSON 8843 B2/B66A RRHS
 - INSTALL (1) RAYCAP DC6-48-60-0-8F SURGE SUPPRESSOR
 - INSTALL (2) DC TRUNKS

- GROUND SCOPE OF WORK**
- REMOVE (6) POWERWAVE LGP 13519 DIPLEXERS
 - INSTALL (1) 6630 + (1) IDLE

LOCATION MAP



AT&T SITE NUMBER:
 CTL01042

BU #: 842423
 WINDHAM NORTH RIDGE ROAD

10 NORTH RIDGE DRIVE
 WINDHAM, CT 06256

EXISTING 86'-8"
 MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	5/6/20	BLB	CONSTRUCTION	RMC
1	6/3/20	GEH	CONSTRUCTION	RMC
2	6/22/20	GEH	CONSTRUCTION	RMC

APPLICABLE CODES/REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2018 CT SBC (2015 IBC)
MECHANICAL	2018 CT SBC (2015 IMC)
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:
 STRUCTURAL ANALYSIS: PENDING

MOUNT ANALYSIS: B+T GROUP
 APRIL 10, 2020

DESIGN PACKAGE BASED ON THE RFDS
 REVISION: 3.00
 DATE: 5/29/20

DESIGN PACKAGE BASED ON THE APPLICATION
 ID: 509319
 REVISION: 0

NOTE:
 PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER



CALL CONNECTICUT ONE CALL
 (800) 922-4455
 CALL 3 WORKING DAYS
 BEFORE YOU DIG!



B&T ENGINEERING, INC.
 PEC.0001564
 Expires 2/10/21

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: REVISION:

T-1 2

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
3. ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE" AND LATEST VERSION OF TIA 1019 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
4. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
5. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
13. NOTICE TO PROCEED- NO WORK TO COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.
14. ALL CONSTRUCTION MEANS AND METHODS, INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN STANDARD CED-STD-10253 INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH THE ANSI/TIA-322 (LATEST EDITION).

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4") CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
4. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 CONCRETE CAST AGAINST EARTH.....3 IN.
 CONCRETE EXPOSED TO EARTH OR WEATHER:
 #6 AND LARGER.....2 IN.
 #5 AND SMALLER & WWF.....1 1/2 IN.
 CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
 SLAB AND WALLS.....3/4 IN.
 BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES:

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90, GRADE N. TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F'm) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYP. "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR- GENERAL CONTRACTOR (CONSTRUCTION)
 SUBCONTRACTOR- AT&T
 CARRIER- CROWN CASTLE USA INC.
 TOWER OWNER- CROWN CASTLE USA INC.
 OEM- ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR AND CROWN CASTLE USA INC.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

- AGL ABOVE GRADE LEVEL
- BTS BASE TRANSCIEVER STATION
- EXISTING EXISTING
- MIN. MINIMUM
- REF REFERENCE
- RF RADIO FREQUENCY
- T.B.D. TO BE DETERMINED
- T.B.R. TO BE RESOLVED
- TYP TYPICAL
- REQ REQUIRED
- EGR EQUIPMENT GROUND RING
- AWG AMERICAN WIRE GAUGE
- MCB MASTER GROUND BAR
- EG EQUIPMENT GROUND
- BCW BARE COPPER WIRE
- SIAD SMART INTEGRATED ACCESS DEVICE
- GEN GENERATOR
- IGR INTERIOR GROUND RING (HALO)
- RBS RADIO BASE STATION

SYMBOLS:

-  SOLID GROUND BUS BAR
-  SOLID NEUTRAL BUS BAR
-  SUPPLEMENTAL GROUND CONDUCTOR
-  2-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
-  SINGLE-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
-  CHEMICAL GROUND ROD
-  TEST WELL
-  DISCONNECT SWITCH
-  METER
-  EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
-  MECHANICAL CONNECTION
-  GROUNDING WIRE

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC. HILTI EPOXY ANCHORS ARE REQUIRED BY CROWN CASTLE USA INC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).
22. 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. 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. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHIN ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL; SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "AT&T".
29. ALL CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OFF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 TINNED SOLID IN 3/4" LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

NEC INSULATOR COLOR CODE

DESCRIPTION	PHASE/CODE LETTER	WIRE COLOR
240/120 1Ø	LEG 1	BLACK
	LEG 2	RED
AC NEUTRAL	N	WHITE
GROUND (EGC)	G	GREEN
VDC POS	+	*RED-POLARITY MARK AT TERMINATION
VDC NEG	-	*BLACK-POLARITY MARK AT TERMINATION
240V OR 208V, 3Ø	PHASE A	BLACK
	PHASE B	RED(ORG. IF HI LEG)
	PHASE C	BLUE
480V, 3Ø	PHASE A	BROWN
	PHASE B	ORANGE OR PURPLE
	PHASE C	YELLOW

* SEE NEC 210.5(C)(1) AND (2)



ONE AT&T WAY
BEDMINSTER, NJ 07921



3200 HORIZON DRIVE, SUITE 150
KING OF PRUSSIA, PA 19406



1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T SITE NUMBER:
CTL01042

BU #: 842423
WINDHAM NORTH
RIDGE ROAD

10 NORTH RIDGE
DRIVE
WINDHAM, CT 06256

EXISTING 86'-8"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	5/6/20	BLB	CONSTRUCTION	RMC
1	6/3/20	GEH	CONSTRUCTION	RMC
2	6/22/20	GEH	CONSTRUCTION	RMC



B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

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SHEET NUMBER: **REVISION:**

T-2 **2**



AT&T SITE NUMBER:
CTL01042

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RIDGE ROAD**

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WINDHAM, CT 06256

EXISTING 86'-8"
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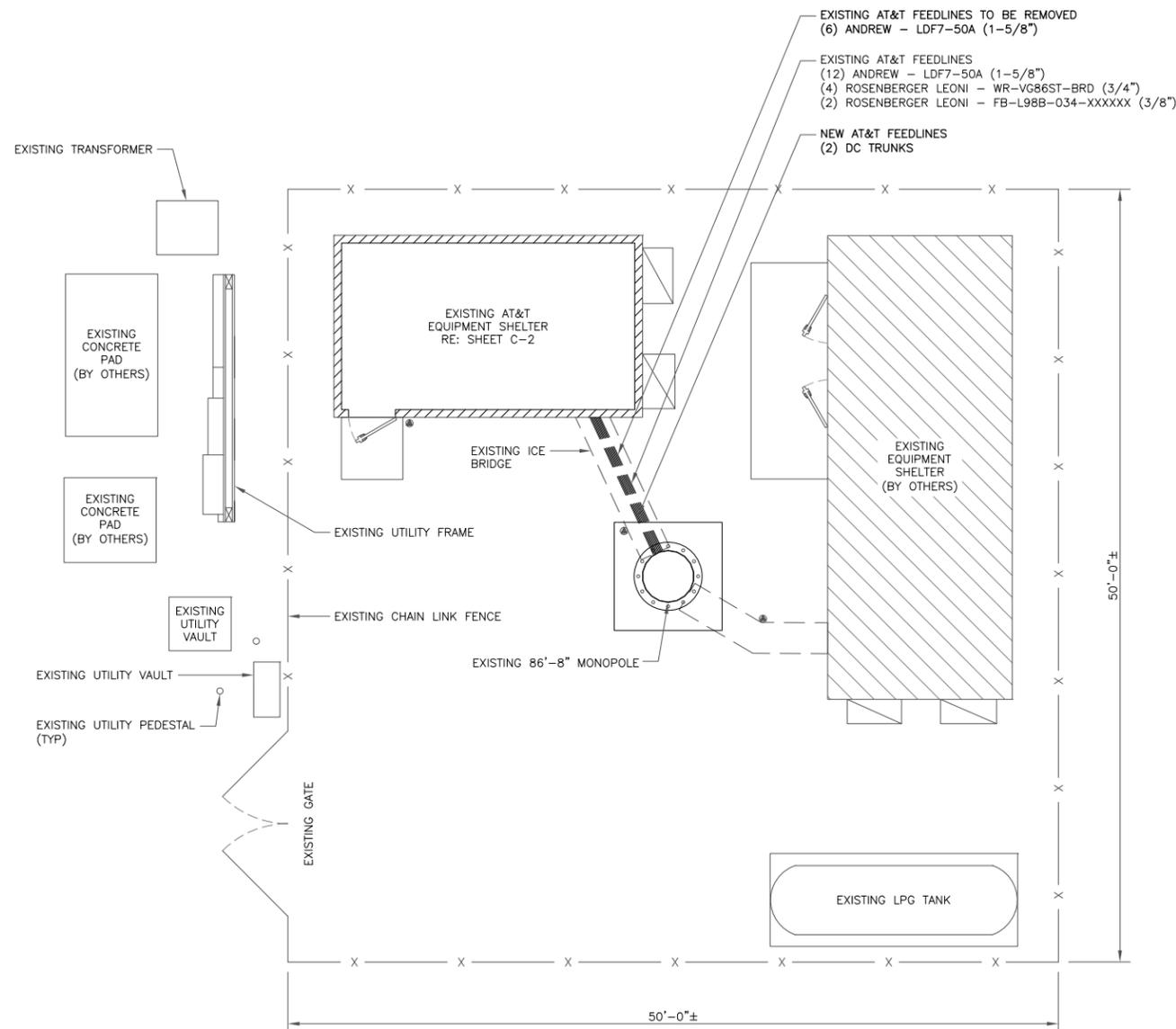


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SHEET NUMBER: REVISION:

C-1 **2**



1 SITE PLAN
SCALE: 3/16"=1'-0" (FULL SIZE)
3/32"=1'-0" (11x17)





AT&T SITE NUMBER:
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BU #: 842423
**WINDHAM NORTH
RIDGE ROAD**

10 NORTH RIDGE
DRIVE
WINDHAM, CT 06256

EXISTING 86'-8"
MONOPOLE

ISSUED FOR:

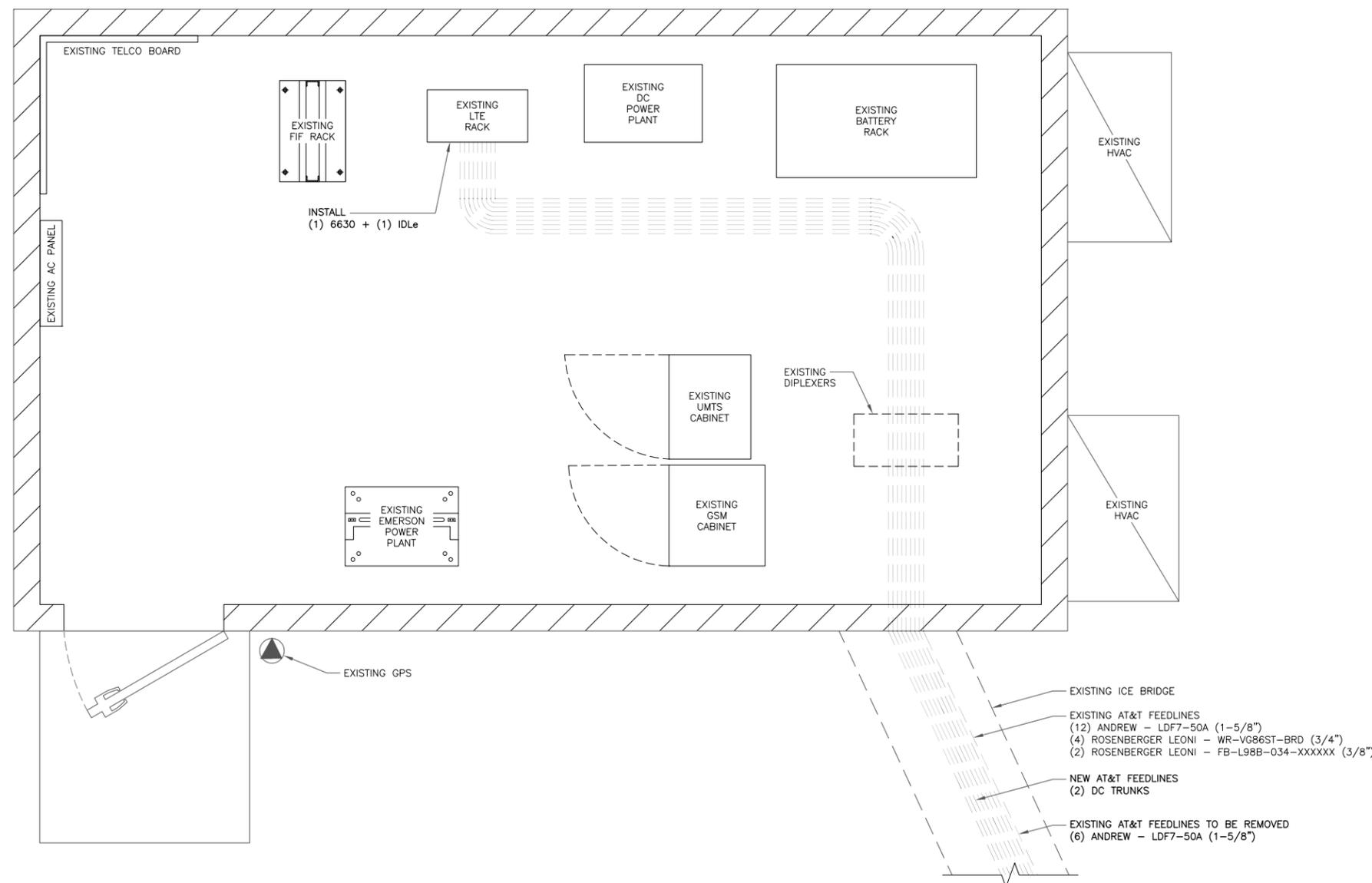
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1	6/3/20	GEH	CONSTRUCTION	RMC
2	6/22/20	GEH	CONSTRUCTION	RMC



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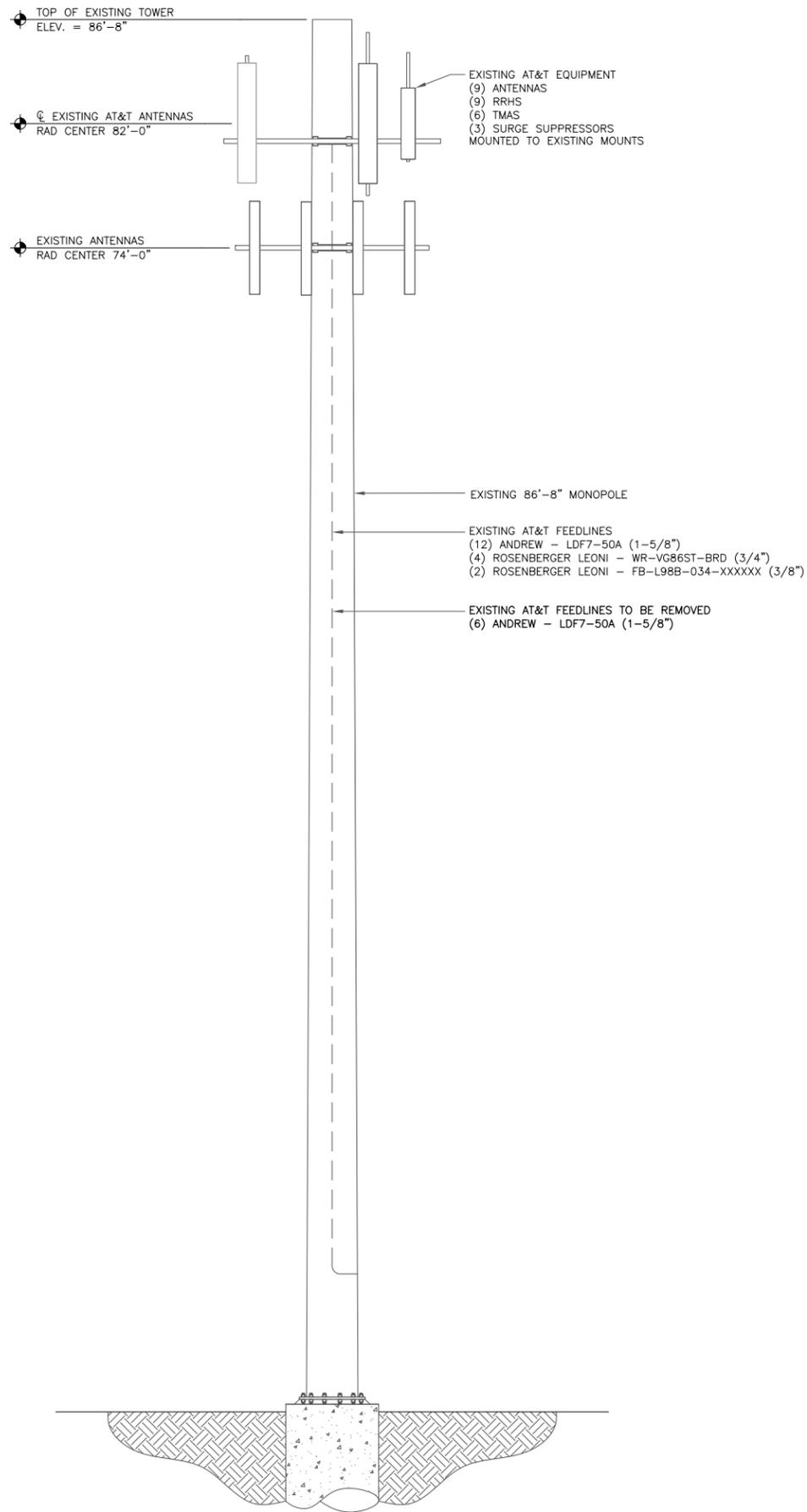
SHEET NUMBER: **C-2** REVISION: **2**



1 EXISTING EQUIPMENT PLAN
SCALE: 3/4"=1'-0" (FULL SIZE)
3/8"=1'-0" (11x17)

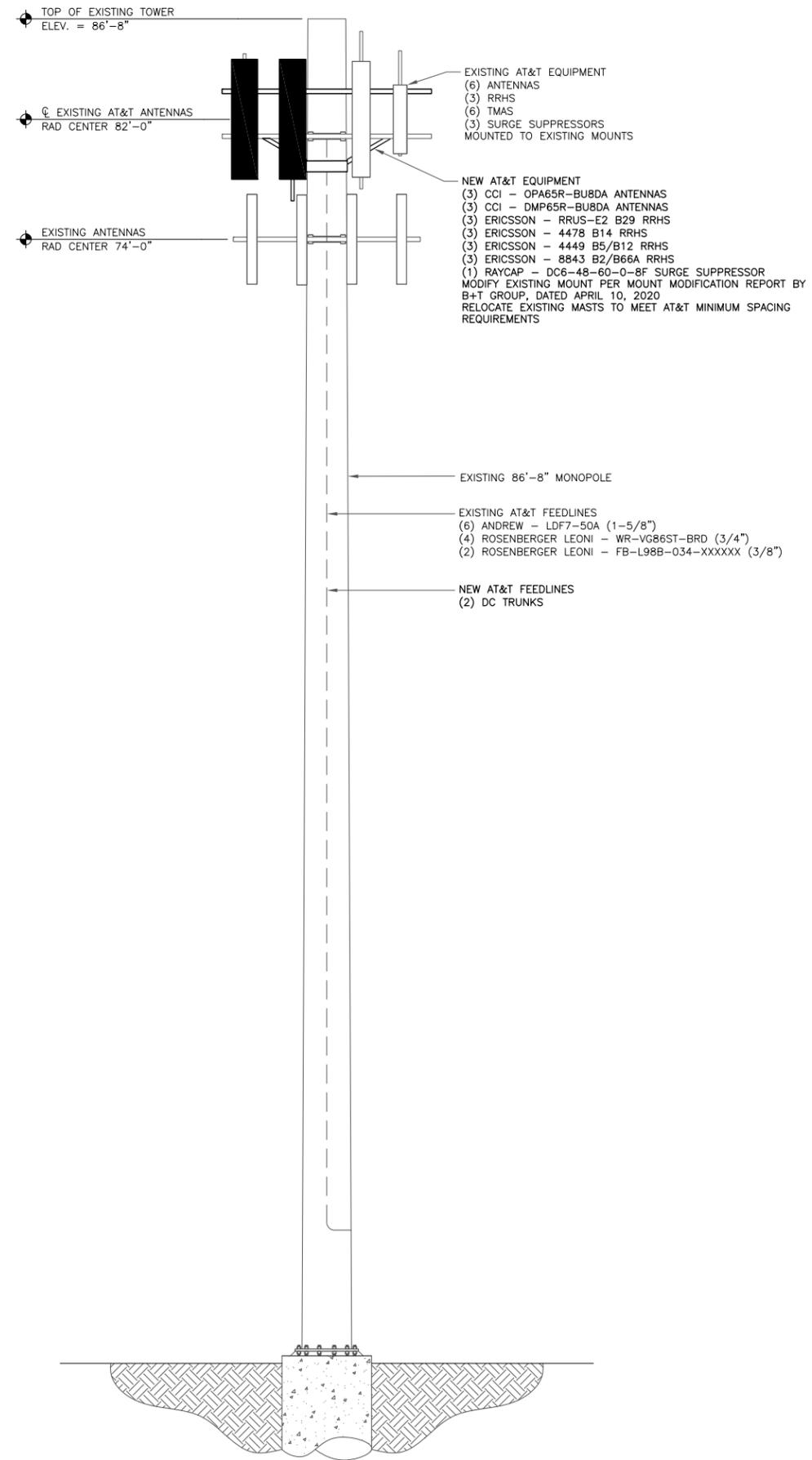


AT&T EQUIPMENT
 ANTENNA CL: 82'-0"
 MOUNT CL: 81'-0"



1 EXISTING ELEVATION
 SCALE: NOT TO SCALE

AT&T EQUIPMENT
 ANTENNA CL: 82'-0"
 MOUNT CL: 81'-0"



2 FINAL ELEVATION
 SCALE: NOT TO SCALE



AT&T SITE NUMBER:
CTL01042

BU #: 842423
WINDHAM NORTH RIDGE ROAD

10 NORTH RIDGE DRIVE
 WINDHAM, CT 06256

EXISTING 86'-8"
 MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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SHEET NUMBER: **C-3** REVISION: **2**



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RIDGE ROAD**

10 NORTH RIDGE
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WINDHAM, CT 06256

EXISTING 86'-8"
MONOPOLE

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2	6/22/20	GEH	CONSTRUCTION	RMC



6/22/20

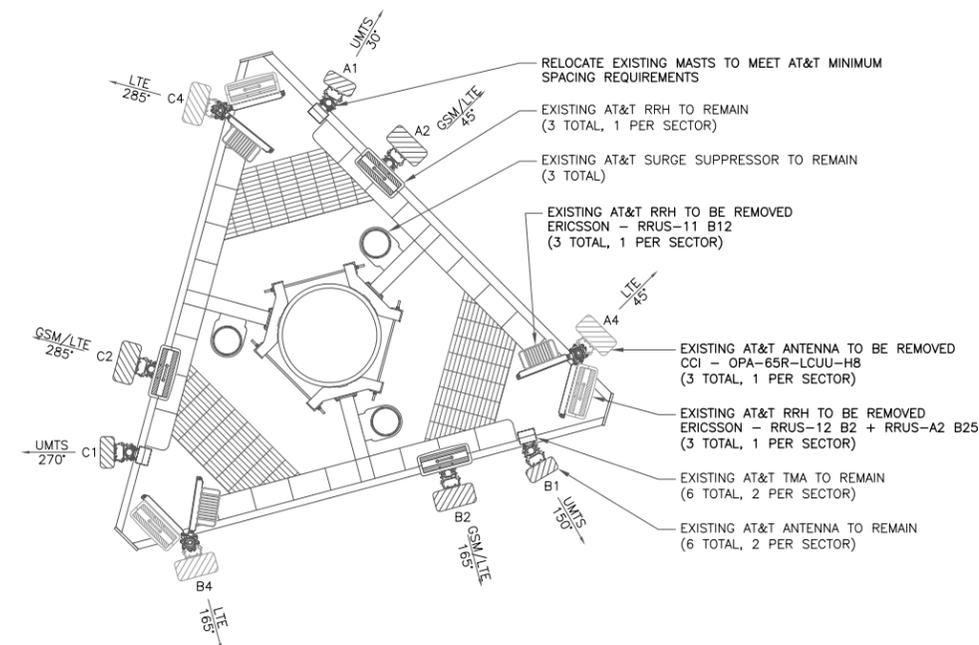
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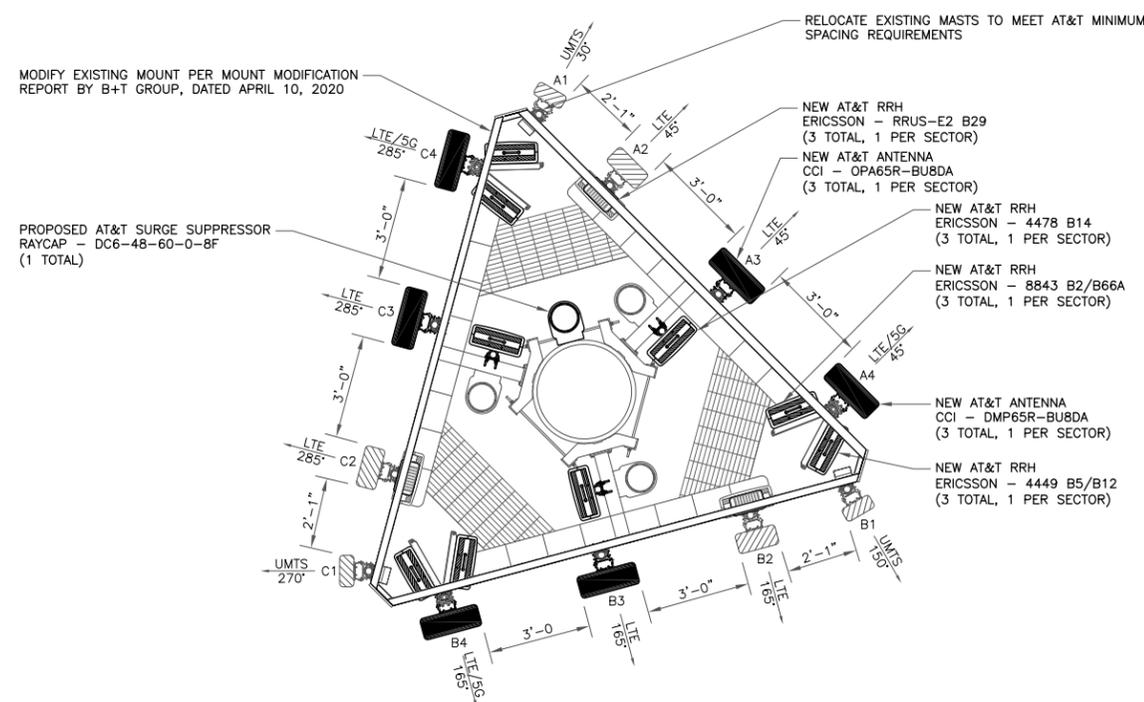
SHEET NUMBER: REVISION:

C-4

2



1 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



2 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE



PIM ISSUES EXIST DUE
TO INSUFFICIENT SPACE



AT&T SITE NUMBER:
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BU #: 842423
WINDHAM NORTH RIDGE ROAD

10 NORTH RIDGE DRIVE
WINDHAM, CT 06256

EXISTING 86'-8" MONOPOLE

ISSUED FOR:

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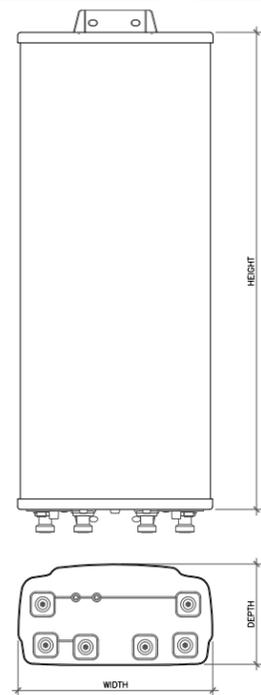
SHEET NUMBER: **C-5** REVISION: **2**

FINAL ANTENNA AND COAXIAL CABLE SCHEDULE

POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	RAYCAP	DC (WR-VG86ST-BRD) FIBER CABLES (FB-L98B-034-XXXXXX)	RRHS	DIPLEXER	RET CABLE
ALPHA SECTOR																
A1	UMTS	EXISTING	30°	POWERWAVE 7770	82'-0"	0°	4°	1-5/8"	98'-0"	2	(2) LGP 21401			-	(2) LGP 13519 (SHELTER)	Y
A2	LTE	EXISTING	45°	CCI OPA-65R-LCUU-H8	82'-0"	0°	2'/2'	-	-	-	-	(1) DC6-48-60-18-8F (1) DC6-48-60-0-8F	(1) FIBER (2) DC LINES (2) DC LINES	(1) RRUS-E2 B29 (1) RRUS-32 B30	-	Y
A3	LTE	NEW	45°	CCI OPA65R-BU8DA	82'-0"	0°	2'/2'	-	-	-	-			(1) 4478 B14	-	Y
A4	LTE/5G	NEW	45°	CCI DMP65R-BU8DA	82'-0"	0°	2'/2'/2'/2'/2'	-	-	-	-			(1) 4449 B5/B12 (1) 8843 B2/B66A	-	Y
BETA SECTOR																
B1	UMTS	EXISTING	150°	POWERWAVE 7770	82'-0"	0°	2°	1-5/8"	98'-0"	2	(2) LGP 21401			-	(2) LGP 13519 (SHELTER)	Y
B2	LTE	EXISTING	165°	CCI OPA-65R-LCUU-H8	82'-0"	0°	2'/4'	-	-	-	-	(1) DC6-48-60-18-8F	(1) FIBER (2) DC LINES	(1) RRUS-E2 B29 (1) RRUS-32 B30	-	Y
B3	LTE	NEW	165°	CCI OPA65R-BU8DA	82'-0"	0°	2'/2'	-	-	-	-			(1) 4478 B14	-	Y
B4	LTE/5G	NEW	165°	CCI DMP65R-BU8DA	82'-0"	0°	2'/2'/2'/2'/2'	-	-	-	-			(1) 4449 B5/B12 (1) 8843 B2/B66A	-	Y
GAMMA SECTOR																
C1	UMTS	EXISTING	270°	POWERWAVE 7770	82'-0"	0°	0°	1-5/8"	98'-0"	2	(2) LGP 21401			-	(2) LGP 13519 (SHELTER)	Y
C2	LTE	EXISTING	285°	CCI OPA-65R-LCUU-H8	82'-0"	0°	2'/3'	-	-	-	-	(1) DC6-48-60-18-8F	(1) FIBER (2) DC LINES	(1) RRUS-E2 B29 (1) RRUS-32 B30	-	Y
C3	LTE	NEW	285°	CCI OPA65R-BU8DA	82'-0"	0°	9'/2'	-	-	-	-			(1) 4478 B14	-	Y
C4	LTE/5G	NEW	285°	CCI DMP65R-BU8DA	82'-0"	0°	2'/2'/2'/2'/2'	-	-	-	-			(1) 4449 B5/B12 (1) 8843 B2/B66A	-	Y

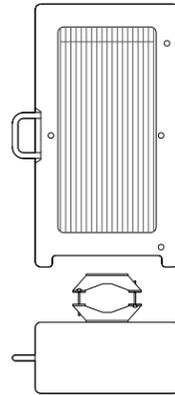
NOTE: BOLD DENOTES NEW EQUIPMENT

1 FINAL ANTENNA AND COAXIAL CABLE SCHEDULE
SCALE: NOT TO SCALE



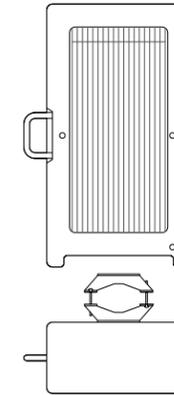
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
OPA65R-BU8DA	96"	21"	7.8"	76.5 lbs
DMP65R-BU8DA	96"	20.7"	7.7"	95.7 lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



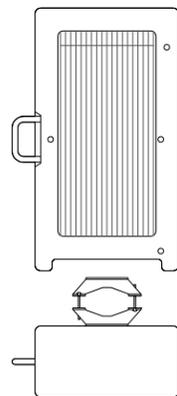
ERICSSON - RRUS-E2 B29
WEIGHT (FULLY EQUIPPED): 60.0 LBS
SIZE (HxWxD): 20.4x18.5x7.5 IN.

2 RRH DETAIL
SCALE: NOT TO SCALE



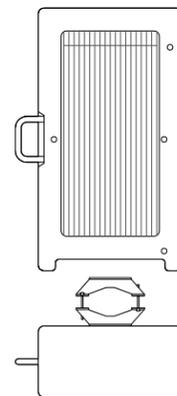
ERICSSON - 4478 B14
WEIGHT (FULLY EQUIPPED): 59.4 LBS
SIZE (HxWxD): 18.1x13.4x8.3 IN.

3 RRH DETAIL
SCALE: NOT TO SCALE



ERICSSON - 4449 B5/B12
WEIGHT (FULLY EQUIPPED): 71.0 LBS
SIZE (HxWxD): 17.9x13.19x9.44 IN.

4 RRH DETAIL
SCALE: NOT TO SCALE

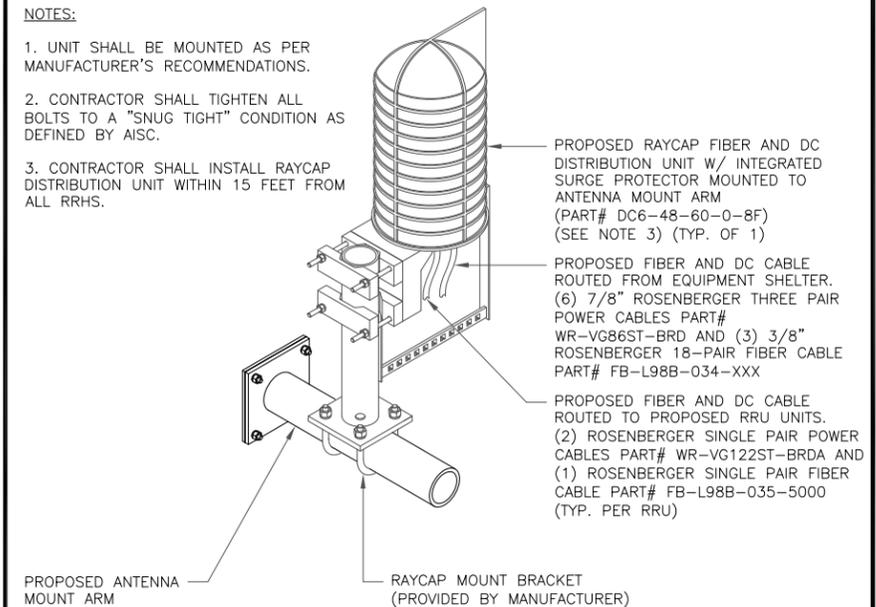


ERICSSON - 8843 B2/B66A
WEIGHT (FULLY EQUIPPED): 72.0 LBS
SIZE (HxWxD): 14.9x13.2x10.9 IN.

5 RRH DETAIL
SCALE: NOT TO SCALE

NOTES:

- UNIT SHALL BE MOUNTED AS PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL TIGHTEN ALL BOLTS TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
- CONTRACTOR SHALL INSTALL RAYCAP DISTRIBUTION UNIT WITHIN 15 FEET FROM ALL RRHS.



6 SURGE SUPPRESSOR DETAIL
SCALE: NOT TO SCALE

ONE AT&T WAY
BEDMINSTER, NJ 07921

3200 HORIZON DRIVE, SUITE 150
KING OF PRUSSIA, PA 19406

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T SITE NUMBER:
CTL01042

BU #: 842423
**WINDHAM NORTH
RIDGE ROAD**

10 NORTH RIDGE
DRIVE
WINDHAM, CT 06256

EXISTING 86'-8"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	5/6/20	BLB	CONSTRUCTION	RMC
1	6/3/20	GEH	CONSTRUCTION	RMC
2	6/22/20	GEH	CONSTRUCTION	RMC



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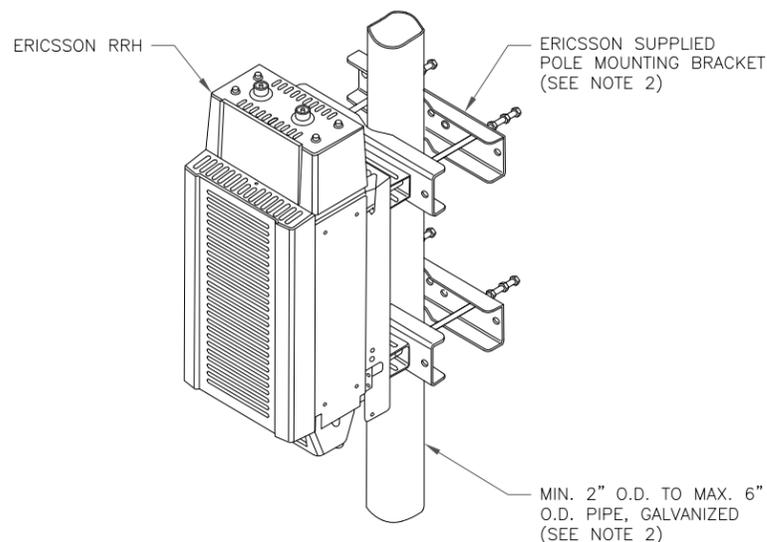
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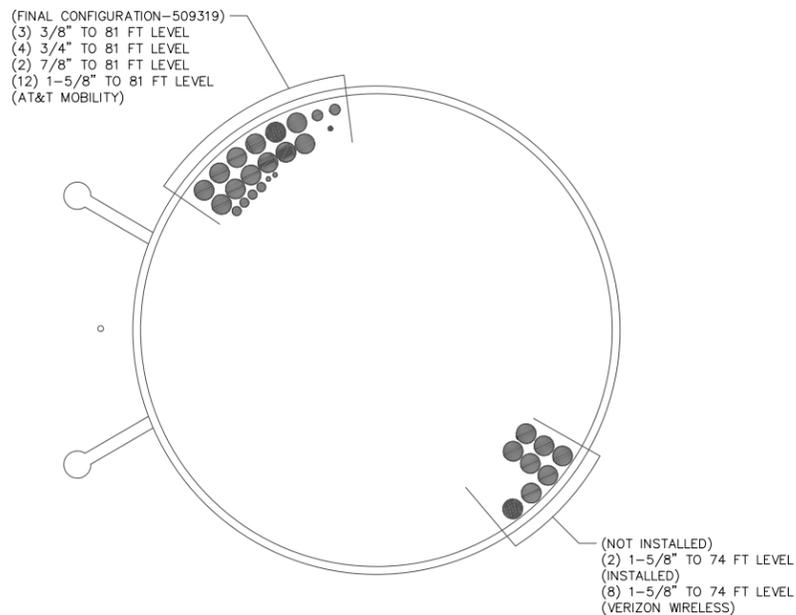
C-6 **2**

NOTES:

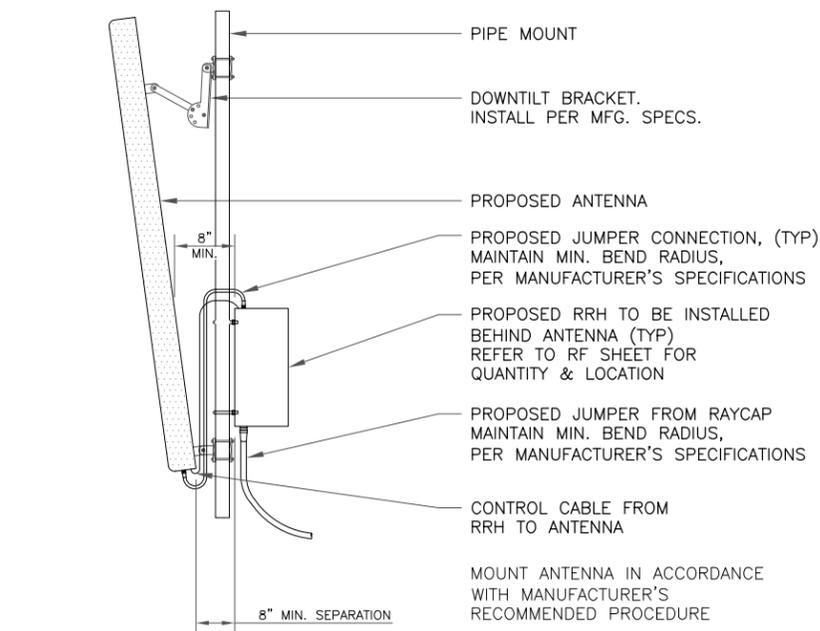
- ERICSSON VIA AT&T SUPPLIES RRH, RRH POLE-MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRH POLE-MOUNTING BRACKET. ERICSSON INSTALLS RRH AND MAKES CABLE TERMINATIONS.
- FOR POLE DIAMETERS FROM 6" TO 15", ERICSSON CAN SUPPLY A PAIR OF POLE MOUNTING METAL BANDS WITH BOLTING WELDMENT.
- NO PAINTING OF THE RRH OR SOLAR SHIELD IS ALLOWED



1 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE



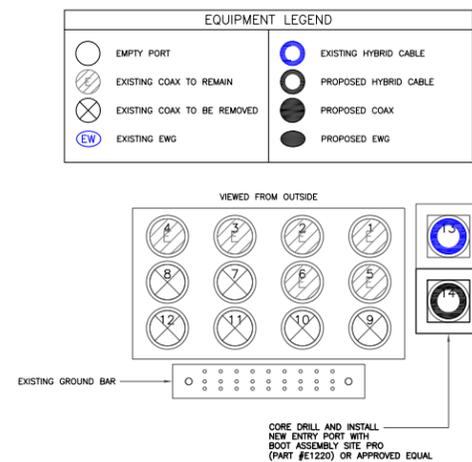
2 BASE LEVEL DRAWING
SCALE: NOT TO SCALE



3 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

NOTES:

- VIEW IS LOOKING FROM THE EXTERIOR.
- COAX LOCATIONS ARE SHOWN FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS.



4 HATCH PLATE LAYOUT
SCALE: NOT TO SCALE



AT&T SITE NUMBER:
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BU #: 842423
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RIDGE ROAD**

10 NORTH RIDGE
DRIVE
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2	6/22/20	GEH	CONSTRUCTION	RMC

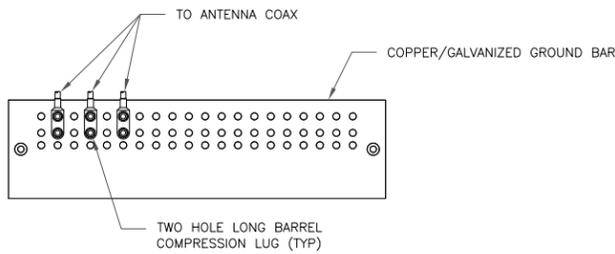


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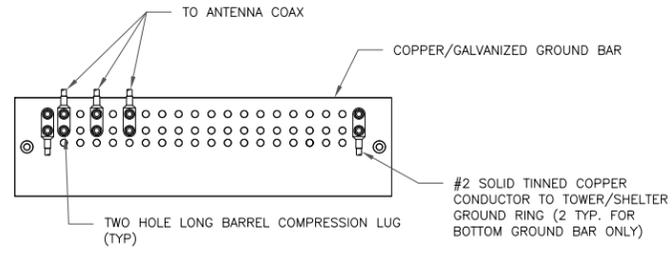
C-7 2



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

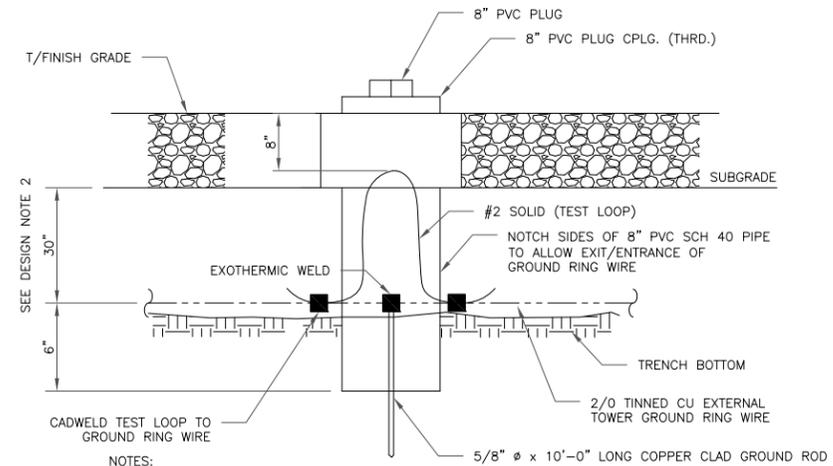
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

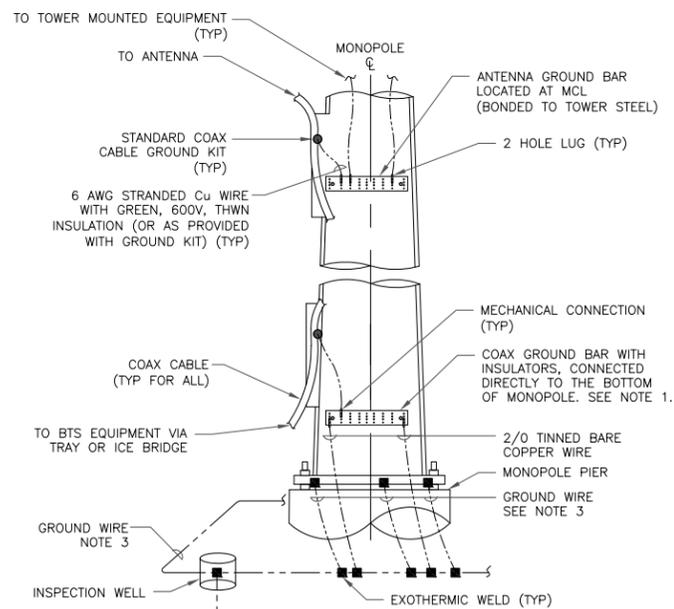
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

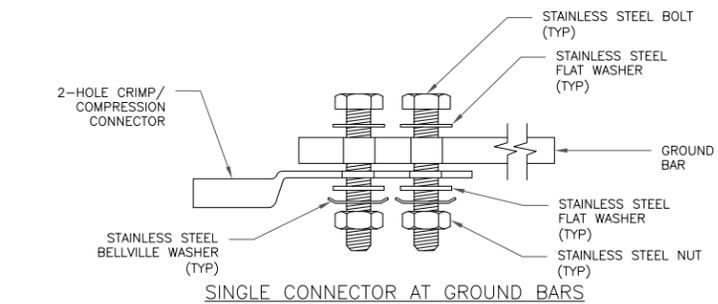
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



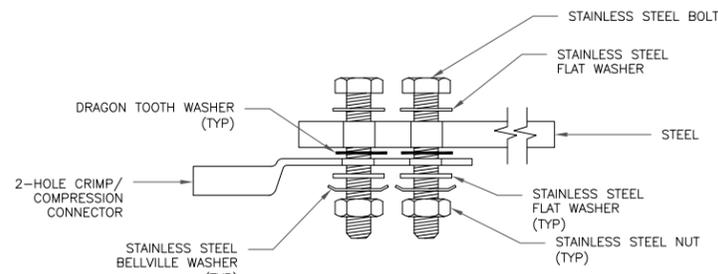
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

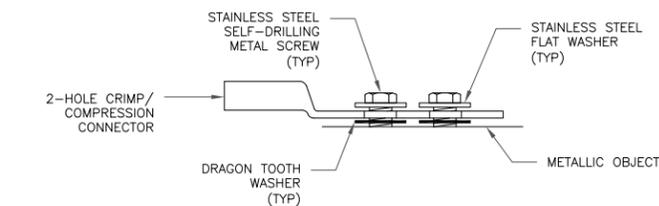
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

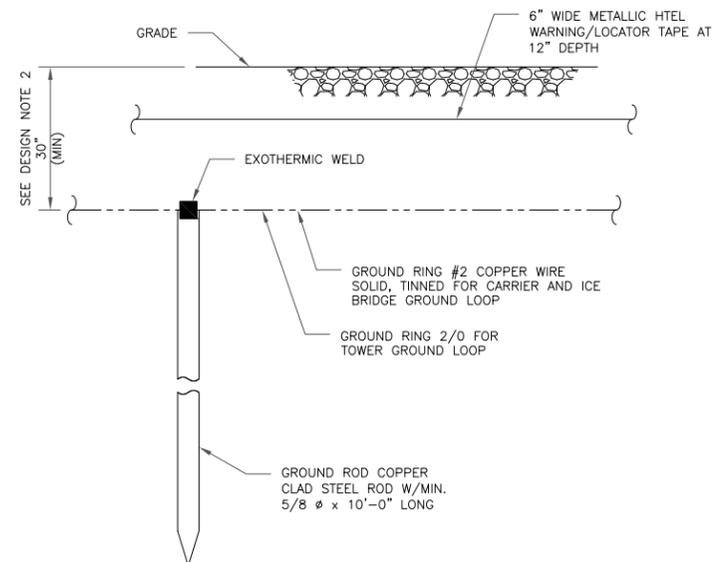


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE



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CTL01042

BU #: 842423
WINDHAM NORTH RIDGE ROAD

10 NORTH RIDGE DRIVE
WINDHAM, CT 06256

EXISTING 86'-8" MONOPOLE

ISSUED FOR:

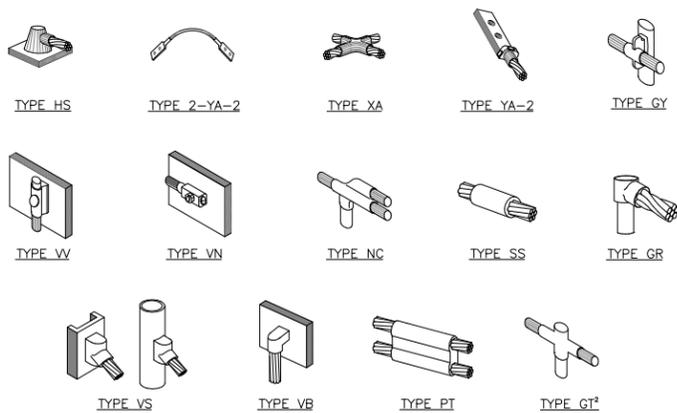
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	5/6/20	BLB	CONSTRUCTION	RMC
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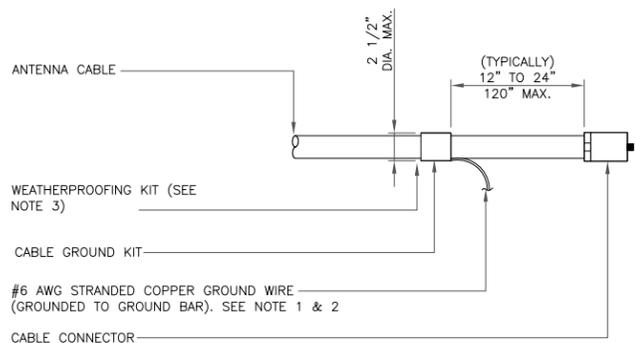
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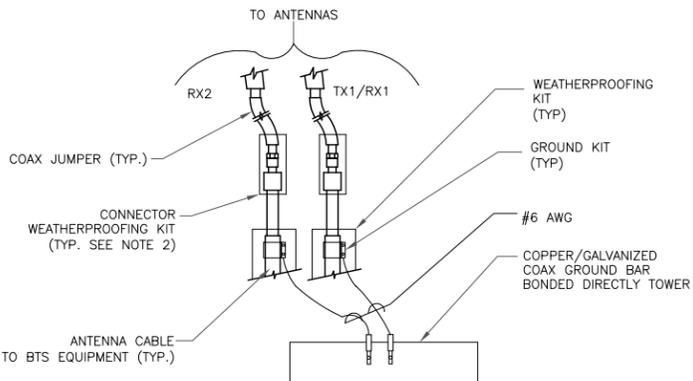
NOTE:
 1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
 SCALE: NOT TO SCALE



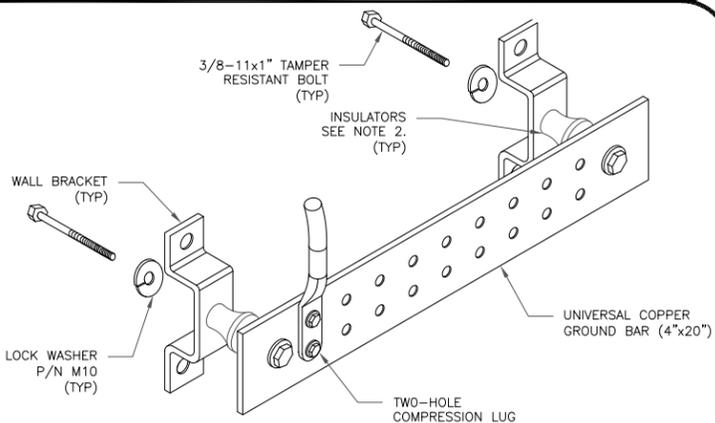
NOTES:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

3 CABLE GROUND KIT CONNECTION
 SCALE: NOT TO SCALE



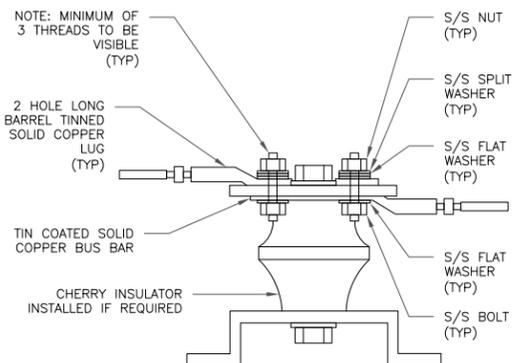
NOTES:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
 SCALE: NOT TO SCALE



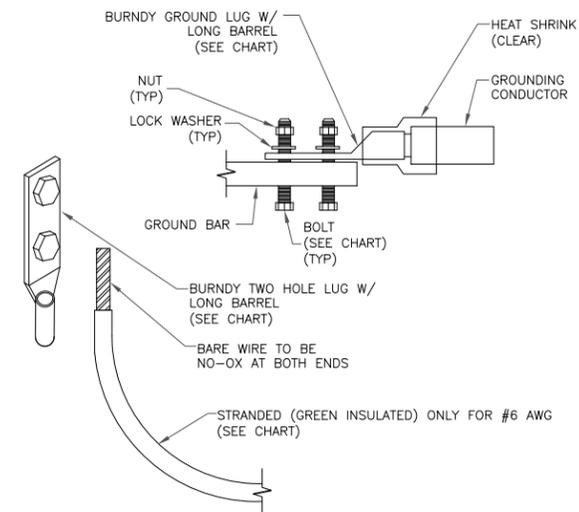
NOTES:
 1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY OAS-STD-10091, NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
 2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
 SCALE: NOT TO SCALE



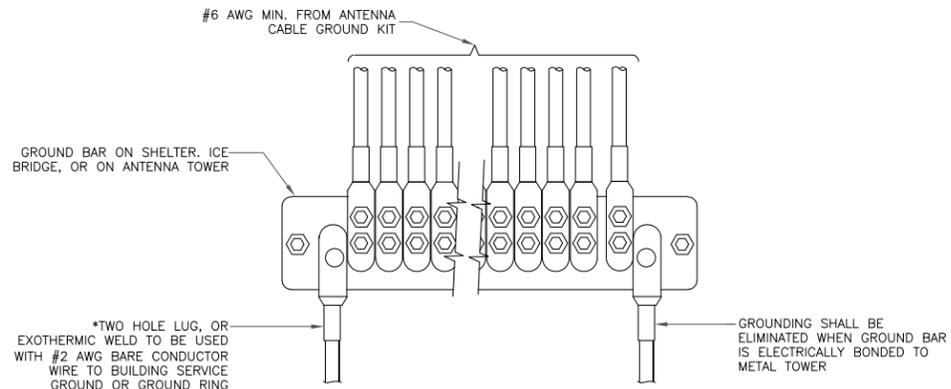
7 LUG DETAIL
 SCALE: NOT TO SCALE

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT

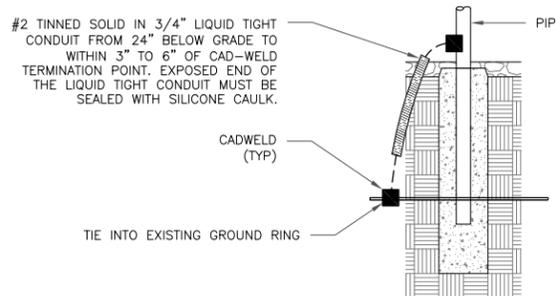


NOTES:
 1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

2 MECHANICAL LUG CONNECTION
 SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
 SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
 SCALE: NOT TO SCALE



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Exhibit D

Structural Analysis Report



Date: **May 14, 2020**

Cheryl Schultz
Crown Castle
6325 Ardrey Kell Rdd Suite 600
Charlotte, NC 28277

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

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: 10065747
Carrier Site Name: Windham North Ridge Road

Crown Castle Designation: **Crown Castle BU Number:** 842423
Crown Castle Site Name: Windham North Ridge Road
Crown Castle JDE Job Number: 596322
Crown Castle Work Order Number: 1834996
Crown Castle Order Number: 509319 Rev. 0

Engineering Firm Designation: **B+T Group Project Number:** 95362.008.01

Site Data: **10 North Ridge Drive, Windham, Windham County, CT**
Latitude 41° 44' 23.53", Longitude -72° 10' 22.47"
88.7 Foot - Monopole Tower

Dear Cheryl Schultz,

B+T Group is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above mentioned tower.

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

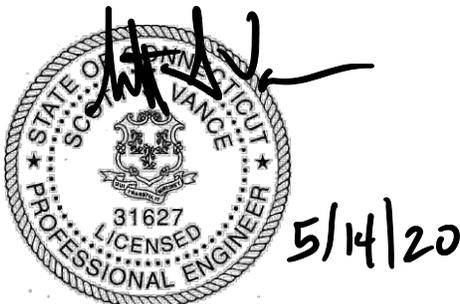
LC5: Proposed Equipment Configuration

Sufficient Capacity -65.1%

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Carlon Bethell II

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 02/10/2021



Scott S. Vance, P.E.

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2) ANALYSIS CRITERIA

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- Table 2 - Other Considered Equipment

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- Table 3 - Documents Provided
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- 3.2) Assumptions

4) ANALYSIS RESULTS

- Table 4 - Section Capacity (Summary)
- Table 5 – Tower Component Stresses vs. Capacity - LC5
- 4.1) Recommendations

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- tnxTower Output

6) APPENDIX B

- Base Level Drawing

7) APPENDIX C

- Additional Calculations

1) INTRODUCTION

This tower is 88.7 ft. Monopole tower designed by Engineered Endeavors Incorporated in March of 2005.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
81.0	88.0	3	Ericsson	RRUS-32 B30	12 2 4 3	1-5/8 7/8 3/4 3/8
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14_CCIV2		
		3	Ericsson	RRUS 8843 B2/B66A_CCIV2		
		6	Powerwave Tech.	LGP21401		
		2	Raycap	DC6-48-60-18		
	1	Raycap	DC6-48-60-18-8C-EV			
	84.0	3	CCI Antennas	DMP65R-BU8D		
		3	CCI Antennas	OPA-65R-LCUU-H8		
		3	CCI Antennas	OPA65R-BU8D		
		3	Powerwave Tech.	7770.00		
		1	Site Pro 1	HRK-14 Handrail Kit		
	81.0	1	--	Platform Mount [LP 714-1]		
80.0	3	Site Pro 1	PRK-1245 Reinforcement Kit			

Table 2 - Other Considered Equipment

Mounting Level (ft.)	Center Line Elevation (ft.)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
74.0	75.0	3	Alcatel Lucent	RRH2X40 700	8	1-5/8
		3	Alcatel Lucent	RRH2X40-AWS		
		6	Antel	BXA-171063/12CF		
		6	Antel	BXA-70063/6CF		
		1	Raycap	RRFDC-3315-PF-48		
		1	Raycap	RRFDC-4750-PF-48		
		1	RFS Celwave	DB-T1-6Z-8AB-0Z		
	74.0	1	--	Platform Mount [LP 303-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Online Order Information	AT&T Mobility, Co-Locate, Rev# 0	509319	CCI Sites
Tower Manufacturer Drawing	EEl, Job No.13253-E01	4943145	CCI Sites
Mount Modification Report	B+T Group, Date: 04/10/2020	9026958	CCI Sites
Foundation Drawing	EEl, Project No.13253	4712164	CCI Sites
Geotech Report	JGI, Project No. 05191G	4290426	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 03/06/2020	CCI Sites

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

- 1) The tower and structures were maintained in accordance with the - TIA-222 standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	88.7 - 47.57	Pole	TP30.46x21.89x0.25	1	-11.049	1428.483	47.1	Pass
L2	47.57 - 0	Pole	TP39.75x29.058x0.313	2	-20.844	2402.767	65.1	Pass
							Summary	
						Pole (L2)	65.1	Pass
						Rating =	65.1	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
1	Anchor Rods	Base	44.8	Pass
1	Base Plate	Base	63.3	Pass
1	Base Foundation (Structure)	Base	49.9	Pass
1	Base Foundation (Soil Interaction)	Base	51.6	Pass

Structure Rating (max from all components) =	65.1%
---	--------------

Notes:

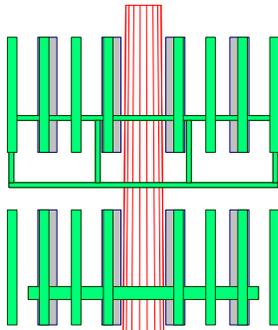
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Rating per TIA-222-H Section 15.5.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT

88.7 ft



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 65.1%

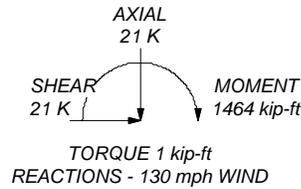
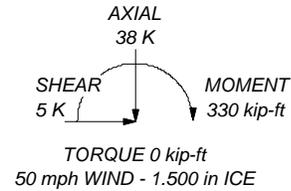
Section	1	2
Length (ft)	41.130	51.900
Number of Sides	18	18
Thickness (in)	0.250	0.313
Socket Length (ft)	4.330	29.058
Top Dia (in)	21.890	39.750
Bot Dia (in)	30.460	
Grade	A572-65	
Weight (K)	2.9	6.0

47.6 ft

0.0 ft



ALL REACTIONS ARE FACTORED



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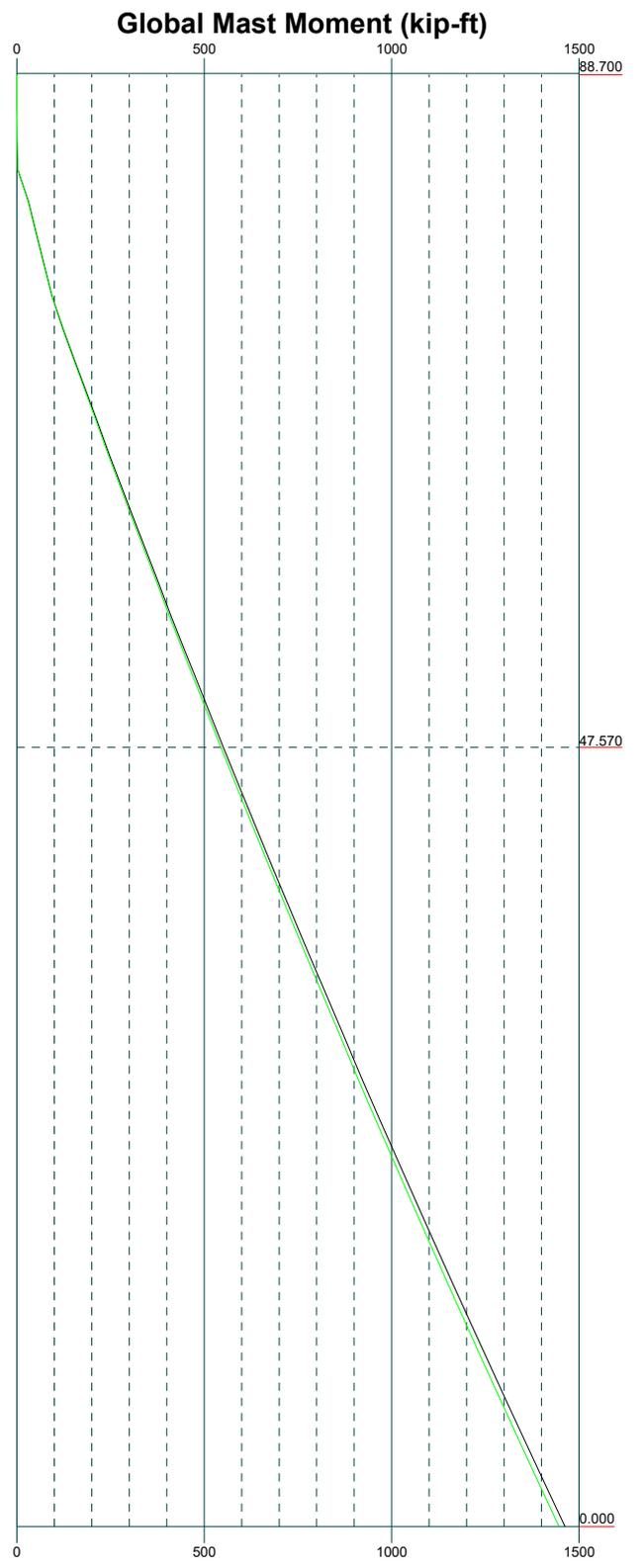
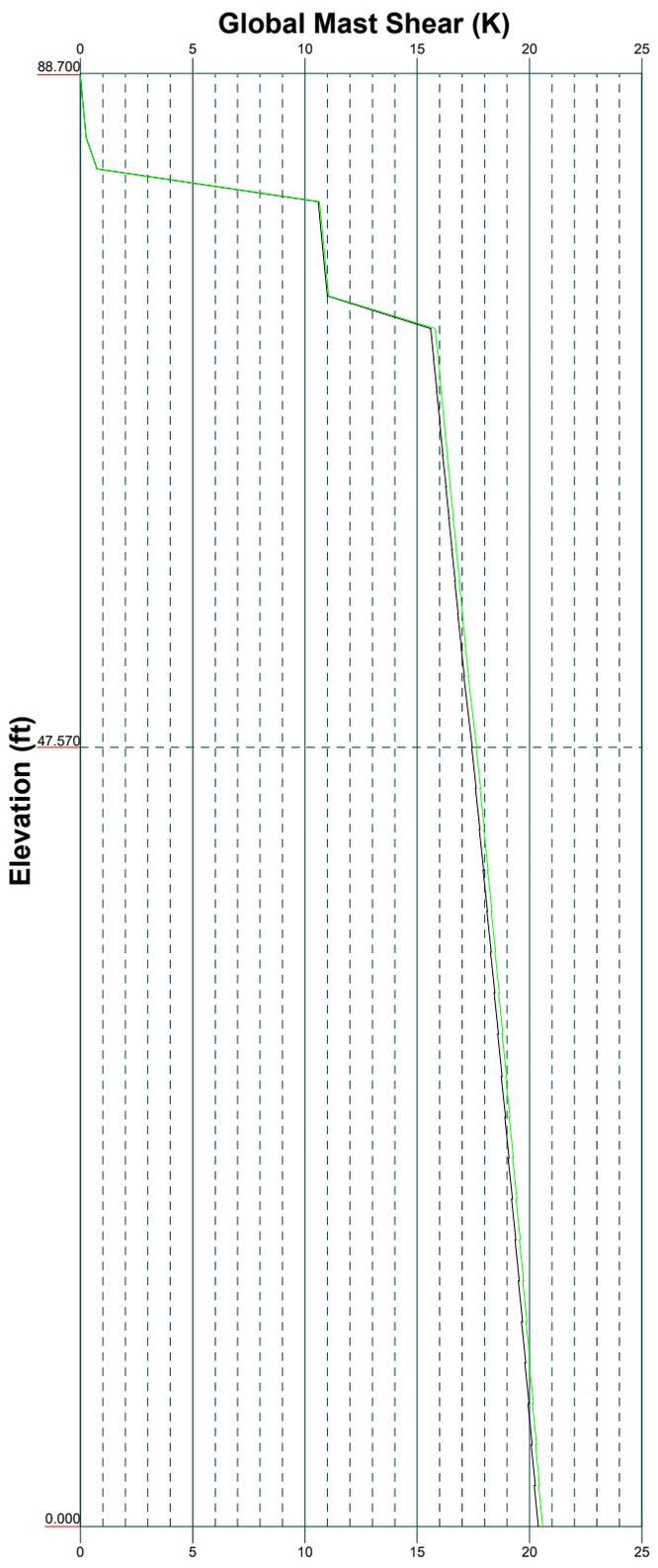
Job:	95362.008.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 84242)		
Project:			
Client:	Crown Castle	Drawn by:	Vijeth
Code:	TIA-222-H	Date:	05/14/20
Path:			
		App'd:	
		Scale:	NTS
		Dwg No.	E-1

Vx

Vz

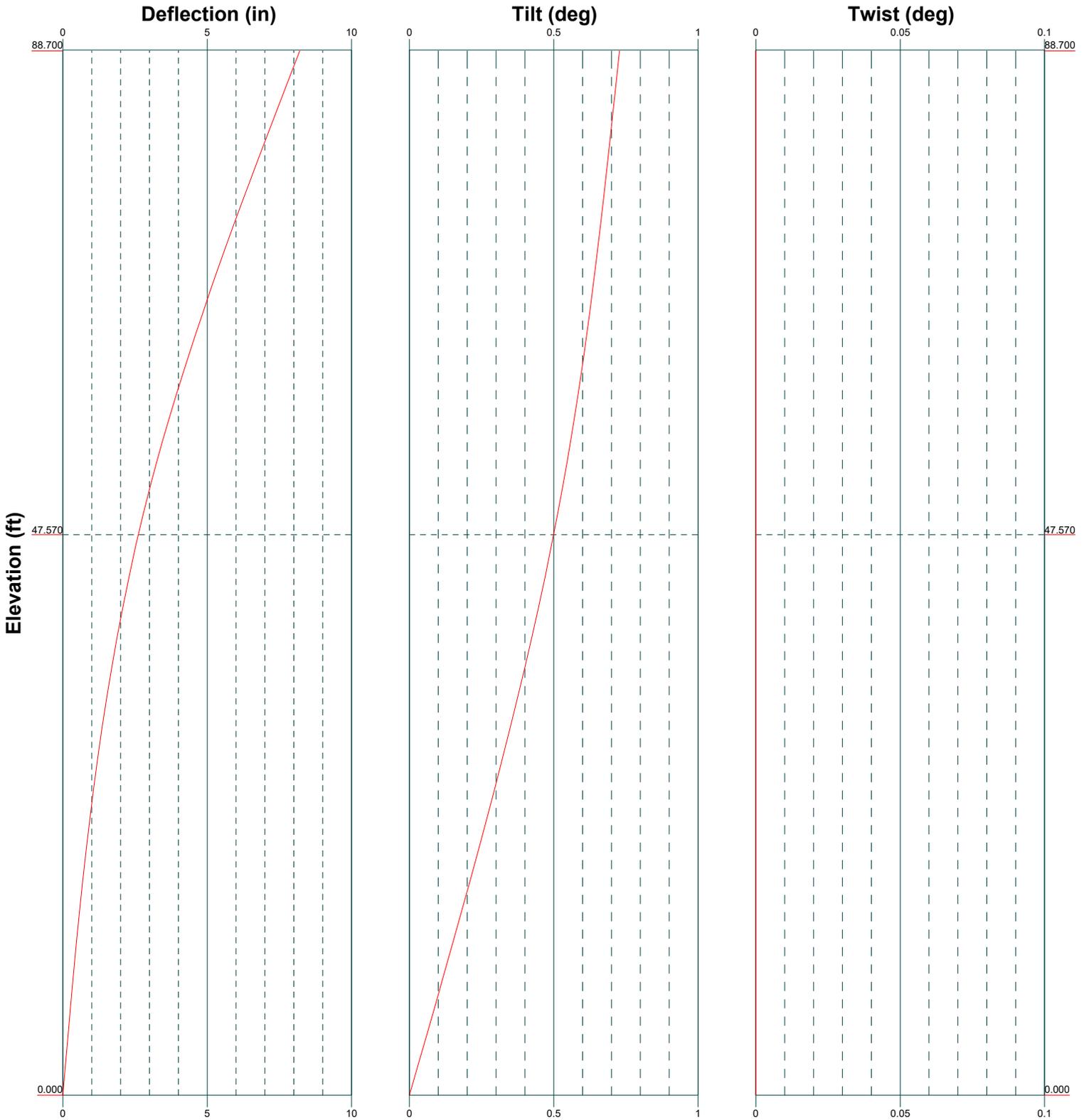
Mx

Mz



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Job: 95362.008.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 84242)		
Project:		
Client: Crown Castle	Drawn by: Vijeth	App'd:
Code: TIA-222-H	Date: 05/14/20	Scale: NTS
Path:	Dwg No. E-4	



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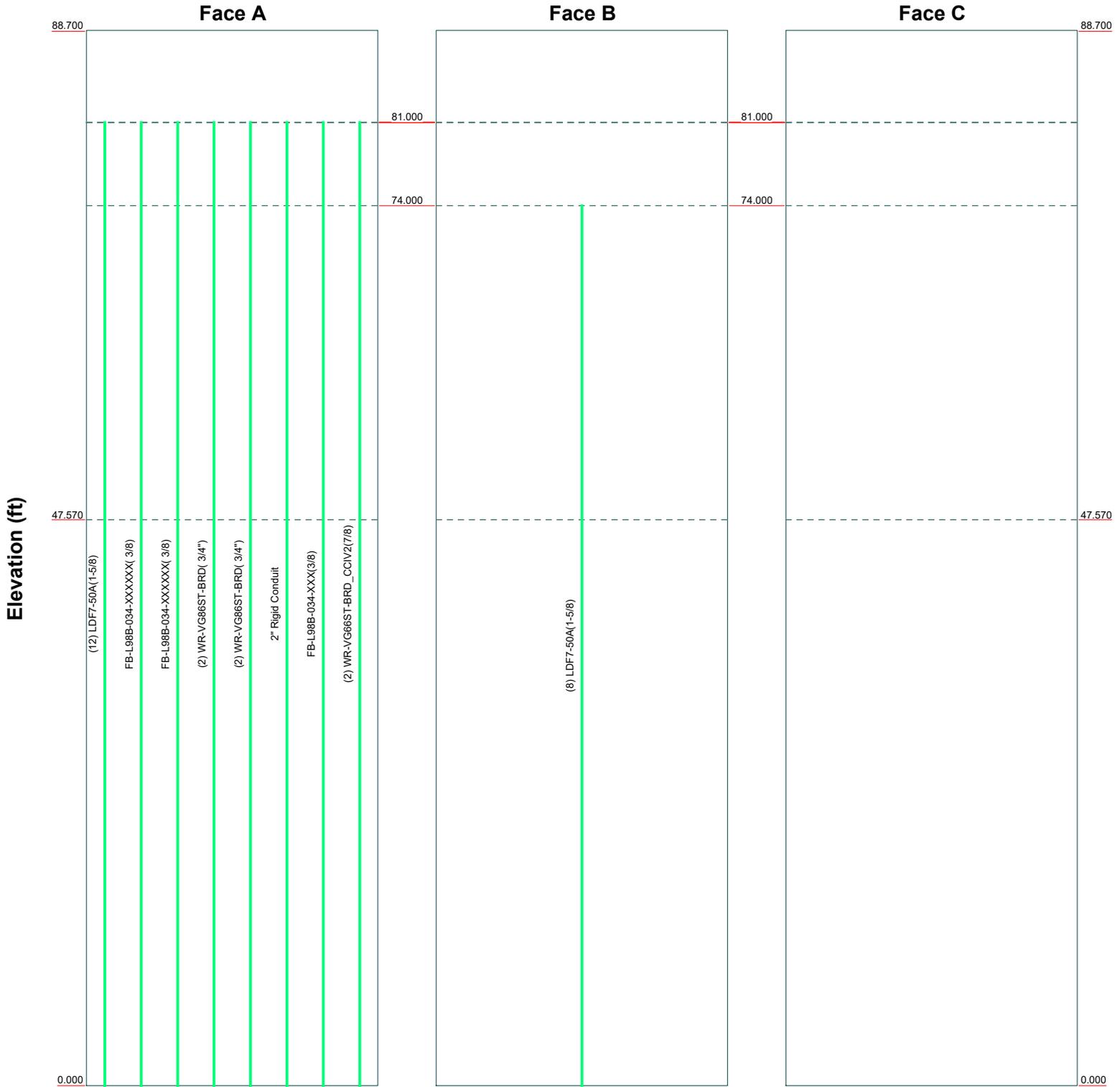
Job: 95362.008.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 84242)		
Project:		
Client: Crown Castle	Drawn by: Vijeth	App'd:
Code: TIA-222-H	Date: 05/14/20	Scale: NTS
Path:	Dwg No. E-5	

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Feed Line Distribution Chart

0' - 88'8-13/32"

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




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Job: 95362.008.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 84242)		
Project:		
Client: Crown Castle	Drawn by: Vijeth	App'd:
Code: TIA-222-H	Date: 05/14/20	Scale: NTS
Path:	Dwg No. E-7	

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 95362.008.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 842423)	Page 1 of 15
	Project	Date 15:23:54 05/14/20
	Client Crown Castle	Designed by Vijeth

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower is located in Windham County, Connecticut.

Tower base elevation above sea level: 313.000 ft.

Basic wind speed of 130 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.500 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 60 mph.

TIA-222-H Annex S.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.05.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs 	<ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <p style="text-align: center;">Poles</p> <ul style="list-style-type: none"> √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets √ Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	88.700-47.570	41.130	4.330	18	21.890	30.460	0.250	1.000	A572-65 (65 ksi)
L2	47.570-0.000	51.900		18	29.058	39.750	0.313	1.250	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	22.189	17.171	1015.912	7.682	11.120	91.358	2033.161	8.587	3.413	13.651
	30.891	23.972	2763.991	10.725	15.474	178.625	5531.618	11.988	4.921	19.684
L2	30.364	28.512	2976.420	10.205	14.761	201.636	5956.757	14.259	4.564	14.605
	40.315	39.117	7686.392	14.000	20.193	380.646	15382.898	19.562	6.446	20.627

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
88.700-47.570				1	1	1			
47.570-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
*											

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf	
LDF7-50A(1-5/8)	A	No	No	Inside Pole	81.000 - 0.000	12	0.000	0.001	
						No Ice	0.000	0.001	
						1/2" Ice	0.000	0.001	
						1" Ice	0.000	0.001	
FB-L98B-034-XXX XXX(3/8)	A	No	No	Inside Pole	81.000 - 0.000	1	0.000	0.000	
						No Ice	0.000	0.000	
						1/2" Ice	0.000	0.000	
						1" Ice	0.000	0.000	
							2" Ice	0.000	0.000

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	Client Crown Castle	Designed by Vijeth

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight klf
FB-L98B-034-XXX XXX(3/8)	A	No	No	Inside Pole	81.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
WR-VG86ST-BRD(3/4")	A	No	No	Inside Pole	81.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
WR-VG86ST-BRD(3/4")	A	No	No	Inside Pole	81.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
2" Rigid Conduit	A	No	No	Inside Pole	81.000 - 0.000	1	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
							2" Ice	0.000	0.003
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	81.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
WR-VG66ST-BRD_ CCIV2(7/8)	A	No	No	Inside Pole	81.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
* LDF7-50A(1-5/8)	B	No	No	Inside Pole	74.000 - 0.000	8	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
* *									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	88.700-47.570	A	0.000	0.000	0.000	0.000	0.565
		B	0.000	0.000	0.000	0.000	0.173
		C	0.000	0.000	0.000	0.000	0.000
L2	47.570-0.000	A	0.000	0.000	0.000	0.000	0.804
		B	0.000	0.000	0.000	0.000	0.312
		C	0.000	0.000	0.000	0.000	0.000

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	88.700-47.570	A	1.369	0.000	0.000	0.000	0.000	0.565
		B		0.000	0.000	0.000	0.000	0.173

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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L2	47.570-0.000	C	1.234	0.000	0.000	0.000	0.000	0.000
		A		0.000	0.000	0.000	0.000	0.804
		B		0.000	0.000	0.000	0.000	0.312
		C		0.000	0.000	0.000	0.000	0.000

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	88.700-47.570	0.000	0.000	0.000	0.000
L2	47.570-0.000	0.000	0.000	0.000	0.000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
OPA65R-BU8D	A	From Leg	4.000	0.000	81.000	No Ice	18.089	8.200	0.077
			0.000			1/2" Ice	18.722	8.794	0.175
			3.000			1" Ice	19.362	9.395	0.283
						2" Ice	20.662	10.620	0.523
OPA65R-BU8D	B	From Leg	4.000	0.000	81.000	No Ice	18.089	8.200	0.077
			0.000			1/2" Ice	18.722	8.794	0.175
			3.000			1" Ice	19.362	9.395	0.283
						2" Ice	20.662	10.620	0.523
OPA65R-BU8D	C	From Leg	4.000	0.000	81.000	No Ice	18.089	8.200	0.077
			0.000			1/2" Ice	18.722	8.794	0.175
			3.000			1" Ice	19.362	9.395	0.283
						2" Ice	20.662	10.620	0.523
DMP65R-BU8D	A	From Leg	4.000	0.000	81.000	No Ice	15.860	5.950	0.106
			0.000			1/2" Ice	16.800	6.780	0.203
			3.000			1" Ice	17.750	7.640	0.309
						2" Ice	19.710	9.390	0.546
DMP65R-BU8D	B	From Leg	4.000	0.000	81.000	No Ice	15.860	5.950	0.106
			0.000			1/2" Ice	16.800	6.780	0.203
			3.000			1" Ice	17.750	7.640	0.309
						2" Ice	19.710	9.390	0.546

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	Client Crown Castle						Designed by Vijeth		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
DMP65R-BU8D	C	From Leg	4.000	0.000	81.000	2" Ice	19.710	9.390	0.546
			0.000	0.000		No Ice	15.860	5.950	0.106
			3.000	0.000		1/2" Ice	16.800	6.780	0.203
				0.000		1" Ice	17.750	7.640	0.309
DC6-48-60-18-8C-EV	A	From Leg	4.000	0.000	81.000	2" Ice	19.710	9.390	0.546
			0.000	0.000		No Ice	2.736	2.736	0.026
			7.000	0.000		1/2" Ice	2.962	2.962	0.052
				0.000		1" Ice	3.195	3.195	0.082
RRUS 4478 B14_CCIV2	A	From Leg	4.000	0.000	81.000	2" Ice	3.683	3.683	0.152
			0.000	0.000		No Ice	2.021	1.246	0.059
			7.000	0.000		1/2" Ice	2.200	1.396	0.077
				0.000		1" Ice	2.386	1.554	0.097
RRUS 4478 B14_CCIV2	B	From Leg	4.000	0.000	81.000	2" Ice	2.780	1.891	0.147
			0.000	0.000		No Ice	2.021	1.246	0.059
			7.000	0.000		1/2" Ice	2.200	1.396	0.077
				0.000		1" Ice	2.386	1.554	0.097
RRUS 4478 B14_CCIV2	C	From Leg	4.000	0.000	81.000	2" Ice	2.780	1.891	0.147
			0.000	0.000		No Ice	2.021	1.246	0.059
			7.000	0.000		1/2" Ice	2.200	1.396	0.077
				0.000		1" Ice	2.386	1.554	0.097
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	81.000	2" Ice	2.780	1.891	0.147
			0.000	0.000		No Ice	1.968	1.408	0.071
			7.000	0.000		1/2" Ice	2.144	1.564	0.090
				0.000		1" Ice	2.328	1.727	0.111
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	81.000	2" Ice	2.718	2.075	0.163
			0.000	0.000		No Ice	1.968	1.408	0.071
			7.000	0.000		1/2" Ice	2.144	1.564	0.090
				0.000		1" Ice	2.328	1.727	0.111
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	81.000	2" Ice	2.718	2.075	0.163
			0.000	0.000		No Ice	1.968	1.408	0.071
			7.000	0.000		1/2" Ice	2.144	1.564	0.090
				0.000		1" Ice	2.328	1.727	0.111
RRUS 8843 B2/B66A_CCIV2	A	From Leg	4.000	0.000	81.000	2" Ice	2.718	2.075	0.163
			0.000	0.000		No Ice	1.980	1.695	0.075
			7.000	0.000		1/2" Ice	2.157	1.861	0.096
				0.000		1" Ice	2.341	2.035	0.119
RRUS 8843 B2/B66A_CCIV2	B	From Leg	4.000	0.000	81.000	2" Ice	2.733	2.405	0.176
			0.000	0.000		No Ice	1.980	1.695	0.075
			7.000	0.000		1/2" Ice	2.157	1.861	0.096
				0.000		1" Ice	2.341	2.035	0.119
RRUS 8843 B2/B66A_CCIV2	C	From Leg	4.000	0.000	81.000	2" Ice	2.733	2.405	0.176
			0.000	0.000		No Ice	1.980	1.695	0.075
			7.000	0.000		1/2" Ice	2.157	1.861	0.096
				0.000		1" Ice	2.341	2.035	0.119
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	81.000	2" Ice	2.733	2.405	0.176
			0.000	0.000		No Ice	5.746	4.254	0.055
			3.000	0.000		1/2" Ice	6.179	5.014	0.103
				0.000		1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	81.000	2" Ice	7.488	7.155	0.287
			0.000	0.000		No Ice	5.746	4.254	0.055
			3.000	0.000		1/2" Ice	6.179	5.014	0.103
				0.000		1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	81.000	2" Ice	7.488	7.155	0.287
			0.000	0.000		No Ice	5.746	4.254	0.055
			3.000	0.000		1/2" Ice	6.179	5.014	0.103
				0.000		1" Ice	6.607	5.711	0.157
					2" Ice	7.488	7.155	0.287	

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	Project				Date		15:23:54 05/14/20	
	Client		Crown Castle		Designed by		Vijeth	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
6' x 2" Mount Pipe	C	From Leg	1.000	0.000	81.000	No Ice	1.200	1.200	0.022
			0.000			1/2" Ice	1.802	1.802	0.031
			3.000			1" Ice	2.170	2.170	0.045
						2" Ice	2.932	2.932	0.084
						No Ice	1.200	1.200	0.022
			0.000			1/2" Ice	1.802	1.802	0.031
			3.000			1" Ice	2.170	2.170	0.045
						2" Ice	2.932	2.932	0.084
9' x 2" Pipe Mount	A	From Leg	4.000	0.000	81.000	No Ice	2.138	2.138	0.065
			0.000			1/2" Ice	3.066	3.066	0.081
			0.000			1" Ice	4.010	4.010	0.103
						2" Ice	5.131	5.131	0.165
9' x 2" Pipe Mount	B	From Leg	4.000	0.000	81.000	No Ice	2.138	2.138	0.065
			0.000			1/2" Ice	3.066	3.066	0.081
			0.000			1" Ice	4.010	4.010	0.103
						2" Ice	5.131	5.131	0.165
9' x 2" Pipe Mount	C	From Leg	4.000	0.000	81.000	No Ice	2.138	2.138	0.065
			0.000			1/2" Ice	3.066	3.066	0.081
			0.000			1" Ice	4.010	4.010	0.103
						2" Ice	5.131	5.131	0.165
(4) L 2.5x2.5x3/16x4.416'	A	From Leg	2.000	0.000	81.000	No Ice	1.250	0.005	0.025
			0.000			1/2" Ice	1.601	0.024	0.032
			-1.000			1" Ice	1.959	0.049	0.044
						2" Ice	2.698	0.123	0.081
(4) L 2.5x2.5x3/16x4.416'	B	From Leg	2.000	0.000	81.000	No Ice	1.250	0.005	0.025
			0.000			1/2" Ice	1.601	0.024	0.032
			-1.000			1" Ice	1.959	0.049	0.044
						2" Ice	2.698	0.123	0.081
(4) L 2.5x2.5x3/16x4.416'	C	From Leg	2.000	0.000	81.000	No Ice	1.250	0.005	0.025
			0.000			1/2" Ice	1.601	0.024	0.032
			-1.000			1" Ice	1.959	0.049	0.044
						2" Ice	2.698	0.123	0.081
Miscellaneous [NA 510-1]	C	None		0.000	84.000	No Ice	6.360	6.360	0.256
						1/2" Ice	8.520	8.520	0.344
						1" Ice	10.620	10.620	0.459
						2" Ice	14.640	14.640	0.769
Platform Mount [LP 714-1]	C	None		0.000	81.000	No Ice	37.510	37.510	1.600
						1/2" Ice	41.700	41.700	2.496
						1" Ice	45.890	45.890	3.458
						2" Ice	54.290	54.290	5.583
*									
(2) BXA-70063/6CF w/ Mount Pipe	A	From Leg	4.000	0.000	74.000	No Ice	7.819	5.695	0.040
			0.000			1/2" Ice	8.370	6.849	0.100
			1.000			1" Ice	8.886	7.715	0.168
						2" Ice	9.942	9.497	0.331
(2) BXA-70063/6CF w/ Mount Pipe	B	From Leg	4.000	0.000	74.000	No Ice	7.819	5.695	0.040
			0.000			1/2" Ice	8.370	6.849	0.100
			1.000			1" Ice	8.886	7.715	0.168
						2" Ice	9.942	9.497	0.331
(2) BXA-70063/6CF w/ Mount Pipe	C	From Leg	4.000	0.000	74.000	No Ice	7.819	5.695	0.040
			0.000			1/2" Ice	8.370	6.849	0.100
			1.000			1" Ice	8.886	7.715	0.168
						2" Ice	9.942	9.497	0.331
(2) BXA-171063/12CF w/ Mount Pipe	A	From Leg	4.000	0.000	74.000	No Ice	5.029	5.289	0.041
			0.000			1/2" Ice	5.583	6.459	0.087
			1.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
(2) BXA-171063/12CF w/	B	From Leg	4.000	0.000	74.000	No Ice	5.029	5.289	0.041

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
Mount Pipe			0.000			1/2" Ice	5.583	6.459	0.087
			1.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
(2) BXA-171063/12CF w/ Mount Pipe	C	From Leg	4.000	0.000	74.000	No Ice	5.029	5.289	0.041
			0.000			1/2" Ice	5.583	6.459	0.087
			1.000			1" Ice	6.103	7.348	0.140
						2" Ice	7.166	9.148	0.273
RRH2X40 700	A	From Leg	4.000	0.000	74.000	No Ice	1.962	1.034	0.050
			0.000			1/2" Ice	2.137	1.168	0.067
			1.000			1" Ice	2.318	1.311	0.086
						2" Ice	2.704	1.617	0.134
RRH2X40 700	B	From Leg	4.000	0.000	74.000	No Ice	1.962	1.034	0.050
			0.000			1/2" Ice	2.137	1.168	0.067
			1.000			1" Ice	2.318	1.311	0.086
						2" Ice	2.704	1.617	0.134
RRH2X40 700	C	From Leg	4.000	0.000	74.000	No Ice	1.962	1.034	0.050
			0.000			1/2" Ice	2.137	1.168	0.067
			1.000			1" Ice	2.318	1.311	0.086
						2" Ice	2.704	1.617	0.134
RRH2X40-AWS	A	From Leg	4.000	0.000	74.000	No Ice	2.161	1.420	0.044
			0.000			1/2" Ice	2.360	1.590	0.061
			1.000			1" Ice	2.565	1.768	0.082
						2" Ice	2.999	2.143	0.132
RRH2X40-AWS	B	From Leg	4.000	0.000	74.000	No Ice	2.161	1.420	0.044
			0.000			1/2" Ice	2.360	1.590	0.061
			1.000			1" Ice	2.565	1.768	0.082
						2" Ice	2.999	2.143	0.132
RRH2X40-AWS	C	From Leg	4.000	0.000	74.000	No Ice	2.161	1.420	0.044
			0.000			1/2" Ice	2.360	1.590	0.061
			1.000			1" Ice	2.565	1.768	0.082
						2" Ice	2.999	2.143	0.132
RRFDC-3315-PF-48	A	From Leg	4.000	0.000	74.000	No Ice	3.364	2.192	0.032
			0.000			1/2" Ice	3.597	2.395	0.061
			1.000			1" Ice	3.838	2.606	0.093
						2" Ice	4.343	3.049	0.168
RRFDC-4750-PF-48	C	From Leg	4.000	0.000	74.000	No Ice	3.366	2.194	0.016
			0.000			1/2" Ice	3.600	2.397	0.045
			1.000			1" Ice	3.841	2.608	0.077
						2" Ice	4.346	3.051	0.152
DB-T1-6Z-8AB-0Z	A	From Leg	1.000	0.000	74.000	No Ice	4.800	2.000	0.044
			0.000			1/2" Ice	5.070	2.193	0.080
			1.000			1" Ice	5.348	2.393	0.120
						2" Ice	5.926	2.815	0.213
Platform Mount [LP 303-1]	C	None		0.000	74.000	No Ice	14.690	14.690	1.250
						1/2" Ice	18.010	18.010	1.569
						1" Ice	21.340	21.340	1.942
						2" Ice	28.080	28.080	2.852

*

Load Combinations

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Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	88.7 - 47.57	Pole	Max Tension	27	0.000	-0.000	-0.001
			Max. Compression	26	-25.538	0.864	1.560
			Max. Mx	20	-11.068	469.912	-1.858

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L2	47.57 - 0	Pole	Max. My	2	-11.050	-2.119	475.575
			Max. Vy	20	-17.097	469.912	-1.858
			Max. Vx	2	-17.297	-2.119	475.575
			Max. Torque	6			1.293
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.607	0.864	1.560
			Max. Mx	20	-20.845	1446.708	-5.565
			Max. My	2	-20.844	-5.838	1462.666
			Max. Vy	20	-20.392	1446.708	-5.565
			Max. Vx	2	-20.587	-5.838	1462.666
			Max. Torque	6			1.291

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	37.607	-0.011	4.671
	Max. H _x	20	20.869	20.367	-0.070
	Max. H _z	2	20.869	-0.070	20.562
	Max. M _x	2	1462.666	-0.070	20.562
	Max. M _z	8	1446.235	-20.367	0.070
	Max. Torsion	6	1.289	-17.674	10.342
	Min. Vert	11	15.652	-17.604	-10.220
	Min. H _x	8	20.869	-20.367	0.070
	Min. H _z	14	20.869	0.070	-20.562
	Min. M _x	14	-1461.647	0.070	-20.562
	Min. M _z	20	-1446.708	20.367	-0.070
	Min. Torsion	18	-1.274	17.674	-10.342

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	17.391	0.000	0.000	-0.409	0.190	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	20.869	0.070	-20.562	-1462.666	-5.838	-0.573
0.9 Dead+1.0 Wind 0 deg - No Ice	15.652	0.070	-20.562	-1453.638	-5.859	-0.572
1.2 Dead+1.0 Wind 30 deg - No Ice	20.869	10.245	-17.842	-1269.808	-728.248	-1.073
0.9 Dead+1.0 Wind 30 deg - No Ice	15.652	10.245	-17.842	-1261.952	-723.875	-1.072
1.2 Dead+1.0 Wind 60 deg - No Ice	20.869	17.674	-10.342	-736.850	-1255.471	-1.289
0.9 Dead+1.0 Wind 60 deg - No Ice	15.652	17.674	-10.342	-732.236	-1247.891	-1.287
1.2 Dead+1.0 Wind 90 deg - No Ice	20.869	20.367	-0.070	-6.581	-1446.235	-1.153
0.9 Dead+1.0 Wind 90 deg - No Ice	15.652	20.367	-0.070	-6.410	-1437.497	-1.152
1.2 Dead+1.0 Wind 120 deg -	20.869	17.604	10.220	725.324	-1249.410	-0.700

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
0.9 Dead+1.0 Wind 120 deg - No Ice	15.652	17.604	10.220	721.040	-1241.871	-0.700
1.2 Dead+1.0 Wind 150 deg - No Ice	20.869	10.123	17.772	1262.732	-717.735	-0.057
0.9 Dead+1.0 Wind 150 deg - No Ice	15.652	10.123	17.772	1255.177	-713.431	-0.057
1.2 Dead+1.0 Wind 180 deg - No Ice	20.869	-0.070	20.562	1461.647	6.308	0.597
0.9 Dead+1.0 Wind 180 deg - No Ice	15.652	-0.070	20.562	1452.881	6.208	0.596
1.2 Dead+1.0 Wind 210 deg - No Ice	20.869	-10.245	17.842	1268.791	728.717	1.082
0.9 Dead+1.0 Wind 210 deg - No Ice	15.652	-10.245	17.842	1261.197	724.222	1.081
1.2 Dead+1.0 Wind 240 deg - No Ice	20.869	-17.674	10.342	735.835	1255.941	1.274
0.9 Dead+1.0 Wind 240 deg - No Ice	15.652	-17.674	10.342	731.483	1248.240	1.273
1.2 Dead+1.0 Wind 270 deg - No Ice	20.869	-20.367	0.070	5.566	1446.708	1.130
0.9 Dead+1.0 Wind 270 deg - No Ice	15.652	-20.367	0.070	5.657	1437.848	1.129
1.2 Dead+1.0 Wind 300 deg - No Ice	20.869	-17.604	-10.220	-726.341	1249.885	0.692
0.9 Dead+1.0 Wind 300 deg - No Ice	15.652	-17.604	-10.220	-721.795	1242.223	0.691
1.2 Dead+1.0 Wind 330 deg - No Ice	20.869	-10.123	-17.772	-1263.751	718.208	0.071
0.9 Dead+1.0 Wind 330 deg - No Ice	15.652	-10.123	-17.772	-1255.934	713.782	0.072
1.2 Dead+1.0 Ice+1.0 Temp	37.607	-0.000	-0.000	-1.560	0.864	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	37.607	0.011	-4.671	-329.748	-0.100	-0.122
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	37.607	2.330	-4.051	-286.286	-162.741	-0.217
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	37.607	4.024	-2.345	-166.549	-281.535	-0.254
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	37.607	4.640	-0.011	-2.619	-324.651	-0.223
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	37.607	4.012	2.326	161.578	-280.536	-0.132
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	37.607	2.310	4.039	282.046	-161.012	-0.005
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	37.607	-0.011	4.671	326.506	1.896	0.122
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	37.607	-2.330	4.051	283.044	164.537	0.217
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	37.607	-4.024	2.345	163.307	283.331	0.254
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	37.607	-4.640	0.011	-0.623	326.447	0.222
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	37.607	-4.012	-2.326	-164.820	282.333	0.132
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	37.607	-2.310	-4.039	-285.288	162.808	0.006
Dead+Wind 0 deg - Service	17.391	0.014	-4.125	-292.788	-1.018	-0.117
Dead+Wind 30 deg - Service	17.391	2.055	-3.580	-254.226	-145.467	-0.217
Dead+Wind 60 deg - Service	17.391	3.546	-2.075	-147.657	-250.886	-0.258
Dead+Wind 90 deg - Service	17.391	4.086	-0.014	-1.638	-289.028	-0.230
Dead+Wind 120 deg - Service	17.391	3.532	2.050	144.707	-249.672	-0.140

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 150 deg - Service	17.391	2.031	3.566	252.165	-143.364	-0.013
Dead+Wind 180 deg - Service	17.391	-0.014	4.125	291.941	1.410	0.118
Dead+Wind 210 deg - Service	17.391	-2.055	3.580	253.378	145.860	0.217
Dead+Wind 240 deg - Service	17.391	-3.546	2.075	146.810	251.279	0.258
Dead+Wind 270 deg - Service	17.391	-4.086	0.014	0.790	289.420	0.230
Dead+Wind 300 deg - Service	17.391	-3.532	-2.050	-145.555	250.065	0.140
Dead+Wind 330 deg - Service	17.391	-2.031	-3.566	-253.012	143.757	0.013

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-17.391	0.000	0.000	17.391	0.000	0.000%
2	0.070	-20.869	-20.562	-0.070	20.869	20.562	0.000%
3	0.070	-15.652	-20.562	-0.070	15.652	20.562	0.000%
4	10.245	-20.869	-17.842	-10.245	20.869	17.842	0.000%
5	10.245	-15.652	-17.842	-10.245	15.652	17.842	0.000%
6	17.674	-20.869	-10.342	-17.674	20.869	10.342	0.000%
7	17.674	-15.652	-10.342	-17.674	15.652	10.342	0.000%
8	20.367	-20.869	-0.070	-20.367	20.869	0.070	0.000%
9	20.367	-15.652	-0.070	-20.367	15.652	0.070	0.000%
10	17.604	-20.869	10.220	-17.604	20.869	-10.220	0.000%
11	17.604	-15.652	10.220	-17.604	15.652	-10.220	0.000%
12	10.123	-20.869	17.772	-10.123	20.869	-17.772	0.000%
13	10.123	-15.652	17.772	-10.123	15.652	-17.772	0.000%
14	-0.070	-20.869	20.562	0.070	20.869	-20.562	0.000%
15	-0.070	-15.652	20.562	0.070	15.652	-20.562	0.000%
16	-10.245	-20.869	17.842	10.245	20.869	-17.842	0.000%
17	-10.245	-15.652	17.842	10.245	15.652	-17.842	0.000%
18	-17.674	-20.869	10.342	17.674	20.869	-10.342	0.000%
19	-17.674	-15.652	10.342	17.674	15.652	-10.342	0.000%
20	-20.367	-20.869	0.070	20.367	20.869	-0.070	0.000%
21	-20.367	-15.652	0.070	20.367	15.652	-0.070	0.000%
22	-17.604	-20.869	-10.220	17.604	20.869	10.220	0.000%
23	-17.604	-15.652	-10.220	17.604	15.652	10.220	0.000%
24	-10.123	-20.869	-17.772	10.123	20.869	17.772	0.000%
25	-10.123	-15.652	-17.772	10.123	15.652	17.772	0.000%
26	0.000	-37.607	0.000	0.000	37.607	0.000	0.000%
27	0.011	-37.607	-4.671	-0.011	37.607	4.671	0.000%
28	2.330	-37.607	-4.050	-2.330	37.607	4.051	0.000%
29	4.024	-37.607	-2.345	-4.024	37.607	2.345	0.000%
30	4.640	-37.607	-0.011	-4.640	37.607	0.011	0.000%
31	4.012	-37.607	2.326	-4.012	37.607	-2.326	0.000%
32	2.310	-37.607	4.039	-2.310	37.607	-4.039	0.000%
33	-0.011	-37.607	4.671	0.011	37.607	-4.671	0.000%
34	-2.330	-37.607	4.050	2.330	37.607	-4.051	0.000%
35	-4.024	-37.607	2.345	4.024	37.607	-2.345	0.000%
36	-4.640	-37.607	0.011	4.640	37.607	-0.011	0.000%
37	-4.012	-37.607	-2.326	4.012	37.607	2.326	0.000%
38	-2.310	-37.607	-4.039	2.310	37.607	4.039	0.000%
39	0.014	-17.391	-4.125	-0.014	17.391	4.125	0.000%
40	2.055	-17.391	-3.580	-2.055	17.391	3.580	0.000%
41	3.546	-17.391	-2.075	-3.546	17.391	2.075	0.000%
42	4.086	-17.391	-0.014	-4.086	17.391	0.014	0.000%
43	3.532	-17.391	2.050	-3.532	17.391	-2.050	0.000%
44	2.031	-17.391	3.566	-2.031	17.391	-3.566	0.000%
45	-0.014	-17.391	4.125	0.014	17.391	-4.125	0.000%

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 95362.008.01 - WINDHAM NORTH RIDGE ROAD, CT (BU# 842423)</p>	<p>Page 13 of 15</p>
	<p>Project</p>	<p>Date 15:23:54 05/14/20</p>
	<p>Client Crown Castle</p>	<p>Designed by Vijeth</p>

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
46	-2.055	-17.391	3.580	2.055	17.391	-3.580	0.000%
47	-3.546	-17.391	2.075	3.546	17.391	-2.075	0.000%
48	-4.086	-17.391	0.014	4.086	17.391	-0.014	0.000%
49	-3.532	-17.391	-2.050	3.532	17.391	2.050	0.000%
50	-2.031	-17.391	-3.566	2.031	17.391	3.566	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	4	0.0000001	0.00008941
3	Yes	4	0.0000001	0.00005399
4	Yes	5	0.0000001	0.00005860
5	Yes	5	0.0000001	0.00002467
6	Yes	5	0.0000001	0.00006545
7	Yes	5	0.0000001	0.00002784
8	Yes	4	0.0000001	0.00025481
9	Yes	4	0.0000001	0.00015396
10	Yes	5	0.0000001	0.00005811
11	Yes	5	0.0000001	0.00002460
12	Yes	5	0.0000001	0.00006036
13	Yes	5	0.0000001	0.00002561
14	Yes	4	0.0000001	0.00014249
15	Yes	4	0.0000001	0.00008576
16	Yes	5	0.0000001	0.00006486
17	Yes	5	0.0000001	0.00002755
18	Yes	5	0.0000001	0.00005805
19	Yes	5	0.0000001	0.00002446
20	Yes	4	0.0000001	0.00020201
21	Yes	4	0.0000001	0.00012232
22	Yes	5	0.0000001	0.00006243
23	Yes	5	0.0000001	0.00002655
24	Yes	5	0.0000001	0.00006015
25	Yes	5	0.0000001	0.00002547
26	Yes	4	0.0000001	0.00000600
27	Yes	4	0.0000001	0.00054968
28	Yes	4	0.0000001	0.00062649
29	Yes	4	0.0000001	0.00063008
30	Yes	4	0.0000001	0.00053849
31	Yes	4	0.0000001	0.00060882
32	Yes	4	0.0000001	0.00061191
33	Yes	4	0.0000001	0.00053959
34	Yes	4	0.0000001	0.00062631
35	Yes	4	0.0000001	0.00061959
36	Yes	4	0.0000001	0.00054394
37	Yes	4	0.0000001	0.00062891
38	Yes	4	0.0000001	0.00062896
39	Yes	4	0.0000001	0.00000001
40	Yes	4	0.0000001	0.00002574
41	Yes	4	0.0000001	0.00003721
42	Yes	4	0.0000001	0.00001320
43	Yes	4	0.0000001	0.00002524
44	Yes	4	0.0000001	0.00002827
45	Yes	4	0.0000001	0.00000001
46	Yes	4	0.0000001	0.00003573

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47	Yes	4	0.00000001	0.00002563
48	Yes	4	0.00000001	0.00001268
49	Yes	4	0.00000001	0.00003245
50	Yes	4	0.00000001	0.00002804

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	88.7 - 47.57	8.203	40	0.729	0.002
L2	51.9 - 0	3.048	40	0.531	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
84.000	Miscellaneous [NA 510-1]	40	7.467	0.708	0.002	32095
81.000	OPA65R-BU8D	40	7.000	0.695	0.002	20841
74.000	(2) BXA-70063/6CF w/ Mount Pipe	40	5.935	0.662	0.002	10917

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	88.7 - 47.57	40.966	4	3.641	0.012
L2	51.9 - 0	15.232	4	2.653	0.005

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
84.000	Miscellaneous [NA 510-1]	4	37.290	3.538	0.011	6475
81.000	OPA65R-BU8D	4	34.962	3.471	0.010	4204
74.000	(2) BXA-70063/6CF w/ Mount Pipe	4	29.646	3.309	0.009	2201

Compression Checks

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	Client Crown Castle	Designed by Vijeth

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	88.7 - 47.57 (1)	TP30.46x21.89x0.25	41.130	0.000	0.0	23.256	-11.049	1360.460	0.008
L2	47.57 - 0 (2)	TP39.75x29.058x0.313	51.900	0.000	0.0	39.117	-20.844	2288.350	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	88.7 - 47.57 (1)	TP30.46x21.89x0.25	476.068	982.733	0.484	0.000	982.733	0.000
L2	47.57 - 0 (2)	TP39.75x29.058x0.313	1463.817	2172.667	0.674	0.000	2172.667	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u K	φV _n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u kip-ft	φT _n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	88.7 - 47.57 (1)	TP30.46x21.89x0.25	17.310	408.138	0.042	1.076	1047.542	0.001
L2	47.57 - 0 (2)	TP39.75x29.058x0.313	20.599	686.505	0.030	1.073	2371.008	0.000

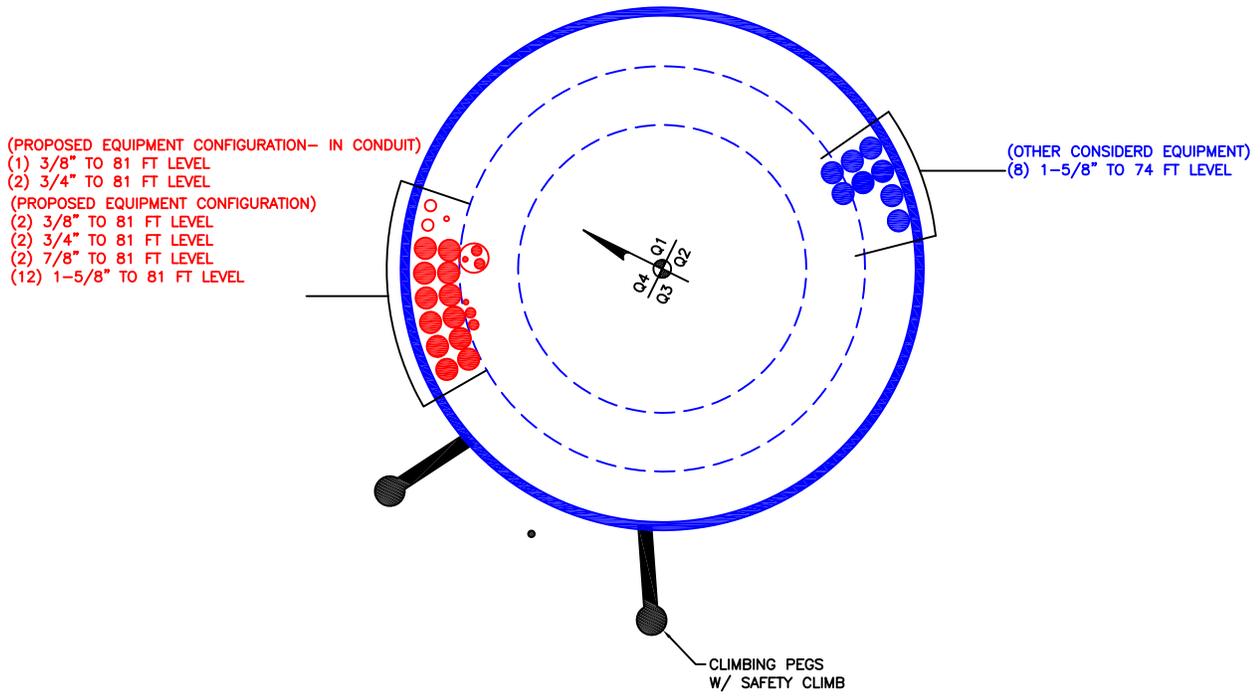
Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	88.7 - 47.57 (1)	0.008	0.484	0.000	0.042	0.001	0.494	1.050	4.8.2 ✓
L2	47.57 - 0 (2)	0.009	0.674	0.000	0.030	0.000	0.684	1.050	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
L1	88.7 - 47.57	Pole	TP30.46x21.89x0.25	1	-11.049	1428.483	47.1	Pass
L2	47.57 - 0	Pole	TP39.75x29.058x0.313	2	-20.844	2402.767	65.1	Pass
Summary								
Pole (L2)							65.1	Pass
RATING =							65.1	Pass

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 842423

APPENDIX C
ADDITIONAL CALCULATIONS

Monopole Base Plate Connection

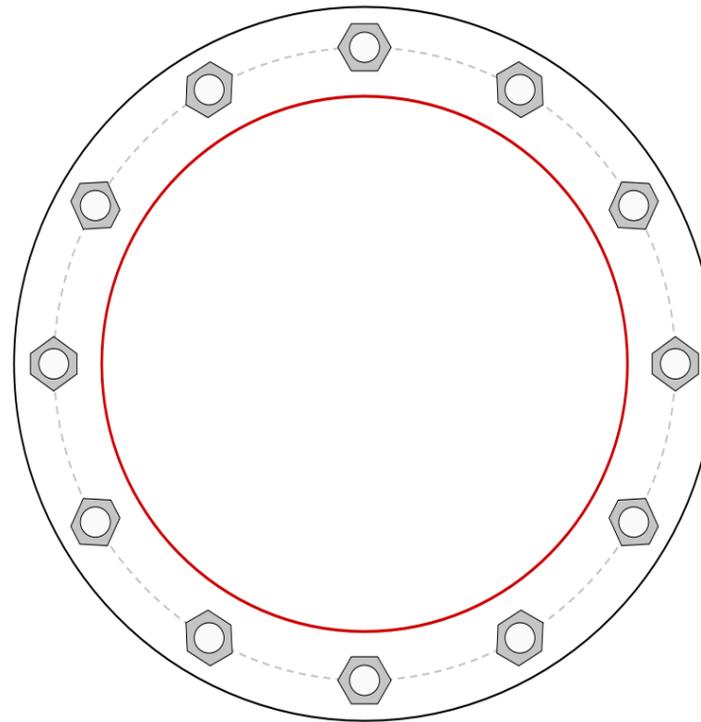


Site Info	
BU #	842423
Site Name	HAM NORTH RIDGE RO
Order #	509319, Rev 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	3

Applied Loads	
Moment (kip-ft)	1463.82
Axial Force (kips)	20.84
Shear Force (kips)	20.60

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 47" BC
Base Plate Data
53" OD x 1.75" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)
Stiffener Data
N/A
Pole Data
39.75" x 0.3125" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary		
<i>(units of kips, kip-in)</i>		
$P_{u_c} = 126.2$	$\phi P_{n_c} = 268.39$	Stress Rating
$V_u = 1.72$	$\phi V_n = 120.77$	44.8%
$M_u = n/a$	$\phi M_n = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	35.88	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	63.3%	Pass

Pier and Pad Foundation



BU #: 842423
 Site Name: WINDHAM NORTH
 App. Number: 509319, Rev 0

TIA-222 Revision: H
 Tower Type: Monopole

Top & Bot. Pad Rein. Different?:
 Block Foundation?:

Superstructure Analysis Reactions		
Compression, P_{comp} :	21	kips
Base Shear, Vu_{comp} :	21	kips
Moment, M_u :	1464	ft-kips
Tower Height, H :	88.7	ft
BP Dist. Above Fdn, bp_{dist} :	5.25	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	181.67	21.00	11.0%	Pass
<i>Bearing Pressure (ksf)</i>	12.54	1.92	15.3%	Pass
<i>Overtuning (kip*ft)</i>	3139.32	1620.19	51.6%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	2953.75	1548.00	49.9%	Pass
<i>Pier Compression (kip)</i>	13497.04	41.36	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	1523.05	531.91	33.3%	Pass
<i>Pad Shear - 1-way (kips)</i>	617.33	97.14	15.0%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.020	11.5%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	2142.83	928.80	41.3%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	6	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	9	
Pier Rebar Quantity, mc :	22	
Pier Tie/Spiral Size, St :	3	
Pier Tie/Spiral Quantity, mt :	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	4	in

*Rating per TIA-222-H Section 15.5

Soil Rating*:	51.6%
Structural Rating*:	49.9%

Pad Properties		
Depth, D :	6	ft
Pad Width, W :	20	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom), Sp :	9	
Pad Rebar Quantity (Bottom), mp :	11	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, Fy :	60	ksi
Concrete Compressive Strength, $F'c$:	3	ksi
Dry Concrete Density, δc :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Net Bearing, Q_{net} :	16.000	ksf
Cohesion, Cu :	0.000	ksf
Friction Angle, ϕ :	30.0	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.5	
Neglected Depth, N :	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	n/a	ft

<--Toggle between Gross and Net

REPORT SUMMARY

Seismic

SS	0.173
S1	0.062
FA	1.6
FV	2.4
SMS	0.277
SM1	0.149
SDS	0.185
SD1	0.099
TL	6
PGA	0.086
PGAM	0.138
FPGA	1.6
LE	1
Seismic Design Category	B

Ice

Thickness	0.75 in.
Concurrent Temperature	15 F
Gust Speed	50 mph

Exhibit E

Mount Analysis



Date: April 10, 2020

Kevin Morrow
Crown Castle
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Charlotte, NC 28277
(704) 405-6619

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

Subject: Mount Modification Report

Carrier Designation: AT&T Mobility Equipment Change-Out
Carrier Site Number: 10065747
Carrier Site Name: Windham North Ridge Road

Crown Castle Designation: **Crown Castle BU Number:** 842423
Crown Castle Site Name: Windham North Ridge Road
Crown Castle JDE Job Number: 596322
Crown Castle Order Number: 509319, Rev.0

Engineering Firm Designation: **B+T Group Report Designation:** 95362.006.01

Site Data: 10 North Ridge Drive, Windham, CT 06256, Windham County
Latitude 41° 44' 23.53" Longitude -72° 10' 22.47"

Structure Information: **Tower Height & Type:** 86.7 ft. Monopole
Mount Elevation: 81 ft.
Mount Type: 14 ft. Platform Mount

Dear Mr. Morrow,

B+T Group is pleased to submit this "Mount Modification Report" to determine the structural integrity of AT&T Mobility's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level to be:

Platform Mount

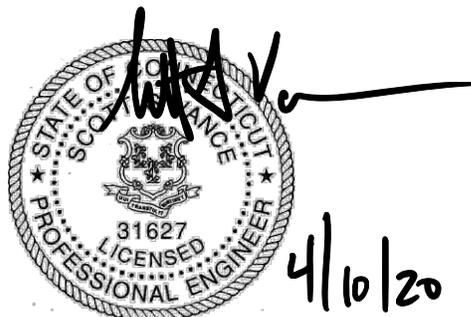
Sufficient

*Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Joseph Variamparampil

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2021



Scott S. Vance, P.E.

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Mount Modification Design Drawings

1) INTRODUCTION

This is a 14 ft. platform mount, mapped by B+T Group.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	130 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.173
Seismic S_1:	0.062
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
81	88	3	Ericsson	RRUS 4449 B5/B12	14 ft. Platform Mount
		3	Ericsson	RRUS 4478 B14 CCIV2	
		3	Ericsson	RRUS 8843 B2/B66A CCIV2	
		3	Ericsson	RRUS-32 B30	
		6	Powerwave	LGP21401	
		2	Raycap	DC6-48-60-18	
	1	Raycap	DC6-48-60-18-8C-EV		
	84	3	CCI Antennas	DMP65R-BU8D	
		3	CCI Antennas	OPA-65R-LCUU-H8	
		3	CCI Antennas	OPA65R-BU8D	
		3	Powerwave	7770.00	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 03/04/2020	Crown Castle
RFDS		Date: 02/26/2020	
Mount Mapping	B+T Group	Date: 03/24/2020	On File
Mount Analysis Report	B+T Group	Date: 04/01/2020	On File

3.1) Analysis Method

RISA-3D (Version 17.0.0), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed by B+T Group, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision C).

3.2) Assumptions

1. The mount was properly fabricated and installed in accordance with its original design and manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
10. The following material grades were assumed (Unless Noted Otherwise):
 - (a) Connection Bolts : ASTM A325
 - (b) Steel Pipe : ASTM A53 (GR. 35)
 - (c) HSS (Round) : ASTM 500 (GR. B-42)
 - (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - (e) Channel : ASTM A36 (GR. 36)
 - (f) Steel Solid Rod : ASTM A36 (GR. 36)
 - (g) Steel Plate : ASTM A36 (GR. 36)
 - (h) Steel Angle : ASTM A36 (GR. 36)
 - (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform Mount)

Notes	Component	Critical Member	Centerline (ft.)	% Capacity	Pass / Fail
1,2	Mount Pipes	47	81	84.4	Pass
	Main Horizontals	3	81	40.1	Pass
	Support Tubes	8	81	45.6	Pass
	Support Angles	64	81	7.3	Pass
1,2,3	Support Rail Pipe	M82	81	83.8	Pass
	Support Rail Connection	M84	81	82.5	Pass
	Mount Pipe	71	81	80.2	Pass
	New Kicker Angles	M86	81	29.6	Pass

Structure Rating (max from all components) =	84.4%
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Notes:

- 1) See additional documentation in "Appendix B" for calculations supporting the % capacity consumed.
- 2) All sectors are typical
- 3) Proposed Modification Member

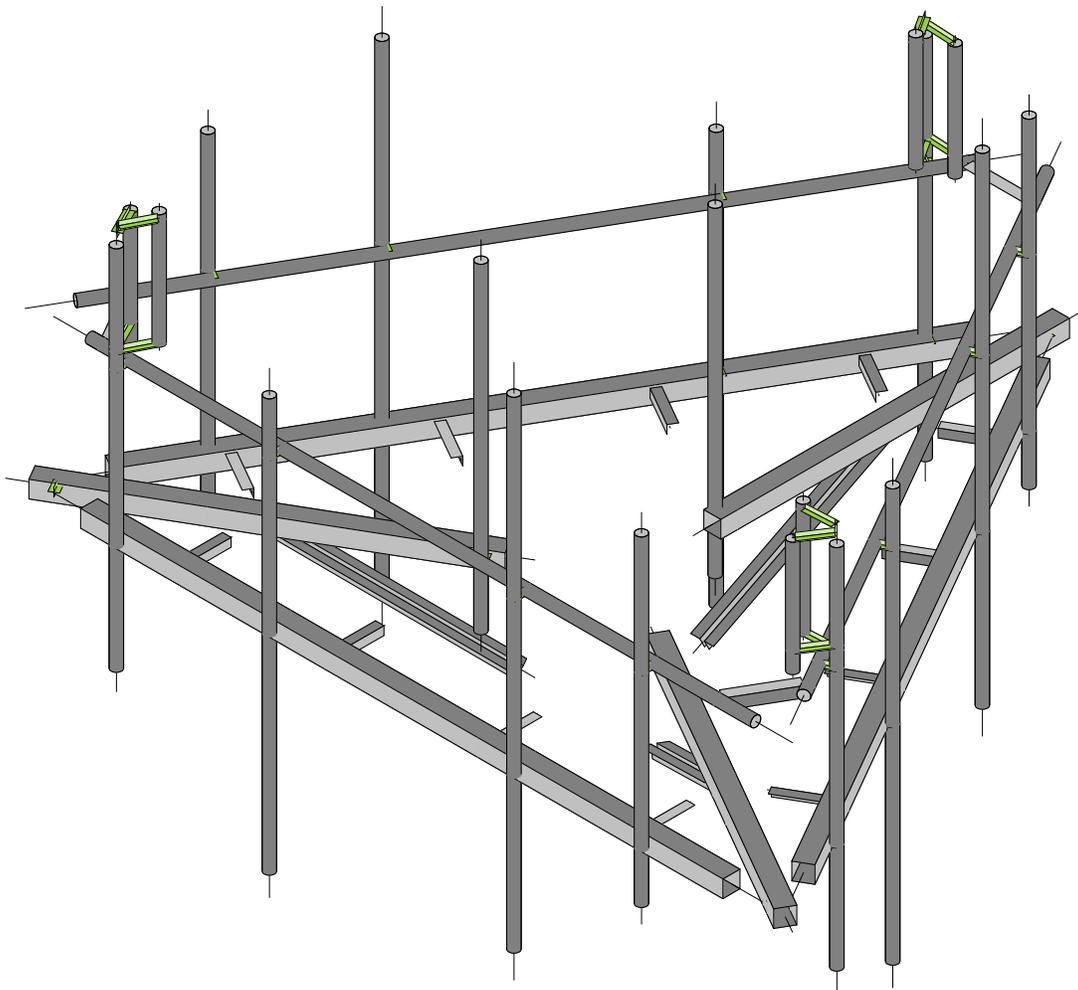
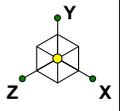
4.1) RECOMMENDATIONS

The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the structural modifications listed below must be completed.

1. Installation of new kicker kit, SitePro1 Part# PRK-1245
2. Installation of new handrail kit, SitePro1 Part# HRK 14

Engineering detail drawings have been provided in Appendix C – Mount Modification Design Drawings.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

B+T Group

JV

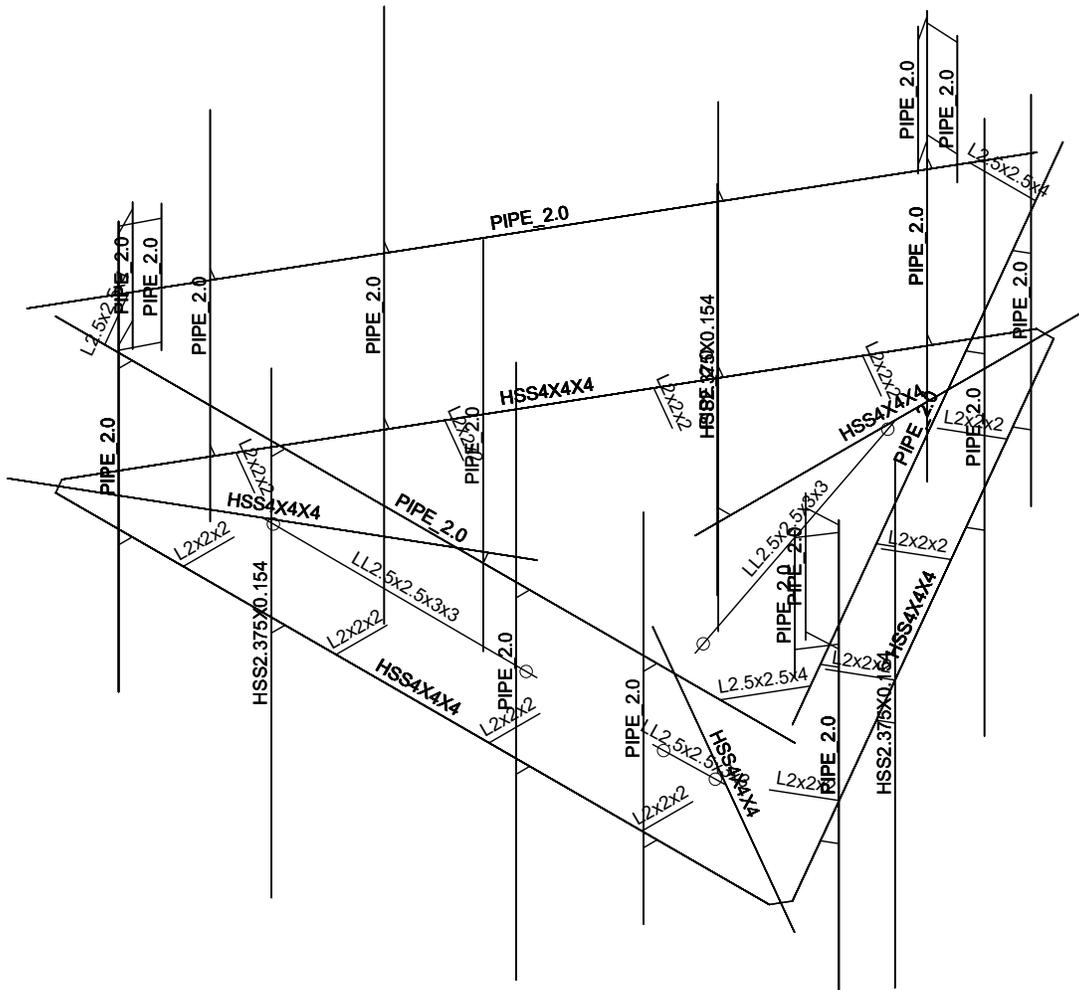
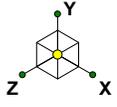
95362.006.01

842423 - Windham North Ridge Road

SK - 1

Apr 9, 2020 at 10:12 AM

95362_006_01_Windham North Ri...



Envelope Only Solution

B+T Group

JV

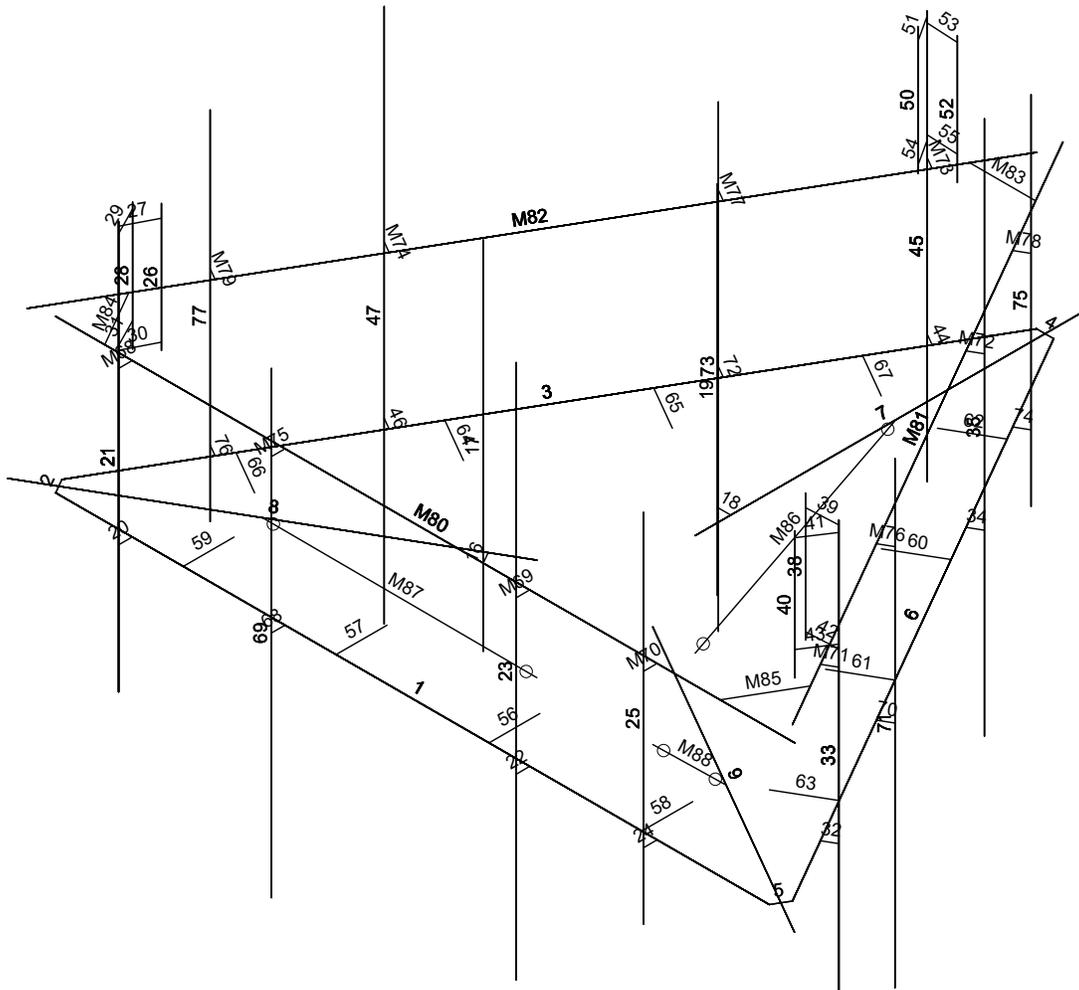
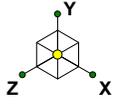
95362.006.01

842423 - Windham North Ridge Road

SK - 2

Apr 9, 2020 at 10:13 AM

95362_006_01_Windham North Ri...



Envelope Only Solution

B+T Group

JV

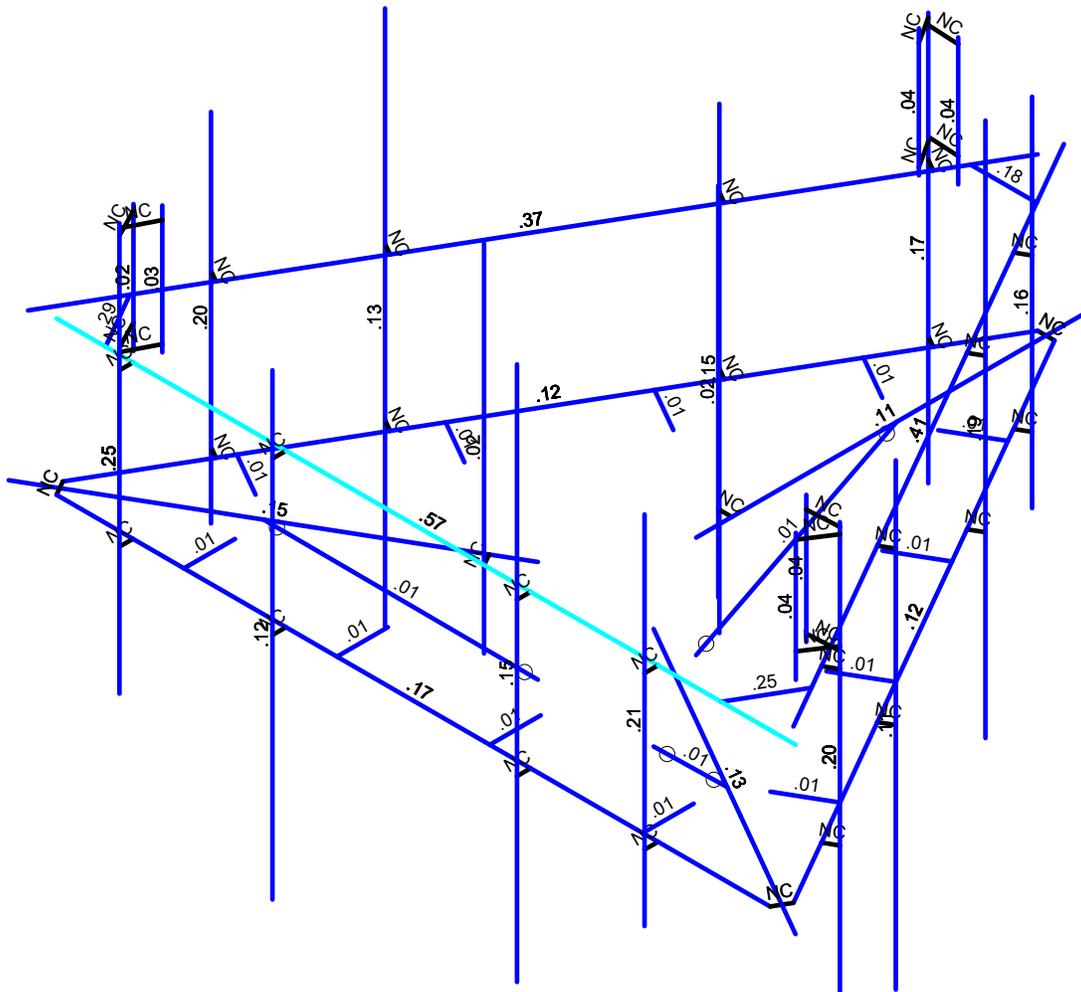
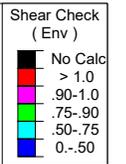
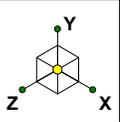
95362.006.01

842423 - Windham North Ridge Road

SK - 3

Apr 9, 2020 at 10:13 AM

95362_006_01_Windham North Ri...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	842423 - Windham North Ridge Road	SK - 5
JV		Apr 9, 2020 at 10:15 AM
95362.006.01		95362_006_01_Windham North Ri...

APPENDIX B

SOFTWARE INPUT CALCULATIONS AND SOFTWARE ANALYSIS OUTPUT

PROJECT	95362.005.01 - Windham Nor	KSC
SUBJECT	Platform Mount Mount Analysis	
DATE	04/09/20	PAGE OF



B+T GRP
 1717 S. Boulder, Suite 300
 Tulsa, OK 74159
 (918) 587-4630

Tower Type	:	Monopole	
Ground Elevation	z_s :	313	ft [ASCE7 Hazard Tool]
Tower Height	:	86.70	ft
Mount Elevation	:	81.00	ft
Antenna Elevation	:	84.00	ft
Crest Height	:	0	ft
Risk Category	:	II	[Table 2-1]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V :	130	mph [ASCE7 Hazard Tool]
Ice wind Velocity	V_i :	50	mph [ASCE7 Hazard Tool]
Service Velocity	V_s :	30	mph [ASCE7 Hazard Tool]
Base Ice thickness	t_i :	1.50	in [ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S :	0.17	
	S_1 :	0.06	
	S_{DS} :	0.19	
	S_{D1} :	0.10	
Gust Factor	G_h :	1.00	[Sec. 16.6]
Pressure Coefficient	K_z :	1.22	[Sec. 2.6.5.2]
Topography Factor	K_{zt} :	1.00	[Sec. 2.6.6]
Elevation Factor	K_e :	0.99	[Sec. 2.6.8]
Directionality Factor	K_d :	0.95	[Sec. 16.6]
Shielding Factor	K_a :	0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz} :	1.65	in [Sec. 2.6.10]
Importance Factor	I_e :	1	[Table 2-3]
Response Coefficient	C_s :	0.093	[Sec. 2.7.7.1]
Amplification	A_s :	2.737024	[Sec. 16.7]

PROJECT	95362.005.01 - Windham Nor		KSC
SUBJECT	Platform Mount Mount Analysis		
DATE	04/09/20	PAGE	OF



Manufacturer	Model	Qty	Aspect Ratio	C_a	EPA_N (ft ²)	EPA_T (ft ²)	EPA_{N-Ice} (ft ²)	EPA_{T-Ice} (ft ²)	$F_{A \text{ No Ice (N)}}$	$F_{A \text{ No Ice (T)}}$	$F_{A \text{ Ice (N)}}$	$F_{A \text{ Ice (T)}}$
				flat/round								
VERWAVE TECHNOLOGIES	7770.00	0.5	5.00	1.31	2.10	0.95	2.89	1.68	0.12	0.06	0.02	0.01
VERWAVE TECHNOLOGIES	7770.00	0.5	5.00	1.31	2.10	0.95	2.89	1.68	0.12	0.06	0.02	0.01
VERWAVE TECHNOLOGIES	TME-LGP21401	2	5.54	1.34	0.52	1.84	1.44	3.07	0.03	0.11	0.00	0.02
CCI ANTENNAS	OPA-65R-LCUU-H8	0.5	6.44	1.38	4.64	2.26	5.90	3.43	0.30	0.15	0.05	0.03
CCI ANTENNAS	OPA-65R-LCUU-H8	0.5	6.44	1.38	4.64	2.26	5.90	3.43	0.30	0.15	0.05	0.03
ERICSSON	TME-RRUS 32 B30	1	2.25	1.20	2.29	1.32	3.26	2.18	0.12	0.07	0.02	0.01
CCI ANTENNAS	OPA-65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.37	3.82	0.40	0.15	0.06	0.02
CCI ANTENNAS	OPA-65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.37	3.82	0.40	0.15	0.06	0.02
ERICSSON	TME-RRUS 4478 B14	1	1.23	1.20	1.54	0.88	2.29	1.51	0.08	0.05	0.01	0.01
CCI ANTENNAS	DMP65R-BU8DA	0.5	4.64	1.30	6.90	2.57	8.27	3.79	0.40	0.15	0.06	0.02
CCI ANTENNAS	DMP65R-BU8DA	0.5	4.64	1.30	6.90	2.57	8.27	3.79	0.40	0.15	0.06	0.02
VERWAVE TECHNOLOGIES	7770.00	0.5	5.00	1.31	2.10	0.95	2.89	1.68	0.12	0.06	0.02	0.01
VERWAVE TECHNOLOGIES	7770.00	0.5	5.00	1.31	2.10	0.95	2.89	1.68	0.12	0.06	0.02	0.01
VERWAVE TECHNOLOGIES	TME-LGP21401	2	5.54	1.34	0.52	1.84	1.44	3.07	0.03	0.11	0.00	0.02
CCI ANTENNAS	OPA-65R-LCUU-H8	0.5	6.44	1.38	4.64	2.26	5.90	3.43	0.30	0.15	0.05	0.03
CCI ANTENNAS	OPA-65R-LCUU-H8	0.5	6.44	1.38	4.64	2.26	5.90	3.43	0.30	0.15	0.05	0.03
ERICSSON	TME-RRUS 32 B30	1	2.25	1.20	2.29	1.32	3.26	2.18	0.12	0.07	0.02	0.01

PROJECT	95362.005.01 - Windham Nor			KSC
SUBJECT	Platform Mount Mount Analysis			
DATE	04/09/20	PAGE	3	OF



Manufacturer	Model	Qty	Aspect Ratio	C_a	EPA_N (ft ²)	EPA_T (ft ²)	EPA_{N-Ice} (ft ²)	EPA_{T-Ice} (ft ²)	$F_{A \text{ No Ice (N)}}$	$F_{A \text{ No Ice (T)}}$	$F_{A \text{ Ice (N)}}$	$F_{A \text{ Ice (T)}}$
				flat/round								
CCI ANTENNAS	OPA-65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.37	3.82	0.00	0.15	0.06	0.02
CCI ANTENNAS	OPA-65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.37	3.82	0.00	0.15	0.06	0.02
ERICSSON	TME-RRUS 4478 B14	1	1.23	1.20	1.54	0.88	2.29	1.51	0.00	0.05	0.01	0.01
CCI ANTENNAS	DMP65R-BU8DA	0.5	4.64	1.30	6.90	2.57	8.27	3.79	0.00	0.15	0.06	0.02
CCI ANTENNAS	DMP65R-BU8DA	0.5	4.64	1.30	6.90	2.57	8.27	3.79	0.00	0.15	0.06	0.02
ERWAVE TECHNOLOGI	7770.00	0.5	5.00	1.31	2.10	0.95	2.89	1.68	0.00	0.06	0.02	0.01
ERWAVE TECHNOLOGI	7770.00	0.5	5.00	1.31	2.10	0.95	2.89	1.68	0.00	0.06	0.02	0.01
ERWAVE TECHNOLOGI	TME-LGP21401	2	5.54	1.34	0.52	1.84	1.44	3.07	0.00	0.11	0.00	0.02
CCI ANTENNAS	OPA-65R-LCUU-H8	0.5	6.44	1.38	4.64	2.26	5.90	3.43	0.00	0.15	0.05	0.03
CCI ANTENNAS	OPA-65R-LCUU-H8	0.5	6.44	1.38	4.64	2.26	5.90	3.43	0.00	0.15	0.05	0.03
ERICSSON	TME-RRUS 32 B30	1	2.25	1.20	2.29	1.32	3.26	2.18	0.00	0.07	0.02	0.01
CCI ANTENNAS	OPA-65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.37	3.82	0.00	0.15	0.06	0.02
CCI ANTENNAS	OPA-65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.37	3.82	0.00	0.15	0.06	0.02
ERICSSON	TME-RRUS 4478 B14	1	1.23	1.20	1.54	0.88	2.29	1.51	0.00	0.05	0.01	0.01
CCI ANTENNAS	DMP65R-BU8DA	0.5	4.64	1.30	6.90	2.57	8.27	3.79	0.00	0.15	0.06	0.02
CCI ANTENNAS	DMP65R-BU8DA	0.5	4.64	1.30	6.90	2.57	8.27	3.79	0.00	0.15	0.06	0.02

PROJECT	95362.005.01 - Windham Nor	KSC
SUBJECT	Platform Mount Mount Analysis	
DATE	04/09/20	PAGE 4 OF



Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _N (ft ²)	EPA _T (ft ²)	EPA _{N-Ice} (ft ²)	EPA _{T-Ice} (ft ²)	F _{A No Ice (N)}	F _{A No Ice (T)}	F _{A Ice (N)}	F _{A Ice (T)}
RAYCAP	DC6-48-60-18	1	1.64	1.20	3.18	1.05	4.26	1.87	0.17	0.06	0.03	0.01
RAYCAP	DC6-48-60-18	1	1.64	1.20	3.18	1.05	4.26	1.87	0.17	0.06	0.03	0.01
RAYCAP	DC6-48-60-18-8C-EV	1	3.07	0.51	2.23	2.23	3.26	3.26	0.05	0.05	0.01	0.01
ERICSSON	4449 B5/B12	1	1.36	1.20	1.64	1.17	2.42	1.87	0.09	0.06	0.01	0.01
ERICSSON	8843 B2/B66A	1	1.36	1.20	1.65	1.41	2.44	2.16	0.09	0.08	0.01	0.01
ERICSSON	4449 B5/B12	1	1.36	1.20	1.64	1.17	2.42	1.87	0.09	0.06	0.01	0.01



Company : B+T Group
 Designer : JV
 Job Number : 95362.006.01
 Model Name : 842423 - Windham North Ridge Road

Apr 9, 2020
 10:16 AM
 Checked By: _____

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
33	33	2.3	0	4.499735	0	
34	34	2.3	7	4.499735	0	
35	35	2.3	-3.5	4.499735	0	
36	36	4.8	0	4.233902	0	
37	37	4.8	0	4.499735	0	
38	38	4.8	5.7	4.499735	0	
39	39	4.8	-1.3	4.499735	0	
40	40	-5.217415	5.666667	3.942267	0	
41	41	-5.217415	3.166667	3.942267	0	
42	42	-5.5	5.416667	4.499735	0	
43	43	-5.217415	5.416667	3.942267	0	
44	44	-5.782585	5.408402	3.942267	0	
45	45	-5.782585	2.908402	3.942267	0	
46	46	-5.5	5.291667	4.499735	0	
47	47	-5.782585	5.291667	3.942267	0	
48	48	-5.5	3.308027	4.499735	0	
49	49	-5.217415	3.308027	3.942267	0	
50	50	-5.5	3.39136	4.499735	0	
51	51	-5.782585	3.39136	3.942267	0	
52	52	6.416667	0	2.646189	0	
53	53	6.646885	0	2.513272	0	
54	54	6.646885	5.5	2.513272	0	
55	55	6.646885	-2.5	2.513272	0	
56	56	2.516667	0	-4.108809	0	
57	57	2.746885	0	-4.241726	0	
58	58	2.746885	7	-4.241726	0	
59	59	2.746885	-3.5	-4.241726	0	
60	64	6.022811	5.666667	2.54728	0	
61	65	6.022811	3.166667	2.54728	0	
62	66	6.646885	5.416667	2.513272	0	
63	67	6.022811	5.416667	2.54728	0	
64	68	6.305396	5.408402	3.036732	0	
65	69	6.305396	2.908402	3.036732	0	
66	70	6.646885	5.291667	2.513272	0	
67	71	6.305396	5.291667	3.036732	0	
68	72	6.646885	3.308027	2.513272	0	
69	73	6.022811	3.308027	2.54728	0	
70	74	6.646885	3.39136	2.513272	0	
71	75	6.305396	3.39136	3.036732	0	
72	76	-0.916667	2e-16	-6.880091	0	
73	77	-1.146885	2e-16	-7.013007	0	
74	78	-1.146885	5.5	-7.013007	0	
75	79	-1.146885	-2.5	-7.013007	0	
76	80	-4.816667	2e-16	-0.125093	0	
77	81	-5.046885	2e-16	-0.258009	0	
78	82	-5.046885	7	-0.258009	0	
79	83	-5.046885	-3.5	-0.258009	0	
80	88	-0.805396	5.666667	-6.489547	0	
81	89	-0.805396	3.166667	-6.489547	0	
82	90	-1.146885	5.416667	-7.013007	0	
83	91	-0.805396	5.416667	-6.489547	0	
84	92	-0.522811	5.408402	-6.978999	0	
85	93	-0.522811	2.908402	-6.978999	0	
86	94	-1.146885	5.291667	-7.013007	0	
87	95	-0.522811	5.291667	-6.978999	0	
88	96	-1.146885	3.308027	-7.013007	0	
89	97	-0.805396	3.308027	-6.489547	0	



Company : B+T Group
 Designer : JV
 Job Number : 95362.006.01
 Model Name : 842423 - Windham North Ridge Road

Apr 9, 2020
 10:16 AM
 Checked By: _____

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
90	98	-1.146885	3.39136	-7.013007	0	
91	99	-0.522811	3.39136	-6.978999	0	
92	100	1.5	0	4.233902	0	
93	101	1.5	0	3.233902	0	
94	102	-1.5	0	4.233902	0	
95	103	-1.5	0	3.233902	0	
96	104	4.5	0	4.233902	0	
97	105	4.5	0	3.233902	0	
98	106	-4.5	0	4.233902	0	
99	107	-4.5	0	3.233902	0	
100	108	2.916667	0	-3.415989	0	
101	109	2.050641	0	-2.915989	0	
102	110	4.416667	0	-0.817913	0	
103	111	3.550641	0	-0.317913	0	
104	112	1.416667	0	-6.014065	0	
105	113	0.550641	0	-5.514065	0	
106	114	5.916667	0	1.780163	0	
107	115	5.050641	0	2.280163	0	
108	116	-4.416667	0	-0.817913	0	
109	117	-3.550641	0	-0.317913	0	
110	118	-2.916667	0	-3.415989	0	
111	119	-2.050641	0	-2.915989	0	
112	120	-5.916667	0	1.780163	0	
113	121	-5.050641	0	2.280163	0	
114	122	-1.416667	0	-6.014065	0	
115	123	-0.550641	0	-5.514065	0	
116	124	-2.5	0	4.233902	0	
117	125	-2.5	0	4.499735	0	
118	126	-2.5	4.5	4.499735	0	
119	127	-2.5	-4.5	4.499735	0	
120	128	4.916667	0	0.048113	0	
121	129	5.146885	0	-0.084804	0	
122	130	5.146885	4.5	-0.084804	0	
123	131	5.146885	-4.5	-0.084804	0	
124	132	-2.416667	0	-4.282014	0	
125	133	-2.646885	0	-4.414931	0	
126	134	-2.646885	4.5	-4.414931	0	
127	135	-2.646885	-4.5	-4.414931	0	
128	136	1.266667	0	-6.273873	0	
129	137	1.496885	0	-6.40679	0	
130	138	1.496885	5.7	-6.40679	0	
131	139	1.496885	-1.3	-6.40679	0	
132	140	-6.066667	0	2.039971	0	
133	141	-6.296885	0	1.907054	0	
134	142	-6.296885	5.7	1.907054	0	
135	143	-6.296885	-1.3	1.907054	0	
136	137A	-7.083333	0	4.089564	0	
137	138A	-0.	0	-8.179129	0	
138	139A	7.083333	0	4.089564	0	
139	N139	-7	3	4.233902	0	
140	N140	7.5	3	4.233902	0	
141	N141	-5.5	3	4.233902	0	
142	N142	-5.5	3	4.499735	0	
143	N143	2.3	3	4.233902	0	
144	N144	2.3	3	4.499735	0	
145	N145	4.8	3	4.233902	0	
146	N146	4.8	3	4.499735	0	



Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
147	N147	6.416667	3	2.646189	0	
148	N148	6.646885	3	2.513272	0	
149	N149	2.516667	3	-4.108809	0	
150	N150	2.746885	3	-4.241726	0	
151	N151	-0.916667	3	-6.880091	0	
152	N152	-1.146885	3	-7.013007	0	
153	N153	-4.816667	3	-0.125093	0	
154	N154	-5.046885	3	-0.258009	0	
155	N155	-2.5	3	4.233902	0	
156	N156	-2.5	3	4.499735	0	
157	N157	4.916667	3	0.048113	0	
158	N158	5.146885	3	-0.084804	0	
159	N159	-2.416667	3	-4.282014	0	
160	N160	-2.646885	3	-4.414931	0	
161	N161	1.266667	3	-6.273873	0	
162	N162	1.496885	3	-6.40679	0	
163	N163	-6.066667	3	2.039971	0	
164	N164	-6.296885	3	1.907054	0	
165	N165	7.166667	3	3.945227	0	
166	N166	-0.083333	3	-8.612142	0	
167	N167	-0.166667	3	-8.179129	0	
168	N168	-7.416667	3	4.37824	0	
169	N169	-0.647792	3	-7.345795	0	
170	N170	0.647792	3	-7.345795	0	
171	N171	-6.03775	3	4.233902	0	
172	N172	-6.685541	3	3.111894	0	
173	N173	6.685541	3	3.111894	0	
174	N174	6.03775	3	4.233902	0	
175	N175	-0.	-2	-1.312335	0	
176	N176	0	-4e-16	-5.25	0	
177	N177	-1.136515	-2	0.656168	0	
178	N178	-4.546633	-4e-16	2.625	0	
179	N179	1.136515	-2	0.656167	0	
180	N180	4.546633	-4e-16	2.625	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	11	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	9	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N175	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N177	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N179	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	1	1	4			MF-H1	Beam	Tube	A500 Gr.B...	Typical
2	2	1	2			RIGID	None	None	RIGID	Typical
3	3	2	3			MF-H1	Beam	Tube	A500 Gr.B...	Typical
4	4	3	6			RIGID	None	None	RIGID	Typical
5	5	4	5			RIGID	None	None	RIGID	Typical
6	6	5	6			MF-H1	Beam	Tube	A500 Gr.B...	Typical
7	7	8	9			F1-S1	Beam	Tube	A500 Gr.B...	Typical
8	8	10	11			F1-S1	Beam	Tube	A500 Gr.B...	Typical



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Member Primary Data (Continued)

Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
9	9	12	13		F1-S1	Beam	Tube	A500 Gr.B..	Typical
10	16	20	21		RIGID	None	None	RIGID	Typical
11	17	22	23		MF-P1	Column	Pipe	A53 Gr.B	Typical
12	18	24	25		RIGID	None	None	RIGID	Typical
13	19	26	27		MF-P1	Column	Pipe	A53 Gr.B	Typical
14	20	28	29		RIGID	None	None	RIGID	Typical
15	21	30	31		MF-P1	Column	Pipe	A53 Gr.B	Typical
16	22	32	33		RIGID	None	None	RIGID	Typical
17	23	34	35		MF-P1	Column	Pipe	A53 Gr.B	Typical
18	24	36	37		RIGID	None	None	RIGID	Typical
19	25	38	39		MF-P1	Column	Pipe	A53 Gr.B	Typical
20	26	40	41		MF-P1	Column	Pipe	A53 Gr.B	Typical
21	27	42	43		RIGID	None	None	RIGID	Typical
22	28	44	45		MF-P1	Column	Pipe	A53 Gr.B	Typical
23	29	46	47		RIGID	None	None	RIGID	Typical
24	30	48	49		RIGID	None	None	RIGID	Typical
25	31	50	51		RIGID	None	None	RIGID	Typical
26	32	52	53		RIGID	None	None	RIGID	Typical
27	33	54	55		MF-P1	Column	Pipe	A53 Gr.B	Typical
28	34	56	57		RIGID	None	None	RIGID	Typical
29	35	58	59		MF-P1	Column	Pipe	A53 Gr.B	Typical
30	38	64	65		MF-P1	Column	Pipe	A53 Gr.B	Typical
31	39	66	67		RIGID	None	None	RIGID	Typical
32	40	68	69		MF-P1	Column	Pipe	A53 Gr.B	Typical
33	41	70	71		RIGID	None	None	RIGID	Typical
34	42	72	73		RIGID	None	None	RIGID	Typical
35	43	74	75		RIGID	None	None	RIGID	Typical
36	44	76	77		RIGID	None	None	RIGID	Typical
37	45	78	79		MF-P1	Column	Pipe	A53 Gr.B	Typical
38	46	80	81		RIGID	None	None	RIGID	Typical
39	47	82	83		MF-P1	Column	Pipe	A53 Gr.B	Typical
40	50	88	89		MF-P1	Column	Pipe	A53 Gr.B	Typical
41	51	90	91		RIGID	None	None	RIGID	Typical
42	52	92	93		MF-P1	Column	Pipe	A53 Gr.B	Typical
43	53	94	95		RIGID	None	None	RIGID	Typical
44	54	96	97		RIGID	None	None	RIGID	Typical
45	55	98	99		RIGID	None	None	RIGID	Typical
46	56	100	101	90	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
47	57	102	103	180	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
48	58	104	105	90	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
49	59	106	107	180	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
50	60	108	109	90	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
51	61	110	111	180	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
52	62	112	113	90	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
53	63	114	115	180	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
54	64	116	117	90	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
55	65	118	119	180	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
56	66	120	121	90	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
57	67	122	123	180	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
58	68	124	125		RIGID	None	None	RIGID	Typical
59	69	126	127		New Mount Pipe	Column	Wide Flange	A500 Gr.B..	Typical
60	70	128	129		RIGID	None	None	RIGID	Typical
61	71	130	131		New Mount Pipe	Column	Wide Flange	A500 Gr.B..	Typical
62	72	132	133		RIGID	None	None	RIGID	Typical
63	73	134	135		New Mount Pipe	Column	Wide Flange	A500 Gr.B..	Typical
64	74	136	137		RIGID	None	None	RIGID	Typical
65	75	138	139		MF-P1	Column	Pipe	A53 Gr.B	Typical



Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
66	76	140	141			RIGID	None	None	RIGID	Typical
67	77	142	143			MF-P1	Column	Pipe	A53 Gr.B	Typical
68	M68	N141	N142			RIGID	None	None	RIGID	Typical
69	M69	N143	N144			RIGID	None	None	RIGID	Typical
70	M70	N145	N146			RIGID	None	None	RIGID	Typical
71	M71	N147	N148			RIGID	None	None	RIGID	Typical
72	M72	N149	N150			RIGID	None	None	RIGID	Typical
73	M73	N151	N152			RIGID	None	None	RIGID	Typical
74	M74	N153	N154			RIGID	None	None	RIGID	Typical
75	M75	N155	N156			RIGID	None	None	RIGID	Typical
76	M76	N157	N158			RIGID	None	None	RIGID	Typical
77	M77	N159	N160			RIGID	None	None	RIGID	Typical
78	M78	N161	N162			RIGID	None	None	RIGID	Typical
79	M79	N163	N164			RIGID	None	None	RIGID	Typical
80	M80	N139	N140			New SUpport ...	Beam	Pipe	A53 Gr.B	Typical
81	M81	N165	N166			New SUpport ...	Beam	Pipe	A53 Gr.B	Typical
82	M82	N167	N168			New SUpport ...	Beam	Pipe	A53 Gr.B	Typical
83	M83	N169	N170		90	New Support ...	Beam	Single Angle	A36 Gr.36	Typical
84	M84	N171	N172		90	New Support ...	Beam	Single Angle	A36 Gr.36	Typical
85	M85	N173	N174		90	New Support ...	Beam	Single Angle	A36 Gr.36	Typical
86	M86	N175	N176			Kicker Angle	VBrace	Double Angle (...)	A36 Gr.36	Typical
87	M87	N177	N178			Kicker Angle	VBrace	Double Angle (...)	A36 Gr.36	Typical
88	M88	N179	N180			Kicker Angle	VBrace	Double Angle (...)	A36 Gr.36	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bo...L-torq...	Kyy	Kzz	Cb	Funct...
1	1	MF-H1	14			Lbyy					Lateral
2	3	MF-H1	14			Lbyy					Lateral
3	6	MF-H1	14			Lbyy					Lateral
4	7	F1-S1	7.6			Lbyy					Lateral
5	8	F1-S1	7.6			Lbyy					Lateral
6	9	F1-S1	7.6			Lbyy					Lateral
7	17	MF-P1	7			Lbyy					Lateral
8	19	MF-P1	7			Lbyy					Lateral
9	21	MF-P1	8			Lbyy					Lateral
10	23	MF-P1	10.5			Lbyy					Lateral
11	25	MF-P1	7			Lbyy					Lateral
12	26	MF-P1	2.5			Lbyy					Lateral
13	28	MF-P1	2.5			Lbyy					Lateral
14	33	MF-P1	8			Lbyy					Lateral
15	35	MF-P1	10.5			Lbyy					Lateral
16	38	MF-P1	2.5			Lbyy					Lateral
17	40	MF-P1	2.5			Lbyy					Lateral
18	45	MF-P1	8			Lbyy					Lateral
19	47	MF-P1	10.5			Lbyy					Lateral
20	50	MF-P1	2.5			Lbyy					Lateral
21	52	MF-P1	2.5			Lbyy					Lateral
22	56	F1-SA1	1			Lbyy					Lateral
23	57	F1-SA1	1			Lbyy					Lateral
24	58	F1-SA1	1			Lbyy					Lateral
25	59	F1-SA1	1			Lbyy					Lateral
26	60	F1-SA1	1			Lbyy					Lateral
27	61	F1-SA1	1			Lbyy					Lateral
28	62	F1-SA1	1			Lbyy					Lateral
29	63	F1-SA1	1			Lbyy					Lateral



Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bo...	L-torq...	Kvy	Kzz	Cb	Funct...
30	64	F1-SA1	1			Lbyy						Lateral
31	65	F1-SA1	1			Lbyy						Lateral
32	66	F1-SA1	1			Lbyy						Lateral
33	67	F1-SA1	1			Lbyy						Lateral
34	69	New Mou...	9			Lbyy						Lateral
35	71	New Mou...	9			Lbyy						Lateral
36	73	New Mou...	9			Lbyy						Lateral
37	75	MF-P1	7			Lbyy						Lateral
38	77	MF-P1	7			Lbyy						Lateral
39	M80	New SUp...	14.5			Lbyy						Lateral
40	M81	New SUp...	14.5			Lbyy						Lateral
41	M82	New SUp...	14.5			Lbyy						Lateral
42	M83	New Supp...	1.296			Lbyy						Lateral
43	M84	New Supp...	1.296			Lbyy						Lateral
44	M85	New Supp...	1.296			Lbyy						Lateral
45	M86	Kicker An...	4.416									Lateral
46	M87	Kicker An...	4.416									Lateral
47	M88	Kicker An...	4.416									Lateral

Joint Loads and Enforced Displacements (BLC 11 : Live Load a)

	Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft, k*s^2*ft)]
1	28	L	Y	-5
2	76	L	Y	-5
3	52	L	Y	-5

Joint Loads and Enforced Displacements (BLC 12 : Live Load b)

	Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft, k*s^2*ft)]
1	124	L	Y	-5
2	132	L	Y	-5
3	128	L	Y	-5

Joint Loads and Enforced Displacements (BLC 13 : Live Load c)

	Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft, k*s^2*ft)]
1	32	L	Y	-5
2	80	L	Y	-5
3	56	L	Y	-5

Joint Loads and Enforced Displacements (BLC 14 : Live Load d)

	Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft, k*s^2*ft)]
1	36	L	Y	-5
2	140	L	Y	-5
3	136	L	Y	-5
4	136	L	Y	-5
5	140	L	Y	-5

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
1	25	Y	-018	%5
2	25	Y	-018	%70
3	25	Y	-028	%40
4	25	Y	0	0
5	25	Y	0	0



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Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
6	23	Y	-.044	%20
7	23	Y	-.044	%60
8	23	Y	-.053	%40
9	23	Y	0	0
10	23	Y	0	0
11	69	Y	-.038	%10
12	69	Y	-.038	%90
13	69	Y	-.06	%30
14	69	Y	0	0
15	69	Y	0	0
16	21	Y	-.048	%5
17	21	Y	-.048	%95
18	21	Y	0	0
19	21	Y	0	0
20	21	Y	0	0
21	77	Y	-.018	%5
22	77	Y	-.018	%70
23	77	Y	-.028	%40
24	77	Y	0	0
25	77	Y	0	0
26	47	Y	-.044	%20
27	47	Y	-.044	%60
28	47	Y	-.053	%40
29	47	Y	0	0
30	47	Y	0	0
31	73	Y	-.038	%10
32	73	Y	-.038	%90
33	73	Y	-.06	%30
34	73	Y	0	0
35	73	Y	0	0
36	45	Y	-.048	%5
37	45	Y	-.048	%95
38	45	Y	0	0
39	45	Y	0	0
40	45	Y	0	0
41	75	Y	-.018	%5
42	75	Y	-.018	%70
43	75	Y	-.028	%40
44	75	Y	0	0
45	75	Y	0	0
46	35	Y	-.044	%20
47	35	Y	-.044	%60
48	35	Y	-.053	%40
49	35	Y	0	0
50	35	Y	0	0
51	71	Y	-.038	%10
52	71	Y	-.038	%90
53	71	Y	-.06	%30
54	71	Y	0	0
55	71	Y	0	0
56	33	Y	-.048	%5
57	33	Y	-.048	%95
58	33	Y	0	0
59	33	Y	0	0
60	33	Y	0	0
61	17	Y	-.048	%50
62	17	Y	0	0



Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
63	17	Y	0	0
64	17	Y	0	0
65	17	Y	0	0
66	19	Y	-.048	%50
67	19	Y	0	0
68	19	Y	0	0
69	19	Y	0	0
70	19	Y	0	0
71	9	Y	-.026	%80
72	9	Y	0	0
73	9	Y	0	0
74	9	Y	0	0
75	9	Y	0	0
76	26	Y	-.071	%50
77	26	Y	0	0
78	26	Y	0	0
79	26	Y	0	0
80	26	Y	0	0
81	28	Y	-.075	%50
82	28	Y	0	0
83	28	Y	0	0
84	28	Y	0	0
85	28	Y	0	0
86	50	Y	-.071	%50
87	50	Y	0	0
88	50	Y	0	0
89	50	Y	0	0
90	50	Y	0	0
91	52	Y	-.075	%50
92	52	Y	0	0
93	52	Y	0	0
94	52	Y	0	0
95	52	Y	0	0
96	38	Y	-.071	%50
97	38	Y	0	0
98	38	Y	0	0
99	38	Y	0	0
100	38	Y	0	0
101	40	Y	-.075	%50
102	40	Y	0	0
103	40	Y	0	0
104	40	Y	0	0
105	40	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
1	25	Z	-.123	%5
2	25	Z	-.123	%70
3	25	Z	-.031	%40
4	25	Z	0	0
5	25	Z	0	0
6	23	Z	-.296	%20
7	23	Z	-.296	%60
8	23	Z	-.122	%40
9	23	Z	0	0
10	23	Z	0	0



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Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
11	69	Z	-404	%10
12	69	Z	-404	%90
13	69	Z	-082	%30
14	69	Z	0	0
15	69	Z	0	0
16	21	Z	-399	%5
17	21	Z	-399	%95
18	21	Z	0	0
19	21	Z	0	0
20	21	Z	0	0
21	77	Z	-123	%5
22	77	Z	-123	%70
23	77	Z	-031	%40
24	77	Z	0	0
25	77	Z	0	0
26	47	Z	-296	%20
27	47	Z	-296	%60
28	47	Z	-122	%40
29	47	Z	0	0
30	47	Z	0	0
31	73	Z	-404	%10
32	73	Z	-404	%90
33	73	Z	-082	%30
34	73	Z	0	0
35	73	Z	0	0
36	45	Z	-399	%5
37	45	Z	-399	%95
38	45	Z	0	0
39	45	Z	0	0
40	45	Z	0	0
41	75	Z	-123	%5
42	75	Z	-123	%70
43	75	Z	-031	%40
44	75	Z	0	0
45	75	Z	0	0
46	35	Z	-296	%20
47	35	Z	-296	%60
48	35	Z	-122	%40
49	35	Z	0	0
50	35	Z	0	0
51	71	Z	-404	%10
52	71	Z	-404	%90
53	71	Z	-082	%30
54	71	Z	0	0
55	71	Z	0	0
56	33	Z	-399	%5
57	33	Z	-399	%95
58	33	Z	0	0
59	33	Z	0	0
60	33	Z	0	0
61	17	Z	-17	%50
62	17	Z	0	0
63	17	Z	0	0
64	17	Z	0	0
65	17	Z	0	0
66	19	Z	-17	%50
67	19	Z	0	0



Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
68	19	Z	0	0
69	19	Z	0	0
70	19	Z	0	0
71	9	Z	-.051	%80
72	9	Z	0	0
73	9	Z	0	0
74	9	Z	0	0
75	9	Z	0	0
76	26	Z	-.088	%50
77	26	Z	0	0
78	26	Z	0	0
79	26	Z	0	0
80	26	Z	0	0
81	28	Z	-.088	%50
82	28	Z	0	0
83	28	Z	0	0
84	28	Z	0	0
85	28	Z	0	0
86	50	Z	-.088	%50
87	50	Z	0	0
88	50	Z	0	0
89	50	Z	0	0
90	50	Z	0	0
91	52	Z	-.088	%50
92	52	Z	0	0
93	52	Z	0	0
94	52	Z	0	0
95	52	Z	0	0
96	38	Z	-.088	%50
97	38	Z	0	0
98	38	Z	0	0
99	38	Z	0	0
100	38	Z	0	0
101	40	Z	-.088	%50
102	40	Z	0	0
103	40	Z	0	0
104	40	Z	0	0
105	40	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
1	25	X	-.056	%5
2	25	X	-.056	%70
3	25	X	-.11	%40
4	25	X	0	0
5	25	X	0	0
6	23	X	-.149	%20
7	23	X	-.149	%60
8	23	X	-.071	%40
9	23	X	0	0
10	23	X	0	0
11	69	X	-.15	%10
12	69	X	-.15	%90
13	69	X	-.047	%30
14	69	X	0	0
15	69	X	0	0



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Member Point Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
16	21	X	-.148	%5
17	21	X	-.148	%95
18	21	X	0	0
19	21	X	0	0
20	21	X	0	0
21	77	X	-.056	%5
22	77	X	-.056	%70
23	77	X	-.11	%40
24	77	X	0	0
25	77	X	0	0
26	47	X	-.149	%20
27	47	X	-.149	%60
28	47	X	-.071	%40
29	47	X	0	0
30	47	X	0	0
31	73	X	-.15	%10
32	73	X	-.15	%90
33	73	X	-.047	%30
34	73	X	0	0
35	73	X	0	0
36	45	X	-.148	%5
37	45	X	-.148	%95
38	45	X	0	0
39	45	X	0	0
40	45	X	0	0
41	75	X	-.056	%5
42	75	X	-.056	%70
43	75	X	-.11	%40
44	75	X	0	0
45	75	X	0	0
46	35	X	-.149	%20
47	35	X	-.149	%60
48	35	X	-.071	%40
49	35	X	0	0
50	35	X	0	0
51	71	X	-.15	%10
52	71	X	-.15	%90
53	71	X	-.047	%30
54	71	X	0	0
55	71	X	0	0
56	33	X	-.148	%5
57	33	X	-.148	%95
58	33	X	0	0
59	33	X	0	0
60	33	X	0	0
61	17	X	-.056	%50
62	17	X	0	0
63	17	X	0	0
64	17	X	0	0
65	17	X	0	0
66	19	X	-.056	%50
67	19	X	0	0
68	19	X	0	0
69	19	X	0	0
70	19	X	0	0
71	9	X	-.051	%80
72	9	X	0	0



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Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
21	77	Z	-.018	%5
22	77	Z	-.018	%70
23	77	Z	-.005	%40
24	77	Z	0	0
25	77	Z	0	0
26	47	Z	-.055	%20
27	47	Z	-.055	%60
28	47	Z	-.018	%40
29	47	Z	0	0
30	47	Z	0	0
31	73	Z	-.06	%10
32	73	Z	-.06	%90
33	73	Z	-.012	%30
34	73	Z	0	0
35	73	Z	0	0
36	45	Z	-.059	%5
37	45	Z	-.059	%95
38	45	Z	0	0
39	45	Z	0	0
40	45	Z	0	0
41	75	Z	-.018	%5
42	75	Z	-.018	%70
43	75	Z	-.005	%40
44	75	Z	0	0
45	75	Z	0	0
46	35	Z	-.055	%20
47	35	Z	-.055	%60
48	35	Z	-.018	%40
49	35	Z	0	0
50	35	Z	0	0
51	71	Z	-.06	%10
52	71	Z	-.06	%90
53	71	Z	-.012	%30
54	71	Z	0	0
55	71	Z	0	0
56	33	Z	-.059	%5
57	33	Z	-.059	%95
58	33	Z	0	0
59	33	Z	0	0
60	33	Z	0	0
61	17	Z	-.025	%50
62	17	Z	0	0
63	17	Z	0	0
64	17	Z	0	0
65	17	Z	0	0
66	19	Z	-.025	%50
67	19	Z	0	0
68	19	Z	0	0
69	19	Z	0	0
70	19	Z	0	0
71	9	Z	-.008	%80
72	9	Z	0	0
73	9	Z	0	0
74	9	Z	0	0
75	9	Z	0	0
76	26	Z	-.013	%50
77	26	Z	0	0



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Member Point Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
26	47	X	-032	%20
27	47	X	-032	%60
28	47	X	-011	%40
29	47	X	0	0
30	47	X	0	0
31	73	X	-022	%10
32	73	X	-022	%90
33	73	X	-007	%30
34	73	X	0	0
35	73	X	0	0
36	45	X	-022	%5
37	45	X	-022	%95
38	45	X	0	0
39	45	X	0	0
40	45	X	0	0
41	75	X	-008	%5
42	75	X	-008	%70
43	75	X	-016	%40
44	75	X	0	0
45	75	X	0	0
46	35	X	-032	%20
47	35	X	-032	%60
48	35	X	-011	%40
49	35	X	0	0
50	35	X	0	0
51	71	X	-022	%10
52	71	X	-022	%90
53	71	X	-007	%30
54	71	X	0	0
55	71	X	0	0
56	33	X	-022	%5
57	33	X	-022	%95
58	33	X	0	0
59	33	X	0	0
60	33	X	0	0
61	17	X	-008	%50
62	17	X	0	0
63	17	X	0	0
64	17	X	0	0
65	17	X	0	0
66	19	X	-008	%50
67	19	X	0	0
68	19	X	0	0
69	19	X	0	0
70	19	X	0	0
71	9	X	-008	%80
72	9	X	0	0
73	9	X	0	0
74	9	X	0	0
75	9	X	0	0
76	26	X	-009	%50
77	26	X	0	0
78	26	X	0	0
79	26	X	0	0
80	26	X	0	0
81	28	X	-011	%50
82	28	X	0	0



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Member Point Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
83	28	X	0	0
84	28	X	0	0
85	28	X	0	0
86	50	X	-.009	%50
87	50	X	0	0
88	50	X	0	0
89	50	X	0	0
90	50	X	0	0
91	52	X	-.011	%50
92	52	X	0	0
93	52	X	0	0
94	52	X	0	0
95	52	X	0	0
96	38	X	-.009	%50
97	38	X	0	0
98	38	X	0	0
99	38	X	0	0
100	38	X	0	0
101	40	X	-.011	%50
102	40	X	0	0
103	40	X	0	0
104	40	X	0	0
105	40	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	25	Z	-.006	%5
2	25	Z	-.006	%70
3	25	Z	-.002	%40
4	25	Z	0	0
5	25	Z	0	0
6	23	Z	-.016	%20
7	23	Z	-.016	%60
8	23	Z	-.006	%40
9	23	Z	0	0
10	23	Z	0	0
11	69	Z	-.021	%10
12	69	Z	-.021	%90
13	69	Z	-.004	%30
14	69	Z	0	0
15	69	Z	0	0
16	21	Z	-.021	%5
17	21	Z	-.021	%95
18	21	Z	0	0
19	21	Z	0	0
20	21	Z	0	0
21	77	Z	-.006	%5
22	77	Z	-.006	%70
23	77	Z	-.002	%40
24	77	Z	0	0
25	77	Z	0	0
26	47	Z	-.016	%20
27	47	Z	-.016	%60
28	47	Z	-.006	%40
29	47	Z	0	0
30	47	Z	0	0



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Member Point Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
31	73	Z	-0.021	%10
32	73	Z	-0.021	%90
33	73	Z	-0.004	%30
34	73	Z	0	0
35	73	Z	0	0
36	45	Z	-0.021	%5
37	45	Z	-0.021	%95
38	45	Z	0	0
39	45	Z	0	0
40	45	Z	0	0
41	75	Z	-0.006	%5
42	75	Z	-0.006	%70
43	75	Z	-0.002	%40
44	75	Z	0	0
45	75	Z	0	0
46	35	Z	-0.016	%20
47	35	Z	-0.016	%60
48	35	Z	-0.006	%40
49	35	Z	0	0
50	35	Z	0	0
51	71	Z	-0.021	%10
52	71	Z	-0.021	%90
53	71	Z	-0.004	%30
54	71	Z	0	0
55	71	Z	0	0
56	33	Z	-0.021	%5
57	33	Z	-0.021	%95
58	33	Z	0	0
59	33	Z	0	0
60	33	Z	0	0
61	17	Z	-0.009	%50
62	17	Z	0	0
63	17	Z	0	0
64	17	Z	0	0
65	17	Z	0	0
66	19	Z	-0.009	%50
67	19	Z	0	0
68	19	Z	0	0
69	19	Z	0	0
70	19	Z	0	0
71	9	Z	-0.003	%80
72	9	Z	0	0
73	9	Z	0	0
74	9	Z	0	0
75	9	Z	0	0
76	26	Z	-0.005	%50
77	26	Z	0	0
78	26	Z	0	0
79	26	Z	0	0
80	26	Z	0	0
81	28	Z	-0.005	%50
82	28	Z	0	0
83	28	Z	0	0
84	28	Z	0	0
85	28	Z	0	0
86	50	Z	-0.005	%50
87	50	Z	0	0



Member Point Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
88	50	Z	0	0
89	50	Z	0	0
90	50	Z	0	0
91	52	Z	-.005	%50
92	52	Z	0	0
93	52	Z	0	0
94	52	Z	0	0
95	52	Z	0	0
96	38	Z	-.005	%50
97	38	Z	0	0
98	38	Z	0	0
99	38	Z	0	0
100	38	Z	0	0
101	40	Z	-.005	%50
102	40	Z	0	0
103	40	Z	0	0
104	40	Z	0	0
105	40	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	25	X	-.003	%5
2	25	X	-.003	%70
3	25	X	-.006	%40
4	25	X	0	0
5	25	X	0	0
6	23	X	-.008	%20
7	23	X	-.008	%60
8	23	X	-.004	%40
9	23	X	0	0
10	23	X	0	0
11	69	X	-.008	%10
12	69	X	-.008	%90
13	69	X	-.003	%30
14	69	X	0	0
15	69	X	0	0
16	21	X	-.008	%5
17	21	X	-.008	%95
18	21	X	0	0
19	21	X	0	0
20	21	X	0	0
21	77	X	-.003	%5
22	77	X	-.003	%70
23	77	X	-.006	%40
24	77	X	0	0
25	77	X	0	0
26	47	X	-.008	%20
27	47	X	-.008	%60
28	47	X	-.004	%40
29	47	X	0	0
30	47	X	0	0
31	73	X	-.008	%10
32	73	X	-.008	%90
33	73	X	-.003	%30
34	73	X	0	0
35	73	X	0	0



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Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
36	45	X	-0.008	%5
37	45	X	-0.008	%95
38	45	X	0	0
39	45	X	0	0
40	45	X	0	0
41	75	X	-0.003	%5
42	75	X	-0.003	%70
43	75	X	-0.006	%40
44	75	X	0	0
45	75	X	0	0
46	35	X	-0.008	%20
47	35	X	-0.008	%60
48	35	X	-0.004	%40
49	35	X	0	0
50	35	X	0	0
51	71	X	-0.008	%10
52	71	X	-0.008	%90
53	71	X	-0.003	%30
54	71	X	0	0
55	71	X	0	0
56	33	X	-0.008	%5
57	33	X	-0.008	%95
58	33	X	0	0
59	33	X	0	0
60	33	X	0	0
61	17	X	-0.003	%50
62	17	X	0	0
63	17	X	0	0
64	17	X	0	0
65	17	X	0	0
66	19	X	-0.003	%50
67	19	X	0	0
68	19	X	0	0
69	19	X	0	0
70	19	X	0	0
71	9	X	-0.003	%80
72	9	X	0	0
73	9	X	0	0
74	9	X	0	0
75	9	X	0	0
76	26	X	-0.003	%50
77	26	X	0	0
78	26	X	0	0
79	26	X	0	0
80	26	X	0	0
81	28	X	-0.004	%50
82	28	X	0	0
83	28	X	0	0
84	28	X	0	0
85	28	X	0	0
86	50	X	-0.003	%50
87	50	X	0	0
88	50	X	0	0
89	50	X	0	0
90	50	X	0	0
91	52	X	-0.004	%50
92	52	X	0	0



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Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
93	52	X	0	0
94	52	X	0	0
95	52	X	0	0
96	38	X	-.003	%50
97	38	X	0	0
98	38	X	0	0
99	38	X	0	0
100	38	X	0	0
101	40	X	-.004	%50
102	40	X	0	0
103	40	X	0	0
104	40	X	0	0
105	40	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
1	25	Y	-.063	%5
2	25	Y	-.063	%70
3	25	Y	-.054	%40
4	25	Y	0	0
5	25	Y	0	0
6	23	Y	-.158	%20
7	23	Y	-.158	%60
8	23	Y	-.071	%40
9	23	Y	0	0
10	23	Y	0	0
11	69	Y	-.194	%10
12	69	Y	-.194	%90
13	69	Y	-.047	%30
14	69	Y	0	0
15	69	Y	0	0
16	21	Y	-.191	%5
17	21	Y	-.191	%95
18	21	Y	0	0
19	21	Y	0	0
20	21	Y	0	0
21	77	Y	-.063	%5
22	77	Y	-.063	%70
23	77	Y	-.054	%40
24	77	Y	0	0
25	77	Y	0	0
26	47	Y	-.158	%20
27	47	Y	-.158	%60
28	47	Y	-.071	%40
29	47	Y	0	0
30	47	Y	0	0
31	73	Y	-.194	%10
32	73	Y	-.194	%90
33	73	Y	-.047	%30
34	73	Y	0	0
35	73	Y	0	0
36	45	Y	-.191	%5
37	45	Y	-.191	%95
38	45	Y	0	0
39	45	Y	0	0
40	45	Y	0	0



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Member Point Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
41	75	Y	-.063	%5
42	75	Y	-.063	%70
43	75	Y	-.054	%40
44	75	Y	0	0
45	75	Y	0	0
46	35	Y	-.158	%20
47	35	Y	-.158	%60
48	35	Y	-.071	%40
49	35	Y	0	0
50	35	Y	0	0
51	71	Y	-.194	%10
52	71	Y	-.194	%90
53	71	Y	-.047	%30
54	71	Y	0	0
55	71	Y	0	0
56	33	Y	-.191	%5
57	33	Y	-.191	%95
58	33	Y	0	0
59	33	Y	0	0
60	33	Y	0	0
61	17	Y	-.088	%50
62	17	Y	0	0
63	17	Y	0	0
64	17	Y	0	0
65	17	Y	0	0
66	19	Y	-.088	%50
67	19	Y	0	0
68	19	Y	0	0
69	19	Y	0	0
70	19	Y	0	0
71	9	Y	-.063	%80
72	9	Y	0	0
73	9	Y	0	0
74	9	Y	0	0
75	9	Y	0	0
76	26	Y	-.054	%50
77	26	Y	0	0
78	26	Y	0	0
79	26	Y	0	0
80	26	Y	0	0
81	28	Y	-.057	%50
82	28	Y	0	0
83	28	Y	0	0
84	28	Y	0	0
85	28	Y	0	0
86	50	Y	-.054	%50
87	50	Y	0	0
88	50	Y	0	0
89	50	Y	0	0
90	50	Y	0	0
91	52	Y	-.057	%50
92	52	Y	0	0
93	52	Y	0	0
94	52	Y	0	0
95	52	Y	0	0
96	38	Y	-.054	%50
97	38	Y	0	0



Member Point Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
98	38	Y	0	0
99	38	Y	0	0
100	38	Y	0	0
101	40	Y	-.057	%50
102	40	Y	0	0
103	40	Y	0	0
104	40	Y	0	0
105	40	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	25	Z	-.009	%5
2	25	Z	-.009	%70
3	25	Z	-.004	%40
4	25	Z	0	0
5	25	Z	0	0
6	23	Z	-.022	%20
7	23	Z	-.022	%60
8	23	Z	-.013	%40
9	23	Z	0	0
10	23	Z	0	0
11	69	Z	-.019	%10
12	69	Z	-.019	%90
13	69	Z	-.015	%30
14	69	Z	0	0
15	69	Z	0	0
16	21	Z	-.024	%5
17	21	Z	-.024	%95
18	21	Z	0	0
19	21	Z	0	0
20	21	Z	0	0
21	77	Z	-.009	%5
22	77	Z	-.009	%70
23	77	Z	-.004	%40
24	77	Z	0	0
25	77	Z	0	0
26	47	Z	-.022	%20
27	47	Z	-.022	%60
28	47	Z	-.013	%40
29	47	Z	0	0
30	47	Z	0	0
31	73	Z	-.019	%10
32	73	Z	-.019	%90
33	73	Z	-.015	%30
34	73	Z	0	0
35	73	Z	0	0
36	45	Z	-.024	%5
37	45	Z	-.024	%95
38	45	Z	0	0
39	45	Z	0	0
40	45	Z	0	0
41	75	Z	-.009	%5
42	75	Z	-.009	%70
43	75	Z	-.004	%40
44	75	Z	0	0
45	75	Z	0	0



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Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
46	35	Z	-0.22	%20
47	35	Z	-0.22	%60
48	35	Z	-0.13	%40
49	35	Z	0	0
50	35	Z	0	0
51	71	Z	-0.19	%10
52	71	Z	-0.19	%90
53	71	Z	-0.15	%30
54	71	Z	0	0
55	71	Z	0	0
56	33	Z	-0.24	%5
57	33	Z	-0.24	%95
58	33	Z	0	0
59	33	Z	0	0
60	33	Z	0	0
61	17	Z	-0.12	%50
62	17	Z	0	0
63	17	Z	0	0
64	17	Z	0	0
65	17	Z	0	0
66	19	Z	-0.12	%50
67	19	Z	0	0
68	19	Z	0	0
69	19	Z	0	0
70	19	Z	0	0
71	9	Z	-0.007	%80
72	9	Z	0	0
73	9	Z	0	0
74	9	Z	0	0
75	9	Z	0	0
76	26	Z	-0.18	%50
77	26	Z	0	0
78	26	Z	0	0
79	26	Z	0	0
80	26	Z	0	0
81	28	Z	-0.19	0
82	28	Z	0	0
83	28	Z	0	0
84	28	Z	0	0
85	28	Z	0	%50
86	50	Z	-0.18	%50
87	50	Z	0	0
88	50	Z	0	0
89	50	Z	0	0
90	50	Z	0	0
91	50	Z	-0.19	%50
92	50	Z	0	0
93	50	Z	0	0
94	50	Z	0	0
95	50	Z	0	0
96	50	Z	-0.18	%50
97	50	Z	0	0
98	50	Z	0	0
99	50	Z	0	0
100	50	Z	0	0
101	50	Z	-0.19	%50
102	50	Z	0	0



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Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
103	50	Z	0	0
104	50	Z	0	0
105	50	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft,%]
1	25	X	-0.009	%5
2	25	X	-0.009	%70
3	25	X	-0.004	%40
4	25	X	0	0
5	25	X	0	0
6	23	X	-0.022	%20
7	23	X	-0.022	%60
8	23	X	-0.013	%40
9	23	X	0	0
10	23	X	0	0
11	69	X	-0.019	%10
12	69	X	-0.019	%90
13	69	X	-0.015	%30
14	69	X	0	0
15	69	X	0	0
16	21	X	-0.024	%5
17	21	X	-0.024	%95
18	21	X	0	0
19	21	X	0	0
20	21	X	0	0
21	77	X	-0.009	%5
22	77	X	-0.009	%70
23	77	X	-0.004	%40
24	77	X	0	0
25	77	X	0	0
26	47	X	-0.022	%20
27	47	X	-0.022	%60
28	47	X	-0.013	%40
29	47	X	0	0
30	47	X	0	0
31	73	X	-0.019	%10
32	73	X	-0.019	%90
33	73	X	-0.015	%30
34	73	X	0	0
35	73	X	0	0
36	45	X	-0.024	%5
37	45	X	-0.024	%95
38	45	X	0	0
39	45	X	0	0
40	45	X	0	0
41	75	X	-0.009	%5
42	75	X	-0.009	%70
43	75	X	-0.004	%40
44	75	X	0	0
45	75	X	0	0
46	35	X	-0.022	%20
47	35	X	-0.022	%60
48	35	X	-0.013	%40
49	35	X	0	0
50	35	X	0	0



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Member Point Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
51	71	X	-0.19	%10
52	71	X	-0.19	%90
53	71	X	-0.15	%30
54	71	X	0	0
55	71	X	0	0
56	33	X	-0.24	%5
57	33	X	-0.24	%95
58	33	X	0	0
59	33	X	0	0
60	33	X	0	0
61	17	X	-0.12	%50
62	17	X	0	0
63	17	X	0	0
64	17	X	0	0
65	17	X	0	0
66	19	X	-0.12	%50
67	19	X	0	0
68	19	X	0	0
69	19	X	0	0
70	19	X	0	0
71	9	X	-0.007	%80
72	9	X	0	0
73	9	X	0	0
74	9	X	0	0
75	9	X	0	0
76	26	X	-0.18	%50
77	26	X	0	0
78	26	X	0	0
79	26	X	0	0
80	26	X	0	0
81	28	X	-0.19	0
82	28	X	0	0
83	28	X	0	0
84	28	X	0	0
85	28	X	0	%50
86	50	X	-0.18	%50
87	50	X	0	0
88	50	X	0	0
89	50	X	0	0
90	50	X	0	0
91	50	X	-0.19	%50
92	50	X	0	0
93	50	X	0	0
94	50	X	0	0
95	50	X	0	0
96	50	X	-0.18	%50
97	50	X	0	0
98	50	X	0	0
99	50	X	0	0
100	50	X	0	0
101	50	X	-0.19	%50
102	50	X	0	0
103	50	X	0	0
104	50	X	0	0
105	50	X	0	0



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Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%,]	End Location[ft.%,]	
16	38	Z	-0.008	-0.008	0	0
17	40	Z	-0.008	-0.008	0	0
18	45	Z	-0.011	-0.011	0	0
19	47	Z	-0.011	-0.011	0	0
20	50	Z	-0.008	-0.008	0	0
21	52	Z	-0.008	-0.008	0	0
22	56	Z	-0.01	-0.01	0	0
23	57	Z	-0.01	-0.01	0	0
24	58	Z	-0.01	-0.01	0	0
25	59	Z	-0.01	-0.01	0	0
26	60	Z	-0.01	-0.01	0	0
27	61	Z	-0.01	-0.01	0	0
28	62	Z	-0.01	-0.01	0	0
29	63	Z	-0.01	-0.01	0	0
30	64	Z	-0.01	-0.01	0	0
31	65	Z	-0.01	-0.01	0	0
32	66	Z	-0.01	-0.01	0	0
33	67	Z	-0.01	-0.01	0	0
34	69	Z	-0.011	-0.011	0	0
35	71	Z	-0.011	-0.011	0	0
36	73	Z	-0.011	-0.011	0	0
37	75	Z	-0.011	-0.011	0	0
38	77	Z	-0.011	-0.011	0	0
39	M80	Z	-0.011	-0.011	0	0
40	M81	Z	-0.011	-0.011	0	0
41	M82	Z	-0.011	-0.011	0	0
42	M83	Z	-0.012	-0.012	0	0
43	M84	Z	-0.012	-0.012	0	0
44	M85	Z	-0.012	-0.012	0	0
45	M86	Z	-0.028	-0.028	0	0
46	M87	Z	-0.028	-0.028	0	0
47	M88	Z	-0.028	-0.028	0	0

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%,]	End Location[ft.%,]	
1	1	X	-0.03	-0.03	0	0
2	3	X	-0.03	-0.03	0	0
3	6	X	-0.03	-0.03	0	0
4	7	X	-0.029	-0.029	0	0
5	8	X	-0.029	-0.029	0	0
6	9	X	-0.029	-0.029	0	0
7	17	X	-0.011	-0.011	0	0
8	19	X	-0.011	-0.011	0	0
9	21	X	-0.011	-0.011	0	0
10	23	X	-0.011	-0.011	0	0
11	25	X	-0.011	-0.011	0	0
12	26	X	-0.008	-0.008	0	0
13	28	X	-0.008	-0.008	0	0
14	33	X	-0.011	-0.011	0	0
15	35	X	-0.011	-0.011	0	0
16	38	X	-0.008	-0.008	0	0
17	40	X	-0.008	-0.008	0	0
18	45	X	-0.011	-0.011	0	0
19	47	X	-0.011	-0.011	0	0
20	50	X	-0.008	-0.008	0	0
21	52	X	-0.008	-0.008	0	0



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Member Distributed Loads (BLC 3 : 90 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]	
22	56	X	-01	-01	0	0
23	57	X	-01	-01	0	0
24	58	X	-01	-01	0	0
25	59	X	-01	-01	0	0
26	60	X	-01	-01	0	0
27	61	X	-01	-01	0	0
28	62	X	-01	-01	0	0
29	63	X	-01	-01	0	0
30	64	X	-01	-01	0	0
31	65	X	-01	-01	0	0
32	66	X	-01	-01	0	0
33	67	X	-01	-01	0	0
34	69	X	-011	-011	0	0
35	71	X	-011	-011	0	0
36	73	X	-011	-011	0	0
37	75	X	-011	-011	0	0
38	77	X	-011	-011	0	0
39	M80	X	-011	-011	0	0
40	M81	X	-011	-011	0	0
41	M82	X	-011	-011	0	0
42	M83	X	-012	-012	0	0
43	M84	X	-012	-012	0	0
44	M85	X	-012	-012	0	0
45	M86	X	-028	-028	0	0
46	M87	X	-028	-028	0	0
47	M88	X	-028	-028	0	0

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]	
1	1	Z	-008	-008	0	0
2	3	Z	-008	-008	0	0
3	6	Z	-008	-008	0	0
4	7	Z	-008	-008	0	0
5	8	Z	-008	-008	0	0
6	9	Z	-008	-008	0	0
7	17	Z	-002	-002	0	0
8	19	Z	-002	-002	0	0
9	21	Z	-002	-002	0	0
10	23	Z	-002	-002	0	0
11	25	Z	-002	-002	0	0
12	26	Z	-002	-002	0	0
13	28	Z	-002	-002	0	0
14	33	Z	-002	-002	0	0
15	35	Z	-002	-002	0	0
16	38	Z	-002	-002	0	0
17	40	Z	-002	-002	0	0
18	45	Z	-002	-002	0	0
19	47	Z	-002	-002	0	0
20	50	Z	-002	-002	0	0
21	52	Z	-002	-002	0	0
22	56	Z	-005	-005	0	0
23	57	Z	-005	-005	0	0
24	58	Z	-005	-005	0	0
25	59	Z	-005	-005	0	0
26	60	Z	-005	-005	0	0
27	61	Z	-005	-005	0	0



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Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%,]	End Location[ft.%,]
28	62	Z	-0.005	-0.005	0	0
29	63	Z	-0.005	-0.005	0	0
30	64	Z	-0.005	-0.005	0	0
31	65	Z	-0.005	-0.005	0	0
32	66	Z	-0.005	-0.005	0	0
33	67	Z	-0.005	-0.005	0	0
34	69	Z	-0.002	-0.002	0	0
35	71	Z	-0.002	-0.002	0	0
36	73	Z	-0.002	-0.002	0	0
37	75	Z	-0.002	-0.002	0	0
38	77	Z	-0.002	-0.002	0	0
39	M80	Z	-0.002	-0.002	0	0
40	M81	Z	-0.002	-0.002	0	0
41	M82	Z	-0.002	-0.002	0	0
42	M83	Z	-0.005	-0.005	0	0
43	M84	Z	-0.005	-0.005	0	0
44	M85	Z	-0.005	-0.005	0	0
45	M86	Z	-0.007	-0.007	0	0
46	M87	Z	-0.007	-0.007	0	0
47	M88	Z	-0.007	-0.007	0	0

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%,]	End Location[ft.%,]
1	1	X	-0.008	-0.008	0	0
2	3	X	-0.008	-0.008	0	0
3	6	X	-0.008	-0.008	0	0
4	7	X	-0.008	-0.008	0	0
5	8	X	-0.008	-0.008	0	0
6	9	X	-0.008	-0.008	0	0
7	17	X	-0.002	-0.002	0	0
8	19	X	-0.002	-0.002	0	0
9	21	X	-0.002	-0.002	0	0
10	23	X	-0.002	-0.002	0	0
11	25	X	-0.002	-0.002	0	0
12	26	X	-0.002	-0.002	0	0
13	28	X	-0.002	-0.002	0	0
14	33	X	-0.002	-0.002	0	0
15	35	X	-0.002	-0.002	0	0
16	38	X	-0.002	-0.002	0	0
17	40	X	-0.002	-0.002	0	0
18	45	X	-0.002	-0.002	0	0
19	47	X	-0.002	-0.002	0	0
20	50	X	-0.002	-0.002	0	0
21	52	X	-0.002	-0.002	0	0
22	56	X	-0.005	-0.005	0	0
23	57	X	-0.005	-0.005	0	0
24	58	X	-0.005	-0.005	0	0
25	59	X	-0.005	-0.005	0	0
26	60	X	-0.005	-0.005	0	0
27	61	X	-0.005	-0.005	0	0
28	62	X	-0.005	-0.005	0	0
29	63	X	-0.005	-0.005	0	0
30	64	X	-0.005	-0.005	0	0
31	65	X	-0.005	-0.005	0	0
32	66	X	-0.005	-0.005	0	0
33	67	X	-0.005	-0.005	0	0



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Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft, %]	End Location[ft, %]
40	M81	Z	-0.003	-0.003	0	0
41	M82	Z	-0.003	-0.003	0	0
42	M83	Z	-0.007	-0.007	0	0
43	M84	Z	-0.007	-0.007	0	0
44	M85	Z	-0.007	-0.007	0	0
45	M86	Z	-0.002	-0.002	0	0
46	M87	Z	-0.002	-0.002	0	0
47	M88	Z	-0.002	-0.002	0	0

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft, %]	End Location[ft, %]
1	1	X	-0.002	-0.002	0	0
2	3	X	-0.002	-0.002	0	0
3	6	X	-0.002	-0.002	0	0
4	7	X	-0.002	-0.002	0	0
5	8	X	-0.002	-0.002	0	0
6	9	X	-0.002	-0.002	0	0
7	17	X	-0.003	-0.003	0	0
8	19	X	-0.003	-0.003	0	0
9	21	X	-0.003	-0.003	0	0
10	23	X	-0.003	-0.003	0	0
11	25	X	-0.003	-0.003	0	0
12	26	X	-0.003	-0.003	0	0
13	28	X	-0.003	-0.003	0	0
14	33	X	-0.003	-0.003	0	0
15	35	X	-0.003	-0.003	0	0
16	38	X	-0.003	-0.003	0	0
17	40	X	-0.003	-0.003	0	0
18	45	X	-0.003	-0.003	0	0
19	47	X	-0.003	-0.003	0	0
20	50	X	-0.003	-0.003	0	0
21	52	X	-0.003	-0.003	0	0
22	56	X	-0.005	-0.005	0	0
23	57	X	-0.005	-0.005	0	0
24	58	X	-0.005	-0.005	0	0
25	59	X	-0.005	-0.005	0	0
26	60	X	-0.005	-0.005	0	0
27	61	X	-0.005	-0.005	0	0
28	62	X	-0.005	-0.005	0	0
29	63	X	-0.005	-0.005	0	0
30	64	X	-0.005	-0.005	0	0
31	65	X	-0.005	-0.005	0	0
32	66	X	-0.005	-0.005	0	0
33	67	X	-0.005	-0.005	0	0
34	69	X	-0.003	-0.003	0	0
35	71	X	-0.003	-0.003	0	0
36	73	X	-0.003	-0.003	0	0
37	75	X	-0.003	-0.003	0	0
38	77	X	-0.003	-0.003	0	0
39	M80	X	-0.003	-0.003	0	0
40	M81	X	-0.003	-0.003	0	0
41	M82	X	-0.003	-0.003	0	0
42	M83	X	-0.007	-0.007	0	0
43	M84	X	-0.007	-0.007	0	0
44	M85	X	-0.007	-0.007	0	0
45	M86	X	-0.002	-0.002	0	0



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Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%,]	End Location[ft.%,]
2	3	Z	-0.003	-0.003	0	0
3	6	Z	-0.003	-0.003	0	0
4	7	Z	-0.003	-0.003	0	0
5	8	Z	-0.003	-0.003	0	0
6	9	Z	-0.003	-0.003	0	0
7	17	Z	-0.0009	-0.0009	0	0
8	19	Z	-0.0009	-0.0009	0	0
9	21	Z	-0.0009	-0.0009	0	0
10	23	Z	-0.0009	-0.0009	0	0
11	25	Z	-0.0009	-0.0009	0	0
12	26	Z	-0.0009	-0.0009	0	0
13	28	Z	-0.0009	-0.0009	0	0
14	33	Z	-0.0009	-0.0009	0	0
15	35	Z	-0.0009	-0.0009	0	0
16	38	Z	-0.0009	-0.0009	0	0
17	40	Z	-0.0009	-0.0009	0	0
18	45	Z	-0.0009	-0.0009	0	0
19	47	Z	-0.0009	-0.0009	0	0
20	50	Z	-0.0009	-0.0009	0	0
21	52	Z	-0.0009	-0.0009	0	0
22	56	Z	-0.0006	-0.0006	0	0
23	57	Z	-0.0006	-0.0006	0	0
24	58	Z	-0.0006	-0.0006	0	0
25	59	Z	-0.0006	-0.0006	0	0
26	60	Z	-0.0006	-0.0006	0	0
27	61	Z	-0.0006	-0.0006	0	0
28	62	Z	-0.0006	-0.0006	0	0
29	63	Z	-0.0006	-0.0006	0	0
30	64	Z	-0.0006	-0.0006	0	0
31	65	Z	-0.0006	-0.0006	0	0
32	66	Z	-0.0006	-0.0006	0	0
33	67	Z	-0.0006	-0.0006	0	0
34	69	Z	-0.0009	-0.0009	0	0
35	71	Z	-0.0009	-0.0009	0	0
36	73	Z	-0.0009	-0.0009	0	0
37	75	Z	-0.0009	-0.0009	0	0
38	77	Z	-0.0009	-0.0009	0	0
39	M80	Z	-0.0009	-0.0009	0	0
40	M81	Z	-0.0009	-0.0009	0	0
41	M82	Z	-0.0009	-0.0009	0	0
42	M83	Z	-0.001	-0.001	0	0
43	M84	Z	-0.001	-0.001	0	0
44	M85	Z	-0.001	-0.001	0	0
45	M86	Z	-0.002	-0.002	0	0
46	M87	Z	-0.002	-0.002	0	0
47	M88	Z	-0.002	-0.002	0	0

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%,]	End Location[ft.%,]
1	1	X	-0.003	-0.003	0	0
2	3	X	-0.003	-0.003	0	0
3	6	X	-0.003	-0.003	0	0
4	7	X	-0.003	-0.003	0	0
5	8	X	-0.003	-0.003	0	0
6	9	X	-0.003	-0.003	0	0
7	17	X	-0.0009	-0.0009	0	0



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Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]	
14	8	Y	-.007	-.004	2.584	3.496
15	8	Y	-.004	-.0008972	3.496	4.408
16	8	Y	-.0008972	-.0002201	4.408	5.32
17	46	Y	-.004	-.004	0	.266
18	64	Y	.002	-.001	0	.2
19	64	Y	-.001	-.004	.2	.4
20	64	Y	-.004	-.008	.4	.6
21	64	Y	-.008	-.032	.6	.8
22	64	Y	-.032	-.068	.8	1
23	65	Y	.002	-.001	0	.2
24	65	Y	-.001	-.004	.2	.4
25	65	Y	-.004	-.009	.4	.6
26	65	Y	-.009	-.031	.6	.8
27	65	Y	-.031	-.065	.8	1
28	66	Y	.0006635	-.002	0	.2
29	66	Y	-.002	-.005	.2	.4
30	66	Y	-.005	-.01	.4	.6
31	66	Y	-.01	-.022	.6	.8
32	66	Y	-.022	-.035	.8	1
33	67	Y	.0006635	-.002	0	.2
34	67	Y	-.002	-.005	.2	.4
35	67	Y	-.005	-.01	.4	.6
36	67	Y	-.01	-.022	.6	.8
37	67	Y	-.022	-.035	.8	1
38	1	Y	-.0001176	-.003	0	2
39	1	Y	-.003	-.004	2	4
40	1	Y	-.004	-.005	4	6
41	1	Y	-.005	-.005	6	8
42	1	Y	-.005	-.004	8	10
43	1	Y	-.004	-.003	10	12
44	1	Y	-.003	-.0001176	12	14
45	9	Y	-.003	-.007	.76	1.672
46	9	Y	-.007	-.007	1.672	2.584
47	9	Y	-.007	-.004	2.584	3.496
48	9	Y	-.004	-.0008961	3.496	4.408
49	9	Y	-.0008961	-.0002192	4.408	5.32
50	22	Y	-.004	-.004	0	.266
51	56	Y	.002	-.001	0	.2
52	56	Y	-.001	-.004	.2	.4
53	56	Y	-.004	-.008	.4	.6
54	56	Y	-.008	-.032	.6	.8
55	56	Y	-.032	-.068	.8	1
56	57	Y	.002	-.001	0	.2
57	57	Y	-.001	-.004	.2	.4
58	57	Y	-.004	-.009	.4	.6
59	57	Y	-.009	-.031	.6	.8
60	57	Y	-.031	-.065	.8	1
61	58	Y	.0006635	-.002	0	.2
62	58	Y	-.002	-.005	.2	.4
63	58	Y	-.005	-.01	.4	.6
64	58	Y	-.01	-.022	.6	.8
65	58	Y	-.022	-.035	.8	1
66	59	Y	.0006635	-.002	0	.2
67	59	Y	-.002	-.005	.2	.4
68	59	Y	-.005	-.01	.4	.6
69	59	Y	-.01	-.022	.6	.8
70	59	Y	-.022	-.035	.8	1



Company : B+T Group
 Designer : JV
 Job Number : 95362.006.01
 Model Name : 842423 - Windham North Ridge Road

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Member Distributed Loads (BLC 40 : BLC 8 Transient Area Loads) (Continued)

Member Label	Direction	Start Magnitude[k/ft...	End Magnitude[k/ft.F...	Start Location[ft.%,]	End Location[ft.%,]	
27	65	Y	-.016	-.034	.8	1
28	66	Y	.0003447	-.001	0	.2
29	66	Y	-.001	-.002	.2	.4
30	66	Y	-.002	-.005	.4	.6
31	66	Y	-.005	-.011	.6	.8
32	66	Y	-.011	-.018	.8	1
33	67	Y	.0003447	-.001	0	.2
34	67	Y	-.001	-.002	.2	.4
35	67	Y	-.002	-.005	.4	.6
36	67	Y	-.005	-.011	.6	.8
37	67	Y	-.011	-.018	.8	1
38	1	Y	-5.879e-5	-.001	0	2
39	1	Y	-.001	-.002	2	4
40	1	Y	-.002	-.003	4	6
41	1	Y	-.003	-.003	6	8
42	1	Y	-.003	-.002	8	10
43	1	Y	-.002	-.001	10	12
44	1	Y	-.001	-5.879e-5	12	14
45	9	Y	-.001	-.004	.76	1.672
46	9	Y	-.004	-.004	1.672	2.584
47	9	Y	-.004	-.002	2.584	3.496
48	9	Y	-.002	-.0004481	3.496	4.408
49	9	Y	-.0004481	-.0001096	4.408	5.32
50	22	Y	-.002	-.002	0	.266
51	56	Y	.0008974	-.0006825	0	.2
52	56	Y	-.0006825	-.002	.2	.4
53	56	Y	-.002	-.004	.4	.6
54	56	Y	-.004	-.016	.6	.8
55	56	Y	-.016	-.034	.8	1
56	57	Y	.0008415	-.000743	0	.2
57	57	Y	-.000743	-.002	.2	.4
58	57	Y	-.002	-.004	.4	.6
59	57	Y	-.004	-.016	.6	.8
60	57	Y	-.016	-.032	.8	1
61	58	Y	.0003318	-.001	0	.2
62	58	Y	-.001	-.002	.2	.4
63	58	Y	-.002	-.005	.4	.6
64	58	Y	-.005	-.011	.6	.8
65	58	Y	-.011	-.018	.8	1
66	59	Y	.0003317	-.001	0	.2
67	59	Y	-.001	-.002	.2	.4
68	59	Y	-.002	-.005	.4	.6
69	59	Y	-.005	-.011	.6	.8
70	59	Y	-.011	-.018	.8	1
71	6	Y	-8.823e-5	-.002	0	2.333
72	6	Y	-.002	-.003	2.333	4.667
73	6	Y	-.003	-.002	4.667	7
74	6	Y	-.002	-.002	7	9.333
75	6	Y	-.002	-.002	9.333	11.667
76	6	Y	-.002	-8.823e-5	11.667	14
77	34	Y	-.002	-.002	0	.266
78	60	Y	.0008974	-.0006825	0	.2
79	60	Y	-.0006825	-.002	.2	.4
80	60	Y	-.002	-.004	.4	.6
81	60	Y	-.004	-.016	.6	.8
82	60	Y	-.016	-.034	.8	1
83	61	Y	.0008415	-.000743	0	.2



Company : B+T Group
 Designer : JV
 Job Number : 95362.006.01
 Model Name : 842423 - Windham North Ridge Road

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Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
25	Maint LL 11	LL							
26	Maint LL 12	LL							
27	Maint LL 13	LL							
28	Maint LL 14	LL							
29	Maint LL 15	LL							
30	Maint LL 16	LL							
31	Maint LL 17	LL							
32	Maint LL 18	LL							
33	Maint LL 19	LL							
34	Maint LL 20	LL							
35	Maint LL 21	LL							
36	Maint LL 22	LL							
37	Maint LL 23	LL							
38	Maint LL 24	LL							
39	BLC 1 Transient Area...	None						97	
40	BLC 8 Transient Area...	None						97	

Load Combinations

	Description	Solve	PDelta	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4 Dead	Yes	Y		1	1.4														
2	1.2 D + 1.0 - 0 W	Yes	Y		1	1.2	2	1												
3	1.2 D + 1.0 - 30 W	Yes	Y		1	1.2	2	.866	3	.5										
4	1.2 D + 1.0 - 60 W	Yes	Y		1	1.2	3	.866	2	.5										
5	1.2 D + 1.0 - 90 W	Yes	Y		1	1.2	3	1												
6	1.2 D + 1.0 - 120 W	Yes	Y		1	1.2	3	.866	2	-.5										
7	1.2 D + 1.0 - 150 W	Yes	Y		1	1.2	2	-.8...	3	.5										
8	1.2 D + 1.0 - 180 W	Yes	Y		1	1.2	2	-1												
9	1.2 D + 1.0 - 210 W	Yes	Y		1	1.2	2	-.8...	3	-.5										
10	1.2 D + 1.0 - 240 W	Yes	Y		1	1.2	3	-.8...	2	-.5										
11	1.2 D + 1.0 - 270 W	Yes	Y		1	1.2	3	-1												
12	1.2 D + 1.0 - 300 W	Yes	Y		1	1.2	3	-.8...	2	.5										
13	1.2 D + 1.0 - 330 W	Yes	Y		1	1.2	2	.866	3	-.5										
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y		1	1.2	4	1		8	1									
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y		1	1.2	4	.866	5	.5	8	1								
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y		1	1.2	5	.866	4	.5	8	1								
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y		1	1.2	5	1		8	1									
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y		1	1.2	5	.866	4	-.5	8	1								
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y		1	1.2	4	-.8...	5	.5	8	1								
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y		1	1.2	4	-1		8	1									
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y		1	1.2	4	-.8...	5	-.5	8	1								
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y		1	1.2	5	-.8...	4	-.5	8	1								
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y		1	1.2	5	-1		8	1									
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y		1	1.2	5	-.8...	4	.5	8	1								
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y		1	1.2	4	.866	5	-.5	8	1								
26	1.2 D + 1.0 E - 0	Yes	Y		1	1.2	9	1												
27	1.2 D + 1.0 E - 30	Yes	Y		1	1.2	9	.866	10	.5										
28	1.2 D + 1.0 E - 60	Yes	Y		1	1.2	10	.866	9	.5										
29	1.2 D + 1.0 E - 90	Yes	Y		1	1.2	10	1												
30	1.2 D + 1.0 E - 120	Yes	Y		1	1.2	10	.866	9	-.5										
31	1.2 D + 1.0 E - 150	Yes	Y		1	1.2	9	-.8...	10	.5										
32	1.2 D + 1.0 E - 180	Yes	Y		1	1.2	9	-1												
33	1.2 D + 1.0 E - 210	Yes	Y		1	1.2	9	-.8...	10	-.5										
34	1.2 D + 1.0 E - 240	Yes	Y		1	1.2	10	-.8...	9	-.5										
35	1.2 D + 1.0 E - 270	Yes	Y		1	1.2	10	-1												
36	1.2 D + 1.0 E - 300	Yes	Y		1	1.2	10	-.8...	9	.5										



Company : B+T Group
 Designer : JV
 Job Number : 95362.006.01
 Model Name : 842423 - Windham North Ridge Road

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 10:16 AM
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Load Combinations (Continued)

Description	Solve	PDelta	SRSS	B...	Fa...																	
37 1.2 D + 1.0 E - 330	Yes	Y		1	1.2	9	.866	10	-5													
38 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	6	1			11	1.5											
39 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	6	.866	7	.5	11	1.5											
40 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	7	.866	6	.5	11	1.5											
41 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	7	1			11	1.5											
42 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	7	.866	6	-5	11	1.5											
43 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	6	-8...	7	.5	11	1.5											
44 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	6	-1			11	1.5											
45 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	6	-8...	7	-5	11	1.5											
46 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	7	-8...	6	-5	11	1.5											
47 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	7	-1			11	1.5											
48 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	7	-8...	6	.5	11	1.5											
49 1.2 D + 1.5 LL a + Ser...	Yes	Y		1	1.2	6	.866	7	-5	11	1.5											
50 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	6	1			12	1.5											
51 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	6	.866	7	.5	12	1.5											
52 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	7	.866	6	.5	12	1.5											
53 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	7	1			12	1.5											
54 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	7	.866	6	-5	12	1.5											
55 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	6	-8...	7	.5	12	1.5											
56 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	6	-1			12	1.5											
57 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	6	-8...	7	-5	12	1.5											
58 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	7	-8...	6	-5	12	1.5											
59 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	7	-1			12	1.5											
60 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	7	-8...	6	.5	12	1.5											
61 1.2 D + 1.5 LL b + Ser...	Yes	Y		1	1.2	6	.866	7	-5	12	1.5											
62 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	6	1			13	1.5											
63 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	6	.866	7	.5	13	1.5											
64 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	7	.866	6	.5	13	1.5											
65 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	7	1			13	1.5											
66 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	7	.866	6	-5	13	1.5											
67 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	6	-8...	7	.5	13	1.5											
68 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	6	-1			13	1.5											
69 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	6	-8...	7	-5	13	1.5											
70 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	7	-8...	6	-5	13	1.5											
71 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	7	-1			13	1.5											
72 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	7	-8...	6	.5	13	1.5											
73 1.2 D + 1.5 LL c + Ser...	Yes	Y		1	1.2	6	.866	7	-5	13	1.5											
74 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	6	1			14	1.5											
75 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	6	.866	7	.5	14	1.5											
76 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	7	.866	6	.5	14	1.5											
77 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	7	1			14	1.5											
78 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	7	.866	6	-5	14	1.5											
79 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	6	-8...	7	.5	14	1.5											
80 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	6	-1			14	1.5											
81 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	6	-8...	7	-5	14	1.5											
82 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	7	-8...	6	-5	14	1.5											
83 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	7	-1			14	1.5											
84 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	7	-8...	6	.5	14	1.5											
85 1.2 D + 1.5 LL d + Ser...	Yes	Y		1	1.2	6	.866	7	-5	14	1.5											
86 1.2 D + 1.5 LL Maint (1)	Yes	Y		1	1.2					15	1.5											
87 1.2 D + 1.5 LL Maint (2)	Yes	Y		1	1.2					16	1.5											
88 1.2 D + 1.5 LL Maint (3)	Yes	Y		1	1.2					17	1.5											
89 1.2 D + 1.5 LL Maint (4)	Yes	Y		1	1.2					18	1.5											
90 1.2 D + 1.5 LL Maint (5)	Yes	Y		1	1.2					19	1.5											
91 1.2 D + 1.5 LL Maint (6)	Yes	Y		1	1.2					20	1.5											
92 1.2 D + 1.5 LL Maint (7)	Yes	Y		1	1.2					21	1.5											
93 1.2 D + 1.5 LL Maint (8)	Yes	Y		1	1.2					22	1.5											



Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	B...	Fa...															
94	1.2 D + 1.5 LL Maint (9)	Yes	Y		1	1.2						23	1.5								
95	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						24	1.5								
96	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						25	1.5								
97	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						26	1.5								
98	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						27	1.5								
99	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						28	1.5								
100	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						29	1.5								
101	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						30	1.5								
102	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						31	1.5								
103	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						32	1.5								
104	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						33	1.5								
105	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						34	1.5								
106	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						35	1.5								
107	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						36	1.5								
108	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						37	1.5								
109	1.2 D + 1.5 LL Maint (...)	Yes	Y		1	1.2						38	1.5								

Envelope Joint Reactions

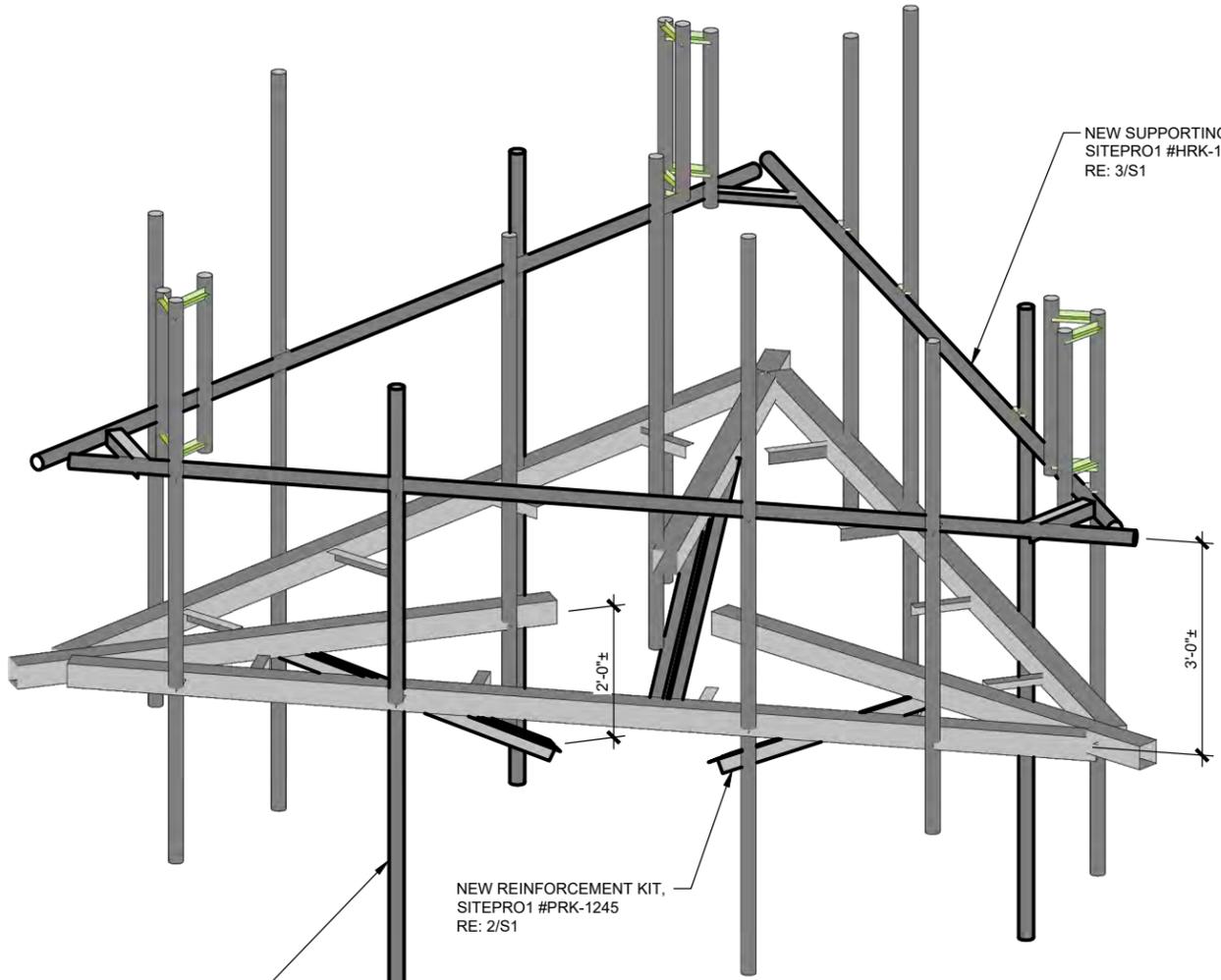
Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	11	max	9.871	6	.305	12	3.949	13	1.425	3	2.642	3	1.245	8
2		min	-5.601	12	-1.156	18	-6.439	7	-1.143	9	-2.648	9	-.593	2
3	9	max	.904	5	.546	8	14.794	2	.076	8	1.81	11	.97	11
4		min	-.903	11	-1.241	2	-9.887	8	-1.067	14	-1.81	5	-1.058	5
5	13	max	5.44	4	.202	4	3.597	3	1.083	13	2.449	7	.463	2
6		min	-9.722	10	-1.295	22	-6.084	9	-.67	7	-2.452	13	-1.091	8
7	N175	max	.057	5	5.571	14	1.217	8	0	109	0	5	0	11
8		min	-.057	11	-.634	8	-10.864	14	0	1	0	11	0	5
9	N177	max	-.075	12	5.474	18	5.336	18	.001	3	0	9	0	9
10		min	-9.242	18	.029	12	.043	12	-.001	9	0	3	0	3
11	N179	max	9.242	22	5.474	22	5.336	22	.001	13	0	13	0	13
12		min	.162	4	.08	4	.093	4	0	7	0	7	0	7
13	Totals:	max	8.544	5	12.188	25	13.217	2						
14		min	-8.544	11	4.517	7	-13.217	8						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[...]	LC	Shea...	Loc[ft]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...Cb	Eqn	
1	1	HSS4X4X4	.354	0	7	.165	14	z	8	61.431	139.518	16.181	16.181	2... H1-1b
2	3	HSS4X4X4	.401	14	2	.124	0	z	4	61.431	139.518	16.181	16.181	2... H1-1b
3	6	HSS4X4X4	.337	14	2	.121	14	y	13	61.431	139.518	16.181	16.181	2... H1-1b
4	7	HSS4X4X4	.437	.792	16	.113	3.642	y	16	109.559	139.518	16.181	16.181	1... H1-1b
5	8	HSS4X4X4	.456	.792	8	.148	7.6	z	9	109.559	139.518	16.181	16.181	1... H1-1b
6	9	HSS4X4X4	.448	.792	20	.127	3.642	y	8	109.559	139.518	16.181	16.181	1... H1-1b
7	17	PIPE 2.0	.267	5.469	2	.024	5.469		2	17.855	32.13	1.872	1.872	1... H1-1b
8	19	PIPE 2.0	.266	5.469	8	.024	5.469		8	17.855	32.13	1.872	1.872	1 H1-1b
9	21	PIPE 2.0	.714	2.5	2	.250	2.5		8	14.916	32.13	1.872	1.872	2... H1-1b
10	23	PIPE 2.0	.736	7	2	.147	7		9	8.922	32.13	1.872	1.872	2... H1-1b
11	25	PIPE 2.0	.516	5.688	13	.212	5.688		8	17.855	32.13	1.872	1.872	1... H1-1b
12	26	PIPE 2.0	.133	2.344	2	.026	2.344		2	29.81	32.13	1.872	1.872	1... H1-1b
13	28	PIPE 2.0	.100	2.005	2	.025	2.005		7	29.81	32.13	1.872	1.872	1... H1-1b
14	33	PIPE 2.0	.709	2.5	8	.196	2.5		13	14.916	32.13	1.872	1.872	2... H1-1b
15	35	PIPE 2.0	.800	7	2	.188	7		2	8.922	32.13	1.872	1.872	3... H1-1b
16	38	PIPE 2.0	.131	2.344	8	.038	2.344		8	29.81	32.13	1.872	1.872	2... H1-1b
17	40	PIPE 2.0	.113	2.005	8	.040	2.005		8	29.81	32.13	1.872	1.872	2... H1-1b
18	45	PIPE 2.0	.675	2.5	8	.173	2.5		9	14.916	32.13	1.872	1.872	3... H1-1b

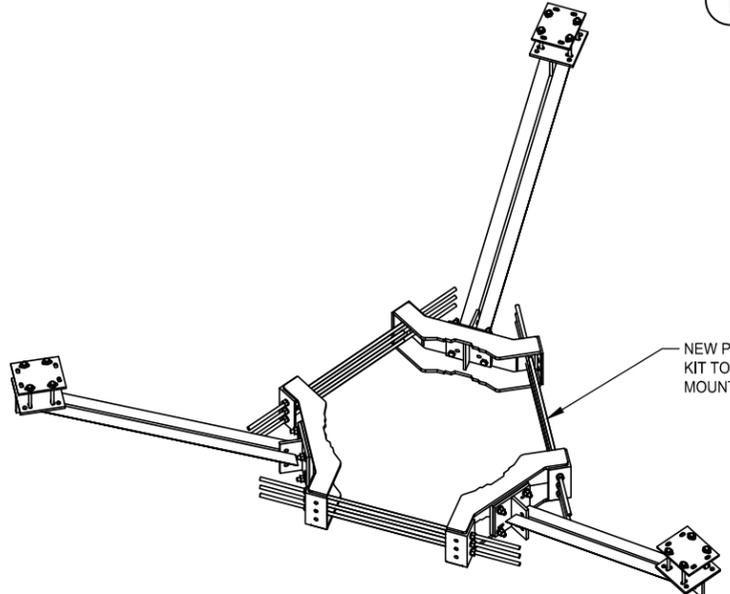
APPENDIX C
MOUNT MODIFICATION DESIGN DRAWINGS

MODIFICATIONS BASED ON THE FAILING STRUCTURAL ANALYSIS FROM B+T GROUP DATED 04/01/20 AND ACCOMPANIED BY ANALYSIS FROM B+T GROUP DATED 04/10/20

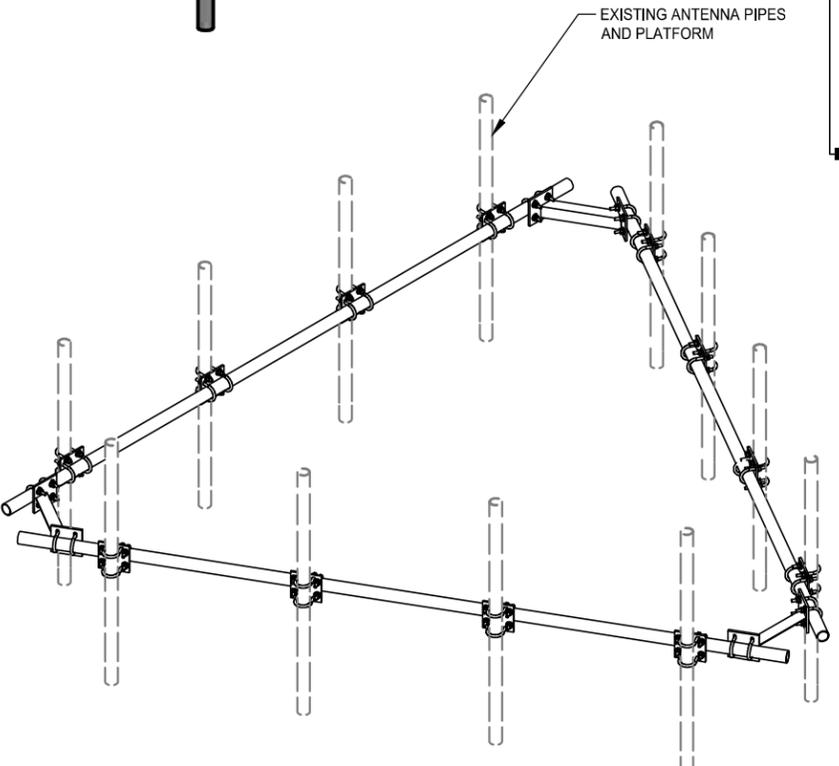


INSTALL NEW MOUNT PIPE IN POSITION 3 WITH NEW PIPE HSS2.375 x 0.154 x 9'-0" LONG FOR NEW ANTENNA (TYP. 3 PLACES)

1 MODIFIED PLATFORM
SCALE: N.T.S.



2 SITE PRO1 PRK-1245 PLATFORM REINFORCEMENT KIT
SCALE: N.T.S.



3 SITE PRO1 HRK-14 SUPPORTING RAIL KIT
SCALE: N.T.S.

GENERAL NOTES

- 1.1 CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO THE MOBILIZING ON THE SITE FOR INSTALLATION OF THE MOUNT MODIFICATION AND SHALL NOTIFY THE ENGINEER OF RECORD IF THE FIELD CONDITIONS VARY FROM WHAT IS SHOWN ON THE DRAWINGS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD PRIOR TO MOBILIZING AT THE SITE IF THE MOUNT REINFORCEMENT SHOWN WILL NEED TO BE REVISED TO SATISFY FIELD CONDITIONS
- 1.2 CONTRACTOR SHALL RELOCATE NON-ANTENNA EQUIPMENT ALONG THE EXISTING PIPE MOUNT THAT IT IS MOUNTED TO, TO ALLOW FOR INSTALLATION OF MOUNT REINFORCEMENT. ENGINEER OF RECORD WILL BE NOTIFIED IF NON-ANTENNA EQUIPMENT NEEDS TO BE RELOCATED TO ANY OTHER EXISTING MEMBERS TO ALLOW FOR INSTALLATION OF MOUNT MODIFICATION.
- 1.3 MODIFICATION SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED APPURTENANCES.
- 1.4 ALL WORK SHALL COMPLY WITH THE TIA-222-H STANDARD, ANSI/TIA-322 AND ANSI/ASSE A10.48, AS WELL AS ANY OTHER GOVERNING BUILDING CODES.
- 1.5 FIELD WORK WILL BE DONE AROUND EXISTING COAXIAL CABLE AND EQUIPMENT. ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE. A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO ANY FIELD CUTS OR FIELD DRILLED HOLES.
- 1.7 THE USE OF A GAS TORCH OR WELDER WILL NOT BE PERMITTED ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.
- 1.8 ALL FIELD CONNECTIONS SHALL BE MADE WITH A325N BOLTS, U.N.O.
- 1.9 IN LIEU OF TEMPORARY BRACING, CONTRACTOR MAY HAVE A STABILITY ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE TOWER IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 mph (3-SEC) PER ANSI/TIA-322 and ANSI/ASSE A10.48
- 1.10 ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH CCUSA POLICY "CUTTING AND WELDING PLAN" (DOC #ENG-PLN-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE LIFE OF THE PROJECT.
- 1.11 DIMENSIONS WITH "±" MUST BE WITHIN 3" OF THE INDICATED DIMENSION.

FABRICATION

- 2.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
- 2.2 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:

	YIELD	ASTM SPECS
STEEL PIPE, U.N.O.	35ksi	A53 GR.B
- 2.3 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A153.
- 2.4 WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E80 SERIES.
- 2.5 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO B+T GROUP 5 DAYS PRIOR TO FABRICATION.

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

**WINDHAM NORTH
RIDGE ROAD**
10 NORTH RIDGE DRIVE
WINDHAM, CT 06256
WINDHAM
EXISTING PLATFORM
AT 81'-00"

PROJECT NO: 95362.006.01
CHECKED BY: JV

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	04/10/20	PMS	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: **S1** REVISION: **0**

Exhibit F

Power Density/RF Emissions Report



RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of AT&T Mobility, LLC

Crown Castle Site Name: WINDHAM NORTH RIDGE ROAD
Crown Castle Site BU: 842423
AT&T Mobility, LLC Site FA #: 10065747
10 N. Ridge Drive
Windham, CT
3/25/2020

Report Status:

AT&T Mobility, LLC is Compliant



Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Connecticut License Number 33928
Expires January 31, 2021

Signed 25 March 2020

Prepared By:

Site Safe, LLC

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
Windham, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Site Safe, LLC in Vienna, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle on behalf of AT&T Mobility, LLC (see attached Site Summary and Carrier documents) and that AT&T Mobility, LLC's installation involves communications equipment, antennas and associated technical equipment at a location referred to as "WINDHAM NORTH RIDGE ROAD" ("the site"); and

That AT&T Mobility, LLC proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by AT&T Mobility, LLC and shown on the worksheet and that worst-case 100% duty cycle has been assumed; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio frequency energy must utilize the standards set by the FCC, which is the federal agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," which defines situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and 2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of AT&T Mobility, LLC's operating frequencies as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is no more than 6.529% of the maximum permissible exposure limits in any accessible area on the ground; and

That it is understood per FCC Guidelines and OET 65 Appendix A, that regardless of the existent radio frequency environment, only those licensees whose contributions exceed 5% of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 10.675% of the maximum in any accessible area up to two meters above the ground per OET 65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET 65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier(s) and frequency range(s) indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding radio frequency safety; and

In summary, it is stated here that the proposed operation at the site will not result in exposure of the public to excessive levels of radio frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307(b), and that AT&T Mobility, LLC's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals and approved contractor personnel trained in radio frequency safety and that this instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower or in the immediate proximity of the antennas.

**Crown Castle
WINDHAM NORTH RIDGE ROAD
Site Summary**

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.255 %
AT&T Mobility, LLC (Proposed)	1.437 %
AT&T Mobility, LLC (Proposed)	0.817 %
AT&T Mobility, LLC (Proposed)	1.019 %
AT&T Mobility, LLC (Proposed)	1.301 %
AT&T Mobility, LLC (Proposed)	0.955 %
AT&T Mobility, LLC (Proposed)	0.745 %
Verizon Wireless	1.571 %
Verizon Wireless	0.868 %
Verizon Wireless	0.949 %
Verizon Wireless	0.758 %
 Composite Site MPE:	 10.675 %

**AT&T Mobility, LLC
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 850 MHz
 Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.44428 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.25487 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Powerwave	7770	84	30	547	0.803769	0.141842	1.237709	0.218419
Powerwave	7770	84	150	547	0.803769	0.141842	1.237709	0.218419
Powerwave	7770	84	270	547	0.803769	0.141842	1.237709	0.218419

**AT&T Mobility, LLC (Proposed)
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 1900 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 14.37478 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 1.43748 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	DMP65R-BU8D	84	45	4170	12.621182	1.262118	14.282717	1.428272
CCI	DMP65R-BU8D	84	165	4170	12.621182	1.262118	14.282717	1.428272
CCI	DMP65R-BU8D	84	285	4170	12.621182	1.262118	14.282717	1.428272

**AT&T Mobility, LLC (Proposed)
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 850 MHz
 Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 4.62842 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.81678 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	DMP65R-BU8D	84	45	2885	2.428541	0.428566	4.588678	0.809767
CCI	DMP65R-BU8D	84	165	2885	2.428541	0.428566	4.588678	0.809767
CCI	DMP65R-BU8D	84	285	2885	2.428541	0.428566	4.588678	0.809767

**AT&T Mobility, LLC (Proposed)
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 737 MHz
 Maximum Permissible Exposure (MPE): 491.33 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 5.00642 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 1.01895 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	DMP65R-BU8D	84	45	2692	2.372808	0.482932	4.392938	0.894085
CCI	DMP65R-BU8D	84	165	2692	2.372808	0.482932	4.392938	0.894085
CCI	DMP65R-BU8D	84	285	2692	2.372808	0.482932	4.392938	0.894085

**AT&T Mobility, LLC (Proposed)
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 2100 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 13.01090 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 1.30109 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	OPA65R-BU8D	84	45	5118	12.929955	1.292996	12.929956	1.292996
CCI	OPA65R-BU8D	84	165	5118	12.929955	1.292996	12.929956	1.292996
CCI	OPA65R-BU8D	84	285	5118	12.929955	1.292996	12.929956	1.292996

**AT&T Mobility, LLC (Proposed)
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 763 MHz
 Maximum Permissible Exposure (MPE): 508.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 4.85631 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.95471 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	OPA65R-BU8D	84	45	3229	2.605211	0.512165	4.293661	0.844101
CCI	OPA65R-BU8D	84	165	3229	2.605211	0.512165	4.293661	0.844101
CCI	OPA65R-BU8D	84	285	3229	2.605211	0.512165	4.293661	0.844101

**AT&T Mobility, LLC (Proposed)
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 2300 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 7.44880 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.74488 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	OPA-65R-LCUU-H8	84	45	2917	7.381920	0.738192	7.381920	0.738192
CCI	OPA-65R-LCUU-H8	84	165	2917	7.381920	0.738192	7.381920	0.738192
CCI	OPA-65R-LCUU-H8	84	285	2917	7.381920	0.738192	7.381920	0.738192

**Verizon Wireless
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 8.90042 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.57066 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-70063-6CF	75	40	4509	5.602888	0.988745	5.602889	0.988745
Antel	BXA-70063-6CF	75	160	4509	5.602888	0.988745	5.602889	0.988745
Antel	BXA-70063-6CF	75	250	4509	5.602888	0.988745	5.602889	0.988745

**Verizon Wireless
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 2100 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 8.68074 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.86807 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-171063-12CF	75	40	3918	3.874510	0.387451	7.632409	0.763241
Antel	BXA-171063-12CF	75	160	3918	3.874510	0.387451	7.632409	0.763241
Antel	BXA-171063-12CF	75	250	3918	3.874510	0.387451	7.632409	0.763241

**Verizon Wireless
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 751 MHz
 Maximum Permissible Exposure (MPE): 500.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 4.75076 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.94889 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-70063-6CF	75	40	2010	2.758345	0.550934	3.864820	0.771935
Antel	BXA-70063-6CF	75	160	2010	2.758345	0.550934	3.864820	0.771935
Antel	BXA-70063-6CF	75	250	2010	2.758345	0.550934	3.864820	0.771935

**Verizon Wireless
WINDHAM NORTH RIDGE ROAD
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 7.58035 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.75803 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-171063-12CF	75	40	3574	2.424939	0.242494	6.170281	0.617028
Antel	BXA-171063-12CF	75	160	3574	2.424939	0.242494	6.170281	0.617028
Antel	BXA-171063-12CF	75	250	3574	2.424939	0.242494	6.170281	0.617028