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

June 23, 2020

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

RE: **Notice of Exempt Modification for AT&T - 841793**
50 Pine Lane, Windsor, CT 06095
Latitude: 41° 49′ 11.43″ / Longitude: -72° 40′ 1.88″

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 130-foot mount on the existing 148-foot Monopole Tower, located at 50 Pine Lane, Windsor, CT. The tower is owned by Crown Castle and the property is owned by the Town of Windsor. AT&T now intends to remove and replace three (3) existing antennas with three new antennas, as well as, add three (3) antennas to their existing configuration. The new antennas will be installed at the 130-ft level of the tower.

The facility was approved by the Windsor Town Planning and Zoning Commission on October 10, 2000 by way of a Special Use Permit #547. This approval was given without conditions.

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 Peter Souza, Town Manager for the Town of Windsor, as both the municipality and property owner, Robert Russo, Zoning Enforcement Officer 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.

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
Network Real Estate Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
(201) 236-9224
AnneMarie.Zsamba@crowncastle.com

Attachments
cc:

Peter Souza, Town Manager (*via email only to townmanager@townofwindsorct.com*)
Town of Windsor
275 Broad Street
Windsor, CT 06095

Robert Russo, Zoning Enforcement Officer (*via email only to ruzzo@townofwindsorct.com*)
Town of Windsor
275 Broad Street
Windsor, CT 06095

Crown Castle, Tower Owner

From:	Zsamba, Anne Marie
To:	townmanager@townofwindsorct.com
Subject:	Notice of Exempt Modification - 50 Pine Lane - AT&T 841793
Date:	Tuesday, June 23, 2020 3:09:00 PM
Attachments:	EM-AT&T-841793-50 PINE LANE WINDSOR_notice.pdf

Dear Town Manager Souza:

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today June 23, 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: "ruzzo@townofwindsorct.com"
Subject: Notice of Exempt Modification - 50 Pine Lane - AT&T 841793
Date: Tuesday, June 23, 2020 3:09:00 PM
Attachments: EM-AT&T-841793-50 PINE LANE WINDSOR_notice.pdf

Dear ZEO Ruzzo:

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today June 23, 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

SUA547

TOWN OF WINDSOR
First in Connecticut. First for its citizens.

RECEIVED
SEP 08 2000
TOWN OF WINDSOR
PLANNING DEPT.

A.M.
TP+ZC
10.10.00

Application for a Special Use

Town Planning and Zoning Commission

Your Name Town of Windsor
AT&T Wireless PCS, LLC

Your Phone # 860-285-1877
203-831-4011

Your Address 275 Broad Street, Windsor, Connecticut 06095
149 Water Street, Norwalk, Connecticut 06854

Are You the..... (X) Owner ( ) Optionee ( ) Buyer ( ) Agent (X) Other

If Other please explain Lessee

Owner's Name (If other than applicant) Town of Windsor

Owner's Phone # 860-285-1877

Owner's Address 275 Broad Street, Windsor, Connecticut 06095

Address of Subject Parcel(s) 50 Pine Lane

Size of Subject Parcel(s) 258,311 Sq. Ft.

Zone of Subject Parcel(s) NZ

Please describe the Special Use

Wilson Firehouse Municipal Tower Facility/Wireless Facility Co-location

Applicable Section(s) of Zoning Regulations 12.2 & 2.2.19E(1)

Please describe how the Special Use will benefit the Town of Windsor (feel free to use the other side).

Additional material to be supplied.

Your Signature Christopher B. Fisher
Attorney for the Applicant

Date September 5, 2000

Owner's Signature Patrick J. McMahon

Date 9/6/00

Office Use Only **********

Fee Paid _____ **Application#** _____ **Application Received By** _____

Date of Action _____ **Approved** _____ **Disapproved** _____

Approved 5/98

I, Anita M. Mips, Chairperson of the Windsor Town Planning and Zoning Commission, hereby certify that on October 10, 2000 the Planning and Zoning Commission of the Town of Windsor granted approval of Special Use Application #547 for a Wireless Telecommunications Tower with a monopole height of 150 feet plus 13-foot Town public service whip antennas for a total height of 163 feet, under Zoning Regulations Sections 12.2 & 2.2.19E(1).

This approval also includes the following waivers in accordance with Zoning Regulations Section 12.1:

1) **a waiver of the fall zone distance requirement for 73 feet in relation to the distance of the tower from the easterly property line, 163 feet being required and 90 feet being proposed;**

2) **a waiver of the fall zone distance requirement for 236 feet in relation to the distance of the tower from I-91 to the east, 326 feet being required and 90 feet being proposed;**

3) **a waiver of the fall zone distance requirement for 245 feet in relation to the distance of the tower from the residential zone to the north, 576 feet being required and 331 feet being proposed; and**

4) **a waiver of the fall zone requirement for 52 feet in relation to the distance of the tower from Putnam Memorial Highway to the south, 326 feet being required and 274 feet being proposed.**

Said Special Use was granted for the property located at: **50 Pine Lane**

The owner of record of said parcel is: **Town of Windsor**

Dated at Windsor, Connecticut, this 30th **day of November, 2000**

_____ **Chairperson**

Public Act #75-317

Received for Record this _____ day of _____, 2000

_____ **Attest: Town Clerk**

LH 5-14-04

TOWN OF WINDSOR

BUILDING PERMIT APPLICATION

Town Hall • Windsor, CT 06095-2994

PERMIT #: B-041172

ADDRESS OF WORK LOCATION: 50 PINE LANE WINDSOR, CT

TYPE OF PERMIT (Check One)

☒ **BUILDING** (List size or sq. ft.)
Foundation 12' x 20'
Addition NA
Acc. Structure 12' x 20'
Deck NA
Roofing/Siding (# Squares) NA
Pool: Aboveground: NA Inground: NA
Other NA

☐ **ELECTRICAL**
☐ S. Change
☐ New Residential
☐ New Commercial
☐ Addition
☐ Pool Wiring
☐ Temporary Service
☐ Low Voltage
☐ Other

☐ **PLUMBING**
☐ New Residential
☐ New Commercial
☐ Addition
☐ Fire Suppression
☐ Water Heater
☐ Other

☐ **HVAC**
☐ New Residential
☐ New Commercial
☐ Addition
☐ Central Air
☐ Replace/Repair
☐ Other

New Residential (Total Gross Square Feet) NA
Residential Renovation NA
New Commercial (Total Gross Square Feet) 240 SQ FT
Commercial Renovation (Square Feet of Renovated Space) NA
Signs (size & type) NA

Copy to FMO

DESCRIPTION OF WORK (must fill out for all permits): Addition of Cingular Wireless antennas and pre-fab concrete equipment shelter to existing ATT Wireless monopole and Compound.

Retail Market Value $ 40,500 Fee: 550 Work Start Date: 5-24-04

Owner: ATT WIRELESS (land), Town of Windsor (land)
Address: (ATT) 15 East Midland Ave 5th Floor PARAMUS, NJ Zip 07652
Phone # (Days): 201-576-2416

Applicant: CINGULAR WIRELESS (TIM BURKS)
Address: 500 Enterprise Drive Suite 3A ROCKY HILL, CT Zip 06067
Phone # (Days): 860 513 7218
License #: MCO.900137 Type: MA Jour CONTRACTOR Exp.: 6-30-04
CFM CONSTRUCTION ✓OK

I understand that applying for this permit does not guarantee that it will be issued, and no work shall be done prior to the issuance of said permit or the approval of the **Building Official**. I agree to be in compliance with all applicable codes, standards, statutes, and ordinances which may pertain.

Applicant's Signature: Timothy M. Burks Print Name: TIMOTHY M. BURKS Date 5/12/04

STAFF MEMBER Check Pertinent Items and initial:

Zoning 3.90 on Addition OK - TP+Z Taxes Exempt/OK Worker's Comp. OK - CFM Wetlands N/A 6/8/04

Other: _____ Septic _____ Sewer _____ Letter of Authorization ✓ T.O.W.

Use Group: S-1 Construction Type: 2-C

Fee: ☒ Check ☐ Cash Transaction/Receipt #: 1172 Blanket Not Electrical

Special Conditions or Comments: All Work Per '99 CT State Bldg Code Reqmts Incl. Section 114 Threshold Structures & Section 1705 Spec. Insp. All Steel/Mech Work Req's Seper. Permits. Call For Inspections Noted - Allow 48 HR Notice. Completion Letters + Documentation Req'd. for C/O PRIOR TO USE. This Is Cingular Colocate.

Reviewed & Issued By: Stephen Dupre CBO Date: June 17, 2004

Exhibit B

Property Card

Property Location 50 PINE LN | Map ID 69/ 442/ 102/T / | Bldg Name | State Use 4340
Vision ID 100888 | Account # 00735.01 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 4/15/2020 11:21:24 A

CURRENT OWNER

WINDSOR TOWN OF
C/O AT&T MOBILITY
575 MOROSGO DR SUITE 13-F
WEST TOWER ATTN: NREA TAX DEP
ATLANTA GA 30324

TOPO	UTILITIES	STRT / ROAD	LOCATION

SUPPLEMENTAL DATA

Alt Prcl ID	735.01	CTRACT	4731.00
INC:		CBLOCK	
GH		DIST	
		HEART	
2007	254520	GL YEAR	
GIS ID	735.01	Assoc Pid#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
IND LAND	3-1	180,400	126,280
IND BLDG	3-2	43,230	30,261
IND IMPR	3-3	224,070	156,849
Total		447,700	313,390

6164

WINDSOR, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
WINDSOR TOWN OF	0941	0016	05-17-1993	U	V	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed V	Year	Code	Assessed
2019	3-1	126,280	2018	3-1	114,800	2017	3-1	114,800
	3-2	30,261		3-2	27,510		3-2	27,020
	3-3	156,849		3-3	142,590		3-3	142,590
	Total	313390		Total	284900		Total	284410

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Sub	Nbhd Name	B	Tracing	Batch
0001	A				

NOTES

00735.01 LAND VALUE ADJUSTED
69-442-102-T PER INC APPR 10/2003
AT&T CELLULAR TOWER ADDED CINGULAR EQP BLDG
MARKET VALUE PER 10/01/2004
INCOME CAPITALIZATION
10/01/2001 SK

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	43,230
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	224,070
Appraised Land Value (Bldg)	180,400
Special Land Value	0
Total Appraised Parcel Value	447,700
Valuation Method	I
Total Appraised Parcel Value	447,700

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
B-181148	05-16-2018	RE	Renovation	25,000	10-01-2018	100	10-01-2018	UPGRADE EQUIMENT FOR A
B-170180	01-24-2017	CM	Commercial	8,000	08-18-2017	100	10-01-2017	REMOVE & REPLACE 3 RRU'
B-161869	07-19-2016	RE	Renovation	35,000	08-23-2016	100	10-01-2016	EYE TOWER TO INTALL 5 NE
E-160383	02-23-2016	EL	Electric	20,000	08-23-2016	100	10-01-2016	ADD 3 ANTENNA & 3 RRU'S
B-041172	07-09-2004	CM	Commercial					CINGULAR CELL EQUIP BLD
B-010198	10-01-2001	CM	Commercial					CELL EQP BLDG

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
12-04-2019	LL			64	I & E PENALTY
10-01-2001	SK			00	Measur+Listed

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment		Adj Unit P	Land Value
1	4340	Cell Tower	NZ		0.050	AC	82,000	40.0000	0	1.00		1.000	CELL TOWER SITE		1.0000		164,000
				Total Card Land Units	0.050	AC	Parcel Total Land Area			0.0500					Total Land Value		164,000

Property Location 50 PINE LN | Map ID 69/ 442/ 102/T / | Bldg Name | State Use 4340
Vision ID 100888 | Account # 00735.01 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 4/15/2020 11:21:26 A

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	94	Outbuildings
Model	00	Vacant
Grade:		
Stories:		
Occupancy		
Exterior Wall 1		
Exterior Wall 2		
Roof Structure:		
Roof Cover		
Interior Wall 1		
Interior Wall 2		
Interior Flr 1		
Interior Flr 2		
Heat Fuel		
Heat Type:		
AC Type:		
Total Bedrooms		
Total Bthrms:		
Total Half Baths		
Total Xtra Fixtrs		
Total Rooms:		
Bath Style:		
Kitchen Style:		

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd	Description

CONDO DATA

Parcel Id		C		Owne	
		B		S	

Adjust Type	Code	Description	Factor%
Condo Flr			
Condo Unit			

COST / MARKET VALUATION

Building Value New	0
Year Built	0
Effective Year Built	
Depreciation Code	
Remodel Rating	
Year Remodeled	
Depreciation %	
Functional Obsol	0
External Obsol	0
Trend Factor	1
Condition	
Condition %	
Percent Good	
Cns Sect Rcnld	
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	

OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Descript	Sub	Sub Ty	L/B	Units	Unit Pric	Yr Blt	Cond. C	% Gd	Grade	Grade A	Appr. V
CB3	PerCast			L	360	350.00	2001		95		0.00	119,70
CB3	PerCast			L	240	350.00	2004		100		0.00	84,000

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
	Ttl Gross Liv / Lease Area	0	0			0

No Sketch

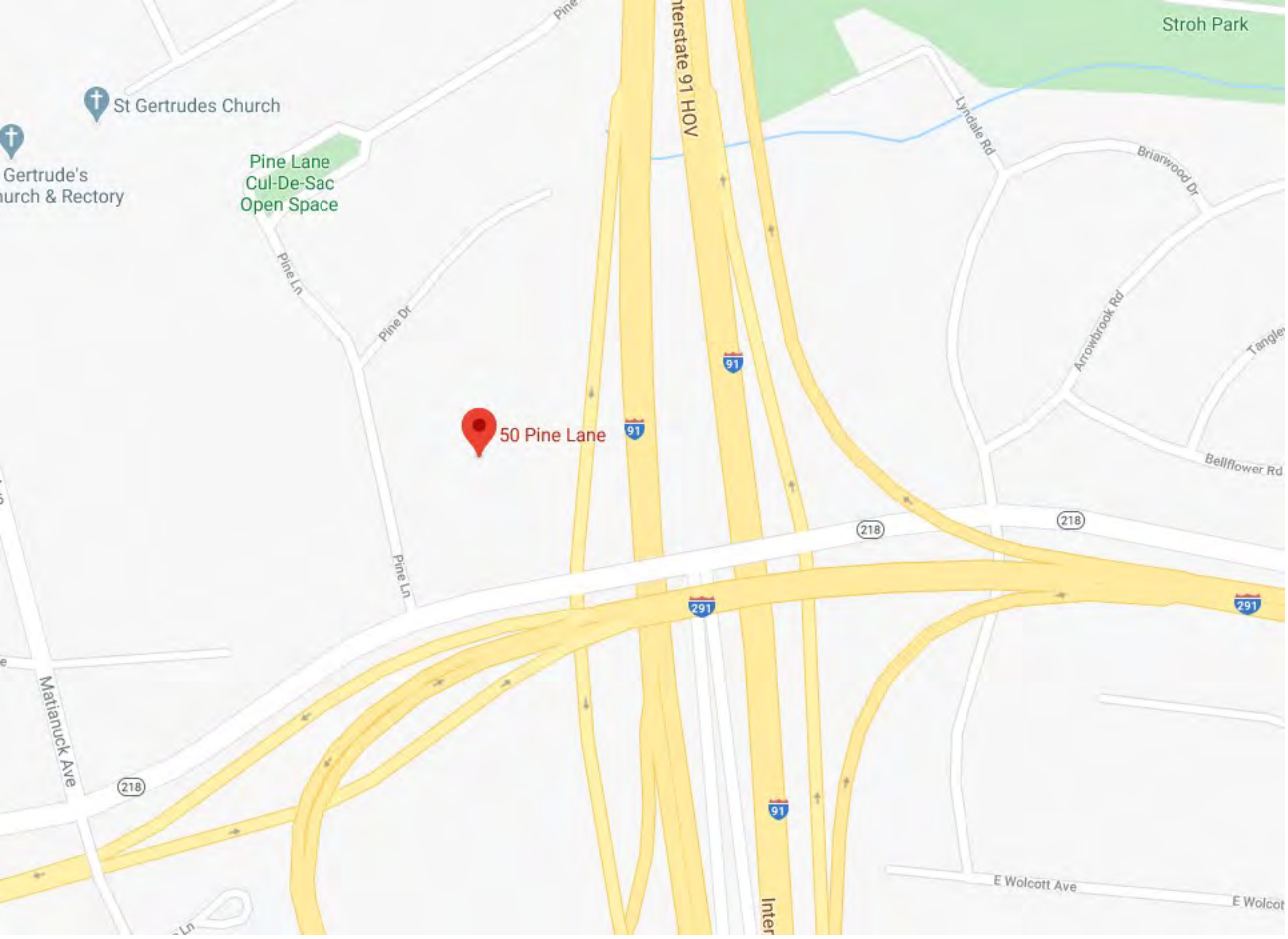

Stroh Park
St Gertrudes Church
Gertrude's
urch & Rectory
Pine Lane
Cul-De-Sac
Open Space
Interstate 91 HOV
Lyndale Rd
Briarwood Dr
Arrowbrook Rd
Bellflower Rd
Pine Ln
Pine Dr
50 Pine Lane
91
218
291
Matianuck Ave
E Wolcott Ave

Exhibit C

Construction Drawings

AT&T SITE NUMBER: CTL01137
AT&T SITE NAME: WINDSOR PINE LANE
AT&T FA CODE: 10042353
AT&T PACE NUMBER: MRCTB045494, MRCTB045518, MRCTB045507, MRCTB045546, MRCTB045486
SITE TYPE: MONOPOLE
BUSINESS UNIT #: 841793
SITE ADDRESS: 50 PINE LANE WINDSOR, CT 06095
COUNTY: HARTFORD
TOWER HEIGHT: 148'-0"
PROJECT: AT&T 6C, 7C, 4TXRX, 5G NR, BWE ADD

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	WINDSOR PINE LANE
SITE ADDRESS:	50 PINE LANE WINDSOR, CT 06095
COUNTY:	HARTFORD
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.819828
LONGITUDE:	-72.667188
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:	509312

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 SOUTH BOULDER, SUITE 300 TULSA, OK 74119 MIKE OAKES (918) 217-8574
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3200 HORIZON SRIVE, SUITE 150 KING OF PRUSSIA, PA 19406

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

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.

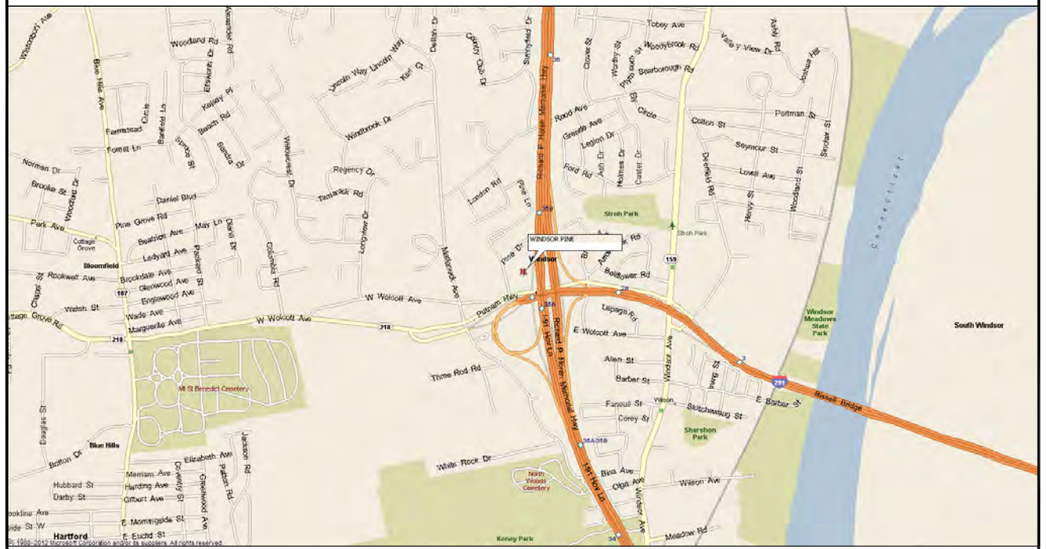
PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK
- REMOVE (2) CCI HPA-65R-BUU-H6 ANTENNAS
- REMOVE (2) KMW AM-X-CD-16-65-00T-RET ANTENNAS
- REMOVE (1) CCI HPA-65R-BUU-H8 ANTENNA
- REMOVE (1) POWERWAVE P65-17-XLH-RR ANTENNA
- REMOVE (3) ERICSSON RRUS-11 B12 RRHS
- REMOVE (3) CCI DTMABP7819VG12A TMAS
- REMOVE (6) CCI TPX-070821 TRIPLEXERS
- RELOCATE (2) QUINTEL QS66512-2 ANTENNAS
- RELOCATE (1) CCI TPA-65R-LCUUUU-H8 ANTENNA
- RELOCATE EXISTING RRHS TO NEW VALMONT - RRUDSM MOUNTS
- RECONNECT UMTS TO RELOCATED ANTENNA IN POSITION 1, ALL SECTORS
- INSTALL (1) CCI DMP65R-BU8DA ANTENNAS
- INSTALL (1) CCI OPA65R-BU8DA ANTENNAS
- INSTALL (2) CCI DMP65R-BU6DA ANTENNAS
- INSTALL (2) CCI OPA65R-BU6DA ANTENNAS
- INSTALL (3) ERICSSON 4449 B5/B12 RRHS
- INSTALL (3) ERICSSON 4478 B14 RRHS
- INSTALL (3) ERICSSON RRUS-E2 B29 RRHS
- INSTALL (3) ERICSSON RRUS-32 B2 RRHS
- INSTALL (3) RAYCAP DC6-48-60-18-8F
- INSTALL (4) DC TRUNKS

GROUND SCOPE OF WORK
- REMOVE (6) POWERWAVE CM1007-DBPXBC-003 DIPLEXERS
- REMOVE (6) CCI TPX-070821 TRIPLEXERS
- REMOVE (3) ERICSSON RRUS-12 B5 RRHS
- INSTALL (1) BB6630 + IDLe

LOCATION MAP



NO SCALE

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 IBC)
ELECTRICAL	2018 CT SBC (2017 NEC)

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: BLACK & VEATCH, APRIL 06, 2020

MOUNT ANALYSIS: B+T GROUP, APRIL 2, 2020

DESIGN PACKAGE BASED ON THE RFDS
REVISION: PRELIMINARY
DATE: 2/6/20

DESIGN PACKAGE BASED ON THE APPLICATION
ID: 509312
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!

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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

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

AT&T SITE NUMBER:
CTL01137

BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	4/27/20	JCO	CONSTRUCTION	RMC
1	5/14/20	GEH	CONSTRUCTION	RMC
2	6/2/20	GEH	CONSTRUCTION	RMC

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
6/2/20

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

SHEET NUMBER: T-1

REVISION: 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"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8"ø 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-	
SUBCONTRACTOR-	GENERAL CONTRACTOR (CONSTRUCTION)
CARRIER-	AT&T
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 TRANSCEIVER 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
MGB	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, WIRE 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), 600 V, 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-OF-POTENTAL 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)

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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

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

AT&T SITE NUMBER:
CTL01137

BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

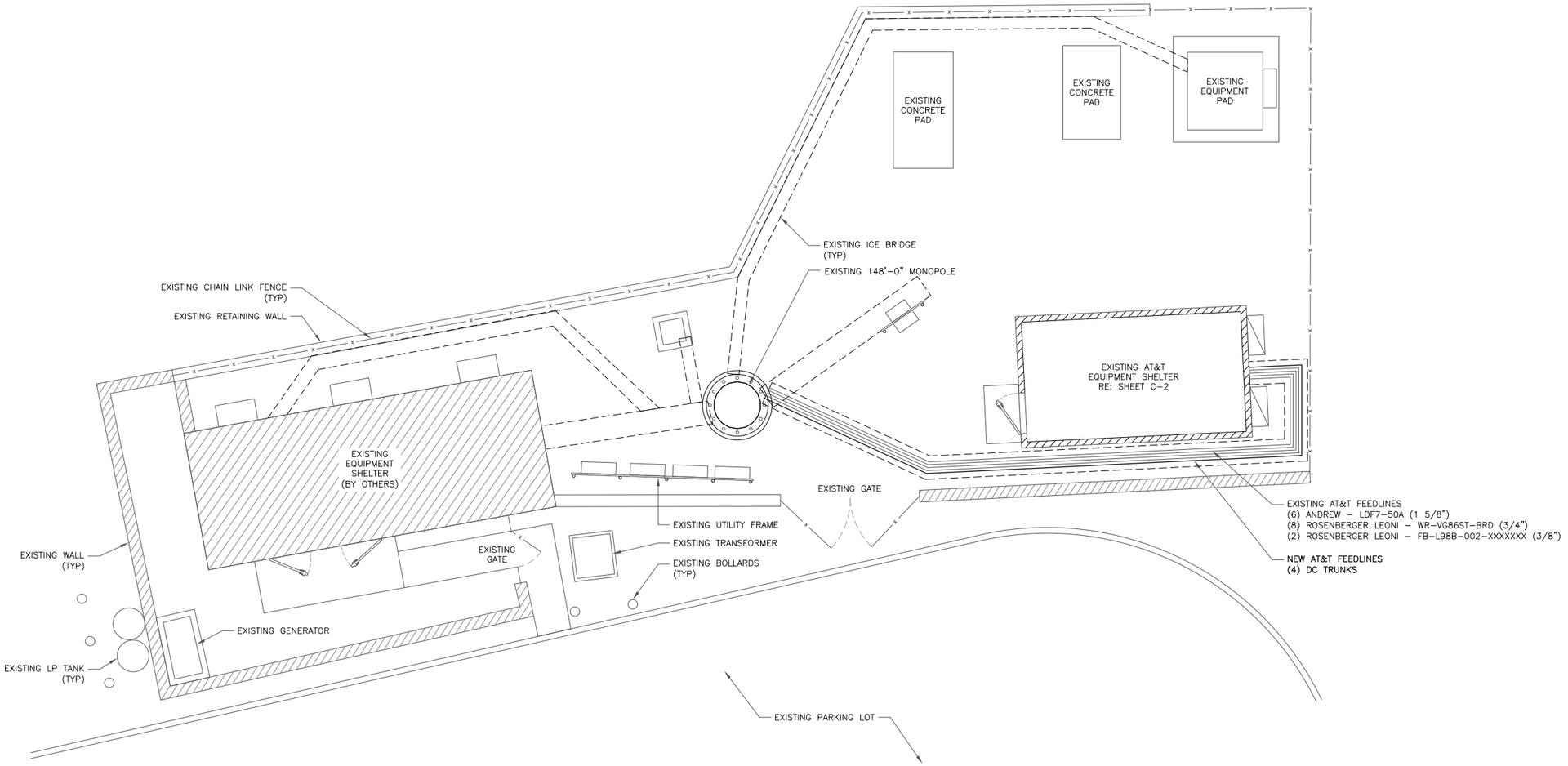
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	4/27/20	JCO	CONSTRUCTION	RMC
1	5/14/20	GEH	CONSTRUCTION	RMC
2	6/2/20	GEH	CONSTRUCTION	RMC

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
6/2/20

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

SHEET NUMBER: T-2

REVISION: 2



1 SITE PLAN

SCALE: 4' 2' 0 4' — 3/16"=1'-0" (FULL SIZE) 3/32"=1'-0" (11x17)

N

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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

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

AT&T SITE NUMBER:
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BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	4/27/20	JCO	CONSTRUCTION	RMC
1	5/14/20	GEH	CONSTRUCTION	RMC
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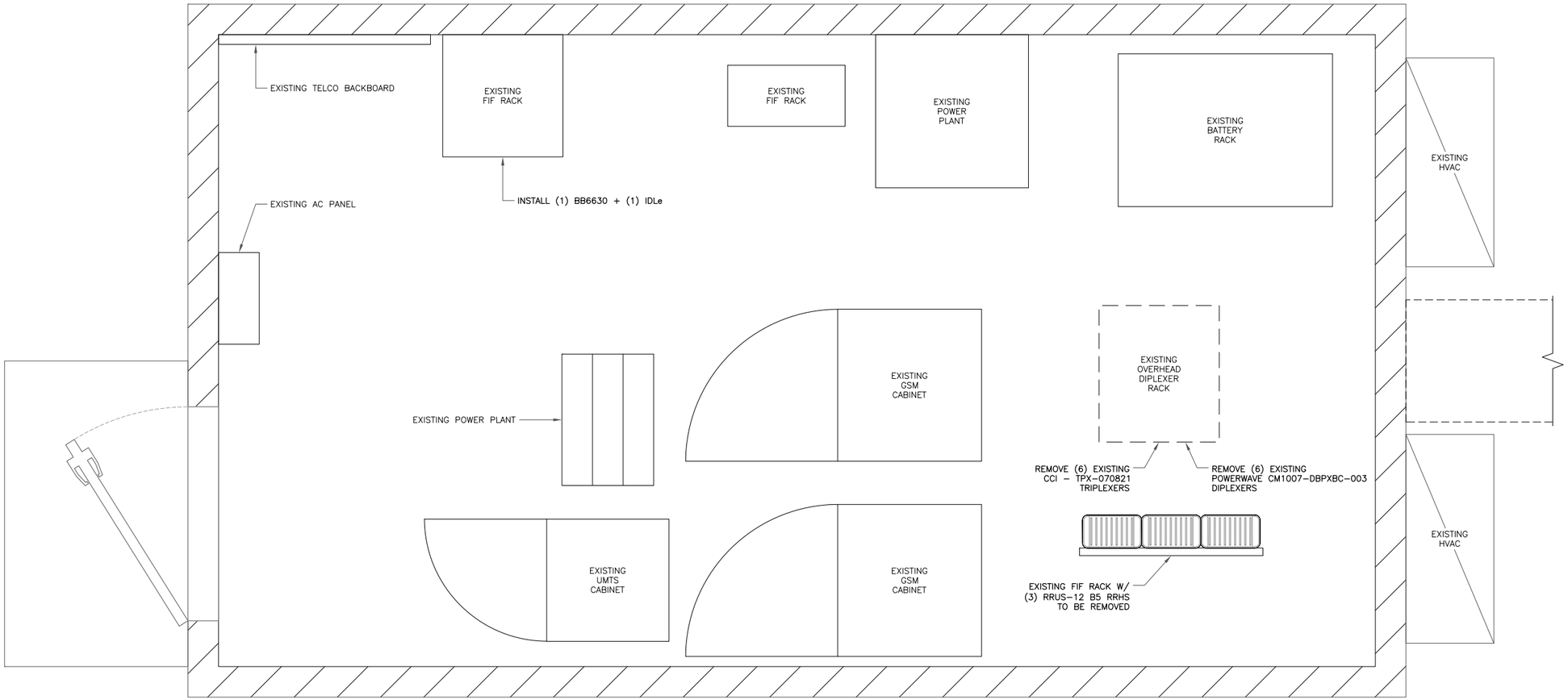
31627
LICENSED
PROFESSIONAL ENGINEER
6/2/20

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

SHEET NUMBER: C-1

REVISION: 2

141992.004_841793_Windsor Pine Lane.dwg - Sheet:C-1 - User: rcarson - Jun 02, 2020 - 1:27pm



1 EXISTING EQUIPMENT PLAN

SCALE: 1' 6" 0 1' 1"=1'-0" (FULL SIZE) 1/2"=1'-0" (11x17)

N

ONE AT&T WAY
BEDMINSTER, NJ 07921

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EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	4/27/20	JCO	CONSTRUCTION	RMC
1	5/14/20	GEH	CONSTRUCTION	RMC
2	6/2/20	GEH	CONSTRUCTION	RMC

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31627
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PROFESSIONAL ENGINEER
6/2/20

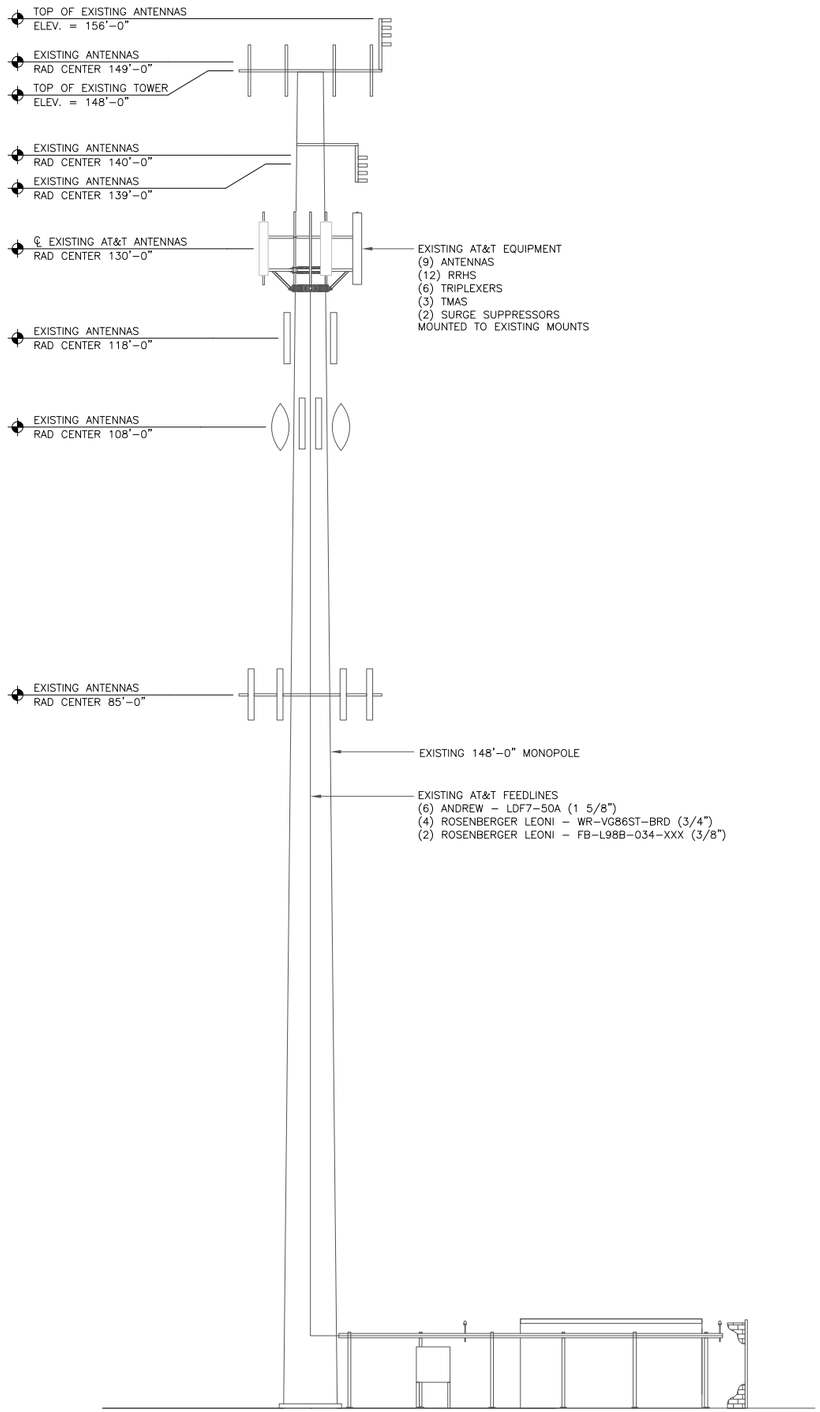
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-2

REVISION: 2

AT&T EQUIPMENT

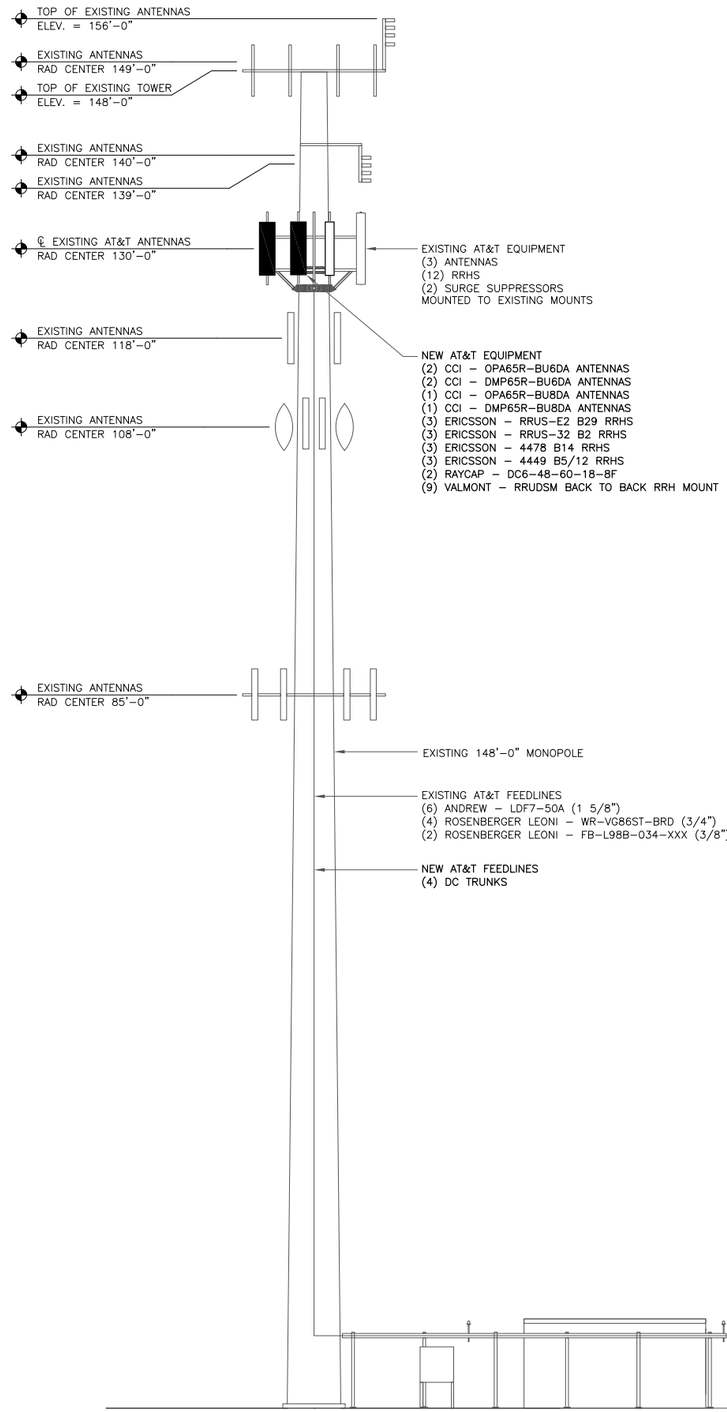
ANTENNA CL: 130'-0"
MOUNT CL: 130'-0"



1 EXISTING ELEVATION
SCALE: NOT TO SCALE

AT&T EQUIPMENT

ANTENNA CL: 130'-0"
MOUNT CL: 130'-0"



2 FINAL ELEVATION
SCALE: NOT TO SCALE

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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

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

AT&T SITE NUMBER:
CTL01137

BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

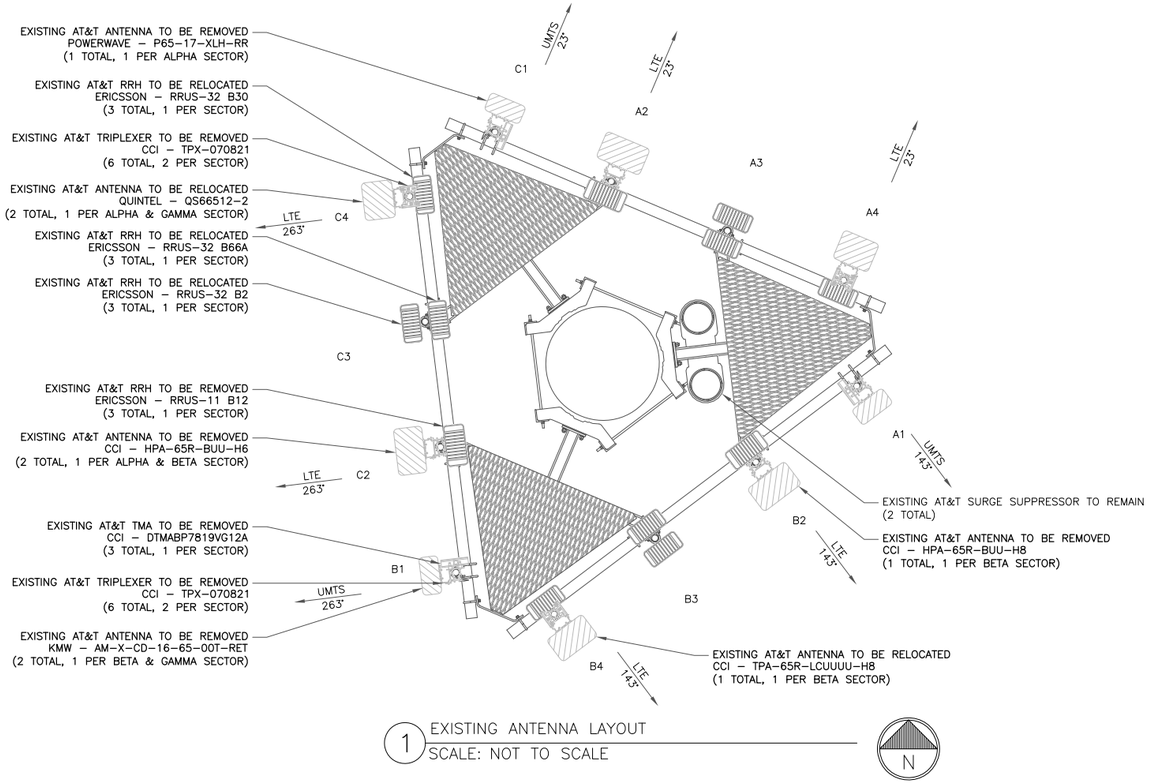
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	4/27/20	JCO	CONSTRUCTION	RMC
1	5/14/20	GEH	CONSTRUCTION	RMC
2	6/2/20	GEH	CONSTRUCTION	RMC

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
6/2/20

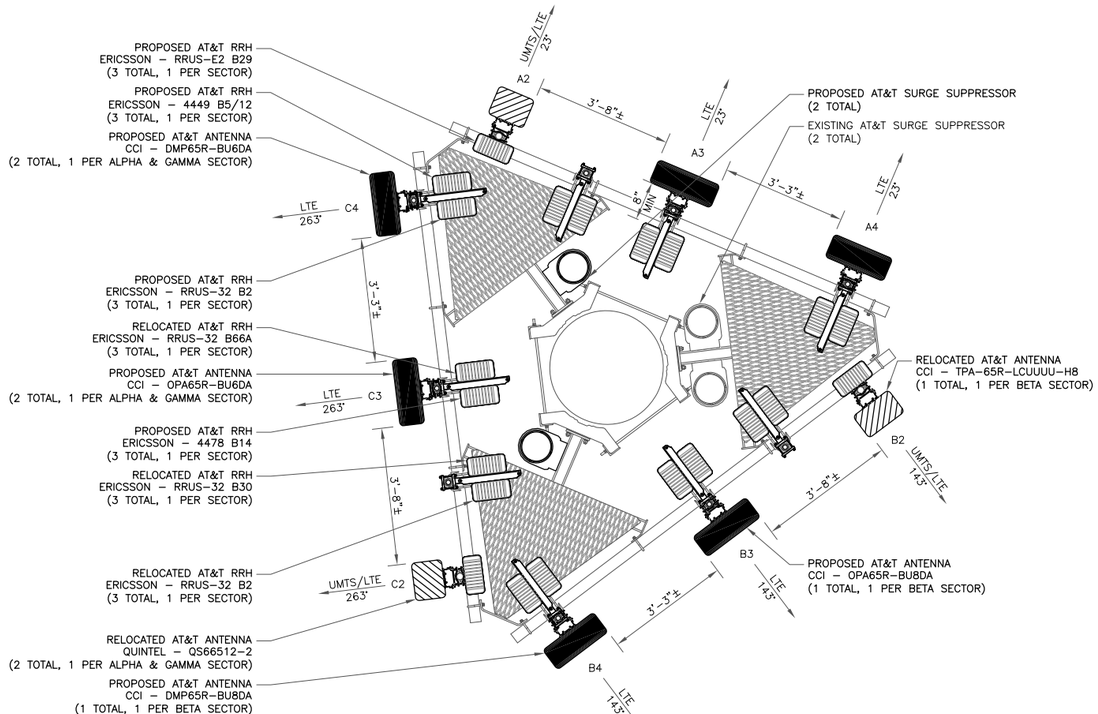
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-3
REVISION: 2



1 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE

N



2 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

N

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BEDMINSTER, NJ 07921

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3200 HORIZON DRIVE, SUITE 150
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AT&T SITE NUMBER:
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EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

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STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION
31627
LICENSED
PROFESSIONAL ENGINEER
6/2/20

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

SHEET NUMBER: C-4
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																
A2	UMTS/LTE	EXISTING	23°	QUINTEL QS66512-2	130'-0"	0°	3°/0°/3°/3°/2°	1 5/8"	170'-0"	2	–	(2) DC6-48-60-18-8F	(2) FIBER (4) DC LINES	RRUS-E2 B29 RRUS-32 B2 RRUS-32 B30	–	Y
A3	LTE	NEW	23°	CCI OPA65R-BU6DA	130'-0"	0°	2°/3°	–	170'-0"	–	–			4478 B14 RRUS-32 B66A	–	Y
A4	LTE	NEW	23°	CCI DMP65R-BU6DA	130'-0"	0°	2°/2°/3°/2°	–	170'-0"	–	–			4449 B5/12 RRUS-32 B2	–	Y
BETA SECTOR																
B2	UMTS/LTE	EXISTING	143°	CCI TPA-65R-LCUUUU-H8	130'-0"	0°	3°/2°/5°/5°/0°	1 5/8"	170'-0"	2	–	DC6-48-60-18-8F	(2) DC LINES	RRUS-E2 B29 RRUS-32 B2 RRUS-32 B30	–	Y
B3	LTE	NEW	143°	CCI OPA65R-BU8DA	130'-0"	0°	4°/3°	–	170'-0"	–	–			4478 B14 RRUS-32 B66A	–	Y
B4	LTE	NEW	143°	CCI DMP65R-BU8DA	130'-0"	0°	4°/4°/5°/4°	–	170'-0"	–	–			4449 B5/12 RRUS-32 B2	–	Y
GAMMA SECTOR																
C2	UMTS/LTE	EXISTING	263°	QUINTEL QS66512-2	130'-0"	0°	3°/2°/6°/6°/2°	1 5/8"	170'-0"	2	–	DC6-48-60-18-8F	(2) DC LINES	RRUS-E2 B29 RRUS-32 B2 RRUS-32 B30	–	Y
C3	LTE	NEW	263°	CCI OPA65R-BU6DA	130'-0"	0°	2°/3°	–	170'-0"	–	–			4478 B14 RRUS-32 B66A	–	Y
C4	LTE	NEW	263°	CCI DMP65R-BU6DA	130'-0"	0°	2°/2°/6°/2°	–	170'-0"	–	–			4449 B5/12 RRUS-32 B2	–	Y

NOTE: BOLD DENOTES NEW EQUIPMENT

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

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AT&T SITE NUMBER:
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BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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STATE OF CONNECTICUT
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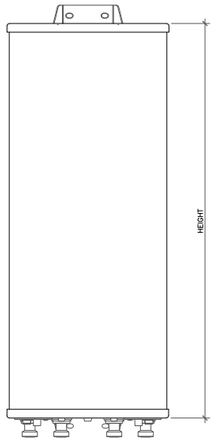
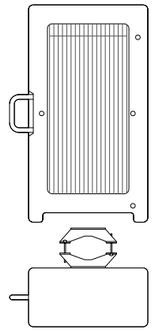
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-5
REVISION: 2



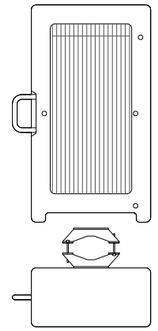
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU6D	71.2"	20.7"	7.7"	79.4 lbs
OPA65R-BU6A	71.2"	21"	7.8"	60.2 lbs
DMP65R-BU8D	96"	20.7"	7.7"	95.7 lbs
OPA65R-BU8A	96"	21	7.8"	76.5 lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



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

2 RRH DETAIL
SCALE: NOT TO SCALE



ERICSSON – 4478 B14
WEIGHT (FULLY EQUIPPED): 59.40 LBS
SIZE (HxWxD): 18.1x13.4x8.26 IN.

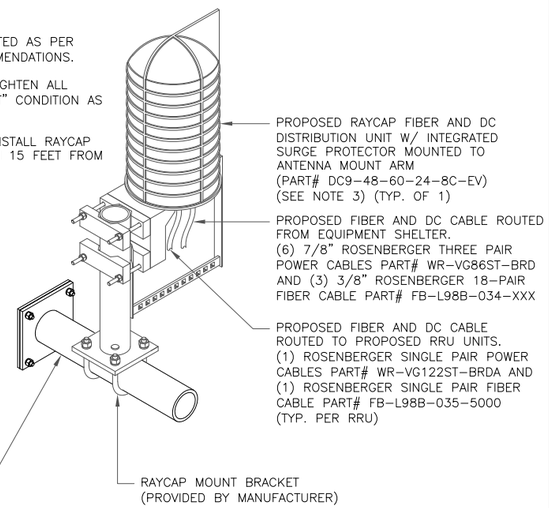
3 RRH DETAIL
SCALE: NOT TO SCALE

NOTES:

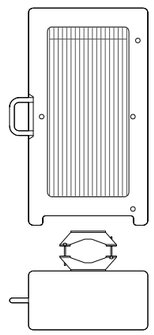
1. UNIT SHALL BE MOUNTED AS PER MANUFACTURER'S RECOMMENDATIONS.

2. CONTRACTOR SHALL TIGHTEN ALL BOLTS TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.

3. CONTRACTOR SHALL INSTALL RAYCAP DISTRIBUTION UNIT WITHIN 15 FEET FROM ALL RRHS.

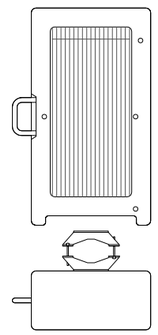


4 SURGE SUPPRESSOR DETAIL
SCALE: NOT TO SCALE



ERICSSON – RRUS-E2 B29
WEIGHT (FULLY EQUIPPED): 52.9 LBS
SIZE (HxWxD): 20.4x18.5x7.5 IN.

5 RRH DETAIL
SCALE: NOT TO SCALE



ERICSSON – RRUS-32 B2
WEIGHT (FULLY EQUIPPED): 52.9 LBS
SIZE (HxWxD): 27.2x12.05x7.0 IN.

6 RRH DETAIL
SCALE: NOT TO SCALE

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AT&T SITE NUMBER:
CTL01137

BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

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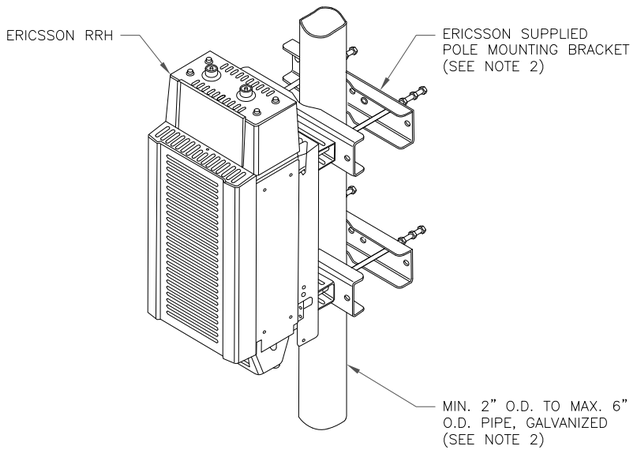
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

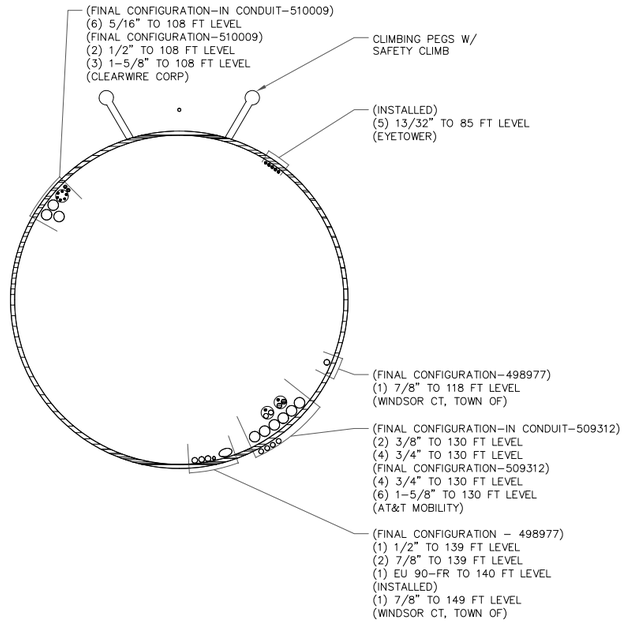
SHEET NUMBER: C-6
REVISION: 2

NOTES:

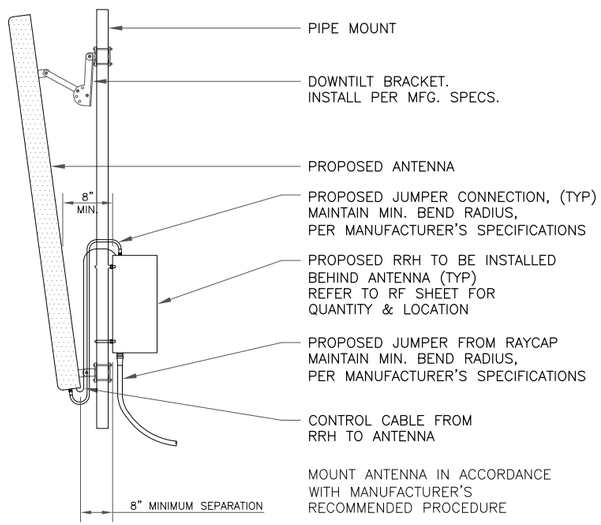
1. ERICSSON VIA AT&T SUPPLIES RRH, RRH POLE–MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRH POLE–MOUNTING BRACKET. ERICSSON INSTALLS RRH AND MAKES CABLE TERMINATIONS.
2. FOR POLE DIAMETERS FROM 6" TO 15", ERICSSON CAN SUPPLY A PAIR OF POLE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



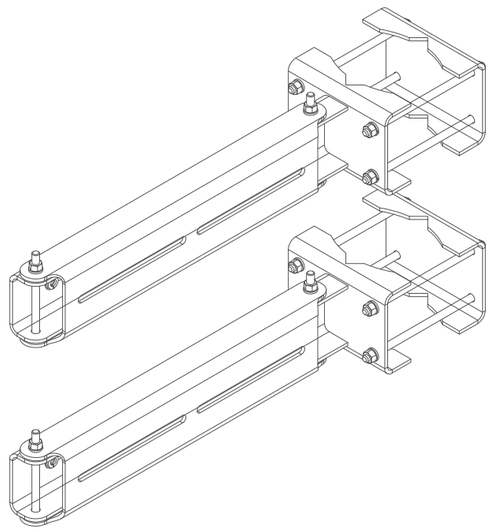
1 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE



2 BASE LEVEL DRAWING
SCALE: NOT TO SCALE



3 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE



4 VALMONT – RRUDSM
SCALE: NOT TO SCALE

AT&T
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BU #: **841793**
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WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

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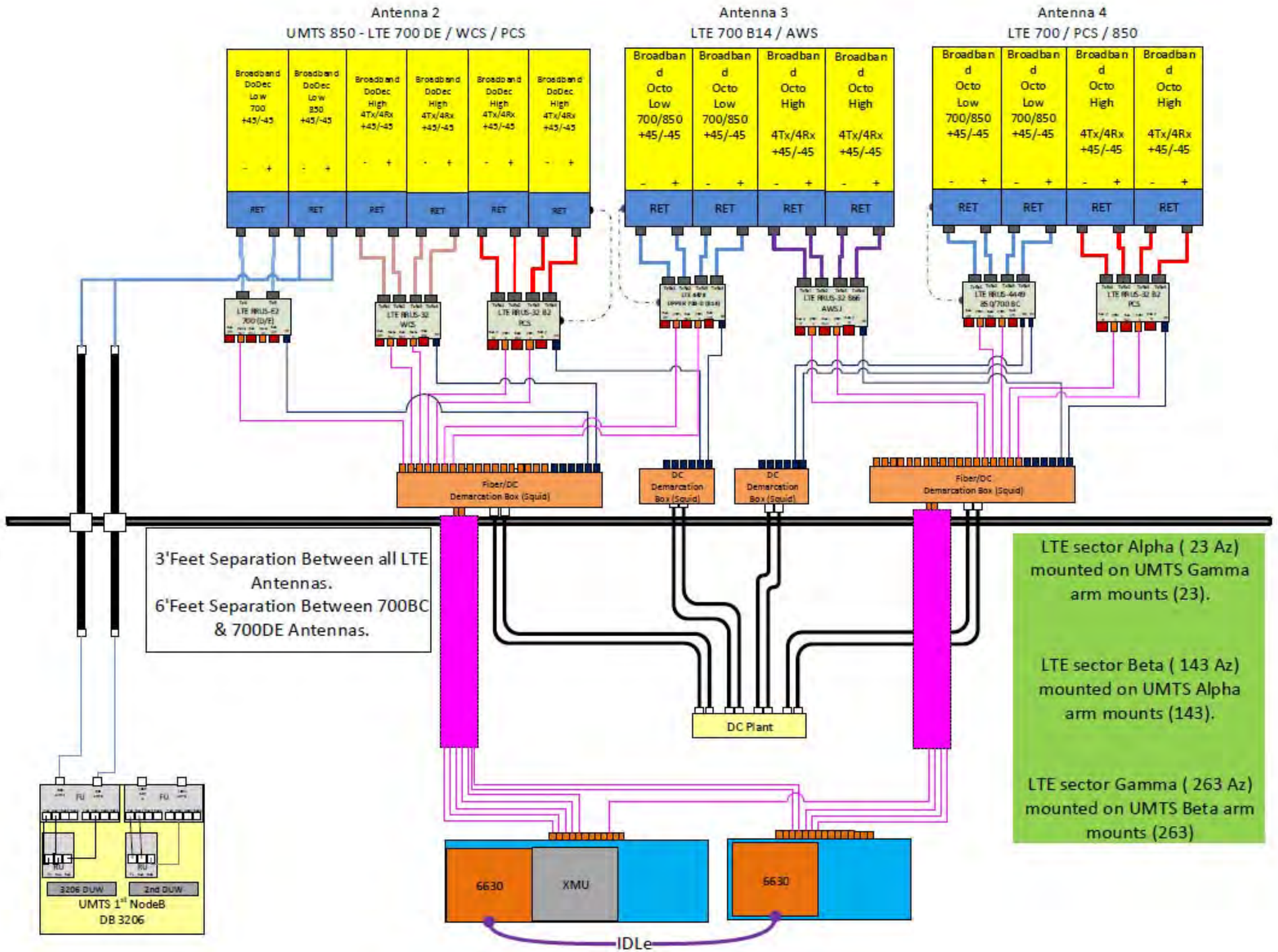
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-7
REVISION: 2



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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SHEET NUMBER: C-8
REVISION: 2

SECTOR	TECHNOLOGY	FREQUENCY BAND	COLOR CODE – SECTOR DESIGNATION FOR SECTOR SPLIT	COLOR CODE – SECTOR (AMOUNT OF BANDS BASED ON POSITION)	COLOR CODE – FREQUENCY			45 + COAX	45 – COAX
A	LTE	700 (B/C)	BLANK	GREEN	VIOLET		BLANK	YELLOW	BLANK
A	LTE	850	BLANK	GREEN	YELLOW		BLANK	YELLOW	BLANK
A	LTE	850 – 2ND BLOCK	BLANK	GREEN	YELLOW	YELLOW	BLANK	YELLOW	BLANK
A	LTE	1900 (PCS)	BLANK	GREEN	RED		BLANK	YELLOW	BLANK
A	LTE	1900 (PCS) – 2ND BLOCK	BLANK	GREEN	RED	RED	BLANK	YELLOW	BLANK
A	LTE	2100 (AWS)	BLANK	GREEN	ORANGE		BLANK	YELLOW	BLANK
A	LTE	2100 (AWS) – 2ND BLOCK	BLANK	GREEN	ORANGE	ORANGE	BLANK	YELLOW	BLANK
A	LTE	2300 (WCS)	BLANK	GREEN	SLATE		BLANK	YELLOW	BLANK
A	LTE	2300 (WCS) – 2ND BLOCK	BLANK	GREEN	BROWN		BLANK	YELLOW	BLANK
A	LTE	2300 (WCS) – SXM REPEATER	BLANK	GREEN	BROWN	BROWN	BLANK	YELLOW	BLANK
A	LTE	700 (D/E)	BLANK	GREEN	BROWN	BROWN	BROWN	YELLOW	BLANK
A	LTE	700 FIRSTNET	BLANK	GREEN	VIOLET	BLUE	BLANK	YELLOW	BLANK
A	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	GREEN	VIOLET	VIOLET	BLUE	YELLOW	BLANK
A	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	GREEN	RED	ORANGE	BLANK	YELLOW	BLANK
A	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	GREEN	YELLOW	SLATE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	700 (B/C)	GREEN	ORANGE	VIOLET		BLANK	YELLOW	BLANK
A – SPLIT	LTE	850	GREEN	ORANGE	YELLOW		BLANK	YELLOW	BLANK
A – SPLIT	LTE	850 – 2ND BLOCK	GREEN	ORANGE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
A – SPLIT	LTE	1900 (PCS)	GREEN	ORANGE	RED		BLANK	YELLOW	BLANK
A – SPLIT	LTE	1900 (PCS) – 2ND BLOCK	GREEN	ORANGE	RED	RED	BLANK	YELLOW	BLANK
A – SPLIT	LTE	2100 (AWS)	GREEN	ORANGE	ORANGE		BLANK	YELLOW	BLANK
A – SPLIT	LTE	2100 (AWS) – 2ND BLOCK	GREEN	ORANGE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	2300 (WCS)	GREEN	ORANGE	SLATE		BLANK	YELLOW	BLANK
A – SPLIT	LTE	2300 (WCS) – 2ND BLOCK	GREEN	ORANGE	BROWN		BLANK	YELLOW	BLANK
A – SPLIT	LTE	2300 (WCS) – SXM REPEATER	GREEN	ORANGE	BROWN	BROWN	BLANK	YELLOW	BLANK
A – SPLIT	LTE	700 (D/E)	GREEN	ORANGE	BROWN	BROWN	BROWN	YELLOW	BLANK
A – SPLIT	LTE	700 FIRSTNET	GREEN	ORANGE	VIOLET	BLUE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	GREEN	ORANGE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
A – SPLIT	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	GREEN	ORANGE	RED	ORANGE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	8500 / 700 D/E (DUAL RRH)	GREEN	ORANGE	YELLOW	SLATE	BLANK	YELLOW	BLANK
B	LTE	700 (B/C)	BLANK	BLUE	VIOLET		BLANK	YELLOW	BLANK
B	LTE	850	BLANK	BLUE	YELLOW		BLANK	YELLOW	BLANK
B	LTE	850 – 2ND BLOCK	BLANK	BLUE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
B	LTE	1900 (PCS)	BLANK	BLUE	RED		BLANK	YELLOW	BLANK
B	LTE	1900 (PCS) – 2ND BLOCK	BLANK	BLUE	RED	RED	BLANK	YELLOW	BLANK
B	LTE	2100 (AWS)	BLANK	BLUE	ORANGE		BLANK	YELLOW	BLANK
B	LTE	2100 (AWS) – 2ND BLOCK	BLANK	BLUE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
B	LTE	2300 (WCS)	BLANK	BLUE	SLATE		BLANK	YELLOW	BLANK
B	LTE	2300 (WCS) – 2ND BLOCK	BLANK	BLUE	BROWN		BLANK	YELLOW	BLANK
B	LTE	2300 (WCS) – SXM REPEATER	BLANK	BLUE	BROWN	BROWN	BLANK	YELLOW	BLANK
B	LTE	700 (D/E)	BLANK	BLUE	BROWN	BROWN	BROWN	YELLOW	BLANK
B	LTE	700 FIRSTNET	BLANK	BLUE	VIOLET	BLUE	BLANK	YELLOW	BLANK
B	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	BLUE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
B	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	BLUE	RED	ORANGE	BLANK	YELLOW	BLANK
B	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	BLUE	YELLOW	SLATE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	700 (B/C)	BLUE	BROWN	VIOLET		BLANK	YELLOW	BLANK
B – SPLIT	LTE	850	BLUE	BROWN	YELLOW		BLANK	YELLOW	BLANK
B – SPLIT	LTE	850 – 2ND BLOCK	BLUE	BROWN	YELLOW	YELLOW	BLANK	YELLOW	BLANK
B – SPLIT	LTE	1900 (PCS)	BLUE	BROWN	RED		BLANK	YELLOW	BLANK
B – SPLIT	LTE	1900 (PCS) – 2ND BLOCK	BLUE	BROWN	RED	RED	BLANK	YELLOW	BLANK
B – SPLIT	LTE	2100 (AWS)	BLUE	BROWN	ORANGE		BLANK	YELLOW	BLANK
B – SPLIT	LTE	2100 (AWS) – 2ND BLOCK	BLUE	BROWN	ORANGE	ORANGE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	2300 (WCS)	BLUE	BROWN	SLATE		BLANK	YELLOW	BLANK
B – SPLIT	LTE	2300 (WCS) – 2ND BLOCK	BLUE	BROWN	BROWN		BLANK	YELLOW	BLANK
B – SPLIT	LTE	2300 (WCS) – SXM REPEATER	BLUE	BROWN	BROWN	BROWN	BLANK	YELLOW	BLANK
B – SPLIT	LTE	700 (D/E)	BLUE	BROWN	BROWN	BROWN	BROWN	YELLOW	BLANK
B – SPLIT	LTE	700 FIRSTNET	BLUE	BROWN	VIOLET	BLUE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLUE	BROWN	VIOLET	VIOLET	BLUE	YELLOW	BLANK
B – SPLIT	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLUE	BROWN	RED	ORANGE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	8500 / 700 D/E (DUAL RRH)	BLUE	BROWN	YELLOW	SLATE	BLANK	YELLOW	BLANK
C	LTE	700 (B/C)	BLANK	WHITE	VIOLET		BLANK	YELLOW	BLANK
C	LTE	850	BLANK	WHITE	YELLOW		BLANK	YELLOW	BLANK
C	LTE	850 – 2ND BLOCK	BLANK	WHITE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
C	LTE	1900 (PCS)	BLANK	WHITE	RED		BLANK	YELLOW	BLANK
C	LTE	1900 (PCS) – 2ND BLOCK	BLANK	WHITE	RED	RED	BLANK	YELLOW	BLANK
C	LTE	2100 (AWS)	BLANK	WHITE	ORANGE		BLANK	YELLOW	BLANK
C	LTE	2100 (AWS) – 2ND BLOCK	BLANK	WHITE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
C	LTE	2300 (WCS)	BLANK	WHITE	SLATE		BLANK	YELLOW	BLANK
C	LTE	2300 (WCS) – 2ND BLOCK	BLANK	WHITE	BROWN		BLANK	YELLOW	BLANK
C	LTE	2300 (WCS) – SXM REPEATER	BLANK	WHITE	BROWN	BROWN	BLANK	YELLOW	BLANK
C	LTE	700 (D/E)	BLANK	WHITE	BROWN	BROWN	BROWN	YELLOW	BLANK
C	LTE	700 FIRSTNET	BLANK	WHITE	VIOLET	BLUE	BLANK	YELLOW	BLANK
C	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	WHITE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
C	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	WHITE	RED	ORANGE	BLANK	YELLOW	BLANK
C	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	WHITE	YELLOW	SLATE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	700 (B/C)	WHITE	VIOLET	VIOLET		BLANK	YELLOW	BLANK
C – SPLIT	LTE	850	WHITE	VIOLET	YELLOW		BLANK	YELLOW	BLANK
C – SPLIT	LTE	850 – 2ND BLOCK	WHITE	VIOLET	YELLOW	YELLOW	BLANK	YELLOW	BLANK
C – SPLIT	LTE	1900 (PCS)	WHITE	VIOLET	RED		BLANK	YELLOW	BLANK
C – SPLIT	LTE	1900 (PCS) – 2ND BLOCK	WHITE	VIOLET	RED	RED	BLANK	YELLOW	BLANK
C – SPLIT	LTE	2100 (AWS)	WHITE	VIOLET	ORANGE		BLANK	YELLOW	BLANK
C – SPLIT	LTE	2100 (AWS) – 2ND BLOCK	WHITE	VIOLET	ORANGE	ORANGE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	2300 (WCS)	WHITE	VIOLET	SLATE		BLANK	YELLOW	BLANK
C – SPLIT	LTE	2300 (WCS) – 2ND BLOCK	WHITE	VIOLET	BROWN		BLANK	YELLOW	BLANK
C – SPLIT	LTE	2300 (WCS) – SXM REPEATER	WHITE	VIOLET	BROWN	BROWN	BLANK	YELLOW	BLANK
C – SPLIT	LTE	700 (D/E)	WHITE	VIOLET	BROWN	BROWN	BROWN	YELLOW	BLANK
C – SPLIT	LTE	700 FIRSTNET	WHITE	VIOLET	VIOLET	BLUE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	WHITE	VIOLET	VIOLET	VIOLET	BLUE	YELLOW	BLANK
C – SPLIT	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	WHITE	VIOLET	RED	ORANGE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	8500 / 700 D/E (DUAL RRH)	WHITE	VIOLET	YELLOW	SLATE	BLANK	YELLOW	BLANK
D	LTE	700 (B/C)	BLANK	ORANGE	VIOLET		BLANK	YELLOW	BLANK
D	LTE	850	BLANK	ORANGE	YELLOW		BLANK	YELLOW	BLANK
D	LTE	850 – 2ND BLOCK	BLANK	ORANGE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
D	LTE	1900 (PCS)	BLANK	ORANGE	RED		BLANK	YELLOW	BLANK
D	LTE	1900 (PCS) – 2ND BLOCK	BLANK	ORANGE	RED	RED	BLANK	YELLOW	BLANK
D	LTE	2100 (AWS)	BLANK	ORANGE	ORANGE		BLANK	YELLOW	BLANK
D	LTE	2100 (AWS) – 2ND BLOCK	BLANK	ORANGE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
D	LTE	2300 (WCS)	BLANK	ORANGE	SLATE		BLANK	YELLOW	BLANK
D	LTE	2300 (WCS) – 2ND BLOCK	BLANK	ORANGE	BROWN		BLANK	YELLOW	BLANK
D	LTE	2300 (WCS) – SXM REPEATER	BLANK	ORANGE	BROWN	BROWN	BLANK	YELLOW	BLANK
D	LTE	700 (D/E)	BLANK	ORANGE	BROWN	BROWN	BROWN	YELLOW	BLANK
D	LTE	700 FIRSTNET	BLANK	ORANGE	VIOLET	BLUE	BLANK	YELLOW	BLANK
D	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	ORANGE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
D	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	ORANGE	RED	ORANGE	BLANK	YELLOW	BLANK
D	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	ORANGE	YELLOW	SLATE	BLANK	YELLOW	BLANK
E	LTE	700 (B/C)	BLANK	BROWN	VIOLET		BLANK	YELLOW	BLANK
E	LTE	850	BLANK	BROWN	YELLOW		BLANK	YELLOW	BLANK
E	LTE	850 – 2ND BLOCK	BLANK	BROWN	YELLOW	YELLOW	BLANK	YELLOW	BLANK
E	LTE	1900 (PCS)	BLANK	BROWN	RED		BLANK	YELLOW	BLANK
E	LTE	1900 (PCS) – 2ND BLOCK	BLANK	BROWN	RED	RED	BLANK	YELLOW	BLANK
E	LTE	2100 (AWS)	BLANK	BROWN	ORANGE		BLANK	YELLOW	BLANK
E	LTE	2100 (AWS) – 2ND BLOCK	BLANK	BROWN	ORANGE	ORANGE	BLANK	YELLOW	BLANK
E	LTE	2300 (WCS)	BLANK	BROWN	SLATE		BLANK	YELLOW	BLANK
E	LTE	2300 (WCS) – 2ND BLOCK	BLANK	BROWN	BROWN		BLANK	YELLOW	BLANK
E	LTE	2300 (WCS) – SXM REPEATER	BLANK	BROWN	BROWN	BROWN	BLANK	YELLOW	BLANK
E	LTE	700 (D/E)	BLANK	BROWN	BROWN	BROWN	BROWN	YELLOW	BLANK
E	LTE	700 FIRSTNET	BLANK	BROWN	VIOLET	BLUE	BLANK	YELLOW	BLANK
E	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	BROWN	VIOLET	VIOLET	BLUE	YELLOW	BLANK
E	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	BROWN	RED	ORANGE	BLANK	YELLOW	BLANK
E	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	BROWN	YELLOW	SLATE	BLANK	YELLOW	BLANK
F	LTE	700 (B/C)	BLANK	VIOLET	VIOLET		BLANK	YELLOW	BLANK
F	LTE	850	BLANK	VIOLET	YELLOW		BLANK	YELLOW	BLANK
F	LTE	850 – 2ND BLOCK	BLANK	VIOLET	YELLOW	YELLOW	BLANK	YELLOW	BLANK
F	LTE	1900 (PCS)	BLANK	VIOLET	RED		BLANK	YELLOW	BLANK
F	LTE	1900 (PCS) – 2ND BLOCK	BLANK	VIOLET	RED	RED	BLANK	YELLOW	BLANK
F	LTE	2100 (AWS)	BLANK	VIOLET	ORANGE		BLANK	YELLOW	BLANK
F	LTE	2100 (AWS) – 2ND BLOCK	BLANK	VIOLET	ORANGE	ORANGE	BLANK	YELLOW	BLANK
F	LTE	2300 (WCS)	BLANK	VIOLET	SLATE		BLANK	YELLOW	BLANK
F	LTE	2300 (WCS) – 2ND BLOCK	BLANK	VIOLET	BROWN		BLANK	YELLOW	BLANK
F	LTE	2300 (WCS) – SXM REPEATER	BLANK	VIOLET	BROWN	BROWN	BLANK	YELLOW	BLANK
F	LTE	700 (D/E)	BLANK	VIOLET	BROWN	BROWN	BROWN	YELLOW	BLANK
F	LTE	700 FIRSTNET	BLANK	VIOLET	VIOLET	BLUE	BLANK	YELLOW	BLANK
F	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	VIOLET	VIOLET	VIOLET	BLUE	YELLOW	BLANK
F	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	VIOLET	RED	ORANGE	BLANK	YELLOW	BLANK
F	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	VIOLET	YELLOW	SLATE	BLANK	YELLOW	BLANK

NOTE 1: PRODUCTS ARE ONLY TO BE USED WHEN ADEQUATE PHYSICAL SPACE EXISTS FOR PROPER INSTALLATION.

NOTE 2: HEAT SHRINK MAY ONLY BE USED AT GROUND LEVEL OR ROOFTOP SITES WHEN APPLIED WITH A HEAT GUN. USE ON TOWERS OR INSTALLING WITH AN OPEN FLAME DEVICE, SUCH AS A TORCH, IS PROHIBITED DUE TO POTENTIAL DAMAGE TO CONNECTORS AND CABLES. HEAT SHRINK IS NOT ALLOWED ON CONNECTIONS TO TOWER TOP EQUIPMENT EVEN IF THE HEAT SHRINK IS APPLIED ON THE GROUND PRIOR TO INSTALLING THE EQUIPMENT ON THE TOWER TOP.

NOTE 3: HEAT SHRINK IS NOT TO BE USED ON RET/AISG CONNECTORS FOUND ON RF DEVICES (RRH/RRU, ANTENNAS, ETC.), DUE TO POSSIBLE DAMAGE BEING CAUSED TO THE DEVICE. IT MAY BE USED ON CONNECTORS ATTACHED TO RET SURGE PROTECTORS.

NOTE 4: WHEN GAMMA ELECTRONICS COLD SHRINK IS USED ON FULLY THREADED DIN CONNECTORS THE THREADS MUST HAVE EITHER ROSENBERGER THREAD ADAPTER OR BUTYL APPLIED PRIOR TO THE COLD SHRINK BEING INSTALLED. REFER TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS INCLUDED WITH THE PRODUCT FOR DETAILS.

TABLE 1: E/ PA / S. NJ / DE – COAX COLOR CODE

SECTOR	ALPHA	GREEN		
	A–SPLIT	GREEN	ORANGE	BLANK
	BETA	BLUE		
	B–SPLIT	BROWN	BROWN	BLANK
	GAMMA	WHITE		
	C–SPLIT	WHITE	VIOLET	BLANK
	D	ORANGE		
	E	BROWN		
	F	VIOLET		

DC TRUCNK / DC JUMPER / FIRST FIBER JUMPER

FREQUENCY BAND	700 (B/C)	VIOLET		
	850	YELLOW		
	850 – 2ND BLOCK	YELLOW	YELLOW	BLANK
	1900 (PCS)	RED		
	1900 (PCS) – 2ND BLOCK	RED	RED	BLANK
	2100 (AWS)	ORANGE		
	2100 (AWS) – 2ND BLOCK	ORANGE	ORANGE	BLANK
	2300 (WCS)	BROWN		
	2300 (WCS) – 2ND BLOCK	BROWN	BROWN	BLANK
	2300 (WCS) – SXM REPEATER	BROWN	BROWN	BROWN
	700 (D/E)	SLATE		
	700 FIRSTNET	VIOLET	BLUE	BLANK
	700 (B/C) / 700 FIRSTNET (DUAL RRH)	VIOLET	VIOLET	BLUE
	1900 (PCS) / 2100 (AWS) (DUAL RRH)	RED	ORANGE	BLANK
	8500 / 700 D/E (DUAL RRH)	YELLOW	SLATE	BLANK

WEATHERPROOFING PRODUCT APPLICATION TABLE

PRODUCT	APPLICATION					
	HARDLINE TO JUMPER CONNECTION	7–16 DIN RF CONNECTOR	4.3–10 RF CONNECTOR	RRH/RRU DC CONNECTOR	RRH/RRU FIBER CONNECTOR	RET/AISG
TAPE & BUTYL	YES	YES (1)	YES (1)	NO	NO	NO
SELF–FUSING TAPE	YES	YES (1)	YES (1)	YES	NO	YES
JUMPER BOOT	NO	YES	YES	NO	NO	NO

TORQUE VALUES FOR CONNECTORS

CONNECTOR TYPE	TORQUE Ft–lbs	TORQUE In–lbs
7–16 DIN	19–22	221–265
4.3–10	3.67	44
N	1.25	15
SMA	0.42	5
TNC	0.42	5
RET/AISG	HAND TIGHTEN	HAND TIGHTEN

MINIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS

GROUNDING CONDUCTOR SIZE	MINIMUM BENDING RADIUS (INCHES)
6 AWG	2
4 AWG	3
2 AWG	3
1/0 AWG	4
4/0 AWG	4
750 KCML	7

1 COLOR CODE STANDARD
SCALE: NOT TO SCALE

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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

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

AT&T SITE NUMBER:
CTL01137

BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
WINDSOR, CT 06095

EXISTING 148'-0"
MONOPOLE

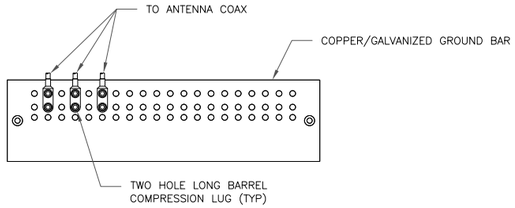
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	4/27/20	JCO	CONSTRUCTION	RMC
1	5/14/20	GEH	CONSTRUCTION	RMC
2	6/2/20	GEH	CONSTRUCTION	RMC

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
6/2/20

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

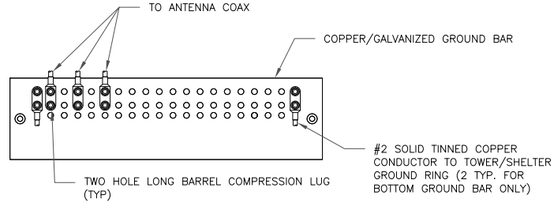
SHEET NUMBER: C-9
REVISION: 2



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.

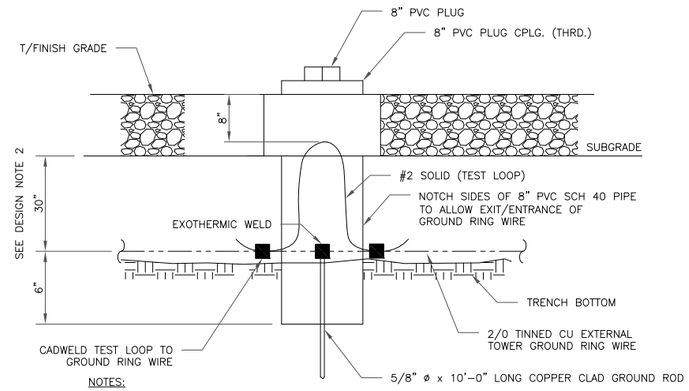
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

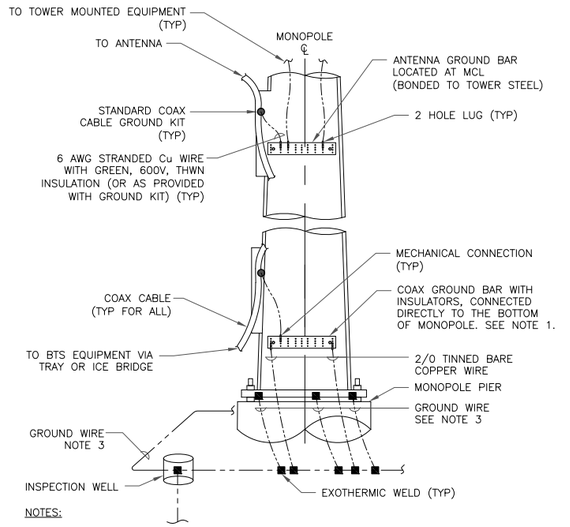
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



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)

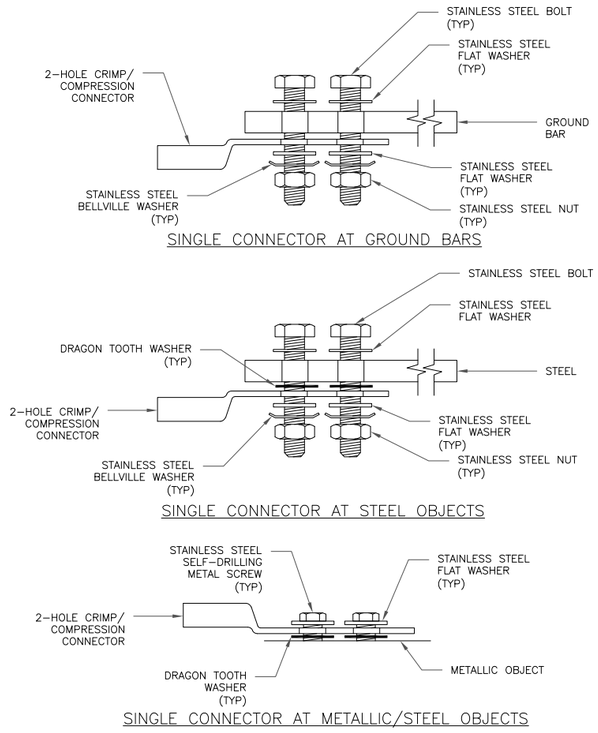
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



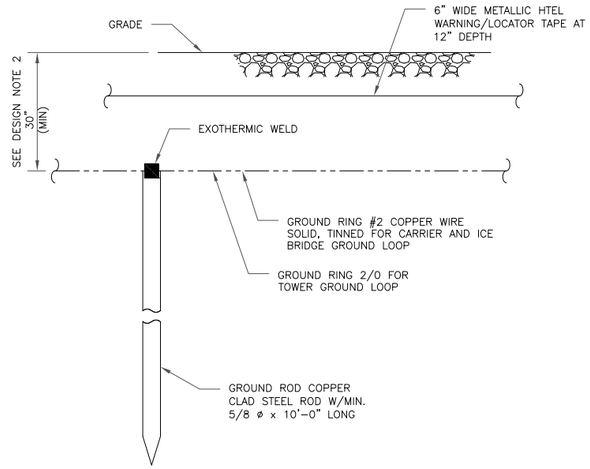
NOTES:

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



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

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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AT&T SITE NUMBER:
CTL01137

BU #: **841793**
WINDSOR PINE LANE

50 PINE LANE
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EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
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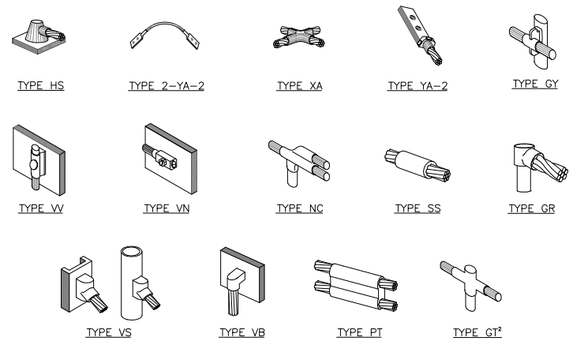
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: G-1
REVISION: 2

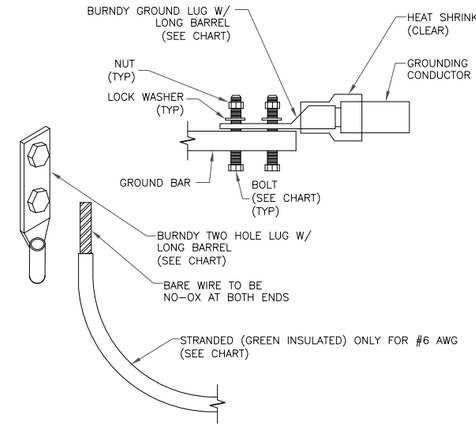


NOTE:

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

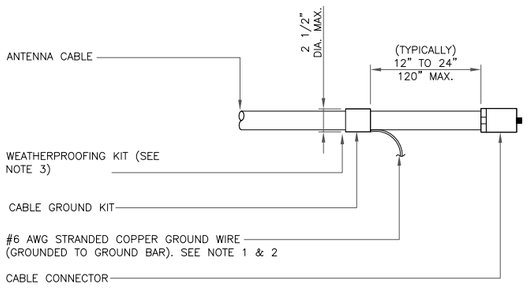
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



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.

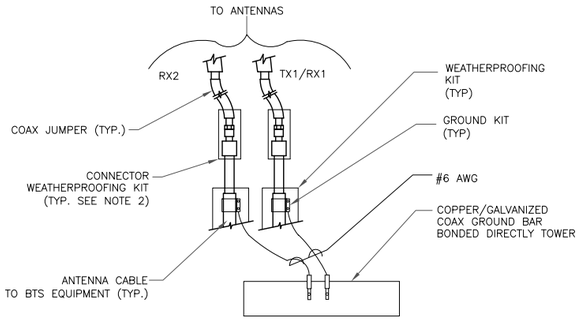
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



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.

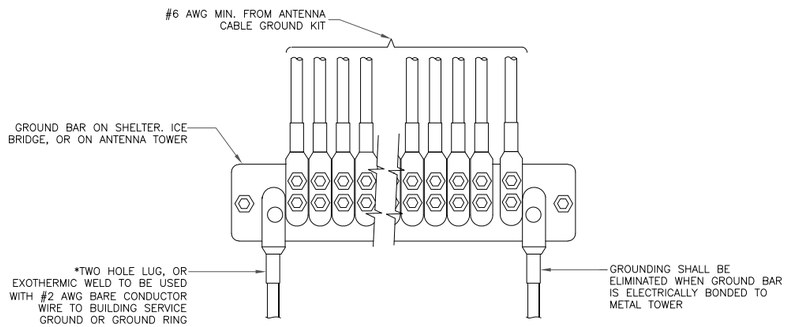
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



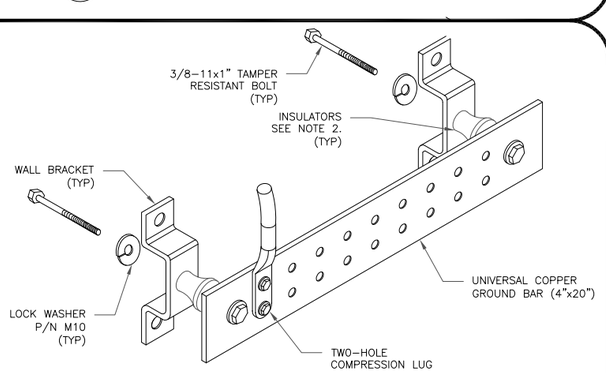
NOTES:

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



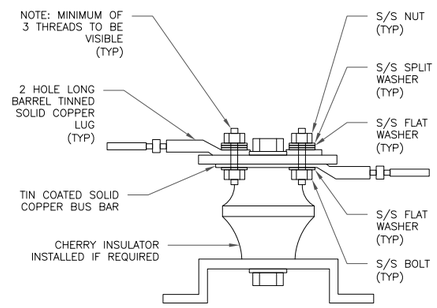
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



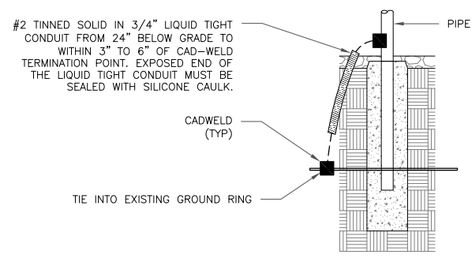
NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-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



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

CROWN CASTLE
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KING OF PRUSSIA, PA 19406

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AT&T SITE NUMBER:
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BU #: **841793**
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EXISTING 148'-0"
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STATE OF CONNECTICUT
31627
LICENSED PROFESSIONAL ENGINEER
6/2/20

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

SHEET NUMBER: G-2
REVISION: 2

Exhibit D

Structural Analysis Report

Date: **June 05, 2020**

Amanda D Brown
Crown Castle
6325 Ardrey Kell RddSuite 600
Charlotte, NC 28277

Black & Veatch Corp.
6800 W. 115th St., Suite 2292
Overland Park, KS 66211
(913) 458-6909

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL01137
	Carrier Site Name:	Windsor Pine Lane
Crown Castle Designation:	**Crown Castle BU Number:**	841793
	Crown Castle Site Name:	Windsor Pine Lane
	Crown Castle JDE Job Number:	612881
	Crown Castle Work Order Number:	1857079
	Crown Castle Order Number:	523083 Rev. 0
Engineering Firm Designation:	**Black & Veatch Corp. Project Number:**	400087
Site Data:	**50 Pine Lane, Windsor, Hartford County, CT** **Latitude *41° 49' 11.43"*, Longitude *-72° 40' 1.88"*** **147.458 Foot - Monopole Tower**	

Dear Amanda D Brown,

Black & Veatch Corp. 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:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 86.1%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 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: Aditya Kulkarni

Respectfully submitted by:

Joshua J. Riley, P.E.

Professional Engineer

06/05/2020

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 147.458 ft Monopole tower mapped by Tower Engineering Professionals.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	2 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)
130.0	130.0	2	cci antennas	DMP65R-BU6D	2 8 6 2	3/8 3/4 1 5/8 2 Conduit
		1	cci antennas	DMP65R-BU8D		
		2	cci antennas	OPA65R-BU6D		
		1	cci antennas	OPA65R-BU8D		
		1	cci antennas	TPA-65R-LCUUUU-H8		
		2	quintel technology	QS66512-2		
		6	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 32 B66A		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14_CCIV2		
		3	ericsson	RRUS E2 B29		
		4	raycap	DC6-48-60-18-8F		
		1	cci tower mounts (v2.1)	Platform Mount [LP 301-1_KCKR]		

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)
149.0	153.0	1	decibel	DB225-C	1	7/8
	149.0	1	cci tower mounts (v2.1)	Platform Mount [12' LP 1201-1]		
140.0	140.0	1	rfs celwave	SC3-W100ASTX	1	EU 90-FR
		1	cci tower mounts (v2.1)	Pipe Mount [PM 601-1]		
139.0	145.0	2	rfi antennas	CC807-11	1 2	1/2 7/8
		1	bird technologies group	432E-83I-01-T		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	139.0	2	cci tower mounts (v2.1)	Side Arm Mount [SO 901-1]		
118.0	118.0	1	rfi antennas	BPA7496-180-11 w/ Mount Pipe	1	7/8
108.0	109.0	1	andrew	VHLP800-11	6 2 3 1	5/16 1/2 1 5/8 2 Conduit
	108.0	3	argus technologies	LLPX310R-V4 w/ Mount Pipe		
		3	commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	samsung telecommunications	RRH-2WB		
		3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		3	nokia	AHCC		
		2	aviat networks	ODU600		
		1	cci tower mounts (v2.1)	Side Arm Mount [SO 102-3]		
	107.0	1	andrew	VHLP2-18		
85.0	85.0	1	wade antenna	WH 14-69/S	5	13/32
		1	wade antenna	WL 14-69/S		
		2	cci tower mounts (v2.1)	Side Arm Mount [SO 102-3]		
		4	cci tower mounts (v2.1)	Side Arm Mount [SO 901-1]		
	83.0	2	wade antenna	WL 14-69/S		
	78.0	1	wade antenna	J105-HI		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Wilkinson Engineering, Inc.	4469790	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Wilkinson Engineering, Inc. (Mapped)	4469791	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Tower Engineering Professionals (Mapped)	6064532	CCISITES

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) 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. Black & Veatch Corp. should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary) (Monopole Tower)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	147.458 - 115.418	Pole	TP31.25x24x0.2188	1	-8.98	1187.33	26.8	Pass
L2	115.418 - 74.2933	Pole	TP37.75x29.9413x0.2188	2	-16.23	1445.66	84.6	Pass
L3	74.2933 - 39.21	Pole	TP44.625x36.5034x0.3125	3	-23.54	2428.89	73.3	Pass
L4	39.21 - 0	Pole	TP51.25x42.8761x0.375	4	-36.59	3433.41	74.4	Pass
							Summary	
						Pole (L2)	84.6	Pass
						Rating =	**84.6**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	56.7	Pass
	Base Plate		86.1	Pass
1	Base Foundation	0	42.0	Pass
	Base Foundation Soil Interaction		71.5	Pass

Structure Rating (max from all components) =	86.1%

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

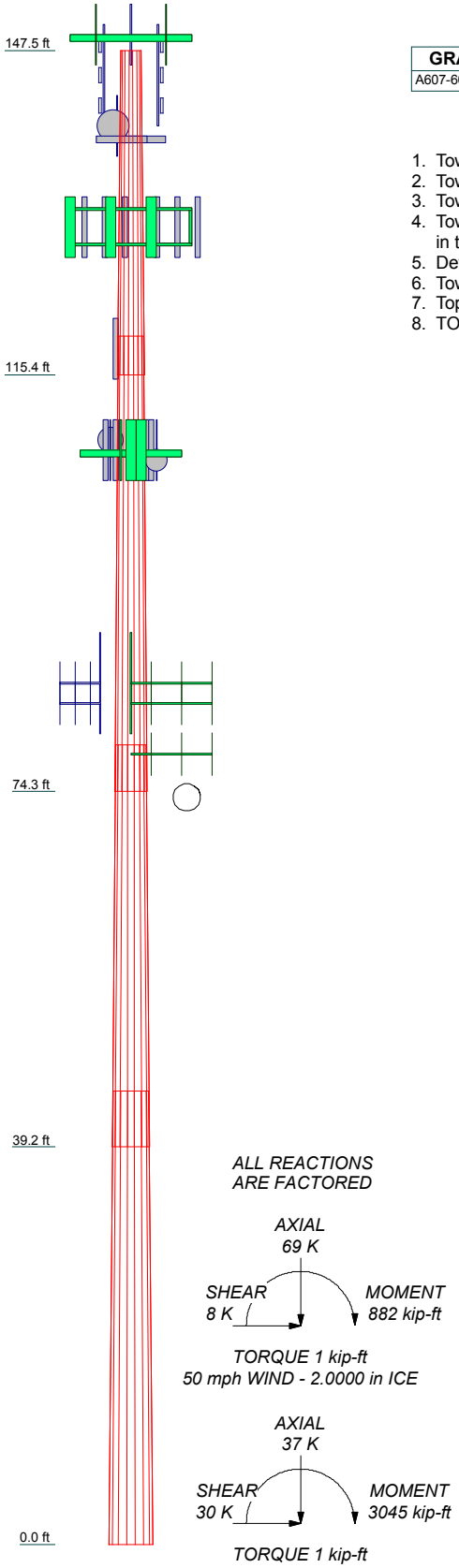
4.1) Recommendations

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

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	32.04	18	0.2188	3.85	24.0000	31.2500		2.1
2	44.98	18	0.2188	4.66	29.9413	37.7500		3.6
3	39.74	18	0.3125	5.50	36.5034	44.6250		5.4
4	44.71	18	0.3750		42.8761	51.2500		8.5
							A607-60	19.5



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 2.00 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 0.00 ft
8. TOWER RATING: 84.6%

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Black & Veatch Corp.
6800 W. 115th St., Suite 2292
Overland Park, KS 66211
Phone: (913) 458-6909
FAX: (913) 458-8136

Job: ***Windsor Pine Lane (BU# 841793)***			
Project: ***400087 (841793.1857079)***			
Client: Crown Castle	Drawn by: Aditya Kulkarni	App'd:	
Code: TIA-222-H	Date: 06/05/20	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

1. Tower is located in Hartford County, Connecticut.
2. Tower base elevation above sea level: 94.00 ft.
3. Basic wind speed of 125 mph.
4. Risk Category II.
5. Exposure Category C.
6. Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7. Topographic Category: 1.
8. Crest Height: 0.00 ft.
9. Nominal ice thickness of 2.0000 in.
10. Ice thickness is considered to increase with height.
11. Ice density of 56 pcf.
12. A wind speed of 50 mph is used in combination with ice.
13. Temperature drop of 50 °F.
14. Deflections calculated using a wind speed of 60 mph.
15. A non-linear (P-delta) analysis was used.
16. Pressures are calculated at each section.
17. Stress ratio used in pole design is 1.05.
18. Tower analysis based on target reliabilities in accordance with Annex S.
19. Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
20. Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules	
Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces	
Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA	
Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression	
Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable	
Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation	
Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque	
Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check	
Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption	
Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption	
Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles	
Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction	
Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow	
SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets	
SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments	
				Pole With Shroud Or No Appurtenances	
				Outside and Inside Corner Radii Are Known	

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	147.46-115.42	32.04	3.85	18	24.0000	31.2500	0.2188	0.8750	A607-60 (60 ksi)
L2	115.42-74.29	44.98	4.66	18	29.9413	37.7500	0.2188	0.8750	A607-60 (60 ksi)

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
L3	74.29-39.21	39.74	5.50	18	36.5034	44.6250	0.3125	1.2500	A607-60 (60 ksi)
L4	39.21-0.00	44.71		18	42.8761	51.2500	0.3750	1.5000	A607-60 (60 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.3365	16.5116	1179.7676	8.4423	12.1920	96.7657	2361.0876	8.2574	3.8390	17.55
	31.6983	21.5454	2621.1402	11.0161	15.8750	165.1112	5245.7293	10.7747	5.1150	23.383
L2	31.0482	20.6368	2303.3060	10.5515	15.2102	151.4318	4609.6428	10.3203	4.8847	22.33
	38.2986	26.0584	4637.3676	13.3236	19.1770	241.8192	9280.8371	13.0317	6.2590	28.613
L3	37.9853	35.8969	5940.0928	12.8478	18.5437	320.3288	11888.0017	17.9518	5.8746	18.799
	45.2652	43.9525	10903.6814	15.7309	22.6695	480.9846	21821.7101	21.9804	7.3040	23.373
L4	44.5257	50.5869	11544.5028	15.0879	21.7810	530.0252	23104.1961	25.2983	6.8862	18.363
	51.9828	60.5540	19801.0813	18.0606	26.0350	760.5562	39628.2174	30.2827	8.3600	22.293

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
L1 147.46-115.42				1	1	1			
L2 115.42-74.29				1	1	1			
L3 74.29-39.21				1	1	1			
L4 39.21-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	A	No	Surface Ar (CaAa)	147.46 - 8.00	1	1	0.490 0.500	0.3750		0.22
WR-VG86ST-BRD(3/4)	C	No	Surface Ar (CaAa)	130.00 - 0.00	4	4	-0.300 -0.200	0.7950		0.58
****										
***										
***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
*****149*****									
LDF5-50A(7/8)	C	No	No	Inside Pole	147.46 - 0.00	1	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
*****140*****									
EU 90-FR(ELLIPTICAL)	C	No	No	Inside Pole	140.00 - 0.00	1	No Ice	0.00	0.34
							1/2" Ice	0.00	0.34
							1" Ice	0.00	0.34
							2" Ice	0.00	0.34
*****139*****									
LDF5-50A(7/8)	C	No	No	Inside Pole	139.00 - 0.00	2	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
LDF4-50A(1/2)	C	No	No	Inside Pole	139.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
*****130*****									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	130.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	130.00 - 0.00	2	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	130.00 - 0.00	4	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
							2" Ice	0.00	0.58
2" innerduct conduit	C	No	No	Inside Pole	130.00 - 0.00	2	No Ice	0.00	0.20
							1/2" Ice	0.00	0.20
							1" Ice	0.00	0.20
							2" Ice	0.00	0.20
*****118*****									
LDF5-50A(7/8)	C	No	No	Inside Pole	118.00 - 0.00	1	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
*****108*****									
HB158-21U6M48-30F(1-5/8)	C	No	No	Inside Pole	108.00 - 0.00	3	No Ice	0.00	2.39
							1/2" Ice	0.00	2.39
							1" Ice	0.00	2.39
							2" Ice	0.00	2.39
9207(5/16)	C	No	No	Inside Pole	108.00 - 0.00	6	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
LDF4-50A(1/2)	C	No	No	Inside Pole	108.00 - 0.00	2	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
2" innerduct conduit	C	No	No	Inside Pole	108.00 - 0.00	1	No Ice	0.00	0.20
							1/2" Ice	0.00	0.20
							1" Ice	0.00	0.20
							2" Ice	0.00	0.20
*****85*****									
1110(13/32)	C	No	No	Inside Pole	85.00 - 0.00	5	No Ice	0.00	0.05
							1/2" Ice	0.00	0.05
							1" Ice	0.00	0.05
							2" Ice	0.00	0.05
****									
***									
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	147.46-115.42	A	0.000	0.000	1.202	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	4.637	0.000	0.19
L2	115.42-74.29	A	0.000	0.000	1.542	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	13.078	0.000	0.76
L3	74.29-39.21	A	0.000	0.000	1.316	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	11.156	0.000	0.71
L4	39.21-0.00	A	0.000	0.000	1.170	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	12.469	0.000	0.79

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	147.46-115.42	A	1.951	0.000	0.000	13.704	0.000	0.18
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	12.909	0.000	0.34
L2	115.42-74.29	A	1.888	0.000	0.000	17.590	0.000	0.24
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	36.407	0.000	1.19
L3	74.29-39.21	A	1.794	0.000	0.000	14.566	0.000	0.19
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	30.508	0.000	1.06
L4	39.21-0.00	A	1.615	0.000	0.000	12.369	0.000	0.16
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	33.172	0.000	1.15

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	147.46-115.42	0.5800	0.7314	0.6991	-0.1597
L2	115.42-74.29	1.1253	1.6911	1.3309	1.0451
L3	74.29-39.21	1.1489	1.7260	1.4078	1.1188
L4	39.21-0.00	1.1690	1.8142	1.4728	1.4906

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
L1	1	Safety Line 3/8	115.42 - 147.46	1.0000	1.0000
L1	15	WR-VG86ST-BRD(3/4)	115.42 - 130.00	1.0000	1.0000
L2	1	Safety Line 3/8	74.29 - 115.42	1.0000	1.0000
L2	15	WR-VG86ST-BRD(3/4)	74.29 - 115.42	1.0000	1.0000
L3	1	Safety Line 3/8	39.21 - 74.29	1.0000	1.0000
L3	15	WR-VG86ST-BRD(3/4)	39.21 - 74.29	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
14" x 2' Top Hat	C	None		0.0000	147.46	No Ice	1.17	1.17	0.11
						1/2" Ice	1.82	1.82	0.13
						1" Ice	2.02	2.02	0.16
						2" Ice	2.45	2.45	0.22
149									
Platform Mount [12' LP 1201-1]	C	None		0.0000	149.00	No Ice	19.80	19.80	1.80
						1/2" Ice	22.97	22.97	2.14
						1" Ice	26.14	26.14	2.49
						2" Ice	32.49	32.49	3.17
(4) 6' x 2" Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	149.00	No Ice	1.43	1.43	0.02
						1/2" Ice	1.92	1.92	0.03
						1" Ice	2.29	2.29	0.05
						2" Ice	3.06	3.06	0.09
(4) 6' x 2" Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	149.00	No Ice	1.43	1.43	0.02
						1/2" Ice	1.92	1.92	0.03
						1" Ice	2.29	2.29	0.05
						2" Ice	3.06	3.06	0.09
(4) 6' x 2" Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	149.00	No Ice	1.43	1.43	0.02
						1/2" Ice	1.92	1.92	0.03
						1" Ice	2.29	2.29	0.05
						2" Ice	3.06	3.06	0.09
DB225-C	A	From Leg	3.00 6.00 4.00	0.0000	149.00	No Ice	2.32	2.32	0.03
						1/2" Ice	4.18	4.18	0.04
						1" Ice	6.03	6.03	0.04
						2" Ice	9.74	9.74	0.06
140									
Pipe Mount [PM 601-1]	A	From Face	0.50 0.00 0.00	0.0000	140.00	No Ice	1.32	1.32	0.07
						1/2" Ice	1.58	1.58	0.08
						1" Ice	1.84	1.84	0.09
						2" Ice	2.40	2.40	0.13
139									
Side Arm Mount [SO 901-1]	A	From Face	0.00 0.00 0.00	0.0000	139.00	No Ice	0.33	0.62	0.11
						1/2" Ice	0.46	0.78	0.11
						1" Ice	0.62	0.97	0.12
						2" Ice	1.01	1.43	0.15
Side Arm Mount [SO 901-1]	B	From Face	0.00 0.00 0.00	0.0000	139.00	No Ice	0.33	0.62	0.11
						1/2" Ice	0.46	0.78	0.11
						1" Ice	0.62	0.97	0.12
						2" Ice	1.01	1.43	0.15
CC807-11	A	From Face	2.00 0.00 6.00	0.0000	139.00	No Ice	5.27	5.27	0.05
						1/2" Ice	7.04	7.04	0.09
						1" Ice	8.83	8.83	0.14
						2" Ice	12.45	12.45	0.27
CC807-11	B	From Face	2.00 0.00 6.00	0.0000	139.00	No Ice	5.27	5.27	0.05
						1/2" Ice	7.04	7.04	0.09
						1" Ice	8.83	8.83	0.14
						2" Ice	12.45	12.45	0.27
432E-83I-01-T	A	From Face	2.00 0.00 6.00	0.0000	139.00	No Ice	1.40	0.88	0.03
						1/2" Ice	1.56	1.01	0.04
						Ice	1.73	1.15	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice 2" Ice	2.09	1.45	0.09
130									
Platform Mount [LP 301-1_KCKR]	C	None		0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	35.03 44.46 53.72 72.29	35.03 44.46 53.72 72.29	1.86 2.52 3.33 5.42
QS66512-2	A	From Face	3.00 -2.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.01 4.41 4.81 5.65	3.37 3.76 4.15 4.97	0.11 0.17 0.23 0.38
OPA65R-BU6D	A	From Face	3.00 2.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.22 12.98 13.75 15.35	4.54 5.19 5.86 7.24	0.06 0.14 0.22 0.40
DMP65R-BU6D	A	From Face	3.00 6.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.93 12.68 13.45 15.03	4.48 5.12 5.78 7.16	0.09 0.16 0.24 0.43
TPA-65R-LCUUUU-H8	B	From Face	3.00 -2.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.87 12.82 13.77 15.74	7.02 7.91 8.82 10.68	0.08 0.16 0.25 0.45
OPA65R-BU8D	B	From Face	3.00 2.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	19.60 20.36 21.13 22.70	8.20 8.79 9.40 10.62	0.08 0.18 0.28 0.52
DMP65R-BU8D	B	From Face	3.00 6.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	15.86 16.80 17.75 19.71	5.95 6.78 7.64 9.39	0.11 0.20 0.31 0.55
QS66512-2	C	From Face	3.00 -2.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.01 4.41 4.81 5.65	3.37 3.76 4.15 4.97	0.11 0.17 0.23 0.38
OPA65R-BU6D	C	From Face	3.00 2.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.22 12.98 13.75 15.35	4.54 5.19 5.86 7.24	0.06 0.14 0.22 0.40
DMP65R-BU6D	C	From Face	3.00 6.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.93 12.68 13.45 15.03	4.48 5.12 5.78 7.16	0.09 0.16 0.24 0.43
(2) RRUS 32 B2	A	From Face	3.00 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.73 2.95 3.18 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
(2) RRUS 32 B2	B	From Face	3.00 0.00 0.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.73 2.95 3.18 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
(2) RRUS 32 B2	C	From Face	3.00 0.00	0.0000	130.00	No Ice 1/2"	2.73 2.95	1.67 1.86	0.05 0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS E2 B29	A	From Face	3.00	0.0000	130.00	No Ice	3.15	1.29	0.05
			0.00			1/2"	3.36	1.44	0.08
			0.00			Ice	3.59	1.60	0.10
						1" Ice	4.07	1.95	0.17
						2" Ice			
RRUS E2 B29	B	From Face	3.00	0.0000	130.00	No Ice	3.15	1.29	0.05
			0.00			1/2"	3.36	1.44	0.08
			0.00			Ice	3.59	1.60	0.10
						1" Ice	4.07	1.95	0.17
						2" Ice			
RRUS E2 B29	C	From Face	3.00	0.0000	130.00	No Ice	3.15	1.29	0.05
			0.00			1/2"	3.36	1.44	0.08
			0.00			Ice	3.59	1.60	0.10
						1" Ice	4.07	1.95	0.17
						2" Ice			
RRUS 4478 B14_CCIV2	A	From Face	3.00	0.0000	130.00	No Ice	2.02	1.25	0.06
			0.00			1/2"	2.20	1.40	0.08
			0.00			Ice	2.39	1.55	0.10
						1" Ice	2.78	1.89	0.15
						2" Ice			
RRUS 4478 B14_CCIV2	B	From Face	3.00	0.0000	130.00	No Ice	2.02	1.25	0.06
			0.00			1/2"	2.20	1.40	0.08
			0.00			Ice	2.39	1.55	0.10
						1" Ice	2.78	1.89	0.15
						2" Ice			
RRUS 4478 B14_CCIV2	C	From Face	3.00	0.0000	130.00	No Ice	2.02	1.25	0.06
			0.00			1/2"	2.20	1.40	0.08
			0.00			Ice	2.39	1.55	0.10
						1" Ice	2.78	1.89	0.15
						2" Ice			
RRUS 32 B30	A	From Face	3.00	0.0000	130.00	No Ice	2.69	1.57	0.06
			0.00			1/2"	2.91	1.76	0.08
			0.00			Ice	3.14	1.95	0.10
						1" Ice	3.61	2.35	0.16
						2" Ice			
RRUS 32 B30	B	From Face	3.00	0.0000	130.00	No Ice	2.69	1.57	0.06
			0.00			1/2"	2.91	1.76	0.08
			0.00			Ice	3.14	1.95	0.10
						1" Ice	3.61	2.35	0.16
						2" Ice			
RRUS 32 B30	C	From Face	3.00	0.0000	130.00	No Ice	2.69	1.57	0.06
			0.00			1/2"	2.91	1.76	0.08
			0.00			Ice	3.14	1.95	0.10
						1" Ice	3.61	2.35	0.16
						2" Ice			
RRUS 32 B66A	A	From Face	3.00	0.0000	130.00	No Ice	2.86	1.78	0.06
			0.00			1/2"	3.09	1.97	0.08
			0.00			Ice	3.32	2.17	0.10
						1" Ice	3.81	2.59	0.16
						2" Ice			
RRUS 32 B66A	B	From Face	3.00	0.0000	130.00	No Ice	2.86	1.78	0.06
			0.00			1/2"	3.09	1.97	0.08
			0.00			Ice	3.32	2.17	0.10
						1" Ice	3.81	2.59	0.16
						2" Ice			
RRUS 32 B66A	C	From Face	3.00	0.0000	130.00	No Ice	2.86	1.78	0.06
			0.00			1/2"	3.09	1.97	0.08
			0.00			Ice	3.32	2.17	0.10
						1" Ice	3.81	2.59	0.16
						2" Ice			
RRUS 4449 B5/B12	A	From Face	3.00	0.0000	130.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 4449 B5/B12	B	From Face	3.00	0.0000	130.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			0.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 4449 B5/B12	C	From Face	3.00	0.0000	130.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			0.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
(2) DC6-48-60-18-8F	A	From Face	1.00	0.0000	130.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice	2.04	2.04	0.11
						2" Ice			
DC6-48-60-18-8F	B	From Face	3.00	0.0000	130.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice	2.04	2.04	0.11
						2" Ice			
DC6-48-60-18-8F	C	From Face	3.00	0.0000	130.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice	2.04	2.04	0.11
						2" Ice			
***									
118									
BPA7496-180-11 w/ Mount Pipe	A	From Face	0.50	0.0000	118.00	No Ice	6.30	5.17	0.04
			0.00			1/2"	6.85	6.05	0.09
			0.00			Ice	7.38	6.81	0.15
						1" Ice	8.47	8.37	0.29
						2" Ice			
108									
Side Arm Mount [SO 102-3]	C	None		0.0000	108.00	No Ice	3.60	3.60	0.07
						1/2"	4.18	4.18	0.11
						Ice	4.75	4.75	0.14
						1" Ice	5.90	5.90	0.20
						2" Ice			
7'x3" Mount Pipes	A	From Face	1.00	0.0000	108.00	No Ice	2.27	2.27	0.04
			0.00			1/2"	2.83	2.83	0.06
			0.00			Ice	3.26	3.26	0.08
						1" Ice	4.15	4.15	0.14
						2" Ice			
7'x3" Mount Pipes	B	From Face	1.00	0.0000	108.00	No Ice	2.27	2.27	0.04
			1.00			1/2"	2.83	2.83	0.06
			0.00			Ice	3.26	3.26	0.08
						1" Ice	4.15	4.15	0.14
						2" Ice			
7'x3" Mount Pipes	C	From Face	1.00	0.0000	108.00	No Ice	2.27	2.27	0.04
			1.00			1/2"	2.83	2.83	0.06
			0.00			Ice	3.26	3.26	0.08
						1" Ice	4.15	4.15	0.14
						2" Ice			
NNVV-65B-R4 w/ Mount Pipe	A	From Face	1.00	0.0000	108.00	No Ice	7.55	4.23	0.11
			1.00			1/2"	8.04	4.67	0.20
			0.00			Ice	8.53	5.12	0.30
						1" Ice	9.56	6.05	0.53
						2" Ice			
NNVV-65B-R4 w/ Mount Pipe	B	From Face	1.00	0.0000	108.00	No Ice	7.55	4.23	0.11
			-1.00			1/2"	8.04	4.67	0.20
			0.00			Ice	8.53	5.12	0.30
						1" Ice	9.56	6.05	0.53

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
NNVV-65B-R4 w/ Mount Pipe	C	From Face	1.00 -1.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.55 8.04 8.53 9.56	4.23 4.67 5.12 6.05	0.11 0.20 0.30 0.53
LLPX310R-V4 w/ Mount Pipe	A	From Face	1.00 -1.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.54 4.89 5.25 6.01	2.98 3.53 4.09 5.24	0.05 0.08 0.13 0.23
LLPX310R-V4 w/ Mount Pipe	B	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.54 4.89 5.25 6.01	2.98 3.53 4.09 5.24	0.05 0.08 0.13 0.23
LLPX310R-V4 w/ Mount Pipe	C	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.54 4.89 5.25 6.01	2.98 3.53 4.09 5.24	0.05 0.08 0.13 0.23
RRH-2WB	A	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.30 2.50 2.69 3.11	0.78 0.92 1.06 1.36	0.04 0.06 0.08 0.12
RRH-2WB	B	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.30 2.50 2.69 3.11	0.78 0.92 1.06 1.36	0.04 0.06 0.08 0.12
RRH-2WB	C	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.30 2.50 2.69 3.11	0.78 0.92 1.06 1.36	0.04 0.06 0.08 0.12
PCS 1900MHZ 4X45W-65MHZ	A	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
PCS 1900MHZ 4X45W-65MHZ	B	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
PCS 1900MHZ 4X45W-65MHZ	C	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
AHCC	A	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.63 1.79 1.96 2.32	1.14 1.28 1.43 1.75	0.05 0.06 0.08 0.12
AHCC	B	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.63 1.79 1.96 2.32	1.14 1.28 1.43 1.75	0.05 0.06 0.08 0.12
AHCC	C	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice	1.63 1.79 1.96 2.32	1.14 1.28 1.43 1.75	0.05 0.06 0.08 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
ODU600	A	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.91 1.03 1.15 1.43	0.43 0.51 0.61 0.83	0.01 0.02 0.03 0.05
ODU600	B	From Face	1.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.91 1.03 1.15 1.43	0.43 0.51 0.61 0.83	0.01 0.02 0.03 0.05
85									
(2) Side Arm Mount [SO 102-3]	C	None		0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.60 4.18 4.75 5.90	3.60 4.18 4.75 5.90	0.07 0.11 0.14 0.20
(2) Side Arm Mount [SO 901-1]	A	From Face	0.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.33 0.46 0.62 1.01	0.62 0.78 0.97 1.43	0.11 0.11 0.12 0.15
(2) Side Arm Mount [SO 901-1]	C	From Face	0.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.33 0.46 0.62 1.01	0.62 0.78 0.97 1.43	0.11 0.11 0.12 0.15
10'x2" Mount Pipe	A	From Face	2.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.38 3.40 4.45 5.91	2.38 3.40 4.45 5.91	0.04 0.05 0.08 0.15
10'x2" Mount Pipe	C	From Face	2.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.38 3.40 4.45 5.91	2.38 3.40 4.45 5.91	0.04 0.05 0.08 0.15
WL 14-69/S	A	From Face	2.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.63 1.02 1.42 2.21	0.63 1.02 1.42 2.21	0.01 0.02 0.04 0.06
WL 14-69/S	A	From Face	2.00 0.00 -2.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.63 1.02 1.42 2.21	0.63 1.02 1.42 2.21	0.01 0.02 0.04 0.06
WH 14-69/S	C	From Face	2.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 3.37 4.42 6.52	2.32 3.37 4.42 6.52	0.00 0.00 0.00 0.01
WL 14-69/S	C	From Face	2.00 0.00 -2.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.63 1.02 1.42 2.21	0.63 1.02 1.42 2.21	0.01 0.02 0.04 0.06
J105-HI	C	From Face	2.00 0.00 -7.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.32 0.42 0.52 0.75	4.84 5.21 5.59 6.37	0.01 0.03 0.06 0.12
*****									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
*****140*****											
SC3-W100ASTX	A	Paraboloid w/Shroud (HP)	From Face	1.00 0.00 0.00	-4.0000		140.00	3.29	No Ice 1/2" Ice 1" Ice 2" Ice	8.51 8.95 9.38 10.26	0.04 0.09 0.13 0.22
108											
VHLP800-11	A	Paraboloid w/Shroud (HP)	From Face	1.00 0.00 1.00	74.0000		108.00	2.60	No Ice 1/2" Ice 1" Ice 2" Ice	5.31 5.66 6.00 6.69	0.06 0.09 0.12 0.18
VHLP2-18	B	Paraboloid w/Shroud (HP)	From Face	1.00 1.00 -1.00	39.0000		108.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice	3.69 3.98 4.27 4.84	0.04 0.06 0.08 0.12
****											

Load Combinations

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

Comb. No.	Description
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	147.458 - 115.418	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.61	-0.88	1.65
			Max. Mx	8	-8.98	-218.83	-1.29
			Max. My	2	-9.06	1.92	211.78
			Max. Vy	8	13.93	-218.83	-1.29
			Max. Vx	14	13.48	-3.68	-211.29
			Max. Torque	12			2.70
L2	115.418 - 74.2933	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.48	0.84	1.46
			Max. Mx	8	-16.23	-963.20	0.37
			Max. My	14	-16.30	-7.53	-939.48
			Max. Vy	8	22.35	-963.20	0.37
			Max. Vx	14	21.72	-7.53	-939.48
			Max. Torque	22			-2.98
L3	74.2933 - 39.21	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.46	1.12	0.88
			Max. Mx	8	-23.54	-1790.58	2.54
			Max. My	14	-23.59	-10.78	-1745.30
			Max. Vy	8	25.93	-1790.58	2.54
			Max. Vx	14	25.30	-10.78	-1745.30
			Max. Torque	23			-1.44
L4	39.21 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.17	1.43	-0.01
			Max. Mx	8	-36.59	-3044.77	5.29
			Max. My	14	-36.59	-14.88	-2971.85
			Max. Vy	8	29.94	-3044.77	5.29
			Max. Vx	14	29.33	-14.88	-2971.85
			Max. Torque	23			-1.44

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	69.17	-8.27	0.01
	Max. H_x	20	36.61	29.84	-0.10
	Max. H_z	3	27.46	-0.00	29.21
	Max. M_x	2	2961.04	-0.00	29.21
	Max. M_z	8	3044.77	-29.92	0.07
	Max. Torsion	9	1.33	-29.92	0.07
	Min. Vert	25	27.46	14.91	25.22
	Min. H_x	8	36.61	-29.92	0.07
	Min. H_z	14	36.61	-0.09	-29.30
	Min. M_x	14	-2971.85	-0.09	-29.30

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. M_z	20	-3033.27	29.84	-0.10
	Min. Torsion	23	-1.44	25.78	14.56

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	30.51	0.00	0.00	0.12	0.45	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	36.61	0.00	-29.21	-2961.04	2.50	0.68
0.9 Dead+1.0 Wind 0 deg - No Ice	27.46	0.00	-29.21	-2931.97	2.30	0.68
1.2 Dead+1.0 Wind 30 deg - No Ice	36.61	15.00	-25.34	-2569.32	-1525.36	-0.21
0.9 Dead+1.0 Wind 30 deg - No Ice	27.46	15.00	-25.34	-2544.11	-1510.51	-0.20
1.2 Dead+1.0 Wind 60 deg - No Ice	36.61	25.99	-14.57	-1471.22	-2648.19	-0.83
0.9 Dead+1.0 Wind 60 deg - No Ice	27.46	25.99	-14.57	-1456.84	-2622.27	-0.83
1.2 Dead+1.0 Wind 90 deg - No Ice	36.61	29.92	-0.07	-5.29	-3044.77	-1.32
0.9 Dead+1.0 Wind 90 deg - No Ice	27.46	29.92	-0.07	-5.30	-3014.96	-1.33
1.2 Dead+1.0 Wind 120 deg - No Ice	36.61	25.82	14.60	1481.18	-2626.99	-1.30
0.9 Dead+1.0 Wind 120 deg - No Ice	27.46	25.82	14.60	1466.59	-2601.29	-1.31
1.2 Dead+1.0 Wind 150 deg - No Ice	36.61	14.95	25.35	2570.47	-1523.41	-1.07
0.9 Dead+1.0 Wind 150 deg - No Ice	27.46	14.95	25.35	2545.18	-1508.55	-1.08
1.2 Dead+1.0 Wind 180 deg - No Ice	36.61	0.09	29.30	2971.85	-14.88	-0.72
0.9 Dead+1.0 Wind 180 deg - No Ice	27.46	0.09	29.30	2942.63	-14.83	-0.72
1.2 Dead+1.0 Wind 210 deg - No Ice	36.61	-15.11	25.37	2571.71	1541.57	0.36
0.9 Dead+1.0 Wind 210 deg - No Ice	27.46	-15.11	25.37	2546.43	1526.26	0.36
1.2 Dead+1.0 Wind 240 deg - No Ice	36.61	-25.97	14.69	1487.90	2643.67	1.05
0.9 Dead+1.0 Wind 240 deg - No Ice	27.46	-25.97	14.69	1473.28	2617.54	1.05
1.2 Dead+1.0 Wind 270 deg - No Ice	36.61	-29.84	0.10	10.26	3033.27	1.42
0.9 Dead+1.0 Wind 270 deg - No Ice	27.46	-29.84	0.10	10.14	3003.32	1.42
1.2 Dead+1.0 Wind 300 deg - No Ice	36.61	-25.78	-14.56	-1473.74	2620.05	1.43
0.9 Dead+1.0 Wind 300 deg - No Ice	27.46	-25.78	-14.56	-1459.30	2594.16	1.44
1.2 Dead+1.0 Wind 330 deg - No Ice	36.61	-14.91	-25.22	-2553.41	1517.28	1.21
0.9 Dead+1.0 Wind 330 deg - No Ice	27.46	-14.91	-25.22	-2528.37	1502.21	1.22
1.2 Dead+1.0 Ice+1.0 Temp	69.17	-0.00	-0.00	0.01	1.43	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	69.17	0.00	-8.15	-867.38	2.08	0.28
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	69.17	4.15	-7.07	-752.13	-440.58	-0.06
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	69.17	7.18	-4.07	-431.72	-765.51	-0.35
1.2 Dead+1.0 Wind 90	69.17	8.27	-0.01	-1.07	-881.54	-0.57

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
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	69.17	7.15	4.07	433.83	-761.27	-0.60
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	69.17	4.14	7.07	752.36	-440.40	-0.50
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	69.17	0.02	8.17	869.45	-1.80	-0.29
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	69.17	-4.17	7.07	752.45	446.79	0.10
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	69.17	-7.18	4.09	434.98	767.49	0.40
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	69.17	-8.26	0.02	1.89	882.07	0.59
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	69.17	-7.14	-4.07	-432.51	762.75	0.62
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	69.17	-4.13	-7.04	-749.01	442.04	0.51
Dead+Wind 0 deg - Service	30.51	0.00	-6.34	-639.06	0.89	0.15
Dead+Wind 30 deg - Service	30.51	3.26	-5.50	-554.52	-328.91	-0.04
Dead+Wind 60 deg - Service	30.51	5.64	-3.16	-317.51	-571.30	-0.17
Dead+Wind 90 deg - Service	30.51	6.49	-0.01	-1.07	-656.92	-0.29
Dead+Wind 120 deg - Service	30.51	5.60	3.17	319.81	-566.72	-0.29
Dead+Wind 150 deg - Service	30.51	3.24	5.50	554.94	-328.49	-0.25
Dead+Wind 180 deg - Service	30.51	0.02	6.36	641.57	-2.86	-0.16
Dead+Wind 210 deg - Service	30.51	-3.28	5.50	555.21	333.11	0.09
Dead+Wind 240 deg - Service	30.51	-5.63	3.19	321.27	571.03	0.24
Dead+Wind 270 deg - Service	30.51	-6.47	0.02	2.29	655.13	0.31
Dead+Wind 300 deg - Service	30.51	-5.59	-3.16	-318.04	565.92	0.31
Dead+Wind 330 deg - Service	30.51	-3.23	-5.47	-551.08	327.86	0.26

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-30.51	0.00	0.00	30.51	0.00	0.000%
2	0.00	-36.61	-29.21	-0.00	36.61	29.21	0.000%
3	0.00	-27.46	-29.21	-0.00	27.46	29.21	0.000%
4	15.00	-36.61	-25.34	-15.00	36.61	25.34	0.000%
5	15.00	-27.46	-25.34	-15.00	27.46	25.34	0.000%
6	25.99	-36.61	-14.57	-25.99	36.61	14.57	0.000%
7	25.99	-27.46	-14.57	-25.99	27.46	14.57	0.000%
8	29.92	-36.61	-0.07	-29.92	36.61	0.07	0.000%
9	29.92	-27.46	-0.07	-29.92	27.46	0.07	0.000%
10	25.82	-36.61	14.60	-25.82	36.61	-14.60	0.000%
11	25.82	-27.46	14.60	-25.82	27.46	-14.60	0.000%
12	14.95	-36.61	25.35	-14.95	36.61	-25.35	0.000%
13	14.95	-27.46	25.35	-14.95	27.46	-25.35	0.000%
14	0.09	-36.61	29.30	-0.09	36.61	-29.30	0.000%
15	0.09	-27.46	29.30	-0.09	27.46	-29.30	0.000%
16	-15.11	-36.61	25.37	15.11	36.61	-25.37	0.000%
17	-15.11	-27.46	25.37	15.11	27.46	-25.37	0.000%
18	-25.97	-36.61	14.69	25.97	36.61	-14.69	0.000%
19	-25.97	-27.46	14.69	25.97	27.46	-14.69	0.000%
20	-29.84	-36.61	0.10	29.84	36.61	-0.10	0.000%
21	-29.84	-27.46	0.10	29.84	27.46	-0.10	0.000%
22	-25.78	-36.61	-14.56	25.78	36.61	14.56	0.000%
23	-25.78	-27.46	-14.56	25.78	27.46	14.56	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
24	-14.91	-36.61	-25.22	14.91	36.61	25.22	0.000%
25	-14.91	-27.46	-25.22	14.91	27.46	25.22	0.000%
26	0.00	-69.17	0.00	0.00	69.17	0.00	0.000%
27	0.00	-69.17	-8.15	-0.00	69.17	8.15	0.000%
28	4.15	-69.17	-7.07	-4.15	69.17	7.07	0.000%
29	7.18	-69.17	-4.07	-7.18	69.17	4.07	0.000%
30	8.27	-69.17	-0.01	-8.27	69.17	0.01	0.000%
31	7.15	-69.17	4.07	-7.15	69.17	-4.07	0.000%
32	4.14	-69.17	7.07	-4.14	69.17	-7.07	0.000%
33	0.02	-69.17	8.17	-0.02	69.17	-8.17	0.000%
34	-4.17	-69.17	7.07	4.17	69.17	-7.07	0.000%
35	-7.18	-69.17	4.09	7.18	69.17	-4.09	0.000%
36	-8.26	-69.17	0.02	8.26	69.17	-0.02	0.000%
37	-7.14	-69.17	-4.07	7.14	69.17	4.07	0.000%
38	-4.13	-69.17	-7.04	4.13	69.17	7.04	0.000%
39	0.00	-30.51	-6.34	-0.00	30.51	6.34	0.000%
40	3.26	-30.51	-5.50	-3.26	30.51	5.50	0.000%
41	5.64	-30.51	-3.16	-5.64	30.51	3.16	0.000%
42	6.49	-30.51	-0.01	-6.49	30.51	0.01	0.000%
43	5.60	-30.51	3.17	-5.60	30.51	-3.17	0.000%
44	3.24	-30.51	5.50	-3.24	30.51	-5.50	0.000%
45	0.02	-30.51	6.36	-0.02	30.51	-6.36	0.000%
46	-3.28	-30.51	5.50	3.28	30.51	-5.50	0.000%
47	-5.63	-30.51	3.19	5.63	30.51	-3.19	0.000%
48	-6.47	-30.51	0.02	6.47	30.51	-0.02	0.000%
49	-5.59	-30.51	-3.16	5.59	30.51	3.16	0.000%
50	-3.23	-30.51	-5.47	3.23	30.51	5.47	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00006309
3	Yes	4	0.00000001	0.00082617
4	Yes	6	0.00000001	0.00007141
5	Yes	5	0.00000001	0.00065375
6	Yes	6	0.00000001	0.00007393
7	Yes	5	0.00000001	0.00067657
8	Yes	5	0.00000001	0.00012978
9	Yes	5	0.00000001	0.00005834
10	Yes	6	0.00000001	0.00006804
11	Yes	5	0.00000001	0.00062167
12	Yes	6	0.00000001	0.00007511
13	Yes	5	0.00000001	0.00068899
14	Yes	5	0.00000001	0.00009951
15	Yes	5	0.00000001	0.00004499
16	Yes	6	0.00000001	0.00007276
17	Yes	5	0.00000001	0.00066614
18	Yes	6	0.00000001	0.00006965
19	Yes	5	0.00000001	0.00063613
20	Yes	5	0.00000001	0.00011958
21	Yes	5	0.00000001	0.00005401
22	Yes	6	0.00000001	0.00007539
23	Yes	5	0.00000001	0.00069093
24	Yes	6	0.00000001	0.00006808
25	Yes	5	0.00000001	0.00062286
26	Yes	4	0.00000001	0.00002208
27	Yes	5	0.00000001	0.00064538
28	Yes	5	0.00000001	0.00095678
29	Yes	5	0.00000001	0.00097781
30	Yes	5	0.00000001	0.00066264
31	Yes	5	0.00000001	0.00092988
32	Yes	5	0.00000001	0.00098078
33	Yes	5	0.00000001	0.00064263
34	Yes	5	0.00000001	0.00095588
35	Yes	5	0.00000001	0.00094057

36	Yes	5	0.00000001	0.00066211
37	Yes	5	0.00000001	0.00099755
38	Yes	5	0.00000001	0.00093841
39	Yes	4	0.00000001	0.00009493
40	Yes	4	0.00000001	0.00047426
41	Yes	4	0.00000001	0.00053139
42	Yes	4	0.00000001	0.00016581
43	Yes	4	0.00000001	0.00042554
44	Yes	4	0.00000001	0.00056062
45	Yes	4	0.00000001	0.00010957
46	Yes	4	0.00000001	0.00049716
47	Yes	4	0.00000001	0.00044227
48	Yes	4	0.00000001	0.00016885
49	Yes	4	0.00000001	0.00058018
50	Yes	4	0.00000001	0.00043076

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.458 - 115.418	21.439	42	1.2104	0.0054
L2	119.268 - 74.2933	14.417	42	1.1433	0.0033
L3	78.9533 - 39.21	6.178	42	0.7446	0.0008
L4	44.71 - 0	1.984	42	0.4027	0.0003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	Platform Mount [12' LP 1201-1]	42	21.439	1.2104	0.0054	54004
147.46	14" x 2' Top Hat	42	21.439	1.2104	0.0054	54004
140.00	SC3-W100ASTX	42	19.541	1.2042	0.0049	36204
139.00	Side Arm Mount [SO 901-1]	42	19.287	1.2031	0.0048	31924
130.00	Platform Mount [LP 301-1_KCKR]	42	17.027	1.1868	0.0041	15466
118.00	BPA7496-180-11 w/ Mount Pipe	42	14.117	1.1358	0.0032	9352
109.00	VHLP800-11	42	12.052	1.0679	0.0025	7776
108.00	Side Arm Mount [SO 102-3]	42	11.830	1.0590	0.0025	7636
107.00	VHLP2-18	42	11.609	1.0499	0.0024	7501
85.00	(2) Side Arm Mount [SO 102-3]	42	7.211	0.8128	0.0010	5400

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.458 - 115.418	99.454	8	5.6218	0.0248
L2	119.268 - 74.2933	66.887	8	5.3102	0.0152
L3	78.9533 - 39.21	28.661	8	3.4572	0.0036
L4	44.71 - 0	9.201	8	1.8686	0.0015

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	Platform Mount [12' LP 1201-1]	8	99.454	5.6218	0.0248	11832
147.46	14" x 2' Top Hat	8	99.454	5.6218	0.0248	11832
140.00	SC3-W100ASTX	8	90.649	5.5931	0.0223	7932
139.00	Side Arm Mount [SO 901-1]	8	89.473	5.5880	0.0219	6994
130.00	Platform Mount [LP 301-1_KCKR]	8	78.992	5.5123	0.0189	3386
118.00	BPA7496-180-11 w/ Mount Pipe	8	65.496	5.2753	0.0148	2045
109.00	VHLP800-11	8	55.914	4.9599	0.0117	1696
108.00	Side Arm Mount [SO 102-3]	8	54.883	4.9185	0.0114	1666
107.00	VHLP2-18	8	53.860	4.8761	0.0110	1636
85.00	(2) Side Arm Mount [SO 102-3]	8	33.455	3.7745	0.0048	1172

Compression Checks

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	147.458 - 115.418 (1)	TP31.25x24x0.2188	32.04	0.00	0.0	20.9405	-8.98	1130.79	0.008
L2	115.418 - 74.2933 (2)	TP37.75x29.9413x0.2188	44.98	0.00	0.0	25.4967	-16.23	1376.82	0.012
L3	74.2933 - 39.21 (3)	TP44.625x36.5034x0.3125	39.74	0.00	0.0	42.8377	-23.54	2313.23	0.010
L4	39.21 - 0 (4)	TP51.25x42.8761x0.375	44.71	0.00	0.0	60.5540	-36.59	3269.91	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	147.458 - 115.418 (1)	TP31.25x24x0.2188	218.84	807.25	0.271	0.00	807.25	0.000
L2	115.418 - 74.2933 (2)	TP37.75x29.9413x0.2188	963.20	1102.68	0.874	0.00	1102.68	0.000
L3	74.2933 - 39.21 (3)	TP44.625x36.5034x0.3125	1790.58	2362.72	0.758	0.00	2362.72	0.000
L4	39.21 - 0 (4)	TP51.25x42.8761x0.375	3044.77	3960.31	0.769	0.00	3960.31	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	147.458 - 115.418 (1)	TP31.25x24x0.2188	13.93	339.24	0.041	1.72	896.02	0.002
L2	115.418 - 74.2933 (2)	TP37.75x29.9413x0.2188	22.35	413.05	0.054	1.33	1328.33	0.001
L3	74.2933 -	TP44.625x36.5034x0.312	25.93	693.97	0.037	1.32	2624.76	0.001

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 $\frac{T_u}{\phi T_n}$
	39.21 (3)	5						
L4	39.21 - 0 (4)	TP51.25x42.8761x0.375	29.94	980.97	0.031	1.32	4370.61	0.000

Pole Interaction Design Data

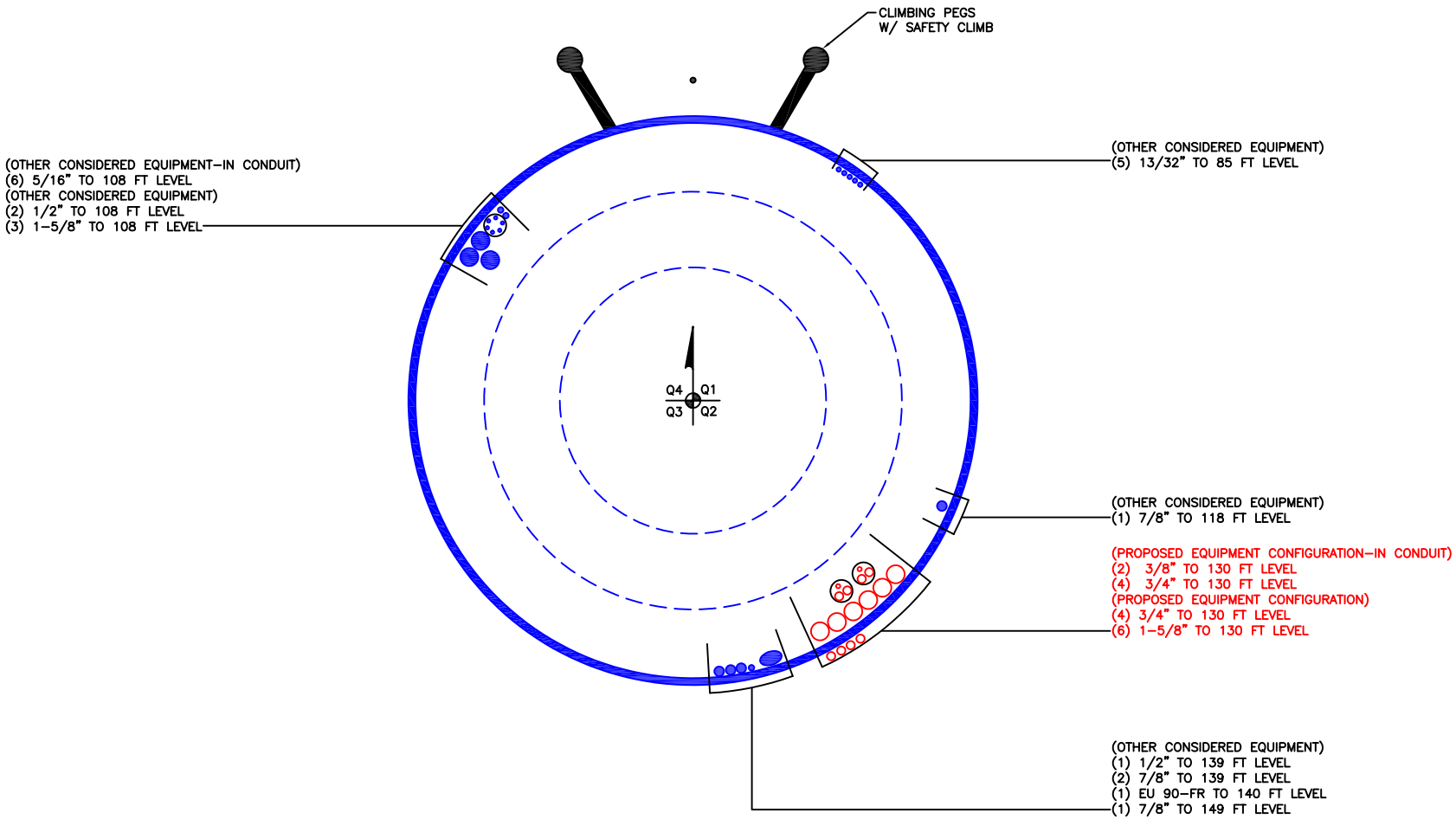
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	147.458 - 115.418 (1)	0.008	0.271	0.000	0.041	0.002	0.281	1.050	4.8.2
L2	115.418 - 74.2933 (2)	0.012	0.874	0.000	0.054	0.001	0.888	1.050	4.8.2
L3	74.2933 - 39.21 (3)	0.010	0.758	0.000	0.037	0.001	0.769	1.050	4.8.2
L4	39.21 - 0 (4)	0.011	0.769	0.000	0.031	0.000	0.781	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	147.458 - 115.418	Pole	TP31.25x24x0.2188	1	-8.98	1187.33	26.8	Pass
L2	115.418 - 74.2933	Pole	TP37.75x29.9413x0.2188	2	-16.23	1445.66	84.6	Pass
L3	74.2933 - 39.21	Pole	TP44.625x36.5034x0.3125	3	-23.54	2428.89	73.3	Pass
L4	39.21 - 0	Pole	TP51.25x42.8761x0.375	4	-36.59	3433.41	74.4	Pass
							Summary	
						Pole (L2)	84.6	Pass
						RATING =	**84.6**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 841793 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

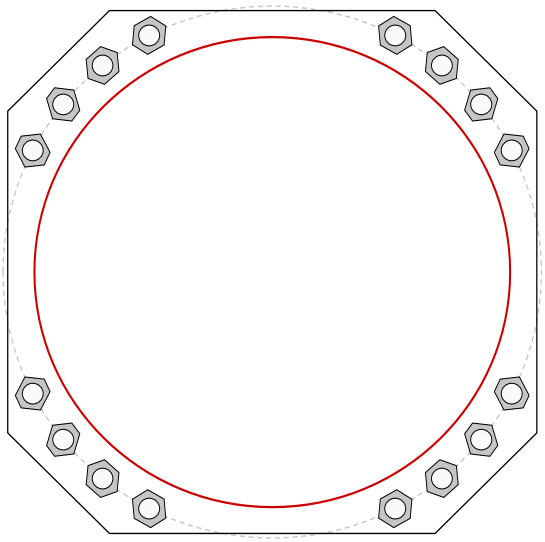
Monopole Base Plate Connection

Site Info	
BU #	841793
Site Name	Windsor Pine Lane
Order #	523083 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.8125

Applied Loads	
Moment (kip-ft)	3044.77
Axial Force (kips)	36.59
Shear Force (kips)	29.94

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 58" BC

Anchor Spacing: 6 in

Base Plate Data

57" OD x 2.75" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

N/A

Pole Data

51.25" x 0.375" 18-sided pole (A607-60; Fy=60 ksi, Fu=75 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 159.68	ϕPn_c = 268.39	**Stress Rating**
Vu = 1.87	ϕVn = 120.77	**56.7%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	29.3	(Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**86.1%**	**Pass**

Drilled Pier Foundation

BU # :	841793
Site Name:	Windsor Pine Lane
Order Number:	523083 Rev. 0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3044.77	
Axial Force (kips)	36.59	
Shear Force (kips)	29.94	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	32	ft
Ext. Above Grade	0	ft
Pier Section 1		
From 0' below grade to 32' below grade		
Pier Diameter	7	ft
Rebar Quantity	30	
Rebar Size	11	
Clear Cover to Ties	3	in
Tie Size	4	

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	4.82	-
Soil Safety Factor	1.77	-
Max Moment (kip-ft)	3164.67	-
Rating*	*71.5%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	145.01	-
End Bearing (kips)	259.77	-
Weight of Concrete (kips)	149.63	-
Total Capacity (kips)	404.78	-
Axial (kips)	186.22	-
Rating*	*43.8%*	-
Reinforced Concrete Check	*Compression*	*Uplift*
Critical Depth (ft from TOC)	4.74	-
Critical Moment (kip-ft)	3164.61	-
Critical Moment Capacity	7178.87	-
Rating*	*42.0%*	-

Soil Interaction Rating*	**71.5%**
Structural Foundation Rating*	**42.0%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐

Soil Profile

Groundwater Depth	7	# of Layers	3

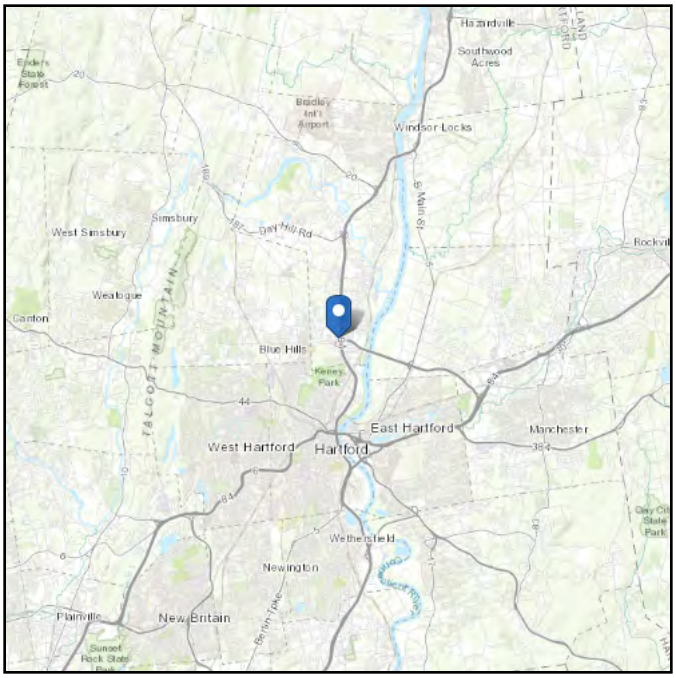
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	7	4	120	150	0	30	0.479	0.479				10	Cohesionless
3	7	32	25	50	87.6	0.5	0	0.275	0.275			9		Cohesive

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 93.75 ft (NAVD 88)
Latitude: 41.819842
Longitude: -72.667189



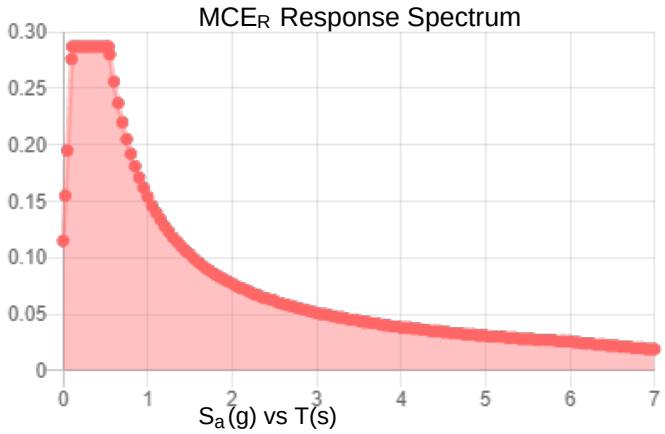
Seismic

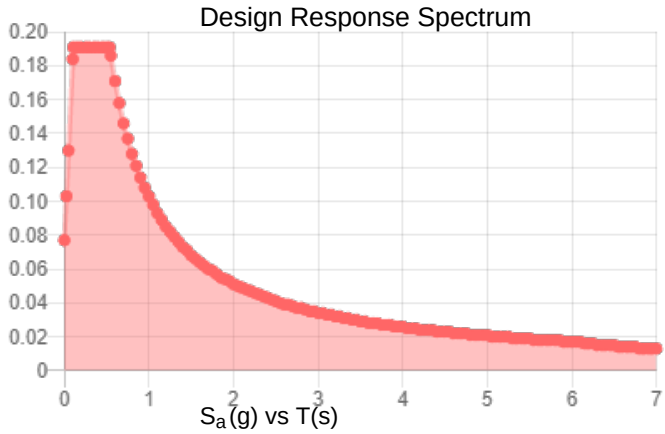
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.179	S_{DS} :	0.191
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.09
S_{MS} :	0.287	PGA_M :	0.144
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Jun 05 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Jun 05 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

June 2, 2020

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

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

Subject:	**Mount Analysis Report**	
Carrier Designation:	**AT&T Mobility**	
	Site Number:	**CTL01137**
	Site Name:	**Windsor Pine Lane**
Crown Castle Designation:	**BU Number:**	**841793**
	Site Name:	**Windsor Pine Lane**
	JDE Number:	**612881**
	Order ID:	**523083, Revision 0**
Engineering Firm Designation:	**B+T Group Project Number:**	**141992.005.01**
Site Data:	**50 Pine Lane, Windsor, CT 06095. Hartford County.**	
	Latitude *41° 49' 11.43"*, Longitude *-72° 40' 1.88"*	
Structure Information:	**Tower Height & Type:**	**148.0 ft. Monopole**
	Mount Elevation:	**130.0 ft.**
	Mount Type:	**12.5 ft. Platform**

Dear Ms. Tarr,

B+T Group is pleased to submit this **"Mount Analysis 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 with Support Rails & Kickers **Sufficient**

The analysis has been performed in accordance with the ANSI/TIA-222-H Standard. This analysis utilizes a Basic Wind Speed of 117 mph 3-second gust as required by the 2018 International Building Code. Applicable Standard references and design criteria are listed in Section 2 – Analysis Criteria.

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

Mount Structural Analysis prepared by: Khup Hatzaw, P.E.

Respectfully submitted by: B+T Engineering, Inc.

Scott S. Vance, P.E.
Engineer of Record

STATE OF CONNECTICUT SCOTT S. VANCE 31627 LICENSED PROFESSIONAL ENGINEER

6/2/20

TABLE OF CONTENTS

1) INTRODUCTION

The Mount is a 12.5 ft. Platform with Support Rails and Kickers mapped by B+T Group.

2) ANALYSIS CRITERIA

Building Code:	**2018 International Building Code**
TIA-222 Revision:	**TIA-222-H**
Risk Category:	**II**
Basic Wind Speed:	**117 mph**
Exposure Category:	**C**
Topographic Factor at Base:	**1.0**
Topographic Factor at Mount:	**1.0**
Escalated Ice Thickness:	**1.5 in**
Wind Speed with Ice:	**50 mph**
Seismic S_S:	**0.184**
Seismic S_1:	**0.055**
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.)	Qty.	Manufacturer	Model / Type	Mount / Modification Details
130.0	130.0	2	CCI	DMP65R-BU6D	Existing 12.5 ft. Platform Mount
		1	CCI	DMP65R-BU8D	
		2	CCI	OPA65R-BU6D	
		1	CCI	OPA65R-BU8D	
		1	CCI	TPA-65R-LCUUUU-H8	
		2	Quintel	QS66512-2	
		6	Ericsson	RRUS 32 B2	
		3	Ericsson	RRUS 32 B30	
		3	Ericsson	RRUS 32 B66A	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4478 B14_CCIV2	
		3	Ericsson	RRUS E2 B29	
		4	Raycap	DC6-48-60-18-8F	

Table 2 – Documents Provided

Document	Descriptions	Reference	Source
Crown Castle Order Information	Proposed Loading and Existing Loading	Order ID: 523083, Rev. 0	Crown Castle
RFDS	Proposed Loading and Existing Loading	Dated: 05/26/2020	
Construction Document by Crown Castle	Construction Drawing	Dated: 01/06/2020 130.0 ft. Proposed Level	

Table 2 – Documents Provided, Cont'd.

Document	Descriptions	Reference	Source
Drone Mount Mapping Report by B+T Group	Existing Mount	Dated: 03/24/2020	On File
Mount Analysis Report by B+T Group	Existing Mount Structural Analysis	Dated: 04/02/2020	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections 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 load cases. Selected output from the analysis is included in Appendix B "Software Input Calculations".

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 Tower Mount Analysis (Revision C). In addition, this analysis is in accordance with *AT&T's Mount Technical Directive – R14.1*.

3.2) Assumptions

1) The mount was built in accordance with the 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 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, weights and equipment location 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

Notes	Component	Elevation (ft.)	Critical Member	Capacity (%)	Pass / Fail
1	Antenna Mount – Pipes	130.0	MP22	71.2	Pass
	Face Horizontal – Pipes	130.0	F3	18.9	Pass
	Face Bridge – Plates	130.0	FB2	43.7	Pass
	Support Rail – Pipes	130.0	H2	68.6	Pass
	Rail Bridge – Angles	130.0	HB1	34.5	Pass
	Platform Support – Pipes	130.0	S2	56.0	Pass
	Platform Beam – Channels	130.0	B3	79.1	Pass
	Platform Joist – Angles	130.0	J3	54.3	Pass
	Frame Connection – Plates	130.0	FC8	72.9	Pass
	Platform Kicker – Angles	130.0	K3	12.2	Pass

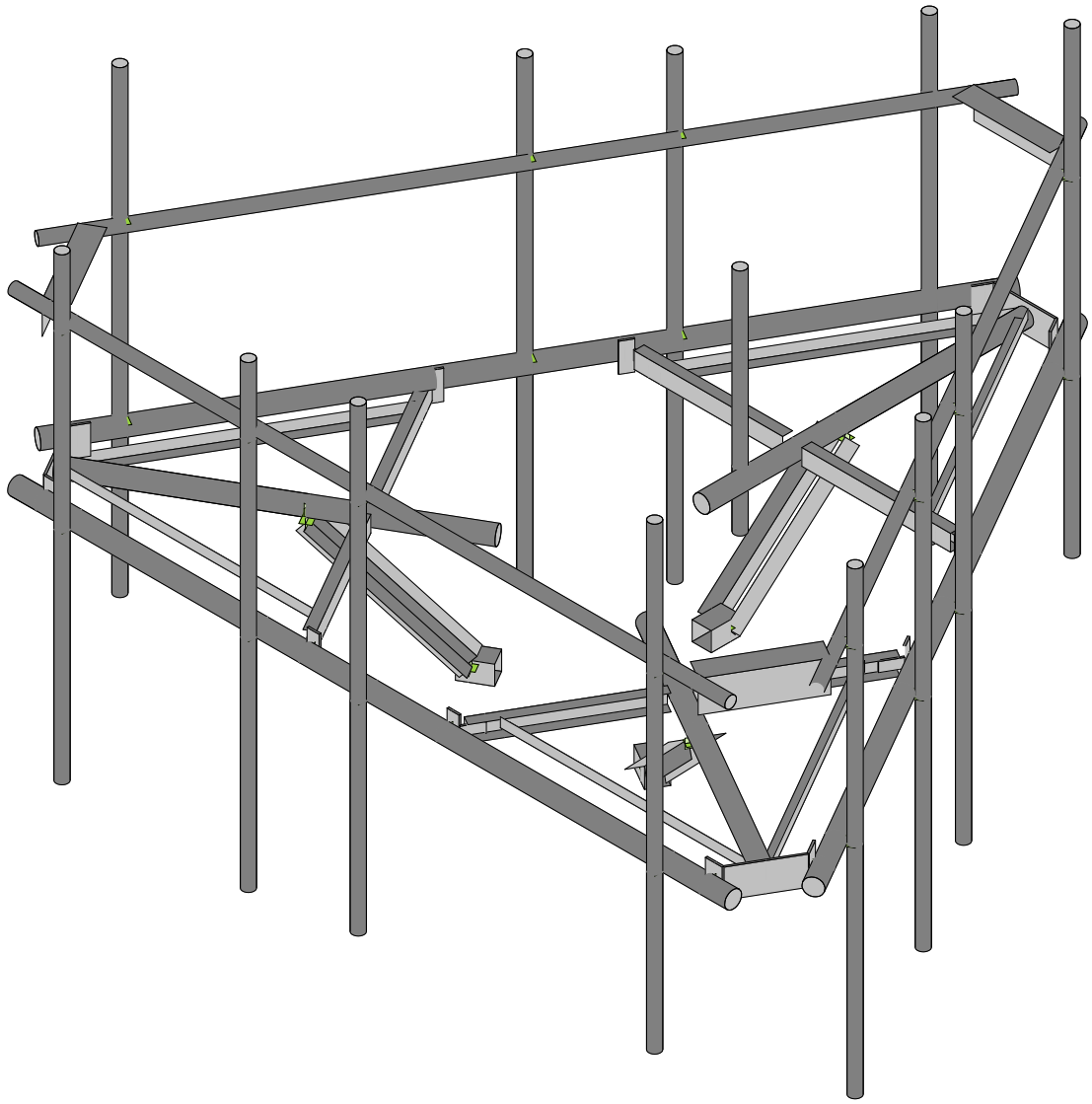
Note:
1. See additional documentation in Appendix C: “Software Input and Output" for the analysis supporting the Capacity percentage usage.

Structural Rating (Max. from Components)	79.1%

5) RECOMMENDATIONS

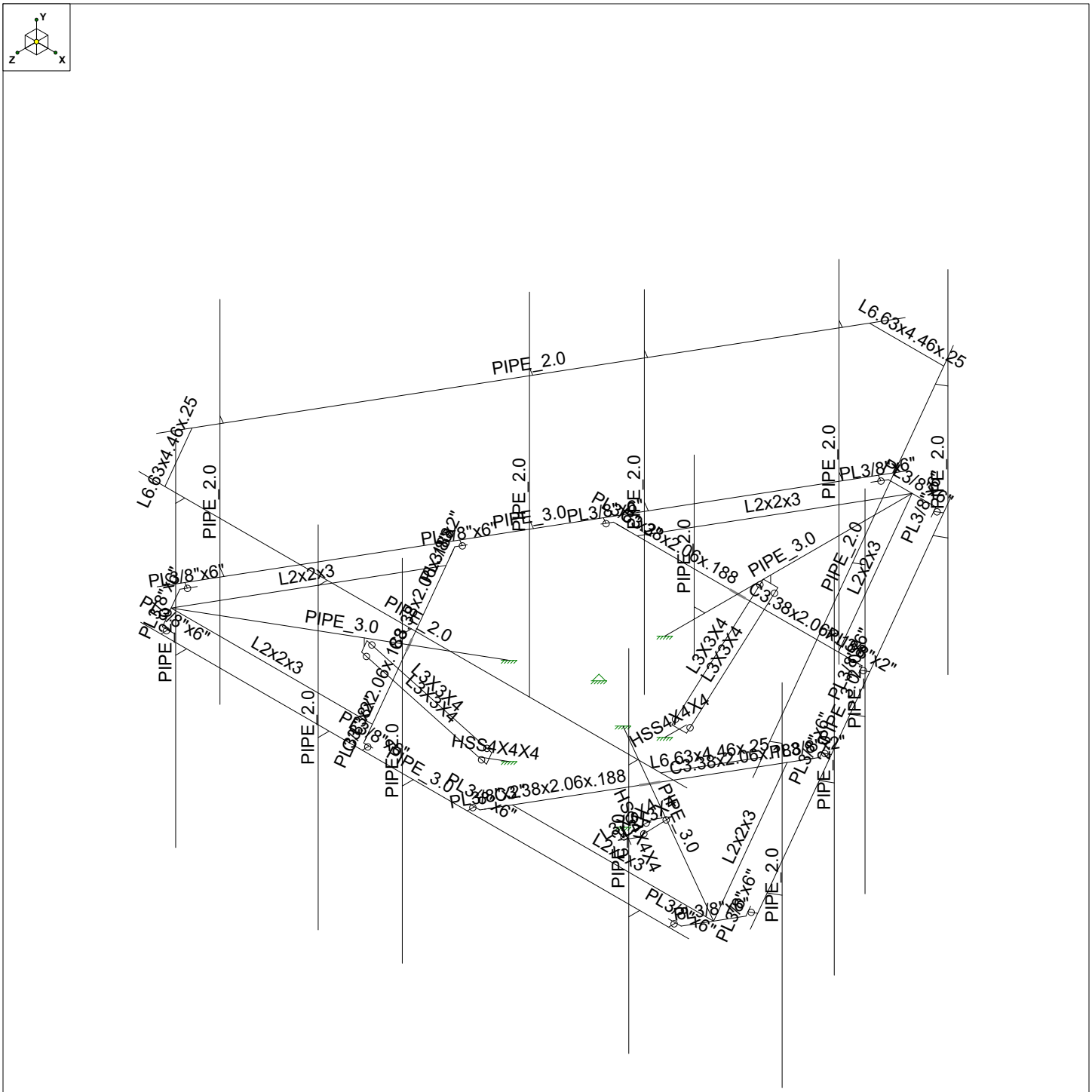
The Mount has sufficient capacity to carry the proposed loading configuration.
No modifications are required at this time.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

B+T GROUP		SK - 1
KH	WINDSOR PINE LANE 841793	June 2, 2020 at 5:05 PM
141992.005.01	PLATFORM WITH HANDRAILS & KICKERS	141992.005.01_Platform.R3D



Envelope Only Solution

B+T GROUP		SK - 2
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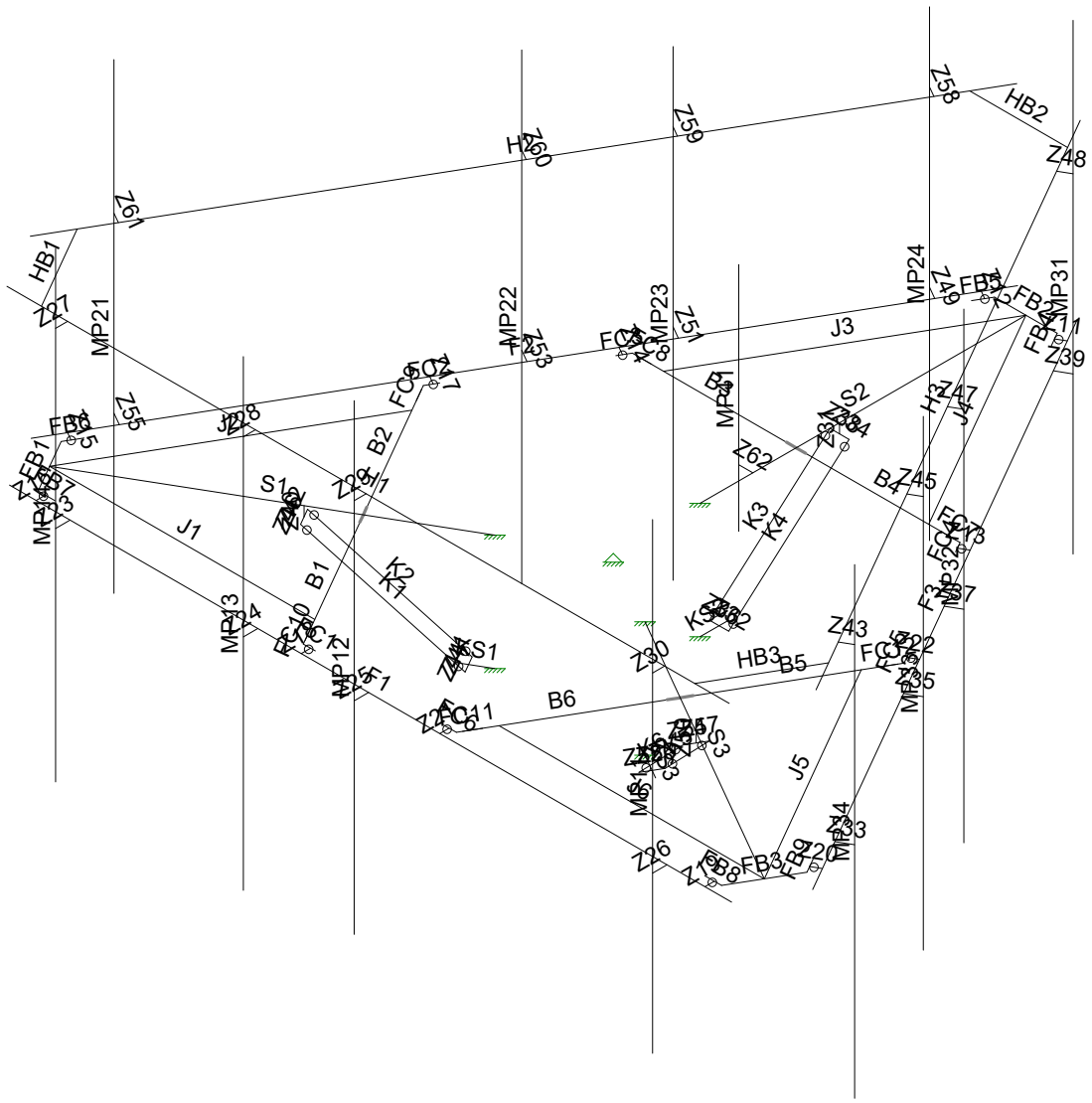

Envelope Only Solution

B+T GROUP		SK - 3
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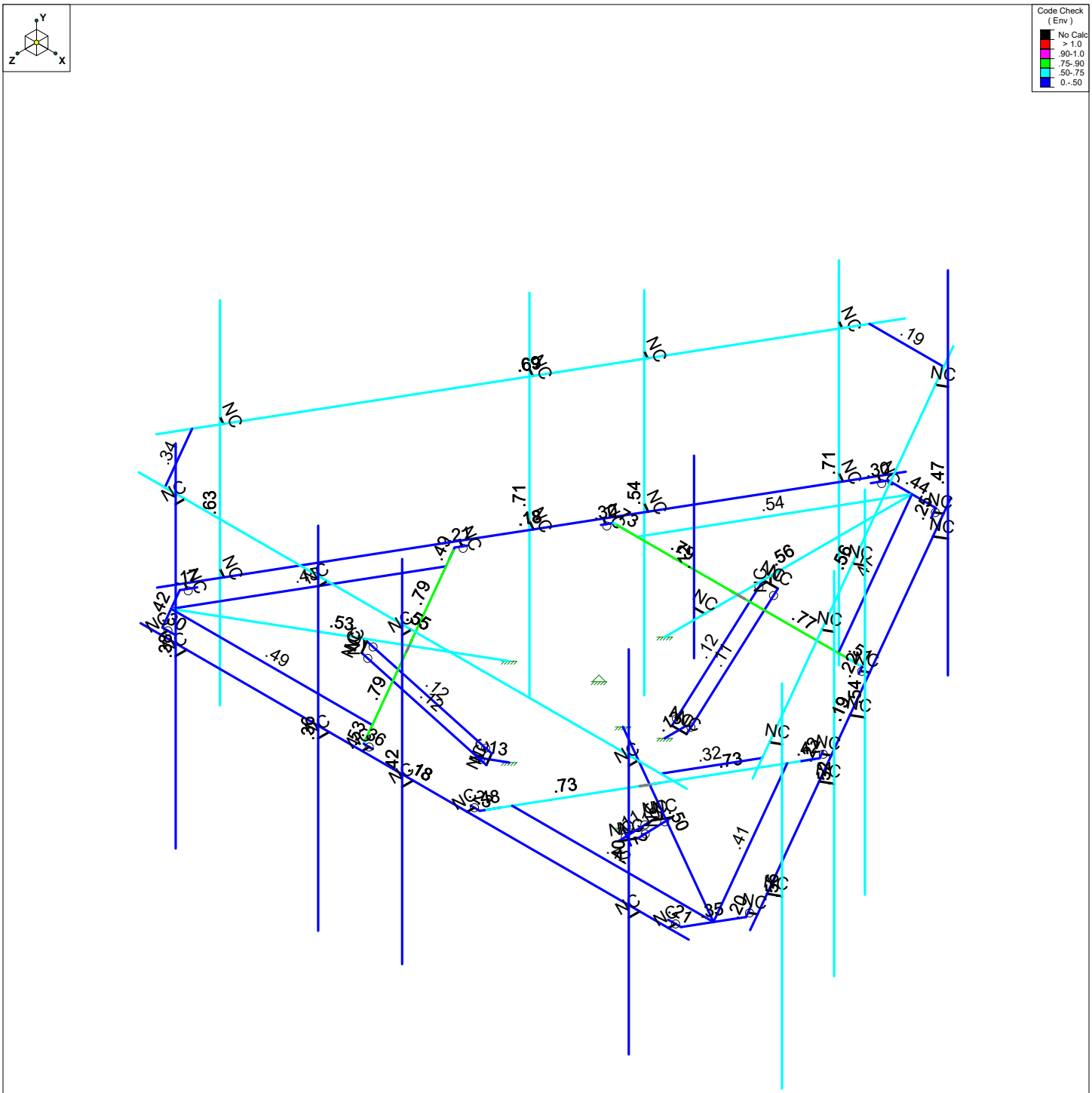
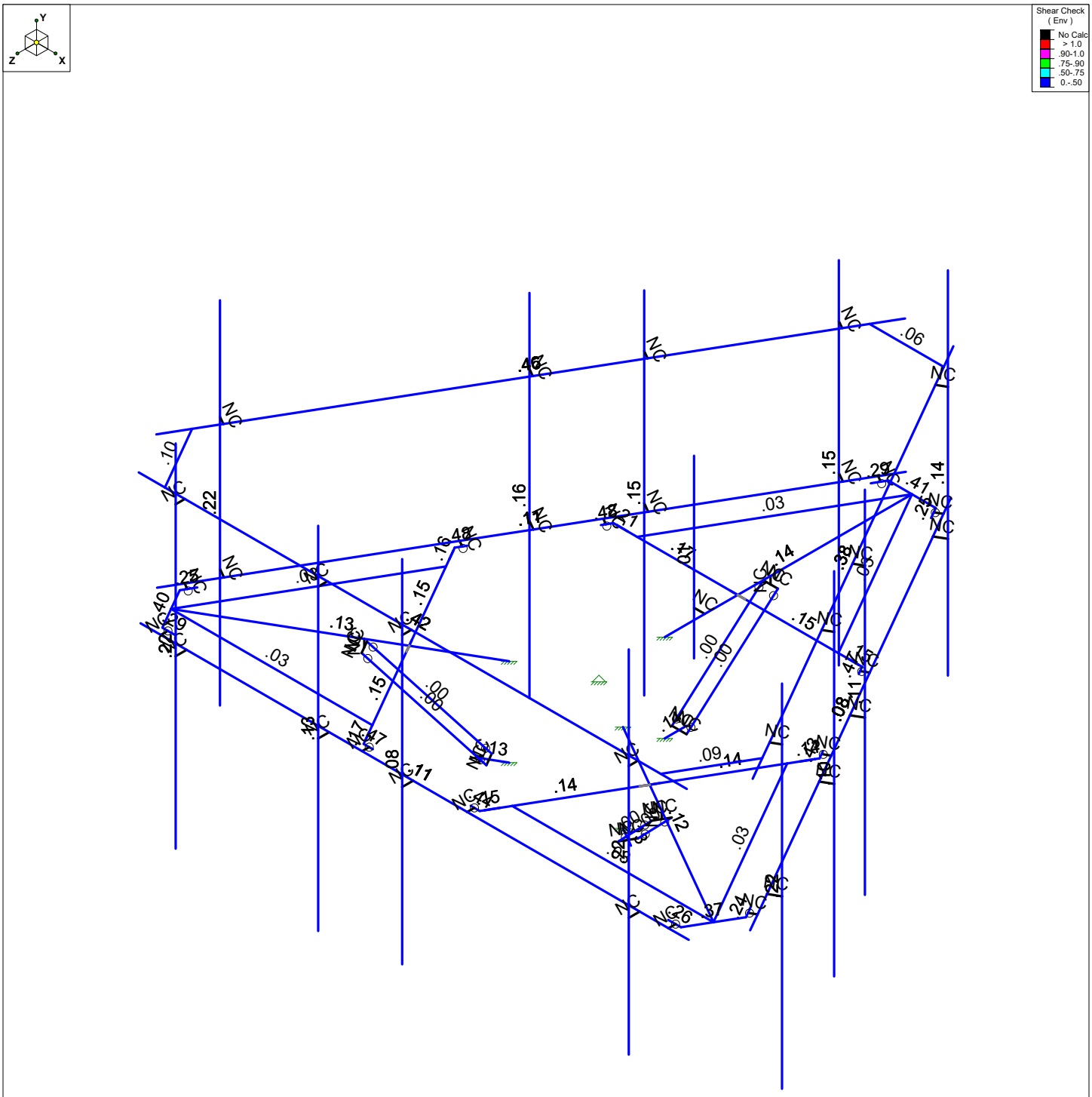


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T GROUP		SK - 4
KH	WINDSOR PINE LANE 841793	June 2, 2020 at 5:06 PM
141992.005.01	PLATFORM W/HANDRAILS - CODE CHECK	141992.005.01_Platform.R3D



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T GROUP		SK - 5
KH	WINDSOR PINE LANE 841793	June 2, 2020 at 5:07 PM
141992.005.01	PLATFORM W/HANDRAILS - SHEAR CHECK	141992.005.01_Platform.R3D

APPENDIX B
SOFTWARE INPUT CALCULATIONS

PROJECT	**141992.005.01 - WINDSOR P**		**KSC**
SUBJECT	**PLATFORM MOUNT Mount Analysis**		
DATE	**06/02/20**	PAGE	OF

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

Tower Type		:	Monopole		
Ground Elevation	z_s	:	94	ft	[ASCE7 Hazard Tool]
Tower Height		:	148.00	ft	
Mount Elevation		:	130.00	ft	
Antenna Elevation		:	130.00	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	:	117	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	:	0.18		
	S_1	:	0.06		
	S_{DS}	:	0.20		
	S_{D1}	:	0.09		
Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.34		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	1.00		[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}	:	1.72	in	[Sec. 2.6.10]
Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.098		[Sec. 2.7.7.1]
Amplification	A_s	:	2.513514		[Sec. 16.7]

PROJECT	**141992.005.01 - WINDSOR P**		**KSC**
SUBJECT	**PLATFORM MOUNT Mount Analysis**		
DATE	**06/02/20**	PAGE	OF

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-Ice}}$ (ft^2)	$EPA_{T\text{-Ice}}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
)UINTEL TECHNOLOG	QS66512-2	0.5	6.00	2.61	3.00	2.40	4.04	3.42	0.09	0.07	0.02	0.02
)UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	4.04	3.42	0.09	0.07	0.02	0.02
ERICSSON	TME-RRUS E2 B29	1	1.10	1.20	2.62	1.06	3.63	1.81	0.13	0.05	0.02	0.01
ERICSSON	TME-RRUS 32 B2	1	2.26	1.20	2.28	1.32	3.30	2.22	0.11	0.06	0.02	0.01
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	5.19	1.93	6.33	2.91	0.27	0.10	0.06	0.03
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	5.19	1.93	6.33	2.91	0.27	0.10	0.06	0.03
ERICSSON	TME-RRUS 4478 B14_CCIV2	1	1.35	1.20	1.68	1.04	2.52	1.75	0.08	0.05	0.01	0.01
ERICSSON	TME-RRUS 32 B66	1	2.25	1.20	2.29	1.32	3.31	2.22	0.11	0.06	0.02	0.01
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.12	1.90	6.26	2.89	0.26	0.10	0.06	0.03
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.12	1.90	6.26	2.89	0.26	0.10	0.06	0.03
ERICSSON	TME-RRUS 32 B30	1	2.25	1.20	2.29	1.32	3.31	2.22	0.11	0.06	0.02	0.01
ERICSSON	TME-RRUS 32 B2	1	2.26	1.20	2.28	1.32	3.30	2.22	0.11	0.06	0.02	0.01
ERICSSON	RRUS 4449 B5/B12	1	1.36	1.20	1.64	1.17	2.46	1.91	0.08	0.06	0.01	0.01
CCI ANTENNAS	TPA-65R-LCUUUU-H8	0.5	6.67	1.39	4.80	2.87	6.16	4.16	0.26	0.16	0.06	0.04
CCI ANTENNAS	TPA-65R-LCUUUU-H8	0.5	6.67	1.39	4.80	2.87	6.16	4.16	0.26	0.16	0.06	0.04
ERICSSON	TME-RRUS E2 B29	1	1.10	1.20	2.62	1.06	3.63	1.81	0.13	0.05	0.02	0.01
ERICSSON	TME-RRUS 32 B2	1	2.26	1.20	2.28	1.32	3.30	2.22	0.11	0.06	0.02	0.01
CCI ANTENNAS	OPA65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.44	3.88	0.36	0.13	0.07	0.02
CCI ANTENNAS	OPA65R-BU8DA	0.5	4.57	1.29	7.00	2.60	8.44	3.88	0.36	0.13	0.07	0.02
ERICSSON	TME-RRUS 4478 B14_CCIV2	1	1.35	1.20	1.68	1.04	2.52	1.75	0.08	0.05	0.01	0.01
ERICSSON	TME-RRUS 32 B66	1	2.25	1.20	2.29	1.32	3.31	2.22	0.11	0.06	0.02	0.01
CCI ANTENNAS	DMP65R-BU8D	0.5	4.64	1.30	6.90	2.57	8.34	3.85	0.35	0.13	0.08	0.03
CCI ANTENNAS	DMP65R-BU8D	0.5	4.64	1.30	6.90	2.57	8.34	3.85	0.35	0.13	0.08	0.03
ERICSSON	TME-RRUS 32 B30	1	2.25	1.20	2.29	1.32	3.31	2.22	0.11	0.06	0.02	0.01
ERICSSON	TME-RRUS 32 B2	1	2.26	1.20	2.28	1.32	3.30	2.22	0.11	0.06	0.02	0.01
ERICSSON	RRUS 4449 B5/B12	1	1.36	1.20	1.64	1.17	2.46	1.91	1.90	1.20		0.08

PROJECT	**141992.005.01 - WINDSOR P**		**KH**
SUBJECT	**PLATFORM MOUNT Mount Analysis**		
DATE	**06/02/20**	PAGE 3 OF	

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
)UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	4.04	3.42	0.09	0.07	0.02	0.02
)UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	4.04	3.42	0.09	0.07	0.02	0.02
ERICSSON	TME-RRUS E2 B29	1	1.10	1.20	2.62	1.06	3.63	1.81	0.13	0.05	0.02	0.01
ERICSSON	TME-RRUS 32 B2	1	2.26	1.20	2.28	1.32	3.30	2.22	0.11	0.06	0.02	0.01
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	5.19	1.93	6.33	2.91	0.27	0.10	0.06	0.03
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	5.19	1.93	6.33	2.91	0.27	0.10	0.06	0.03
ERICSSON	TME-RRUS 4478 B14_CCIV2	1	1.35	1.20	1.68	1.04	2.52	1.75	0.08	0.05	0.01	0.01
ERICSSON	TME-RRUS 32 B66	1	2.25	1.20	2.29	1.32	3.31	2.22	0.11	0.06	0.02	0.01
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.12	1.90	6.26	2.89	0.26	0.10	0.06	0.03
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.12	1.90	6.26	2.89	0.26	0.10	0.06	0.03
ERICSSON	TME-RRUS 32 B30	1	2.25	1.20	2.29	1.32	3.31	2.22	0.11	0.06	0.02	0.01
ERICSSON	TME-RRUS 32 B2	1	2.26	1.20	2.28	1.32	3.30	2.22	0.00	0.06	0.02	0.01
ERICSSON	RRUS 4449 B5/B12	1	1.36	1.20	1.64	1.17	2.46	1.91	0.00	0.06	0.01	0.01
RAYCAP (Installed)	TME-DC6-48-60-18-8F	1	2.84	0.51	2.39	2.39	3.48	3.48	0.05	0.05	0.01	0.01
RAYCAP (Installed)	TME-DC6-48-60-18-8F	1	2.84	0.51	2.39	2.39	3.48	3.48	0.05	0.05	0.01	0.01
RAYCAP (Proposed)	TME-DC6-48-60-18-8F	1	2.84	0.51	2.39	2.39	3.48	3.48	0.05	0.05	0.01	0.01
RAYCAP (Proposed)	TME-DC6-48-60-18-8F	1	2.84	0.51	2.39	2.39	3.48	3.48	0.05	0.05	0.01	0.01

APPENDIX C
SOFTWARE ANALYSIS INPUT & OUTPUT

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	FH-Pipe	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	HR-Pipe	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	SH-Pipe	PIPE 3.0	Beam	Tube	A500 Gr.B Rect	Typical	2.07	2.85	2.85	5.69
4	PB-Channel	C3.38x2.06x.188	Beam	Channel	A36 Gr.36	Typical	1.339	.562	2.4	.015
5	PJ-Angle	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
6	HB-Angle	L6.63x4.46x.25	Beam	Single Angle	A36 Gr.36	Typical	2.71	4.764	12.628	.055
7	KS-Tube	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
8	MP-Pipe	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	FB-Plate	PL3/8"x6"	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
10	FC-Plate	PL3/8"x2"	Beam	RECT	A36 Gr.36	Typical	.76	.009	.253	.032
11	PK-Angle	L3X3X4	VBrace	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rul...
1	B1	N28	N26		180	PB-Channel	Beam	Channel	A36 Gr.36	Typical
2	B2	N26	N27		180	PB-Channel	Beam	Channel	A36 Gr.36	Typical
3	B3	N5	N3		180	PB-Channel	Beam	Channel	A36 Gr.36	Typical
4	B4	N3	N4		180	PB-Channel	Beam	Channel	A36 Gr.36	Typical
5	B5	N51	N49		180	PB-Channel	Beam	Channel	A36 Gr.36	Typical
6	B6	N49	N50		180	PB-Channel	Beam	Channel	A36 Gr.36	Typical
7	F1	N71	N70			FH-Pipe	Beam	Pipe	A53 Gr.B	Typical
8	F2	N75	N74			FH-Pipe	Beam	Pipe	A53 Gr.B	Typical
9	F3	N73	N72			FH-Pipe	Beam	Pipe	A53 Gr.B	Typical
10	FB1	N30	N29			FB-Plate	Beam	RECT	A36 Gr.36	Typical
11	FB2	N7	N6			FB-Plate	Beam	RECT	A36 Gr.36	Typical
12	FB3	N53	N52			FB-Plate	Beam	RECT	A36 Gr.36	Typical
13	FB4	N13	N6			FB-Plate	Beam	RECT	A36 Gr.36	Typical
14	FB5	N7	N15			FB-Plate	Beam	RECT	A36 Gr.36	Typical
15	FB6	N36	N29			FB-Plate	Beam	RECT	A36 Gr.36	Typical
16	FB7	N30	N38			FB-Plate	Beam	RECT	A36 Gr.36	Typical
17	FB8	N59	N52			FB-Plate	Beam	RECT	A36 Gr.36	Typical
18	FB9	N53	N61			FB-Plate	Beam	RECT	A36 Gr.36	Typical
19	FC1	N33	N45			FB-Plate	Beam	RECT	A36 Gr.36	Typical
20	FC2	N31	N42			FB-Plate	Beam	RECT	A36 Gr.36	Typical
21	FC3	N10	N22			FB-Plate	Beam	RECT	A36 Gr.36	Typical
22	FC4	N8	N19			FB-Plate	Beam	RECT	A36 Gr.36	Typical
23	FC5	N56	N68			FB-Plate	Beam	RECT	A36 Gr.36	Typical
24	FC6	N54	N65			FB-Plate	Beam	RECT	A36 Gr.36	Typical
25	FC7	N9	N8			FC-Plate	Beam	RECT	A36 Gr.36	Typical
26	FC8	N11	N10			FC-Plate	Beam	RECT	A36 Gr.36	Typical
27	FC9	N32	N31			FC-Plate	Beam	RECT	A36 Gr.36	Typical
28	FC10	N34	N33			FC-Plate	Beam	RECT	A36 Gr.36	Typical
29	FC11	N55	N54			FC-Plate	Beam	RECT	A36 Gr.36	Typical
30	FC12	N57	N56			FC-Plate	Beam	RECT	A36 Gr.36	Typical
31	H1	N107	N106			HR-Pipe	Beam	Pipe	A53 Gr.B	Typical
32	H2	N111	N110			HR-Pipe	Beam	Pipe	A53 Gr.B	Typical
33	H3	N109	N108			HR-Pipe	Beam	Pipe	A53 Gr.B	Typical
34	HB1	N195	N194		180	HB-Angle	Beam	Single Angle	A36 Gr.36	Typical
35	HB2	N193	N192		180	HB-Angle	Beam	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rul...
36	HB3	N197	N196		180	HB-Angle	Beam	Single Angle	A36 Gr.36	Typical
37	J1	N94	N25			PJ-Angle	Beam	Single Angle	A36 Gr.36	Typical
38	J2	N25	N93			PJ-Angle	Beam	Single Angle	A36 Gr.36	Typical
39	J3	N92	N2			PJ-Angle	Beam	Single Angle	A36 Gr.36	Typical
40	J4	N2	N97			PJ-Angle	Beam	Single Angle	A36 Gr.36	Typical
41	J5	N96	N48			PJ-Angle	Beam	Single Angle	A36 Gr.36	Typical
42	J6	N48	N95			PJ-Angle	Beam	Single Angle	A36 Gr.36	Typical
43	K1	N131	N132		180	PK-Angle	VBrace	Single Angle	A36 Gr.36	Typical
44	K2	N129	N130		90	PK-Angle	VBrace	Single Angle	A36 Gr.36	Typical
45	K3	N125	N126		180	PK-Angle	VBrace	Single Angle	A36 Gr.36	Typical
46	K4	N123	N124		90	PK-Angle	VBrace	Single Angle	A36 Gr.36	Typical
47	K5	N137	N138		180	PK-Angle	VBrace	Single Angle	A36 Gr.36	Typical
48	K6	N135	N136		90	PK-Angle	VBrace	Single Angle	A36 Gr.36	Typical
49	KS1	K1	N117			KS-Tube	Beam	Tube	A500 Gr.B R...	Typical
50	KS2	K2	N114			KS-Tube	Beam	Tube	A500 Gr.B R...	Typical
51	KS3	K3	N120			KS-Tube	Beam	Tube	A500 Gr.B R...	Typical
52	MP11	N87	N91			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
53	MP12	N86	N90			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
54	MP13	N85	N89			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
55	MP14	N84	N88			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
56	MP21	N174	N178			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
57	MP22	N173	N177			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
58	MP23	N172	N176			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
59	MP24	N171	N175			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
60	MP31	N150	N154			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
61	MP32	N149	N153			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
62	MP33	N148	N152			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
63	MP34	N147	N151			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
64	MP41	N190	N191			MP-Pipe	Column	Pipe	A53 Gr.B	Typical
65	S1	N25	R1			SH-Pipe	Beam	Tube	A500 Gr.B R...	Typical
66	S2	N2	R2			SH-Pipe	Beam	Tube	A500 Gr.B R...	Typical
67	S3	N48	R3			SH-Pipe	Beam	Tube	A500 Gr.B R...	Typical
68	Z11	N12	N16			RIGID	None	None	RIGID	Typical
69	Z12	N14	N17			RIGID	None	None	RIGID	Typical
70	Z13	N18	N20			RIGID	None	None	RIGID	Typical
71	Z14	N21	N23			RIGID	None	None	RIGID	Typical
72	Z15	N35	N39			RIGID	None	None	RIGID	Typical
73	Z16	N37	N40			RIGID	None	None	RIGID	Typical
74	Z17	N41	N43			RIGID	None	None	RIGID	Typical
75	Z18	N44	N46			RIGID	None	None	RIGID	Typical
76	Z19	N58	N62			RIGID	None	None	RIGID	Typical
77	Z20	N60	N63			RIGID	None	None	RIGID	Typical
78	Z21	N64	N66			RIGID	None	None	RIGID	Typical
79	Z22	N67	N69			RIGID	None	None	RIGID	Typical
80	Z23	N80	N76			RIGID	None	None	RIGID	Typical
81	Z24	N81	N77			RIGID	None	None	RIGID	Typical
82	Z25	N82	N78			RIGID	None	None	RIGID	Typical
83	Z26	N83	N79			RIGID	None	None	RIGID	Typical
84	Z27	N98	N102			RIGID	None	None	RIGID	Typical
85	Z28	N99	N103			RIGID	None	None	RIGID	Typical
86	Z29	N100	N104			RIGID	None	None	RIGID	Typical
87	Z30	N101	N105			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rul...
88	Z31	N122	N121			RIGID	None	None	RIGID	Typical
89	Z32	N113	N123			RIGID	None	None	RIGID	Typical
90	Z33	N143	N139			RIGID	None	None	RIGID	Typical
91	Z34	N122	N124			RIGID	None	None	RIGID	Typical
92	Z35	N144	N140			RIGID	None	None	RIGID	Typical
93	Z36	N113	N125			RIGID	None	None	RIGID	Typical
94	Z37	N145	N141			RIGID	None	None	RIGID	Typical
95	Z38	N122	N126			RIGID	None	None	RIGID	Typical
96	Z39	N146	N142			RIGID	None	None	RIGID	Typical
97	Z40	N128	N127			RIGID	None	None	RIGID	Typical
98	Z41	N116	N129			RIGID	None	None	RIGID	Typical
99	Z42	N128	N130			RIGID	None	None	RIGID	Typical
100	Z43	N155	N159			RIGID	None	None	RIGID	Typical
101	Z44	N116	N131			RIGID	None	None	RIGID	Typical
102	Z45	N156	N160			RIGID	None	None	RIGID	Typical
103	Z46	N128	N132			RIGID	None	None	RIGID	Typical
104	Z47	N157	N161			RIGID	None	None	RIGID	Typical
105	Z48	N158	N162			RIGID	None	None	RIGID	Typical
106	Z49	N167	N163			RIGID	None	None	RIGID	Typical
107	Z50	N134	N133			RIGID	None	None	RIGID	Typical
108	Z51	N168	N164			RIGID	None	None	RIGID	Typical
109	Z52	N119	N135			RIGID	None	None	RIGID	Typical
110	Z53	N169	N165			RIGID	None	None	RIGID	Typical
111	Z54	N134	N136			RIGID	None	None	RIGID	Typical
112	Z55	N170	N166			RIGID	None	None	RIGID	Typical
113	Z56	N119	N137			RIGID	None	None	RIGID	Typical
114	Z57	N134	N138			RIGID	None	None	RIGID	Typical
115	Z58	N179	N183			RIGID	None	None	RIGID	Typical
116	Z59	N180	N184			RIGID	None	None	RIGID	Typical
117	Z60	N181	N185			RIGID	None	None	RIGID	Typical
118	Z61	N182	N186			RIGID	None	None	RIGID	Typical
119	Z62	N188	N189			RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface...
1	Dead Load	DL		-1			60		3	
2	0 Wind - No Ice	WLZ					60	67		
3	90 Wind - No Ice	WLX					60	67		
4	0 Wind - Ice	WLZ					60	67		
5	90 Wind - Ice	WLX					60	67		
6	0 Wind - Service	WLZ					60	67		
7	90 Wind - Service	WLX					60	67		
8	Ice Load	OL1					60	67	3	
9	0 Seismic	ELZ					60	67		
10	90 Seismic	ELX					60	67		
11	Live Load a	LL				2				
12	Live Load b	LL				2				
13	Live Load c	LL				2				
14	Live Load d	LL				2				
15	Maint LL 1	LL					1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface...
16	Maint LL 2	LL					1			
17	Maint LL 3	LL					1			
18	Maint LL 4	LL					1			
19	Maint LL 5	LL					1			
20	Maint LL 6	LL					1			
21	Maint LL 7	LL					1			
22	Maint LL 8	LL					1			
23	Maint LL 9	LL					1			
24	Maint LL 10	LL					1			
25	Maint LL 11	LL					1			
26	Maint LL 12	LL					1			
27	Maint LL 13	LL					1			
28	Maint LL 14	LL					1			
29	Maint LL 15	LL					1			
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 Loads	None						21		
40	BLC 8 Transient Area Loads	None						21		

Load Combinations

	Description	Solve	PD...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
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	-.866	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	-.866	3	-.5																
10	1.2 D + 1.0 - 240 W	Yes	Y		1	1.2	3	-.866	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	-.866	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/I...	Yes	Y		1	1.2	5	.866	4	-.5	8	1														
19	1.2 D + 1.0 - 150 W/I...	Yes	Y		1	1.2	4	-.866	5	.5	8	1														
20	1.2 D + 1.0 - 180 W/I...	Yes	Y		1	1.2	4	-1			8	1														
21	1.2 D + 1.0 - 210 W/I...	Yes	Y		1	1.2	4	-.866	5	-.5	8	1														
22	1.2 D + 1.0 - 240 W/I...	Yes	Y		1	1.2	5	-.866	4	-.5	8	1														

Load Combinations (Continued)

	Description	Solve	PD	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
23	1.2 D + 1.0 - 270 W/I...	Yes	Y		1	1.2	5	-1			8	1														
24	1.2 D + 1.0 - 300 W/I...	Yes	Y		1	1.2	5	-.866	4	.5	8	1														
25	1.2 D + 1.0 - 330 W/I...	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	-.866	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	-.866	10	-.5																
34	1.2 D + 1.0 E - 240	Yes	Y		1	1.2	10	-.866	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	-.866	9	.5																
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 + Se...	Yes	Y		1	1.2	6	1			11	1.5														
39	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	6	.866	7	.5	11	1.5														
40	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	7	.866	6	.5	11	1.5														
41	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	7	1			11	1.5														
42	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	7	.866	6	-.5	11	1.5														
43	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	6	-.866	7	.5	11	1.5														
44	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	6	-1			11	1.5														
45	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	6	-.866	7	-.5	11	1.5														
46	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	7	-.866	6	-.5	11	1.5														
47	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	7	-1			11	1.5														
48	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	7	-.866	6	.5	11	1.5														
49	1.2 D + 1.5 LL a + Se...	Yes	Y		1	1.2	6	.866	7	-.5	11	1.5														
50	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	6	1			12	1.5														
51	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	6	.866	7	.5	12	1.5														
52	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	7	.866	6	.5	12	1.5														
53	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	7	1			12	1.5														
54	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	7	.866	6	-.5	12	1.5														
55	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	6	-.866	7	.5	12	1.5														
56	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	6	-1			12	1.5														
57	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	6	-.866	7	-.5	12	1.5														
58	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	7	-.866	6	-.5	12	1.5														
59	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	7	-1			12	1.5														
60	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	7	-.866	6	.5	12	1.5														
61	1.2 D + 1.5 LL b + Se...	Yes	Y		1	1.2	6	.866	7	-.5	12	1.5														
62	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	6	1			13	1.5														
63	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	6	.866	7	.5	13	1.5														
64	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	7	.866	6	.5	13	1.5														
65	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	7	1			13	1.5														
66	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	7	.866	6	-.5	13	1.5														
67	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	6	-.866	7	.5	13	1.5														
68	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	6	-1			13	1.5														
69	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	6	-.866	7	-.5	13	1.5														
70	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	7	-.866	6	-.5	13	1.5														
71	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	7	-1			13	1.5														
72	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	7	-.866	6	.5	13	1.5														
73	1.2 D + 1.5 LL c + Se...	Yes	Y		1	1.2	6	.866	7	-.5	13	1.5														
74	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	6	1			14	1.5														

Load Combinations (Continued)

	Description	Solve	PD	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
75	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	6	.866	7	.5	14	1.5														
76	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	7	.866	6	.5	14	1.5														
77	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	7	1			14	1.5														
78	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	7	.866	6	-.5	14	1.5														
79	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	6	-.866	7	.5	14	1.5														
80	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	6	-1			14	1.5														
81	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	6	-.866	7	-.5	14	1.5														
82	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	7	-.866	6	-.5	14	1.5														
83	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	7	-1			14	1.5														
84	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	7	-.866	6	.5	14	1.5														
85	1.2 D + 1.5 LL d + Se...	Yes	Y		1	1.2	6	.866	7	-.5	14	1.5														
86	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					15	1.5														
87	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					16	1.5														
88	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					17	1.5														
89	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					18	1.5														
90	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					19	1.5														
91	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					20	1.5														
92	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					21	1.5														
93	1.2 D + 1.5 LL Maint ...	Yes	Y		1	1.2					22	1.5														
94	1.2 D + 1.5 LL Maint ...	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														

Member Point Loads (BLC 1 : Dead Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	Y	-.056	%10
2	MP11	Y	-.056	%85
3	MP11	Y	-.06	%20
4	MP11	Y	-.053	%40
5	MP11	Y	0	0
6	MP12	Y	-.032	%5
7	MP12	Y	-.032	%80
8	MP12	Y	-.059	%15
9	MP12	Y	-.053	%40
10	MP12	Y	0	0
11	MP14	Y	-.045	%5
12	MP14	Y	-.045	%80

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
13	MP14	Y	-.053	%35
14	MP14	Y	-.053	%35
15	MP14	Y	-.071	%65
16	MP21	Y	-.041	%5
17	MP21	Y	-.041	%95
18	MP21	Y	-.06	%20
19	MP21	Y	-.053	%40
20	MP21	Y	0	0
21	MP22	Y	-.038	%5
22	MP22	Y	-.038	%95
23	MP22	Y	-.059	%15
24	MP22	Y	-.053	%40
25	MP22	Y	0	0
26	MP24	Y	-.053	%5
27	MP24	Y	-.053	%95
28	MP24	Y	-.053	%35
29	MP24	Y	-.053	%35
30	MP24	Y	-.071	%65
31	MP31	Y	-.056	%10
32	MP31	Y	-.056	%85
33	MP31	Y	-.06	%20
34	MP31	Y	-.053	%40
35	MP31	Y	0	0
36	MP32	Y	-.032	%5
37	MP32	Y	-.032	%80
38	MP32	Y	-.059	%15
39	MP32	Y	-.053	%40
40	MP32	Y	0	0
41	MP34	Y	-.045	%5
42	MP34	Y	-.045	%80
43	MP34	Y	-.053	%35
44	MP34	Y	-.053	%35
45	MP34	Y	-.071	%65
46	MP41	Y	-.033	%15
47	MP41	Y	-.033	%40
48	MP41	Y	0	0
49	MP41	Y	0	0
50	MP41	Y	0	0
51	MP13	Y	-.033	%5
52	MP13	Y	0	0
53	MP13	Y	0	0
54	MP13	Y	0	0
55	MP13	Y	0	0
56	MP23	Y	-.033	%5
57	MP23	Y	0	0
58	MP23	Y	0	0
59	MP23	Y	0	0
60	MP23	Y	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	Z	-.089	%10
2	MP11	Z	-.089	%85
3	MP11	Z	-.126	%20
4	MP11	Z	-.109	%40
5	MP11	Z	0	0
6	MP12	Z	-.271	%5
7	MP12	Z	-.271	%80
8	MP12	Z	-.081	%15
9	MP12	Z	-.11	%40
10	MP12	Z	0	0
11	MP14	Z	-.265	%5
12	MP14	Z	-.265	%80
13	MP14	Z	-.11	%35
14	MP14	Z	-.109	%35
15	MP14	Z	-.079	%65
16	MP21	Z	-.263	%5
17	MP21	Z	-.263	%95
18	MP21	Z	-.126	%20
19	MP21	Z	-.109	%40
20	MP21	Z	0	0
21	MP22	Z	-.361	%5
22	MP22	Z	-.361	%95
23	MP22	Z	-.081	%15
24	MP22	Z	-.11	%40
25	MP22	Z	0	0
26	MP24	Z	-.352	%5
27	MP24	Z	-.352	%95
28	MP24	Z	-.11	%35
29	MP24	Z	-.109	%35
30	MP24	Z	-.079	%65
31	MP31	Z	-.089	%10
32	MP31	Z	-.089	%85
33	MP31	Z	-.126	%20
34	MP31	Z	-.109	%40
35	MP31	Z	0	0
36	MP32	Z	-.271	%5
37	MP32	Z	-.271	%80
38	MP32	Z	-.081	%15
39	MP32	Z	-.11	%40
40	MP32	Z	0	0
41	MP34	Z	-.265	%5
42	MP34	Z	-.265	%80
43	MP34	Z	-.11	%35
44	MP34	Z	-.109	%35
45	MP34	Z	-.079	%65
46	MP41	Z	-.048	%15
47	MP41	Z	-.048	%40
48	MP41	Z	0	0
49	MP41	Z	0	0
50	MP41	Z	0	0
51	MP13	Z	-.048	%5
52	MP13	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
53	MP13	Z	0	0
54	MP13	Z	0	0
55	MP13	Z	0	0
56	MP23	Z	-.048	%5
57	MP23	Z	0	0
58	MP23	Z	0	0
59	MP23	Z	0	0
60	MP23	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	X	-.075	%10
2	MP11	X	-.075	%85
3	MP11	X	-.051	%20
4	MP11	X	-.063	%40
5	MP11	X	0	0
6	MP12	X	-.101	%5
7	MP12	X	-.101	%80
8	MP12	X	-.05	%15
9	MP12	X	-.063	%40
10	MP12	X	0	0
11	MP14	X	-.099	%5
12	MP14	X	-.099	%80
13	MP14	X	-.063	%35
14	MP14	X	-.063	%35
15	MP14	X	-.056	%65
16	MP21	X	-.156	%5
17	MP21	X	-.156	%95
18	MP21	X	-.051	%20
19	MP21	X	-.063	%40
20	MP21	X	0	0
21	MP22	X	-.134	%5
22	MP22	X	-.134	%95
23	MP22	X	-.05	%15
24	MP22	X	-.063	%40
25	MP22	X	0	0
26	MP24	X	-.132	%5
27	MP24	X	-.132	%95
28	MP24	X	-.063	%35
29	MP24	X	-.063	%35
30	MP24	X	-.056	%65
31	MP31	X	-.075	%10
32	MP31	X	-.075	%85
33	MP31	X	-.051	%20
34	MP31	X	-.063	%40
35	MP31	X	0	0
36	MP32	X	-.101	%5
37	MP32	X	-.101	%80
38	MP32	X	-.05	%15
39	MP32	X	-.063	%40
40	MP32	X	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
41	MP34	X	-.099	%5
42	MP34	X	-.099	%80
43	MP34	X	-.063	%35
44	MP34	X	-.063	%35
45	MP34	X	-.056	%65
46	MP41	X	-.048	%15
47	MP41	X	-.048	%40
48	MP41	X	0	0
49	MP41	X	0	0
50	MP41	X	0	0
51	MP13	X	-.048	%5
52	MP13	X	0	0
53	MP13	X	0	0
54	MP13	X	0	0
55	MP13	X	0	0
56	MP23	X	-.048	%5
57	MP23	X	0	0
58	MP23	X	0	0
59	MP23	X	0	0
60	MP23	X	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	Z	-.021	%10
2	MP11	Z	-.021	%85
3	MP11	Z	-.023	%20
4	MP11	Z	-.02	%40
5	MP11	Z	0	0
6	MP12	Z	-.059	%5
7	MP12	Z	-.059	%80
8	MP12	Z	-.015	%15
9	MP12	Z	-.02	%40
10	MP12	Z	0	0
11	MP14	Z	-.058	%5
12	MP14	Z	-.058	%80
13	MP14	Z	-.02	%35
14	MP14	Z	-.02	%35
15	MP14	Z	-.014	%65
16	MP21	Z	-.06	%5
17	MP21	Z	-.06	%95
18	MP21	Z	-.023	%20
19	MP21	Z	-.02	%40
20	MP21	Z	0	0
21	MP22	Z	-.066	%5
22	MP22	Z	-.066	%95
23	MP22	Z	-.015	%15
24	MP22	Z	-.02	%40
25	MP22	Z	0	0
26	MP24	Z	-.076	%5
27	MP24	Z	-.076	%95
28	MP24	Z	-.02	%35

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
29	MP24	Z	-.02	%35
30	MP24	Z	-.014	%65
31	MP31	Z	-.021	%10
32	MP31	Z	-.021	%85
33	MP31	Z	-.023	%20
34	MP31	Z	-.02	%40
35	MP31	Z	0	0
36	MP32	Z	-.059	%5
37	MP32	Z	-.059	%80
38	MP32	Z	-.015	%15
39	MP32	Z	-.02	%40
40	MP32	Z	0	0
41	MP34	Z	-.058	%5
42	MP34	Z	-.058	%80
43	MP34	Z	-.02	%35
44	MP34	Z	-.02	%35
45	MP34	Z	-.014	%65
46	MP41	Z	-.009	%15
47	MP41	Z	-.009	%40
48	MP41	Z	0	0
49	MP41	Z	0	0
50	MP41	Z	0	0
51	MP13	Z	-.009	%5
52	MP13	Z	0	0
53	MP13	Z	0	0
54	MP13	Z	0	0
55	MP13	Z	0	0
56	MP23	Z	-.009	%5
57	MP23	Z	0	0
58	MP23	Z	0	0
59	MP23	Z	0	0
60	MP23	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	X	-.018	%10
2	MP11	X	-.018	%85
3	MP11	X	-.009	%20
4	MP11	X	-.012	%40
5	MP11	X	0	0
6	MP12	X	-.027	%5
7	MP12	X	-.027	%80
8	MP12	X	-.009	%15
9	MP12	X	-.012	%40
10	MP12	X	0	0
11	MP14	X	-.026	%5
12	MP14	X	-.026	%80
13	MP14	X	-.012	%35
14	MP14	X	-.012	%35
15	MP14	X	-.01	%65
16	MP21	X	-.04	%5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
17	MP21	X	-.04	%95
18	MP21	X	-.009	%20
19	MP21	X	-.012	%40
20	MP21	X	0	0
21	MP22	X	-.025	%5
22	MP22	X	-.025	%95
23	MP22	X	-.009	%15
24	MP22	X	-.012	%40
25	MP22	X	0	0
26	MP24	X	-.035	%5
27	MP24	X	-.035	%95
28	MP24	X	-.012	%35
29	MP24	X	-.012	%35
30	MP24	X	-.01	%65
31	MP31	X	-.018	%10
32	MP31	X	-.018	%85
33	MP31	X	-.009	%20
34	MP31	X	-.012	%40
35	MP31	X	0	0
36	MP32	X	-.027	%5
37	MP32	X	-.027	%80
38	MP32	X	-.009	%15
39	MP32	X	-.012	%40
40	MP32	X	0	0
41	MP34	X	-.026	%5
42	MP34	X	-.026	%80
43	MP34	X	-.012	%35
44	MP34	X	-.012	%35
45	MP34	X	-.01	%65
46	MP41	X	-.009	%15
47	MP41	X	-.009	%40
48	MP41	X	0	0
49	MP41	X	0	0
50	MP41	X	0	0
51	MP13	X	-.009	%5
52	MP13	X	0	0
53	MP13	X	0	0
54	MP13	X	0	0
55	MP13	X	0	0
56	MP23	X	-.009	%5
57	MP23	X	0	0
58	MP23	X	0	0
59	MP23	X	0	0
60	MP23	X	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	Z	-.006	%10
2	MP11	Z	-.006	%85
3	MP11	Z	-.008	%20
4	MP11	Z	-.007	%40

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
5	MP11	Z	0	0
6	MP12	Z	-.018	%5
7	MP12	Z	-.018	%80
8	MP12	Z	-.005	%15
9	MP12	Z	-.007	%40
10	MP12	Z	0	0
11	MP14	Z	-.017	%5
12	MP14	Z	-.017	%80
13	MP14	Z	-.007	%35
14	MP14	Z	-.007	%35
15	MP14	Z	-.005	%65
16	MP21	Z	-.017	%5
17	MP21	Z	-.017	%95
18	MP21	Z	-.008	%20
19	MP21	Z	-.007	%40
20	MP21	Z	0	0
21	MP22	Z	-.024	%5
22	MP22	Z	-.024	%95
23	MP22	Z	-.005	%15
24	MP22	Z	-.007	%40
25	MP22	Z	0	0
26	MP24	Z	-.023	%5
27	MP24	Z	-.023	%95
28	MP24	Z	-.007	%35
29	MP24	Z	-.007	%35
30	MP24	Z	-.005	%65
31	MP31	Z	-.006	%10
32	MP31	Z	-.006	%85
33	MP31	Z	-.008	%20
34	MP31	Z	-.007	%40
35	MP31	Z	0	0
36	MP32	Z	-.018	%5
37	MP32	Z	-.018	%80
38	MP32	Z	-.005	%15
39	MP32	Z	-.007	%40
40	MP32	Z	0	0
41	MP34	Z	-.017	%5
42	MP34	Z	-.017	%80
43	MP34	Z	-.007	%35
44	MP34	Z	-.007	%35
45	MP34	Z	-.005	%65
46	MP41	Z	-.003	%15
47	MP41	Z	-.003	%40
48	MP41	Z	0	0
49	MP41	Z	0	0
50	MP41	Z	0	0
51	MP13	Z	-.003	%5
52	MP13	Z	0	0
53	MP13	Z	0	0
54	MP13	Z	0	0
55	MP13	Z	0	0
56	MP23	Z	-.003	%5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
57	MP23	Z	0	0
58	MP23	Z	0	0
59	MP23	Z	0	0
60	MP23	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	X	-.005	%10
2	MP11	X	-.005	%85
3	MP11	X	-.003	%20
4	MP11	X	-.004	%40
5	MP11	X	0	0
6	MP12	X	-.007	%5
7	MP12	X	-.007	%80
8	MP12	X	-.003	%15
9	MP12	X	-.004	%40
10	MP12	X	0	0
11	MP14	X	-.006	%5
12	MP14	X	-.006	%80
13	MP14	X	-.004	%35
14	MP14	X	-.004	%35
15	MP14	X	-.004	%65
16	MP21	X	-.01	%5
17	MP21	X	-.01	%95
18	MP21	X	-.003	%20
19	MP21	X	-.004	%40
20	MP21	X	0	0
21	MP22	X	-.009	%5
22	MP22	X	-.009	%95
23	MP22	X	-.003	%15
24	MP22	X	-.004	%40
25	MP22	X	0	0
26	MP24	X	-.009	%5
27	MP24	X	-.009	%95
28	MP24	X	-.004	%35
29	MP24	X	-.004	%35
30	MP24	X	-.004	%65
31	MP31	X	-.005	%10
32	MP31	X	-.005	%85
33	MP31	X	-.003	%20
34	MP31	X	-.004	%40
35	MP31	X	0	0
36	MP32	X	-.007	%5
37	MP32	X	-.007	%80
38	MP32	X	-.003	%15
39	MP32	X	-.004	%40
40	MP32	X	0	0
41	MP34	X	-.006	%5
42	MP34	X	-.006	%80
43	MP34	X	-.004	%35
44	MP34	X	-.004	%35

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
45	MP34	X	-.004	%65
46	MP41	X	-.003	%15
47	MP41	X	-.003	%40
48	MP41	X	0	0
49	MP41	X	0	0
50	MP41	X	0	0
51	MP13	X	-.003	%5
52	MP13	X	0	0
53	MP13	X	0	0
54	MP13	X	0	0
55	MP13	X	0	0
56	MP23	X	-.003	%5
57	MP23	X	0	0
58	MP23	X	0	0
59	MP23	X	0	0
60	MP23	X	0	0

Member Point Loads (BLC 8 : Ice Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	Y	-.152	%10
2	MP11	Y	-.152	%85
3	MP11	Y	-.077	%20
4	MP11	Y	-.075	%40
5	MP11	Y	0	0
6	MP12	Y	-.156	%5
7	MP12	Y	-.156	%80
8	MP12	Y	-.055	%15
9	MP12	Y	-.075	%40
10	MP12	Y	0	0
11	MP14	Y	-.167	%5
12	MP14	Y	-.167	%80
13	MP14	Y	-.075	%35
14	MP14	Y	-.075	%35
15	MP14	Y	-.056	%65
16	MP21	Y	-.174	%5
17	MP21	Y	-.174	%95
18	MP21	Y	-.077	%20
19	MP21	Y	-.075	%40
20	MP21	Y	0	0
21	MP22	Y	-.203	%5
22	MP22	Y	-.203	%95
23	MP22	Y	-.055	%15
24	MP22	Y	-.075	%40
25	MP22	Y	0	0
26	MP24	Y	-.214	%5
27	MP24	Y	-.214	%95
28	MP24	Y	-.075	%35
29	MP24	Y	-.075	%35
30	MP24	Y	-.056	%65
31	MP31	Y	-.152	%10
32	MP31	Y	-.152	%85

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
33	MP31	Y	-.077	%20
34	MP31	Y	-.075	%40
35	MP31	Y	0	0
36	MP32	Y	-.156	%5
37	MP32	Y	-.156	%80
38	MP32	Y	-.055	%15
39	MP32	Y	-.075	%40
40	MP32	Y	0	0
41	MP34	Y	-.167	%5
42	MP34	Y	-.167	%80
43	MP34	Y	-.075	%35
44	MP34	Y	-.075	%35
45	MP34	Y	-.056	%65
46	MP41	Y	-.07	%15
47	MP41	Y	-.07	%40
48	MP41	Y	0	0
49	MP41	Y	0	0
50	MP41	Y	0	0
51	MP13	Y	-.07	%5
52	MP13	Y	0	0
53	MP13	Y	0	0
54	MP13	Y	0	0
55	MP13	Y	0	0
56	MP23	Y	-.07	%5
57	MP23	Y	0	0
58	MP23	Y	0	0
59	MP23	Y	0	0
60	MP23	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	Z	-.027	%10
2	MP11	Z	-.027	%85
3	MP11	Z	-.015	%20
4	MP11	Z	-.013	%40
5	MP11	Z	0	0
6	MP12	Z	-.016	%5
7	MP12	Z	-.016	%80
8	MP12	Z	-.015	%15
9	MP12	Z	-.013	%40
10	MP12	Z	0	0
11	MP14	Z	-.022	%5
12	MP14	Z	-.022	%80
13	MP14	Z	-.013	%35
14	MP14	Z	-.013	%35
15	MP14	Z	-.018	%65
16	MP21	Z	-.02	%5
17	MP21	Z	-.02	%95
18	MP21	Z	-.015	%20
19	MP21	Z	-.013	%40
20	MP21	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
21	MP22	Z	-.019	%5
22	MP22	Z	-.019	%95
23	MP22	Z	-.015	%15
24	MP22	Z	-.013	%40
25	MP22	Z	0	0
26	MP24	Z	-.026	%5
27	MP24	Z	-.026	%95
28	MP24	Z	-.013	%35
29	MP24	Z	-.013	%35
30	MP24	Z	-.018	%65
31	MP31	Z	-.027	%10
32	MP31	Z	-.027	%85
33	MP31	Z	-.015	%20
34	MP31	Z	-.013	%40
35	MP31	Z	0	0
36	MP32	Z	-.016	%5
37	MP32	Z	-.016	%80
38	MP32	Z	-.015	%15
39	MP32	Z	-.013	%40
40	MP32	Z	0	0
41	MP34	Z	-.022	%5
42	MP34	Z	-.022	%80
43	MP34	Z	-.013	%35
44	MP34	Z	-.013	%35
45	MP34	Z	-.018	%65
46	MP41	Z	-.008	%15
47	MP41	Z	-.008	%40
48	MP41	Z	0	0
49	MP41	Z	0	0
50	MP41	Z	0	0
51	MP13	Z	-.008	%5
52	MP13	Z	0	0
53	MP13	Z	0	0
54	MP13	Z	0	0
55	MP13	Z	0	0
56	MP23	Z	-.008	%5
57	MP23	Z	0	0
58	MP23	Z	0	0
59	MP23	Z	0	0
60	MP23	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP11	X	-.027	%10
2	MP11	X	-.027	%85
3	MP11	X	-.015	%20
4	MP11	X	-.013	%40
5	MP11	X	0	0
6	MP12	X	-.016	%5
7	MP12	X	-.016	%80
8	MP12	X	-.015	%15

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
9	MP12	X	-.013	%40
10	MP12	X	0	0
11	MP14	X	-.022	%5
12	MP14	X	-.022	%80
13	MP14	X	-.013	%35
14	MP14	X	-.013	%35
15	MP14	X	-.018	%65
16	MP21	X	-.02	%5
17	MP21	X	-.02	%95
18	MP21	X	-.015	%20
19	MP21	X	-.013	%40
20	MP21	X	0	0
21	MP22	X	-.019	%5
22	MP22	X	-.019	%95
23	MP22	X	-.015	%15
24	MP22	X	-.013	%40
25	MP22	X	0	0
26	MP24	X	-.026	%5
27	MP24	X	-.026	%95
28	MP24	X	-.013	%35
29	MP24	X	-.013	%35
30	MP24	X	-.018	%65
31	MP31	X	-.027	%10
32	MP31	X	-.027	%85
33	MP31	X	-.015	%20
34	MP31	X	-.013	%40
35	MP31	X	0	0
36	MP32	X	-.016	%5
37	MP32	X	-.016	%80
38	MP32	X	-.015	%15
39	MP32	X	-.013	%40
40	MP32	X	0	0
41	MP34	X	-.022	%5
42	MP34	X	-.022	%80
43	MP34	X	-.013	%35
44	MP34	X	-.013	%35
45	MP34	X	-.018	%65
46	MP41	X	-.008	%15
47	MP41	X	-.008	%40
48	MP41	X	0	0
49	MP41	X	0	0
50	MP41	X	0	0
51	MP13	X	-.008	%5
52	MP13	X	0	0
53	MP13	X	0	0
54	MP13	X	0	0
55	MP13	X	0	0
56	MP23	X	-.008	%5
57	MP23	X	0	0
58	MP23	X	0	0
59	MP23	X	0	0
60	MP23	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	H1	Y	-.25	%95

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	F1	Y	-.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	H1	Y	-.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	F1	Y	-.25	%95

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	H2	Y	-.25	%95

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	F2	Y	-.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	H2	Y	-.25	%5

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	F2	Y	-.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	H3	Y	-.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	F3	Y	-.25	%5

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	H3	Y	-.25	%5

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	F3	Y	-.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	S1	Y	-.25	%5

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	S2	Y	-.25	%5

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	S3	Y	-.25	%5

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/f...
1	N76	L	Y	-.5
2	N139	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/f...
1	N77	L	Y	-.5
2	N140	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/f...
1	N78	L	Y	-.5
2	N141	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/f...
1	N79	L	Y	-.5
2	N142	L	Y	-.5

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	S2	Z	-.01	-.01	0	0
2	B3	Z	-.016	-.016	0	0
3	B4	Z	-.016	-.016	0	0
4	FB2	Z	-.024	-.024	0	0
5	FC7	Z	-.008	-.008	0	0
6	FC8	Z	-.008	-.008	0	0
7	FB4	Z	-.024	-.024	0	0
8	FB5	Z	-.024	-.024	0	0
9	FC4	Z	-.024	-.024	0	0
10	FC3	Z	-.024	-.024	0	0
11	S1	Z	-.01	-.01	0	0
12	B1	Z	-.016	-.016	0	0
13	B2	Z	-.016	-.016	0	0
14	FB1	Z	-.024	-.024	0	0

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,%]
15	FC9	Z	-.008	-.008	0	0
16	FC10	Z	-.008	-.008	0	0
17	FB6	Z	-.024	-.024	0	0
18	FB7	Z	-.024	-.024	0	0
19	FC2	Z	-.024	-.024	0	0
20	FC1	Z	-.024	-.024	0	0
21	S3	Z	-.01	-.01	0	0
22	B5	Z	-.016	-.016	0	0
23	B6	Z	-.016	-.016	0	0
24	FB3	Z	-.024	-.024	0	0
25	FC11	Z	-.008	-.008	0	0
26	FC12	Z	-.008	-.008	0	0
27	FB8	Z	-.024	-.024	0	0
28	FB9	Z	-.024	-.024	0	0
29	FC6	Z	-.024	-.024	0	0
30	FC5	Z	-.024	-.024	0	0
31	F1	Z	-.014	-.014	0	0
32	F3	Z	-.014	-.014	0	0
33	F2	Z	-.014	-.014	0	0
34	MP11	Z	-.009	-.009	0	0
35	MP12	Z	-.009	-.009	0	0
36	MP13	Z	-.009	-.009	0	0
37	MP14	Z	-.009	-.009	0	0
38	J2	Z	-.013	-.013	0	0
39	J3	Z	-.013	-.013	0	0
40	J6	Z	-.013	-.013	0	0
41	J1	Z	-.013	-.013	0	0
42	J4	Z	-.013	-.013	0	0
43	J5	Z	-.013	-.013	0	0
44	H1	Z	-.009	-.009	0	0
45	H3	Z	-.009	-.009	0	0
46	H2	Z	-.009	-.009	0	0
47	HB2	Z	-.027	-.027	0	0
48	KS2	Z	-.016	-.016	0	0
49	KS1	Z	-.016	-.016	0	0
50	KS3	Z	-.016	-.016	0	0
51	K4	Z	-.015	-.015	0	0
52	K3	Z	-.015	-.015	0	0
53	K2	Z	-.015	-.015	0	0
54	K1	Z	-.015	-.015	0	0
55	K6	Z	-.015	-.015	0	0
56	K5	Z	-.015	-.015	0	0
57	MP31	Z	-.009	-.009	0	0
58	MP32	Z	-.009	-.009	0	0
59	MP33	Z	-.009	-.009	0	0
60	MP34	Z	-.009	-.009	0	0
61	MP21	Z	-.009	-.009	0	0
62	MP22	Z	-.009	-.009	0	0
63	MP23	Z	-.009	-.009	0	0
64	MP24	Z	-.009	-.009	0	0
65	MP41	Z	-.009	-.009	0	0
66	HB1	Z	-.027	-.027	0	0

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,%]
67	HB3	Z	-.027	-.027	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	S2	X	-.01	-.01	0	0
2	B3	X	-.016	-.016	0	0
3	B4	X	-.016	-.016	0	0
4	FB2	X	-.024	-.024	0	0
5	FC7	X	-.008	-.008	0	0
6	FC8	X	-.008	-.008	0	0
7	FB4	X	-.024	-.024	0	0
8	FB5	X	-.024	-.024	0	0
9	FC4	X	-.024	-.024	0	0
10	FC3	X	-.024	-.024	0	0
11	S1	X	-.01	-.01	0	0
12	B1	X	-.016	-.016	0	0
13	B2	X	-.016	-.016	0	0
14	FB1	X	-.024	-.024	0	0
15	FC9	X	-.008	-.008	0	0
16	FC10	X	-.008	-.008	0	0
17	FB6	X	-.024	-.024	0	0
18	FB7	X	-.024	-.024	0	0
19	FC2	X	-.024	-.024	0	0
20	FC1	X	-.024	-.024	0	0
21	S3	X	-.01	-.01	0	0
22	B5	X	-.016	-.016	0	0
23	B6	X	-.016	-.016	0	0
24	FB3	X	-.024	-.024	0	0
25	FC11	X	-.008	-.008	0	0
26	FC12	X	-.008	-.008	0	0
27	FB8	X	-.024	-.024	0	0
28	FB9	X	-.024	-.024	0	0
29	FC6	X	-.024	-.024	0	0
30	FC5	X	-.024	-.024	0	0
31	F1	X	-.014	-.014	0	0
32	F3	X	-.014	-.014	0	0
33	F2	X	-.014	-.014	0	0
34	MP11	X	-.009	-.009	0	0
35	MP12	X	-.009	-.009	0	0
36	MP13	X	-.009	-.009	0	0
37	MP14	X	-.009	-.009	0	0
38	J2	X	-.013	-.013	0	0
39	J3	X	-.013	-.013	0	0
40	J6	X	-.013	-.013	0	0
41	J1	X	-.013	-.013	0	0
42	J4	X	-.013	-.013	0	0
43	J5	X	-.013	-.013	0	0
44	H1	X	-.009	-.009	0	0
45	H3	X	-.009	-.009	0	0
46	H2	X	-.009	-.009	0	0
47	HB2	X	-.027	-.027	0	0

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,%]
48	KS2	X	-.016	-.016	0	0
49	KS1	X	-.016	-.016	0	0
50	KS3	X	-.016	-.016	0	0
51	K4	X	-.015	-.015	0	0
52	K3	X	-.015	-.015	0	0
53	K2	X	-.015	-.015	0	0
54	K1	X	-.015	-.015	0	0
55	K6	X	-.015	-.015	0	0
56	K5	X	-.015	-.015	0	0
57	MP31	X	-.009	-.009	0	0
58	MP32	X	-.009	-.009	0	0
59	MP33	X	-.009	-.009	0	0
60	MP34	X	-.009	-.009	0	0
61	MP21	X	-.009	-.009	0	0
62	MP22	X	-.009	-.009	0	0
63	MP23	X	-.009	-.009	0	0
64	MP24	X	-.009	-.009	0	0
65	MP41	X	-.009	-.009	0	0
66	HB1	X	-.027	-.027	0	0
67	HB3	X	-.027	-.027	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	S2	Z	-.003	-.003	0	0
2	B3	Z	-.007	-.007	0	0
3	B4	Z	-.007	-.007	0	0
4	FB2	Z	-.009	-.009	0	0
5	FC7	Z	-.007	-.007	0	0
6	FC8	Z	-.007	-.007	0	0
7	FB4	Z	-.014	-.014	0	0
8	FB5	Z	-.014	-.014	0	0
9	FC4	Z	-.016	-.016	0	0
10	FC3	Z	-.016	-.016	0	0
11	S1	Z	-.003	-.003	0	0
12	B1	Z	-.007	-.007	0	0
13	B2	Z	-.007	-.007	0	0
14	FB1	Z	-.009	-.009	0	0
15	FC9	Z	-.007	-.007	0	0
16	FC10	Z	-.007	-.007	0	0
17	FB6	Z	-.014	-.014	0	0
18	FB7	Z	-.014	-.014	0	0
19	FC2	Z	-.016	-.016	0	0
20	FC1	Z	-.016	-.016	0	0
21	S3	Z	-.003	-.003	0	0
22	B5	Z	-.007	-.007	0	0
23	B6	Z	-.007	-.007	0	0
24	FB3	Z	-.009	-.009	0	0
25	FC11	Z	-.007	-.007	0	0
26	FC12	Z	-.007	-.007	0	0
27	FB8	Z	-.014	-.014	0	0
28	FB9	Z	-.014	-.014	0	0

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,%]
29	FC6	Z	-.016	-.016	0	0
30	FC5	Z	-.016	-.016	0	0
31	F1	Z	-.003	-.003	0	0
32	F3	Z	-.003	-.003	0	0
33	F2	Z	-.003	-.003	0	0
34	MP11	Z	-.002	-.002	0	0
35	MP12	Z	-.002	-.002	0	0
36	MP13	Z	-.002	-.002	0	0
37	MP14	Z	-.002	-.002	0	0
38	J2	Z	-.007	-.007	0	0
39	J3	Z	-.007	-.007	0	0
40	J6	Z	-.007	-.007	0	0
41	J1	Z	-.007	-.007	0	0
42	J4	Z	-.007	-.007	0	0
43	J5	Z	-.007	-.007	0	0
44	H1	Z	-.002	-.002	0	0
45	H3	Z	-.002	-.002	0	0
46	H2	Z	-.002	-.002	0	0
47	HB2	Z	-.009	-.009	0	0
48	KS2	Z	-.009	-.009	0	0
49	KS1	Z	-.009	-.009	0	0
50	KS3	Z	-.009	-.009	0	0
51	K4	Z	-.006	-.006	0	0
52	K3	Z	-.006	-.006	0	0
53	K2	Z	-.006	-.006	0	0
54	K1	Z	-.006	-.006	0	0
55	K6	Z	-.006	-.006	0	0
56	K5	Z	-.006	-.006	0	0
57	MP31	Z	-.002	-.002	0	0
58	MP32	Z	-.002	-.002	0	0
59	MP33	Z	-.002	-.002	0	0
60	MP34	Z	-.002	-.002	0	0
61	MP21	Z	-.002	-.002	0	0
62	MP22	Z	-.002	-.002	0	0
63	MP23	Z	-.002	-.002	0	0
64	MP24	Z	-.002	-.002	0	0
65	MP41	Z	-.002	-.002	0	0
66	HB1	Z	-.009	-.009	0	0
67	HB3	Z	-.009	-.009	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	S2	X	-.003	-.003	0	0
2	B3	X	-.007	-.007	0	0
3	B4	X	-.007	-.007	0	0
4	FB2	X	-.009	-.009	0	0
5	FC7	X	-.007	-.007	0	0
6	FC8	X	-.007	-.007	0	0
7	FB4	X	-.014	-.014	0	0
8	FB5	X	-.014	-.014	0	0
9	FC4	X	-.016	-.016	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
10	FC3	X	-.016	-.016	0	0
11	S1	X	-.003	-.003	0	0
12	B1	X	-.007	-.007	0	0
13	B2	X	-.007	-.007	0	0
14	FB1	X	-.009	-.009	0	0
15	FC9	X	-.007	-.007	0	0
16	FC10	X	-.007	-.007	0	0
17	FB6	X	-.014	-.014	0	0
18	FB7	X	-.014	-.014	0	0
19	FC2	X	-.016	-.016	0	0
20	FC1	X	-.016	-.016	0	0
21	S3	X	-.003	-.003	0	0
22	B5	X	-.007	-.007	0	0
23	B6	X	-.007	-.007	0	0
24	FB3	X	-.009	-.009	0	0
25	FC11	X	-.007	-.007	0	0
26	FC12	X	-.007	-.007	0	0
27	FB8	X	-.014	-.014	0	0
28	FB9	X	-.014	-.014	0	0
29	FC6	X	-.016	-.016	0	0
30	FC5	X	-.016	-.016	0	0
31	F1	X	-.003	-.003	0	0
32	F3	X	-.003	-.003	0	0
33	F2	X	-.003	-.003	0	0
34	MP11	X	-.002	-.002	0	0
35	MP12	X	-.002	-.002	0	0
36	MP13	X	-.002	-.002	0	0
37	MP14	X	-.002	-.002	0	0
38	J2	X	-.007	-.007	0	0
39	J3	X	-.007	-.007	0	0
40	J6	X	-.007	-.007	0	0
41	J1	X	-.007	-.007	0	0
42	J4	X	-.007	-.007	0	0
43	J5	X	-.007	-.007	0	0
44	H1	X	-.002	-.002	0	0
45	H3	X	-.002	-.002	0	0
46	H2	X	-.002	-.002	0	0
47	HB2	X	-.009	-.009	0	0
48	KS2	X	-.009	-.009	0	0
49	KS1	X	-.009	-.009	0	0
50	KS3	X	-.009	-.009	0	0
51	K4	X	-.006	-.006	0	0
52	K3	X	-.006	-.006	0	0
53	K2	X	-.006	-.006	0	0
54	K1	X	-.006	-.006	0	0
55	K6	X	-.006	-.006	0	0
56	K5	X	-.006	-.006	0	0
57	MP31	X	-.002	-.002	0	0
58	MP32	X	-.002	-.002	0	0
59	MP33	X	-.002	-.002	0	0
60	MP34	X	-.002	-.002	0	0
61	MP21	X	-.002	-.002	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
62	MP22	X	-.002	-.002	0	0
63	MP23	X	-.002	-.002	0	0
64	MP24	X	-.002	-.002	0	0
65	MP41	X	-.002	-.002	0	0
66	HB1	X	-.009	-.009	0	0
67	HB3	X	-.009	-.009	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	S2	Z	-.0005	-.0005	0	0
2	B3	Z	-.001	-.001	0	0
3	B4	Z	-.001	-.001	0	0
4	FB2	Z	-.002	-.002	0	0
5	FC7	Z	-.0005	-.0005	0	0
6	FC8	Z	-.0005	-.0005	0	0
7	FB4	Z	-.002	-.002	0	0
8	FB5	Z	-.002	-.002	0	0
9	FC4	Z	-.002	-.002	0	0
10	FC3	Z	-.002	-.002	0	0
11	S1	Z	-.0005	-.0005	0	0
12	B1	Z	-.001	-.001	0	0
13	B2	Z	-.001	-.001	0	0
14	FB1	Z	-.002	-.002	0	0
15	FC9	Z	-.0005	-.0005	0	0
16	FC10	Z	-.0005	-.0005	0	0
17	FB6	Z	-.002	-.002	0	0
18	FB7	Z	-.002	-.002	0	0
19	FC2	Z	-.002	-.002	0	0
20	FC1	Z	-.002	-.002	0	0
21	S3	Z	-.0005	-.0005	0	0
22	B5	Z	-.001	-.001	0	0
23	B6	Z	-.001	-.001	0	0
24	FB3	Z	-.002	-.002	0	0
25	FC11	Z	-.0005	-.0005	0	0
26	FC12	Z	-.0005	-.0005	0	0
27	FB8	Z	-.002	-.002	0	0
28	FB9	Z	-.002	-.002	0	0
29	FC6	Z	-.002	-.002	0	0
30	FC5	Z	-.002	-.002	0	0
31	F1	Z	-.0005	-.0005	0	0
32	F3	Z	-.0005	-.0005	0	0
33	F2	Z	-.0005	-.0005	0	0
34	MP11	Z	-.0003	-.0003	0	0
35	MP12	Z	-.0003	-.0003	0	0
36	MP13	Z	-.0003	-.0003	0	0
37	MP14	Z	-.0003	-.0003	0	0
38	J2	Z	-.0009	-.0009	0	0
39	J3	Z	-.0009	-.0009	0	0
40	J6	Z	-.0009	-.0009	0	0
41	J1	Z	-.0009	-.0009	0	0
42	J4	Z	-.0009	-.0009	0	0

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,%]
43	J5	Z	-.0009	-.0009	0	0
44	H1	Z	-.0003	-.0003	0	0
45	H3	Z	-.0003	-.0003	0	0
46	H2	Z	-.0003	-.0003	0	0
47	HB2	Z	-.002	-.002	0	0
48	KS2	Z	-.001	-.001	0	0
49	KS1	Z	-.001	-.001	0	0
50	KS3	Z	-.001	-.001	0	0
51	K4	Z	-.001	-.001	0	0
52	K3	Z	-.001	-.001	0	0
53	K2	Z	-.001	-.001	0	0
54	K1	Z	-.001	-.001	0	0
55	K6	Z	-.001	-.001	0	0
56	K5	Z	-.001	-.001	0	0
57	MP31	Z	-.0003	-.0003	0	0
58	MP32	Z	-.0003	-.0003	0	0
59	MP33	Z	-.0003	-.0003	0	0
60	MP34	Z	-.0003	-.0003	0	0
61	MP21	Z	-.0003	-.0003	0	0
62	MP22	Z	-.0003	-.0003	0	0
63	MP23	Z	-.0003	-.0003	0	0
64	MP24	Z	-.0003	-.0003	0	0
65	MP41	Z	-.0003	-.0003	0	0
66	HB1	Z	-.002	-.002	0	0
67	HB3	Z	-.002	-.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	S2	X	-.0005	-.0005	0	0
2	B3	X	-.001	-.001	0	0
3	B4	X	-.001	-.001	0	0
4	FB2	X	-.002	-.002	0	0
5	FC7	X	-.0005	-.0005	0	0
6	FC8	X	-.0005	-.0005	0	0
7	FB4	X	-.002	-.002	0	0
8	FB5	X	-.002	-.002	0	0
9	FC4	X	-.002	-.002	0	0
10	FC3	X	-.002	-.002	0	0
11	S1	X	-.0005	-.0005	0	0
12	B1	X	-.001	-.001	0	0
13	B2	X	-.001	-.001	0	0
14	FB1	X	-.002	-.002	0	0
15	FC9	X	-.0005	-.0005	0	0
16	FC10	X	-.0005	-.0005	0	0
17	FB6	X	-.002	-.002	0	0
18	FB7	X	-.002	-.002	0	0
19	FC2	X	-.002	-.002	0	0
20	FC1	X	-.002	-.002	0	0
21	S3	X	-.0005	-.0005	0	0
22	B5	X	-.001	-.001	0	0
23	B6	X	-.001	-.001	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
24	FB3	X	-.002	-.002	0	0
25	FC11	X	-.0005	-.0005	0	0
26	FC12	X	-.0005	-.0005	0	0
27	FB8	X	-.002	-.002	0	0
28	FB9	X	-.002	-.002	0	0
29	FC6	X	-.002	-.002	0	0
30	FC5	X	-.002	-.002	0	0
31	F1	X	-.0005	-.0005	0	0
32	F3	X	-.0005	-.0005	0	0
33	F2	X	-.0005	-.0005	0	0
34	MP11	X	-.0003	-.0003	0	0
35	MP12	X	-.0003	-.0003	0	0
36	MP13	X	-.0003	-.0003	0	0
37	MP14	X	-.0003	-.0003	0	0
38	J2	X	-.0009	-.0009	0	0
39	J3	X	-.0009	-.0009	0	0
40	J6	X	-.0009	-.0009	0	0
41	J1	X	-.0009	-.0009	0	0
42	J4	X	-.0009	-.0009	0	0
43	J5	X	-.0009	-.0009	0	0
44	H1	X	-.0003	-.0003	0	0
45	H3	X	-.0003	-.0003	0	0
46	H2	X	-.0003	-.0003	0	0
47	HB2	X	-.002	-.002	0	0
48	KS2	X	-.001	-.001	0	0
49	KS1	X	-.001	-.001	0	0
50	KS3	X	-.001	-.001	0	0
51	K4	X	-.001	-.001	0	0
52	K3	X	-.001	-.001	0	0
53	K2	X	-.001	-.001	0	0
54	K1	X	-.001	-.001	0	0
55	K6	X	-.001	-.001	0	0
56	K5	X	-.001	-.001	0	0
57	MP31	X	-.0003	-.0003	0	0
58	MP32	X	-.0003	-.0003	0	0
59	MP33	X	-.0003	-.0003	0	0
60	MP34	X	-.0003	-.0003	0	0
61	MP21	X	-.0003	-.0003	0	0
62	MP22	X	-.0003	-.0003	0	0
63	MP23	X	-.0003	-.0003	0	0
64	MP24	X	-.0003	-.0003	0	0
65	MP41	X	-.0003	-.0003	0	0
66	HB1	X	-.002	-.002	0	0
67	HB3	X	-.002	-.002	0	0

Member Distributed Loads (BLC 8 : Ice Load)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	S2	Y	-.011	-.011	0	0
2	B3	Y	-.012	-.012	0	0
3	B4	Y	-.012	-.012	0	0
4	FB2	Y	-.016	-.016	0	0

Member Distributed Loads (BLC 8 : Ice Load) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
5	FC7	Y	-.008	-.008	0	0
6	FC8	Y	-.008	-.008	0	0
7	FB4	Y	-.016	-.016	0	0
8	FB5	Y	-.016	-.016	0	0
9	FC4	Y	-.016	-.016	0	0
10	FC3	Y	-.016	-.016	0	0
11	S1	Y	-.011	-.011	0	0
12	B1	Y	-.012	-.012	0	0
13	B2	Y	-.012	-.012	0	0
14	FB1	Y	-.016	-.016	0	0
15	FC9	Y	-.008	-.008	0	0
16	FC10	Y	-.008	-.008	0	0
17	FB6	Y	-.016	-.016	0	0
18	FB7	Y	-.016	-.016	0	0
19	FC2	Y	-.016	-.016	0	0
20	FC1	Y	-.016	-.016	0	0
21	S3	Y	-.011	-.011	0	0
22	B5	Y	-.012	-.012	0	0
23	B6	Y	-.012	-.012	0	0
24	FB3	Y	-.016	-.016	0	0
25	FC11	Y	-.008	-.008	0	0
26	FC12	Y	-.008	-.008	0	0
27	FB8	Y	-.016	-.016	0	0
28	FB9	Y	-.016	-.016	0	0
29	FC6	Y	-.016	-.016	0	0
30	FC5	Y	-.016	-.016	0	0
31	F1	Y	-.011	-.011	0	0
32	F3	Y	-.011	-.011	0	0
33	F2	Y	-.011	-.011	0	0
34	MP11	Y	-.009	-.009	0	0
35	MP12	Y	-.009	-.009	0	0
36	MP13	Y	-.009	-.009	0	0
37	MP14	Y	-.009	-.009	0	0
38	J2	Y	-.01	-.01	0	0
39	J3	Y	-.01	-.01	0	0
40	J6	Y	-.01	-.01	0	0
41	J1	Y	-.01	-.01	0	0
42	J4	Y	-.01	-.01	0	0
43	J5	Y	-.01	-.01	0	0
44	H1	Y	-.009	-.009	0	0
45	H3	Y	-.009	-.009	0	0
46	H2	Y	-.009	-.009	0	0
47	HB2	Y	-.02	-.02	0	0
48	KS2	Y	-.016	-.016	0	0
49	KS1	Y	-.016	-.016	0	0
50	KS3	Y	-.016	-.016	0	0
51	K4	Y	-.013	-.013	0	0
52	K3	Y	-.013	-.013	0	0
53	K2	Y	-.013	-.013	0	0
54	K1	Y	-.013	-.013	0	0
55	K6	Y	-.013	-.013	0	0
56	K5	Y	-.013	-.013	0	0

Member Distributed Loads (BLC 8 : Ice Load) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
57	MP31	Y	-.009	-.009	0	0
58	MP32	Y	-.009	-.009	0	0
59	MP33	Y	-.009	-.009	0	0
60	MP34	Y	-.009	-.009	0	0
61	MP21	Y	-.009	-.009	0	0
62	MP22	Y	-.009	-.009	0	0
63	MP23	Y	-.009	-.009	0	0
64	MP24	Y	-.009	-.009	0	0
65	MP41	Y	-.009	-.009	0	0
66	HB1	Y	-.02	-.02	0	0
67	HB3	Y	-.02	-.02	0	0

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	S2	Z	-.0005	-.0005	0	0
2	B3	Z	-.001	-.001	0	0
3	B4	Z	-.001	-.001	0	0
4	FB2	Z	-.002	-.002	0	0
5	FC7	Z	-.0005	-.0005	0	0
6	FC8	Z	-.0005	-.0005	0	0
7	FB4	Z	-.002	-.002	0	0
8	FB5	Z	-.002	-.002	0	0
9	FC4	Z	-.002	-.002	0	0
10	FC3	Z	-.002	-.002	0	0
11	S1	Z	-.0005	-.0005	0	0
12	B1	Z	-.001	-.001	0	0
13	B2	Z	-.001	-.001	0	0
14	FB1	Z	-.002	-.002	0	0
15	FC9	Z	-.0005	-.0005	0	0
16	FC10	Z	-.0005	-.0005	0	0
17	FB6	Z	-.002	-.002	0	0
18	FB7	Z	-.002	-.002	0	0
19	FC2	Z	-.002	-.002	0	0
20	FC1	Z	-.002	-.002	0	0
21	S3	Z	-.0005	-.0005	0	0
22	B5	Z	-.001	-.001	0	0
23	B6	Z	-.001	-.001	0	0
24	FB3	Z	-.002	-.002	0	0
25	FC11	Z	-.0005	-.0005	0	0
26	FC12	Z	-.0005	-.0005	0	0
27	FB8	Z	-.002	-.002	0	0
28	FB9	Z	-.002	-.002	0	0
29	FC6	Z	-.002	-.002	0	0
30	FC5	Z	-.002	-.002	0	0
31	F1	Z	-.0005	-.0005	0	0
32	F3	Z	-.0005	-.0005	0	0
33	F2	Z	-.0005	-.0005	0	0
34	MP11	Z	-.0003	-.0003	0	0
35	MP12	Z	-.0003	-.0003	0	0
36	MP13	Z	-.0003	-.0003	0	0
37	MP14	Z	-.0003	-.0003	0	0

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,%]
38	J2	Z	-.0009	-.0009	0	0
39	J3	Z	-.0009	-.0009	0	0
40	J6	Z	-.0009	-.0009	0	0
41	J1	Z	-.0009	-.0009	0	0
42	J4	Z	-.0009	-.0009	0	0
43	J5	Z	-.0009	-.0009	0	0
44	H1	Z	-.0003	-.0003	0	0
45	H3	Z	-.0003	-.0003	0	0
46	H2	Z	-.0003	-.0003	0	0
47	HB2	Z	-.002	-.002	0	0
48	KS2	Z	-.001	-.001	0	0
49	KS1	Z	-.001	-.001	0	0
50	KS3	Z	-.001	-.001	0	0
51	K4	Z	-.001	-.001	0	0
52	K3	Z	-.001	-.001	0	0
53	K2	Z	-.001	-.001	0	0
54	K1	Z	-.001	-.001	0	0
55	K6	Z	-.001	-.001	0	0
56	K5	Z	-.001	-.001	0	0
57	MP31	Z	-.0003	-.0003	0	0
58	MP32	Z	-.0003	-.0003	0	0
59	MP33	Z	-.0003	-.0003	0	0
60	MP34	Z	-.0003	-.0003	0	0
61	MP21	Z	-.0003	-.0003	0	0
62	MP22	Z	-.0003	-.0003	0	0
63	MP23	Z	-.0003	-.0003	0	0
64	MP24	Z	-.0003	-.0003	0	0
65	MP41	Z	-.0003	-.0003	0	0
66	HB1	Z	-.002	-.002	0	0
67	HB3	Z	-.002	-.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	S2	X	-.0005	-.0005	0	0
2	B3	X	-.001	-.001	0	0
3	B4	X	-.001	-.001	0	0
4	FB2	X	-.002	-.002	0	0
5	FC7	X	-.0005	-.0005	0	0
6	FC8	X	-.0005	-.0005	0	0
7	FB4	X	-.002	-.002	0	0
8	FB5	X	-.002	-.002	0	0
9	FC4	X	-.002	-.002	0	0
10	FC3	X	-.002	-.002	0	0
11	S1	X	-.0005	-.0005	0	0
12	B1	X	-.001	-.001	0	0
13	B2	X	-.001	-.001	0	0
14	FB1	X	-.002	-.002	0	0
15	FC9	X	-.0005	-.0005	0	0
16	FC10	X	-.0005	-.0005	0	0
17	FB6	X	-.002	-.002	0	0
18	FB7	X	-.002	-.002	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
19	FC2	X	-.002	-.002	0	0
20	FC1	X	-.002	-.002	0	0
21	S3	X	-.0005	-.0005	0	0
22	B5	X	-.001	-.001	0	0
23	B6	X	-.001	-.001	0	0
24	FB3	X	-.002	-.002	0	0
25	FC11	X	-.0005	-.0005	0	0
26	FC12	X	-.0005	-.0005	0	0
27	FB8	X	-.002	-.002	0	0
28	FB9	X	-.002	-.002	0	0
29	FC6	X	-.002	-.002	0	0
30	FC5	X	-.002	-.002	0	0
31	F1	X	-.0005	-.0005	0	0
32	F3	X	-.0005	-.0005	0	0
33	F2	X	-.0005	-.0005	0	0
34	MP11	X	-.0003	-.0003	0	0
35	MP12	X	-.0003	-.0003	0	0
36	MP13	X	-.0003	-.0003	0	0
37	MP14	X	-.0003	-.0003	0	0
38	J2	X	-.0009	-.0009	0	0
39	J3	X	-.0009	-.0009	0	0
40	J6	X	-.0009	-.0009	0	0
41	J1	X	-.0009	-.0009	0	0
42	J4	X	-.0009	-.0009	0	0
43	J5	X	-.0009	-.0009	0	0
44	H1	X	-.0003	-.0003	0	0
45	H3	X	-.0003	-.0003	0	0
46	H2	X	-.0003	-.0003	0	0
47	HB2	X	-.002	-.002	0	0
48	KS2	X	-.001	-.001	0	0
49	KS1	X	-.001	-.001	0	0
50	KS3	X	-.001	-.001	0	0
51	K4	X	-.001	-.001	0	0
52	K3	X	-.001	-.001	0	0
53	K2	X	-.001	-.001	0	0
54	K1	X	-.001	-.001	0	0
55	K6	X	-.001	-.001	0	0
56	K5	X	-.001	-.001	0	0
57	MP31	X	-.0003	-.0003	0	0
58	MP32	X	-.0003	-.0003	0	0
59	MP33	X	-.0003	-.0003	0	0
60	MP34	X	-.0003	-.0003	0	0
61	MP21	X	-.0003	-.0003	0	0
62	MP22	X	-.0003	-.0003	0	0
63	MP23	X	-.0003	-.0003	0	0
64	MP24	X	-.0003	-.0003	0	0
65	MP41	X	-.0003	-.0003	0	0
66	HB1	X	-.002	-.002	0	0
67	HB3	X	-.002	-.002	0	0

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

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]

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,%]
1	B1	Y	-.012	-.012	1.756	2.592
2	B2	Y	-.012	-.012	.167	1.002
3	J1	Y	-.009	-.005	0	2.295
4	J1	Y	-.005	-.001	2.295	4.59
5	J2	Y	-.001	-.005	0	2.295
6	J2	Y	-.005	-.009	2.295	4.59
7	S1	Y	-.012	-.012	1.13	2.951
8	B3	Y	-.012	-.012	1.756	2.592
9	B4	Y	-.012	-.012	.167	1.002
10	J3	Y	-.009	-.005	0	2.295
11	J3	Y	-.005	-.001	2.295	4.59
12	J4	Y	-.001	-.005	0	2.295
13	J4	Y	-.005	-.009	2.295	4.59
14	S2	Y	-.012	-.012	1.13	2.951
15	B5	Y	-.012	-.012	1.756	2.592
16	B6	Y	-.012	-.012	.167	1.002
17	J5	Y	-.009	-.005	0	2.295
18	J5	Y	-.005	-.001	2.295	4.59
19	J6	Y	-.001	-.005	0	2.295
20	J6	Y	-.005	-.009	2.295	4.59
21	S3	Y	-.012	-.012	1.13	2.951

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	B1	Y	-.01	-.01	1.756	2.592
2	B2	Y	-.01	-.01	.167	1.002
3	J1	Y	-.008	-.004	0	2.295
4	J1	Y	-.004	-.001	2.295	4.59
5	J2	Y	-.001	-.004	0	2.295
6	J2	Y	-.004	-.008	2.295	4.59
7	S1	Y	-.01	-.01	1.13	2.951
8	B3	Y	-.01	-.01	1.756	2.592
9	B4	Y	-.01	-.01	.167	1.002
10	J3	Y	-.008	-.004	0	2.295
11	J3	Y	-.004	-.001	2.295	4.59
12	J4	Y	-.001	-.004	0	2.295
13	J4	Y	-.004	-.008	2.295	4.59
14	S2	Y	-.01	-.01	1.13	2.951
15	B5	Y	-.01	-.01	1.756	2.592
16	B6	Y	-.01	-.01	.167	1.002
17	J5	Y	-.008	-.004	0	2.295
18	J5	Y	-.004	-.001	2.295	4.59
19	J6	Y	-.001	-.004	0	2.295
20	J6	Y	-.004	-.008	2.295	4.59
21	S3	Y	-.01	-.01	1.13	2.951

Member Area Loads (BLC 1 : Dead Load)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N25	N93	N94		Y	Two Way	-10
2	N2	N97	N92		Y	Two Way	-10

Member Area Loads (BLC 1 : Dead Load) (Continued)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
3	N48	N95	N96		Y	Two Way	-10

Member Area Loads (BLC 8 : Ice Load)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N25	N93	N94		Y	Two Way	-8
2	N2	N97	N92		Y	Two Way	-8
3	N48	N95	N96		Y	Two Way	-8

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Ch...	Loc[ft]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M...	Cb	Eqn
1	B1	C3.38x2.06x.1...	.789	2.592	20	.153	2.592	y	18	35.676	43.394	1.694	4.483	1.5..	H1-1b
2	B2	C3.38x2.06x.1...	.791	0	19	.154	0	y	18	35.676	43.394	1.703	4.483	1.5..	H1-1b
3	B3	C3.38x2.06x.1...	.791	2.592	16	.169	.459	z	8	35.676	43.394	1.694	4.483	1.5..	H1-1b
4	B4	C3.38x2.06x.1...	.768	0	15	.154	0	y	14	35.676	43.394	1.703	4.483	1.5..	H1-1b
5	B5	C3.38x2.06x.1...	.726	2.592	24	.143	2.592	y	22	35.676	43.394	1.694	4.483	1.5..	H1-1b
6	B6	C3.38x2.06x.1...	.729	0	20	.144	0	y	22	35.676	43.394	1.694	4.483	1.5..	H1-1b
7	F1	PIPE_3.0	.180	7.422	20	.114	4.297		8	28.251	65.205	5.749	5.749	2.6..	H1-1b
8	F2	PIPE_3.0	.182	7.552	15	.113	4.297		3	28.251	65.205	5.749	5.749	2.8..	H1-1b
9	F3	PIPE_3.0	.189	7.422	24	.083	7.422		2	28.251	65.205	5.749	5.749	2.6..	H1-1b
10	FB1	PL3/8"x6"	.416	.542	7	.403	.542	y	19	34.12	72.9	.57	9.113	1.3..	H1-1b
11	FB2	PL3/8"x6"	.437	.542	2	.413	.542	y	14	34.12	72.9	.57	9.113	1.2..	H1-1b
12	FB3	PL3/8"x6"	.346	.542	9	.368	.542	y	21	34.12	72.9	.57	9.113	1.3..	H1-1b
13	FB4	PL3/8"x6"	.247	.292	2	.251	.292	y	85	68.997	72.9	.57	9.113	2.5..	H1-1b
14	FB5	PL3/8"x6"	.300	.125	9	.286	0	y	15	68.997	72.9	.57	9.113	3.7..	H1-1b
15	FB6	PL3/8"x6"	.167	.167	11	.252	.292	y	15	68.997	72.9	.57	9.113	2.4..	H1-1b
16	FB7	PL3/8"x6"	.299	.125	13	.293	0	y	8	68.997	72.9	.57	9.113	2.7..	H1-1b
17	FB8	PL3/8"x6"	.211	.292	9	.260	.292	y	80	68.997	72.9	.57	9.113	2.6..	H1-1b
18	FB9	PL3/8"x6"	.197	.125	5	.242	0	y	48	68.997	72.9	.57	9.113	2.3..	H1-1b
19	FC1	PL3/8"x6"	.365	.124	2	.466	0	y	19	70.882	72.9	.57	9.113	1.9..	H1-1b
20	FC2	PL3/8"x6"	.207	.124	10	.476	0	y	18	70.882	72.9	.57	9.113	2.35	H1-1b
21	FC3	PL3/8"x6"	.304	.124	9	.479	0	y	14	70.882	72.9	.57	9.113	1.7..	H1-1b
22	FC4	PL3/8"x6"	.221	.124	7	.470	0	y	14	70.882	72.9	.57	9.113	1.6..	H1-1b
23	FC5	PL3/8"x6"	.221	.124	6	.430	0	y	22	70.882	72.9	.57	9.113	2.5..	H1-1b
24	FC6	PL3/8"x6"	.231	.124	2	.437	0	y	22	70.882	72.9	.57	9.113	1.9..	H1-1b
25	FC7	PL3/8"x2"	.509	.333	2	.148	.257	y	19	22.934	24.624	.194	1.026	3.45	H1-1b
26	FC8	PL3/8"x2"	.729	.333	2	.206	.257	z	8	22.934	24.624	.194	1.026	3.4..	H1-1b
27	FC9	PL3/8"x2"	.494	.333	6	.157	.257	y	23	22.934	24.624	.194	1.026	3.4..	H1-1b
28	FC10	PL3/8"x2"	.527	.333	7	.167	.257	z	13	22.934	24.624	.194	1.026	3.4..	H1-1b
29	FC11	PL3/8"x2"	.476	.333	9	.149	.257	y	14	22.934	24.624	.194	1.026	3.4..	H1-1b
30	FC12	PL3/8"x2"	.422	.333	10	.140	.257	y	16	22.934	24.624	.194	1.026	3.4..	H1-1b
31	H1	PIPE_2.0	.553	11.458	3	.424	11.849		2	6.295	32.13	1.872	1.872	2.6..	H3-6
32	H2	PIPE_2.0	.686	1.042	3	.461	1.042		3	6.295	32.13	1.872	1.872	2.1..	H3-6
33	H3	PIPE_2.0	.563	11.458	2	.379	11.849		7	6.295	32.13	1.872	1.872	2.1..	H3-6
34	HB1	L6.63x4.46x.25	.345	0	2	.102	1.695	y	9	52.646	87.804	2.444	7.106	2.2..	H2-1
35	HB2	L6.63x4.46x.25	.194	1.695	6	.061	1.695	y	5	52.646	87.804	2.444	7.106	1.8..	H2-1
36	HB3	L6.63x4.46x.25	.318	1.695	2	.094	1.695	z	2	52.646	87.804	2.444	7.106	2.1..	H2-1
37	J1	L2x2x3	.492	0	7	.027	4.59	y	15	8.136	23.393	.558	1.196	2.16	H2-1
38	J2	L2x2x3	.448	0	18	.028	0	y	20	8.136	23.393	.558	1.185	2.04	H2-1
39	J3	L2x2x3	.543	0	3	.026	4.59	y	24	8.136	23.393	.558	1.195	2.1..	H2-1
40	J4	L2x2x3	.474	0	14	.027	0	y	15	8.136	23.393	.558	1.185	2.0..	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Ch...	Loc[ft]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M...	Cb	Eqn
41	J5	L2x2x3	.414	4.59	22	.026	4.59	y	20	8.136	23.393	.558	1.189	2.0..	H2-1
42	J6	L2x2x3	.420	0	21	.025	0	y	24	8.136	23.393	.558	1.189	2.0..	H2-1
43	K1	L3X3X4	.122	1.388	8	.004	2.775	y	50	39.337	46.656	1.688	3.702	1.1..	H2-1
44	K2	L3X3X4	.115	1.359	16	.004	0	z	50	39.337	46.656	1.688	3.702	1.1..	H2-1
45	K3	L3X3X4	.122	1.359	16	.004	2.775	y	25	39.337	46.656	1.688	3.702	1.1..	H2-1
46	K4	L3X3X4	.107	1.359	25	.004	2.775	z	25	39.337	46.656	1.688	3.702	1.1..	H2-1
47	K5	L3X3X4	.102	1.359	24	.004	2.775	y	9	39.337	46.656	1.688	3.702	1.1..	H2-1
48	K6	L3X3X4	.108	1.359	20	.004	2.775	z	9	39.337	46.656	1.688	3.702	1.1..	H2-1
49	KS1	HSS4X4X4	.126	0	20	.134	0	y	20	139.3...	139.5...	16.181	16.181	2.3..	H1-1b
50	KS2	HSS4X4X4	.134	0	15	.143	0	y	15	139.3...	139.5...	16.181	16.181	2.3..	H1-1b
51	KS3	HSS4X4X4	.119	0	20	.127	0	y	21	139.3...	139.5...	16.181	16.181	2.3..	H1-1b
52	MP11	PIPE_2.0	.395	5.25	6	.218	2.333		8	14.916	32.13	1.872	1.872	3.1..	H1-1b
53	MP12	PIPE_2.0	.420	4.5	13	.083	4.5		12	14.916	32.13	1.872	1.872	1.8..	H1-1b
54	MP13	PIPE_2.0	.363	4.167	10	.128	4.167		8	14.916	32.13	1.872	1.872	1.7..	H1-1b
55	MP14	PIPE_2.0	.384	4.25	8	.219	4.167		9	14.916	32.13	1.872	1.872	2.0..	H1-1b
56	MP21	PIPE_2.0	.631	5.25	2	.216	5.25		3	14.916	32.13	1.872	1.872	3.28	H1-1b
57	MP22	PIPE_2.0	.712	4.5	8	.159	4.5		8	14.916	32.13	1.872	1.872	2.3..	H1-1b
58	MP23	PIPE_2.0	.544	4.167	7	.150	4.167		8	14.916	32.13	1.872	1.872	1.8..	H1-1b
59	MP24	PIPE_2.0	.706	4.25	2	.149	4.167		6	14.916	32.13	1.872	1.872	1.7..	H1-1b
60	MP31	PIPE_2.0	.465	5.25	9	.137	5.25		11	14.916	32.13	1.872	1.872	3.0..	H1-1b
61	MP32	PIPE_2.0	.542	4.5	8	.111	4.5		9	14.916	32.13	1.872	1.872	2.1..	H1-1b
62	MP33	PIPE_2.0	.520	4.167	2	.100	4.167		13	14.916	32.13	1.872	1.872	1.8..	H1-1b
63	MP34	PIPE_2.0	.558	4.167	2	.219	4.167		2	14.916	32.13	1.872	1.872	1.9..	H1-1b
64	MP41	PIPE_2.0	.118	2.958	5	.013	2.958		5	26.522	32.13	1.872	1.872	2.6..	H1-1b
65	S1	PIPE_3.0	.525	3.173	18	.132	3.232		18	68.505	85.698	7.555	7.555	1.7..	H1-1b
66	S2	PIPE_3.0	.560	3.173	14	.136	3.232		25	68.505	85.698	7.555	7.555	1.7..	H1-1b
67	S3	PIPE_3.0	.498	3.173	22	.122	3.232		21	68.505	85.698	7.555	7.555	1.7..	H1-1b

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	R2	max	1.573	5	.465	8	8.315	2	.225	8	1.74	11	.261	72
2		min	-1.573	11	-.807	2	-4.649	8	-.515	2	-1.725	5	-.336	6
3	R1	max	5.239	18	.178	12	2.934	13	.356	4	2.771	2	.509	43
4		min	-2.228	12	-.72	18	-4.662	7	-.219	70	-2.738	8	-.103	13
5	R3	max	2.345	4	.196	3	2.027	3	.271	49	1.716	7	.248	3
6		min	-5.357	10	-.71	21	-3.772	9	-.081	7	-1.71	13	-.561	9
7	K2	max	.046	5	5.218	14	.097	8	1.737	14	.393	12	.334	12
8		min	-.046	11	-.105	8	-5.831	14	-.036	8	-.434	6	-.37	6
9	K1	max	-.385	12	4.929	18	2.752	18	.347	2	.672	3	-.085	11
10		min	-4.765	18	.371	12	.222	12	-.894	8	-.684	9	-1.439	17
11	K3	max	4.507	21	4.661	22	2.599	22	.188	2	.432	7	1.334	23
12		min	.369	3	.373	3	.228	4	-.841	20	-.425	13	.147	4
13	CENTER	max	0	109	0	109	0	109	0	109	0	109	0	109
14		min	0	1	0	1	0	1	0	1	0	1	0	1
15	Totals:	max	6.559	5	12.136	16	10.003	2						
16		min	-6.559	11	4.334	10	-10.003	8						

Exhibit F

Power Density/RF Emissions Report

RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of AT&T Mobility, LLC

Crown Castle Site Name: WINDSOR PINE LANE
Crown Castle Site BU: 841793
Order ID: 509312
AT&T Mobility, LLC Site FA #: 10042353
AT&T Mobility, LLC USID: 59433
50 Pine Lane
Windsor, CT
6/17/2020

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 17 June 2020

Prepared By:

Site Safe, LLC

8618 Westwood Center Drive
Suite 315

Vienna, VA 22182

Voice: 703-276-1100
Fax: 703-276-1169

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
Windsor, 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 "WINDSOR PINE LANE" ("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 in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure, and the antennas used are highly directional and oriented at angles at or just below the horizontal, and that the energy present at ground level is typically so low as to be considered insignificant and has not been included in this analysis (a list of microwave antennas is included); 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 4.071% 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 5.473% 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
WINDSOR PINE LANE
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.223 %
AT&T Mobility, LLC	0.381 %
AT&T Mobility, LLC	0.107 %
AT&T Mobility, LLC (Proposed)	0.866 %
AT&T Mobility, LLC (Proposed)	0.461 %
AT&T Mobility, LLC (Proposed)	0.493 %
AT&T Mobility, LLC (Proposed)	0.840 %
AT&T Mobility, LLC (Proposed)	0.451 %
AT&T Mobility, LLC (Proposed)	0.249 %
Clearwire	0.266 %
Clearwire	0.266 %
Clearwire	0.310 %
Clearwire	0.206 %
Eyetower LLC	0.045 %
Town of Windsor	0.175 %
Town of Windsor	0.134 %
Composite Site MPE:	5.473 %

AT&T Mobility, LLC
WINDSOR PINE LANE
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	2.23477	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.22348	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Quintel	QS66512-2	130	23	2858	1.083281	0.108328	2.166964	0.216696
CCI Antennas	TPA-65R-LCUUUU-H8	130	143	2729	0.772986	0.077299	1.678548	0.167855
Quintel	QS66512-2	130	263	2858	1.083281	0.108328	2.166964	0.216696

AT&T Mobility, LLC
WINDSOR PINE LANE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	3.80844	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.38084	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Quintel	QS66512-2	130	23	4170	1.931157	0.193116	3.163531	0.316353
CCI Antennas	TPA-65R-LCUUUU-H8	130	143	3892	2.330223	0.233022	3.485362	0.348536
Quintel	QS66512-2	130	263	4170	2.703590	0.270359	3.709589	0.370959

AT&T Mobility, LLC
WINDSOR PINE LANE
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	$\mu W/cm^2$
Maximum power density at ground level:	0.60506	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.10678	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Quintel	QS66512-2	130	23	499	0.372722	0.065774	0.486244	0.085808
CCI Antennas	TPA-65R-LCUUUU-H8	130	143	908	0.422602	0.074577	0.588744	0.103896
Quintel	QS66512-2	130	263	499	0.440211	0.077684	0.541116	0.095491

AT&T Mobility, LLC (Proposed)
WINDSOR PINE LANE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	8.65544	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.86554	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
CCI Antennas	DMP65R-BU6D	130	23	4075	6.374227	0.637423	7.763963	0.776396
CCI Antennas	DMP65R-BU8D	130	143	4170	5.943469	0.594347	7.760987	0.776099
CCI Antennas	DMP65R-BU6D	130	263	4075	7.145390	0.714539	8.588240	0.858824

AT&T Mobility, LLC (Proposed)
WINDSOR PINE LANE
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	$\mu W/cm^2$
Maximum power density at ground level:	2.61220	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.46098	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
CCI Antennas	DMP65R-BU6D	130	23	2239	1.329561	0.234628	2.118167	0.373794
CCI Antennas	DMP65R-BU8D	130	143	2885	1.951395	0.344364	2.574990	0.454410
CCI Antennas	DMP65R-BU6D	130	263	2239	1.329561	0.234628	2.118167	0.373794

AT&T Mobility, LLC (Proposed)
WINDSOR PINE LANE
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	$\mu W/cm^2$
Maximum power density at ground level:	2.42371	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.49329	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
CCI Antennas	DMP65R-BU6D	130	23	2400	1.611093	0.327902	1.646351	0.335078
CCI Antennas	DMP65R-BU8D	130	143	2692	1.951396	0.397163	2.029339	0.413027
CCI Antennas	DMP65R-BU6D	130	263	2400	1.611093	0.327902	1.646351	0.335078

AT&T Mobility, LLC (Proposed)
WINDSOR PINE LANE
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	8.39950	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.83995	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
CCI	OPA65R-BU6D	130	23	4562	5.258956	0.525896	7.578166	0.757817
CCI	OPA65R-BU8D	130	143	5118	8.078770	0.807877	8.359465	0.835946
CCI	OPA65R-BU6D	130	263	4562	5.258956	0.525896	7.578166	0.757817

AT&T Mobility, LLC (Proposed)
WINDSOR PINE LANE
Carrier Summary

Frequency:	763	MHz
Maximum Permissible Exposure (MPE):	508.67	$\mu W/cm^2$
Maximum power density at ground level:	2.29405	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.45099	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
CCI	OPA65R-BU6D	130	23	2450	1.646721	0.323733	1.692944	0.332820
CCI	OPA65R-BU8D	130	143	3229	2.128793	0.418505	2.216334	0.435714
CCI	OPA65R-BU6D	130	263	2450	1.646721	0.323733	1.692944	0.332820

AT&T Mobility, LLC (Proposed)
WINDSOR PINE LANE
Carrier Summary

Frequency:	722	MHz
Maximum Permissible Exposure (MPE):	481.33	$\mu W/cm^2$
Maximum power density at ground level:	1.19670	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.24862	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Quintel	QS66512-2	130	23	1120	0.846705	0.175908	1.176252	0.244374
CCI	TPA-65R-LCUUUU-H8	130	143	1816	1.117948	0.232261	1.117961	0.232263
Quintel	QS66512-2	130	263	1120	0.846705	0.175908	1.176252	0.244374

Clearwire
WINDSOR PINE LANE
Carrier Summary

Frequency:	1990	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	2.66140	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.26614	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Commscope	NNVV-65B-R4	108	0	2781	1.748578	0.174858	2.640554	0.264055
Commscope	NNVV-65B-R4	108	120	2781	1.748578	0.174858	2.640554	0.264055
Commscope	NNVV-65B-R4	108	240	2781	1.748578	0.174858	2.640554	0.264055

Clearwire
WINDSOR PINE LANE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	2.66140	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.26614	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Commscope	NNVV-65B-R4	108	0	2781	1.748578	0.174858	2.640554	0.264055
Commscope	NNVV-65B-R4	108	120	2781	1.748578	0.174858	2.640554	0.264055
Commscope	NNVV-65B-R4	108	240	2781	1.748578	0.174858	2.640554	0.264055

Clearwire
WINDSOR PINE LANE
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	$\mu W/cm^2$
Maximum power density at ground level:	1.78296	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.31026	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Commscope	NNVV-65B-R4	108	0	1901	1.592263	0.277076	1.627975	0.283290
Commscope	NNVV-65B-R4	108	120	1901	1.592263	0.277076	1.627975	0.283290
Commscope	NNVV-65B-R4	108	240	1901	1.592263	0.277076	1.627975	0.283290

Clearwire
WINDSOR PINE LANE
Carrier Summary

Frequency:	2500	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	2.06210	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.20621	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
ARGUS	LLPX310R	108	0	1542	1.051386	0.105139	1.943397	0.194340
ARGUS	LLPX310R	108	120	1542	1.051386	0.105139	1.943397	0.194340
ARGUS	LLPX310R	108	240	1542	1.051386	0.105139	1.943397	0.194340

Eyetower LLC
WINDSOR PINE LANE
Carrier Summary

Frequency:	470	MHz
Maximum Permissible Exposure (MPE):	313.33	$\mu W/cm^2$
Maximum power density at ground level:	0.14152	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.04516	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Wade	WH14-69/S	85	222	4	0.033185	0.010591	0.033732	0.010766
Wade	WL14-69/S	83	240	4	0.035017	0.011176	0.035476	0.011322
Wade	J105-HI	78	222	4	0.033500	0.010692	0.033783	0.010782
Wade	WL14-69/S	85	260	4	0.033185	0.010591	0.033732	0.010766
Wade	WL14-69/S	83	270	4	0.035017	0.011176	0.035476	0.011322

Town of Windsor
WINDSOR PINE LANE
Carrier Summary

Frequency:	150	MHz
Maximum Permissible Exposure (MPE):	200	$\mu W/cm^2$
Maximum power density at ground level:	0.35041	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.17521	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
ANDREW	DB225-C	153	60	100	0.338325	0.169163	0.350414	0.175207

Town of Windsor
WINDSOR PINE LANE
Carrier Summary

Frequency:	746	MHz
Maximum Permissible Exposure (MPE):	497.33	$\mu W/cm^2$
Maximum power density at ground level:	0.66683	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.13408	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
RFI	BPA7496-180-11	118	0	398	0.358638	0.072112	0.626749	0.126022
RFI	CC807-11	145	0	100	0.041875	0.008420	0.041875	0.008420
RFI	CC807-11	145	0	100	0.041875	0.008420	0.041875	0.008420

WINDSOR PINE LANE
Composite Microwave Antenna Summary

Carrier	Antenna Make/Model	Height (feet)
Clearwire	Andrew VHLP800-11	109
Clearwire	Andrew VHLP2-18	107
Town of Windsor	RFS SC3-W100ASTX	140