



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

June 24, 2020

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

RE: Notice of Exempt Modification for AT&T: 806353
128 Mather Street, Wilton, CT 06897
Latitude: 41° 14' 18.34" / Longitude: -73° 25' 26.44"

Dear Ms. Bachman:

AT&T currently maintains nine (9) total antennas at the 154-foot mount on the existing 180-foot Self Support Tower, located at 128 Mather Street in Wilton, CT. The tower is owned by Crown Castle and the property is owned by the Town of Wilton. AT&T now intends to remove and replace three (3) existing antennas with six (6) new antennas. The new antennas will be installed at the 154-foot mount. AT&T also proposes mount modifications pursuant to the enclosed Mount Analysis.

The facility was approved by the Connecticut Siting Council on May 3, 1988 via a Decision and Order.

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 Lynne Vanderslice, First Selectwoman, Town of Wilton, as the municipality and property owner, and Michael Wrinn, Planning Director for the Town of Wilton. 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.

The Foundation for a Wireless World.

CrownCastle.com

Melanie A. Bachman

Page 2

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

Attachments

cc:

Lynne Vanderslice, First Selectwoman
*(via email only to Jacqueline Rochester, Executive Assistant to the First Selectwoman
jacqueline.rochester@wiltonct.org)*
Town of Wilton
Town Hall – Selectwoman’s Office
238 Danbury Road
Wilton, CT 06897
203.563.0100

Michael Wrinn, Planning Director *(via email only to michael.wrinn@wiltonct.org)*
Town of Wilton
Town Hall – Planning Department
238 Danbury Road
Wilton, CT 06897
203.563.0185

Crown Castle, Tower Owner

From: [Zsamba, Anne Marie](#)
To: ["michael.wrinn@wiltonct.org"](mailto:michael.wrinn@wiltonct.org)
Subject: Notice of Exempt Modification - 128 Mather Street, Wilton - AT&T 806353
Date: Wednesday, June 24, 2020 2:13:00 PM
Attachments: [EM-AT&T-128 MATHER STREET WILTON-806353-CTV2142_notice.pdf](#)

Dear Mr. Wrinn:

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today June 24, 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: jacqueline.rochester@wiltonct.org
Subject: Notice of Exempt Modification - 128 Mather Street, Wilton - AT&T 806353
Date: Wednesday, June 24, 2020 2:13:00 PM
Attachments: [EM-AT&T-128 MATHER STREET WILTON-806353-CTV2142_notice.pdf](#)

Dear Ms. Rochester:

Thank you for taking a moment to speak with me today and for agreeing to accept this notice of exempt modification on behalf of the First Selectwoman.

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today June 24, 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

DOCKET NO. 94 - AN APPLICATION OF METRO : Connecticut
MOBILE CTS OF FAIRFIELD COUNTY, INC., FOR :
A CERTIFICATE OF ENVIRONMENTAL COMPATI- : Siting
BILITY AND PUBLIC NEED FOR CELLULAR : Council
TELEPHONE ANTENNAS AND ASSOCIATED EQUIP- :
MENT IN THE TOWN OF WILTON, CONNECTICUT. May 3, 1988

DECISION AND ORDER

Pursuant to the foregoing opinion, the Connecticut Siting Council finds that the effects associated with the construction and operation of a cellular monopole structure at the alternative Mather Street site, including effects on the natural environment, ecological balance, public health and safety, scenic, historic and recreational values, forests and parks, air and water purity and fish and wildlife, are not significant either alone or cumulatively with other effects, are not in conflict with the policies of the state concerning such effects, and are not sufficient reason to deny the application, and therefore, directs that a Certificate of Environmental Compatibility and Public Need, as provided by Section 16-50k of the General Statutes of Connecticut (CGS) be issued to Metro Mobile CTS of Fairfield County, Inc. (Metro Mobile) for the construction, operation, and maintenance of a cellular telephone tower site and associated equipment at the "Wilton-D/AA" site on Mather Street in Wilton, Connecticut.

The proposed "D-Wilton" site on Richdale Drive and alternative "D/A Wilton" site on Quail Ridge Road are hereby denied.

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

1. The tower shall be constructed as a monopole or lattice tower, as determined by the Council in approving the development and management plan, and be no taller than necessary to provide the proposed service, and in no event shall exceed a total height of 193 feet, including antennas and associated equipment.
2. The facility shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations.

3. Unless necessary to comply with condition number two, above, no lights shall be installed on this tower.
4. The Certificate Holder shall prepare a development and management (d&m) plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The d&m plan shall provide monopole and lattice tower foundation design specifications and plans for permanent evergreen screening around the outside perimeter of the eight-foot chain link fence which will surround the site.
5. The Certificate Holder shall provide the Council with the results of additional subsurface reconnaissance at the proposed site prior to the commencement of any construction at this site.
6. The Certificate Holder or its successor shall notify the Council if and when directional antennas or any equipment other than that listed in this application are added to this facility.
7. The Certificate Holder or its successor shall permit public or private entities to share space on the tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
8. If this facility does not provide, or permanently ceases to provide, cellular service following the completion of construction, this Decision and Order shall be void, and the tower and all associated equipment in this application shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.
9. The Certificate Holder shall comply with any future radio frequency (RF) standards promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted in this Decision and Order shall be brought into compliance with such standards.

10. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the issuance of this Decision and Order, or within three years of the completion of any appeal taken in this Decision and Order.

Pursuant to Section 16-50p, we hereby direct that a copy of the Decision and Order be served on each person listed below. A notice of issuance shall be published in the Norwalk Hour and the Wilton Bulletin.

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

The parties or intervenors to this proceeding are:

Metro Mobile CTS of Fairfield County, Inc. (Party)
50 Rockland Road
South Norwalk, CT 06854
Attn: Michael Riley

Howard L. Slater, Esq. (Its Attorney)
Jennifer Young Gaudet, Esq.
Byrne, Slater, Sandler,
Shulman & Rouse, P.C.
330 Main Street
Hartford, CT 06103

Fleischman and Walsh, P.C. (Representative)
1725 N. Street, N.W.
Washington, D.C. 20036
Attn: Richard Rubin, Esq.

PEACE, Inc. (Party)

Ann Caggiano (Representative)
President
PEACE, Inc.
33 Honey Hill Trail
Wilton, CT 06897

Docket 94
Decision and Order
Page Four

Town of Wilton	(Party)
Edward C. Desmond First Selectman Town of Wilton Town Hall 238 Danbury Road Wilton, CT 06897	(Representative)
Joseph C. Lee, Esq. Alice A. Bruno, Esq. Tyler Cooper & Alcorn 205 Church Street P.O. Box 1936 New Haven, CT 06509	(Its Attorney)
Margaret Doheny 21 Richdale Drive Wilton, CT 06897	(Party)
SNET Cellular, Inc.	(Intervenor)
Donald R. Chapman, Vice President Operations SNET Cellular, Inc. 555 Long Wharf Drive New Haven, CT 06511	(Representative)
Peter J. Tyrrell Senior Attorney SNET Cellular, Inc. 227 Church Street Room 1021 New Haven, CT 06506	(Its Attorney)
Ogden Bigelow 25 Hidden Lake Road Wilton, CT 06897	(Intervenor)

Docket 94
Decision and Order
Page Five

John Jordon
32 Mayapple Road
Wilton, CT 06897

(Party)

Veronica Tella
41 Honey Hill Trail
Wilton, CT 06897

(Party)

Betsy Mitchell
125 Catalpa Road
Wilton, CT 06897
(SERVICE WAIVED)

(Party)

1390E

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in Docket 94 or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 3rd day of May, 1988.


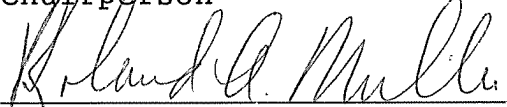
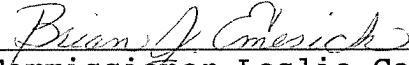
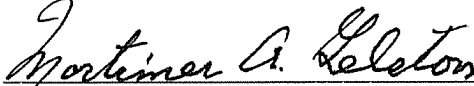
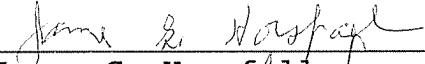
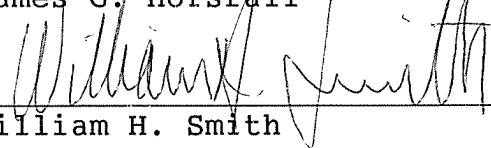
<u>Council Members</u>	<u>Vote Cast</u>
 _____ Gloria Dibble Pond Chairperson	Yes
 _____ Commissioner Peter Boucher Designee: Roland Miller	Yes
 _____ Commissioner Leslie Carothers Designee: Brian Emerick	Yes
 _____ Mortimer A. Gelston	Yes
 _____ James G. Horsfall	Yes
 _____ William H. Smith	Yes
_____ Colin C. Tait	Absent

Exhibit B

Property Card



Town of Wilton, CT

Property Listing Report

Map Block Lot

23-23

Account

006497

Property Information

Property Location	MATHER ST
Owner	WILTON TOWN OF
Co-Owner	
Mailing Address	238 DANBURY RD WILTON CT 06897
Land Use	21V Ex Com MDL-00
Land Class	E
Zoning Code	R-2
Census Tract	
Sub Lot	
Neighborhood	4000
Acreage	74.12
Utilities	
Lot Setting/Desc	Rolling
Survey Map	
Foundation	3

Photo



Sketch



Primary Construction Details

Year Built	0
Stories	
Building Style	
Building Use	
Building Condition	
Floors	Dirt/None
Total Rooms	

Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Gable/Hip
Roof Cover	Enam Mtl Shing

Exterior Walls	Pre-finsh Metl
Interior Walls	Drywall
Heating Type	None
Heating Fuel	None
AC Type	None
Gross Bldg Area	1200
Total Living Area	1200



Town of Wilton, CT

Property Listing Report

Map Block Lot 23-23

Account 006497

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	50000	35000
Extras	0	0
Outbuildings	0	0
Land	10254200	7177940
Total	10304200	7212940

Outbuilding and Extra Items

Type	Description

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1200	1200
Total Area		0

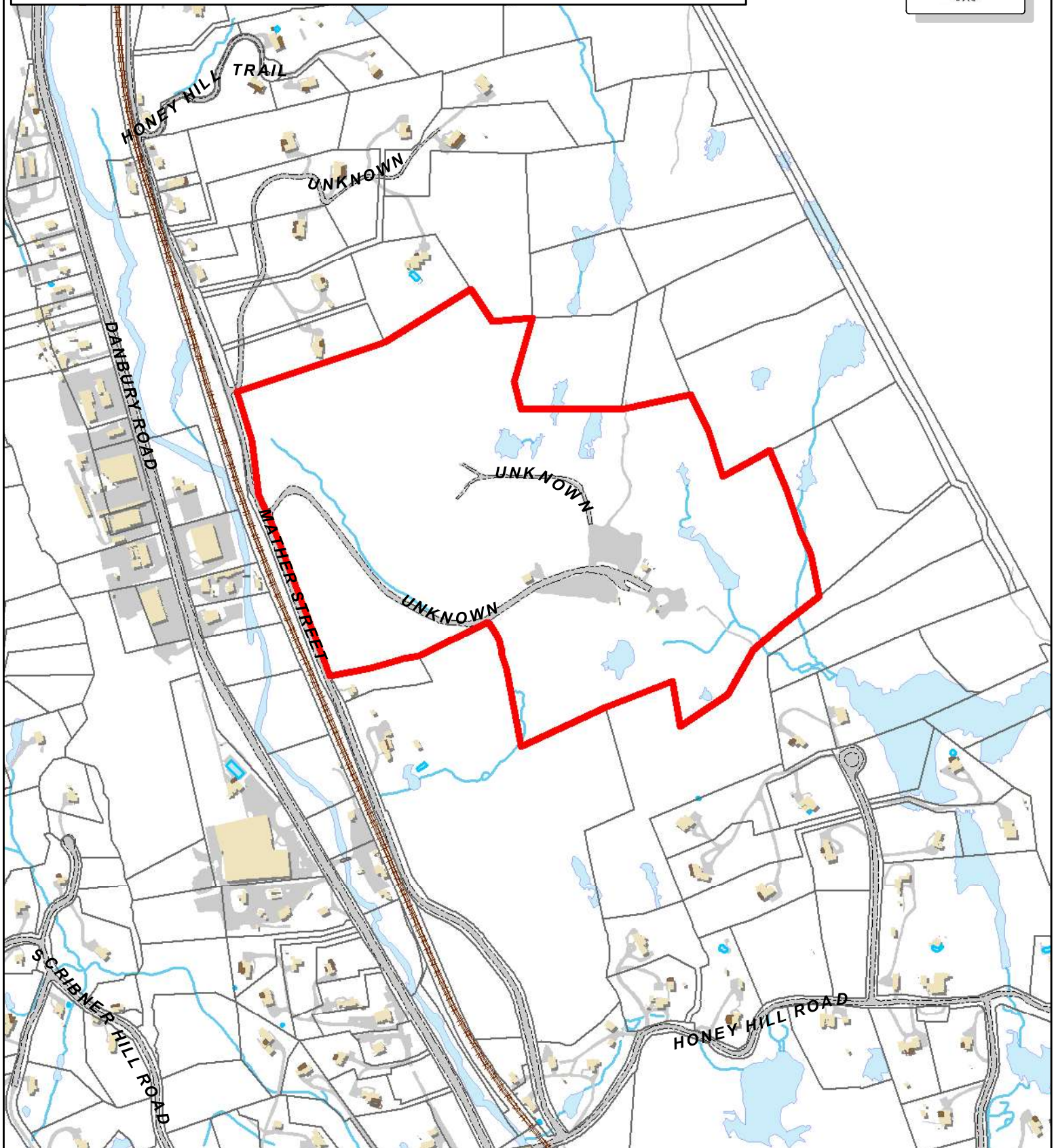
Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
WILTON TOWN OF	1151/0195	2/2/1999	0
	0112/0179	5/1/1965	0

Town of Wilton, Connecticut - Assessment Parcel Map

MBL: 23-23

Address: MATHER ST



Approximate Scale:

1 inch = 600 feet

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Wilton and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Grand List Date: Oct 2017

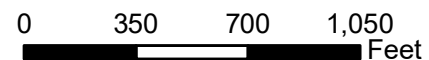


Exhibit C

Construction Drawings



AT&T

AT&T SITE NUMBER: CTV2142
AT&T SITE NAME: HONEY HILL
AT&T FA CODE: 10035031
AT&T PACE NUMBER: MRCTB047214, MRCTB047279,
 MRCTB047191
SITE TYPE: SELF-SUPPORT TOWER

BUSINESS UNIT #: 806353
SITE ADDRESS: 128 MATHER STREET
 WILTON, CT 06897
COUNTY: FAIRFIELD
TOWER HEIGHT: 180'-0"
PROJECT: AT&T LTE 4C/4TX4RX/5G NR

SITE INFORMATION

CROWN CASTLE USA INC.
 BRG 124 943066
 128 MATHER STREET
 WILTON, CT 06897
 FAIRFIELD
 EXISTING
 41.236079
 -73.424100
 NAD83
 OCCUPANCY CLASSIFICATION: U
 TYPE OF CONSTRUCTION: UB
 A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
 TOWER OWNER: CROWN CASTLE DRIVE
 CANONSHURG, PA 15317
 CARRIER/APPLICANT: AT&T MOBILITY
 ONE AT&T WAY
 BEDMINSTER, NJ 07921
 APPLICATION ID: 517058

DRAWING INDEX

SHEET #	TITLE	DESCRIPTION
T-1	GENERAL NOTES	
T-2	SITE PLAN	
G-1	EQUIPMENT PLAN	
G-2	TOWER ELEVATIONS	
G-3	ANTENNA ORIENTATION	
G-4	ANTENNA SCHEDULE	
G-5	ANTENNA AND RRH SPECS.	
G-6	ANTENNA AND RRH DETAIL	
G-7	BULBING DIAGRAM	
G-8	COLOR CODE STANDARD	
G-9	GROUNDING DETAILS	
G-10	GROUNDING DETAILS	

ALL DRAWINGS CONTAINED HEREIN ARE FOR MATTER FOR 1/14/17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS. THE CONTRACTOR SHALL PROCEED WITH THE WORKS OR BE RESPONSIBLE FOR SAME.

PROJECT DESCRIPTION

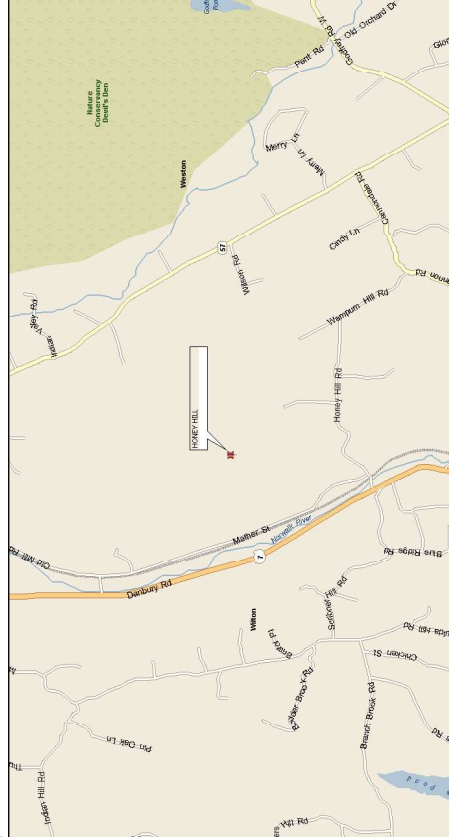
THE PURPOSE OF THIS PROJECT IS TO PROPOSE AN ANTENNA MODIFICATION ON AN EXISTING WIRELESS SITE.

- TOWER SCOPE OF WORK**
- REMOVE (3) INVERTED VEE P65-16X14-RR ANTENNAS
 - REMOVE (3) ERICSSON RRU-S1 B12 RRHS
 - REMOVE (3) ERICSSON RRU-S1 B12 RRHS
 - REMOVE (3) ERICSSON 449 H5/B2 RRHS
 - RELOCATE EXISTING MASTS TO MEET AT&T MINIMUM SPACING REQUIREMENTS
 - INSTALL (3) CCL0P463R-REG0DA ANTENNAS
 - INSTALL (3) CCL0P034R-REG0DA ANTENNAS
 - INSTALL (3) ERICSSON 449 H5/B2 RRHS
 - INSTALL (1) RAYCAP DC-48-60-18-4C-EV SURGE SUPPRESSOR
 - INSTALL (2) DC TRUNKS
- GROUNDING SCOPE OF WORK**
- REMOVE (3) POWER PLANT
 - INSTALL (1) 6630 + 0 IDL4
 - INSTALL (1) NETSURE 7100 POWER PLANT
- DESIGN PACKAGE BASED ON THE RFP'S PRELIMINARY DATE: 3/26/20

PROJECT TEAM

AKE FIRM
 B-T GROUP
 1717 SOUTH BOULDER, SUITE 300
 WILSONVILLE, OR 97149
 MIKE GARRETT
 (919) 217-8574
 CROWN CASTLE
 USA INC. DISTRICT
 3200 HORIZON DRIVE, SUITE 150
 KING OF PRUSSIA, PA 19406

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 THE FOLLOWING CODES:

CODE TYPE
 2018 CT STATE BUILDING CODE (2015 IRC)
 2018 CT STATE BUILDING CODE (2015 IMC)
 2017 NEC
 MECHANICAL
 ELECTRICAL

REFERENCE DOCUMENTS
 STRUCTURAL ANALYSIS B-T GROUP
 APRIL 30, 2020
 MOMENT ANALYSIS INTENIGHT
 APRIL 16, 2020

NOTE:
 BEFORE ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NCC AT (800) 788-3011 & CROWN CONSTRUCTION MANAGER.

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



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



1717 S. BOULDER
WILSONVILLE, OR 97149
PH: (919) 217-8574
www.btg.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124 943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:

REV	DATE	DESCRIPTION	DESIGNER
0	5/6/20	REV CONSTRUCTION	RM
1	6/1/20	REV CONSTRUCTION	RM
2	6/16/20	REV CONSTRUCTION	WV



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

THIS IS A PROFESSIONAL ENGINEERING SEAL. IT IS VALID ONLY IN THE STATE OF CONNECTICUT. IT IS NOT VALID IN ANY OTHER STATE OR JURISDICTION. IT IS NOT VALID FOR ANY OTHER PROFESSION.

SHEET NUMBER: T-1

REVISION: 2



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



1777 S. BOULDER
TULSA, OK 74119
PH: (918) 587-4830
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124-943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:

REV	DATE	BY	DESCRIPTION	DESIGN	CONSTRUCTION	DATE	BY	DESCRIPTION
0	3/6/20	DEB	CONSTRUCTION	RM				
1	6/16/20	GEB	CONSTRUCTION	RM				
2	6/16/20	JPT	CONSTRUCTION	WPT				

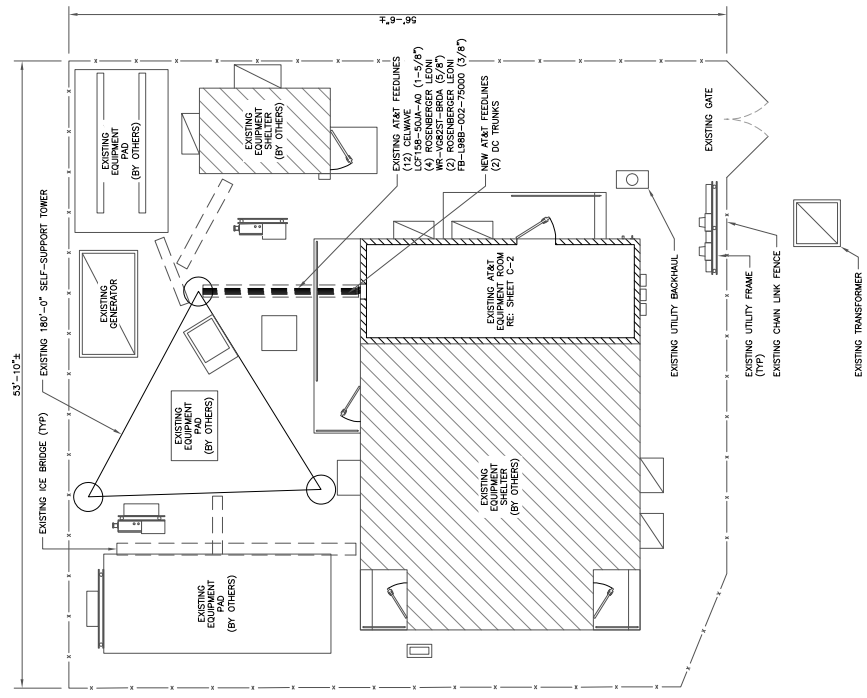


6/16/20

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

THIS SEAL IS VALID FOR THE STATE OF CONNECTICUT ONLY. IT IS NOT VALID FOR ANY OTHER STATE. UNLESS THEY ARE ACTING UNDER THE DIRECTION OR A LICENSED PROFESSIONAL ENGINEER, ALL OTHERS ARE PROHIBITED FROM USING THIS SEAL.

SHEET NUMBER: **C-1** REVISION: **2**



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



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



177 S. BOKLEER
TULSA, OK 74119
PH: (918) 587-4830
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU # 806353
BRG 124 943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:

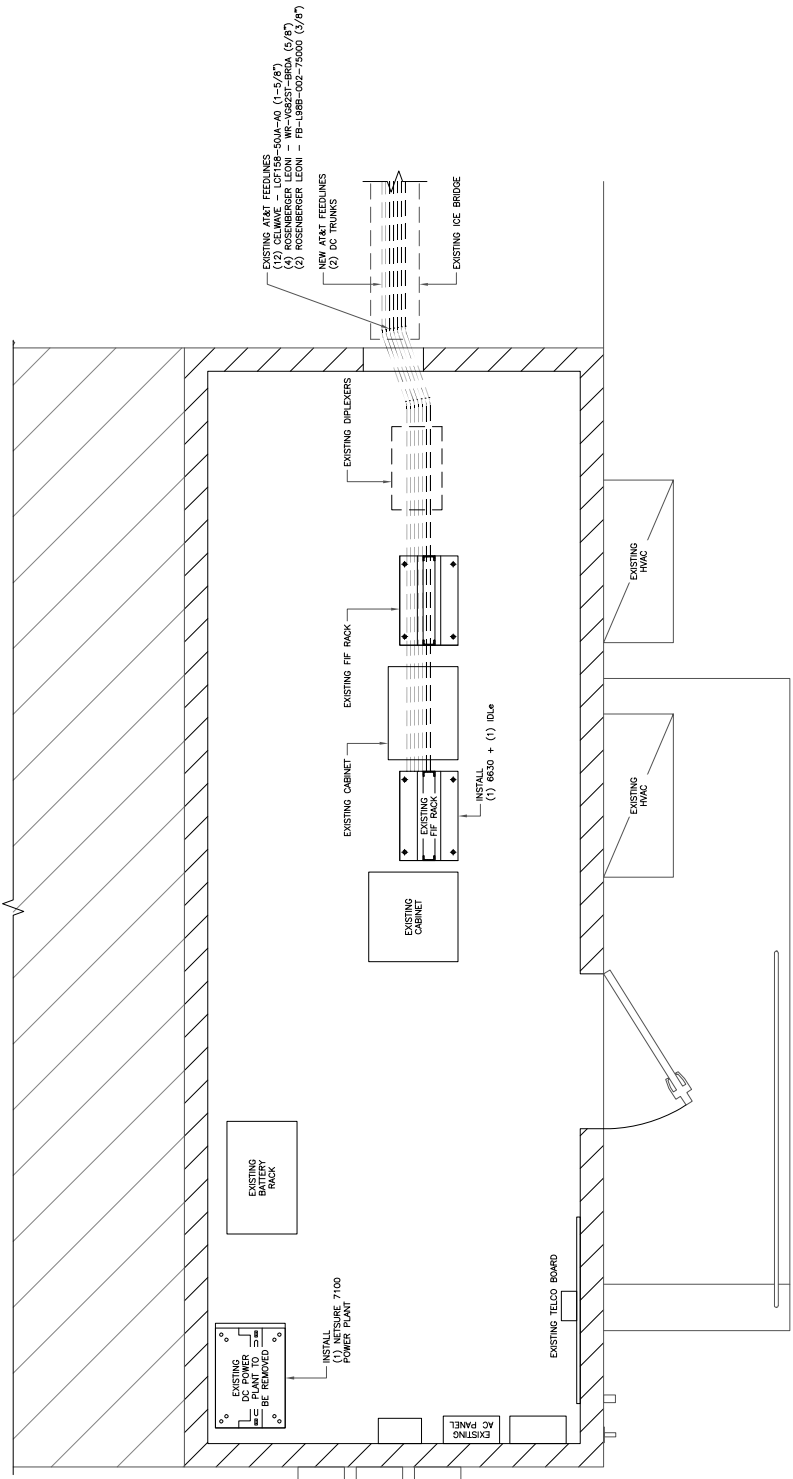
REV	DATE	BY	DESCRIPTION	DESIGN	DATE	BY
0	5/16/20	DEB	CONSTRUCTION	RAM		
1	6/16/20	GEB	CONSTRUCTION	RAM		
2	6/16/20	JPT	CONSTRUCTION	WVP		



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

THIS DRAWING IS THE PROPERTY OF B&T ENGINEERING, INC.
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OR AUTHORITY OF A LICENSED PROFESSIONAL ENGINEER,
THEY WILL BE HELD RESPONSIBLE.

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



1 EXISTING EQUIPMENT PLAN
SCALE: 3/8"=1'-0" (FULL SIZE)
3/8"=1'-0" (1:12)



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



1777 S. BOKULBER
TULSA, OK 74119
PH: (918) 397-8530
www.bttgrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124-943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

REV	DATE	ISSUES	DESCRIPTION	DESIGNER
0	3/6/20	IEB	CONSTRUCTION	RAM
1	6/1/20	GDH	CONSTRUCTION	RAM
2	6/16/20	JPT	CONSTRUCTION	WVJ

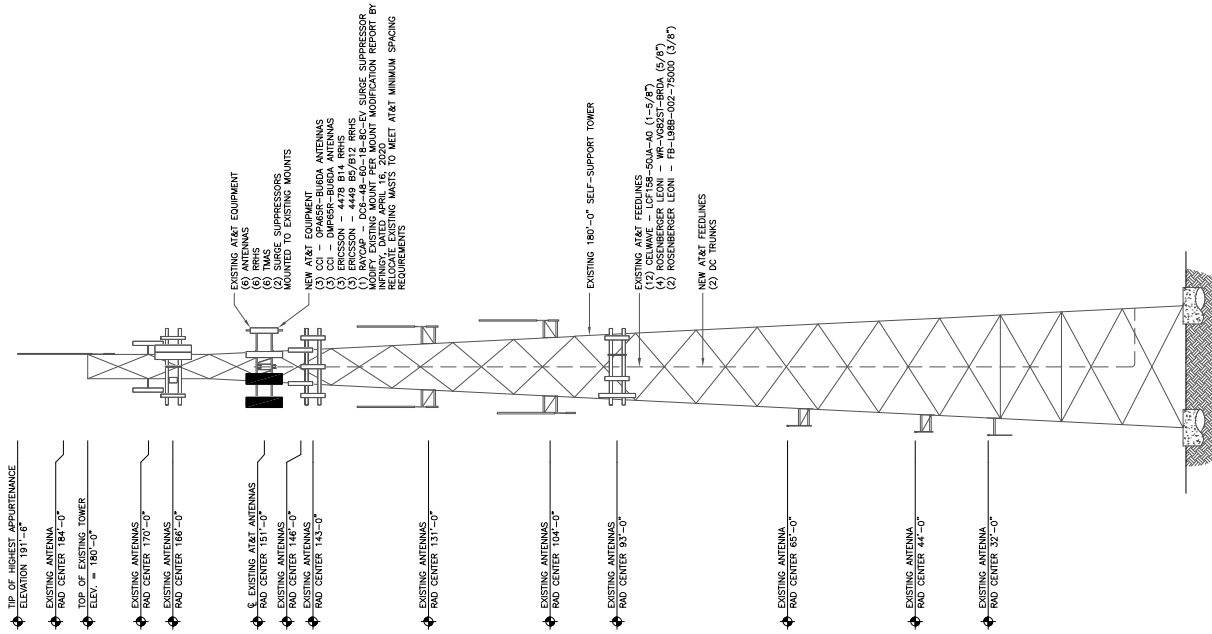


6/16/20

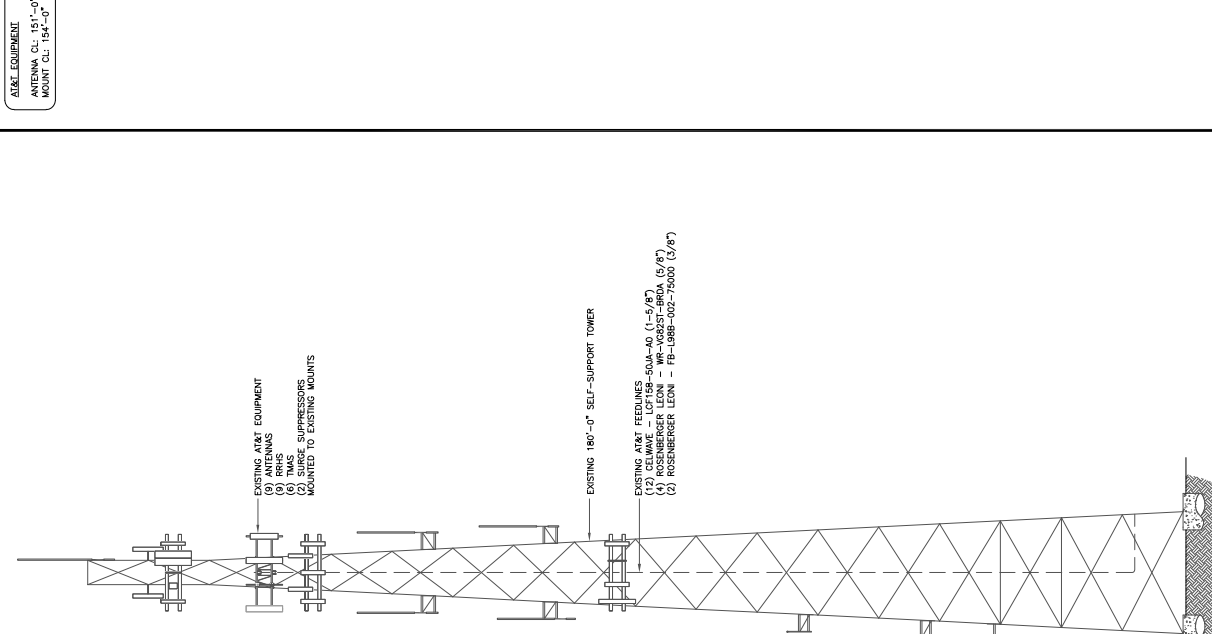
B&T ENGINEERING, INC.
PEC 0001564
Expires: 2/10/21

THIS SEAL IS VALID FOR THE STATE OF NEW JERSEY.
UNLESS THEY ARE ACTING UNDER THE REGULATION
OR A LICENSED PROFESSIONAL ENGINEER,
EXHIBITING THIS SEAL IS UNLAWFUL.

SHEET NUMBER: C-3
REVISION: 2



1 FINAL ELEVATION
2 SCALE: NOT TO SCALE



1 EXISTING ELEVATION
2 SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



1775 S. BOWLER
TULSA, OK 74119
PH: (918) 807-4830
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124 943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:			
REV	DATE	DESCRIPTION	DESIGNER
0	3/6/20	IEB CONSTRUCTION	RM
1	6/1/20	GEB CONSTRUCTION	RM
2	6/16/20	JTH CONSTRUCTION	WV

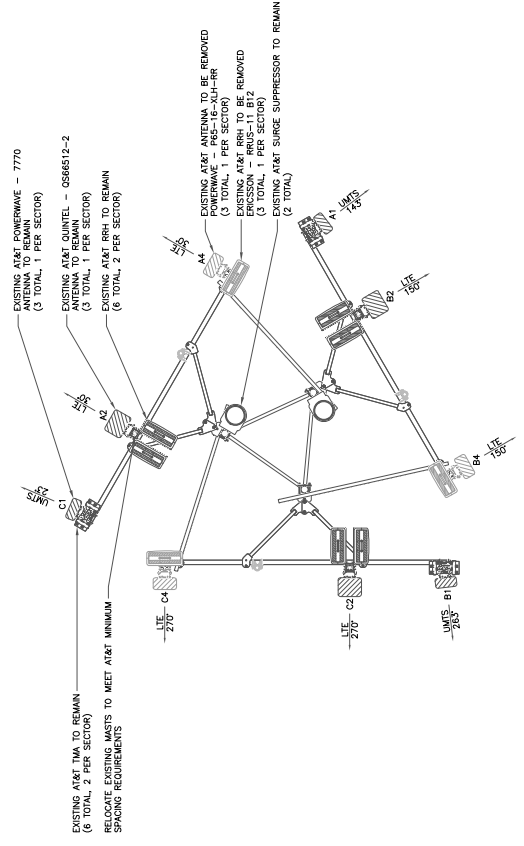


6/16/20

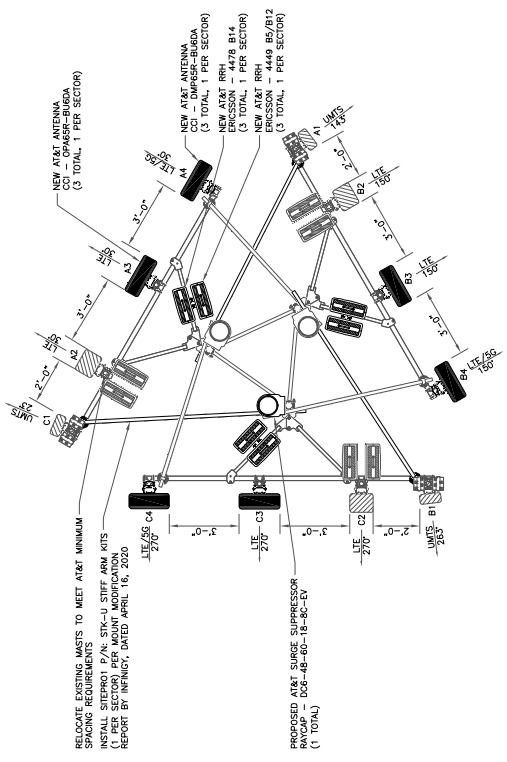
B&T ENGINEERING, INC.
PEC 0001584
Expires: 2/10/21

THIS STATEMENT OF PROFESSIONAL ENGINEERING IS VALID ONLY IF THE ENGINEER OR A LICENSED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF NEW JERSEY, HAS SIGNED AND SEALED IT.

SHEET NUMBER: **C-4** REVISION: **2**



1 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



2 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

RM ISSUES DUE TO INSUFFICIENT SPACE



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



17755 8600 BURB
TULSA, OK 74119
PH: (918) 807-8800
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU # 806353
BRG 124943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:

REV	DATE	BY	DESCR	DESCRIPTION	DATE	BY	DESCRIPTION
0	6/16/20	IBJ	CONSTRUCTION	RM			
1	6/16/20	GBH	CONSTRUCTION	RM			
2	6/16/20	JPT	CONSTRUCTION	REV			



B&T ENGINEERING, INC.
PEC 0001584
Expires: 2/10/21

THIS SHEET IS THE PROPERTY OF B&T ENGINEERING, INC.
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OR AUTHORITY OF A PROFESSIONAL ENGINEER,
REGISTERED PROFESSIONAL ENGINEER.

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

FINAL ANTENNA AND COAXIAL CABLE SCHEDULE

POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWN TILT	ELECTRICAL DOWN TILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA, QTY AND MODEL	RAYCAR	DC (WRAV605T-BRD) FIBER CABLES (FB-L984-034-XXXXXX)	RRHS	DUPLEXER	RET CABLE
ALPHA SECTOR																
A1	UMTS	EXISTING	143°	POWERWAVE 7770	151'-0"	0°	0°	1-5/8"	177'-0"	2	(2) LGP21401				(2) LGP 21901 (GROUND)	Y
A2	LTE	EXISTING	30°	QUINTEL QS66512-2	151'-0"	0°	2°/2/3°	1-5/8"	177'-0"	2			(1) FIBER (2) DC LINES	(1) RRUS-32 B2 (1) RRUS-32 B30	(2) KÆLUS DBCC0061FV51-2 (GROUND)	Y
A3	LTE	NEW	30°	OPAE5R-BU6DA CCI	151'-0"	0°	2°	-	-	-	-	DC6-48-60-18-8F	(1) 4478 B14	-	-	Y
A4	LTE/5G	NEW	30°	DMP65R-BU6DA CCI	151'-0"	0°	2°/2/2°	-	-	-	-	-	(1) 4449 B5/B12	-	-	Y
BETA SECTOR																
B1	UMTS	EXISTING	263°	POWERWAVE 7770	151'-0"	0°	0°	1-5/8"	177'-0"	2	(2) LGP21401				(2) LGP 21901 (GROUND)	Y
B2	LTE	EXISTING	150°	QUINTEL QS66512-2	151'-0"	0°	3°/3/3°	1-5/8"	177'-0"	2			(1) FIBER (2) DC LINES	(1) RRUS-32 B2 (1) RRUS-32 B30	(2) KÆLUS DBCC0061FV51-2 (GROUND)	Y
B3	LTE	NEW	150°	OPAE5R-BU6DA CCI	151'-0"	0°	2°	-	-	-	-	DC6-48-60-18-8F	(1) 4478 B14	-	-	Y
B4	LTE/5G	NEW	150°	DMP65R-BU6DA CCI	151'-0"	0°	2°/2/2°	-	-	-	-	-	(1) 4449 B5/B12	-	-	Y
GAMMA SECTOR																
C1	UMTS	EXISTING	23°	POWERWAVE 7770	151'-0"	0°	0°	1-5/8"	177'-0"	2	(2) LGP21401				(2) LGP 21901 (GROUND)	Y
C2	LTE	EXISTING	270°	QUINTEL QS66512-2	151'-0"	0°	6°/6/3°	1-5/8"	177'-0"	2			(2) DC LINES	(1) RRUS-32 B2 (1) RRUS-32 B30	(2) KÆLUS DBCC0061FV51-2 (GROUND)	Y
C3	LTE	NEW	270°	OPAE5R-BU6DA CCI	151'-0"	0°	2°	-	-	-	-	DC6-48-60-18-8C-EV	(1) 4478 B14	-	-	Y
C4	LTE/5G	NEW	270°	DMP65R-BU6DA CCI	151'-0"	0°	2°/2/2°	-	-	-	-	-	(1) 4449 B5/B12	-	-	Y

NOTE: BOLD DENOTES NEW EQUIPMENT

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



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



177 S. BOULDER
TULSA, OK 74119
PAC: (918) 587-4500
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124 943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:

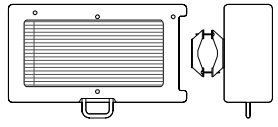
REV	DATE	DRWN	DESCRIPTION	DESIGNOR
0	3/6/20	BLB	CONSTRUCTION RMC	
1	6/3/20	GEB	CONSTRUCTION RMC	
2	6/16/20	DJT	CONSTRUCTION RVP	



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

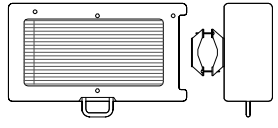
THIS SEAL IS VALID ONLY FOR THE PROJECT AND EXPIRES ON THE DATE SHOWN. IT IS VOID IF USED FOR ANY OTHER PROJECT OR FOR ANY OTHER PROJECT WITHOUT THE SIGNATURE OF A LICENSED PROFESSIONAL ENGINEER.

SHEET NUMBER: **C-6**
REVISION: **2**



ERICSSON - 4449 B5/012
WEIGHT (FULLY EQUIPPED): 71.0 LBS
SIZE (HxWxD): 17.9x13.19x5.44 IN.

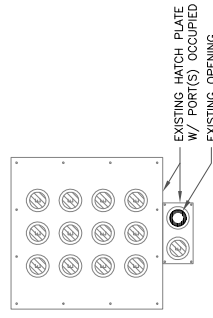
3 RRH DETAIL
SCALE: NOT TO SCALE



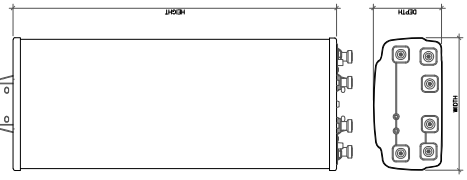
ERICSSON - 4478 B14
WEIGHT (FULLY EQUIPPED): 59.4 LBS
SIZE (HxWxD): 18.1x13.4x5.3 IN.

2 RRH DETAIL
SCALE: NOT TO SCALE

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



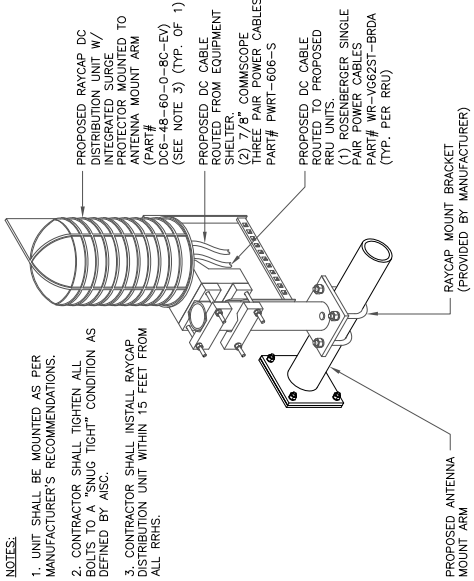
5 HATCH PLATE LAYOUT
SCALE: NOT TO SCALE



ANTENNA DIMENSIONS (INCHES)					
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT	
OPA65F-BUGDA	71.2"	21"	7.8"	60.2 lbs	
DMP65F-BUGDA	71.2"	20.7"	7.7"	79.4 lbs	

1 ANTENNA DETAIL
SCALE: NOT TO SCALE

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



4 SURGE SUPPRESSOR DETAIL
SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



1775 S. BOKER
TULSA, OK 74119
PH: (918) 587-8330
www.btp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124 943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

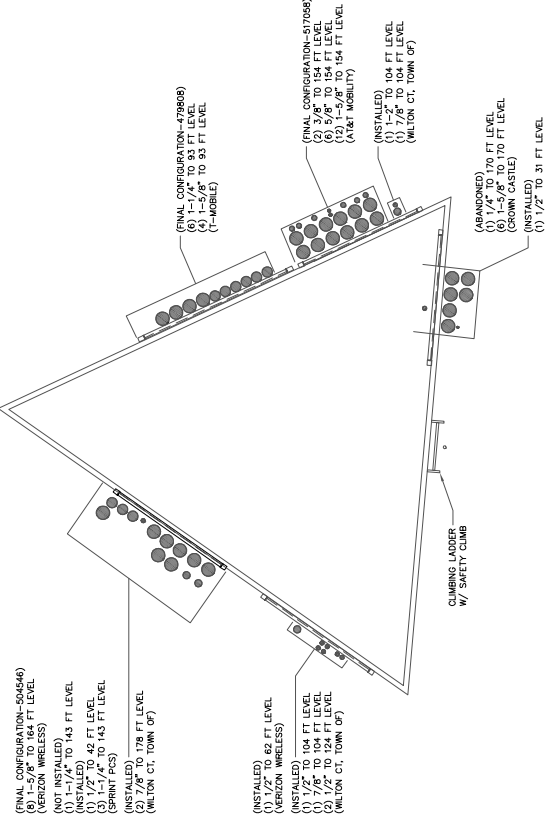
REV	DATE	DRWN	DESCRIPTION	DESIGN	ISSUED FOR:
0	3/6/20	DEB	CONSTRUCTION	PKM	
1	6/3/20	GEB	CONSTRUCTION	PKM	
2	6/16/20	JPT	CONSTRUCTION	DEP	



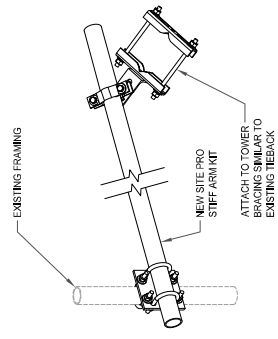
B&T ENGINEERING, INC.
PEC 0001564
Expires: 2/10/21

USE THIS SEAL ONLY FOR THE PROJECT AND EXPIRES UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER.
FOR MORE INFORMATION, CONTACT THE BOARD OF PROFESSIONAL ENGINEERS.

SHEET NUMBER: C-7
REVISION: 2

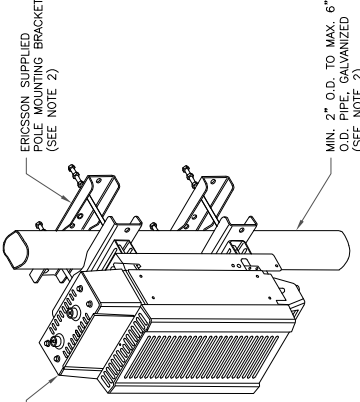


2 BASE LEVEL DRAWING
SCALE: NOT TO SCALE

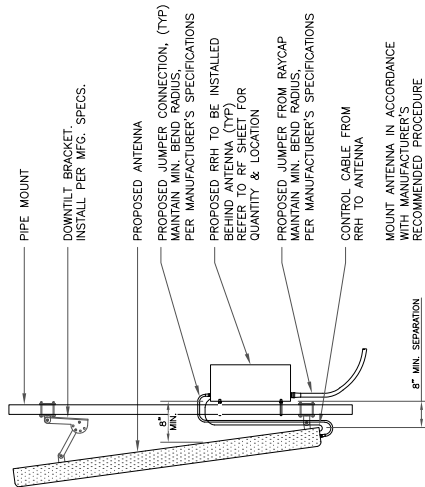


4 SITEPRO STK-U STIFF ARM KIT DETAIL
SCALE: NOT TO SCALE

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



1 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE



3 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



17755 BOKUMBER
TULSA, OK 74119
PH: (918) 587-4830
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124 943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:

REV	DATE	BY	DESCRIPTION	CHKD BY
0	5/6/20	IBJ	CONSTRUCTION	RMK
1	6/1/20	GDH	CONSTRUCTION	RMK
2	6/16/20	JPT	CONSTRUCTION	WVP



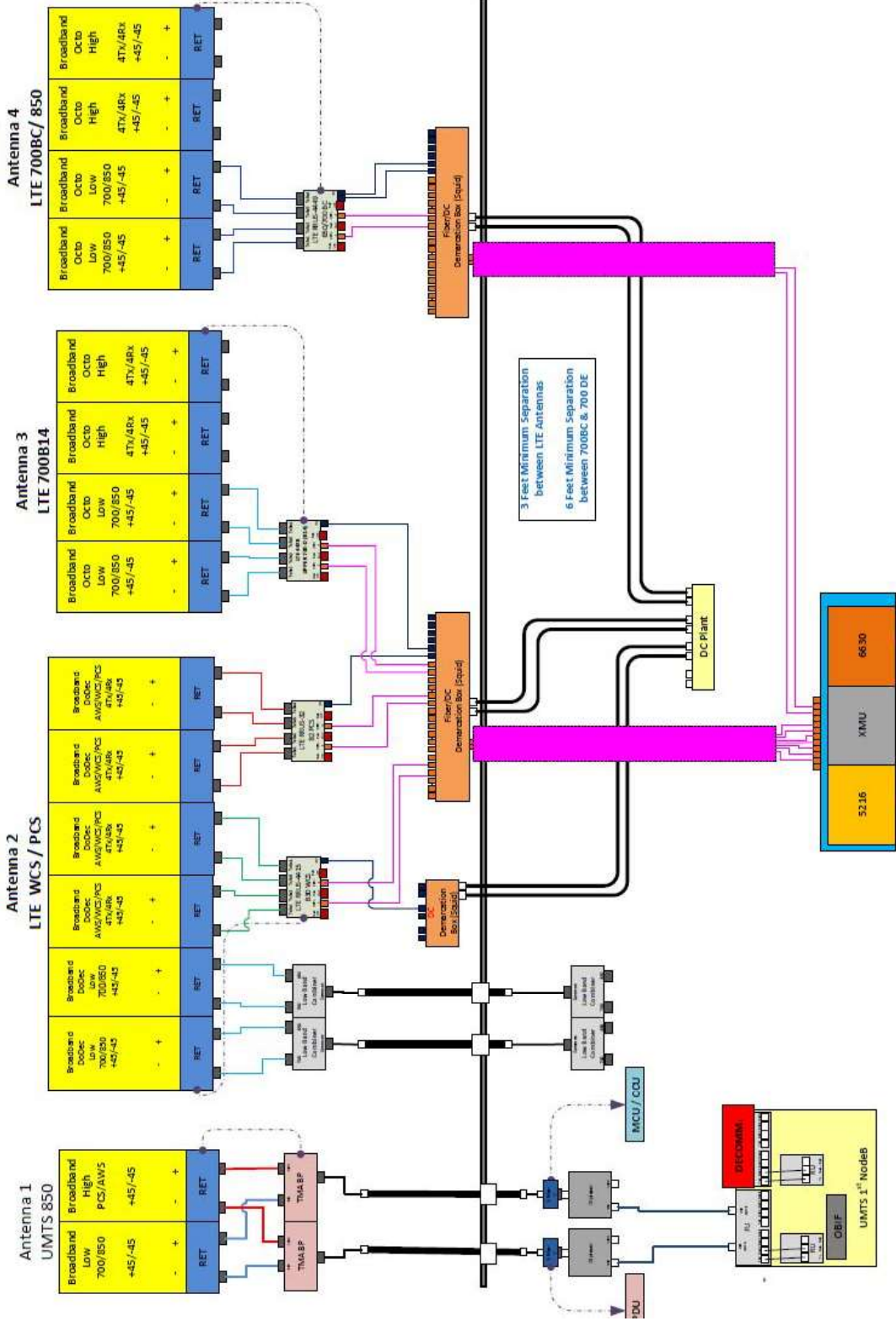
6/16/20

B&T ENGINEERING, INC.
PEC 0001584
Expires: 2/10/21

THIS DOCUMENT IS THE PROPERTY OF B&T ENGINEERING, INC. UNLESS THEY ARE ACTING UNDER THE DIRECTION OR AUTHORITY OF AN ARCHITECT, ENGINEER, OR PROFESSIONAL CONSULTANT.

SHEET NUMBER: C-8

REVISION: 2



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



3200 HORIZON DRIVE, SUITE 150
KING OF PRUSSIA, PA 19380



1777 S. BOKUMBER
TULSA, OK 74119
PH: (918) 987-8500
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124 943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

ISSUED FOR:

REV	DATE	BY	DESCRIPTION	ISSUED FOR
0	6/16/20	BM	CONSTRUCTION	RM
1	6/16/20	BM	CONSTRUCTION	RM
2	6/16/20	BM	CONSTRUCTION	RM



6/16/20

B&T ENGINEERING, INC.

PEC 0001584

Expires: 2/10/21

THIS SEAL IS VALID ONLY WHEN THE ENGINEER
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OR A LICENSED PROFESSIONAL ENGINEER.
FOR THE PROJECT AND CLIENT.

SHEET NUMBER: C-9

REVISION: 2

- 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. 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. NU / DE -- COAX COLOR CODE

SECTOR	ALPHA	GREEN	ORANGE	BLANK
	A-SPLIT	GREEN	ORANGE	BLANK
	BETA	BLUE	BROWN	BLANK
	GAMMA	BROWN	WHITE	BLANK
	C-SPLIT	WHITE	ORANGE	BLANK
	D	ORANGE	BROWN	BLANK
	E	BROWN	BROWN	BLANK

DC TRUCK / DC JUMPER / FIRST FIBER JUMPER	VIOLET	YELLOW	BLANK
700 (B/C)	VIOLET	YELLOW	BLANK
850	YELLOW	YELLOW	BLANK
850 - 2ND BLOCK	YELLOW	YELLOW	BLANK
1900 (PCS)	RED	RED	BLANK
1900 (PCS) - 2ND BLOCK	RED	RED	BLANK
2100 (AMS)	ORANGE	ORANGE	BLANK
2100 (AMS) - 2ND BLOCK	ORANGE	ORANGE	BLANK
2300 (WCS)	BROWN	BROWN	BLANK
2300 (WCS) - 2ND BLOCK	BROWN	BROWN	BLANK
2300 (WCS) - SWX REPEATER	BROWN	BROWN	BLANK
700 (D/E)	SLATE	SLATE	BLANK
700 (B/C) / 700 FIRSTNET (DUAL RRH)	VIOLET	VIOLET	BLANK
1900 (PCS) / 2100 (AMS) (DUAL RRH)	RED	RED	BLANK
8500 / 700 D/E (DUAL RRH)	YELLOW	YELLOW	BLANK

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

WEATHERPROOFING PRODUCT APPLICATION TABLE

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

TORQUE VALUES FOR CONNECTORS		MINIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS	
CONNECTOR TYPE	TORQUE Ft-lbs	TORQUE In-lbs	MINIMUM BENDING RADIUS (INCHES)
7-16 DIN	19-22	221-265	6 AWG 2
4.3-10	3.67	44	4 AWG 3
N	1.25	15	2 AWG 3
SMA	0.42	5	1/0 AWG 4
TNC	0.42	5	4/0 AWG 4
RET/AISG	HAND TIGHTEN	HAND TIGHTEN	750 KCMIL

SECTOR	TELEPHONE	FREQUENCY BAND	COAX TYPE / COLOR CODE	CONNECTION POINT / JUMPER	COAX CODE - FREQUENCY	SECTOR	TELEPHONE	FREQUENCY BAND	COAX TYPE / COLOR CODE	CONNECTION POINT / JUMPER	COAX CODE - FREQUENCY
1	15E	700 (B/C)	Blank	Blank	Blank	1	15E	700 (B/C)	Blank	Blank	Blank
2	15E	700 (B/C)	Blank	Blank	Blank	2	15E	700 (B/C)	Blank	Blank	Blank
3	15E	700 (B/C)	Blank	Blank	Blank	3	15E	700 (B/C)	Blank	Blank	Blank
4	15E	700 (B/C)	Blank	Blank	Blank	4	15E	700 (B/C)	Blank	Blank	Blank
5	15E	700 (B/C)	Blank	Blank	Blank	5	15E	700 (B/C)	Blank	Blank	Blank
6	15E	700 (B/C)	Blank	Blank	Blank	6	15E	700 (B/C)	Blank	Blank	Blank
7	15E	700 (B/C)	Blank	Blank	Blank	7	15E	700 (B/C)	Blank	Blank	Blank
8	15E	700 (B/C)	Blank	Blank	Blank	8	15E	700 (B/C)	Blank	Blank	Blank
9	15E	700 (B/C)	Blank	Blank	Blank	9	15E	700 (B/C)	Blank	Blank	Blank
10	15E	700 (B/C)	Blank	Blank	Blank	10	15E	700 (B/C)	Blank	Blank	Blank
11	15E	700 (B/C)	Blank	Blank	Blank	11	15E	700 (B/C)	Blank	Blank	Blank
12	15E	700 (B/C)	Blank	Blank	Blank	12	15E	700 (B/C)	Blank	Blank	Blank
13	15E	700 (B/C)	Blank	Blank	Blank	13	15E	700 (B/C)	Blank	Blank	Blank
14	15E	700 (B/C)	Blank	Blank	Blank	14	15E	700 (B/C)	Blank	Blank	Blank
15	15E	700 (B/C)	Blank	Blank	Blank	15	15E	700 (B/C)	Blank	Blank	Blank
16	15E	700 (B/C)	Blank	Blank	Blank	16	15E	700 (B/C)	Blank	Blank	Blank
17	15E	700 (B/C)	Blank	Blank	Blank	17	15E	700 (B/C)	Blank	Blank	Blank
18	15E	700 (B/C)	Blank	Blank	Blank	18	15E	700 (B/C)	Blank	Blank	Blank
19	15E	700 (B/C)	Blank	Blank	Blank	19	15E	700 (B/C)	Blank	Blank	Blank
20	15E	700 (B/C)	Blank	Blank	Blank	20	15E	700 (B/C)	Blank	Blank	Blank
21	15E	700 (B/C)	Blank	Blank	Blank	21	15E	700 (B/C)	Blank	Blank	Blank
22	15E	700 (B/C)	Blank	Blank	Blank	22	15E	700 (B/C)	Blank	Blank	Blank
23	15E	700 (B/C)	Blank	Blank	Blank	23	15E	700 (B/C)	Blank	Blank	Blank
24	15E	700 (B/C)	Blank	Blank	Blank	24	15E	700 (B/C)	Blank	Blank	Blank
25	15E	700 (B/C)	Blank	Blank	Blank	25	15E	700 (B/C)	Blank	Blank	Blank
26	15E	700 (B/C)	Blank	Blank	Blank	26	15E	700 (B/C)	Blank	Blank	Blank
27	15E	700 (B/C)	Blank	Blank	Blank	27	15E	700 (B/C)	Blank	Blank	Blank
28	15E	700 (B/C)	Blank	Blank	Blank	28	15E	700 (B/C)	Blank	Blank	Blank
29	15E	700 (B/C)	Blank	Blank	Blank	29	15E	700 (B/C)	Blank	Blank	Blank
30	15E	700 (B/C)	Blank	Blank	Blank	30	15E	700 (B/C)	Blank	Blank	Blank

1 COLOR CODE STANDARD
SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



1777 S. BOULDER
TULSA, OK 74119
PH: (918) 587-8500
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124-943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

REV	DATE	ISSUED FOR:	DESCRIPTION	DESIGNER	CHECKER
0	3/6/20	IBL	CONSTRUCTION	RM	RM
1	4/16/20	GDH	CONSTRUCTION	RM	RM
2	6/16/20	JPT	CONSTRUCTION	RM	RM

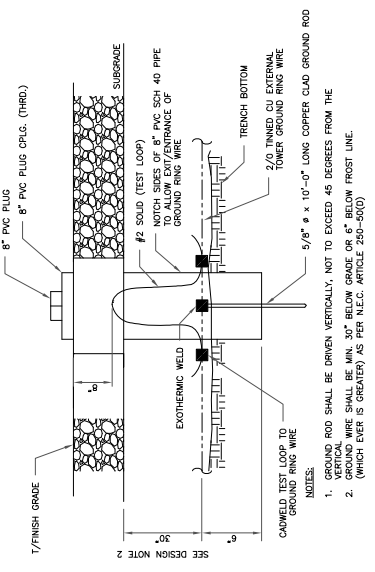


6/16/20

B&T ENGINEERING, INC.
PEC 0001584
Expires: 2/1/21

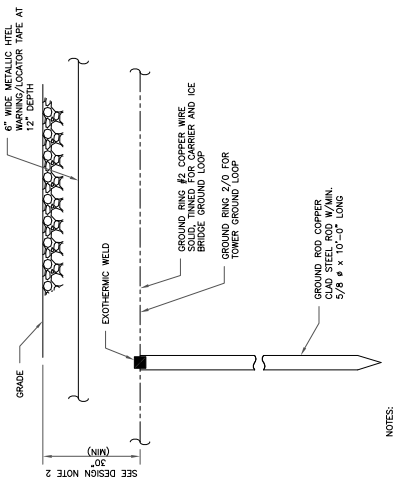
THIS SEAL IS VALID ONLY IF THE ENGINEER
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OR A LICENSED PROFESSIONAL ENGINEER,
REGISTERED UNDER THIS SEAL.

SHEET NUMBER: **G-1**
REVISION: **2**



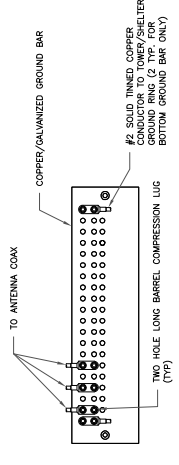
- NOTES:
- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(C)
 - GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER)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

3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



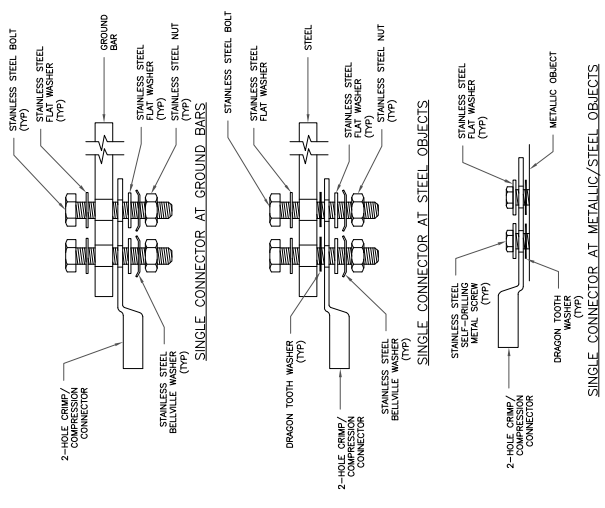
- NOTES:
- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(C)
 - GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER)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

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

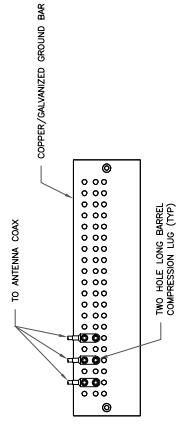


- NOTES:
- EXTERIOR ANTI-OXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 - GROUND BAR SHALL NOT BE ISOLATED FROM TOWER, MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
 - GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

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

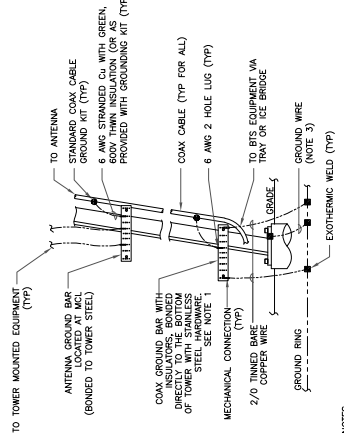


5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



- NOTES:
- DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
 - EXTERIOR ANTI-OXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 - GROUND BAR SHALL NOT BE ISOLATED FROM TOWER, MOUNT DIRECTLY TO TOWER STEEL.

1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



- NOTES:
- NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA GROUND BARS SHALL BE BONDED TO TOWER STEEL AT THE MIDPOINT. PROVIDE AS REQUIRED.
 - 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. 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



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



17775-BOKLEBER
TULSA, OK 74119
PH: (918) 387-8530
www.btggrp.com

AT&T SITE NUMBER:
CTV2142

RU #: 806353
BRG 124-943066

128 MATHER STREET
WILTON, CT 06897

EXISTING 180'-0"
SELF-SUPPORT TOWER

REV	DATE	BY/EN	DESCRIPTION	CHK/CR
0	3/6/20	IBB	CONSTRUCTION	RJM
1	6/1/20	GCH	CONSTRUCTION	RJM
2	6/16/20	JPT	CONSTRUCTION	WVJ



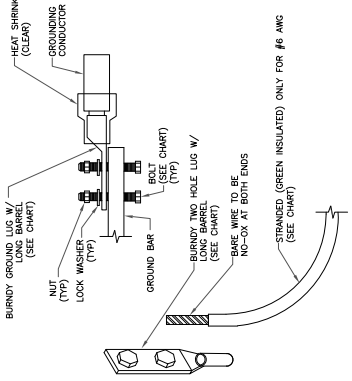
6/16/20

B&T ENGINEERING, INC.
PEC 0001584
Expires: 2/10/21

THIS SEAL IS VALID ONLY IF THE ENGINEER HAS MAINTAINED THE REQUIREMENTS OF THE BOARD OF PROFESSIONAL ENGINEERS. UNLESS THEY ARE ACTING UNDER THE DELEGATION OR AUTHORITY OF A LICENSED PROFESSIONAL ENGINEER.

SHEET NUMBER: **G-2**
REVISION: **2**

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	Y46C-ZTC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	Y43C-ZTC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	Y42C-ZTC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	Y40B-ZTC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	Y42B-2N	1/2" - 16 NC S 2 BOLT

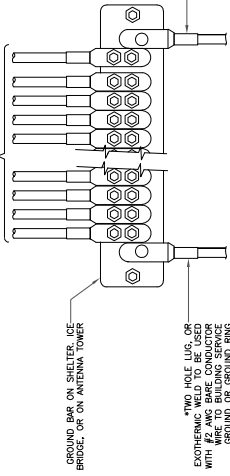


NOTES:

- ALL GROUND LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. THE MANUFACTURER'S PART NUMBER AND THE MANUFACTURER'S NAME AND ADDRESS ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

MECHANICAL LUG CONNECTION

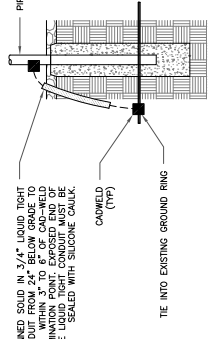
SCALE: NOT TO SCALE



- GROUND BAR ON SHELTER, ICE BRIDGE, OR ON ANTENNA TOWER
- #6 AWG WIRE FROM ANTENNA CABLE GROUND KIT
- GROUNDING SHALL BE ELIMINATED WHEN GROUND BAR IS ELECTRICALLY BONDED TO METAL TOWER

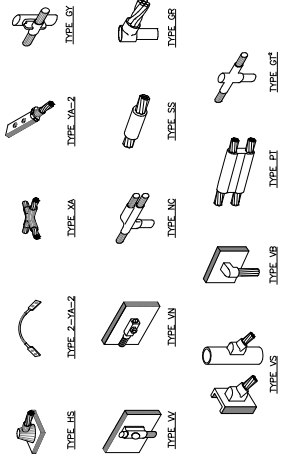
GROUNDWIRE INSTALLATION

SCALE: NOT TO SCALE



TRANSITIONING GROUND DETAIL

SCALE: NOT TO SCALE

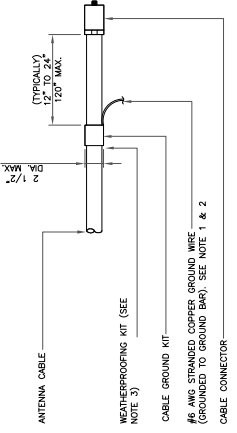


NOTES:

- ERCO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

CADWELD GROUNDING CONNECTIONS

SCALE: NOT TO SCALE

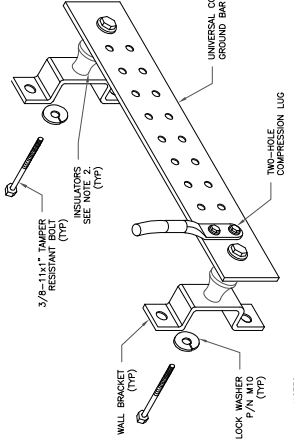


NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- #6 AWG STRANDED COPPER GROUND WIRE (GROUNDED TO GROUND BAR). SEE NOTE 1 & 2
- WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

CABLE GROUND KIT CONNECTION

SCALE: NOT TO SCALE

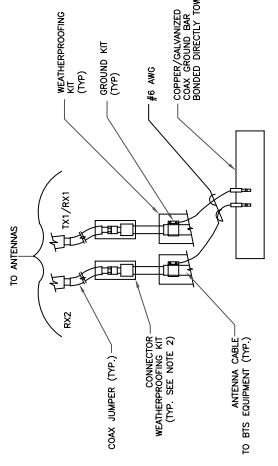


NOTES:

- DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE MOUNTING OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION. NO CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
- OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

GROUND BAR DETAIL

SCALE: NOT TO SCALE

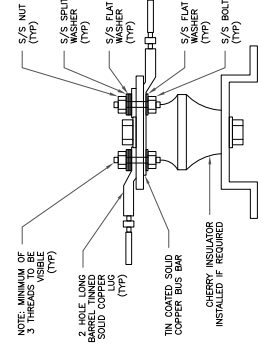


NOTES:

- WIRE DOWN TO ANTENNA GROUND BAR.
- WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

GROUND CABLE CONNECTION

SCALE: NOT TO SCALE



LUG DETAIL

SCALE: NOT TO SCALE

Exhibit D

Structural Analysis Report



Date: **April 30, 2020**

William Barrett
Crown Castle
8000 Avalon Blvd
Alpharetta, GA 30009

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

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: CTV2142
Carrier Site Name: Wilton-Mathers Street

Crown Castle Designation: **Crown Castle BU Number:** 806353
Crown Castle Site Name: BRG 124 943066
Crown Castle JDE Job Number: 605360
Crown Castle Work Order Number: 1845358
Crown Castle Order Number: 517058 Rev. 0

Engineering Firm Designation: **B+T Group Project Number:** 102920.006.01

Site Data: **128 Mather Street, Wilton, Fairfield County, CT**
Latitude 41° 14' 18.34", Longitude -73° 25' 26.44"
180 Foot - Self Support Tower

Dear William Barrett,

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

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

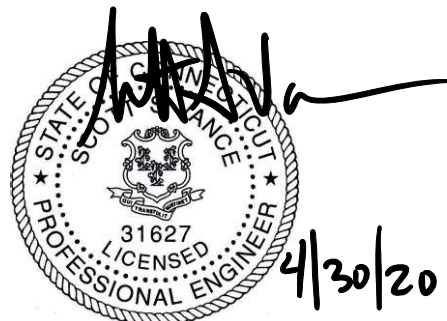
LC7: Proposed Equipment Configuration

Sufficient Capacity-90%

This analysis utilizes an ultimate 3-second gust wind speed of 120 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: Jacob Johnson, E.I.T.

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 10/31/2020



Scott S. Vance, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

Table 2 - Other Considered Equipment

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Table 5 – Tower Component Stresses vs. Capacity - LC7

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This is a 180 ft. Self-Support tower designed by FWT in May 1988. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	0.75 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)	
154.0	158.0	3	Cci Antennas	DMP65R-BU6D	12 6 2	1-5/8 5/8 3/8	
		3	Cci Antennas	OPA65R-BU6D			
		3	Ericsson	RRUS 4449 B5/B12			
		3	Ericsson	RRUS 4478 B14			
		3	Powerwave Tech.	7770.00			
		3	Quintel Tech.	QS66512-2			
	154.0	154.0	3	Site Pro 1			STK-U Stiff-Arm Kit
			1	--			Sector Mount [SM 1303-3]
	150.0	150.0	3	Ericsson			RRUS 32 B2
			3	Ericsson			RRUS 32 B30
			3	Kaelus			DBC0061F1V51-2
			6	Powerwave Tech.			LGP21401
			3	Raycap			DC6-48-60-18-8F

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)
178.0	184.0	1	Rfs Celwave	PD10017	2	7/8
170.0	171.0	3	Kathrein	800 10504	6 1	1-5/8 1/4
	170.0	3	Kathrein	860 10025		
		1	--	Side Arm Mount [SO 103-3]		
164.0	166.0	3	Commscope	CBC78TDS-43-2X	8	1-5/8
		6	Commscope	JAHH-65B-R3B		
		6	Rfs Celwave	APL868013-42T0		
		2	Rfs Celwave	DB-T1-6Z-8AB-0Z		
		3	Samsung Tele.	20W CBRS		
		3	Samsung Tele.	CBRS		
		3	Samsung Tele.	RFV01U-D1A		
		3	Samsung Tele.	RFV01U-D2A		
	164.0	164.0	1	--		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
145.0	146.0	3	Alcatel Lucent	800 External Notch Filter	--	--
		3	Alcatel Lucent	800MHZ 2X50W RRH		
		3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ		
143.0	147.0	3	Alcatel Lucent	TD-RRH8x20-25	3	1-1/4
	143.0	9	Rfs Celwave	ACU-A20-N		
		3	Rfs Celwave	APXVSP18-C-A20		
		3	Rfs Celwave	APXVTM14-C-120		
1	--	Sector Mount [SM 401-3]				
124.0	131.0	2	Rfs Celwave	1142-2C	2	1/2
	124.0	2	--	Side Arm Mount [SO 303-1]		
104.0	111.0	1	Rfs Celwave	1142-2C	1 1	7/8 1/2
	108.0	1	Rfs Celwave	220-3BN		
	104.0	2	--	Side Arm Mount [SO 303-1]		
93.0	93.0	3	Ericsson	AIR 32 B2a/B66Aa	4 6	1-5/8 1-1/4
		3	Ericsson	ERICSSON AIR 21 B2A B4P		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
		3	Rfs Celwave	APXVAARR24_43-U-NA20		
		1	--	Sector Mount [SM 404-3]		
62.0	65.0	1	Gps	GPS_A	1	1/2
	62.0	1	--	Side Arm Mount [SO 305-1]		
42.0	44.0	1	Gps	GPS_A	1	1/2
	42.0	1	--	Side Arm Mount [SO 305-1]		
31.0	32.0	1	Gps	GPS_A	1	1/2
	31.0	1	--	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Online Order Information	AT&T Mobility Co-Locate, Rev# 0	517058	CCI Sites
Tower Manufacturer Drawing	Paul J. Ford/FWT, Date: 05/06/1988	217757	CCI Sites
Mount Analysis Report	Infinigy Engineering, PLLC. Date: 04/16/2020	9034234	CCI Sites
Tower Modification Drawing	HEB, Project No: 98124A w/ FDH Foundation Mapping, Project No: 1207103EN1	3290324	CCI Sites
Tower Modification Drawing	APT, Job No: CT105271	801524	CCI Sites
Tower Modification Drawing	PJF, Date: 12/08/2009	2434484	CCI Sites
Post Modification Inspection	PJF, Date: 01/11/2010	2575710	CCI Sites
Tower Modification Drawing	Destek, Date: 01/13/2016	6061656	CCI Sites
Post Modification Inspection	SGS, Date: 10/21/2016	6515894	CCI Sites
Foundation Drawing	FWT, Date: 05/31/1988	262285	CCI Sites
Geotech Report	FDH, Project No: 09-04219E G1	262283	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 04/14/2020	CCI Sites

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	180 - 168	Leg	P2x0.154	2	-2.489	29.380	8.5	Pass
T2	168 - 160	Leg	P2x0.154 (GR)	26	-10.898	40.351	27.0	Pass
T3	160 - 140	Leg	P3x0.216 (GR)	41	-49.355	91.364	54.0	Pass
T4	140 - 120	Leg	P3.5x.318 (GR)	68	-84.539	128.240	65.9	Pass
T5	120 - 100	Leg	P4x.337 (GR)	89	-116.034	165.049	70.3 77.8 (b)	Pass
T6	100 - 80	Leg	P5x0.375 (GR)	109	125.022	202.153	61.8	Pass
T7	80 - 60	Leg	P6x0.432	131	-177.238	238.435	74.3 85.9 (b)	Pass
T8	60 - 40	Leg	P6x0.432	146	-207.429	238.435	87.0	Pass
T9	40 - 20	Leg	P6x0.432	160	-236.347	266.933	88.5	Pass
T10	20 - 0	Leg	P8x.5	181	-266.175	386.074	68.9	Pass
T1	180 - 168	Diagonal	L2x1 1/2x3/16	10	-0.615	15.935	3.9 6.8 (b)	Pass
T2	168 - 160	Diagonal	L2x1 1/2x3/16	29	-2.617	15.935	16.4 30.3 (b)	Pass
T3	160 - 140	Diagonal	L2x1 1/2x3/16	43	-4.214	10.157	41.5 50.2 (b)	Pass
T4	140 - 120	Diagonal	L2x2x3/16	70	-4.843	9.511	50.9 59.7 (b)	Pass
T5	120 - 100	Diagonal	L2 1/2x2x3/16	91	-5.174	9.472	54.6	Pass
T6	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	112	-6.237	10.923	57.1 60.2 (b)	Pass
T7	80 - 60	Diagonal	L3x3x3/16	133	-7.436	11.950	62.2 64.3 (b)	Pass
T8	60 - 40	Diagonal	L3 1/2x3x1/4	148	-7.920	15.837	50.0 54.6 (b)	Pass
T9	40 - 20	Diagonal	L3 1/2x3x1/4	163	-9.227	12.837	71.9	Pass
T10	20 - 0	Diagonal	L3 1/2x3 1/2x1/4	184	-9.522	14.867	64.0 65.7 (b)	Pass
T9	40 - 20	Secondary Horizontal	L3 1/2x3 1/2x1/4	169	-4.098	23.697	17.3 44.2 (b)	Pass
T1	180 - 168	Top Girt	L2x1 1/2x3/16	6	-0.119	10.904	1.1 1.8 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							Summary	
							Leg (T9)	88.5 Pass
							Diagonal (T9)	71.9 Pass
							Secondary Horizontal (T9)	44.2 Pass
							Top Girt (T1)	1.8 Pass
							Bolt Checks	87.4 Pass
							Rating =	88.5 Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	Base	38.3	Pass
1,2	Base Foundation (Structural)	Base	42.6	Pass
1,2	Base Foundation (Soil Interaction)	Base	90.0	Pass

Structure Rating (max from all components) =	90.0%
---	--------------

Notes:

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

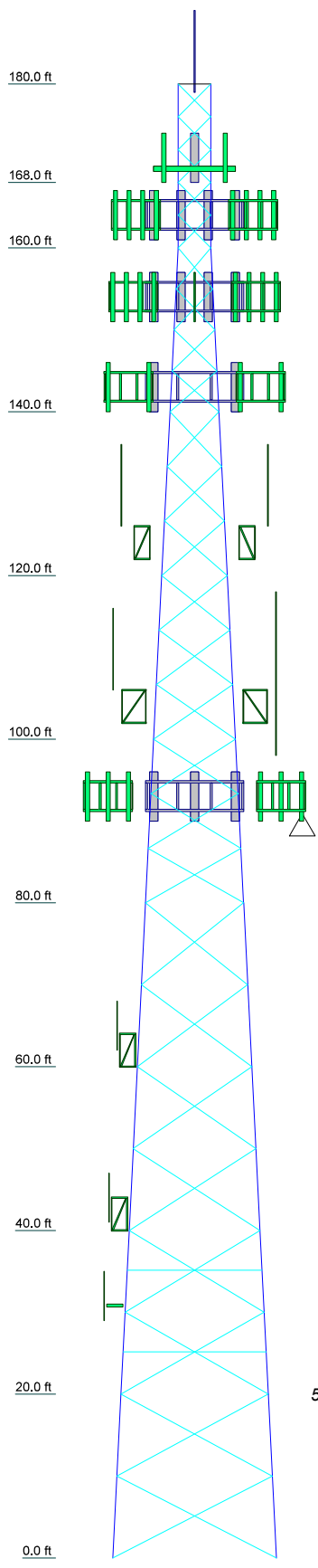
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	P8x.5		P6x0.432		P5x0.375 (GR)	P4x.337 (GR)	P3.5x.318 (GR)	P3x0.216 (GR)	A	P2x0.154
Leg Grade					A53-B-35					
Diagonals	L3 1/2x3 1/2x1/4		L3 1/2x3x1/4		L2 1/2x2 1/2x3/16	L2 1/2x2x3/16	L2x2x3/16	L2x1 1/2x3/16		
Diagonal Grade					A36					
Top Girts					N.A.					L2x1 1/2x3/16
Sec. Horizontals	N.A.					N.A.				
Face Width (ft)	20	18	16	14	12	10	8	6		
# Panels @ (ft)		4.5	8 @ 10	3.2	2.7	2.4	1.9	1.4	4 @ 5	5 @ 4
Weight (K)	24.1		3.9		3.4				0.3	0.4



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	P2x0.154 (GR)		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A36	36 ksi	58 ksi

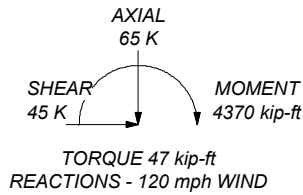
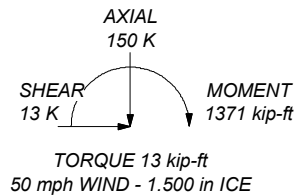
TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. Grouted pipe Fc is 7.000 ksi
9. TIA-222-H Annex S
10. TOWER RATING: 88.5%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 274 K
SHEAR: 28 K

UPLIFT: -230 K
SHEAR: 25 K

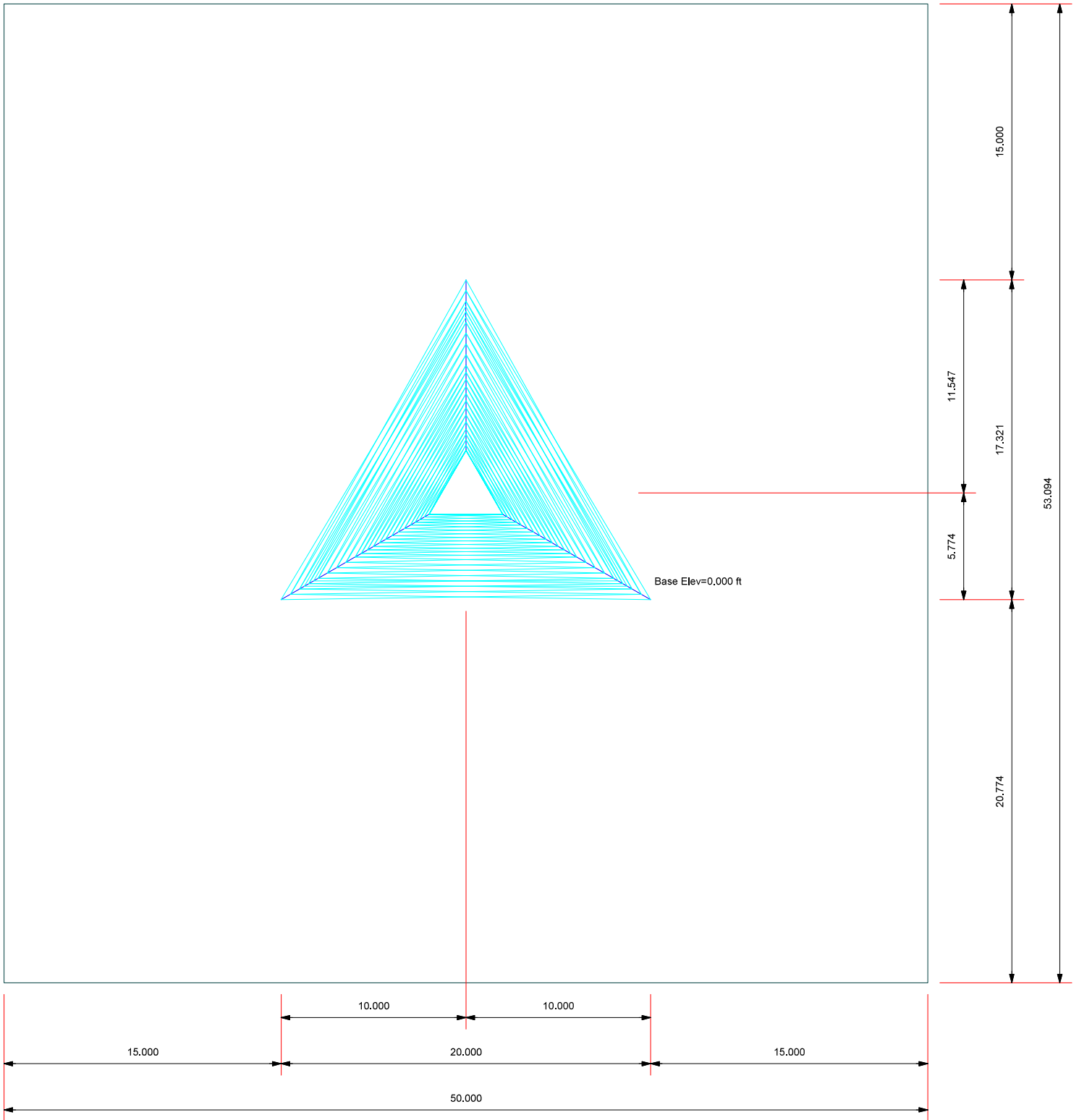


B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 102920.006.01 - BRG 124 943066, CT (BU# 80635)

Project:	Client: Crown Castle	Drawn by: Shathanand	App'd:
Code: TIA-222-H	Date: 04/30/20	Scale: NTS	
Path:		Dwg No. E-1	

Plot Plan
Total Area - 0.06 Acres



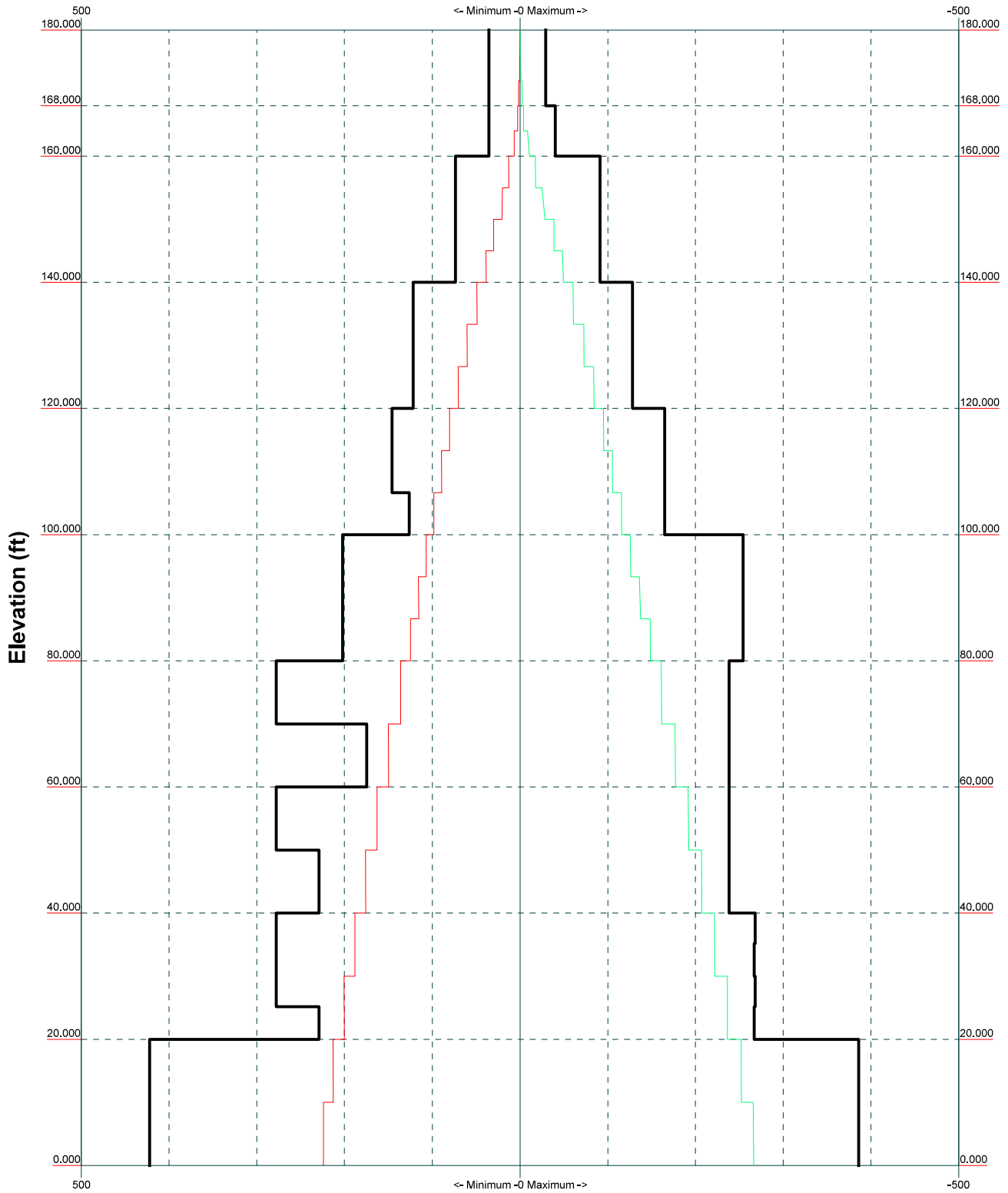
B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 102920.006.01 - BRG 124 943066, CT (BU# 80635)		
Project:		
Client: Crown Castle	Drawn by: Shathanand	App'd:
Code: TIA-222-H	Date: 04/30/20	Scale: NTS
Path:		Dwg No. E-2

TIA-222-H - 120 mph/50 mph 1.500 in Ice Exposure B

Leg Capacity ———

Leg Compression (K)

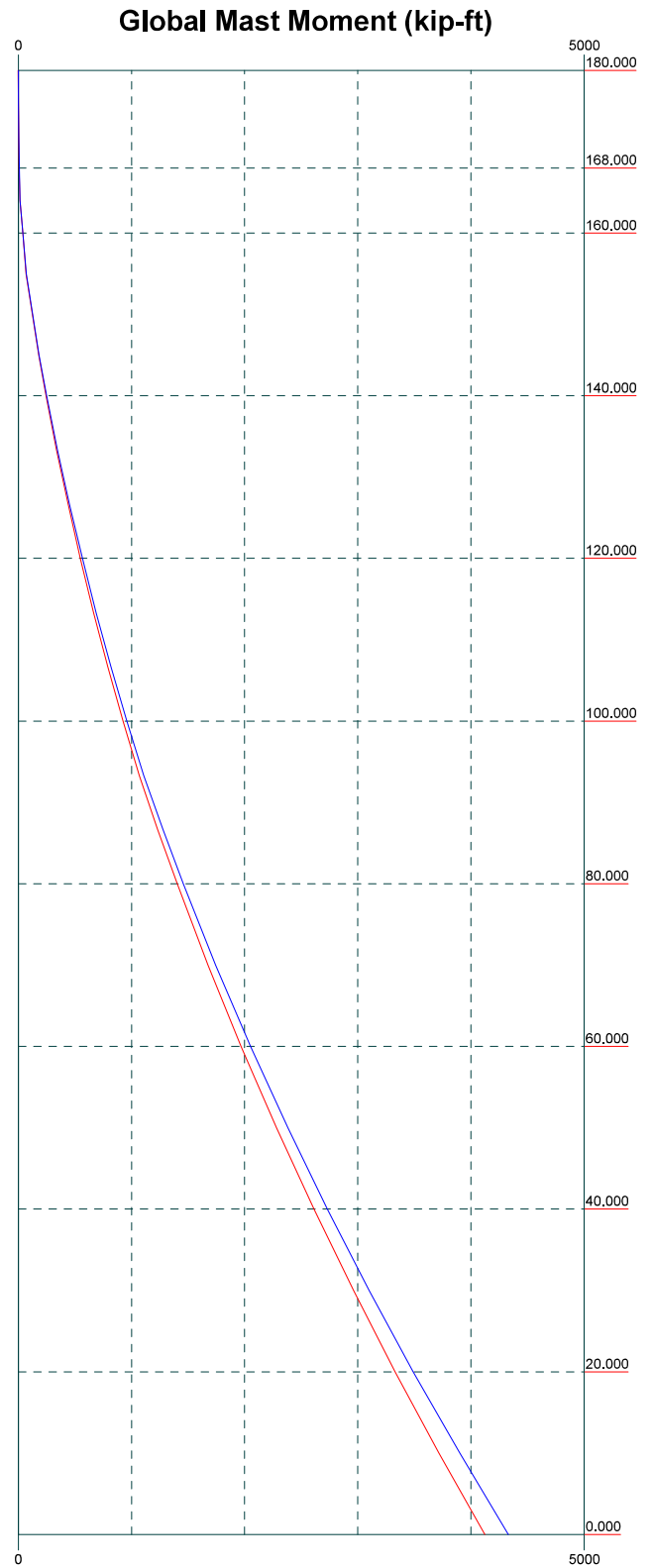
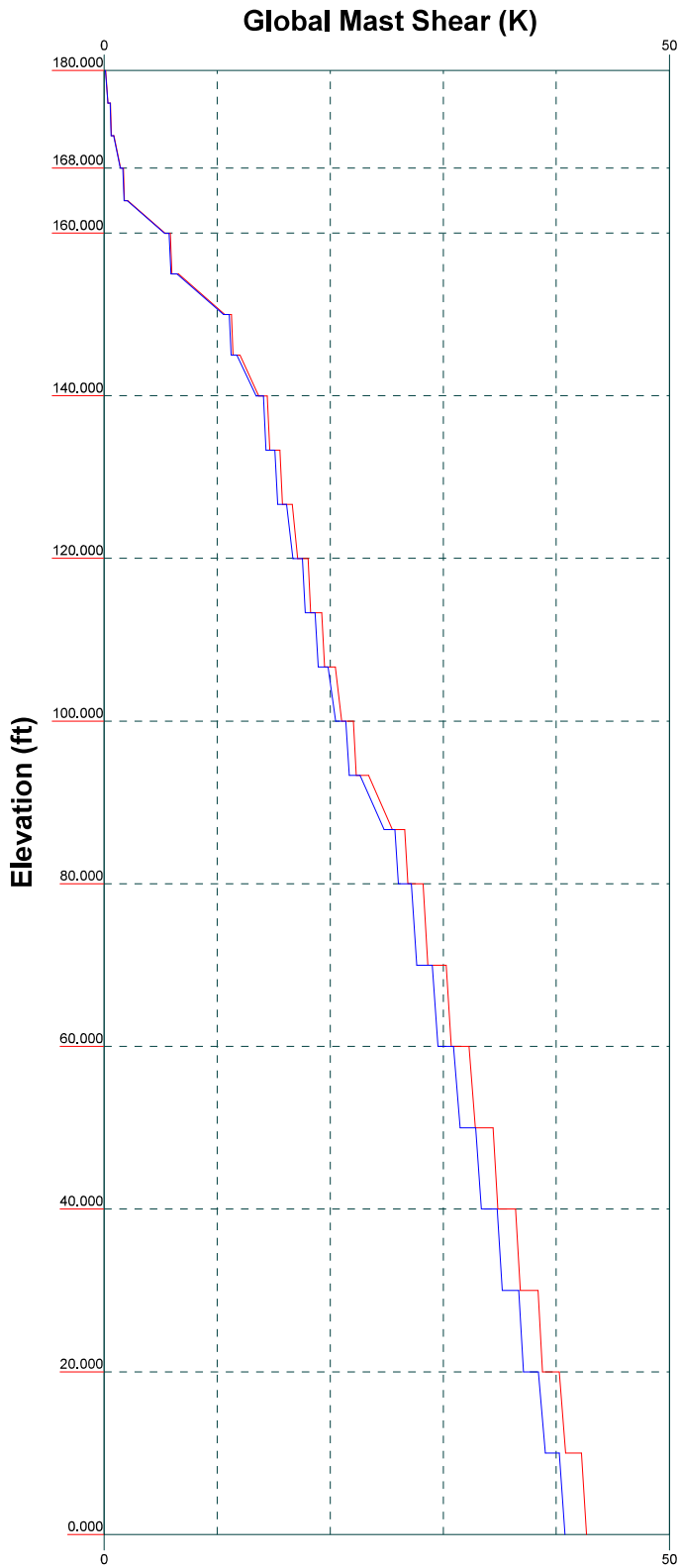


B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job: 102920.006.01 - BRG 124 943066, CT (BU# 80635)		
Project:	Client: Crown Castle	Drawn by: Shathanand
Code: TIA-222-H	Date: 04/30/20	App'd: Scale: NTS
Path:		Dwg No. E-3

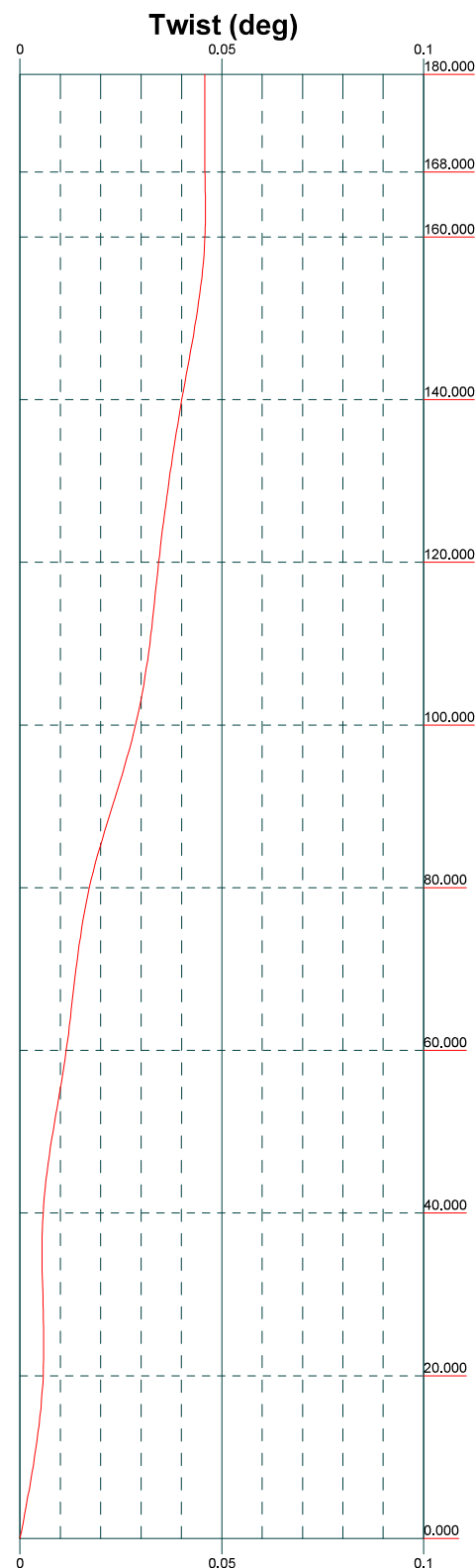
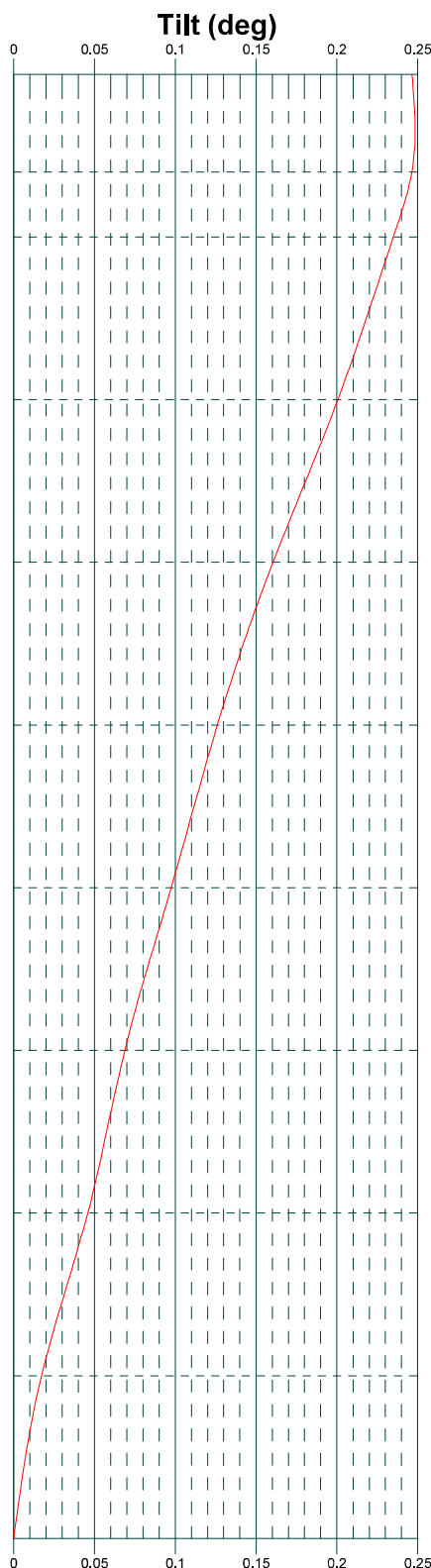
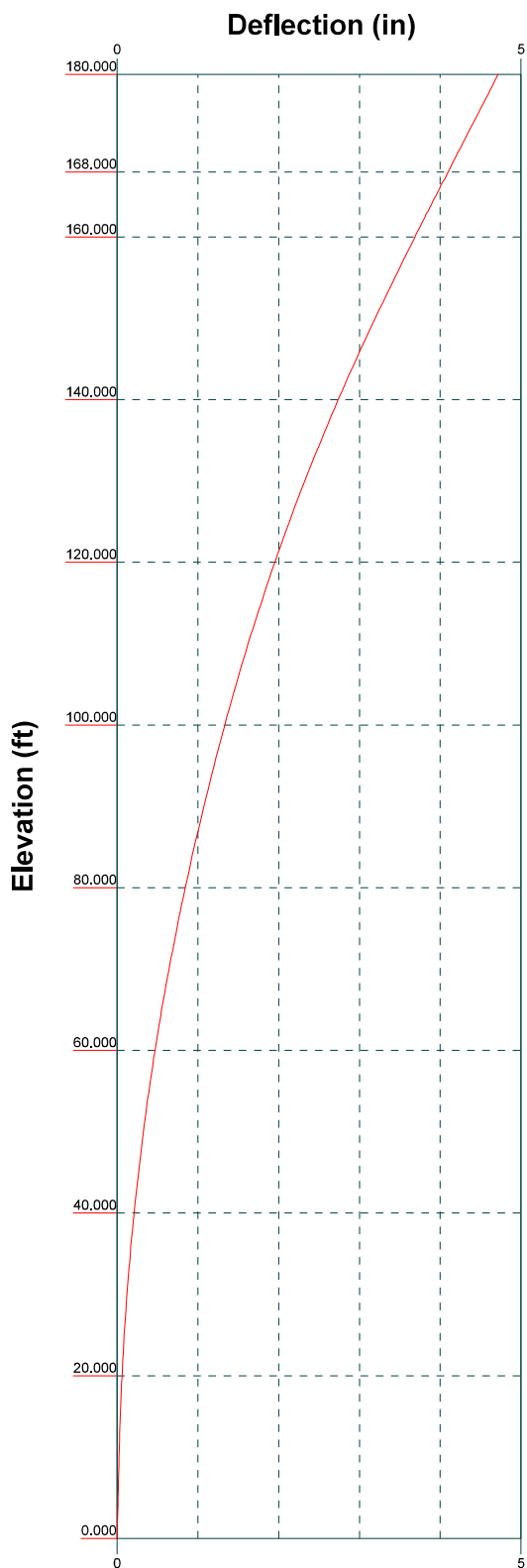
Vx Vz

Mx Mz



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job: 102920.006.01 - BRG 124 943066, CT (BU# 80635)		
Project:	Client: Crown Castle	Drawn by: Shathanand
Code: TIA-222-H	Date: 04/30/20	App'd:
Path:	Scale: NTS	Dwg No. E-4



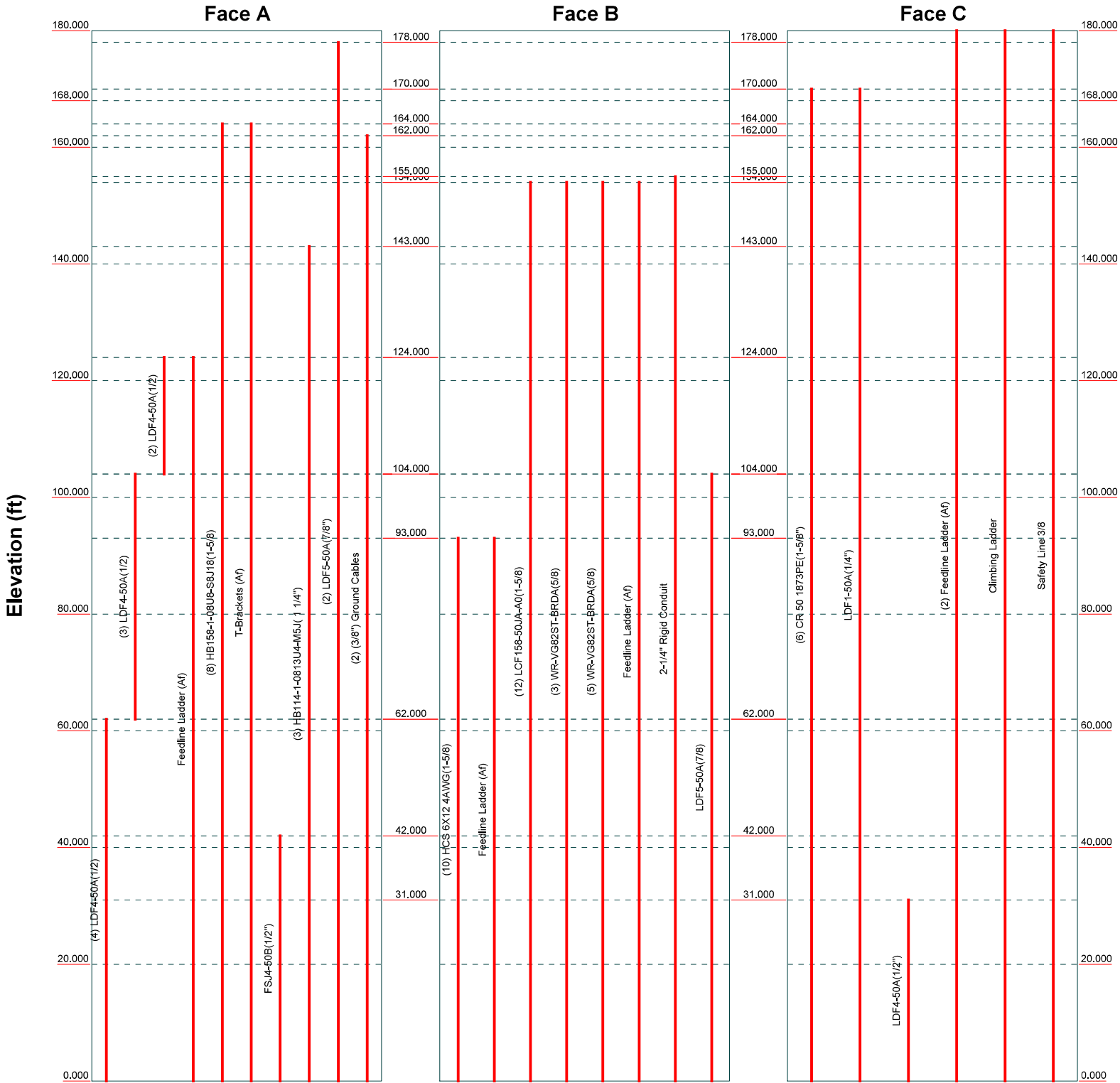
B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job: 102920.006.01 - BRG 124 943066, CT (BU# 80635)		
Project:		
Client: Crown Castle	Drawn by: Shathanand	App'd:
Code: TIA-222-H	Date: 04/30/20	Scale: NTS
Path:	Dwg No. E-5	

Feed Line Distribution Chart

0' - 180'

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



B+T Group

1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job: 102920.006.01 - BRG 124 943066, CT (BU# 80635)		
Project:		
Client: Crown Castle	Drawn by: Shathanand	App'd:
Code: TIA-222-H	Date: 04/30/20	Scale: NTS
Path:		Dwg No. E-7

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 1 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.000 ft above the ground line.

The base of the tower is set at an elevation of 0.000 ft above the ground line.

The face width of the tower is 4.000 ft at the top and 20.000 ft at the base.

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

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Tower base elevation above sea level: 426.000 ft.

Basic wind speed of 120 mph.

Risk Category II.

Exposure Category B.

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

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.500 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

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

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 60 mph.

TIA-222-H Annex S.

Grouted pipe f_c is 7.000 ksi.

Pressures are calculated at each section.

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

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

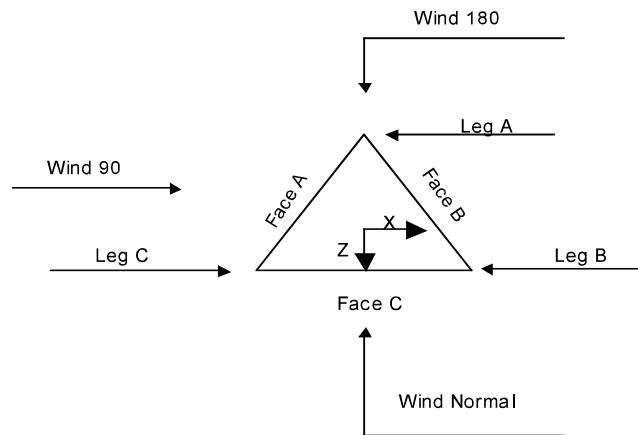
Stress ratio used in tower member design is 1.05.

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

Options

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

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 2 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	180.000-168.000			4.000	1	12.000
T2	168.000-160.000			4.000	1	8.000
T3	160.000-140.000			4.000	1	20.000
T4	140.000-120.000			6.000	1	20.000
T5	120.000-100.000			8.000	1	20.000
T6	100.000-80.000			10.000	1	20.000
T7	80.000-60.000			12.000	1	20.000
T8	60.000-40.000			14.000	1	20.000
T9	40.000-20.000			16.000	1	20.000
T10	20.000-0.000			18.000	1	20.000

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	180.000-168.000	4.000	X Brace	No	No	0.000	0.000
T2	168.000-160.000	4.000	X Brace	No	No	0.000	0.000
T3	160.000-140.000	5.000	X Brace	No	No	0.000	0.000
T4	140.000-120.000	6.667	X Brace	No	No	0.000	0.000
T5	120.000-100.000	6.667	X Brace	No	No	0.000	0.000
T6	100.000-80.000	6.667	X Brace	No	No	0.000	0.000
T7	80.000-60.000	10.000	X Brace	No	No	0.000	0.000
T8	60.000-40.000	10.000	X Brace	No	No	0.000	0.000

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 3 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T9	40.000-20.000	10.000	X Brace	No	Yes	0.000	0.000
T10	20.000-0.000	10.000	X Brace	No	No	0.000	0.000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
ft						
T1 180.000-168.000	Pipe	P2x0.154	A53-B-35 (35 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T2 168.000-160.000	Grouted Pipe	P2x0.154	A53-B-35 (35 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T3 160.000-140.000	Grouted Pipe	P3x0.216	A53-B-35 (35 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T4 140.000-120.000	Grouted Pipe	P3.5x.318	A53-B-35 (35 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T5 120.000-100.000	Grouted Pipe	P4x.337	A53-B-35 (35 ksi)	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)
T6 100.000-80.000	Grouted Pipe	P5x0.375	A53-B-35 (35 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T7 80.000-60.000	Pipe	P6x0.432	A53-B-35 (35 ksi)	Single Angle	L3x3x3/16	A36 (36 ksi)
T8 60.000-40.000	Pipe	P6x0.432	A53-B-35 (35 ksi)	Single Angle	L3 1/2x3x1/4	A36 (36 ksi)
T9 40.000-20.000	Pipe	P6x0.432	A53-B-35 (35 ksi)	Single Angle	L3 1/2x3x1/4	A36 (36 ksi)
T10 20.000-0.000	Pipe	P8x.5	A53-B-35 (35 ksi)	Single Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
ft						
T1 180.000-168.000	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
ft						
T9 40.000-20.000	Single Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)	Single Angle		A36 (36 ksi)

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page	6 of 36
	Project		Date	00:29:45 04/30/20
	Client	Crown Castle	Designed by	Shathanand

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.000-168.0 00	Flange	0.000 A325N	0	0.625 A325N	1	0.625 A325N	1	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T2 168.000-160.0 00	Flange	0.625 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T3 160.000-140.0 00	Flange	0.625 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T4 140.000-120.0 00	Flange	0.750 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T5 120.000-100.0 00	Flange	0.750 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T6 100.000-80.00 0	Flange	0.875 A490N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T7 80.000-60.000	Flange	0.875 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T8 60.000-40.000	Flange	1.000 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T9 40.000-20.000	Flange	1.000 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.500 A325N	1
T10 20.000-0.000	Flange	1.500 A36	0	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0

Grouted Pipe Properties

Size	F _y ksi	A _s in ²	A _c in ²	Wt plf	E _c ksi	E _m ksi	F _{ym} ksi
P2x0.154 (GR)	35.000	1.075	3.356	10.647	4768.962	40914.218	53.581
P3x0.216 (GR)	35.000	2.228	7.393	22.984	4768.962	41656.327	54.738
P3.5x.318 (GR)	35.000	3.678	8.888	31.033	4768.962	38218.387	49.377
P4x.337 (GR)	35.000	4.407	11.497	38.949	4768.962	38951.934	50.521
P5x0.375 (GR)	35.000	6.112	18.194	58.701	4768.962	40356.758	52.712

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
* CR 50 1873PE(1-5/8"))	C	No	No	Ar (CaAa)	170.000 - 0.000	0.000	-0.3	6	4	0.850 0.750	1.980		0.001
LDF1-50A(1/ 4")	C	No	No	Ar (CaAa)	170.000 - 0.000	3.000	-0.283	1	1	0.850 0.750	0.345		0.000

tnxTower

B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job	102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page	7 of 36
Project		Date	00:29:45 04/30/20
Client	Crown Castle	Designed by	Shathanand

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
LDF4-50A(1/2")	C	No	No	Ar (CaAa)	31.000 - 0.000	-1.000	-0.32	1	1	0.850	0.630		0.000
Feedline Ladder (Af)	C	No	No	Af (CaAa)	180.000 - 0.000	-1.000	-0.33	2	1	3.000	3.000		0.008
* Climbing Ladder	C	No	No	Af (CaAa)	180.000 - 0.000	0.000	0.025	1	1	3.000	3.000		0.008
Safety Line 3/8	C	No	No	Ar (CaAa)	180.000 - 0.000	0.000	0.025	1	1	0.375	0.375		0.000
* HCS 6X12 4AWG(1-5/8)	B	No	No	Ar (CaAa)	93.000 - 0.000	0.000	0.1	10	10	0.850	1.660		0.002
Feedline Ladder (Af)	B	No	No	Af (CaAa)	93.000 - 0.000	0.000	0.075	1	1	3.000	3.000		0.008
* LCF158-50JA -A0(1-5/8)	B	No	No	Ar (CaAa)	154.000 - 0.000	0.000	0.3	12	6	0.850	1.980		0.001
WR-VG82ST-BRDA(5/8)	B	No	No	Ar (CaAa)	154.000 - 0.000	0.000	0.365	3	2	0.500	0.645		0.000
WR-VG82ST-BRDA(5/8)	B	No	No	Ar (CaAa)	154.000 - 0.000	5.500	0.3	5	5	1.500	0.645		0.000
Feedline Ladder (Af)	B	No	No	Af (CaAa)	154.000 - 0.000	0.000	0.32	1	1	3.000	3.000		0.008
2-1/4" Rigid Conduit	B	No	No	Ar (CaAa)	155.000 - 0.000	0.000	0.385	1	1	0.850	2.250		0.003
* LDF5-50A(7/8)	B	No	No	Ar (CaAa)	104.000 - 0.000	0.000	0.345	1	1	0.850	1.090		0.000
* LDF4-50A(1/2)	A	No	No	Ar (CaAa)	62.000 - 0.000	0.000	-0.1	4	2	0.500	0.630		0.000
LDF4-50A(1/2)	A	No	No	Ar (CaAa)	104.000 - 62.000	0.000	-0.1	3	2	0.500	0.630		0.000
LDF4-50A(1/2)	A	No	No	Ar (CaAa)	124.000 - 104.000	0.000	-0.1	2	2	0.500	0.630		0.000
Feedline Ladder (Af)	A	No	No	Af (CaAa)	124.000 - 0.000	0.000	0	1	1	3.000	3.000		0.008
* HB158-1-08U 8-S8J18(1-5/8)	A	No	No	Ar (CaAa)	164.000 - 0.000	0.000	0.1	8	4	0.850	1.980		0.001
T-Brackets (Af)	A	No	No	Af (CaAa)	164.000 - 0.000	0.000	0.1	1	1	1.000	1.000		0.008
* FSJ4-50B(1/2")	A	No	No	Ar (CaAa)	42.000 - 0.000	0.000	0.03	1	1	0.850	0.520		0.000
* HB114-1-081 3U4-M5J(1 1/4")	A	No	No	Ar (CaAa)	143.000 - 0.000	0.000	0.05	3	3	0.850	1.540		0.001
* LDF5-50A(7/8")	A	No	No	Ar (CaAa)	178.000 - 0.000	5.500	0.11	2	2	0.850	1.090		0.000
* (3/8") Ground Cables	A	No	No	Ar (CaAa)	162.000 - 0.000	0.000	-0.15	2	2	0.500	0.440		0.000

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 8 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

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} ft ² /ft	Weight klf
*								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T1	180.000-168.000	A	0.000	0.000	2.180	0.000	0.007
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	20.895	0.000	0.315
T2	168.000-160.000	A	0.000	0.000	8.923	0.000	0.081
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	22.080	0.000	0.244
T3	160.000-140.000	A	0.000	0.000	42.519	0.000	0.403
		B	0.000	0.000	50.863	0.000	0.331
		C	0.000	0.000	55.200	0.000	0.609
T4	140.000-120.000	A	0.000	0.000	52.877	0.000	0.499
		B	0.000	0.000	72.340	0.000	0.469
		C	0.000	0.000	55.200	0.000	0.609
T5	120.000-100.000	A	0.000	0.000	63.145	0.000	0.639
		B	0.000	0.000	72.776	0.000	0.470
		C	0.000	0.000	55.200	0.000	0.609
T6	100.000-80.000	A	0.000	0.000	64.153	0.000	0.641
		B	0.000	0.000	102.600	0.000	0.897
		C	0.000	0.000	55.200	0.000	0.609
T7	80.000-60.000	A	0.000	0.000	64.279	0.000	0.642
		B	0.000	0.000	117.720	0.000	1.124
		C	0.000	0.000	55.200	0.000	0.609
T8	60.000-40.000	A	0.000	0.000	65.517	0.000	0.645
		B	0.000	0.000	117.720	0.000	1.124
		C	0.000	0.000	55.200	0.000	0.609
T9	40.000-20.000	A	0.000	0.000	66.453	0.000	0.647
		B	0.000	0.000	117.720	0.000	1.124
		C	0.000	0.000	55.893	0.000	0.611
T10	20.000-0.000	A	0.000	0.000	66.453	0.000	0.647
		B	0.000	0.000	117.720	0.000	1.124
		C	0.000	0.000	56.460	0.000	0.612

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T1	180.000-168.000	A	1.506	0.000	0.000	9.127	0.000	0.082
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	38.379	0.000	0.786
T2	168.000-160.000	A	1.497	0.000	0.000	18.287	0.000	0.287
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	40.061	0.000	0.740
T3	160.000-140.000	A	1.483	0.000	0.000	83.734	0.000	1.362
		B		0.000	0.000	89.023	0.000	1.451

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 9 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T4	140.000-120.000	C	1.462	0.000	0.000	99.797	0.000	1.838
		A		0.000	0.000	111.117	0.000	1.712
		B		0.000	0.000	125.844	0.000	2.037
T5	120.000-100.000	C	1.438	0.000	0.000	99.232	0.000	1.817
		A		0.000	0.000	134.901	0.000	2.072
		B		0.000	0.000	126.758	0.000	2.031
T6	100.000-80.000	C	1.410	0.000	0.000	98.582	0.000	1.793
		A		0.000	0.000	135.174	0.000	2.062
		B		0.000	0.000	186.947	0.000	3.103
T7	80.000-60.000	C	1.375	0.000	0.000	97.816	0.000	1.765
		A		0.000	0.000	133.688	0.000	2.025
		B		0.000	0.000	214.977	0.000	3.594
T8	60.000-40.000	C	1.329	0.000	0.000	96.878	0.000	1.732
		A		0.000	0.000	132.391	0.000	1.996
		B		0.000	0.000	213.091	0.000	3.516
T9	40.000-20.000	C	1.263	0.000	0.000	95.658	0.000	1.689
		A		0.000	0.000	135.038	0.000	1.977
		B		0.000	0.000	210.350	0.000	3.404
T10	20.000-0.000	C	1.132	0.000	0.000	97.356	0.000	1.661
		A		0.000	0.000	128.943	0.000	1.833
		B		0.000	0.000	204.920	0.000	3.186
		C		0.000	0.000	96.150	0.000	1.560

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
T1	180.000-168.000	1.378	4.328	0.954	3.560
T2	168.000-160.000	2.594	3.567	1.871	3.402
T3	160.000-140.000	6.307	3.159	5.759	3.380
T4	140.000-120.000	8.653	3.684	7.913	3.805
T5	120.000-100.000	8.547	3.806	7.592	3.926
T6	100.000-80.000	11.832	3.249	11.074	3.580
T7	80.000-60.000	14.535	3.167	13.733	3.576
T8	60.000-40.000	15.272	3.430	14.934	3.940
T9	40.000-20.000	14.602	3.446	14.663	4.011
T10	20.000-0.000	17.667	4.201	17.242	4.809

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	2	CR 50 1873PE(1-5/8")	168.00 - 170.00	0.6000	0.5105
T1	3	LDF1-50A(1/4")	168.00 - 170.00	0.6000	0.5105
T1	5	Feedline Ladder (Af)	168.00 - 180.00	0.6000	0.5105
T1	7	Climbing Ladder	168.00 - 180.00	0.6000	0.5105
T1	8	Safety Line 3/8	168.00 - 180.00	0.6000	0.5105
T1	40	LDF5-50A(7/8")	168.00 - 178.00	0.6000	0.5105

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T2	2	CR 50 1873PE(1-5/8")	160.00 - 168.00	0.6000	0.5422
T2	3	LDF1-50A(1/4")	160.00 - 168.00	0.6000	0.5422
T2	5	Feedline Ladder (Af)	160.00 - 168.00	0.6000	0.5422
T2	7	Climbing Ladder	160.00 - 168.00	0.6000	0.5422
T2	8	Safety Line 3/8	160.00 - 168.00	0.6000	0.5422
T2	33	HB158-1-08U8-S8J18(1-5/8)	160.00 - 164.00	0.6000	0.5422
T2	34	T-Brackets (Af)	160.00 - 164.00	0.6000	0.5422
T2	40	LDF5-50A(7/8")	160.00 - 168.00	0.6000	0.5422
T2	42	(3/8") Ground Cables	160.00 - 162.00	0.6000	0.5422
T3	2	CR 50 1873PE(1-5/8")	140.00 - 160.00	0.6000	0.6000
T3	3	LDF1-50A(1/4")	140.00 - 160.00	0.6000	0.6000
T3	5	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	7	Climbing Ladder	140.00 - 160.00	0.6000	0.6000
T3	8	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T3	16	LCF158-50JA-A0(1-5/8)	140.00 - 154.00	0.6000	0.6000
T3	17	WR-VG82ST-BRDA(5/8)	140.00 - 154.00	0.6000	0.6000
T3	19	WR-VG82ST-BRDA(5/8)	140.00 - 154.00	0.6000	0.6000
T3	22	Feedline Ladder (Af)	140.00 - 154.00	0.6000	0.6000
T3	23	2-1/4" Rigid Conduit	140.00 - 155.00	0.6000	0.6000
T3	33	HB158-1-08U8-S8J18(1-5/8)	140.00 - 160.00	0.6000	0.6000
T3	34	T-Brackets (Af)	140.00 - 160.00	0.6000	0.6000
T3	38	HB114-1-0813U4-M5J(1/4")	140.00 - 143.00	0.6000	0.6000
T3	40	LDF5-50A(7/8")	140.00 - 160.00	0.6000	0.6000
T3	42	(3/8") Ground Cables	140.00 - 160.00	0.6000	0.6000
T4	2	CR 50 1873PE(1-5/8")	120.00 - 140.00	0.6000	0.6000
T4	3	LDF1-50A(1/4")	120.00 - 140.00	0.6000	0.6000
T4	5	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	7	Climbing Ladder	120.00 - 140.00	0.6000	0.6000
T4	8	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T4	16	LCF158-50JA-A0(1-5/8)	120.00 - 140.00	0.6000	0.6000
T4	17	WR-VG82ST-BRDA(5/8)	120.00 - 140.00	0.6000	0.6000

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T4	19	WR-VG82ST-BRDA(5/8)	120.00 - 140.00	0.6000	0.6000
T4	22	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	23	2-1/4" Rigid Conduit	120.00 - 140.00	0.6000	0.6000
T4	29	LDF4-50A(1/2)	120.00 - 124.00	0.6000	0.6000
T4	30	Feedline Ladder (Af)	120.00 - 124.00	0.6000	0.6000
T4	33	HB158-1-08U8-S8J18(1-5/8)	120.00 - 140.00	0.6000	0.6000
T4	34	T-Brackets (Af)	120.00 - 140.00	0.6000	0.6000
T4	38	HB114-1-0813U4-M5J(1/4")	120.00 - 140.00	0.6000	0.6000
T4	40	LDF5-50A(7/8")	120.00 - 140.00	0.6000	0.6000
T4	42	(3/8") Ground Cables	120.00 - 140.00	0.6000	0.6000
T5	2	CR 50 1873PE(1-5/8")	100.00 - 120.00	0.6000	0.6000
T5	3	LDF1-50A(1/4")	100.00 - 120.00	0.6000	0.6000
T5	5	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	7	Climbing Ladder	100.00 - 120.00	0.6000	0.6000
T5	8	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T5	16	LCF158-50JA-A0(1-5/8)	100.00 - 120.00	0.6000	0.6000
T5	17	WR-VG82ST-BRDA(5/8)	100.00 - 120.00	0.6000	0.6000
T5	19	WR-VG82ST-BRDA(5/8)	100.00 - 120.00	0.6000	0.6000
T5	22	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	23	2-1/4" Rigid Conduit	100.00 - 120.00	0.6000	0.6000
T5	25	LDF5-50A(7/8)	100.00 - 104.00	0.6000	0.6000
T5	28	LDF4-50A(1/2)	100.00 - 104.00	0.6000	0.6000
T5	29	LDF4-50A(1/2)	104.00 - 120.00	0.6000	0.6000
T5	30	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	33	HB158-1-08U8-S8J18(1-5/8)	100.00 - 120.00	0.6000	0.6000
T5	34	T-Brackets (Af)	100.00 - 120.00	0.6000	0.6000
T5	38	HB114-1-0813U4-M5J(1/4")	100.00 - 120.00	0.6000	0.6000
T5	40	LDF5-50A(7/8")	100.00 - 120.00	0.6000	0.6000
T5	42	(3/8") Ground Cables	100.00 - 120.00	0.6000	0.6000
T6	2	CR 50 1873PE(1-5/8")	80.00 - 100.00	0.6000	0.6000
T6	3	LDF1-50A(1/4")	80.00 - 100.00	0.6000	0.6000
T6	5	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	7	Climbing Ladder	80.00 - 100.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	8	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T6	11	HCS 6X12 4AWG(1-5/8)	80.00 - 93.00	0.6000	0.6000
T6	14	Feedline Ladder (Af)	80.00 - 93.00	0.6000	0.6000
T6	16	LCF158-50JA-A0(1-5/8)	80.00 - 100.00	0.6000	0.6000
T6	17	WR-VG82ST-BRDA(5/8)	80.00 - 100.00	0.6000	0.6000
T6	19	WR-VG82ST-BRDA(5/8)	80.00 - 100.00	0.6000	0.6000
T6	22	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	23	2-1/4" Rigid Conduit	80.00 - 100.00	0.6000	0.6000
T6	25	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.6000
T6	28	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.6000
T6	30	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	33	HB158-1-08U8-S8J18(1-5/8)	80.00 - 100.00	0.6000	0.6000
T6	34	T-Brackets (Af)	80.00 - 100.00	0.6000	0.6000
T6	38	HB114-1-0813U4-M5J(1 1/4")	80.00 - 100.00	0.6000	0.6000
T6	40	LDF5-50A(7/8")	80.00 - 100.00	0.6000	0.6000
T6	42	(3/8") Ground Cables	80.00 - 100.00	0.6000	0.6000
T7	2	CR 50 1873PE(1-5/8")	60.00 - 80.00	0.6000	0.6000
T7	3	LDF1-50A(1/4")	60.00 - 80.00	0.6000	0.6000
T7	5	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	7	Climbing Ladder	60.00 - 80.00	0.6000	0.6000
T7	8	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T7	11	HCS 6X12 4AWG(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	14	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	16	LCF158-50JA-A0(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	17	WR-VG82ST-BRDA(5/8)	60.00 - 80.00	0.6000	0.6000
T7	19	WR-VG82ST-BRDA(5/8)	60.00 - 80.00	0.6000	0.6000
T7	22	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	23	2-1/4" Rigid Conduit	60.00 - 80.00	0.6000	0.6000
T7	25	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.6000
T7	27	LDF4-50A(1/2)	60.00 - 62.00	0.6000	0.6000
T7	28	LDF4-50A(1/2)	62.00 - 80.00	0.6000	0.6000
T7	30	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	33	HB158-1-08U8-S8J18(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	34	T-Brackets (Af)	60.00 - 80.00	0.6000	0.6000
T7	38	HB114-1-0813U4-M5J(1 1/4")	60.00 - 80.00	0.6000	0.6000
T7	40	LDF5-50A(7/8")	60.00 - 80.00	0.6000	0.6000
T7	42	(3/8") Ground Cables	60.00 - 80.00	0.6000	0.6000
T8	2	CR 50 1873PE(1-5/8")	40.00 - 60.00	0.6000	0.6000
T8	3	LDF1-50A(1/4")	40.00 - 60.00	0.6000	0.6000
T8	5	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	7	Climbing Ladder	40.00 - 60.00	0.6000	0.6000
T8	8	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T8	11	HCS 6X12 4AWG(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	14	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	16	LCF158-50JA-A0(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	17	WR-VG82ST-BRDA(5/8)	40.00 - 60.00	0.6000	0.6000
T8	19	WR-VG82ST-BRDA(5/8)	40.00 - 60.00	0.6000	0.6000
T8	22	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	23	2-1/4" Rigid Conduit	40.00 - 60.00	0.6000	0.6000
T8	25	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.6000
T8	27	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.6000
T8	30	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	33	HB158-1-08U8-S8J18(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	34	T-Brackets (Af)	40.00 - 60.00	0.6000	0.6000
T8	36	FSJ4-50B(1/2")	40.00 - 42.00	0.6000	0.6000
T8	38	HB114-1-0813U4-M5J(1 1/4")	40.00 - 60.00	0.6000	0.6000
T8	40	LDF5-50A(7/8")	40.00 - 60.00	0.6000	0.6000
T8	42	(3/8") Ground Cables	40.00 - 60.00	0.6000	0.6000
T9	2	CR 50 1873PE(1-5/8")	20.00 - 40.00	0.6000	0.6000

Job	102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page	13 of 36
Project		Date	00:29:45 04/30/20
Client	Crown Castle	Designed by	Shathanand

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T9	3	LDF1-50A(1/4")	20.00 - 40.00	0.6000	0.6000
T9	4	LDF4-50A(1/2")	20.00 - 31.00	0.6000	0.6000
T9	5	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	7	Climbing Ladder	20.00 - 40.00	0.6000	0.6000
T9	8	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T9	11	HCS 6X12 4AWG(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	14	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	16	LCF158-50JA-A0(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	17	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.6000	0.6000
T9	19	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.6000	0.6000
T9	22	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	23	2-1/4" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T9	25	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T9	27	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T9	30	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	33	HB158-1-08U8-S8J18(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	34	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T9	36	FSJ4-50B(1/2")	20.00 - 40.00	0.6000	0.6000
T9	38	HB114-1-0813U4-M5J(1/4")	20.00 - 40.00	0.6000	0.6000
T9	40	LDF5-50A(7/8")	20.00 - 40.00	0.6000	0.6000
T9	42	(3/8") Ground Cables	20.00 - 40.00	0.6000	0.6000
T10	2	CR 50 1873PE(1-5/8")	0.00 - 20.00	0.6000	0.6000
T10	3	LDF1-50A(1/4")	0.00 - 20.00	0.6000	0.6000
T10	4	LDF4-50A(1/2")	0.00 - 20.00	0.6000	0.6000
T10	5	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	7	Climbing Ladder	0.00 - 20.00	0.6000	0.6000
T10	8	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000
T10	11	HCS 6X12 4AWG(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	14	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	16	LCF158-50JA-A0(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	17	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.6000	0.6000
T10	19	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.6000	0.6000
T10	22	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	23	2-1/4" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T10	25	LDF5-50A(7/8)	0.00 - 20.00	0.6000	0.6000
T10	27	LDF4-50A(1/2)	0.00 - 20.00	0.6000	0.6000
T10	30	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	33	HB158-1-08U8-S8J18(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	34	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T10	36	FSJ4-50B(1/2")	0.00 - 20.00	0.6000	0.6000
T10	38	HB114-1-0813U4-M5J(1/4")	0.00 - 20.00	0.6000	0.6000
T10	40	LDF5-50A(7/8")	0.00 - 20.00	0.6000	0.6000
T10	42	(3/8") Ground Cables	0.00 - 20.00	0.6000	0.6000

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 14 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
PD10017	A	From Leg	0.500	0.000	0.000	178.000	No Ice	4.114	4.114	0.025
			0.000				1/2" Ice	5.641	5.641	0.055
			6.000				1" Ice	7.185	7.185	0.095
							2" Ice	10.323	10.323	0.203
*										
800 10504 w/ Mount Pipe	A	From Leg	2.000	0.000	0.000	170.000	No Ice	2.690	2.260	0.038
			0.000				1/2" Ice	3.120	2.680	0.067
			1.000				1" Ice	3.560	3.120	0.105
							2" Ice	4.490	4.030	0.206
800 10504 w/ Mount Pipe	B	From Leg	2.000	0.000	0.000	170.000	No Ice	2.690	2.260	0.038
			0.000				1/2" Ice	3.120	2.680	0.067
			1.000				1" Ice	3.560	3.120	0.105
							2" Ice	4.490	4.030	0.206
800 10504 w/ Mount Pipe	C	From Leg	2.000	0.000	0.000	170.000	No Ice	2.690	2.260	0.038
			0.000				1/2" Ice	3.120	2.680	0.067
			1.000				1" Ice	3.560	3.120	0.105
							2" Ice	4.490	4.030	0.206
860 10025	A	From Leg	2.000	0.000	0.000	170.000	No Ice	0.142	0.121	0.001
			0.000				1/2" Ice	0.196	0.173	0.003
			0.000				1" Ice	0.259	0.231	0.005
							2" Ice	0.408	0.376	0.014
860 10025	B	From Leg	2.000	0.000	0.000	170.000	No Ice	0.142	0.121	0.001
			0.000				1/2" Ice	0.196	0.173	0.003
			0.000				1" Ice	0.259	0.231	0.005
							2" Ice	0.408	0.376	0.014
860 10025	C	From Leg	2.000	0.000	0.000	170.000	No Ice	0.142	0.121	0.001
			0.000				1/2" Ice	0.196	0.173	0.003
			0.000				1" Ice	0.259	0.231	0.005
							2" Ice	0.408	0.376	0.014
6' x 2" Mount Pipe	A	From Leg	2.000	0.000	0.000	170.000	No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	B	From Leg	2.000	0.000	0.000	170.000	No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	C	From Leg	2.000	0.000	0.000	170.000	No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
Side Arm Mount [SO 103-3]	C	None		0.000	0.000	170.000	No Ice	7.640	7.640	0.234
							1/2" Ice	8.800	8.800	0.360
							1" Ice	10.160	10.160	0.517
							2" Ice	13.360	13.360	0.937
*										
(2) APL868013-42T0 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	164.000	No Ice	2.630	4.130	0.030
			0.000				1/2" Ice	3.070	4.600	0.064
			2.000				1" Ice	3.530	5.090	0.106
							2" Ice	4.490	6.110	0.214
(2) APL868013-42T0 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	164.000	No Ice	2.630	4.130	0.030
			0.000				1/2" Ice	3.070	4.600	0.064
			2.000				1" Ice	3.530	5.090	0.106
							2" Ice	4.490	6.110	0.214

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page	15 of 36
	Project		Date	00:29:45 04/30/20
	Client	Crown Castle	Designed by	Shathanand

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C_{AA} Front</i> <i>ft²</i>	<i>C_{AA} Side</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
(2) APL868013-42T0 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 2.630 1/2" Ice 3.070 1" Ice 3.530 2" Ice 4.490	4.130 4.600 5.090 6.110	0.030 0.064 0.106 0.214
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 5.500 1/2" Ice 5.970 1" Ice 6.450 2" Ice 7.440	4.380 4.840 5.300 6.260	0.096 0.169 0.254 0.457
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 5.500 1/2" Ice 5.970 1" Ice 6.450 2" Ice 7.440	4.380 4.840 5.300 6.260	0.096 0.169 0.254 0.457
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 5.500 1/2" Ice 5.970 1" Ice 6.450 2" Ice 7.440	4.380 4.840 5.300 6.260	0.096 0.169 0.254 0.457
RFV01U-D1A	A	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 1.875 1/2" Ice 2.045 1" Ice 2.223 2" Ice 2.601	1.250 1.393 1.543 1.865	0.084 0.103 0.124 0.175
RFV01U-D1A	B	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 1.875 1/2" Ice 2.045 1" Ice 2.223 2" Ice 2.601	1.250 1.393 1.543 1.865	0.084 0.103 0.124 0.175
RFV01U-D1A	C	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 1.875 1/2" Ice 2.045 1" Ice 2.223 2" Ice 2.601	1.250 1.393 1.543 1.865	0.084 0.103 0.124 0.175
CBC78TDS-43-2X	A	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 0.368 1/2" Ice 0.446 1" Ice 0.531 2" Ice 0.723	0.512 0.605 0.705 0.927	0.021 0.027 0.035 0.057
CBC78TDS-43-2X	B	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 0.368 1/2" Ice 0.446 1" Ice 0.531 2" Ice 0.723	0.512 0.605 0.705 0.927	0.021 0.027 0.035 0.057
CBC78TDS-43-2X	C	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 0.368 1/2" Ice 0.446 1" Ice 0.531 2" Ice 0.723	0.512 0.605 0.705 0.927	0.021 0.027 0.035 0.057
20W CBRS	A	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 0.857 1/2" Ice 0.975 1" Ice 1.101 2" Ice 1.374	0.420 0.510 0.608 0.833	0.019 0.026 0.034 0.058
20W CBRS	B	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 0.857 1/2" Ice 0.975 1" Ice 1.101 2" Ice 1.374	0.420 0.510 0.608 0.833	0.019 0.026 0.034 0.058
20W CBRS	C	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 0.857 1/2" Ice 0.975 1" Ice 1.101 2" Ice 1.374	0.420 0.510 0.608 0.833	0.019 0.026 0.034 0.058
(2) RFV01U-D2A	A	From Leg	4.000 0.000 2.000	0.000	164.000	No Ice 1.875 1/2" Ice 2.045 1" Ice 2.223 2" Ice 2.601	1.013 1.145 1.284 1.585	0.070 0.087 0.106 0.153
RFV01U-D2A	B	From Leg	4.000	0.000	164.000	No Ice 1.875	1.013	0.070

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	Page
	102920.006.01 - BRG 124 943066, CT (BU# 806353)	16 of 36
	Project	Date
		00:29:45 04/30/20
Client	Designed by	
	Crown Castle	Shathanand

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft					
			0.000			1/2" Ice	2.045	1.145	0.087
			2.000			1" Ice	2.223	1.284	0.106
						2" Ice	2.601	1.585	0.153
DB-T1-6Z-8AB-0Z	B	From Leg	4.000	0.000	164.000	No Ice	4.800	2.000	0.044
			0.000			1/2" Ice	5.070	2.193	0.080
			2.000			1" Ice	5.348	2.393	0.120
						2" Ice	5.926	2.815	0.213
DB-T1-6Z-8AB-0Z	C	From Leg	4.000	0.000	164.000	No Ice	4.800	2.000	0.044
			0.000			1/2" Ice	5.070	2.193	0.080
			2.000			1" Ice	5.348	2.393	0.120
						2" Ice	5.926	2.815	0.213
CBRS w/ Mount Pipe	A	From Leg	4.000	0.000	164.000	No Ice	1.714	1.168	0.032
			0.000			1/2" Ice	1.934	1.437	0.050
			2.000			1" Ice	2.166	1.723	0.072
						2" Ice	2.664	2.351	0.127
CBRS w/ Mount Pipe	B	From Leg	4.000	0.000	164.000	No Ice	1.714	1.168	0.032
			0.000			1/2" Ice	1.934	1.437	0.050
			2.000			1" Ice	2.166	1.723	0.072
						2" Ice	2.664	2.351	0.127
CBRS w/ Mount Pipe	C	From Leg	4.000	0.000	164.000	No Ice	1.714	1.168	0.032
			0.000			1/2" Ice	1.934	1.437	0.050
			2.000			1" Ice	2.166	1.723	0.072
						2" Ice	2.664	2.351	0.127
(2) 6' x 2" Mount Pipe	A	From Leg	4.000	0.000	164.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
(2) 6' x 2" Mount Pipe	B	From Leg	4.000	0.000	164.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
(2) 6' x 2" Mount Pipe	C	From Leg	4.000	0.000	164.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
Sector Mount [SM 702-3]	C	None		0.000	164.000	No Ice	47.865	47.865	1.909
						1/2" Ice	62.031	62.031	2.805
						1" Ice	76.025	76.025	3.959
						2" Ice	112.467	112.467	7.021
*									
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	154.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			4.000			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	154.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			4.000			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	154.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			4.000			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
QS66512-2 w/ Mount Pipe	A	From Leg	4.000	0.000	154.000	No Ice	4.040	4.180	0.137
			0.000			1/2" Ice	4.420	4.570	0.206
			4.000			1" Ice	4.820	4.970	0.287
						2" Ice	5.630	5.790	0.482
QS66512-2 w/ Mount Pipe	B	From Leg	4.000	0.000	154.000	No Ice	4.040	4.180	0.137

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 17 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
			0.000			1/2" Ice	4.420	4.570	0.206
			4.000			1" Ice	4.820	4.970	0.287
						2" Ice	5.630	5.790	0.482
QS66512-2 w/ Mount Pipe	C	From Leg	4.000	0.000	154.000	No Ice	4.040	4.180	0.137
			0.000			1/2" Ice	4.420	4.570	0.206
			4.000			1" Ice	4.820	4.970	0.287
						2" Ice	5.630	5.790	0.482
(2) LGP21401	A	From Leg	4.000	0.000	154.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			-4.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
(2) LGP21401	B	From Leg	4.000	0.000	154.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			-4.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
(2) LGP21401	C	From Leg	4.000	0.000	154.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			-4.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
DBC0061F1V51-2	A	From Leg	4.000	0.000	154.000	No Ice	0.433	0.413	0.025
			0.000			1/2" Ice	0.518	0.496	0.031
			-4.000			1" Ice	0.609	0.586	0.038
						2" Ice	0.815	0.788	0.057
DBC0061F1V51-2	B	From Leg	4.000	0.000	154.000	No Ice	0.433	0.413	0.025
			0.000			1/2" Ice	0.518	0.496	0.031
			-4.000			1" Ice	0.609	0.586	0.038
						2" Ice	0.815	0.788	0.057
DBC0061F1V51-2	C	From Leg	4.000	0.000	154.000	No Ice	0.433	0.413	0.025
			0.000			1/2" Ice	0.518	0.496	0.031
			-4.000			1" Ice	0.609	0.586	0.038
						2" Ice	0.815	0.788	0.057
RRUS 32 B30	A	From Leg	4.000	0.000	154.000	No Ice	2.692	1.573	0.060
			0.000			1/2" Ice	2.912	1.756	0.080
			-4.000			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 32 B30	B	From Leg	4.000	0.000	154.000	No Ice	2.692	1.573	0.060
			0.000			1/2" Ice	2.912	1.756	0.080
			-4.000			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 32 B30	C	From Leg	4.000	0.000	154.000	No Ice	2.692	1.573	0.060
			0.000			1/2" Ice	2.912	1.756	0.080
			-4.000			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 32 B2	A	From Leg	4.000	0.000	154.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			-4.000			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	B	From Leg	4.000	0.000	154.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			-4.000			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	C	From Leg	4.000	0.000	154.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			-4.000			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
(2) DC6-48-60-18-8F	A	From Leg	4.000	0.000	154.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	Page
	102920.006.01 - BRG 124 943066, CT (BU# 806353)	18 of 36
	Project	Date
		00:29:45 04/30/20
	Client	Designed by
	Crown Castle	Shathanand

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			Vert		°	ft	ft ²	ft ²	K	
			ft	ft						
			ft							
			-4.000				1" Ice	2.105	2.105	0.080
							2" Ice	2.570	2.570	0.138
OPA65R-BU6D w/ Mount Pipe	A	From Leg	4.000	0.000	154.000	No Ice	12.250	6.050	0.089	
			0.000			1/2" Ice	13.000	6.710	0.176	
			4.000			1" Ice	13.760	7.390	0.275	
						2" Ice	15.340	8.790	0.508	
OPA65R-BU6D w/ Mount Pipe	B	From Leg	4.000	0.000	154.000	No Ice	12.250	6.050	0.089	
			0.000			1/2" Ice	13.000	6.710	0.176	
			4.000			1" Ice	13.760	7.390	0.275	
						2" Ice	15.340	8.790	0.508	
OPA65R-BU6D w/ Mount Pipe	C	From Leg	4.000	0.000	154.000	No Ice	12.250	6.050	0.089	
			0.000			1/2" Ice	13.000	6.710	0.176	
			4.000			1" Ice	13.760	7.390	0.275	
						2" Ice	15.340	8.790	0.508	
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.000	0.000	154.000	No Ice	11.960	5.970	0.115	
			0.000			1/2" Ice	12.700	6.630	0.201	
			4.000			1" Ice	13.460	7.300	0.298	
						2" Ice	15.020	8.690	0.529	
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.000	0.000	154.000	No Ice	11.960	5.970	0.115	
			0.000			1/2" Ice	12.700	6.630	0.201	
			4.000			1" Ice	13.460	7.300	0.298	
						2" Ice	15.020	8.690	0.529	
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.000	0.000	154.000	No Ice	11.960	5.970	0.115	
			0.000			1/2" Ice	12.700	6.630	0.201	
			4.000			1" Ice	13.460	7.300	0.298	
						2" Ice	15.020	8.690	0.529	
RRUS 4478 B14	A	From Leg	4.000	0.000	154.000	No Ice	1.843	1.059	0.060	
			0.000			1/2" Ice	2.012	1.197	0.076	
			4.000			1" Ice	2.190	1.342	0.094	
						2" Ice	2.566	1.656	0.140	
RRUS 4478 B14	B	From Leg	4.000	0.000	154.000	No Ice	1.843	1.059	0.060	
			0.000			1/2" Ice	2.012	1.197	0.076	
			4.000			1" Ice	2.190	1.342	0.094	
						2" Ice	2.566	1.656	0.140	
RRUS 4478 B14	C	From Leg	4.000	0.000	154.000	No Ice	1.843	1.059	0.060	
			0.000			1/2" Ice	2.012	1.197	0.076	
			4.000			1" Ice	2.190	1.342	0.094	
						2" Ice	2.566	1.656	0.140	
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	154.000	No Ice	1.968	1.408	0.071	
			0.000			1/2" Ice	2.144	1.564	0.090	
			4.000			1" Ice	2.328	1.727	0.111	
						2" Ice	2.718	2.075	0.163	
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	154.000	No Ice	1.968	1.408	0.071	
			0.000			1/2" Ice	2.144	1.564	0.090	
			4.000			1" Ice	2.328	1.727	0.111	
						2" Ice	2.718	2.075	0.163	
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	154.000	No Ice	1.968	1.408	0.071	
			0.000			1/2" Ice	2.144	1.564	0.090	
			4.000			1" Ice	2.328	1.727	0.111	
						2" Ice	2.718	2.075	0.163	
DC6-48-60-18-8F	A	From Leg	4.000	0.000	154.000	No Ice	1.212	1.212	0.033	
			0.000			1/2" Ice	1.892	1.892	0.055	
			-4.000			1" Ice	2.105	2.105	0.080	
						2" Ice	2.570	2.570	0.138	
(2) 5' x 2" Pipe Mount	A	From Leg	4.000	0.000	154.000	No Ice	1.188	1.188	0.018	
			0.000			1/2" Ice	1.496	1.496	0.027	
			0.000			1" Ice	1.807	1.807	0.040	

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	Page	
	102920.006.01 - BRG 124 943066, CT (BU# 806353)		19 of 36
	Project	Date	00:29:45 04/30/20
Client	Crown Castle	Designed by Shathanand	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						°
(2) 5' x 2" Pipe Mount	B	From Leg	4.000	0.000	0.000	154.000	2" Ice	2.458	2.458	0.076
							No Ice	1.188	1.188	0.018
							1/2" Ice	1.496	1.496	0.027
							1" Ice	1.807	1.807	0.040
(2) 5' x 2" Pipe Mount	C	From Leg	4.000	0.000	0.000	154.000	2" Ice	2.458	2.458	0.076
							No Ice	1.188	1.188	0.018
							1/2" Ice	1.496	1.496	0.027
							1" Ice	1.807	1.807	0.040
12.5' x 2.375" Horizontal Mount Pipe	A	From Leg	4.000	0.000	0.000	154.000	2" Ice	2.458	2.458	0.076
							No Ice	2.980	0.010	0.046
							1/2" Ice	4.250	0.050	0.068
							1" Ice	5.550	0.100	0.981
12.5' x 2.375" Horizontal Mount Pipe	B	From Leg	4.000	0.000	0.000	154.000	2" Ice	8.060	0.240	0.183
							No Ice	2.980	0.010	0.046
							1/2" Ice	4.250	0.050	0.068
							1" Ice	5.550	0.100	0.981
12.5' x 2.375" Horizontal Mount Pipe	C	From Leg	4.000	0.000	0.000	154.000	2" Ice	8.060	0.240	0.183
							No Ice	2.980	0.010	0.046
							1/2" Ice	4.250	0.050	0.068
							1" Ice	5.550	0.100	0.981
Sector Mount [SM 1303-3]	C	None			0.000	154.000	2" Ice	8.060	0.240	0.183
							No Ice	38.780	38.780	1.104
							1/2" Ice	46.780	46.780	1.763
							1" Ice	54.730	54.730	2.567
Pipe Mount [PM 601-3]	C	None			0.000	154.000	2" Ice	70.620	70.620	4.604
							No Ice	3.170	3.170	0.195
							1/2" Ice	3.790	3.790	0.232
							1" Ice	4.420	4.420	0.279
* 800 EXTERNAL NOTCH FILTER	A	From Leg	1.000	0.000	0.000	145.000	2" Ice	5.760	5.760	0.401
							No Ice	0.660	0.321	0.011
							1/2" Ice	0.763	0.398	0.017
							1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH FILTER	B	From Leg	1.000	0.000	0.000	145.000	2" Ice	1.115	0.674	0.045
							No Ice	0.660	0.321	0.011
							1/2" Ice	0.763	0.398	0.017
							1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH FILTER	C	From Leg	1.000	0.000	0.000	145.000	2" Ice	1.115	0.674	0.045
							No Ice	0.660	0.321	0.011
							1/2" Ice	0.763	0.398	0.017
							1" Ice	0.873	0.483	0.024
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	1.000	0.000	0.000	145.000	2" Ice	1.115	0.674	0.045
							No Ice	2.322	2.238	0.060
							1/2" Ice	2.527	2.441	0.083
							1" Ice	2.739	2.651	0.110
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	1.000	0.000	0.000	145.000	2" Ice	3.185	3.093	0.173
							No Ice	2.322	2.238	0.060
							1/2" Ice	2.527	2.441	0.083
							1" Ice	2.739	2.651	0.110
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	1.000	0.000	0.000	145.000	2" Ice	3.185	3.093	0.173
							No Ice	2.322	2.238	0.060
							1/2" Ice	2.527	2.441	0.083
							1" Ice	2.739	2.651	0.110
800MHZ 2X50W RRH	A	From Leg	1.000	0.000	0.000	145.000	2" Ice	3.185	3.093	0.173
							No Ice	2.134	1.773	0.053
							1/2" Ice	2.320	1.946	0.074
							1" Ice	2.512	2.127	0.098

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page	20 of 36
	Project		Date	00:29:45 04/30/20
	Client	Crown Castle		Designed by

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral	Vert					
800MHZ 2X50W RRH	B	From Leg	1.000	0.000	145.000	2" Ice	2.920	2.510	0.157	
			0.000				No Ice	2.134	1.773	0.053
			1.000				1/2" Ice	2.320	1.946	0.074
							1" Ice	2.512	2.127	0.098
800MHZ 2X50W RRH	C	From Leg	1.000	0.000	145.000	2" Ice	2.920	2.510	0.157	
			0.000				No Ice	2.134	1.773	0.053
			1.000				1/2" Ice	2.320	1.946	0.074
							1" Ice	2.512	2.127	0.098
					2" Ice	2.920	2.510	0.157		
* APXVTM14-C-120	A	From Leg	4.000	0.000	143.000	No Ice	4.120	2.060	0.056	
			0.000				1/2" Ice	4.520	2.420	0.096
			0.000				1" Ice	4.930	2.800	0.140
							2" Ice	5.800	3.600	0.246
APXVTM14-C-120	B	From Leg	4.000	0.000	143.000	No Ice	4.120	2.060	0.056	
			0.000				1/2" Ice	4.520	2.420	0.096
			0.000				1" Ice	4.930	2.800	0.140
							2" Ice	5.800	3.600	0.246
APXVTM14-C-120	C	From Leg	4.000	0.000	143.000	No Ice	4.120	2.060	0.056	
			0.000				1/2" Ice	4.520	2.420	0.096
			0.000				1" Ice	4.930	2.800	0.140
							2" Ice	5.800	3.600	0.246
APXVSP18-C-A20	A	From Leg	4.000	0.000	143.000	No Ice	4.660	3.110	0.070	
			0.000				1/2" Ice	5.120	3.550	0.121
			0.000				1" Ice	5.600	4.000	0.180
							2" Ice	6.580	4.940	0.315
APXVSP18-C-A20	B	From Leg	4.000	0.000	143.000	No Ice	4.660	3.110	0.070	
			0.000				1/2" Ice	5.120	3.550	0.121
			0.000				1" Ice	5.600	4.000	0.180
							2" Ice	6.580	4.940	0.315
APXVSP18-C-A20	C	From Leg	4.000	0.000	143.000	No Ice	4.660	3.110	0.070	
			0.000				1/2" Ice	5.120	3.550	0.121
			0.000				1" Ice	5.600	4.000	0.180
							2" Ice	6.580	4.940	0.315
TD-RRH8x20-25	A	From Leg	4.000	0.000	143.000	No Ice	4.045	1.535	0.070	
			0.000				1/2" Ice	4.298	1.714	0.097
			4.000				1" Ice	4.557	1.901	0.128
							2" Ice	5.098	2.295	0.201
TD-RRH8x20-25	B	From Leg	4.000	0.000	143.000	No Ice	4.045	1.535	0.070	
			0.000				1/2" Ice	4.298	1.714	0.097
			4.000				1" Ice	4.557	1.901	0.128
							2" Ice	5.098	2.295	0.201
TD-RRH8x20-25	C	From Leg	4.000	0.000	143.000	No Ice	4.045	1.535	0.070	
			0.000				1/2" Ice	4.298	1.714	0.097
			4.000				1" Ice	4.557	1.901	0.128
							2" Ice	5.098	2.295	0.201
(3) ACU-A20-N	A	From Leg	4.000	0.000	143.000	No Ice	0.067	0.117	0.001	
			0.000				1/2" Ice	0.104	0.162	0.002
			0.000				1" Ice	0.148	0.215	0.004
							2" Ice	0.259	0.343	0.012
(3) ACU-A20-N	B	From Leg	4.000	0.000	143.000	No Ice	0.067	0.117	0.001	
			0.000				1/2" Ice	0.104	0.162	0.002
			0.000				1" Ice	0.148	0.215	0.004
							2" Ice	0.259	0.343	0.012
(3) ACU-A20-N	C	From Leg	4.000	0.000	143.000	No Ice	0.067	0.117	0.001	
			0.000				1/2" Ice	0.104	0.162	0.002
			0.000				1" Ice	0.148	0.215	0.004
							2" Ice	0.259	0.343	0.012

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 21 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			Horz Lateral ft	Vert ft						
5' x 2" Pipe Mount	A	From Leg	4.000	0.000	0.000	143.000	2" Ice	0.259	0.343	0.012
							No Ice	1.188	1.188	0.018
							1/2" Ice	1.496	1.496	0.027
							1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	B	From Leg	4.000	0.000	0.000	143.000	2" Ice	2.458	2.458	0.076
							No Ice	1.188	1.188	0.018
							1/2" Ice	1.496	1.496	0.027
							1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	0.000	143.000	2" Ice	2.458	2.458	0.076
							No Ice	1.188	1.188	0.018
							1/2" Ice	1.496	1.496	0.027
							1" Ice	1.807	1.807	0.040
Sector Mount [SM 401-3]	C	None	0.000	0.000	0.000	143.000	2" Ice	2.458	2.458	0.076
							No Ice	17.820	17.820	0.804
							1/2" Ice	25.010	25.010	1.143
							1" Ice	32.110	32.110	1.600
* 1142-2C	B	From Leg	6.000	0.000	0.000	124.000	2" Ice	46.160	46.160	2.869
							No Ice	2.092	2.092	0.024
							1/2" Ice	3.374	3.374	0.041
							1" Ice	4.673	4.673	0.066
1142-2C	C	From Leg	6.000	0.000	0.000	124.000	2" Ice	7.320	7.320	0.140
							No Ice	2.092	2.092	0.024
							1/2" Ice	3.374	3.374	0.041
							1" Ice	4.673	4.673	0.066
Side Arm Mount [SO 303-1]	B	From Leg	3.000	0.000	0.000	124.000	2" Ice	7.320	7.320	0.140
							No Ice	1.080	5.310	0.115
							1/2" Ice	1.630	7.570	0.158
							1" Ice	2.210	9.930	0.217
Side Arm Mount [SO 303-1]	C	From Leg	3.000	0.000	0.000	124.000	2" Ice	3.440	15.190	0.379
							No Ice	1.080	5.310	0.115
							1/2" Ice	1.630	7.570	0.158
							1" Ice	2.210	9.930	0.217
* 220-3BN	B	From Leg	6.000	0.000	0.000	104.000	2" Ice	14.265	14.265	0.270
							No Ice	5.720	5.720	0.024
							1/2" Ice	7.831	7.831	0.066
							1" Ice	9.959	9.959	0.120
1142-2C	C	From Leg	6.000	0.000	0.000	104.000	2" Ice	7.320	7.320	0.140
							No Ice	2.092	2.092	0.024
							1/2" Ice	3.374	3.374	0.041
							1" Ice	4.673	4.673	0.066
Side Arm Mount [SO 303-1]	B	From Leg	3.000	0.000	0.000	104.000	2" Ice	7.320	7.320	0.140
							No Ice	1.080	5.310	0.115
							1/2" Ice	1.630	7.570	0.158
							1" Ice	2.210	9.930	0.217
Side Arm Mount [SO 303-1]	C	From Leg	3.000	0.000	0.000	104.000	2" Ice	3.440	15.190	0.379
							No Ice	1.080	5.310	0.115
							1/2" Ice	1.630	7.570	0.158
							1" Ice	2.210	9.930	0.217
* ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	93.000	2" Ice	8.117	8.591	0.383
							No Ice	6.329	5.642	0.112
							1/2" Ice	6.775	6.426	0.169
							1" Ice	7.214	7.131	0.233
ERICSSON AIR 21 B2A	B	From Leg	4.000	0.000	0.000	93.000	No Ice	6.329	5.642	0.112

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 22 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz Lateral ft	Vert ft					
B4P w/ Mount Pipe			0.000			1/2" Ice	6.775	6.426	0.169
			0.000			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.000	0.000	93.000	No Ice	6.329	5.642	0.112
			0.000			1/2" Ice	6.775	6.426	0.169
			0.000			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
KRY 112 144/1	A	From Leg	4.000	0.000	93.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
KRY 112 144/1	B	From Leg	4.000	0.000	93.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
KRY 112 144/1	C	From Leg	4.000	0.000	93.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
AIR 32 B2a/B66Aa	A	From Leg	4.000	0.000	93.000	No Ice	6.510	4.712	0.132
			0.000			1/2" Ice	6.887	5.068	0.178
			0.000			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
AIR 32 B2a/B66Aa	B	From Leg	4.000	0.000	93.000	No Ice	6.510	4.712	0.132
			0.000			1/2" Ice	6.887	5.068	0.178
			0.000			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
AIR 32 B2a/B66Aa	C	From Leg	4.000	0.000	93.000	No Ice	6.510	4.712	0.132
			0.000			1/2" Ice	6.887	5.068	0.178
			0.000			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
APXVAARR24_43-U-NA20	A	From Leg	4.000	0.000	93.000	No Ice	14.670	5.320	0.153
			0.000			1/2" Ice	15.430	5.990	0.266
			0.000			1" Ice	16.210	6.680	0.387
						2" Ice	17.810	8.080	0.656
APXVAARR24_43-U-NA20	B	From Leg	4.000	0.000	93.000	No Ice	14.670	5.320	0.153
			0.000			1/2" Ice	15.430	5.990	0.266
			0.000			1" Ice	16.210	6.680	0.387
						2" Ice	17.810	8.080	0.656
APXVAARR24_43-U-NA20	C	From Leg	4.000	0.000	93.000	No Ice	14.670	5.320	0.153
			0.000			1/2" Ice	15.430	5.990	0.266
			0.000			1" Ice	16.210	6.680	0.387
						2" Ice	17.810	8.080	0.656
RADIO 4449 B12/B71	A	From Leg	4.000	0.000	93.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			0.000			1" Ice	1.978	1.447	0.109
						2" Ice	2.336	1.762	0.155
RADIO 4449 B12/B71	B	From Leg	4.000	0.000	93.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			0.000			1" Ice	1.978	1.447	0.109
						2" Ice	2.336	1.762	0.155
RADIO 4449 B12/B71	C	From Leg	4.000	0.000	93.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			0.000			1" Ice	1.978	1.447	0.109
						2" Ice	2.336	1.762	0.155
Sector Mount [SM 404-3]	C	None		0.000	93.000	No Ice	20.430	20.430	0.920
						1/2" Ice	28.680	28.680	1.311

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 24 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

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
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

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 25 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

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		
T1	180 - 168	Leg	Max Tension	7	1.705	-0.068	0.028		
			Max. Compression	10	-2.489	-0.051	-0.028		
			Max. Mx	20	-0.261	0.132	0.007		
			Max. My	16	-0.497	0.065	-0.127		
			Max. Vy	20	-0.120	0.132	0.007		
		Diagonal	Max. Vx	14	0.122	0.033	-0.121		
			Max Tension	11	0.562	0.000	0.000		
			Max. Compression	22	-0.615	0.000	0.000		
			Max. Mx	34	-0.063	0.013	0.000		
			Max. My	24	0.491	0.006	-0.003		
		Top Girt	Max. Vy	34	-0.015	0.013	0.000		
			Max. Vx	24	-0.001	0.005	-0.003		
			Max Tension	18	0.148	0.000	0.000		
			Max. Compression	23	-0.119	0.000	0.000		
			Max. Mx	26	0.044	-0.020	0.000		
T2	168 - 160	Leg	Max. Vy	26	0.020	0.000	0.000		
			Max Tension	7	6.845	0.027	-0.048		
			Max. Compression	10	-10.898	0.026	0.020		
			Max. Mx	8	-1.966	-0.132	0.007		
			Max. My	16	-2.273	0.081	-0.155		
		Diagonal	Max. Vy	20	1.103	0.008	0.059		
			Max. Vx	14	-1.104	-0.001	-0.040		
			Max Tension	21	2.510	0.000	0.000		
			Max. Compression	8	-2.617	0.000	0.000		
			Max. Mx	8	1.453	0.022	0.002		
			Max. My	24	2.456	0.015	-0.005		
			Max. Vy	29	-0.018	0.021	-0.001		
			Max. Vx	24	-0.002	0.010	-0.005		
			Max Tension	7	39.007	-0.265	-0.022		
			Max. Compression	10	-49.355	0.294	-0.001		
T3	160 - 140	Leg	Max. Mx	14	18.429	0.580	0.016		
			Max. My	20	-4.143	-0.025	0.817		
			Max. Vy	14	-1.150	-0.566	0.016		
			Max. Vx	8	1.073	-0.029	0.259		
			Max Tension	20	4.152	0.000	0.000		
		Diagonal	Max. Compression	20	-4.214	0.000	0.000		
			Max. Mx	10	3.561	0.025	-0.001		
			Max. My	4	1.998	0.011	-0.004		
			Max. Vy	31	-0.020	0.023	0.002		
			Max. Vx	4	0.002	0.000	0.000		
		T4	140 - 120	Leg	Max Tension	7	70.522	-0.273	-0.084
					Max. Compression	10	-84.539	0.310	-0.045
					Max. Mx	22	47.380	-0.346	-0.001
					Max. My	4	-6.007	-0.030	-0.449
					Max. Vy	3	0.094	0.276	-0.029
Diagonal	Max. Vx			19	0.179	-0.141	0.348		
	Max Tension			20	4.934	0.000	0.000		
	Max. Compression			20	-4.964	0.000	0.000		
	Max. Mx			31	1.024	0.034	-0.004		
	Max. My			28	1.060	0.030	-0.005		
	Max. Vy			29	0.027	0.030	-0.005		
	Max. Vx			28	0.002	0.000	0.000		
	Max Tension			7	98.339	-0.350	-0.098		
	Max. Compression			10	-116.034	0.430	-0.037		
	Max. Mx			3	-108.735	0.442	-0.061		
T5	120 - 100	Leg	Max. My	16	-9.548	-0.002	0.606		
			Max. Vy	3	-0.109	0.442	-0.061		
			Max. Vx	4	-0.211	-0.034	-0.481		

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page	26 of 36
	Project		Date	00:29:45 04/30/20
	Client	Crown Castle	Designed by	Shathanand

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
T6	100 - 80	Diagonal	Max Tension	20	5.117	0.000	0.000		
			Max. Compression	20	-5.174	0.000	0.000		
			Max. Mx	31	1.035	0.054	-0.006		
			Max. My	28	1.140	0.051	-0.007		
			Max. Vy	29	0.037	0.048	0.005		
			Max. Vx	28	0.002	0.000	0.000		
		Leg	Max Tension	7	125.022	-0.451	-0.022		
			Max. Compression	10	-148.699	0.815	0.013		
			Max. Mx	18	-147.850	0.830	0.086		
			Max. My	16	-13.139	0.011	0.717		
			Max. Vy	22	-0.708	-0.563	-0.017		
			Max. Vx	16	0.660	-0.014	0.382		
		T7	80 - 60	Diagonal	Max Tension	20	6.266	0.000	0.000
					Max. Compression	18	-6.247	0.000	0.000
Max. Mx	31				1.512	0.066	-0.008		
Max. My	29				-1.630	0.057	-0.010		
Max. Vy	29				0.047	0.065	-0.009		
Max. Vx	29				0.003	0.000	0.000		
Leg	Max Tension			7	150.003	-0.678	-0.068		
	Max. Compression			10	-177.238	1.081	0.014		
	Max. Mx			18	-176.551	1.102	0.130		
	Max. My			4	-14.198	-0.089	-1.097		
	Max. Vy			18	-0.130	1.102	0.130		
	Max. Vx			4	0.187	-0.089	-1.097		
T8	60 - 40			Diagonal	Max Tension	20	7.385	0.000	0.000
					Max. Compression	20	-7.436	0.000	0.000
		Max. Mx	31		1.781	0.112	0.015		
		Max. My	34		1.672	0.110	0.017		
		Max. Vy	29		0.063	0.111	0.013		
		Max. Vx	34		-0.004	0.000	0.000		
		Leg	Max Tension	7	176.057	-0.925	-0.066		
			Max. Compression	10	-207.429	-0.131	0.007		
			Max. Mx	18	-191.637	1.102	0.130		
			Max. My	4	-16.675	-0.073	-1.008		
			Max. Vy	22	-0.181	-0.942	-0.022		
			Max. Vx	16	0.163	0.046	0.819		
		T9	40 - 20	Diagonal	Max Tension	20	7.852	0.000	0.000
					Max. Compression	20	-7.920	0.000	0.000
Max. Mx	31				2.028	0.164	0.021		
Max. My	34				1.886	0.153	0.022		
Max. Vy	29				0.083	0.155	0.019		
Max. Vx	34				-0.005	0.000	0.000		
Leg	Max Tension			7	200.313	1.545	-0.044		
	Max. Compression			18	-236.347	-0.399	0.057		
	Max. Mx			18	-221.553	3.313	-0.021		
	Max. My			8	-16.262	-0.403	1.948		
	Max. Vy			18	-1.172	3.258	-0.023		
	Max. Vx			4	0.501	-0.428	-1.930		
Secondary Horizontal	Diagonal			Max Tension	7	8.303	0.107	-0.003	
				Max. Compression	18	-9.227	0.000	0.000	
		Max. Mx	31	1.065	0.195	-0.015			
		Max. My	28	-1.948	0.144	-0.018			
		Max. Vy	29	0.089	0.170	-0.015			
		Max. Vx	28	-0.004	0.000	0.000			
	Secondary Horizontal	Max Tension	18	4.098	0.000	0.000			
		Max. Compression	18	-4.098	0.071	0.006			
		Max. Mx	36	-0.410	0.166	0.033			
		Max. My	30	-0.124	0.137	0.037			
		Max. Vy	35	-0.091	0.141	0.034			
		Max. Vx	30	-0.006	0.000	0.000			

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page	27 of 36
	Project		Date	00:29:45 04/30/20
	Client	Crown Castle	Designed by	Shathanand

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T10	20 - 0	Leg	Max Tension	7	224.241	-1.728	-0.063
			Max. Compression	18	-266.175	0.000	-0.000
			Max. Mx	35	-117.241	4.089	-0.038
			Max. My	8	-19.818	-0.145	2.456
			Max. Vy	31	-0.743	-3.140	-0.001
			Max. Vx	4	-0.378	-0.145	-2.444
		Diagonal	Max Tension	20	8.788	0.000	0.000
			Max. Compression	18	-9.522	0.000	0.000
			Max. Mx	29	0.064	0.245	-0.026
			Max. My	28	3.450	0.172	-0.031
			Max. Vy	29	0.099	0.245	-0.026
			Max. Vx	28	0.005	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	273.592	25.110	-13.212
	Max. H _x	18	273.592	25.110	-13.212
	Max. H _z	7	-230.132	-21.778	11.351
	Min. Vert	7	-230.132	-21.778	11.351
	Min. H _x	7	-230.132	-21.778	11.351
	Min. H _z	18	273.592	25.110	-13.212
Leg B	Max. Vert	10	272.146	-23.833	-13.890
	Max. H _x	23	-221.917	20.431	11.907
	Max. H _z	23	-221.917	20.431	11.907
	Min. Vert	23	-221.917	20.431	11.907
	Min. H _x	10	272.146	-23.833	-13.890
	Min. H _z	10	272.146	-23.833	-13.890
Leg A	Max. Vert	2	259.488	0.877	26.462
	Max. H _x	20	21.137	2.558	1.604
	Max. H _z	2	259.488	0.877	26.462
	Min. Vert	15	-214.494	-0.806	-22.618
	Min. H _x	11	-108.840	-2.531	-11.839
	Min. H _z	15	-214.494	-0.806	-22.618

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	54.242	0.000	0.000	10.180	-32.230	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	65.091	-0.032	-41.393	-4118.657	-36.153	28.883
0.9 Dead+1.0 Wind 0 deg - No Ice	48.818	-0.032	-41.393	-4121.711	-26.484	28.883
1.2 Dead+1.0 Wind 30 deg - No Ice	65.091	20.736	-36.128	-3575.182	-2098.265	46.860
0.9 Dead+1.0 Wind 30 deg - No Ice	48.818	20.736	-36.128	-3578.236	-2088.596	46.860
1.2 Dead+1.0 Wind 60 deg - No Ice	65.091	37.061	-21.483	-2117.950	-3713.192	37.657

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p>102920.006.01 - BRG 124 943066, CT (BU# 806353)</p>	<p>Page</p> <p>28 of 36</p>
	<p>Project</p>	<p>Date</p> <p>00:29:45 04/30/20</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>Shathanand</p>

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
0.9 Dead+1.0 Wind 60 deg - No Ice	48.818	37.061	-21.483	-2121.004	-3703.524	37.657
1.2 Dead+1.0 Wind 90 deg - No Ice	65.091	43.369	0.032	14.738	-4329.000	12.886
0.9 Dead+1.0 Wind 90 deg - No Ice	48.818	43.369	0.032	11.684	-4319.331	12.886
1.2 Dead+1.0 Wind 120 deg - No Ice	65.091	37.354	21.690	2170.064	-3756.095	-3.327
0.9 Dead+1.0 Wind 120 deg - No Ice	48.818	37.354	21.690	2167.010	-3746.426	-3.327
1.2 Dead+1.0 Wind 150 deg - No Ice	65.091	19.627	34.144	3485.651	-2035.382	-9.322
0.9 Dead+1.0 Wind 150 deg - No Ice	48.818	19.627	34.144	3482.597	-2025.713	-9.322
1.2 Dead+1.0 Wind 180 deg - No Ice	65.091	0.032	39.542	4000.054	-41.198	-28.883
0.9 Dead+1.0 Wind 180 deg - No Ice	48.818	0.032	39.542	3997.000	-31.529	-28.883
1.2 Dead+1.0 Wind 210 deg - No Ice	65.091	-20.736	36.128	3599.613	2020.914	-46.860
0.9 Dead+1.0 Wind 210 deg - No Ice	48.818	-20.736	36.128	3596.559	2030.583	-46.860
1.2 Dead+1.0 Wind 240 deg - No Ice	65.091	-38.663	22.408	2213.898	3759.713	-37.657
0.9 Dead+1.0 Wind 240 deg - No Ice	48.818	-38.663	22.408	2210.845	3769.382	-37.657
1.2 Dead+1.0 Wind 270 deg - No Ice	65.091	-43.369	-0.032	9.693	4251.649	-12.886
0.9 Dead+1.0 Wind 270 deg - No Ice	48.818	-43.369	-0.032	6.639	4261.318	-12.886
1.2 Dead+1.0 Wind 300 deg - No Ice	65.091	-35.752	-20.765	-2074.116	3554.873	3.327
0.9 Dead+1.0 Wind 300 deg - No Ice	48.818	-35.752	-20.765	-2077.169	3564.542	3.327
1.2 Dead+1.0 Wind 330 deg - No Ice	65.091	-19.627	-34.144	-3461.220	1958.031	9.322
0.9 Dead+1.0 Wind 330 deg - No Ice	48.818	-19.627	-34.144	-3464.274	1967.700	9.322
1.2 Dead+1.0 Ice+1.0 Temp	149.610	0.000	0.000	37.403	-112.104	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	149.610	-0.010	-11.893	-1161.925	-111.465	7.812
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	149.610	6.076	-10.609	-1021.130	-718.366	12.951
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	149.610	10.935	-6.352	-591.649	-1194.478	11.217
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	149.610	12.664	0.010	38.043	-1370.300	4.498
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	149.610	10.658	6.202	659.903	-1181.849	-0.024
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	149.610	5.787	10.089	1065.237	-701.381	-2.559
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	149.610	0.010	11.613	1215.865	-112.744	-7.812
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	149.610	-6.076	10.609	1095.937	494.158	-12.951
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	149.610	-11.178	6.491	676.889	988.340	-11.217
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	149.610	-12.664	-0.010	36.764	1146.091	-4.498
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	149.610	-10.416	-6.063	-574.663	939.570	0.024

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	Page
	102920.006.01 - BRG 124 943066, CT (BU# 806353)	29 of 36
	Project	Date
Client	Crown Castle	00:29:45 04/30/20
		Designed by
		Shathanand

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
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	149.610	-5.787	-10.089	-990.430	477.172	2.559
Dead+Wind 0 deg - Service	54.242	-0.008	-10.893	-1076.892	-31.566	7.601
Dead+Wind 30 deg - Service	54.242	5.457	-9.507	-933.872	-574.227	12.332
Dead+Wind 60 deg - Service	54.242	9.753	-5.653	-550.390	-999.208	9.910
Dead+Wind 90 deg - Service	54.242	11.413	0.008	10.843	-1161.262	3.391
Dead+Wind 120 deg - Service	54.242	9.830	5.708	578.034	-1010.498	-0.876
Dead+Wind 150 deg - Service	54.242	5.165	8.985	924.241	-557.679	-2.453
Dead+Wind 180 deg - Service	54.242	0.008	10.406	1059.611	-32.893	-7.601
Dead+Wind 210 deg - Service	54.242	-5.457	9.507	954.231	509.768	-12.332
Dead+Wind 240 deg - Service	54.242	-10.174	5.897	589.570	967.346	-9.910
Dead+Wind 270 deg - Service	54.242	-11.413	-0.008	9.516	1096.803	-3.391
Dead+Wind 300 deg - Service	54.242	-9.408	-5.464	-538.855	913.441	0.876
Dead+Wind 330 deg - Service	54.242	-5.165	-8.985	-903.882	493.219	2.453

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-54.242	0.000	-0.000	54.242	0.000	0.000%
2	-0.032	-65.091	-41.393	0.032	65.091	41.393	0.000%
3	-0.032	-48.818	-41.393	0.032	48.818	41.393	0.000%
4	20.736	-65.091	-36.128	-20.736	65.091	36.128	0.000%
5	20.736	-48.818	-36.128	-20.736	48.818	36.128	0.000%
6	37.061	-65.091	-21.483	-37.061	65.091	21.483	0.000%
7	37.061	-48.818	-21.483	-37.061	48.818	21.483	0.000%
8	43.369	-65.091	0.032	-43.369	65.091	-0.032	0.000%
9	43.369	-48.818	0.032	-43.369	48.818	-0.032	0.000%
10	37.354	-65.091	21.690	-37.354	65.091	-21.690	0.000%
11	37.354	-48.818	21.690	-37.354	48.818	-21.690	0.000%
12	19.627	-65.091	34.144	-19.627	65.091	-34.144	0.000%
13	19.627	-48.818	34.144	-19.627	48.818	-34.144	0.000%
14	0.032	-65.091	39.542	-0.032	65.091	-39.542	0.000%
15	0.032	-48.818	39.542	-0.032	48.818	-39.542	0.000%
16	-20.736	-65.091	36.128	20.736	65.091	-36.128	0.000%
17	-20.736	-48.818	36.128	20.736	48.818	-36.128	0.000%
18	-38.663	-65.091	22.408	38.663	65.091	-22.408	0.000%
19	-38.663	-48.818	22.408	38.663	48.818	-22.408	0.000%
20	-43.369	-65.091	-0.032	43.369	65.091	0.032	0.000%
21	-43.369	-48.818	-0.032	43.369	48.818	0.032	0.000%
22	-35.752	-65.091	-20.765	35.752	65.091	20.765	0.000%
23	-35.752	-48.818	-20.765	35.752	48.818	20.765	0.000%
24	-19.627	-65.091	-34.144	19.627	65.091	34.144	0.000%
25	-19.627	-48.818	-34.144	19.627	48.818	34.144	0.000%
26	0.000	-149.610	0.000	-0.000	149.610	-0.000	0.000%
27	-0.010	-149.610	-11.893	0.010	149.610	11.893	0.000%
28	6.076	-149.610	-10.609	-6.076	149.610	10.609	0.000%
29	10.935	-149.610	-6.352	-10.935	149.610	6.352	0.000%
30	12.664	-149.610	0.010	-12.664	149.610	-0.010	0.000%
31	10.658	-149.610	6.202	-10.658	149.610	-6.202	0.000%
32	5.787	-149.610	10.089	-5.787	149.610	-10.089	0.000%
33	0.010	-149.610	11.613	-0.010	149.610	-11.613	0.000%
34	-6.076	-149.610	10.609	6.076	149.610	-10.609	0.000%
35	-11.178	-149.610	6.491	11.178	149.610	-6.491	0.000%
36	-12.664	-149.610	-0.010	12.664	149.610	0.010	0.000%
37	-10.416	-149.610	-6.063	10.416	149.610	6.063	0.000%
38	-5.787	-149.610	-10.089	5.787	149.610	10.089	0.000%

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 30 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
39	-0.008	-54.242	-10.893	0.008	54.242	10.893	0.000%
40	5.457	-54.242	-9.507	-5.457	54.242	9.507	0.000%
41	9.753	-54.242	-5.653	-9.753	54.242	5.653	0.000%
42	11.413	-54.242	0.008	-11.413	54.242	-0.008	0.000%
43	9.830	-54.242	5.708	-9.830	54.242	-5.708	0.000%
44	5.165	-54.242	8.985	-5.165	54.242	-8.985	0.000%
45	0.008	-54.242	10.406	-0.008	54.242	-10.406	0.000%
46	-5.457	-54.242	9.507	5.457	54.242	-9.507	0.000%
47	-10.174	-54.242	5.897	10.174	54.242	-5.897	0.000%
48	-11.413	-54.242	-0.008	11.413	54.242	0.008	0.000%
49	-9.408	-54.242	-5.464	9.408	54.242	5.464	0.000%
50	-5.165	-54.242	-8.985	5.165	54.242	8.985	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 168	4.718	43	0.248	0.048
T2	168 - 160	4.095	43	0.245	0.048
T3	160 - 140	3.685	43	0.236	0.047
T4	140 - 120	2.737	43	0.199	0.042
T5	120 - 100	1.952	43	0.161	0.035
T6	100 - 80	1.332	43	0.123	0.027
T7	80 - 60	0.844	43	0.096	0.019
T8	60 - 40	0.469	43	0.070	0.013
T9	40 - 20	0.210	43	0.044	0.008
T10	20 - 0	0.060	47	0.017	0.004

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
178.000	PD10017	43	4.614	0.248	0.048	574396
170.000	800 10504 w/ Mount Pipe	43	4.198	0.246	0.048	263877
164.000	(2) APL868013-42T0 w/ Mount Pipe	43	3.888	0.241	0.048	80564
154.000	7770.00 w/ Mount Pipe	43	3.386	0.226	0.046	39125
145.000	800 EXTERNAL NOTCH FILTER	43	2.960	0.209	0.044	30361
143.000	APXVTM14-C-120	43	2.870	0.205	0.043	28962
124.000	1142-2C	43	2.095	0.168	0.036	28041
104.000	220-3BN	43	1.444	0.130	0.029	34942
93.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	43	1.147	0.113	0.024	39393
62.000	GPS_A	43	0.502	0.073	0.013	40868
60.000	(2) 3'x8" Knife Plate	43	0.469	0.070	0.013	40763
42.000	GPS_A	43	0.231	0.047	0.009	44755
31.000	GPS_A	47	0.129	0.031	0.006	44266
20.000	(2) 3'x8" Knife Plate	47	0.060	0.017	0.004	44953

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 31 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 168	17.599	10	0.921	0.183
T2	168 - 160	15.283	10	0.911	0.183
T3	160 - 140	13.757	10	0.878	0.180
T4	140 - 120	10.234	19	0.743	0.160
T5	120 - 100	7.317	19	0.598	0.133
T6	100 - 80	5.005	19	0.459	0.104
T7	80 - 60	3.182	19	0.356	0.073
T8	60 - 40	1.777	19	0.262	0.049
T9	40 - 20	0.800	19	0.164	0.032
T10	20 - 0	0.229	19	0.065	0.015

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
178.000	PD10017	10	17.212	0.921	0.183	199982
170.000	800 10504 w/ Mount Pipe	10	15.668	0.916	0.183	89186
164.000	(2) APL868013-42T0 w/ Mount Pipe	10	14.516	0.898	0.182	23288
154.000	7770.00 w/ Mount Pipe	10	12.645	0.843	0.176	10720
145.000	800 EXTERNAL NOTCH FILTER	19	11.063	0.780	0.166	8168
143.000	APXVTM14-C-120	19	10.727	0.765	0.164	7769
124.000	1142-2C	19	7.849	0.627	0.138	7514
104.000	220-3BN	19	5.425	0.485	0.110	9378
93.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	19	4.317	0.420	0.093	10574
62.000	GPS_A	19	1.898	0.272	0.051	10940
60.000	(2) 3'x8" Knife Plate	19	1.777	0.262	0.049	10911
42.000	GPS_A	19	0.880	0.174	0.033	12033
31.000	GPS_A	19	0.493	0.117	0.024	11901
20.000	(2) 3'x8" Knife Plate	19	0.229	0.065	0.015	12045

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	180	Diagonal	A325N	0.625	1	0.562	7.875	0.071	1.05	Member Block Shear
		Top Girt	A325N	0.625	1	0.148	7.875	0.019	1.05	Member Block Shear
T2	168	Leg	A325N	0.625	4	1.718	20.340	0.084	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	2.510	7.875	0.319	1.05	Member Block Shear
T3	160	Leg	A325N	0.625	4	9.742	20.340	0.479	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	4.152	7.875	0.527	1.05	Member Block Shear

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 32 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria	
T4	140	Leg	A325N	0.750	4	17.631	30.101	0.586	✓	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	4.934	7.875	0.627	✓	1.05	Member Block Shear
T5	120	Leg	A325N	0.750	4	24.585	30.101	0.817	✓	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	5.117	9.914	0.516	✓	1.05	Member Block Shear
T6	100	Leg	A490N	0.875	4	31.255	51.945	0.602	✓	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	6.266	9.914	0.632	✓	1.05	Member Block Shear
T7	80	Leg	A325N	0.875	4	37.501	41.556	0.902	✓	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	7.385	10.934	0.675	✓	1.05	Member Block Shear
T8	60	Leg	A325N	1.000	4	44.014	54.517	0.807	✓	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	7.920	13.806	0.574	✓	1.05	Bolt Shear
T9	40	Leg	A325N	1.000	4	50.033	54.517	0.918	✓	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	9.227	13.806	0.668	✓	1.05	Bolt Shear
		Secondary Horizontal	A325N	0.500	1	4.098	8.836	0.464	✓	1.05	Bolt Shear
T10	20	Diagonal	A325N	0.625	1	9.522	13.806	0.690	✓	1.05	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
T1	180 - 168	P2x0.154	12.000	4.000	61.0 K=1.00	1.075	-2.489	27.981	0.089 ¹ ✓
T2	168 - 160	P2x0.154 (GR)	8.000	4.000	61.0 K=1.00	1.075	-10.898	38.430	0.284 ¹ ✓
T3	160 - 140	P3x0.216 (GR)	20.033	5.008	51.7 K=1.00	2.228	-49.355	87.013	0.567 ¹ ✓
T4	140 - 120	P3.5x.318 (GR)	20.033	6.678	61.3 K=1.00	3.678	-84.539	122.133	0.692 ¹ ✓
T5	120 - 100	P4x.337 (GR)	20.033	6.678	54.3 K=1.00	4.407	-116.034	157.190	0.738 ¹ ✓
T6	100 - 80	P5x0.375 (GR)	20.033	6.678	43.6 K=1.00	6.112	-148.699	242.300	0.614 ¹ ✓
T7	80 - 60	P6x0.432	20.033	10.017	54.8 K=1.00	8.405	-177.238	227.081	0.781 ¹ ✓
T8	60 - 40	P6x0.432	20.033	10.017	54.8 K=1.00	8.405	-207.429	227.081	0.913 ¹ ✓
T9	40 - 20	P6x0.432	20.033	5.151	28.2 K=1.00	8.405	-236.347	254.222	0.930 ¹ ✓
T10	20 - 0	P8x.5	20.033	10.017	41.8	12.763	-266.175	367.690	0.724 ¹ ✓

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 33 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
K=1.00									✓

¹ P_u / φP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 168	L2x1 1/2x3/16	5.657	2.543	101.1 K=1.07	0.621	-0.615	15.177	0.041 ¹ ✓
T2	168 - 160	L2x1 1/2x3/16	5.657	2.543	101.1 K=1.07	0.621	-2.617	15.177	0.172 ¹ ✓
T3	160 - 140	L2x1 1/2x3/16	7.621	3.637	135.6 K=1.00	0.621	-4.214	9.673	0.436 ¹ ✓
T4	140 - 120	L2x2x3/16	10.162	4.935	150.3 K=1.00	0.715	-4.843	9.058	0.535 ¹ ✓
T5	120 - 100	L2 1/2x2x3/16	11.744	5.701	160.2 K=1.00	0.809	-5.174	9.021	0.574 ¹ ✓
T6	100 - 80	L2 1/2x2 1/2x3/16	13.438	6.498	157.5 K=1.00	0.902	-6.237	10.403	0.600 ¹ ✓
T7	80 - 60	L3x3x3/16	16.803	8.223	165.6 K=1.00	1.090	-7.436	11.381	0.653 ¹ ✓
T8	60 - 40	L3 1/2x3x1/4	18.448	9.047	172.1 K=1.00	1.560	-7.920	15.083	0.525 ¹ ✓
T9	40 - 20	L3 1/2x3x1/4	20.158	10.049	191.1 K=1.00	1.560	-9.227	12.226	0.755 ¹ ✓
T10	20 - 0	L3 1/2x3 1/2x1/4	21.916	10.690	184.8 K=1.00	1.690	-9.522	14.159	0.672 ¹ ✓

¹ P_u / φP_n controls


Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T9	40 - 20	L3 1/2x3 1/2x1/4	17.486	8.467	146.4 K=1.00	1.690	-4.098	22.568	0.182 ¹ ✓

¹ P_u / φP_n controls

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 34 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand











Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 168	L2x1 1/2x3/16	4.000	3.510	130.8 K=1.00	0.621	-0.119	10.385	0.011 ¹ 

¹ P_u / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 168	P2x0.154	12.000	4.000	61.0	1.075	1.705	33.848	0.050 ¹ 
T2	168 - 160	P2x0.154 (GR)	8.000	4.000	61.0	1.075	6.872	33.848	0.203 ¹ 
T3	160 - 140	P3x0.216 (GR)	20.033	5.008	51.7	2.228	38.967	70.197	0.555 ¹ 
T4	140 - 120	P3.5x.318 (GR)	20.033	6.678	61.3	3.678	70.522	115.870	0.609 ¹ 
T5	120 - 100	P4x.337 (GR)	20.033	6.678	54.3	4.407	98.338	138.834	0.708 ¹ 
T6	100 - 80	P5x0.375 (GR)	20.033	6.678	43.6	6.112	125.022	192.527	0.649 ¹ 
T7	80 - 60	P6x0.432	20.033	10.017	54.8	8.405	150.003	264.756	0.567 ¹ 
T8	60 - 40	P6x0.432	20.033	10.017	54.8	8.405	176.057	264.756	0.665 ¹ 
T9	40 - 20	P6x0.432	20.033	4.865	26.6	8.405	200.313	264.756	0.757 ¹ 
T10	20 - 0	P8x.5	20.033	10.017	41.8	12.763	224.241	402.026	0.558 ¹ 

¹ P_u / φP_n controls

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 35 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 168	L2x1 1/2x3/16	5.657	2.543	73.4	0.360	0.562	15.675	0.036 ¹
T2	168 - 160	L2x1 1/2x3/16	5.657	2.543	73.4	0.360	2.510	15.675	0.160 ¹
T3	160 - 140	L2x1 1/2x3/16	7.621	3.637	103.3	0.360	4.152	15.675	0.265 ¹
T4	140 - 120	L2x2x3/16	9.197	4.474	89.9	0.431	4.934	18.739	0.263 ¹
T5	120 - 100	L2 1/2x2x3/16	11.744	5.701	117.0	0.501	5.117	21.806	0.235 ¹
T6	100 - 80	L2 1/2x2 1/2x3/16	13.438	6.498	102.5	0.571	6.266	24.840	0.252 ¹
T7	80 - 60	L3x3x3/16	16.803	8.223	107.0	0.712	7.385	30.973	0.238 ¹
T8	60 - 40	L3 1/2x3x1/4	18.448	9.047	120.8	1.029	7.852	44.778	0.175 ¹
T9	40 - 20	L3 1/2x3x1/4	20.158	10.049	132.1	1.029	8.303	44.778	0.185 ¹
T10	20 - 0	L3 1/2x3 1/2x1/4	21.916	10.690	119.3	1.127	8.788	49.019	0.179 ¹

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T9	40 - 20	L3 1/2x3 1/2x1/4	17.486	8.467	186.4	1.150	4.098	50.039	0.082 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 168	L2x1 1/2x3/16	4.000	3.510	103.8	0.360	0.148	15.675	0.009 ¹

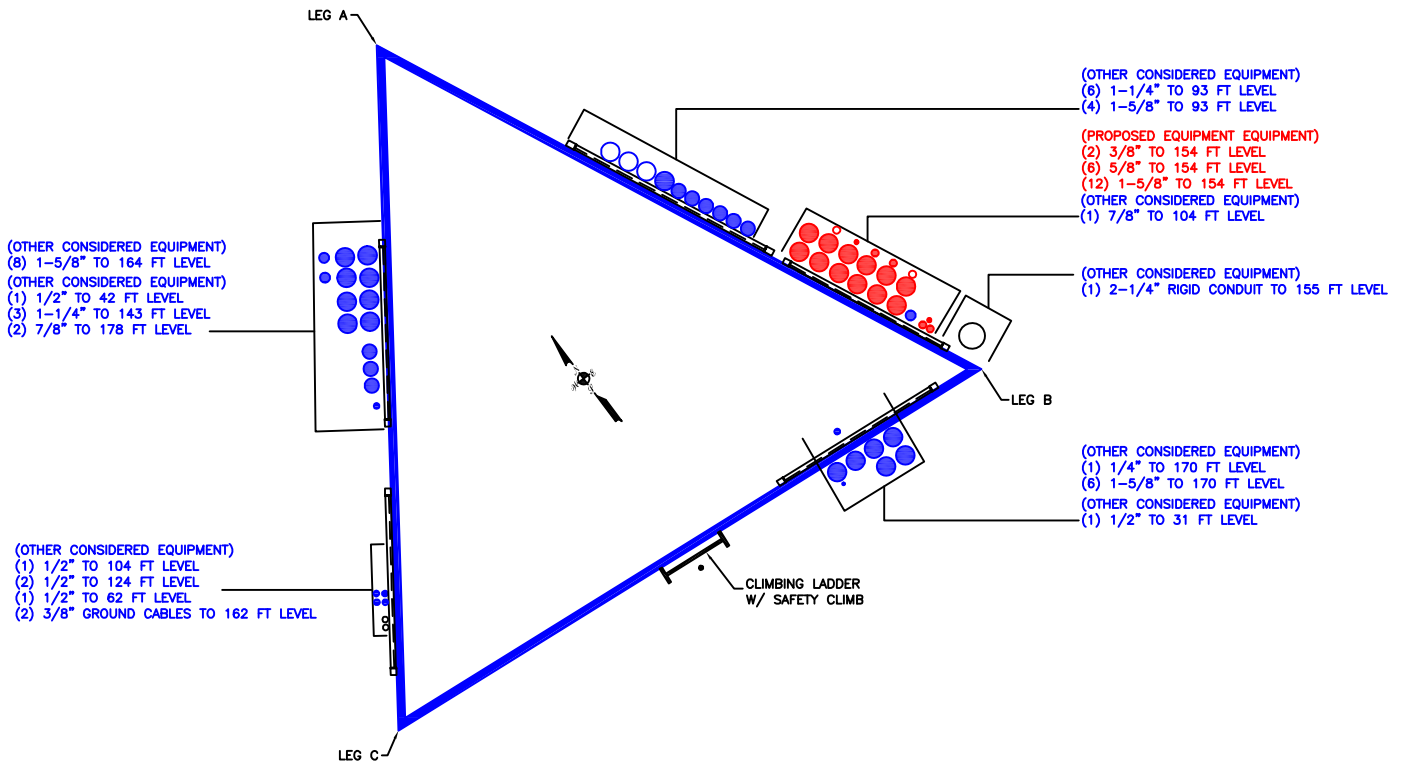
¹ P_u / φP_n controls

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 102920.006.01 - BRG 124 943066, CT (BU# 806353)	Page 36 of 36
	Project	Date 00:29:45 04/30/20
	Client Crown Castle	Designed by Shathanand

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
T1	180 - 168	Leg	P2x0.154	2	-2.489	29.380	8.5	Pass	
T2	168 - 160	Leg	P2x0.154 (GR)	26	-10.898	40.351	27.0	Pass	
T3	160 - 140	Leg	P3x0.216 (GR)	41	-49.355	91.364	54.0	Pass	
T4	140 - 120	Leg	P3.5x.318 (GR)	68	-84.539	128.240	65.9	Pass	
T5	120 - 100	Leg	P4x.337 (GR)	89	-116.034	165.049	70.3	Pass	
							77.8 (b)		
T6	100 - 80	Leg	P5x0.375 (GR)	109	125.022	202.153	61.8	Pass	
T7	80 - 60	Leg	P6x0.432	131	-177.238	238.435	74.3	Pass	
							85.9 (b)		
T8	60 - 40	Leg	P6x0.432	146	-207.429	238.435	87.0	Pass	
T9	40 - 20	Leg	P6x0.432	160	-236.347	266.933	88.5	Pass	
T10	20 - 0	Leg	P8x.5	181	-266.175	386.074	68.9	Pass	
T1	180 - 168	Diagonal	L2x1 1/2x3/16	10	-0.615	15.935	3.9	Pass	
							6.8 (b)		
T2	168 - 160	Diagonal	L2x1 1/2x3/16	29	-2.617	15.935	16.4	Pass	
							30.3 (b)		
T3	160 - 140	Diagonal	L2x1 1/2x3/16	43	-4.214	10.157	41.5	Pass	
							50.2 (b)		
T4	140 - 120	Diagonal	L2x2x3/16	70	-4.843	9.511	50.9	Pass	
							59.7 (b)		
T5	120 - 100	Diagonal	L2 1/2x2x3/16	91	-5.174	9.472	54.6	Pass	
T6	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	112	-6.237	10.923	57.1	Pass	
							60.2 (b)		
T7	80 - 60	Diagonal	L3x3x3/16	133	-7.436	11.950	62.2	Pass	
							64.3 (b)		
T8	60 - 40	Diagonal	L3 1/2x3x1/4	148	-7.920	15.837	50.0	Pass	
							54.6 (b)		
T9	40 - 20	Diagonal	L3 1/2x3x1/4	163	-9.227	12.837	71.9	Pass	
T10	20 - 0	Diagonal	L3 1/2x3 1/2x1/4	184	-9.522	14.867	64.0	Pass	
							65.7 (b)		
T9	40 - 20	Secondary Horizontal	L3 1/2x3 1/2x1/4	169	-4.098	23.697	17.3	Pass	
							44.2 (b)		
T1	180 - 168	Top Girt	L2x1 1/2x3/16	6	-0.119	10.904	1.1	Pass	
							1.8 (b)		
							Summary		
							Leg (T9)	88.5	Pass
							Diagonal (T9)	71.9	Pass
							Secondary Horizontal (T9)	44.2	Pass
							Top Girt (T1)	1.8	Pass
							Bolt Checks	87.4	Pass
							RATING =	88.5	Pass

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 806353

APPENDIX C
ADDITIONAL CALCULATIONS

CClplate

Project Information	
BU #	806353
Site Name	BRG 124 943066, CT
Order #	517058 Rev# 0

Tower Information	
Tower Type	Self Support
TIA-222 Rev	H

Apply TIA-222-H Section 15.5

Applied Loads		
	Comp.	Uplift
Axial (k)	0.00	230.00
Shear (k)	0.00	25.00

Anchor Rod Data	
Quantity:	6
Diameter (in):	1.5
<u>Material Grade:</u>	A36
Grout Considered:	Yes
l_{ar} (in):	0
Eta Factor, η :	0.55
Thread Type:	N-Included
Configuration:	Symmetrical

Fy=36 ksi Fu=58 ksi
Not Considered, $l_{ar} \leq 1(d)$

Anchor Rod Results	
Axial, P_u (kips)	38.33
Shear, V_u (kips)	4.17
Moment, M_u (kip-in)	-
Axial Cap., ϕP_n (kips)	61.34
Shear Cap., ϕV_n (kips)	38.44
Moment Cap., ϕM_n (kip-in)	-
Stress Rating	38.3%

Pass

102920_ LPILE (USCS units)

LPile Plus for Windows, Version 2013-07.007

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

© 1985-2013 by Ensoft, Inc.
All Rights Reserved

This copy of LPILE is used by:

B+T Engineering
Tulsa, OK 74119

Serial Number of Security Device: 136081582

This copy of LPILE is licensed for exclusive use by: B&T Engineering, Tulsa, OK

Use of this program by any entity other than B&T Engineering, Tulsa, OK
is forbidden by the software license agreement.

Files Used for Analysis

Path to file locations: C:\Users\SRIKAR\Desktop\JOBS
(WFH)\Jobs29-04-2020(WFH)\102920_806353_BRG 124
943066-----Shathanand-----Ramesh\Lpile\
Name of input data file: 102920_ LPILE (USCS units).lp7d
Name of output report file: 102920_ LPILE (USCS units).lp7o
Name of plot output file: 102920_ LPILE (USCS units).lp7p
Name of runtime message file: 102920_ LPILE (USCS units).lp7r

Date and Time of Analysis

Date: April 30, 2020 Time: 9:37:22

Problem Title

102920_ LPILE (USCS units)

Project Name: BRG 124 943066, CT

BU Number: 806353

Client: CCI

Engineer: SK

Description: 2.5'dia Drilled Pier; 13.5 length ,13.2 bearing.

Program Options and Settings

Engineering Units of Input Data and Computations:

- Engineering units are US Customary Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:

- Static loading specified

Computational Options:

- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected

102920_LPile (USCS units)

- Buckling analysis of pile not selected

Output Options:

- No p-y curves to be computed and reported for user-specified depths
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1

Pile Structural Properties and Geometry

Total number of pile sections = 1
Total length of pile = 13.50 ft
Depth of ground surface below top of pile = 0.30 ft

Pile diameter values used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile.

Point	Depth X ft	Pile Diameter in
1	0.00000	30.0000000
2	13.50000	30.0000000

Input Structural Properties:

Pile Section No. 1:

Section Type = Drilled Shaft (Bored
Pile)
Section Length = 13.50000 ft
Section Diameter = 30.00000 in

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees

102920_ LPile (USCS units) = 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 3 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 0.30000 ft
Distance from top of pile to bottom of layer = 5.30000 ft
Effective unit weight at top of layer = 110.00000 pcf
Effective unit weight at bottom of layer = 110.00000 pcf
Undrained cohesion at top of layer = 1.00000 psf
Undrained cohesion at bottom of layer = 1.00000 psf
Epsilon-50 at top of layer = 0.0000
Epsilon-50 at bottom of layer = 0.0000

NOTE: Internal default values for Epsilon-50 will be computed for this soil layer.

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 5.30000 ft
Distance from top of pile to bottom of layer = 6.30000 ft
Effective unit weight at top of layer = 110.00000 pcf
Effective unit weight at bottom of layer = 110.00000 pcf
Friction angle at top of layer = 30.00000 deg.
Friction angle at bottom of layer = 30.00000 deg.
Subgrade k at top of layer = 25.00000 pci
Subgrade k at bottom of layer = 25.00000 pci

Layer 3 is stiff clay without free water

Distance from top of pile to top of layer = 6.30000 ft
Distance from top of pile to bottom of layer = 13.50000 ft
Effective unit weight at top of layer = 140.00000 pcf
Effective unit weight at bottom of layer = 140.00000 pcf
Undrained cohesion at top of layer = 8000.00000 psf
Undrained cohesion at bottom of layer = 8000.00000 psf
Epsilon-50 at top of layer = 0.0005000

102920_ LPile (USCS units)
 Epsilon-50 at bottom of layer = 0.0005000

(Depth of lowest soil layer extends 0.00 ft below pile tip)

**** Warning - Possible Input Data Error ****

Values entered for effective unit weights of soil were outside the limits of 0.011574 pci (20 pcf) or 0.0810019 pci (140 pcf) This data may be erroneous. Please check your data.

 Summary of Soil Properties

Layer Num.	Angle of Friction deg.	Layer Strain Soil Type (p-y Curve Criteria) Epsilon 50	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf
1	Soft Clay	default	0.300	110.000	1.000
--	--	default	5.300	110.000	1.000
2	Sand (Reese, et al.)	--	5.300	110.000	--
30.000	--	25.000	6.300	110.000	--
30.000	--	25.000	6.300	140.000	8000.000
3	Stiff Clay w/o Free Water	5.00E-04	13.500	140.000	8000.000
--	--	5.00E-04	--	--	--

 Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

102920_ LPILE (USCS units)

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Compute Type vs. Pile Length	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1 No	V = 28000. lbs	M = 0.0000 in-lbs	274000.
2	1 No	V = 25000. lbs	M = 0.0000 in-lbs	-230000.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head
y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applie to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	13.50000 ft
Shaft Diameter	=	30.00000 in
Concrete Cover Thickness	=	4.00000 in
Number of Reinforcing Bars	=	14 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	706.85835 sq. in.
Total Area of Reinforcing Steel	=	11.06000 sq. in.

102920_ LPile (USCS units)

Area Ratio of Steel Reinforcement = 1.56 percent
 Edge-to-Edge Bar Spacing = 3.67294 in
 Maximum Concrete Aggregate Size = 0.75000 in
 Ratio of Bar Spacing to Aggregate Size = 4.90
 Offset of Center of Rebar Cage from Center of Pile = 0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$ = 2437.886 kips
 Tensile Load for Cracking of Concrete = -289.087 kips
 Nominal Axial Tensile Capacity = -663.600 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.00000	0.79000	10.50000	0.00000
2	1.00000	0.79000	9.46017	4.55578
3	1.00000	0.79000	6.54664	8.20923
4	1.00000	0.79000	2.33647	10.23674
5	1.00000	0.79000	-2.33647	10.23674
6	1.00000	0.79000	-6.54664	8.20923
7	1.00000	0.79000	-9.46017	4.55578
8	1.00000	0.79000	-10.50000	0.00000
9	1.00000	0.79000	-9.46017	-4.55578
10	1.00000	0.79000	-6.54664	-8.20923
11	1.00000	0.79000	-2.33647	-10.23674
12	1.00000	0.79000	2.33647	-10.23674
13	1.00000	0.79000	6.54664	-8.20923
14	1.00000	0.79000	9.46017	-4.55578

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 3.67294 inches
 between Bars 5 and 6

Spacing to aggregate size ratio = 4.89725

Concrete Properties:

Compressive Strength of Concrete = 3000.00000 psi
 Modulus of Elasticity of Concrete = 3122019. psi

102920_ LPile (USCS units)

Modulus of Rupture of Concrete = -410.79191 psi
 Compression Strain at Peak Stress = 0.00163
 Tensile Strain at Fracture of Concrete = -0.0001160
 Maximum Coarse Aggregate Size = 0.75000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	-230.000
2	274.000

Definitions of Run Messages and Notes:

- C = concrete in section has cracked in tension.
- Y = stress in reinforcing steel has reached yield stress.
- T = ACI 318-08 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than than 0.003. See ACI 318-08, Section 10.3.4.
- Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
 Position of neutral axis is measured from edge of compression side of pile.
 Compressive stresses and strains are positive in sign.
 Tensile stresses and strains are negative in sign.

Axial Thrust Force = -230.000 kips

Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0.000001250	192.9246235	154339699.	-50.4441784	-0.0000631	
-0.0001006	-0.2277917	-2.9106640			
0.000002500	192.9246235	77169849.	-271.8352344	-0.0006796	
-0.0007546	0.000000	-21.8721795 C			
0.000003750	192.9246235	51446566.	-176.2230043	-0.0006608	
-0.0007733	0.000000	-22.4104392 C			

102920_LPile (USCS units)				
0.000005000	192.9246235	38584925.	-128.4168893	-0.0006421
-0.0007921	0.000000	-22.9486989 C		
0.000006250	192.9246235	30867940.	-99.7332203	-0.0006233
-0.0008108	0.000000	-23.4869587 C		
0.000007500	192.9246235	25723283.	-80.6107743	-0.0006046
-0.0008296	0.000000	-24.0252184 C		
0.000008750	192.9246235	22048528.	-66.9518842	-0.0005858
-0.0008483	0.000000	-24.5634781 C		
0.0000100	192.9246235	19292462.	-56.7077167	-0.0005671
-0.0008671	0.000000	-25.1017380 C		
0.0000113	199.4515793	17729029.	-48.7400309	-0.0005483
-0.0008858	0.000000	-25.6399975 C		
0.0000125	221.5756621	17726053.	-42.3658822	-0.0005296
-0.0009046	0.000000	-26.1782573 C		
0.0000138	243.6997450	17723618.	-37.1506697	-0.0005108
-0.0009233	0.000000	-26.7165170 C		
0.0000150	265.8238279	17721589.	-32.8046592	-0.0004921
-0.0009421	0.000000	-27.2547767 C		
0.0000163	287.9479108	17719871.	-29.1272658	-0.0004733
-0.0009608	0.000000	-27.7930364 C		
0.0000175	310.0719937	17718400.	-25.9752142	-0.0004546
-0.0009796	0.000000	-28.3312962 C		
0.0000188	332.1960766	17717124.	-23.2434362	-0.0004358
-0.0009983	0.000000	-28.8695559 C		
0.0000200	354.3201595	17716008.	-20.8531305	-0.0004171
-0.0010171	0.000000	-29.4078156 C		
0.0000213	376.4442424	17715023.	-18.7440372	-0.0003983
-0.0010358	0.000000	-29.9460753 C		
0.0000225	398.5683252	17714148.	-16.8692876	-0.0003796
-0.0010546	0.000000	-30.4843350 C		
0.0000238	420.6924081	17713365.	-15.1918800	-0.0003608
-0.0010733	0.000000	-31.0225947 C		
0.0000250	442.8164910	17712660.	-13.6822132	-0.0003421
-0.0010921	0.000000	-31.5608545 C		
0.0000263	464.9405739	17712022.	-12.3163242	-0.0003233
-0.0011108	0.000000	-32.0991143 C		
0.0000275	487.0646568	17711442.	-11.0746069	-0.0003046
-0.0011296	0.000000	-32.6373740 C		
0.0000288	509.1887397	17710913.	-9.9408651	-0.0002858
-0.0011483	0.000000	-33.1756337 C		
0.0000300	531.3128226	17710427.	-8.9016017	-0.0002670
-0.0011670	0.000000	-33.7138934 C		
0.0000313	553.4369054	17709981.	-7.9454794	-0.0002483
-0.0011858	0.000000	-34.2521531 C		
0.0000325	575.5609883	17709569.	-7.0629050	-0.0002295
-0.0012045	0.000000	-34.7904128 C		
0.0000338	597.6850712	17709187.	-6.2457064	-0.0002108
-0.0012233	0.000000	-35.3286726 C		

102920_LPile (USCS units)					
0.0000350	619.8091541	17708833.	-5.4868792	-0.0001920	
-0.0012420	0.0000000	-35.8669323 C			
0.0000363	641.9332370	17708503.	-4.7803849	-0.0001733	
-0.0012608	0.0000000	-36.4051920 C			
0.0000375	664.0573199	17708195.	-4.1209902	-0.0001545	
-0.0012795	0.0000000	-36.9434517 C			
0.0000388	686.1814028	17707907.	-3.5041371	-0.0001358	
-0.0012983	0.0000000	-37.4817115 C			
0.0000400	708.3054856	17707637.	-2.9258373	-0.0001170	
-0.0013170	0.0000000	-38.0199712 C			
0.0000413	730.4295685	17707383.	-2.3825860	-0.0000983	
-0.0013358	0.0000000	-38.5582309 C			
0.0000425	752.5536514	17707145.	-1.8712907	-0.0000795	
-0.0013545	0.0000000	-39.0964906 C			
0.0000438	774.6777343	17706920.	-1.3892122	-0.0000608	
-0.0013733	0.0000000	-39.6347504 C			
0.0000450	796.8018172	17706707.	-0.9339159	-0.0000420	
-0.0013920	0.0000000	-40.1730101 C			
0.0000463	818.9259001	17706506.	-0.5032302	-0.0000233	
-0.0014108	0.0000000	-40.7112698 C			
0.0000475	841.0499830	17706315.	-0.0952121	-0.000004523	
-0.0014295	0.0000000	-41.2495295 C			
0.0000488	863.6184477	17715250.	0.2899683	0.0000141	
-0.0014484	0.0250100	-41.7904947 C			
0.0000513	914.9862380	17853390.	0.9778799	0.0000501	
-0.0014874	0.1538157	-42.9111890 C			
0.0000538	976.3460123	18164577.	1.5603679	0.0000839	
-0.0015286	0.2719767	-44.0964639 C			
0.0000563	1046.0549072	18596532.	2.0563557	0.0001157	
-0.0015718	0.3809338	-45.3383821 C			
0.0000588	1122.0755476	19099158.	2.4838117	0.0001459	
-0.0016166	0.4824703	-46.6251438 C			
0.0000613	1202.8118603	19637745.	2.8566071	0.0001750	
-0.0016625	0.5780056	-47.9470157 C			
0.0000638	1287.5613781	20197041.	3.1832296	0.0002029	
-0.0017096	0.6681988	-49.3001915 C			
0.0000663	1374.9460990	20753903.	3.4739244	0.0002301	
-0.0017574	0.7543069	-50.6750351 C			
0.0000688	1464.4724603	21301418.	3.7342387	0.0002567	
-0.0018058	0.8368145	-52.0682989 C			
0.0000713	1555.9123859	21837367.	3.9679030	0.0002827	
-0.0018548	0.9159497	-53.4788842 C			
0.0000738	1648.4747527	22352200.	4.1805882	0.0003083	
-0.0019042	0.9924724	-54.9004550 C			
0.0000763	1741.6957694	22841912.	4.3761880	0.0003337	
-0.0019538	1.0668581	-56.3289667 C			
0.0000788	1836.0806321	23315310.	4.5540839	0.0003586	
-0.0020039	1.1386357	-57.7695482 C			

102920_LPile (USCS units)

0.0000813	1930.7308823	23762842.	4.7193955	0.0003835
-0.0020540	1.2086779	-59.2139867 C		
0.0000838	2025.8483580	24189234.	4.8724313	0.0004081
-0.0021044	1.2768159	-60.0000000 CY		
0.0000863	2121.2030356	24593658.	5.0150367	0.0004325
-0.0021550	1.3432659	-60.0000000 CY		
0.0000888	2216.8773092	24978899.	5.1477674	0.0004569
-0.0022056	1.4079722	-60.0000000 CY		
0.0000913	2312.4079373	25341457.	5.2732242	0.0004812
-0.0022563	1.4713894	-60.0000000 CY		
0.0000938	2408.5355714	25691046.	5.3889476	0.0005052
-0.0023073	1.5327852	-60.0000000 CY		
0.0000963	2504.2943020	26018642.	5.4995738	0.0005293
-0.0023582	1.5931439	-60.0000000 CY		
0.0000988	2600.2373163	26331517.	5.6031812	0.0005533
-0.0024092	1.6518903	-60.0000000 CY		
0.0001013	2696.3132003	26630254.	5.7005118	0.0005772
-0.0024603	1.7091009	-60.0000000 CY		
0.0001038	2792.0243578	26911078.	5.7939859	0.0006011
-0.0025114	1.7652749	-60.0000000 CY		
0.0001063	2883.3893439	27137782.	5.8784851	0.0006246
-0.0025629	1.8190792	-60.0000000 CY		
0.0001088	2960.3882111	27221961.	5.9440837	0.0006464
-0.0026161	1.8680037	-60.0000000 CY		
0.0001113	3027.3308124	27211962.	5.9982328	0.0006673
-0.0026702	1.9138040	-60.0000000 CY		
0.0001138	3092.1670461	27183886.	6.0487828	0.0006880
-0.0027245	1.9583585	-60.0000000 CY		
0.0001163	3156.7999060	27155268.	6.0976861	0.0007089
-0.0027786	2.0021098	-60.0000000 CY		
0.0001188	3221.1730960	27125668.	6.1450029	0.0007297
-0.0028328	2.0450388	-60.0000000 CY		
0.0001213	3278.7198628	27040989.	6.1827727	0.0007497
-0.0028878	2.0851569	-60.0000000 CY		
0.0001238	3324.9397532	26868200.	6.2090070	0.0007684
-0.0029441	2.1219545	-60.0000000 CY		
0.0001263	3362.6723606	26635029.	6.2268915	0.0007861
-0.0030014	2.1561999	-60.0000000 CY		
0.0001288	3399.2000657	26401554.	6.2433729	0.0008038
-0.0030587	2.1895899	-60.0000000 CY		
0.0001313	3435.6266615	26176203.	6.2595237	0.0008216
-0.0031159	2.2223788	-60.0000000 CY		
0.0001338	3471.9511495	25958513.	6.2753656	0.0008393
-0.0031732	2.2545629	-60.0000000 CY		
0.0001363	3508.1725128	25748055.	6.2909190	0.0008571
-0.0032304	2.2861383	-60.0000000 CY		
0.0001388	3544.2897149	25544430.	6.3062027	0.0008750
-0.0032875	2.3171011	-60.0000000 CY		

102920_LPile (USCS units)

0.0001413	3580.3016991	25347269.	6.3212343	0.0008929
-0.0033446	2.3474474	-60.0000000 CY		
0.0001438	3616.2073885	25156225.	6.3360304	0.0009108
-0.0034017	2.3771731	-60.0000000 CY		
0.0001463	3652.0056850	24970979.	6.3506062	0.0009288
-0.0034587	2.4062742	-60.0000000 CY		
0.0001488	3687.6954687	24791230.	6.3649763	0.0009468
-0.0035157	2.4347464	-60.0000000 CY		
0.0001588	3812.6479656	24016680.	6.4044368	0.0010167
-0.0037458	2.5385590	-60.0000000 CY		
0.0001688	3883.3420276	23012397.	6.3928300	0.0010788
-0.0039837	2.6217063	-60.0000000 CY		
0.0001788	3947.0994329	22081675.	6.3794892	0.0011403
-0.0042222	2.6959669	-60.0000000 CY		
0.0001888	4009.9772582	21244913.	6.3700001	0.0012023
-0.0044602	2.7625970	-60.0000000 CY		
0.0001988	4071.9453227	20487775.	6.3638736	0.0012648
-0.0046977	2.8214253	-60.0000000 CY		
0.0002088	4132.9709291	19798663.	6.3607210	0.0013278
-0.0049347	2.8722698	-60.0000000 CY		
0.0002188	4193.0208814	19168095.	6.3602314	0.0013913
-0.0051712	2.9149372	-60.0000000 CY		
0.0002288	4251.4565295	18585602.	6.3614774	0.0014552
-0.0054073	2.9491469	-60.0000000 CY		
0.0002388	4299.5547226	18008606.	6.3545319	0.0015171
-0.0056454	2.9739485	-60.0000000 CY		
0.0002488	4330.8801844	17410574.	6.3322627	0.0015752
-0.0058873	2.9896994	-60.0000000 CY		
0.0002588	4351.7271162	16818269.	6.3022391	0.0016307
-0.0061318	2.9980482	-60.0000000 CY		
0.0002688	4370.5618771	16262556.	6.2743394	0.0016862
-0.0063763	2.9974331	-60.0000000 CY		
0.0002788	4388.8148763	15744627.	6.2499618	0.0017422
-0.0066203	2.9996820	-60.0000000 CY		
0.0002888	4406.4705639	15260504.	6.2287962	0.0017986
-0.0068639	2.9970118	-60.0000000 CY		
0.0002988	4423.6022118	14807037.	6.2104068	0.0018554
-0.0071071	2.9999942	-60.0000000 CY		
0.0003088	4440.1341104	14381001.	6.1946880	0.0019126
-0.0073499	2.9977097	-60.0000000 CY		
0.0003188	4456.2155301	13980284.	6.1811355	0.0019702
-0.0075923	2.9995865	-60.0000000 CY		
0.0003288	4471.7390251	13602248.	6.1697708	0.0020283
-0.0078342	2.9972943	-60.0000000 CY		
0.0003388	4486.8742315	13245385.	6.1601042	0.0020867
-0.0080758	2.9999808	-60.0000000 CY		
0.0003488	4501.4957609	12907515.	6.1522430	0.0021456
-0.0083169	2.9954809	60.0000000 CY		

102920_LPile (USCS units)

0.0003588	4515.7556305	12587472.	6.1453670	0.0022047
-0.0085578	2.9995115	60.0000000 CY		
0.0003688	4529.5970592	12283653.	6.1398039	0.0022641
-0.0087984	2.9954185	60.0000000 CY		
0.0003788	4543.0711150	11994907.	6.1355522	0.0023238
-0.0090387	2.9973794	60.0000000 CY		
0.0003888	4556.2532431	11720266.	6.1323694	0.0023840
-0.0092785	2.9999340	60.0000000 CY		
0.0003988	4569.0295057	11458381.	6.1304311	0.0024445
-0.0095180	2.9930648	60.0000000 CY		
0.0004088	4581.5315913	11208640.	6.1293836	0.0025054
-0.0097571	2.9974248	60.0000000 CY		
0.0004188	4593.7808231	10970223.	6.1291273	0.0025666
-0.0099959	2.9999054	60.0000000 CY		
0.0004288	4605.6721853	10742093.	6.1298463	0.0026282
-0.0102343	2.9937840	60.0000000 CY		
0.0004388	4616.4081801	10521728.	6.1296075	0.0026894
-0.0104731	2.9955372	60.0000000 CY		
0.0004488	4626.8997645	10310640.	6.1299075	0.0027508
-0.0107117	2.9991759	60.0000000 CY		
0.0004588	4636.8464506	10107567.	6.1302993	0.0028123
-0.0109502	2.9981506	60.0000000 CY		
0.0004688	4643.5644516	9906271.	6.1258294	0.0028715
-0.0111910	2.9911490	60.0000000 CY		
0.0004788	4650.1682237	9713145.	6.1219657	0.0029309
-0.0114316	2.9949376	60.0000000 CY		
0.0004888	4656.6548319	9527683.	6.1186832	0.0029905
-0.0116720	2.9985438	60.0000000 CY		
0.0004988	4659.6348106	9342626.	6.1092390	0.0030470
-0.0119155	2.9999278	60.0000000 CYT		
0.0005088	4662.4082790	9164439.	6.1005399	0.0031036
-0.0121589	2.9958138	60.0000000 CYT		
0.0005188	4665.1008352	8992965.	6.0925114	0.0031605
-0.0124020	2.9899271	60.0000000 CYT		
0.0005288	4666.5850409	8825693.	6.0826462	0.0032162
-0.0126463	2.9922698	60.0000000 CYT		
0.0005388	4667.3546554	8663303.	6.0720007	0.0032713
-0.0128912	2.9960426	60.0000000 CYT		
0.0005488	4668.0815576	8506755.	6.0619552	0.0033265
-0.0131360	2.9985734	60.0000000 CYT		
0.0006088	4671.3724459	7673712.	6.0133015	0.0036606
-0.0146019	2.9939846	60.0000000 CYT		
0.0006688	4671.3724459	6985230.	6.0042591	0.0040153
-0.0160472	2.9845041	60.0000000 CYT		

Axial Thrust Force = 274.000 kips

102920_ LPile (USCS units)					
Bending Max Concrete Curvature Stress rad/in. ksi	Bending Max Steel Moment Stress in-kip ksi	Bending Run Stiffness Msg kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in
0.000001250	191.0811088	152864887.	93.3108250	0.0001166	
0.0000791	0.4124749	3.3770799			
0.000002500	382.1855501	152874220.	54.1857967	0.0001355	
0.0000605	0.4756626	3.9175953			
0.000003750	573.2565633	152868417.	41.1575930	0.0001543	
0.0000418	0.5382373	4.4595758			
0.000005000	764.2774641	152855493.	34.6535978	0.0001733	
0.0000233	0.6001926	5.0030217			
0.000006250	955.2315610	152837050.	30.7592883	0.0001922	
0.000004746	0.6615223	5.5479335			
0.000007500	1146.0774392	152810325.	28.1697389	0.0002113	
-0.0000137	0.7222179	6.0942932			
0.000008750	1336.5101746	152744020.	26.3248625	0.0002303	
-0.0000322	0.7822481	6.6418713			
0.0000100	1526.1467229	152614672.	24.9442797	0.0002494	
-0.0000506	0.8415725	7.1903411			
0.0000113	1714.7564265	152422793.	23.8725351	0.0002686	
-0.0000689	0.9001632	7.7394771			
0.0000125	1902.2038454	152176308.	23.0165631	0.0002877	
-0.0000873	0.9580016	8.2891291			
0.0000138	2088.4085563	151884259.	22.3172687	0.0003069	
-0.0001056	1.0150754	8.8391984			
0.0000150	2088.4085563	139227237.	20.8251384	0.0003124	
-0.0001376	1.0309590	8.9936851 C			
0.0000163	2088.4085563	128517450.	20.1686539	0.0003277	
-0.0001598	1.0758588	9.4337906 C			
0.0000175	2088.4085563	119337632.	19.5897019	0.0003428	
-0.0001822	1.1194139	9.8656487 C			
0.0000188	2122.0839067	113177808.	19.0751768	0.0003577	
-0.0002048	1.1617822	10.2905649 C			
0.0000200	2196.2214784	109811074.	18.6132672	0.0003723	
-0.0002277	1.2030026	10.7086948 C			
0.0000213	2267.5053934	106706136.	18.1968668	0.0003867	
-0.0002508	1.2432280	11.1213817 C			
0.0000225	2336.1474327	103828775.	17.8185169	0.0004009	
-0.0002741	1.2824844	11.5287072 C			
0.0000238	2402.4645329	101156401.	17.4727826	0.0004150	
-0.0002975	1.3208267	11.9310666 C			
0.0000250	2466.9062271	98676249.	17.1559490	0.0004289	
-0.0003211	1.3583509	12.3293131 C			

102920_ LPILE (USCS units)					
0.0000263	2529.6954308	96369350.	16.8643600	0.0004427	
-0.0003448	1.3951034	12.7238066 C			
0.0000275	2591.0454435	94219834.	16.5950739	0.0004564	
-0.0003686	1.4311326	13.1149465 C			
0.0000288	2651.1590786	92214229.	16.3457114	0.0004699	
-0.0003926	1.4664892	13.5031745 C			
0.0000300	2709.8916979	90329723.	16.1129752	0.0004834	
-0.0004166	1.5011193	13.8877885 C			
0.0000313	2767.6481016	88564739.	15.8961516	0.0004968	
-0.0004407	1.5351368	14.2699499 C			
0.0000325	2824.6277100	86911622.	15.6940616	0.0005101	
-0.0004649	1.5686035	14.6502781 C			
0.0000338	2880.6919695	85353836.	15.5044378	0.0005233	
-0.0004892	1.6014716	15.0281561 C			
0.0000350	2935.9436196	83884103.	15.3261453	0.0005364	
-0.0005136	1.6337660	15.4037875 C			
0.0000363	2990.7704202	82504012.	15.1594824	0.0005495	
-0.0005380	1.6656239	15.7787184 C			
0.0000375	3044.6624815	81191000.	15.0011756	0.0005625	
-0.0005625	1.6968559	16.1506535 C			
0.0000388	3098.3756668	79958082.	14.8533107	0.0005756	
-0.0005869	1.7277393	-16.8525295 C			
0.0000400	3151.2038156	78780095.	14.7120587	0.0005885	
-0.0006115	1.7580038	-17.5600119 C			
0.0000413	3203.8880442	77670013.	14.5796887	0.0006014	
-0.0006361	1.7879350	-18.2671098 C			
0.0000425	3255.8898380	76609173.	14.4532138	0.0006143	
-0.0006607	1.8173157	-18.9765390 C			
0.0000438	3307.5986048	75602254.	14.3336583	0.0006271	
-0.0006854	1.8463053	-19.6863584 C			
0.0000450	3359.0086038	74644636.	14.2203682	0.0006399	
-0.0007101	1.8748971	-20.3966694 C			
0.0000463	3409.8059432	73725534.	14.1115442	0.0006527	
-0.0007348	1.9029598	-21.1092037 C			
0.0000475	3460.4816979	72852246.	14.0087796	0.0006654	
-0.0007596	1.9307027	-21.8212810 C			
0.0000488	3510.7991045	72016392.	13.9106094	0.0006781	
-0.0007844	1.9580190	-22.5343133 C			
0.0000513	3610.3709286	70446262.	13.7267195	0.0007035	
-0.0008340	2.0113842	-23.9632254 C			
0.0000538	3708.8993733	69002779.	13.5587160	0.0007288	
-0.0008837	2.0632122	-25.3940389 C			
0.0000563	3806.4924033	67670976.	13.4048880	0.0007540	
-0.0009335	2.1135597	-26.8260888 C			
0.0000588	3903.0668119	66435180.	13.2628718	0.0007792	
-0.0009833	2.1623706	-28.2603197 C			
0.0000613	3998.8369719	65287134.	13.1320834	0.0008043	
-0.0010332	2.2097572	-29.6951992 C			

102920_ LPILE (USCS units)					
0.0000638	4093.8966258	64217986.	13.0114753	0.0008295	
-0.0010830	2.2557551	-31.1302224 C			
0.0000663	4187.9894055	63214934.	12.8987657	0.0008545	
-0.0011330	2.3002323	-32.5675587 C			
0.0000688	4281.6137382	62278018.	12.7951865	0.0008797	
-0.0011828	2.3434495	-34.0030342 C			
0.0000713	4374.4431972	61395694.	12.6982922	0.0009048	
-0.0012327	2.3852201	-35.4397162 C			
0.0000738	4466.5271180	60563080.	12.6076046	0.0009298	
-0.0012827	2.4255750	-36.8771728 C			
0.0000763	4558.1403694	59778890.	12.5237288	0.0009549	
-0.0013326	2.4646624	-38.3127169 C			
0.0000788	4649.2523807	59038125.	12.4459030	0.0009801	
-0.0013824	2.5024581	-39.7466063 C			
0.0000813	4739.4463758	58331648.	12.3715705	0.0010052	
-0.0014323	2.5387186	-41.1835493 C			
0.0000838	4829.1663409	57661688.	12.3024910	0.0010303	
-0.0014822	2.5737018	-42.6185123 C			
0.0000863	4918.4063422	57025001.	12.2382177	0.0010555	
-0.0015320	2.6073976	-44.0514703 C			
0.0000888	5007.1603196	56418708.	12.1783544	0.0010808	
-0.0015817	2.6397954	-45.4823975 C			
0.0000913	5095.2545450	55838406.	12.1216566	0.0011061	
-0.0016314	2.6707855	-46.9136285 C			
0.0000938	5182.6930866	55282060.	12.0678860	0.0011314	
-0.0016811	2.7003714	-48.3451222 C			
0.0000963	5269.6399880	54749506.	12.0176693	0.0011567	
-0.0017308	2.7286454	-49.7744927 C			
0.0000988	5356.0887825	54238874.	11.9707471	0.0011821	
-0.0017804	2.7555963	-51.2017102 C			
0.0001013	5442.0328430	53748473.	11.9268857	0.0012076	
-0.0018299	2.7812127	-52.6267442 C			
0.0001038	5527.4653835	53276775.	11.8858742	0.0012332	
-0.0018793	2.8054827	-54.0495631 C			
0.0001063	5612.3655581	52822264.	11.8474369	0.0012588	
-0.0019287	2.8283864	-55.4703973 C			
0.0001088	5696.5519555	52382087.	11.8103284	0.0012844	
-0.0019781	2.8498168	-56.8926139 C			
0.0001113	5780.2173339	51957010.	11.7756146	0.0013100	
-0.0020275	2.8698803	-58.3124854 C			
0.0001138	5863.3542656	51545972.	11.7431489	0.0013358	
-0.0020767	2.8885639	-59.7299748 C			
0.0001163	5945.9551247	51148001.	11.7127974	0.0013616	
-0.0021259	2.9058546	-60.0000000 CY			
0.0001188	6028.0120786	50762207.	11.6844382	0.0013875	
-0.0021750	2.9217388	-60.0000000 CY			
0.0001213	6109.5170796	50387770.	11.6579596	0.0014135	
-0.0022240	2.9362027	-60.0000000 CY			

102920_LPile (USCS units)

0.0001238	6190.4618551	50023934.	11.6332592	0.0014396
-0.0022729	2.9492319	-60.0000000 CY		
0.0001263	6270.8378980	49670003.	11.6102433	0.0014658
-0.0023217	2.9608120	-60.0000000 CY		
0.0001288	6350.6364559	49325332.	11.5888258	0.0014921
-0.0023704	2.9709279	-60.0000000 CY		
0.0001313	6429.8485208	48989322.	11.5689274	0.0015184
-0.0024191	2.9795644	-60.0000000 CY		
0.0001338	6508.4648164	48661419.	11.5504754	0.0015449
-0.0024676	2.9867056	-60.0000000 CY		
0.0001363	6586.4069508	48340601.	11.5327709	0.0015713
-0.0025162	2.9923193	-60.0000000 CY		
0.0001388	6663.7407152	48026960.	11.5164071	0.0015979
-0.0025646	2.9964151	-60.0000000 CY		
0.0001413	6740.4578047	47720055.	11.5013434	0.0016246
-0.0026129	2.9989759	-60.0000000 CY		
0.0001438	6816.5475956	47419462.	11.4875263	0.0016513
-0.0026612	2.9999839	-60.0000000 CY		
0.0001463	6891.4240388	47120848.	11.4746555	0.0016782
-0.0027093	2.9994946	-60.0000000 CY		
0.0001488	6961.4862416	46799908.	11.4606462	0.0017048
-0.0027577	2.9991120	-60.0000000 CY		
0.0001588	7172.8031092	45183012.	11.3813565	0.0018068
-0.0029557	2.9986407	-60.0000000 CY		
0.0001688	7357.9984978	43602954.	11.3105098	0.0019086
-0.0031539	2.9999874	-60.0000000 CY		
0.0001788	7492.6031487	41916661.	11.2283590	0.0020071
-0.0033554	2.9990755	-60.0000000 CY		
0.0001888	7585.8735918	40190059.	11.1361039	0.0021019
-0.0035606	2.9998120	60.0000000 CY		
0.0001988	7675.0696838	38616703.	11.0576913	0.0021977
-0.0037648	2.9999942	60.0000000 CY		
0.0002088	7761.2567335	37179673.	10.9913073	0.0022944
-0.0039681	2.9993116	60.0000000 CY		
0.0002188	7844.6704049	35861350.	10.9341608	0.0023918
-0.0041707	2.9992519	60.0000000 CY		
0.0002288	7924.9832564	34644736.	10.8832426	0.0024895
-0.0043730	2.9999962	60.0000000 CY		
0.0002388	7987.7708965	33456632.	10.8279549	0.0025852
-0.0045773	2.9997361	60.0000000 CY		
0.0002488	8027.8795443	32272883.	10.7631684	0.0026773
-0.0047852	2.9983524	60.0000000 CY		
0.0002588	8057.9691291	31141910.	10.6981957	0.0027682
-0.0049943	2.9981229	60.0000000 CY		
0.0002688	8086.8014414	30090424.	10.6389107	0.0028592
-0.0052033	2.9993504	60.0000000 CY		
0.0002788	8114.4134419	29110003.	10.5824514	0.0029499
-0.0054126	2.9958224	60.0000000 CY		

102920_ L Pile (USCS units)					
0.0002888	8141.4549714	28195515.	10.5312604	0.0030409	
-0.0056216	2.9994574	60.0000000	CYT		
0.0002988	8167.9646162	27340467.	10.4847642	0.0031323	
-0.0058302	2.9958556	60.0000000	CYT		
0.0003088	8193.9910328	26539242.	10.4424285	0.0032241	
-0.0060384	2.9989613	60.0000000	CYT		
0.0003188	8219.6065005	25787001.	10.4037515	0.0033162	
-0.0062463	2.9980891	60.0000000	CYT		
0.0003288	8244.7440813	25079069.	10.3685253	0.0034087	
-0.0064538	2.9972489	60.0000000	CYT		
0.0003388	8269.4317181	24411607.	10.3350802	0.0035010	
-0.0066615	2.9998212	60.0000000	CYT		
0.0003488	8293.2235386	23779852.	10.3036754	0.0035934	
-0.0068691	2.9949555	60.0000000	CYT		
0.0003588	8314.9987003	23177697.	10.2773442	0.0036870	
-0.0070755	2.9976982	60.0000000	CYT		
0.0003688	8336.5305008	22607540.	10.2531009	0.0037808	
-0.0072817	2.9998895	60.0000000	CYT		
0.0003788	8336.5305008	22010642.	10.2599378	0.0038860	
-0.0074765	2.9933484	60.0000000	CYT		

 Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
 or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	-230.000	4657.156	0.00300000
2	274.000	8129.306	0.00300000

Note note that the values of moment capacity in the table above are not factored by a strength reduction factor (phi-factor).

In ACI 318-08, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318-08, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

102920_ LPile (USCS units)

Axial (Factored) Load Capacity No. in-kip	Resistance Bending Factor at Ult. for Moment	Nominal Stiffness Moment Capacity in-kip	Ultimate (Factored) Axial Thrust kips	Ultimate Moment
		kip-in ²		
1	0.65	4657.156	-149.500	
3027.151		27211989.195		
2	0.65	8129.306	178.100	
5284.049		54664395.648		
1	0.70	4657.156	-161.000	
3260.009		27068521.480		
2	0.70	8129.306	191.800	
5690.514		52413654.734		
1	0.75	4657.156	-172.500	
3492.867		25836986.278		
2	0.75	8129.306	205.500	
6096.980		50445366.238		

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 28000.0 lbs
 Applied moment at pile head = 0.0 in-lbs
 Axial thrust load on pile head = 274000.0 lbs

Depth Res. X feet lb/in	Deflect. Soil Spr. y inches lb/inch	Bending Distrib. Moment Load in-lbs lb/inch	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness lb-in ²	Soil p
0.00 0.000	0.1217 0.000	-1.132E-05 0.000	28000.	-0.001483	0.000	1.529E+11	

102920_ LPILE (USCS units)							
0.135	0.1193	46018.	28000.	-0.001483	0.000	1.529E+11	
0.000	0.000	0.000					
0.270	0.1169	92037.	28000.	-0.001483	0.000	1.529E+11	
0.000	0.000	0.000					
0.405	0.1145	138055.	28000.	-0.001481	0.000	1.529E+11	
-0.3977	5.6274	0.000					
0.540	0.1121	184071.	27999.	-0.001480	0.000	1.529E+11	
-0.3949	5.7074	0.000					
0.675	0.1097	230085.	27998.	-0.001477	0.000	1.529E+11	
-0.3921	5.7902	0.000					
0.810	0.1073	276097.	27998.	-0.001475	0.000	1.529E+11	
-0.3892	5.8759	0.000					
0.945	0.1049	322107.	27997.	-0.001472	0.000	1.529E+11	
-0.3863	5.9647	0.000					
1.080	0.1025	368114.	27997.	-0.001468	0.000	1.529E+11	
-0.3833	6.0567	0.000					
1.215	0.1002	414119.	27996.	-0.001464	0.000	1.529E+11	
-0.3804	6.1520	0.000					
1.350	0.0978	460120.	27995.	-0.001459	0.000	1.529E+11	
-0.3773	6.2510	0.000					
1.485	0.0954	506119.	27995.	-0.001454	0.000	1.529E+11	
-0.3743	6.3536	0.000					
1.620	0.0931	552114.	27994.	-0.001448	0.000	1.529E+11	
-0.3712	6.4601	0.000					
1.755	0.0907	598105.	27993.	-0.001442	0.000	1.529E+11	
-0.3680	6.5708	0.000					
1.890	0.0884	644093.	27993.	-0.001436	0.000	1.529E+11	
-0.3649	6.6858	0.000					
2.025	0.0861	690077.	27992.	-0.001429	0.000	1.529E+11	
-0.3616	6.8054	0.000					
2.160	0.0838	736056.	27992.	-0.001421	0.000	1.529E+11	
-0.3584	6.9299	0.000					
2.295	0.0815	782032.	27991.	-0.001413	0.000	1.529E+11	
-0.3551	7.0594	0.000					
2.430	0.0792	828002.	27991.	-0.001404	0.000	1.528E+11	
-0.3517	7.1944	0.000					
2.565	0.0769	873968.	27990.	-0.001395	0.000	1.528E+11	
-0.3483	7.3351	0.000					
2.700	0.0747	919928.	27989.	-0.001386	0.000	1.528E+11	
-0.3449	7.4819	0.000					
2.835	0.0724	965884.	27989.	-0.001376	0.000	1.528E+11	
-0.3414	7.6352	0.000					
2.970	0.0702	1011834.	27988.	-0.001365	0.000	1.528E+11	
-0.3379	7.7953	0.000					
3.105	0.0680	1057778.	27988.	-0.001355	0.000	1.528E+11	
-0.3343	7.9628	0.000					
3.240	0.0658	1103717.	27987.	-0.001343	0.000	1.528E+11	
-0.3307	8.1380	0.000					

102920_ LPILE (USCS units)						
3.375	0.0637	1149649.	27987.	-0.001331	0.000	1.528E+11
-0.3270	8.3216	0.000				
3.510	0.0615	1195575.	27986.	-0.001319	0.000	1.528E+11
-0.3233	8.5141	0.000				
3.645	0.0594	1241495.	27986.	-0.001306	0.000	1.528E+11
-0.3196	8.7160	0.000				
3.780	0.0573	1287408.	27985.	-0.001292	0.000	1.528E+11
-0.3157	8.9282	0.000				
3.915	0.0552	1333314.	27985.	-0.001278	0.000	1.527E+11
-0.3119	9.1514	0.000				
4.050	0.0531	1379213.	27984.	-0.001264	0.000	1.527E+11
-0.3079	9.3863	0.000				
4.185	0.0511	1425105.	27984.	-0.001249	0.000	1.527E+11
-0.3039	9.6339	0.000				
4.320	0.0491	1470989.	27983.	-0.001234	0.000	1.526E+11
-0.2999	9.8953	0.000				
4.455	0.0471	1516866.	27983.	-0.001218	0.000	1.526E+11
-0.2958	10.1715	0.000				
4.590	0.0452	1562734.	27982.	-0.001202	0.000	1.526E+11
-0.2916	10.4637	0.000				
4.725	0.0432	1608595.	27982.	-0.001185	0.000	1.525E+11
-0.2874	10.7735	0.000				
4.860	0.0413	1654447.	27981.	-0.001167	0.000	1.525E+11
-0.2831	11.1022	0.000				
4.995	0.0394	1700291.	27981.	-0.001150	0.000	1.524E+11
-0.2788	11.4518	0.000				
5.130	0.0376	1746125.	27980.	-0.001131	0.000	1.524E+11
-0.2744	11.8240	0.000				
5.265	0.0358	1791951.	27980.	-0.001113	0.000	1.523E+11
-0.2699	12.2213	0.000				
5.400	0.0340	1837768.	27976.	-0.001093	0.000	1.523E+11
-4.2481	202.5000	0.000				
5.535	0.0322	1883565.	27968.	-0.001073	0.000	1.522E+11
-5.3340	268.1100	0.000				
5.670	0.0305	1929339.	27959.	-0.001053	0.000	1.521E+11
-6.2845	333.7200	0.000				
5.805	0.0288	1975087.	27948.	-0.001032	0.000	1.521E+11
-7.1036	399.3300	0.000				
5.940	0.0272	2020808.	27936.	-0.001011	0.000	1.520E+11
-7.7956	464.9400	0.000				
6.075	0.0255	2066498.	27923.	-0.000989	0.000	1.519E+11
-8.3650	530.5500	0.000				
6.210	0.0240	2112157.	27909.	-0.000963	0.000	1.160E+11
-8.8163	596.1600	0.000				
6.345	0.0224	2157779.	26111.	-0.000933	0.000	1.115E+11
-2210.5809	159726.	0.000				
6.480	0.0209	2197586.	22544.	-0.000901	0.000	1.097E+11
-2193.8054	169767.	0.000				

102920_ LPILE (USCS units)							
6.615	0.0195	2231621.	19005.	-0.000868	0.000	1.082E+11	
-2175.6955	180743.	0.000					
6.750	0.0181	2259932.	15496.	-0.000834	0.000	1.070E+11	
-2156.2488	192763.	0.000					
6.885	0.0168	2282568.	12019.	-0.000800	0.000	1.060E+11	
-2135.4641	205953.	0.000					
7.020	0.0155	2299585.	8577.9051	-0.000765	0.000	1.053E+11	
-2113.3426	220455.	0.000					
7.155	0.0143	2311039.	5173.2887	-0.000729	0.000	1.048E+11	
-2089.8875	236434.	0.000					
7.290	0.0132	2316994.	1807.7458	-0.000693	0.000	1.046E+11	
-2065.1037	254078.	0.000					
7.425	0.0121	2317512.	-1516.5763	-0.000658	0.000	1.046E+11	
-2038.9976	273604.	0.000					
7.560	0.0110	2312664.	-4797.5418	-0.000622	0.000	1.048E+11	
-2011.5772	295265.	0.000					
7.695	0.0101	2302520.	-8033.0293	-0.000586	0.000	1.052E+11	
-1982.8518	319352.	0.000					
7.830	0.009138	2287157.	-11221.	-0.000551	0.000	1.058E+11	
-1952.8317	346208.	0.000					
7.965	0.008274	2266653.	-14359.	-0.000516	0.000	1.067E+11	
-1921.5274	376234.	0.000					
8.100	0.007465	2241091.	-17446.	-0.000482	0.000	1.078E+11	
-1888.9490	409899.	0.000					
8.235	0.006712	2210557.	-20478.	-0.000449	0.000	1.092E+11	
-1855.1069	447764.	0.000					
8.370	0.006011	2175140.	-23455.	-0.000417	0.000	1.107E+11	
-1820.0091	490492.	0.000					
8.505	0.005362	2134932.	-26374.	-0.000385	0.000	1.126E+11	
-1783.6605	538881.	0.000					
8.640	0.004763	2090030.	-29233.	-0.000359	0.000	1.498E+11	
-1746.0609	593895.	0.000					
8.775	0.004200	2040535.	-32029.	-0.000336	0.000	1.520E+11	
-1706.0721	658031.	0.000					
8.910	0.003673	1986553.	-34759.	-0.000315	0.000	1.520E+11	
-1663.3656	733689.	0.000					
9.045	0.003180	1928196.	-37416.	-0.000294	0.000	1.521E+11	
-1617.5771	824148.	0.000					
9.180	0.002720	1865585.	-39997.	-0.000274	0.000	1.522E+11	
-1568.2212	934100.	0.000					
9.315	0.002292	1798850.	-42494.	-0.000254	0.000	1.523E+11	
-1514.6336	1070529.	0.000					
9.450	0.001895	1728131.	-44900.	-0.000236	0.000	1.524E+11	
-1455.8727	1244372.	0.000					
9.585	0.001528	1653583.	-47206.	-0.000218	0.000	1.525E+11	
-1390.5412	1473881.	0.000					
9.720	0.001190	1575378.	-49398.	-0.000201	0.000	1.526E+11	
-1316.4390	1792259.	0.000					

		102920_ LPILE (USCS units)			
9.855	0.000879	1493711.	-51461.	-0.000184	0.000 1.526E+11
-1229.7935	2267735.	0.000			
9.990	0.000593	1408809.	-53358.	-0.000169	0.000 1.527E+11
-1113.0749	3041683.	0.000			
10.125	0.000331	1320980.	-54768.	-0.000154	0.000 1.527E+11
-626.8833	3065027.	0.000			
10.260	9.254E-05	1231499.	-55418.	-0.000141	0.000 1.528E+11
-176.4233	3088375.	0.000			
10.395	-0.000125	1141549.	-55367.	-0.000128	0.000 1.528E+11
240.2862	3111728.	0.000			
10.530	-0.000323	1052225.	-54666.	-0.000117	0.000 1.528E+11
625.3304	3135084.	0.000			
10.665	-0.000503	964536.	-53365.	-0.000106	0.000 1.528E+11
980.8562	3158444.	0.000			
10.800	-0.000666	879418.	-51590.	-9.620E-05	0.000 1.528E+11
1209.9383	2940918.	0.000			
10.935	-0.000815	797470.	-49572.	-8.732E-05	0.000 1.529E+11
1281.6086	2548138.	0.000			
11.070	-0.000949	718882.	-47447.	-7.928E-05	0.000 1.529E+11
1341.2594	2288642.	0.000			
11.205	-0.001072	643811.	-45233.	-7.206E-05	0.000 1.529E+11
1392.5150	2105013.	0.000			
11.340	-0.001183	572391.	-42941.	-6.562E-05	0.000 1.529E+11
1437.5821	1968823.	0.000			
11.475	-0.001284	504742.	-40579.	-5.991E-05	0.000 1.529E+11
1477.9243	1864283.	0.000			
11.610	-0.001377	440969.	-38155.	-5.490E-05	0.000 1.529E+11
1514.5738	1781867.	0.000			
11.745	-0.001462	381168.	-35674.	-5.054E-05	0.000 1.529E+11
1548.2941	1715457.	0.000			
11.880	-0.001541	325429.	-33141.	-4.680E-05	0.000 1.529E+11
1579.6709	1660927.	0.000			
12.015	-0.001614	273834.	-30558.	-4.362E-05	0.000 1.529E+11
1609.1665	1615382.	0.000			
12.150	-0.001682	226461.	-27928.	-4.097E-05	0.000 1.529E+11
1637.1537	1576726.	0.000			
12.285	-0.001747	183384.	-25254.	-3.880E-05	0.000 1.529E+11
1663.9381	1543402.	0.000			
12.420	-0.001808	144672.	-22538.	-3.706E-05	0.000 1.529E+11
1689.7725	1514233.	0.000			
12.555	-0.001867	110394.	-19780.	-3.571E-05	0.000 1.529E+11
1714.8672	1488312.	0.000			
12.690	-0.001924	80617.	-16982.	-3.470E-05	0.000 1.529E+11
1739.3969	1464942.	0.000			
12.825	-0.001979	55404.	-14145.	-3.398E-05	0.000 1.529E+11
1763.5054	1443579.	0.000			
12.960	-0.002034	34818.	-11268.	-3.350E-05	0.000 1.529E+11
1787.3094	1423805.	0.000			

102920_ LPILE (USCS units)							
13.095	-0.002088	18924.	-8353.9017	-3.322E-05	0.000	1.529E+11	
1810.9012	1405302.	0.000					
13.230	-0.002141	7781.2942	-5401.2479	-3.307E-05	0.000	1.529E+11	
1834.3503	1387834.	0.000					
13.365	-0.002195	1452.9695	-2410.6828	-3.302E-05	0.000	1.529E+11	
1857.7053	1371234.	0.000					
13.500	-0.002248	0.000	0.000	-3.302E-05	0.000	1.529E+11	
1118.4463	402961.	0.000					

* This analysis computed pile response using nonlinear moment-curvature relationships.

Values of total stress due to combined axial and bending stresses are computed only

for elastic sections only and do not equal the actual stresses in concrete and steel.

Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

Pile-head deflection	=	0.1216934 inches
Computed slope at pile head	=	-0.0014835 radians
Maximum bending moment	=	2317512. inch-lbs
Maximum shear force	=	-55418. lbs
Depth of maximum bending moment	=	7.4250000 feet below pile head
Depth of maximum shear force	=	10.2600000 feet below pile head
Number of iterations	=	30
Number of zero deflection points	=	1

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	25000.0 lbs
Applied moment at pile head	=	0.0 in-lbs
Axial thrust load on pile head	=	-230000.0 lbs

Depth	Deflect.	Bending	Shear	Slope	Total	Bending	Soil
Res. Soil	Spr.	Distrib.	Force	S	Stress	Stiffness	p
X	y	Moment					

102920_ LPile (USCS units)

Es*h feet lb/in	Lat. Load inches lb/inch	in-lbs lb/inch	lbs	radians	psi*	lb-in ²
0.00	0.4677	0.001427	25000.	-0.006508	0.000	1.543E+11
0.000	0.000	0.000				
0.135	0.4571	38075.	25000.	-0.006508	0.000	1.543E+11
0.000	0.000	0.000				
0.270	0.4466	76150.	25000.	-0.006508	0.000	1.543E+11
0.000	0.000	0.000				
0.405	0.4361	114226.	24999.	-0.006507	0.000	1.543E+11
-0.6210	2.3073	0.000				
0.540	0.4255	152300.	24998.	-0.006505	0.000	1.543E+11
-0.6160	2.3452	0.000				
0.675	0.4150	190373.	24998.	-0.006503	0.000	1.543E+11
-0.6109	2.3847	0.000				
0.810	0.4044	228445.	24997.	-0.006492	0.000	1.773E+10
-0.6057	2.4260	0.000				
0.945	0.3939	266524.	24996.	-0.006469	0.000	1.772E+10
-0.6004	2.4689	0.000				
1.080	0.3835	304610.	24995.	-0.006443	0.000	1.772E+10
-0.5950	2.5136	0.000				
1.215	0.3731	342705.	24994.	-0.006414	0.000	1.772E+10
-0.5896	2.5602	0.000				
1.350	0.3627	380810.	24993.	-0.006381	0.000	1.771E+10
-0.5841	2.6087	0.000				
1.485	0.3524	418926.	24992.	-0.006344	0.000	1.771E+10
-0.5785	2.6593	0.000				
1.620	0.3421	457055.	24991.	-0.006304	0.000	1.771E+10
-0.5728	2.7122	0.000				
1.755	0.3320	495199.	24990.	-0.006260	0.000	1.771E+10
-0.5671	2.7673	0.000				
1.890	0.3219	533357.	24989.	-0.006213	0.000	1.771E+10
-0.5613	2.8249	0.000				
2.025	0.3118	571533.	24988.	-0.006163	0.000	1.771E+10
-0.5554	2.8852	0.000				
2.160	0.3019	609726.	24987.	-0.006109	0.000	1.771E+10
-0.5494	2.9482	0.000				
2.295	0.2920	647939.	24986.	-0.006051	0.000	1.771E+10
-0.5434	3.0141	0.000				
2.430	0.2823	686172.	24985.	-0.005990	0.000	1.771E+10
-0.5373	3.0832	0.000				
2.565	0.2726	724427.	24985.	-0.005926	0.000	1.771E+10
-0.5311	3.1555	0.000				
2.700	0.2631	762706.	24984.	-0.005858	0.000	1.771E+10
-0.5248	3.2314	0.000				
2.835	0.2537	801009.	24983.	-0.005786	0.000	1.771E+10

102920_ LPILE (USCS units)

-0.5184	3.3110	0.000					
	2.970	0.2443	839339.	24982.	-0.005711	0.000	1.771E+10
-0.5120	3.3946	0.000					
	3.105	0.2352	877695.	24981.	-0.005633	0.000	1.775E+10
-0.5055	3.4825	0.000					
	3.240	0.2261	916080.	24980.	-0.005551	0.000	1.786E+10
-0.4989	3.5749	0.000					
	3.375	0.2172	954495.	24980.	-0.005467	0.000	1.806E+10
-0.4923	3.6722	0.000					
	3.510	0.2084	992940.	24979.	-0.005380	0.000	1.827E+10
-0.4855	3.7747	0.000					
	3.645	0.1997	1031417.	24978.	-0.005291	0.000	1.851E+10
-0.4787	3.8829	0.000					
	3.780	0.1912	1069926.	24977.	-0.005199	0.000	1.876E+10
-0.4719	3.9971	0.000					
	3.915	0.1829	1108468.	24976.	-0.005106	0.000	1.901E+10
-0.4649	4.1178	0.000					
	4.050	0.1747	1147045.	24976.	-0.005011	0.000	1.927E+10
-0.4578	4.2456	0.000					
	4.185	0.1667	1185656.	24975.	-0.004913	0.000	1.953E+10
-0.4507	4.3810	0.000					
	4.320	0.1588	1224302.	24974.	-0.004814	0.000	1.978E+10
-0.4435	4.5248	0.000					
	4.455	0.1511	1262985.	24974.	-0.004713	0.000	2.004E+10
-0.4362	4.6776	0.000					
	4.590	0.1435	1301705.	24973.	-0.004610	0.000	2.029E+10
-0.4288	4.8403	0.000					
	4.725	0.1361	1340462.	24972.	-0.004505	0.000	2.054E+10
-0.4213	5.0138	0.000					
	4.860	0.1289	1379258.	24971.	-0.004398	0.000	2.078E+10
-0.4137	5.1991	0.000					
	4.995	0.1219	1418092.	24971.	-0.004290	0.000	2.102E+10
-0.4061	5.3974	0.000					
	5.130	0.1150	1456966.	24970.	-0.004180	0.000	2.126E+10
-0.3983	5.6099	0.000					
	5.265	0.1083	1495881.	24970.	-0.004068	0.000	2.149E+10
-0.3904	5.8383	0.000					
	5.400	0.1018	1534836.	24959.	-0.003954	0.000	2.172E+10
-12.7295	202.5000	0.000					
	5.535	0.0955	1573801.	24936.	-0.003839	0.000	2.194E+10
-15.8091	268.1100	0.000					
	5.670	0.0894	1612767.	24908.	-0.003722	0.000	2.216E+10
-18.4161	333.7200	0.000					
	5.805	0.0835	1651730.	24876.	-0.003603	0.000	2.237E+10
-20.5742	399.3300	0.000					
	5.940	0.0777	1690682.	24842.	-0.003482	0.000	2.258E+10
-22.3072	464.9400	0.000					
	6.075	0.0722	1729622.	24805.	-0.003360	0.000	2.278E+10

102920_ LPILE (USCS units)

-23.6396	530.5500	0.000					
6.210	0.0668	1768545.	24765.	-0.003236	0.000	2.298E+10	
-24.5964	596.1600	0.000					
6.345	0.0617	1807450.	22439.	-0.003111	0.000	2.317E+10	
-2847.0920	74758.	0.000					
6.480	0.0568	1838930.	17853.	-0.002984	0.000	2.333E+10	
-2815.0308	80347.	0.000					
6.615	0.0520	1863070.	13321.	-0.002856	0.000	2.345E+10	
-2780.5874	86579.	0.000					
6.750	0.0475	1879961.	8845.9559	-0.002727	0.000	2.353E+10	
-2743.6625	93562.	0.000					
6.885	0.0432	1889699.	4433.2323	-0.002597	0.000	2.357E+10	
-2704.1443	101420.	0.000					
7.020	0.0391	1892389.	86.7317	-0.002467	0.000	2.358E+10	
-2661.9058	110312.	0.000					
7.155	0.0352	1888142.	-4189.0207	-0.002337	0.000	2.356E+10	
-2616.8010	120431.	0.000					
7.290	0.0315	1877075.	-8389.2447	-0.002208	0.000	2.351E+10	
-2568.6607	132021.	0.000					
7.425	0.0280	1859315.	-12509.	-0.002079	0.000	2.343E+10	
-2517.2862	145394.	0.000					
7.560	0.0248	1834997.	-16542.	-0.001951	0.000	2.331E+10	
-2462.4410	160952.	0.000					
7.695	0.0217	1804264.	-20484.	-0.001824	0.000	2.316E+10	
-2403.8391	179225.	0.000					
7.830	0.0189	1767270.	-24328.	-0.001698	0.000	2.297E+10	
-2341.1293	200924.	0.000					
7.965	0.0162	1724177.	-28066.	-0.001575	0.000	2.275E+10	
-2273.8711	227028.	0.000					
8.100	0.0138	1675163.	-31691.	-0.001453	0.000	2.250E+10	
-2201.4987	258920.	0.000					
8.235	0.0115	1620417.	-35194.	-0.001333	0.000	2.220E+10	
-2123.2647	298629.	0.000					
8.370	0.009454	1560142.	-38565.	-0.001217	0.000	2.186E+10	
-2038.1475	349255.	0.000					
8.505	0.007577	1494561.	-41791.	-0.001102	0.000	2.148E+10	
-1944.6911	415801.	0.000					
8.640	0.005882	1423919.	-44857.	-0.000991	0.000	2.106E+10	
-1840.7000	506946.	0.000					
8.775	0.004365	1348486.	-47743.	-0.000883	0.000	2.059E+10	
-1722.6092	639309.	0.000					
8.910	0.003020	1268573.	-50421.	-0.000779	0.000	2.008E+10	
-1583.9755	849722.	0.000					
9.045	0.001840	1184540.	-52847.	-0.000679	0.000	1.952E+10	
-1410.9867	1241956.	0.000					
9.180	0.000820	1096841.	-54932.	-0.000583	0.000	1.894E+10	
-1162.2961	2295216.	0.000					
9.315	-4.774E-05	1006127.	-55803.	-0.000491	0.000	1.835E+10	

102920_ LPILE (USCS units)

86.2001	2925030.	0.000					
	9.450	-0.000772	915672.	-54792.	-0.000406	0.000	1.786E+10
1162.9740	2440487.	0.000					
	9.585	-0.001362	828300.	-52755.	-0.000326	0.000	1.771E+10
1350.9083	1607217.	0.000					
	9.720	-0.001829	744502.	-50474.	-0.000254	0.000	1.771E+10
1465.6832	1298517.	0.000					
	9.855	-0.002185	664576.	-48036.	-0.000190	0.000	1.771E+10
1544.3897	1144982.	0.000					
	9.990	-0.002443	588725.	-45488.	-0.000132	0.000	1.771E+10
1600.3909	1061174.	0.000					
	10.125	-0.002614	517095.	-42864.	-8.180E-05	0.000	1.771E+10
1640.1628	1016477.	0.000					
	10.260	-0.002708	449786.	-40184.	-3.758E-05	0.000	1.771E+10
1667.3585	997390.	0.000					
	10.395	-0.002736	386869.	-37470.	6.817E-07	0.000	1.771E+10
1684.2321	997336.	0.000					
	10.530	-0.002706	328385.	-34735.	3.338E-05	0.000	1.772E+10
1692.2484	1013105.	0.000					
	10.665	-0.002628	274353.	-31993.	6.094E-05	0.000	1.772E+10
1692.3798	1043416.	0.000					
	10.800	-0.002509	224773.	-29257.	8.375E-05	0.000	1.773E+10
1685.2599	1088329.	0.000					
	10.935	-0.002356	179622.	-26539.	9.496E-05	0.000	1.543E+11
1671.2647	1149060.	0.000					
	11.070	-0.002201	138859.	-23844.	9.663E-05	0.000	1.543E+11
1654.9919	1218199.	0.000					
	11.205	-0.002043	102439.	-21178.	9.790E-05	0.000	1.543E+11
1636.2759	1297404.	0.000					
	11.340	-0.001884	70314.	-18545.	9.881E-05	0.000	1.543E+11
1614.9014	1388859.	0.000					
	11.475	-0.001723	42427.	-15948.	9.940E-05	0.000	1.543E+11
1590.5882	1495509.	0.000					
	11.610	-0.001562	18715.	-13394.	9.972E-05	0.000	1.543E+11
1562.9679	1621412.	0.000					
	11.745	-0.001400	-895.1729	-10887.	9.981E-05	0.000	1.543E+11
1531.5499	1772349.	0.000					
	11.880	-0.001238	-16486.	-8435.4238	9.972E-05	0.000	1.543E+11
1495.6671	1956843.	0.000					
	12.015	-0.001077	-28152.	-6045.8799	9.949E-05	0.000	1.543E+11
1454.3871	2188067.	0.000					
	12.150	-0.000916	-36000.	-3728.6771	9.915E-05	0.000	1.543E+11
1406.3572	2487589.	0.000					
	12.285	-0.000756	-40159.	-1496.4234	9.875E-05	0.000	1.543E+11
1349.5116	2893547.	0.000					
	12.420	-0.000596	-40775.	628.3186	9.833E-05	0.000	1.543E+11
1273.6267	3462399.	0.000					
	12.555	-0.000437	-38050.	2421.5429	9.791E-05	0.000	1.543E+11

102920_ LPILE (USCS units)							
940.2304	3485798.	0.000					
12.690	-0.000279	-32857.	3672.0816	9.754E-05	0.000	1.543E+11	
603.6445	3509199.	0.000					
12.825	-0.000121	-26079.	4374.6338	9.723E-05	0.000	1.543E+11	
263.7038	3532602.	0.000					
12.960	3.636E-05	-18610.	4523.5790	9.700E-05	0.000	1.543E+11	
-79.8210	3556007.	0.000					
13.095	0.000193	-11351.	4112.8985	9.684E-05	0.000	1.543E+11	
-427.1919	3579414.	0.000					
13.230	0.000350	-5212.3263	3136.1502	9.675E-05	0.000	1.543E+11	
-778.6702	3602823.	0.000					
13.365	0.000507	-1117.4939	1586.4970	9.672E-05	0.000	1.543E+11	
-1134.4819	3626234.	0.000					
13.500	0.000664	0.000	0.000	9.671E-05	0.000	1.543E+11	
-824.1564	1006128.	0.000					

* This analysis computed pile response using nonlinear moment-curvature relationships.

Values of total stress due to combined axial and bending stresses are computed only

for elastic sections only and do not equal the actual stresses in concrete and steel.

Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 2:

Pile-head deflection	=	0.4676829 inches
Computed slope at pile head	=	-0.0065084 radians
Maximum bending moment	=	1892389. inch-lbs
Maximum shear force	=	-55803. lbs
Depth of maximum bending moment	=	7.0200000 feet below pile head
Depth of maximum shear force	=	9.3150000 feet below pile head
Number of iterations	=	27
Number of zero deflection points	=	2

Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

102920_ LPile (USCS units)

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Maximum Load Moment Case Pile No. in-lbs	Load Type No.	Pile-head Maximum Condition 1 Shear V(lbs) or in Pile y(inches) lbs	Pile-head Condition 2 Pile-head in-lb, rad., Rotation or in-lb/rad. radians	Axial Loading lbs	Pile-head Deflection inches	in
1 2317512.	1	V = 28000. -55418.	M = 0.000 -0.00148348	274000.	0.12169335	
2 1892389.	1	V = 25000. -55803.	M = 0.000 -0.00650840	-230000.	0.46768291	

The analysis ended normally.

Drilled Pier Foundation

BU #: 806353
 Site Name: BRG 124 943066, CT
 Order Number: 517058 Rev# 0

TIA-222 Revision: H
 Tower Type: Self Support

Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	0	0
Axial Force (kips)	274	230
Shear Force (kips)	28	25

Material Properties	
Concrete Strength, f _c :	3 ksi
Rebar Strength, F _y :	60 ksi

Pier Design Data	
Depth	13.2 ft
Ext. Above Grade	0.3 ft
Pier Section 1	
<i>From 0.3' above grade to 13.2' below grade</i>	
Pier Diameter	2.5 ft
Rebar Quantity	14
Rebar Size	8
Clear Cover to Ties	4 in
Tie Size	4

Rebar & Pier Options
 Embedded Pole Inputs
 Belled Pier Inputs



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

Analysis Results			
Soil Lateral Check		Compression	Uplift
D _{v=0} (ft from TOC)		7.52	7.52
Soil Safety Factor		7.47	8.36
Max Moment (kip-ft)		191.60	171.07
Rating*		17.0%	15.1%
Soil Vertical Check		Compression	Uplift
Skin Friction (kips)		191.24	191.24
End Bearing (kips)		206.28	-
Weight of Concrete (kips)		11.93	8.95
Total Capacity (kips)		397.52	267.34
Axial (kips)		375.46	230.00
Rating*		90.0%	81.9%
Reinforced Concrete Check			
		Compression	Uplift
Critical Depth (ft from TOC)		7.53	7.14
Critical Moment (kip-ft)		193.13	157.70
Critical Moment Capacity		505.91	352.74
Rating*		36.1%	42.6%
Soil Interaction Rating*		90.0%	
Structural Foundation Rating*		42.6%	

*Rating per TIA-222-H Section 15.5

Soil Profile	
# of Layers	3

Groundwater Depth	N/A
-------------------	-----

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y _{soil} (pcf)	Y _{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	5	5	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	5	6	1	110	150	0	30	0.000	0.000	0.77	0.77			Cohesionless
3	6	13.2	7.2	140	150	8	0	3.600	3.600	4.40	4.40	56.03		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: 426.37 ft (NAVD 88)
Latitude: 41.238428
Longitude: -73.424011

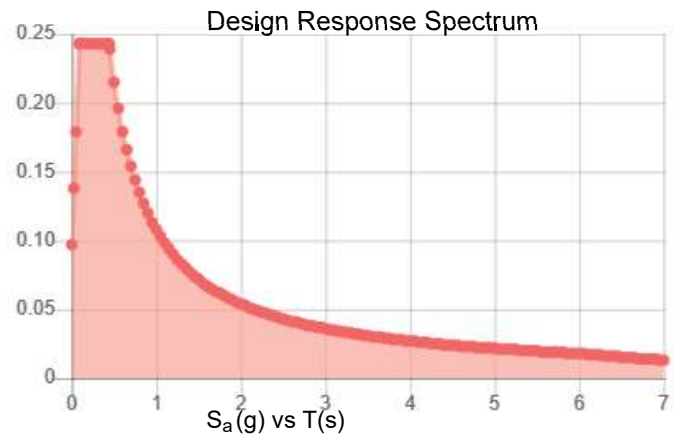
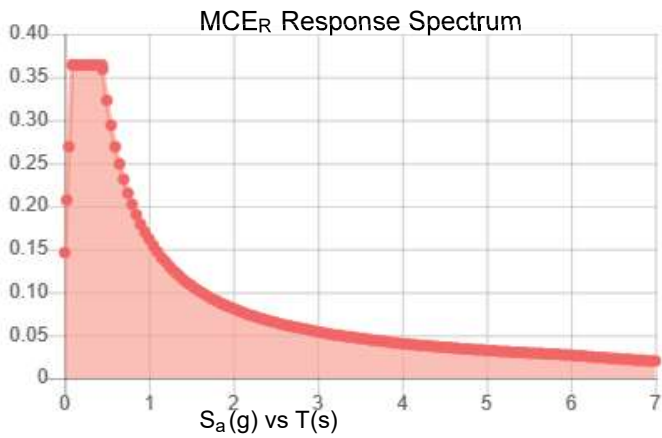


Site Soil Class: D - Stiff Soil

Results:

S_s :	0.227	S_{DS} :	0.243
S_1 :	0.067	S_{D1} :	0.108
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.127
S_{MS} :	0.364	PGA _M :	0.197
S_{M1} :	0.162	F _{PGA} :	1.546
		I_e :	1

Seismic Design Category B



Data Accessed:

Wed Apr 29 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: 0.75 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Wed Apr 29 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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Exhibit E

Mount Analysis

Date: **April 16, 2020**

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Kevin Morrow
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6619

Subject: **Mount Analysis Report**

Carrier Designation: **AT&T Mobility LTE**
Carrier Site ID: CTV2142
Carrier Site Name: Wilton-Mathers Street
Carrier FA #: 10035031

Crown Castle Designation: **Crown Castle BU Number:** 806353
Crown Castle Site Name: BRG 124 943066
Crown Castle JDE Job Number: 605360
Crown Castle Order Number: 517058 Rev. 0

Engineering Firm Designation: **Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B

Site Data: **128 Mather Street, Wilton, Fairfield County, CT, 06897**
Latitude 41°14'18.34" Longitude -73°25'26.44"

Structure Information: **Tower Height & Type:** **180.0 ft Self-Support Tower**
Mount Elevation: **154.0 ft**
Mount Type: **12.5 ft Sector Frame**

Dear Kevin Morrow,

Infinigy Engineering, PLLC 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 stress level. Based on our analysis we have determined the mount stress level to be:

Sector Frame

Sufficient

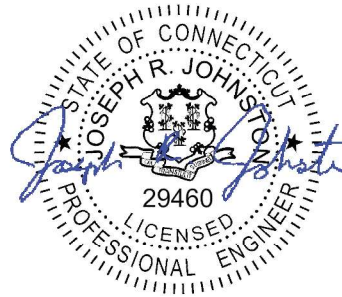
***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 116 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Sergio J. Magallon, EIT

Respectfully Submitted by:

Joseph R. Johnston, P.E.
518-690-0790
jjohnston@infinigy.com
CT PE License No. PEN.0029460



04/17/2020

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

Table 4 - Tieback End Reactions

4.1) Recommendations

5) APPENDIX A

Wire Frame and Rendered Models

6) APPENDIX B

Software Input Calculations

7) APPENDIX C

Software Analysis Output

8) APPENDIX D

Additional Calculations

1) INTRODUCTION

This is a existing [3] sector 12.5 ft Sector Frame mapped by Crown Castle.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	116 mph
Exposure Category:	B
Topographic Factor at Base:	1.000
Topographic Factor at Mount:	1.000
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.236
Seismic S₁:	0.057
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	250 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
154.0	158.0	3	CCI Antennas	DMP65R-BU6D	12.5 ft Sector Frame
		3	CCI Antennas	OPA65R-BU6D	
		3	Powerwave Technologies	7770.0	
		3	Quintel Technology	QS66512-2	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4478 B14	
	150.0	3	Ericsson	RRUS 32 B2	
		3	Ericsson	RRUS 32 B30	
		3	Kaelus	DBC0061F1V51-2	
		6	Powerwave Technologies	LGP21401	
		3	Raycap	DC6-48-60-18-8F	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T Mobility Application	517058 Rev. 0	CCI Sites
Proposed Loading	AT&T Mobility	RFDS ID: 3720002	TSA
Mount Reinforcement Drawings	Site Pro 1	P/N: STK-U	Infinigy

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 antenna mounting system and calculate member stresses for various loading cases.

Infinigy Load Calculator Tool 2.1.4, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

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

3.2) Assumptions

- 1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer’s specifications.
- 2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 3) 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.
- 4) 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.
- 5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
- 6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A307

This analysis may be affected if any assumptions are not valid or have been made in error. Infinigy Engineering, PLLC should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3(a) - Mount Component Stresses vs. Capacity (Sector Frame, All Sectors – Existing)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Mount Pipe(s)	MP3	154.0	81.0	Pass
	Horizontal(s)	M2		128.1	Fail
	Standoff(s)	M17		30.0	Pass
	Bracing	M20		56.7	Pass
	Stiff Arm(s)	M49		45.7	Pass
	Mount Connection(s)	--		59.7	Pass

Table 3(b) - Mount Component Stresses vs. Capacity (Sector Frame, All Sectors – With Conditional Mod)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Mount Pipe(s)	MP3	154.0	81.0	Pass
	Horizontal(s)	M2		69.8	Pass
	Standoff(s)	M15		30.9	Pass
	Bracing	M23		54.2	Pass
	Stiff Arm(s)	M49		45.7	Pass
	Mount Connection(s)	--		49.2	Pass

Structure Rating (max from all components) =	81.0%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) All sectors are typical

Table 4 - Tieback Connection Data Table

Tower Connection Node No.	Existing / Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity (lb) ³	Notes
N72	Existing	1,114.3	Tower Leg	P3x0.216	3,509.9	1, 2
N76	Proposed	789.1				

Notes:

- 1) Tieback connection point is NOT within 25% of either end of the connected tower member
- 2) Reduced member compressive capacity according to CED-STD-10294 *Standard for Installation of Mounts and Appurtenances*

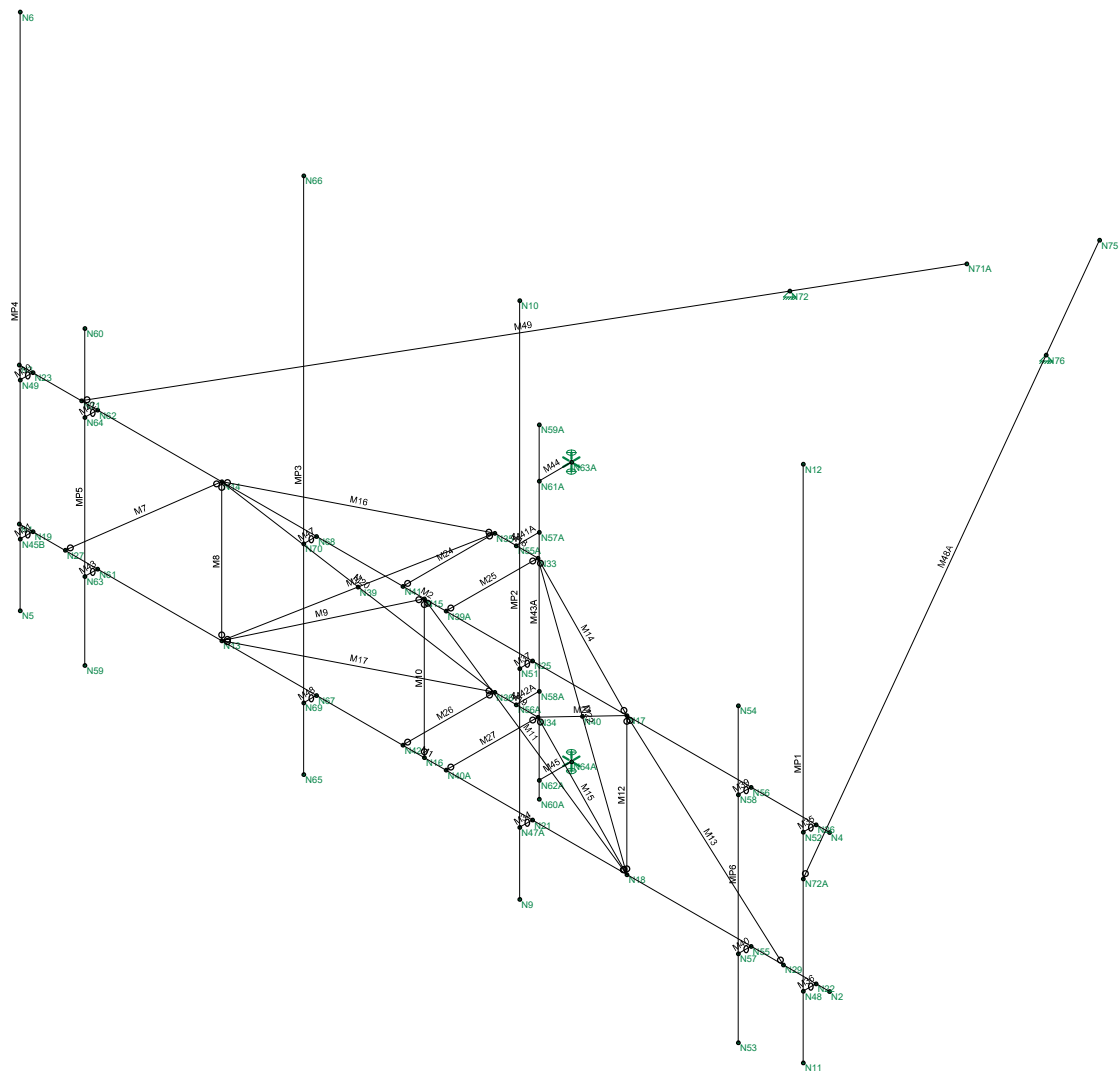
4.1) Recommendations

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

1. Installation of a tieback, Site Pro 1 Part No. STK-U Stiff Arm Kit on the outer most right end pipe mount (front facing) of existing mount 18" above the bottom horizontal per sector, a total of (3) tiebacks to be installed.

No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A
WIRE FRAME AND RENDERED MODELS

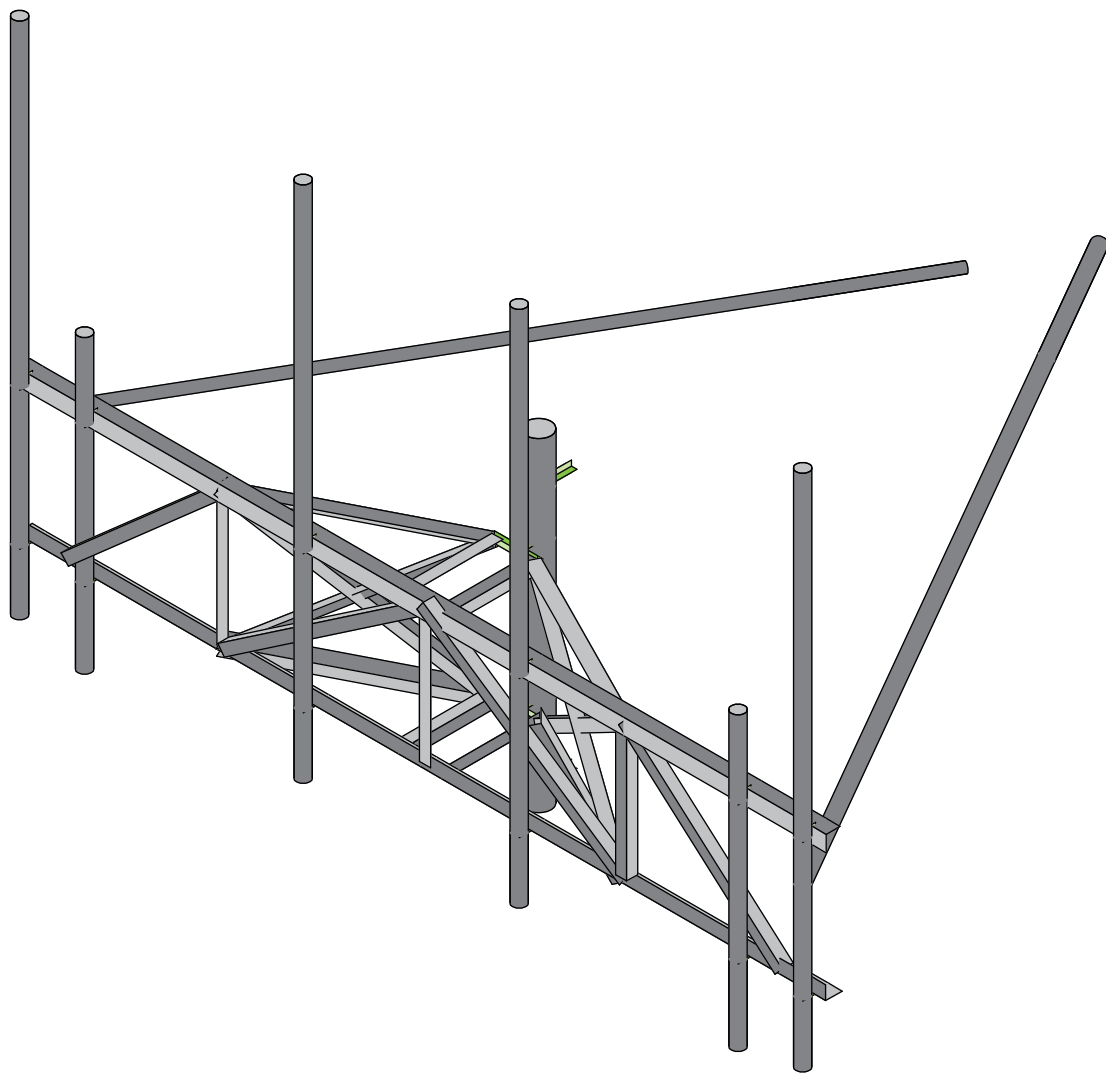


Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

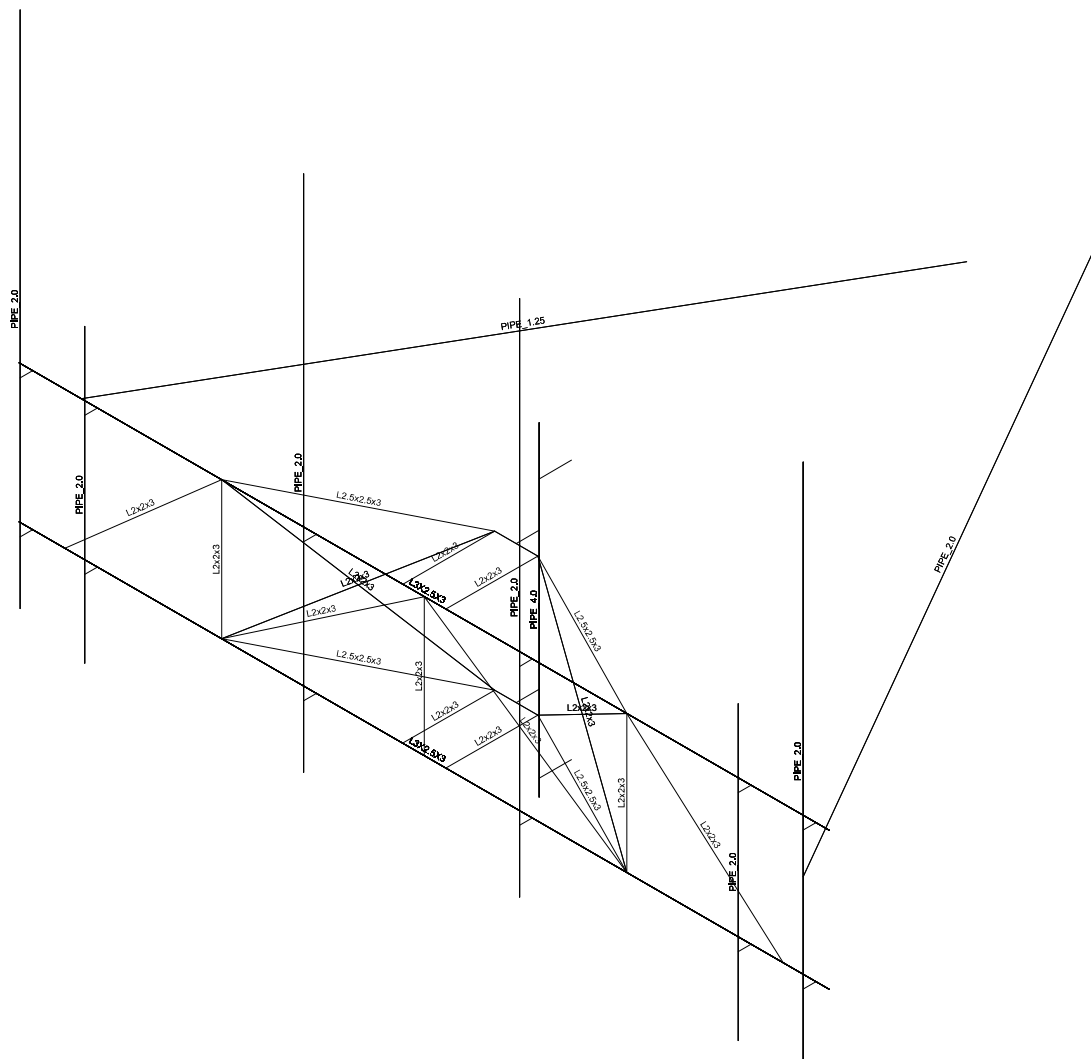
806353

Wireframe Model
Apr 16, 2020 at 4:33 PM
806353 (MA)_loaded.r3d



Envelope Only Solution

Infinigy Engineering, PLLC	806353	Rendered Model
SJM		Apr 16, 2020 at 4:34 PM
1039-Z0001-B		806353 (MA)_loaded.r3d

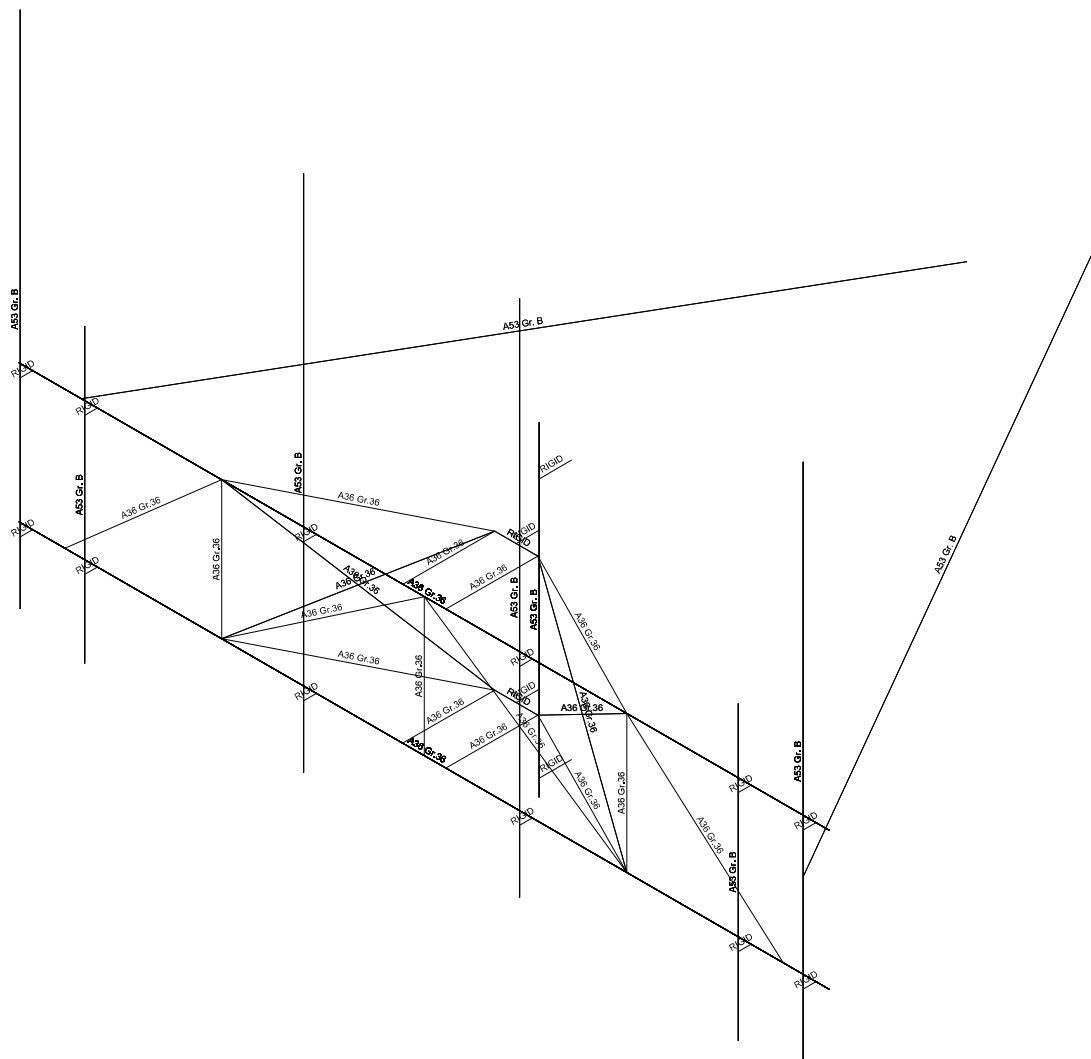


Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

806353

Shapes
Apr 16, 2020 at 4:35 PM
806353 (MA)_loaded.r3d



Envelope Only Solution

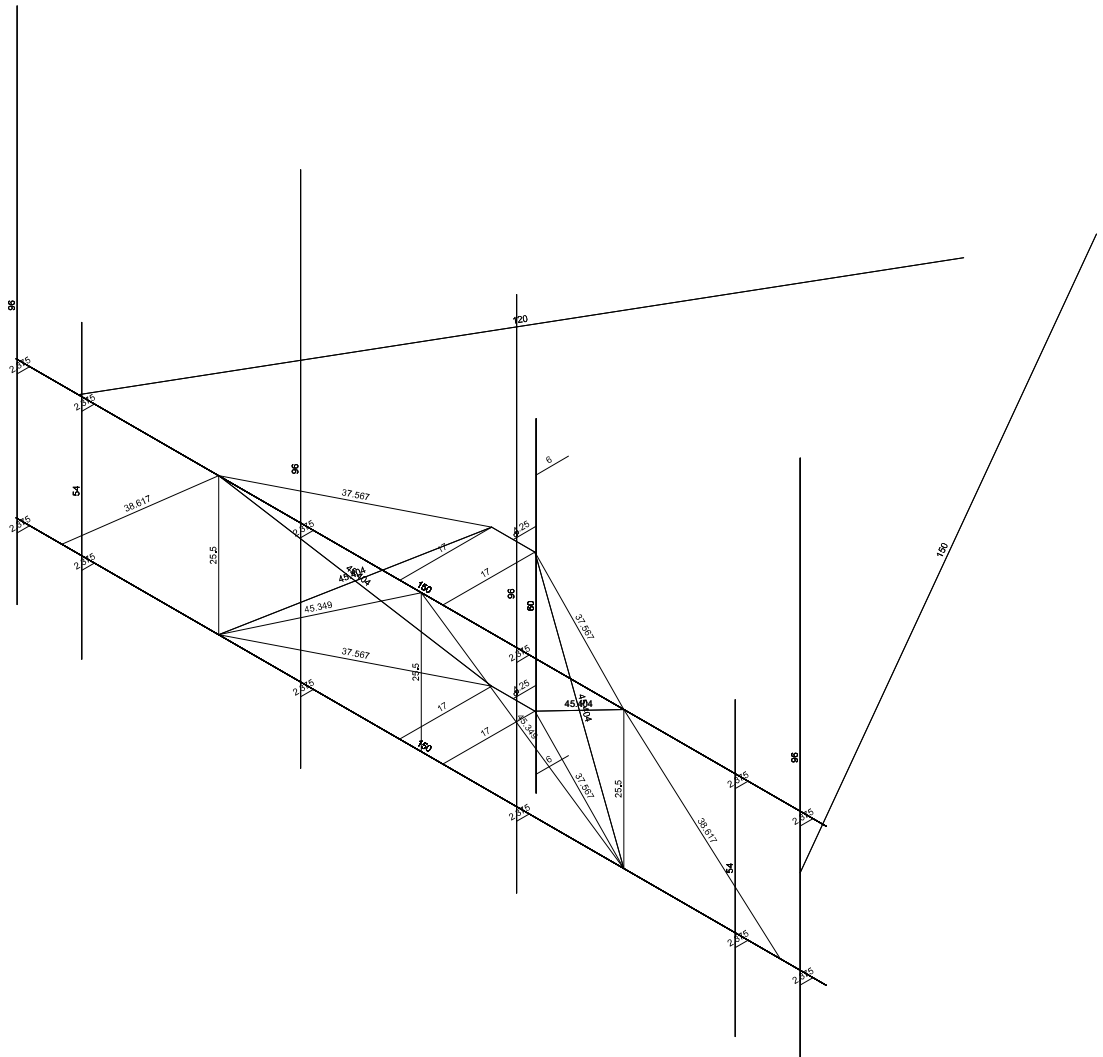
Infinigy Engineering, PLLC
SJM
1039-Z0001-B

806353

Material Sets

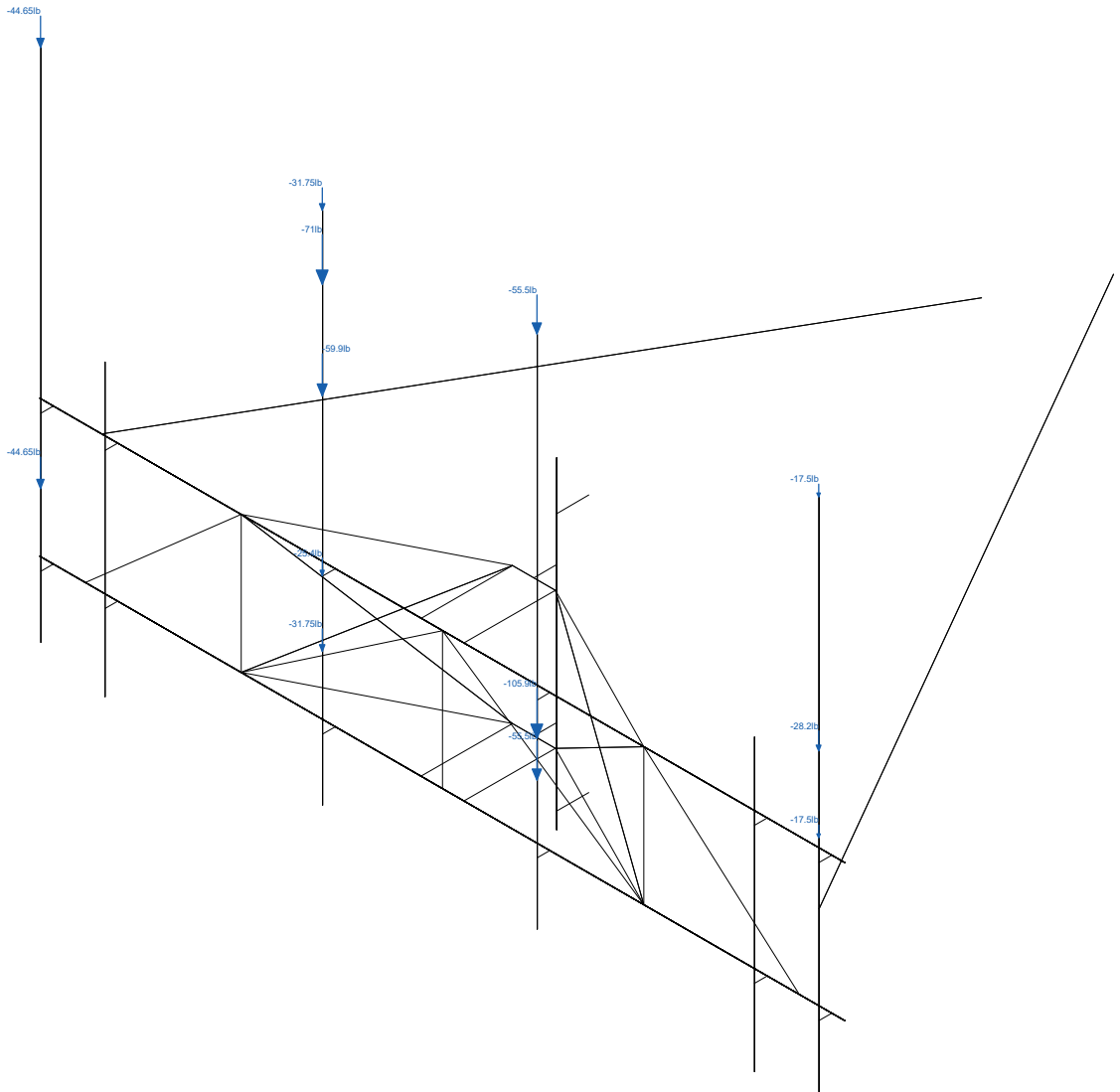
Apr 16, 2020 at 4:35 PM

806353 (MA)_loaded.r3d



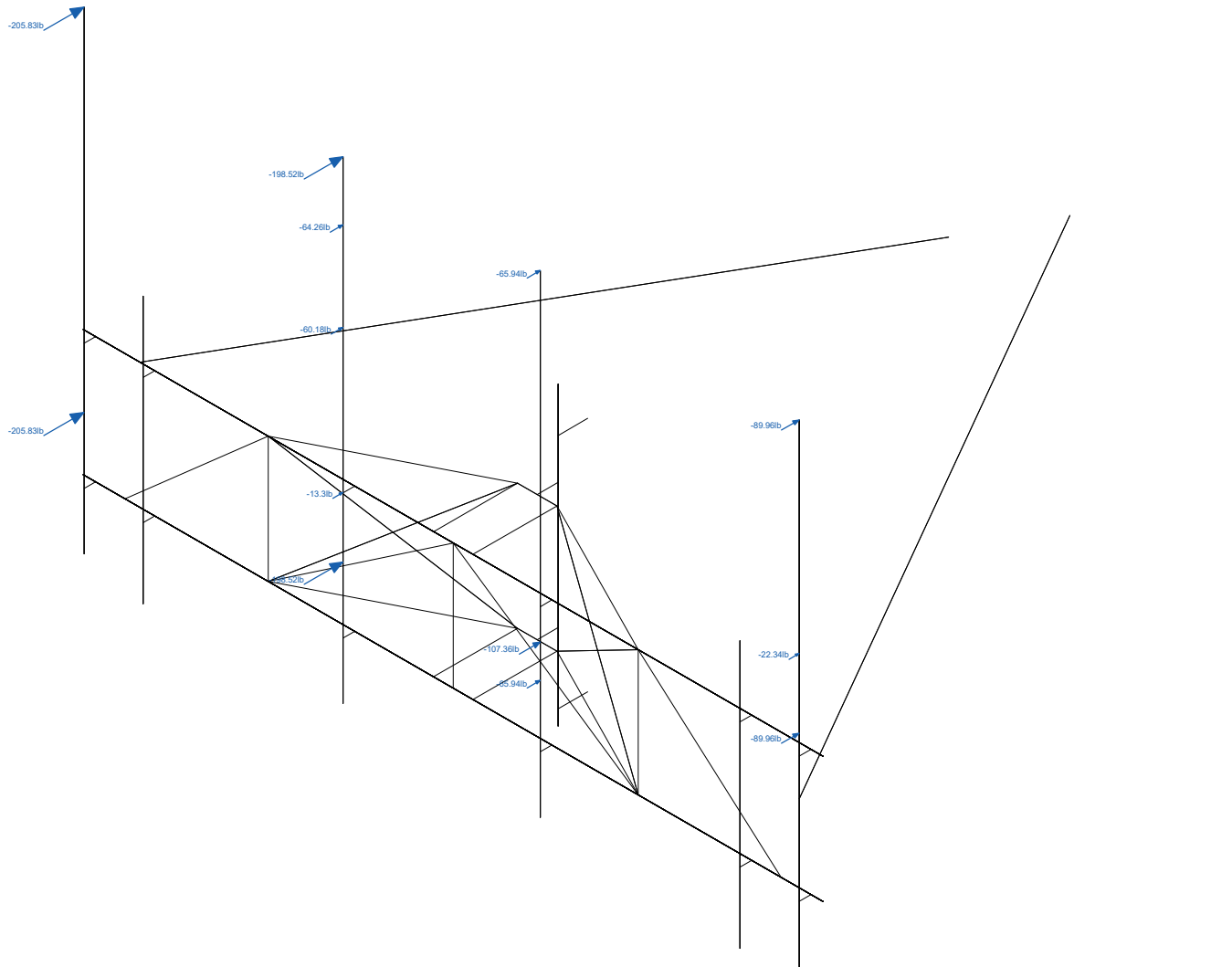
Member Length (m) Displayed
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Lengths
SJM		Apr 16, 2020 at 4:35 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



Loads: BLC 1, Self Weight
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Self Weight Loads
SJM		Apr 16, 2020 at 4:36 PM
1039-Z0001-B		806353 (MA)_loaded.r3d

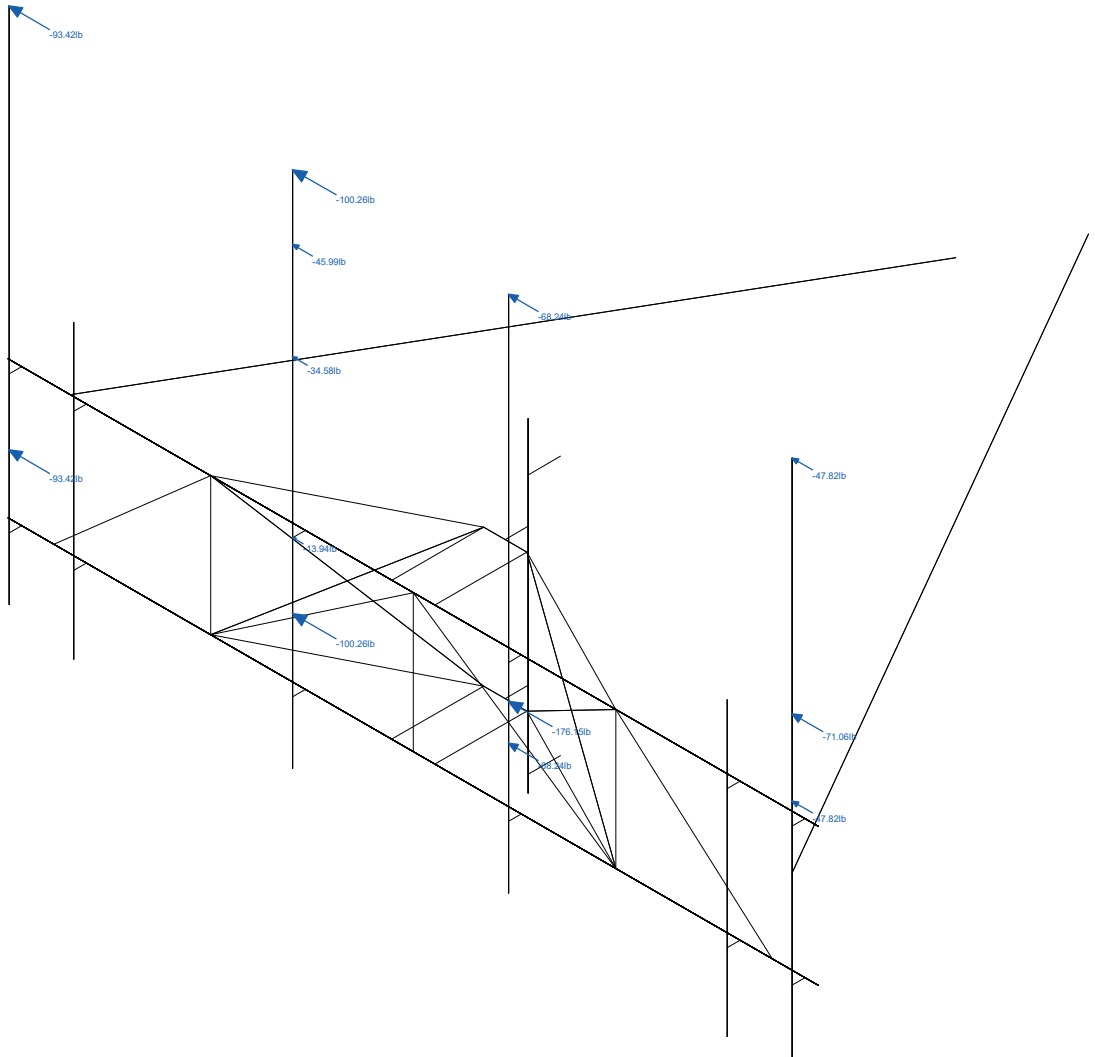


Loads: BLC 2, Wind Load AZ1 0
Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

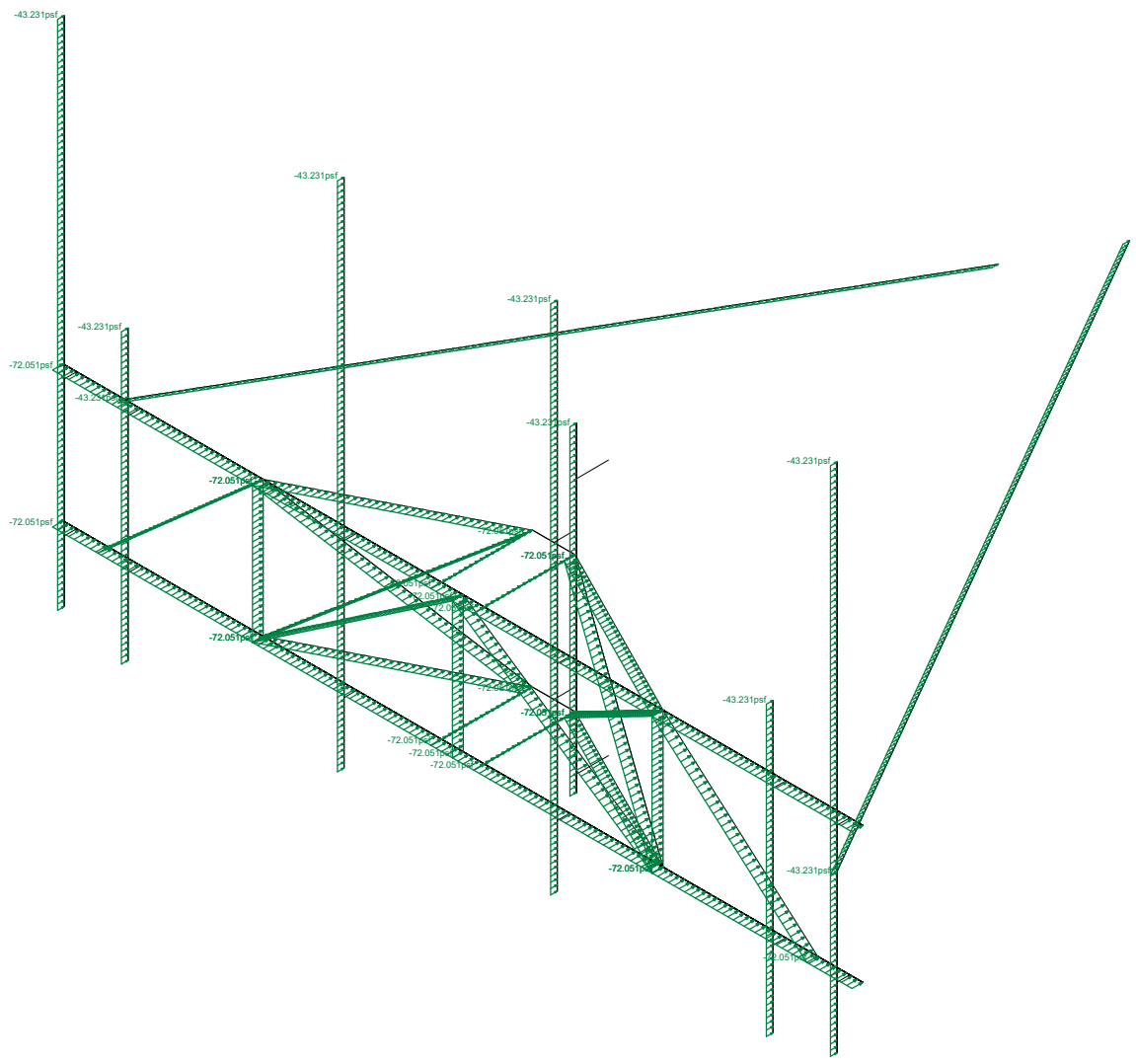
806353

Wind Loads Z
Apr 16, 2020 at 4:36 PM
806353 (MA)_loaded.r3d



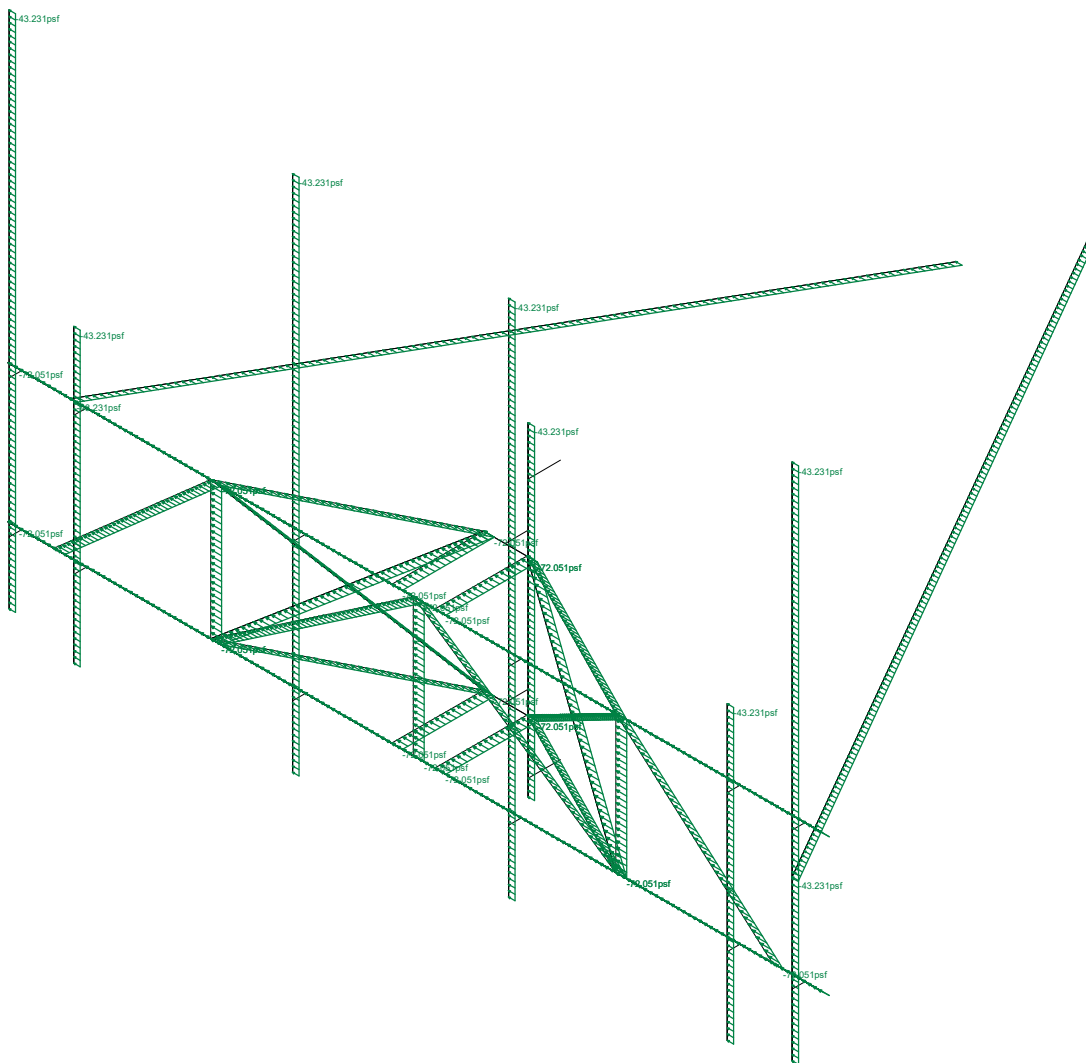
Loads: BLC 5, Wind Load AZ1 90
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Wind Loads X
SJM		Apr 16, 2020 at 4:36 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



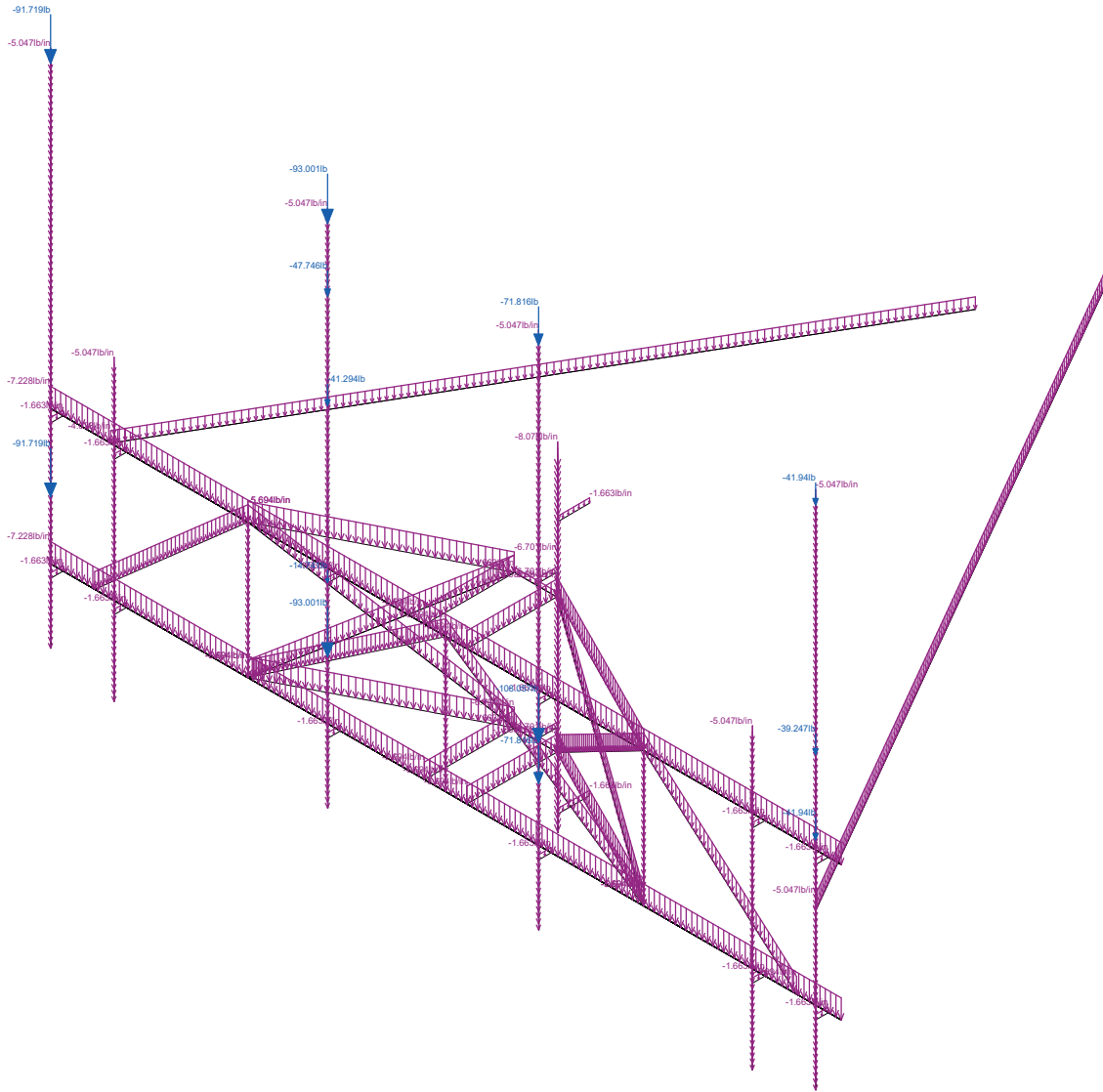
Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Distr. Wind Loads Z
SJM		Apr 16, 2020 at 4:37 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Distr. Wind Loads X
SJM		Apr 16, 2020 at 4:37 PM
1039-Z0001-B		806353 (MA)_loaded.r3d

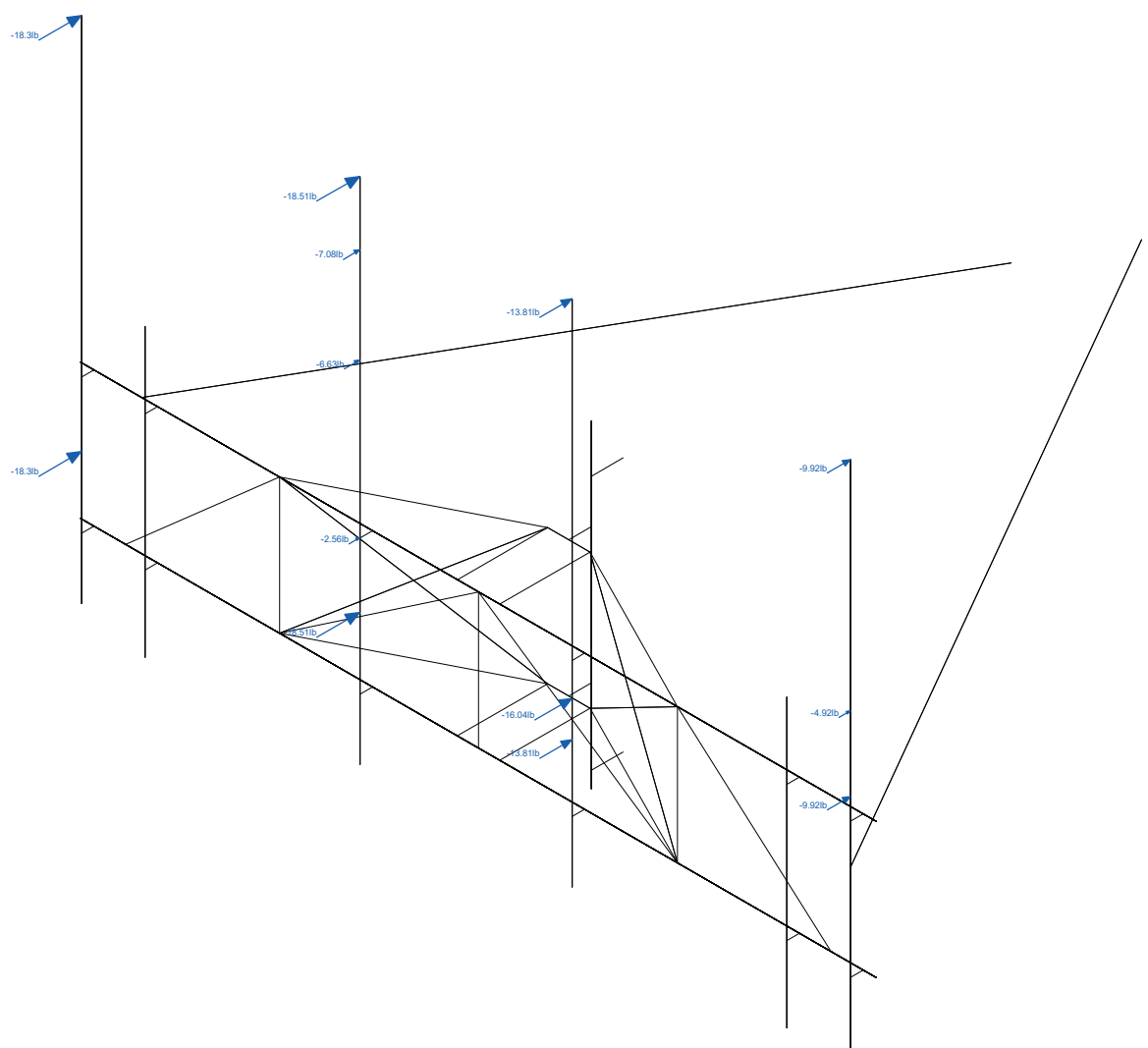


Loads: BLC 16, Ice Weight
Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

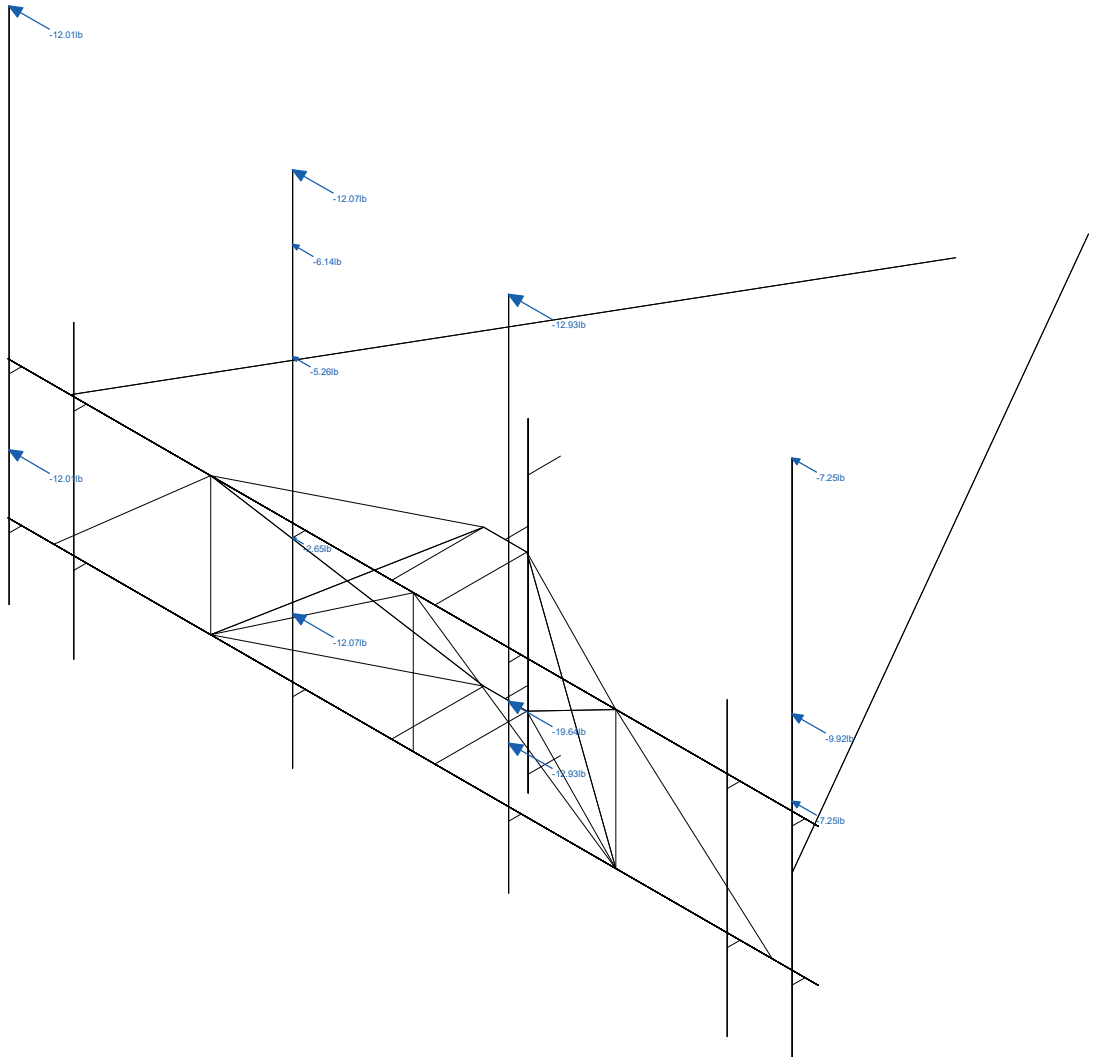
806353

Ice Weight Loads
Apr 16, 2020 at 4:38 PM
806353 (MA)_loaded.r3d



Loads: BLC 17, Ice Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Wind + Ice Loads Z
SJM		Apr 16, 2020 at 4:38 PM
1039-Z0001-B		806353 (MA)_loaded.r3d

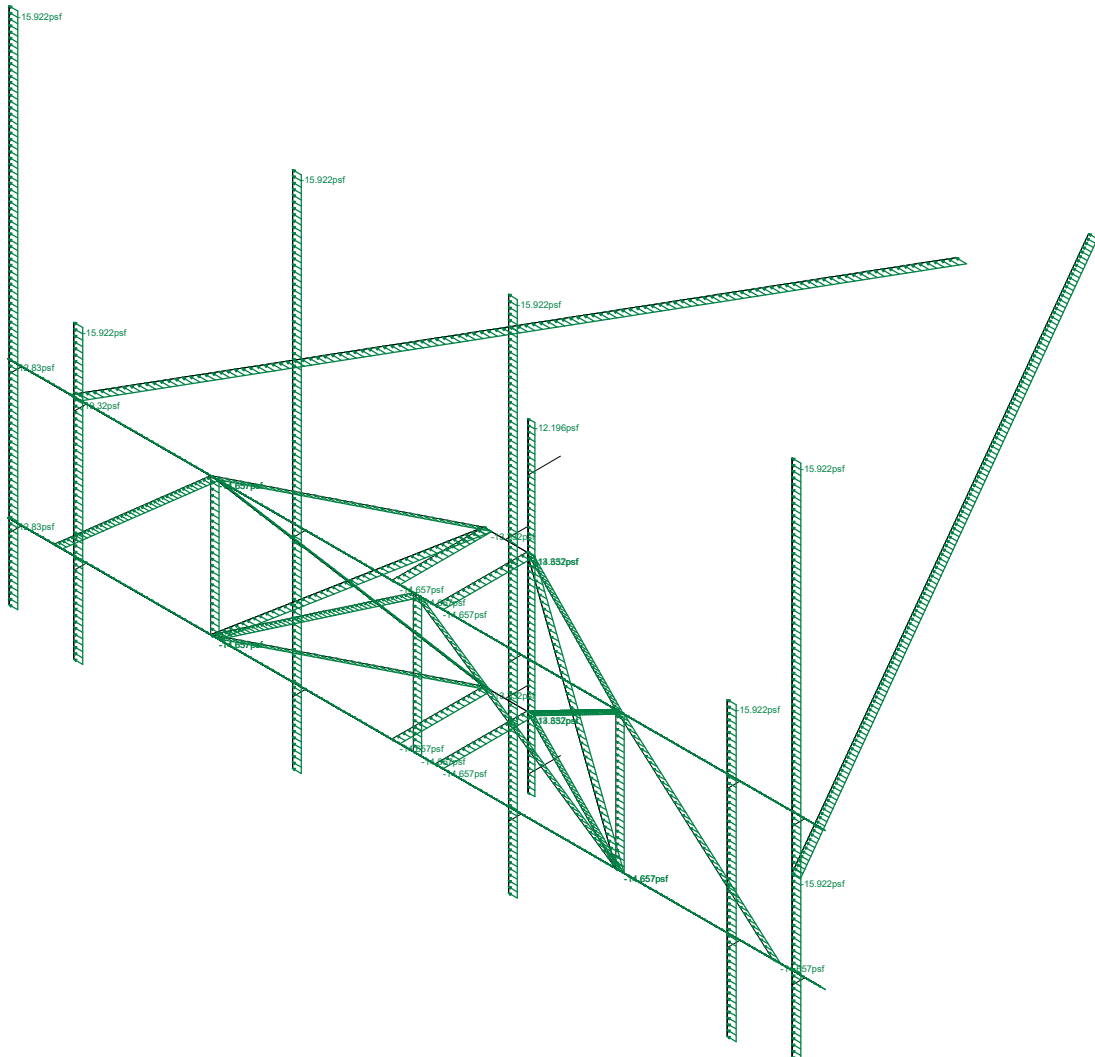


Loads: BLC 20, Ice Wind Load AZI 90
Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

806353

Wind + Ice Loads X
Apr 16, 2020 at 4:38 PM
806353 (MA)_loaded.r3d

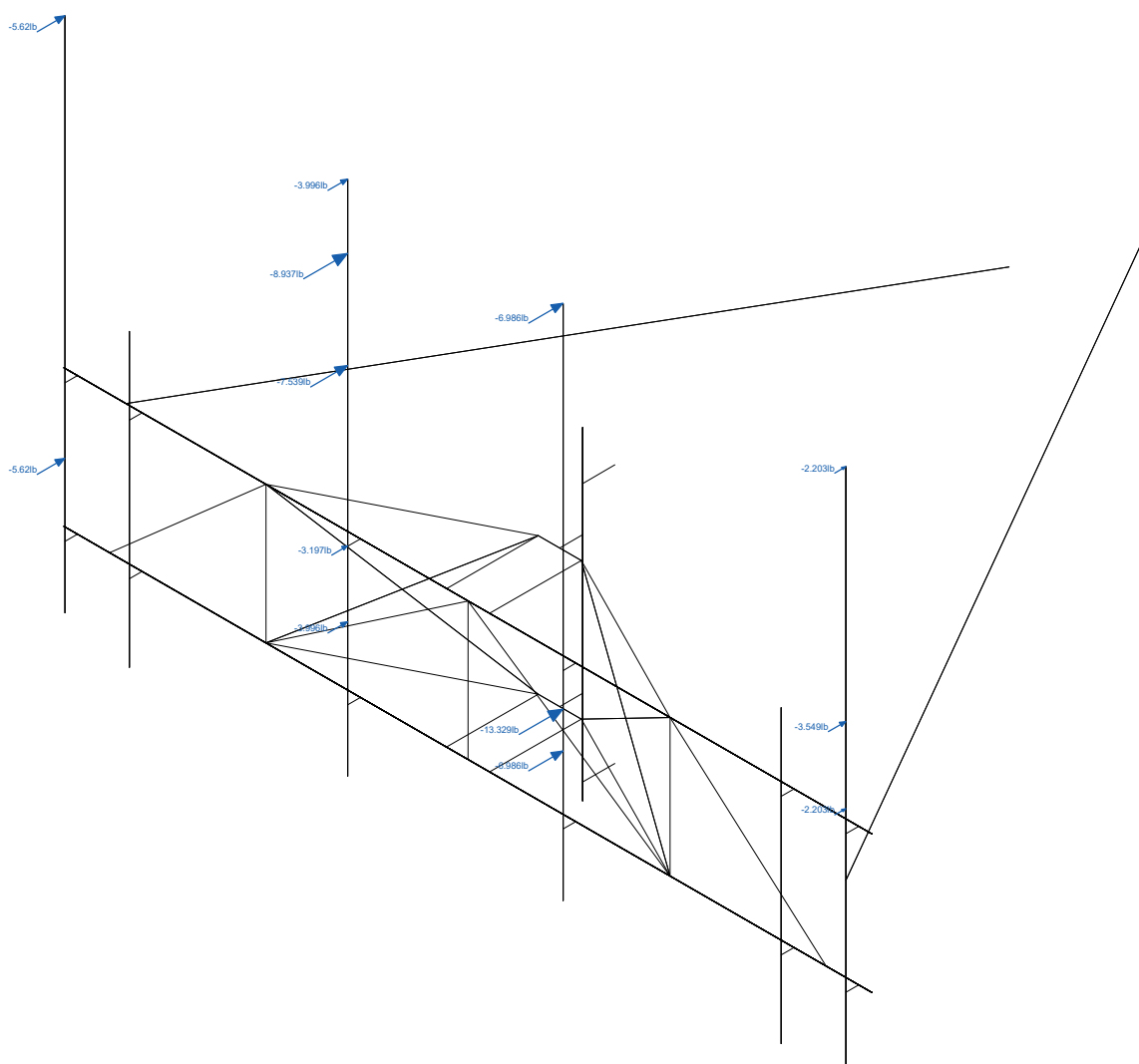


Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

806353

Distr. Wind + Ice Loads X
Apr 16, 2020 at 4:39 PM
806353 (MA)_loaded.r3d

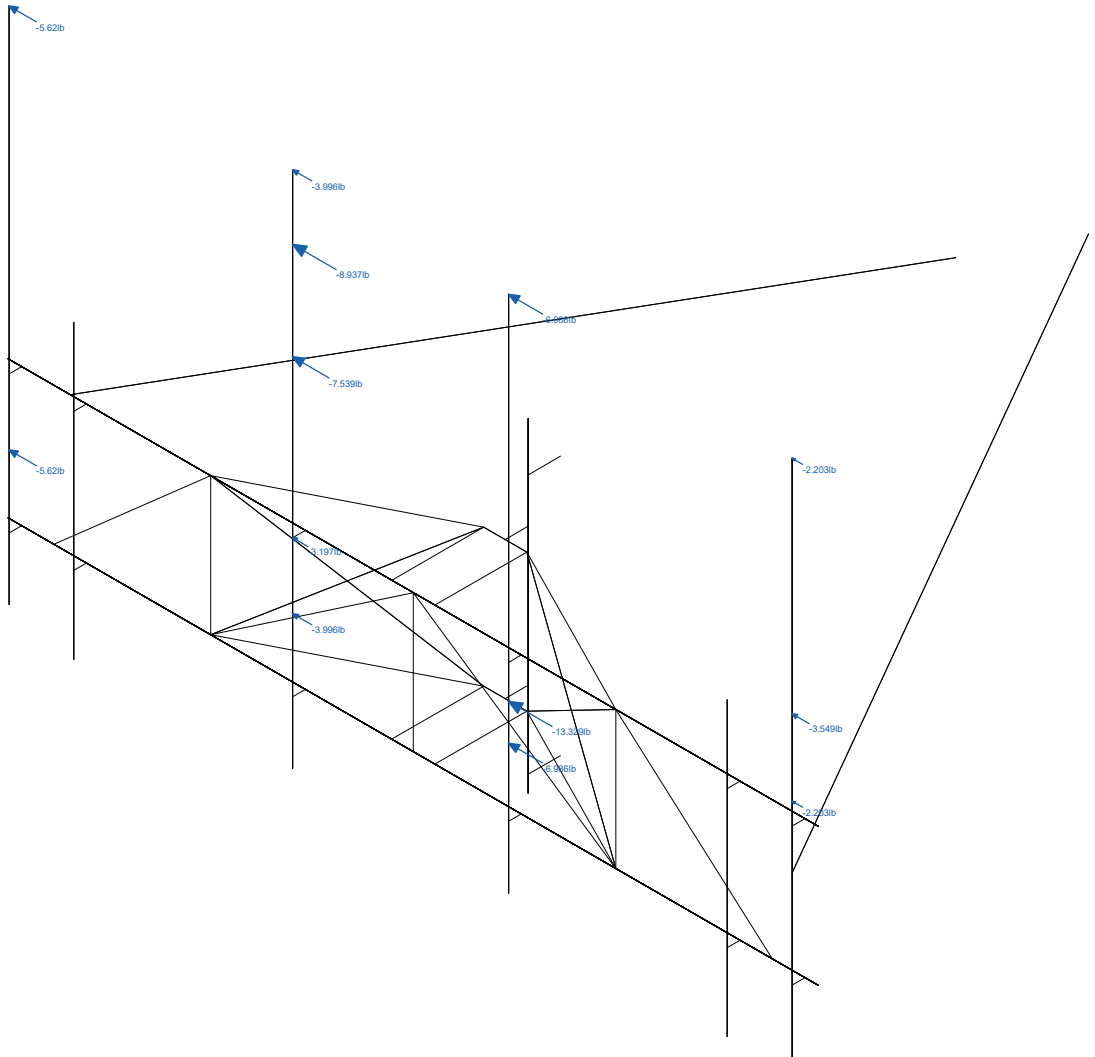


Loads: BLC 31, Seismic Load Z
Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

806353

Seismic Loads Z
Apr 16, 2020 at 4:39 PM
806353 (MA)_loaded.r3d

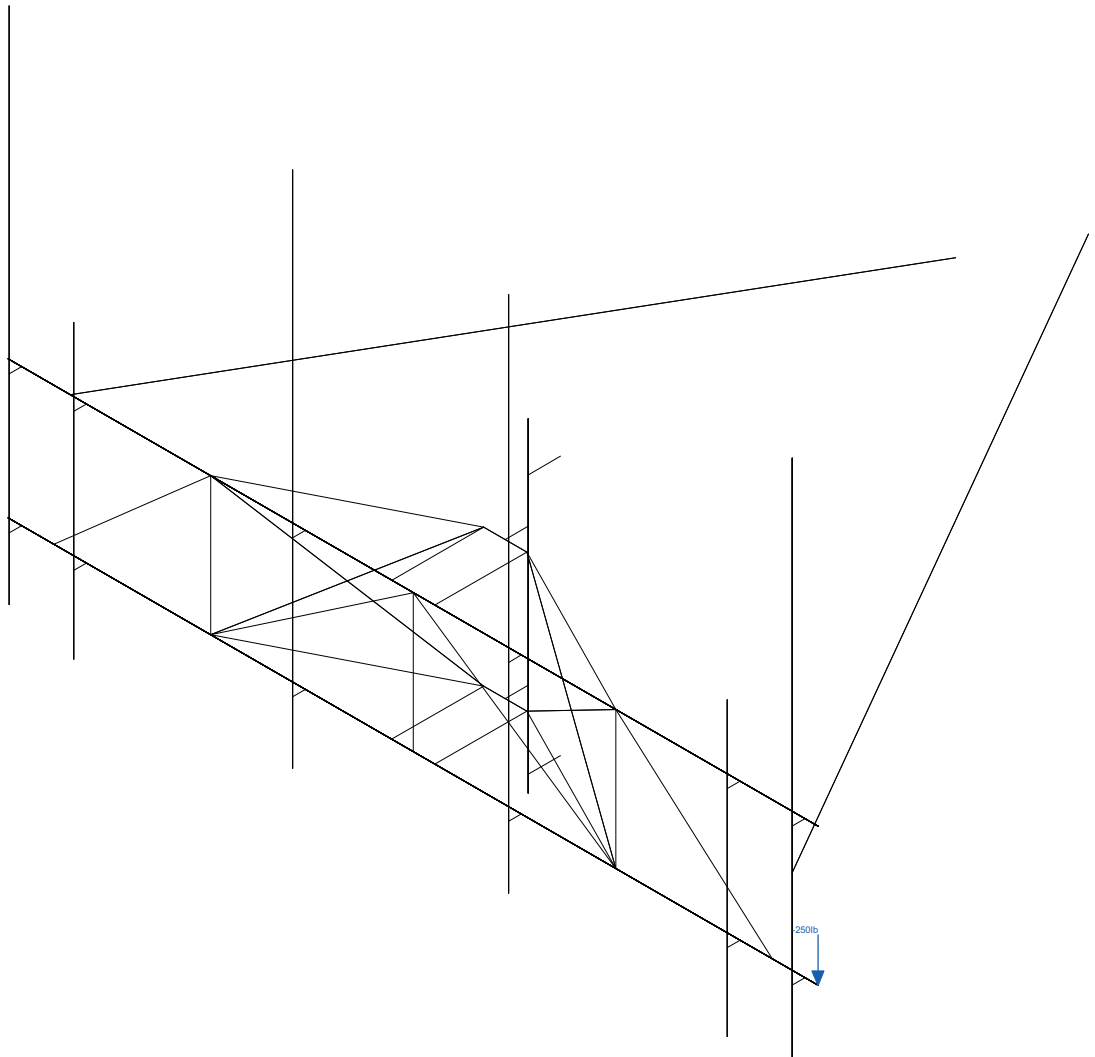


Loads: BLC 32, Seismic Load X
Envelope Only Solution

Infinigy Engineering, PLLC
SJM
1039-Z0001-B

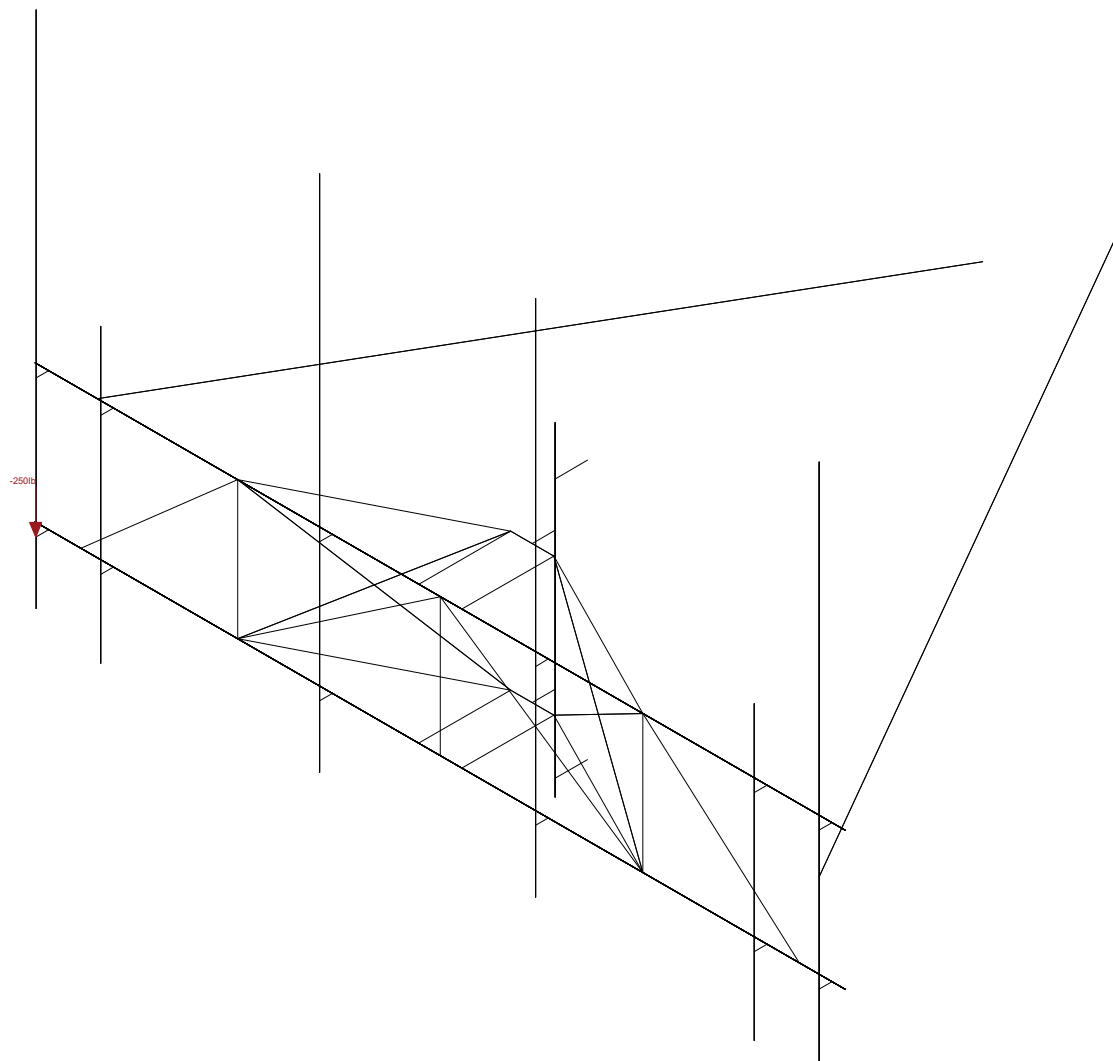
806353

Seismic Loads X
Apr 16, 2020 at 4:39 PM
806353 (MA)_loaded.r3d



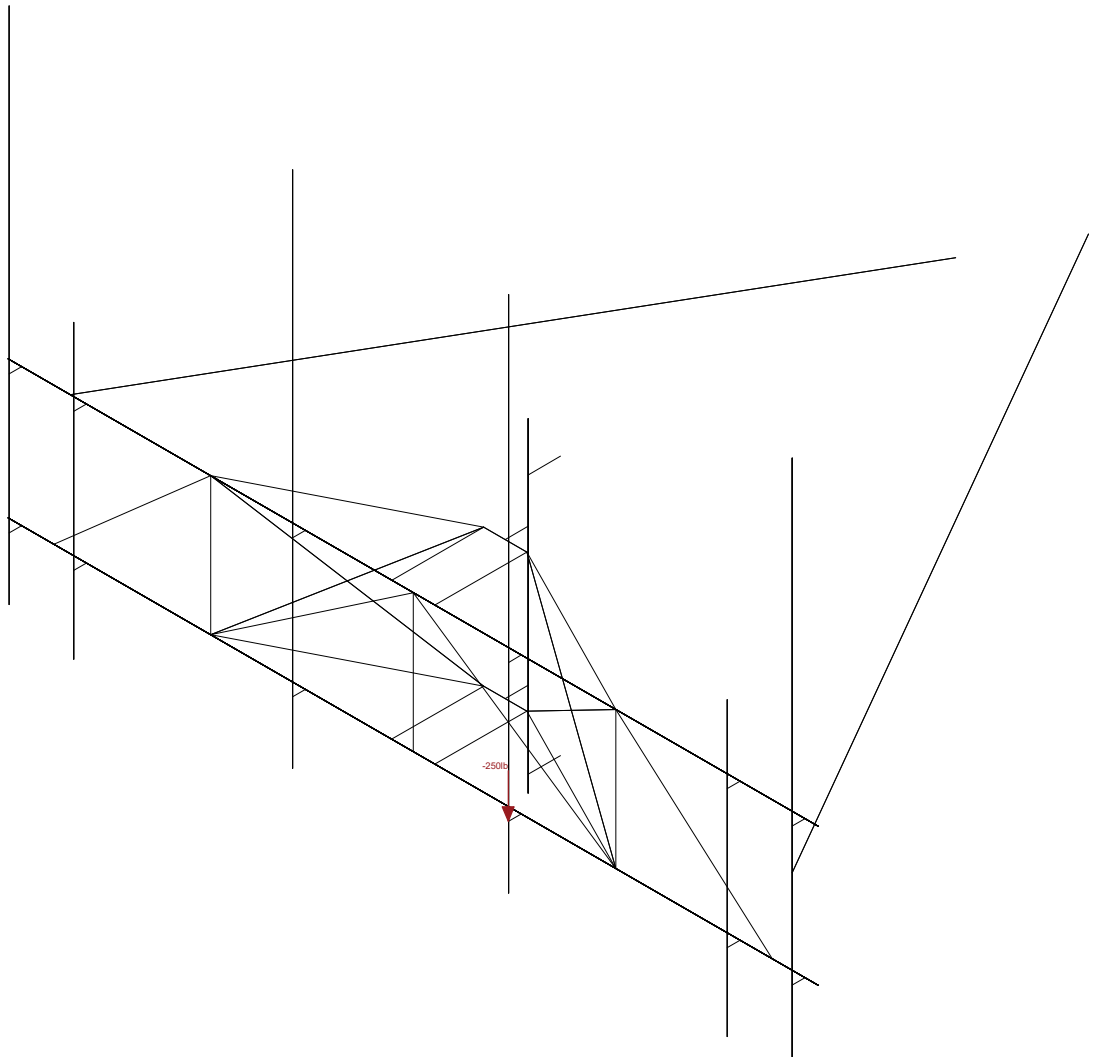
Loads: BLC 33, Service Live Loads
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Service Live Loads
SJM		Apr 16, 2020 at 4:40 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



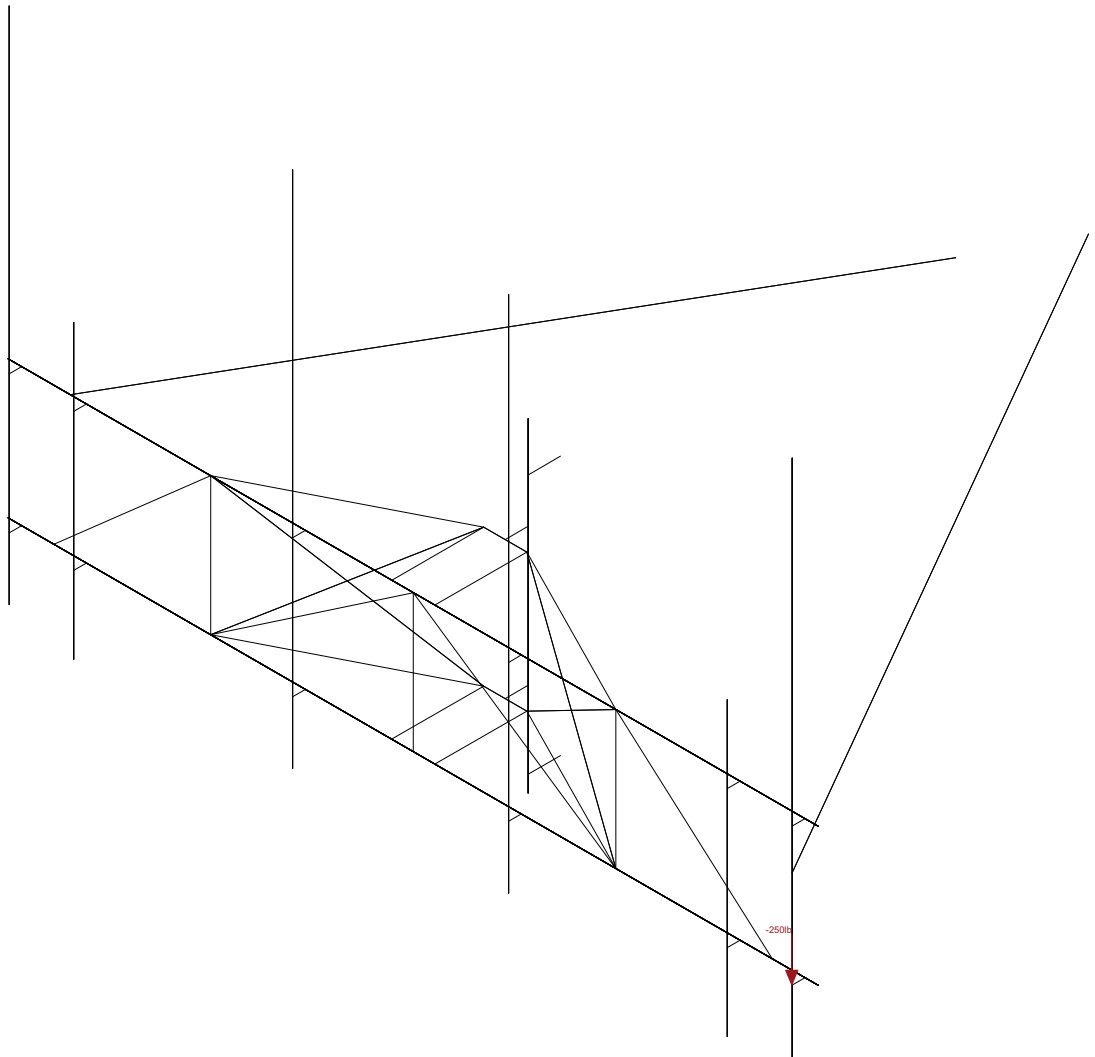
Loads: BLC 34, Maintenance Load 1
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Maintenance Loads 1
SJM		Apr 16, 2020 at 4:40 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



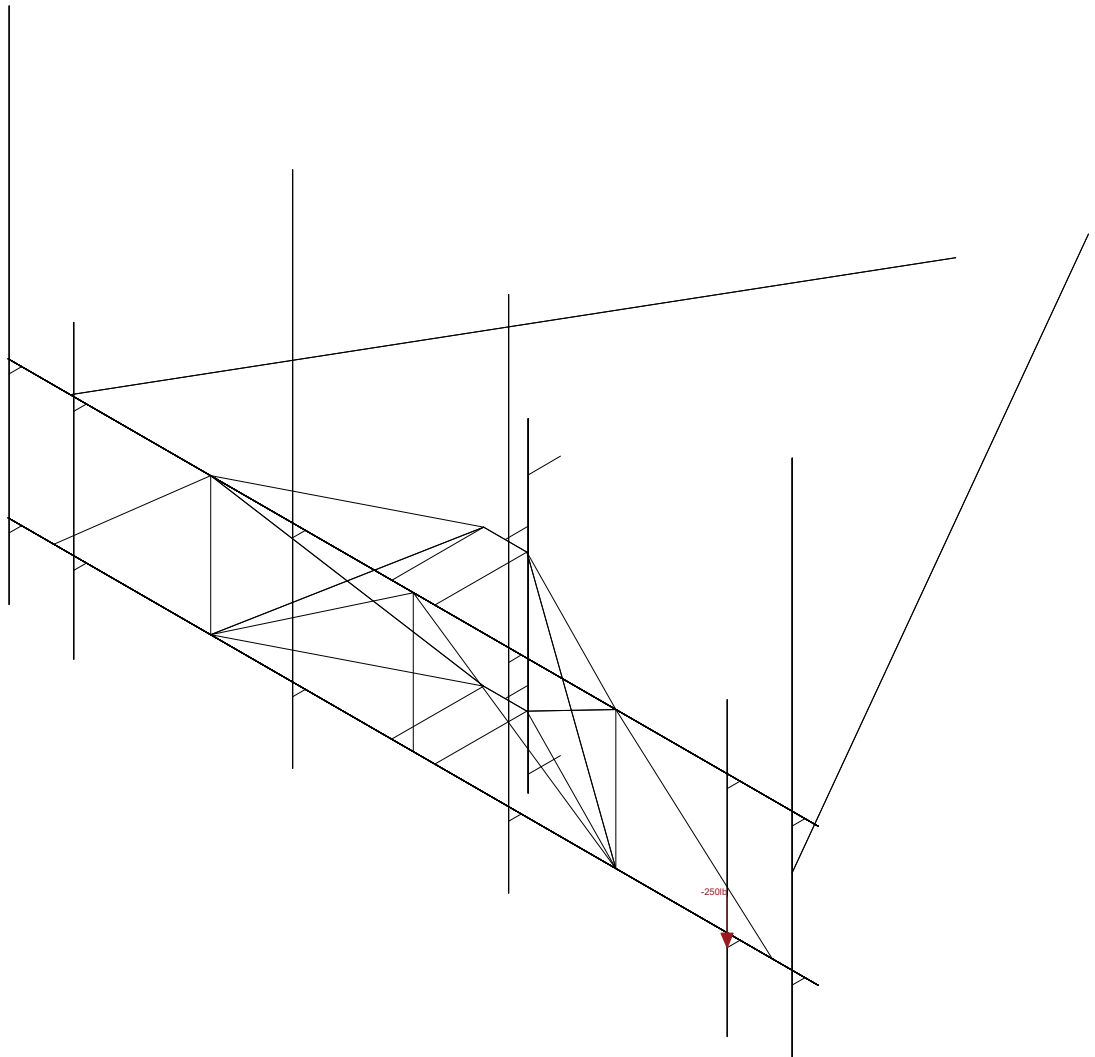
Loads: BLC 35, Maintenance Load 2
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Maintenance Loads 2
SJM		Apr 16, 2020 at 4:40 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



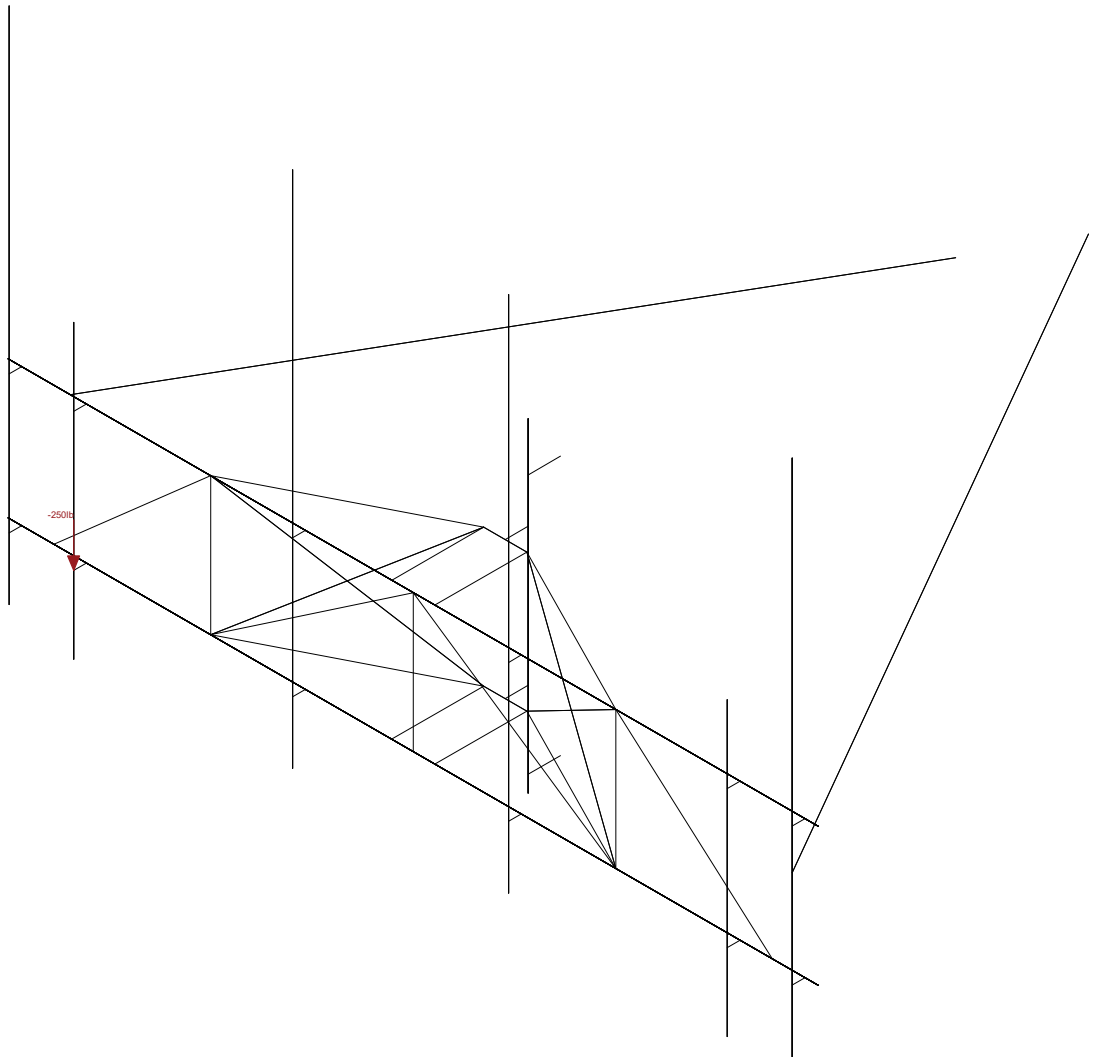
Loads: BLC 36, Maintenance Load 3
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Maintenance Loads 3
SJM		Apr 16, 2020 at 4:40 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



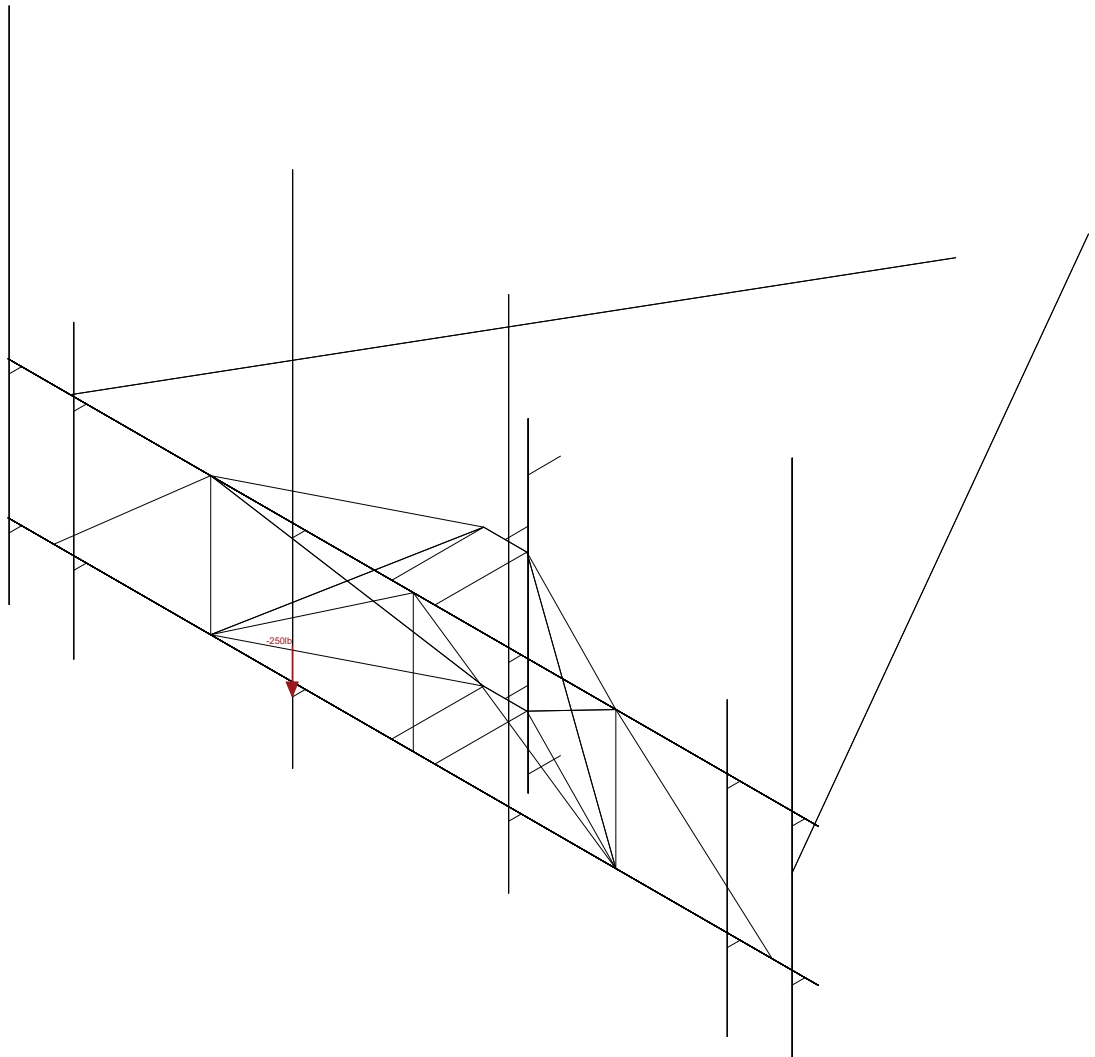
Loads: BLC 37, Maintenance Load 4
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Maintenance Loads 4
SJM		Apr 16, 2020 at 4:41 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



Loads: BLC 38, Maintenance Load 5
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Maintenance Loads 5
SJM		Apr 16, 2020 at 4:41 PM
1039-Z0001-B		806353 (MA)_loaded.r3d



Loads: BLC 39, Maintenance Load 6
Envelope Only Solution

Infinigy Engineering, PLLC	806353	Maintenance Loads 6
SJM		Apr 16, 2020 at 4:41 PM
1039-Z0001-B		806353 (MA)_loaded.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	AT&T Mobility
Engineer:	Sergio Magallon

SITE INFORMATION	
Risk Category:	II
Exposure Category:	B
Topo Factor Procedure:	Method 1, Category 1
Site Class:	D - Stiff Soil
Ground Elevation:	426.37 ft *Rev H

MOUNT INFORMATION	
Mount Type:	Sector Frame
Num Sectors:	3
Centerline AGL:	154.0 ft
Tower Height AGL:	180.0 ft

TOPOGRAPHIC DATA	
Topo Feature:	N/A
Slope Distance:	N/A ft
Crest Distance:	N/A ft
Crest Height:	N/A ft

FACTORS	
Directionality Fact. (K_d):	0.95
Ground Ele. Factor (K_e):	0.98 *Rev H Only
Rooftop Speed-Up (K_s):	1.00 *Rev H Only
Topographic Factor (K_{zt}):	1.00
Gust Effect Factor (G_n):	1.0

CODE STANDARDS	
Building Code:	2018 IBC
TIA Standard:	TIA-222-H
ASCE Standard:	ASCE 7-16

WIND AND ICE DATA	
Ultimate Wind (V_{ult}):	116 mph
Design Wind (V):	N/A mph
Ice Wind (V_{ice}):	50 mph
Base Ice Thickness (t_i):	1 in
Flat Pressure:	72.05 psf
Round Pressure:	43.23 psf
Ice Wind Pressure:	8.03 psf

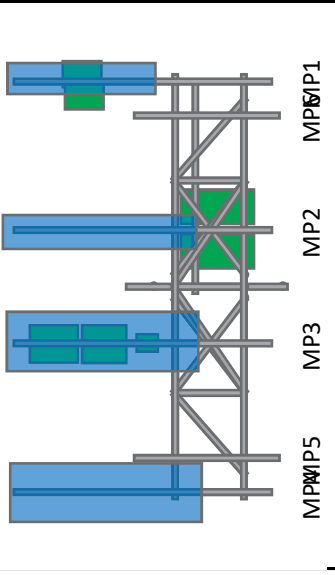
SEISMIC DATA	
Short-Period Accel. (S_s):	0.24 g
1-Second Accel. (S_1):	0.06 g
Short-Period Design (S_{DS}):	0.25
1-Second Design (S_{D1}):	0.09
Short-Period Coeff. (F_a):	1.60
1-Second Coeff. (F_v):	2.40
Amplification Factor (a_p):	1.00
Response Mod. (R_p):	2.50
Overstrength (Ω_o):	1.00



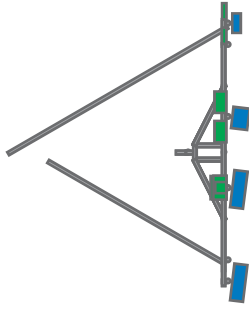
Infinigy Load Calculator V2.1.4

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY

FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K _a	q _z (psf)	EPA _N (ft ²)	EPA _T (ft ²)	Wind F _z (lbs)	Wind F _x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
CCI ANTENNAS DMP65R-BU6D	158.0	3	0.90	36.29	12.71	5.62	411.67	186.84	89.30	11.24	MP4
CCI ANTENNAS OPA65R-BU6D	158.0	3	0.90	36.29	12.25	6.05	397.04	200.52	63.50	7.99	MP3
POWERWAVE TECHNOLOGIES 7770.00	158.0	3	0.90	36.29	5.51	2.93	179.92	95.64	35.00	4.41	MP1
QUINTEL TECHNOLOGY QS66512-2	158.0	3	0.90	36.29	4.04	4.18	131.87	136.48	111.00	13.97	MP2
ERICSSON TME-RRUS 32 B2	150.0	3	0.90	35.76	1.67	2.73	53.68	87.89	52.90	6.66	MP2
ERICSSON TME-RRUS 32 B30	150.0	3	0.90	35.76	1.67	2.74	53.68	88.26	53.00	6.67	MP2
ERICSSON RRUS 4449 B5/B12	158.0	3	0.90	36.29	1.97	1.41	64.26	45.99	71.00	8.94	MP3
ERICSSON TME-RRUS 4478 B14	158.0	3	0.90	36.29	1.84	1.06	60.18	34.58	59.90	7.54	MP3
KAEIUS DBC0061F1V5-2	150.0	3	0.90	35.76	0.41	0.43	13.30	13.94	25.40	3.20	MP3
WERWAVE TECHNOLOGIES TME-LGP21+	150.0	3	0.90	35.76	0.35	1.10	11.17	35.53	14.10	1.77	MP1
WERWAVE TECHNOLOGIES TME-LGP21+	150.0	3	0.90	35.76	0.35	1.10	11.17	35.53	14.10	1.77	MP1
RAYCAP TME-DC6-48-60-18-8F	150.0	3	0.90	35.76	2.90	2.90	93.35	93.35	32.80	4.13	Leg/Flush

APPENDIX C
SOFTWARE ANALYSIS OUTPUT



Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2		270	Horizontal	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N3	N4		180	Horizontal	Beam	Single Angle	A36 Gr.36	Typical
3	MP4	N6	N5			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
4	MP2	N10	N9			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
5	MP1	N12	N11			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
6	M7	N14	N27		90	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
7	M8	N13	N14		180	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
8	M9	N15	N13		90	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
9	M10	N16	N15		180	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
10	M11	N18	N15		90	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
11	M12	N18	N17		270	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
12	M13	N29	N17		90	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
13	M14	N33	N17		90	Standoff Horz.	Beam	Single Angle	A36 Gr.36	Typical
14	M15	N34	N18			Standoff Horz.	Beam	Single Angle	A36 Gr.36	Typical
15	M16	N35	N14		180	Standoff Horz.	Beam	Single Angle	A36 Gr.36	Typical
16	M17	N36	N13		270	Standoff Horz.	Beam	Single Angle	A36 Gr.36	Typical
17	M18	N35	N33		90	RIGID	None	None	RIGID	Typical
18	M19	N36	N34			RIGID	None	None	RIGID	Typical
19	M20	N14	N36		180	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
20	M21	N13	N35		90	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
21	M22	N33	N18		90	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
22	M23	N34	N17		180	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
23	M24	N41	N35		90	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
24	M25	N39A	N33		180	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
25	M26	N42	N36			Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
26	M27	N40A	N34		270	Brace Angle	VBrace	Single Angle	A36 Gr.36	Typical
27	M30	N23	N49			RIGID	None	None	RIGID	Typical
28	M31	N19	N45B			RIGID	None	None	RIGID	Typical
29	M34	N21	N47A			RIGID	None	None	RIGID	Typical
30	M35	N26	N52			RIGID	None	None	RIGID	Typical
31	M36	N22	N48			RIGID	None	None	RIGID	Typical
32	M37	N25	N51			RIGID	None	None	RIGID	Typical
33	MP6	N54	N53			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
34	M39	N56	N58			RIGID	None	None	RIGID	Typical
35	M40	N55	N57			RIGID	None	None	RIGID	Typical
36	MP5	N60	N59			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
37	M42	N62	N64			RIGID	None	None	RIGID	Typical
38	M43	N61	N63			RIGID	None	None	RIGID	Typical
39	M41A	N55A	N57A			RIGID	None	None	RIGID	Typical
40	M42A	N56A	N58A			RIGID	None	None	RIGID	Typical
41	M43A	N59A	N60A			Standoff Pipe ...	Column	Pipe	A53 Gr. B	Typical
42	M44	N63A	N61A			RIGID	None	None	RIGID	Typical
43	M45	N64A	N62A			RIGID	None	None	RIGID	Typical
44	MP3	N66	N65			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
45	M47	N68	N70			RIGID	None	None	RIGID	Typical
46	M48	N67	N69			RIGID	None	None	RIGID	Typical
47	M49	N71	N71A			Tie Back	Beam	Pipe	A53 Gr. B	Typical
48	M48A	N72A	N75			Site Pro 1 STK...	Beam	Pipe	A53 Gr. B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		18	65	0
3	Total General		18	65	0



Material Takeoff (Continued)

	Material	Size	Pieces	Length[in]	Weight[LB]
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2.5x2.5x3	4	150.3	38.392
7	A36 Gr.36	L2x2x3	15	494	101.148
8	A36 Gr.36	L3X2.5X3	2	300	85.069
9	A53 Gr. B	PIPE 1.25	1	120	21.267
10	A53 Gr. B	PIPE 2.0	7	642	185.69
11	A53 Gr. B	PIPE 4.0	1	60	50.361
12	Total HR Steel		30	1766.3	481.927

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Self Weight	DL		-1			15		
2	Wind Load AZI 0	WLZ					30		
3	Wind Load AZI 30	None					30		
4	Wind Load AZI 60	None					30		
5	Wind Load AZI 90	WLX					30		
6	Wind Load AZI 120	None					30		
7	Wind Load AZI 150	None					30		
8	Wind Load AZI 180	None					30		
9	Wind Load AZI 210	None					30		
10	Wind Load AZI 240	None					30		
11	Wind Load AZI 270	None					30		
12	Wind Load AZI 300	None					30		
13	Wind Load AZI 330	None					30		
14	Distr. Wind Load Z	WLZ						48	
15	Distr. Wind Load X	WLX						48	
16	Ice Weight	OL1					15	48	
17	Ice Wind Load AZI 0	OL2					30		
18	Ice Wind Load AZI 30	None					30		
19	Ice Wind Load AZI 60	None					30		
20	Ice Wind Load AZI 90	OL3					30		
21	Ice Wind Load AZI 120	None					30		
22	Ice Wind Load AZI 150	None					30		
23	Ice Wind Load AZI 180	None					30		
24	Ice Wind Load AZI 210	None					30		
25	Ice Wind Load AZI 240	None					30		
26	Ice Wind Load AZI 270	None					30		
27	Ice Wind Load AZI 300	None					30		
28	Ice Wind Load AZI 330	None					30		
29	Distr. Ice Wind Load Z	OL2						48	
30	Distr. Ice Wind Load X	OL3						48	
31	Seismic Load Z	ELZ			-126		15		
32	Seismic Load X	ELX	-126				15		
33	Service Live Loads	LL					1		
34	Maintenance Load 1	LL				1			
35	Maintenance Load 2	LL				1			
36	Maintenance Load 3	LL				1			
37	Maintenance Load 4	LL				1			
38	Maintenance Load 5	LL				1			
39	Maintenance Load 6	LL				1			



Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...
1	1.4DL	Yes	Y	1	1.4																
2	1.2DL + 1WL AZI 0	Yes	Y	1	1.2	2	1	14	1	15											
3	1.2DL + 1WL AZI 30	Yes	Y	1	1.2	3	1	14	.866	15	.5										
4	1.2DL + 1WL AZI 60	Yes	Y	1	1.2	4	1	14	.5	15	.866										
5	1.2DL + 1WL AZI 90	Yes	Y	1	1.2	5	1	14		15	1										
6	1.2DL + 1WL AZI 120	Yes	Y	1	1.2	6	1	14	-.5	15	.866										
7	1.2DL + 1WL AZI 150	Yes	Y	1	1.2	7	1	14	-.8...	15	.5										
8	1.2DL + 1WL AZI 180	Yes	Y	1	1.2	8	1	14	-1	15											
9	1.2DL + 1WL AZI 210	Yes	Y	1	1.2	9	1	14	-.8...	15	-.5										
10	1.2DL + 1WL AZI 240	Yes	Y	1	1.2	10	1	14	-.5	15	-.8...										
11	1.2DL + 1WL AZI 270	Yes	Y	1	1.2	11	1	14		15	-1										
12	1.2DL + 1WL AZI 300	Yes	Y	1	1.2	12	1	14	.5	15	-.8...										
13	1.2DL + 1WL AZI 330	Yes	Y	1	1.2	13	1	14	.866	15	-.5										
14	0.9DL + 1WL AZI 0	Yes	Y	1	.9	2	1	14	1	15											
15	0.9DL + 1WL AZI 30	Yes	Y	1	.9	3	1	14	.866	15	.5										
16	0.9DL + 1WL AZI 60	Yes	Y	1	.9	4	1	14	.5	15	.866										
17	0.9DL + 1WL AZI 90	Yes	Y	1	.9	5	1	14		15	1										
18	0.9DL + 1WL AZI 120	Yes	Y	1	.9	6	1	14	-.5	15	.866										
19	0.9DL + 1WL AZI 150	Yes	Y	1	.9	7	1	14	-.8...	15	.5										
20	0.9DL + 1WL AZI 180	Yes	Y	1	.9	8	1	14	-1	15											
21	0.9DL + 1WL AZI 210	Yes	Y	1	.9	9	1	14	-.8...	15	-.5										
22	0.9DL + 1WL AZI 240	Yes	Y	1	.9	10	1	14	-.5	15	-.8...										
23	0.9DL + 1WL AZI 270	Yes	Y	1	.9	11	1	14		15	-1										
24	0.9DL + 1WL AZI 300	Yes	Y	1	.9	12	1	14	.5	15	-.8...										
25	0.9DL + 1WL AZI 330	Yes	Y	1	.9	13	1	14	.866	15	-.5										
26	1.2D + 1.0Di	Yes	Y	1	1.2	16	1														
27	1.2D + 1.0Di + 1.0Wi AZI 0	Yes	Y	1	1.2	16	1	17	1	29	1	30									
28	1.2D + 1.0Di + 1.0Wi AZI 30	Yes	Y	1	1.2	16	1	18	1	29	.866	30	.5								
29	1.2D + 1.0Di + 1.0Wi AZI 60	Yes	Y	1	1.2	16	1	19	1	29	.5	30	.866								
30	1.2D + 1.0Di + 1.0Wi AZI 90	Yes	Y	1	1.2	16	1	20	1	29		30	1								
31	1.2D + 1.0Di + 1.0Wi AZI 120	Yes	Y	1	1.2	16	1	21	1	29	-.5	30	.866								
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y	1	1.2	16	1	22	1	29	-.8...	30	.5								
33	1.2D + 1.0Di + 1.0Wi AZI 180	Yes	Y	1	1.2	16	1	23	1	29	-1	30									
34	1.2D + 1.0Di + 1.0Wi AZI 210	Yes	Y	1	1.2	16	1	24	1	29	-.8...	30	-.5								
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y	1	1.2	16	1	25	1	29	-.5	30	-.8...								
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y	1	1.2	16	1	26	1	29		30	-1								
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y	1	1.2	16	1	27	1	29	.5	30	-.8...								
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y	1	1.2	16	1	28	1	29	.866	30	-.5								
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.25	31	1	32													
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.25	31	.866	32	.5												
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.25	31	.5	32	.866												
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.25	31		32	1												
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.25	31	-.5	32	.866												
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.25	31	-.8...	32	.5												
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.25	31	-1	32													
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.25	31	-.8...	32	-.5												
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.25	31	-.5	32	-.8...												
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.25	31		32	-1												
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.25	31	.5	32	-.8...												
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.25	31	.866	32	-.5												
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	.85	31	1	32													
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	.85	31	.866	32	.5												
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	.85	31	.5	32	.866												
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	.85	31		32	1												
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	.85	31	-.5	32	.866												
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	.85	31	-.8...	32	.5												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...
114	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	4	.067	14	.033	15	.058							
115	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	5	.067	14		15	.067							
116	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	6	.067	14	-0...	15	.058							
117	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	7	.067	14	-0...	15	.033							
118	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	8	.067	14	-0...	15								
119	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	9	.067	14	-0...	15	-0...							
120	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	10	.067	14	-0...	15	-0...							
121	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	11	.067	14		15	-0...							
122	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	12	.067	14	.033	15	-0...							
123	1.2DL + 1.5LM-MP4 + 1SWL (30 mp...	Yes	Y		1	1.2	37	1.5	13	.067	14	.058	15	-0...							
124	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	2	.067	14	.067	15								
125	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	3	.067	14	.058	15	.033							
126	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	4	.067	14	.033	15	.058							
127	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	5	.067	14		15	.067							
128	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	6	.067	14	-0...	15	.058							
129	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	7	.067	14	-0...	15	.033							
130	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	8	.067	14	-0...	15								
131	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	9	.067	14	-0...	15	-0...							
132	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	10	.067	14	-0...	15	-0...							
133	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	11	.067	14		15	-0...							
134	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	12	.067	14	.033	15	-0...							
135	1.2DL + 1.5LM-MP5 + 1SWL (30 mp...	Yes	Y		1	1.2	38	1.5	13	.067	14	.058	15	-0...							
136	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	2	.067	14	.067	15								
137	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	3	.067	14	.058	15	.033							
138	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	4	.067	14	.033	15	.058							
139	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	5	.067	14		15	.067							
140	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	6	.067	14	-0...	15	.058							
141	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	7	.067	14	-0...	15	.033							
142	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	8	.067	14	-0...	15								
143	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	9	.067	14	-0...	15	-0...							
144	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	10	.067	14	-0...	15	-0...							
145	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	11	.067	14		15	-0...							
146	1.2DL + 1.5LM-MP6 + 1SWL (30 mp...	Yes	Y		1	1.2	39	1.5	12	.067	14	.033	15	-0...							

Envelope Joint Reactions

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC		
1	N63A	max	2096.055	5	3872.53	33	1219.627	14	0	146	2034.057	5	0	146
2		min	-2044.42	23	-247.679	14	-6310.836	33	0	1	-1989.504	23	0	1
3	N64A	max	593.015	66	8003.703	27	6155.399	29	0	146	573.353	17	0	146
4		min	-605.227	85	117.821	20	276.656	14	0	1	-596.954	11	0	1
5	N72	max	532.748	8	318.222	34	925.557	14	0	146	0	146	0	146
6		min	-523.623	14	11.292	52	-941.474	8	0	1	0	1	0	1
7	N76	max	278.369	14	493.557	32	549.17	25	0	146	0	146	0	146
8		min	-285.085	8	22.476	61	-561.917	7	0	1	0	1	0	1
9	Totals:	max	2042.477	17	12438.227	31	2936.473	14						
10		min	-2042.477	11	910.088	61	-2936.477	8						

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

Member	Shape	Code ...	Loc[in]	LC	Shear...	Loc[.Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn	
1	MP3	PIPE 2.0	.810	59	8	.108	59	9	14916.0...	32130	1871.625	1871.625	1...H1-1b	
2	M2	L3X2.5X3	.698	54.688	8	.185	10.9...	z	8	25166.2...	32400	951.925	1561.496	1...H2-1
3	M1	L3X2.5X3	.606	140.625	35	.106	142...	z	33	24021.0...	32400	951.925	1327.894	1...H2-1
4	MP4	PIPE 2.0	.605	59	8	.248	59	2	14916.0...	32130	1871.625	1871.625	1...H1-1b	
5	M23	L2x2x3	.542	0	29	.018	22.7...	y	29	11418.4...	23392.8	557.717	1202.652	1...H2-1



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

Member	Shape	Code	Loc[in]	LC	Shear	LocI	Dir	LC	phi*Pnc	phi*Pnt	phi*Mn	phi*Mn	Cb	Eqn	
6	M20	L2x2x3	.535	45.404	36	.019	22.7...	y	36	11418.4...	23392.8	557.717	1220.952	2...	H2-1
7	M49	PIPE_1.25	.457	45	27	.036	95		35	2886.657	19687.5	800.625	800.625	1...	H1-1b
8	M43A	PIPE_4.0	.417	56.875	27	.239	9.375		31	86073.9...	93240	10631.25	10631.25	1...	H1-1b
9	M48A	PIPE_2.0	.416	57.813	38	.035	121...		31	6295.422	32130	1871.625	1871.625	1...	H1-1b
10	M11	L2x2x3	.379	22.202	37	.019	0	z	33	11438.3...	23392.8	557.717	1097.972	1...	H2-1
11	M9	L2x2x3	.377	23.147	30	.017	0	z	33	11438.3...	23392.8	557.717	1097.972	1...	H2-1
12	MP1	PIPE_2.0	.342	66	8	.175	67		8	14916.0...	32130	1871.625	1871.625	2...	H1-1b
13	M15	L2.5x2.5x3	.309	18.783	33	.018	0	y	37	21202.5...	29192.4	872.574	1806.603	1...	H2-1
14	M17	L2.5x2.5x3	.301	18.783	32	.019	0	z	31	21202.5...	29192.4	872.574	1806.603	1...	H2-1
15	M22	L2x2x3	.294	22.702	34	.018	22.7...	z	32	11418.4...	23392.8	557.717	1166.769	1...	H2-1
16	M21	L2x2x3	.287	22.702	31	.016	22.7...	z	29	11418.4...	23392.8	557.717	1151.777	1...	H2-1
17	M14	L2.5x2.5x3	.272	18.783	34	.019	0	z	30	21202.5...	29192.4	872.574	1806.603	1...	H2-1
18	M16	L2.5x2.5x3	.265	18.783	32	.019	0	y	35	21202.5...	29192.4	872.574	1806.603	1...	H2-1
19	MP2	PIPE_2.0	.253	59	10	.059	59		5	14916.0...	32130	1871.625	1871.625	1...	H1-1b
20	M13	L2x2x3	.252	19.711	29	.016	38.6...	z	35	13924.1...	23392.8	557.717	1135.673	1...	H2-1
21	M7	L2x2x3	.245	18.906	37	.014	0	z	31	13924.1...	23392.8	557.717	1135.673	1...	H2-1
22	MP5	PIPE_2.0	.088	39.375	36	.165	14.6...		8	25203.8...	32130	1871.625	1871.625	1...	H1-1b
23	MP6	PIPE_2.0	.084	39.375	27	.180	14.6...		8	25203.8...	32130	1871.625	1871.625	1...	H1-1b
24	M24	L2x2x3	.058	8.5	15	.012	0	z	27	21155.1...	23392.8	557.717	1239.29	1...	H2-1
25	M27	L2x2x3	.046	8.5	12	.012	0	z	38	21155.1...	23392.8	557.717	1239.29	1...	H2-1
26	M26	L2x2x3	.045	8.5	6	.012	0	y	32	21155.1...	23392.8	557.717	1239.29	1...	H2-1
27	M25	L2x2x3	.041	8.5	31	.012	0	y	38	21155.1...	23392.8	557.717	1239.29	1...	H2-1
28	M10	L2x2x3	.038	18.063	37	.004	25.5	z	2	18656.73	23392.8	557.717	1220.114	1...	H2-1
29	M12	L2x2x3	.029	12.75	22	.018	25.5	y	8	18656.73	23392.8	557.717	1220.114	1...	H2-1
30	M8	L2x2x3	.026	12.75	17	.011	0	y	4	18656.73	23392.8	557.717	1220.114	1...	H2-1

Hot Rolled Steel Section Sets

Label	Shape	Type	Design List	Material	Design	A [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]	
1	Horizontal	L3X2.5X3	Beam	Single Angle	A36 Gr.36	Typical	1	.568	.899	.013
2	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
3	Tie Back	PIPE_1.25	Beam	Pipe	A53 Gr. B	Typical	.625	.184	.184	.368
4	Standoff Horiz.	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
5	Brace Angle	L2x2x3	VBrace	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
6	Standoff Pipe Mount	PIPE_4.0	Column	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
7	Site Pro 1 STK-U Stif..	PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25

Member Advanced Data

Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio	Options	Analysis ...	Inactive	Seismi...
1	M1					Yes					None
2	M2					Yes					None
3	MP4					Yes	** NA **				None
4	MP2					Yes	** NA **				None
5	MP1					Yes	** NA **				None
6	M7	BenPIN	BenPIN			Yes	** NA **				None
7	M8	BenPIN	BenPIN			Yes	** NA **				None
8	M9	BenPIN	BenPIN			Yes	** NA **				None
9	M10	BenPIN	BenPIN			Yes	** NA **				None
10	M11	BenPIN	BenPIN			Yes	** NA **				None
11	M12	BenPIN	BenPIN			Yes	** NA **				None
12	M13	BenPIN	BenPIN			Yes	** NA **				None
13	M14	BenPIN	BenPIN			Yes					None
14	M15	BenPIN	BenPIN			Yes					None
15	M16	BenPIN	BenPIN			Yes					None
16	M17	BenPIN	BenPIN			Yes					None



Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
21	M24	Brace Angle	17									Lateral
22	M25	Brace Angle	17									Lateral
23	M26	Brace Angle	17									Lateral
24	M27	Brace Angle	17									Lateral
25	MP6	Mount Pipe	54									Lateral
26	MP5	Mount Pipe	54									Lateral
27	M43A	Standoff Pip...	60									Lateral
28	MP3	Mount Pipe	96									Lateral
29	M49	Tie Back	120									Lateral
30	M48A	Site Pro 1 S...	150									Lateral

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N45B	L	Y	-250

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N47A	L	Y	-250

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N48	L	Y	-250

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N57	L	Y	-250

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N63	L	Y	-250

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N69	L	Y	-250

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[(lb,lb-ft)]	Location[in,%]
1	MP4	Y	-44.65	0
2	MP4	Y	-44.65	71.2
3	MP3	Y	-31.75	0
4	MP3	Y	-31.75	71.2
5	MP1	Y	-17.5	0
6	MP1	Y	-17.5	55
7	MP2	Y	-55.5	0
8	MP2	Y	-55.5	72
9	MP2	Y	-52.9	65.25
10	MP2	Y	-53	65.25
11	MP3	Y	-71	12
12	MP3	Y	-59.9	30
13	MP3	Y	-25.4	59
14	MP1	Y	-14.1	41



Member Point Loads (BLC 1 : Self Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
15	MP1	Y	-14.1	41

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	0	0
2	MP4	Z	-205.83	0
3	MP4	X	0	71.2
4	MP4	Z	-205.83	71.2
5	MP3	X	0	0
6	MP3	Z	-198.52	0
7	MP3	X	0	71.2
8	MP3	Z	-198.52	71.2
9	MP1	X	0	0
10	MP1	Z	-89.96	0
11	MP1	X	0	55
12	MP1	Z	-89.96	55
13	MP2	X	0	0
14	MP2	Z	-65.94	0
15	MP2	X	0	72
16	MP2	Z	-65.94	72
17	MP2	X	0	65.25
18	MP2	Z	-53.68	65.25
19	MP2	X	0	65.25
20	MP2	Z	-53.68	65.25
21	MP3	X	0	12
22	MP3	Z	-64.26	12
23	MP3	X	0	30
24	MP3	Z	-60.18	30
25	MP3	X	0	59
26	MP3	Z	-13.3	59
27	MP1	X	0	41
28	MP1	Z	-11.17	41
29	MP1	X	0	41
30	MP1	Z	-11.17	41

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	-82.8	0
2	MP4	Z	-143.41	0
3	MP4	X	-82.8	71.2
4	MP4	Z	-143.41	71.2
5	MP3	X	-81.67	0
6	MP3	Z	-141.46	0
7	MP3	X	-81.67	71.2
8	MP3	Z	-141.46	71.2
9	MP1	X	-39.71	0
10	MP1	Z	-68.78	0
11	MP1	X	-39.71	55
12	MP1	Z	-68.78	55
13	MP2	X	-33.38	0
14	MP2	Z	-57.82	0
15	MP2	X	-33.38	72
16	MP2	Z	-57.82	72
17	MP2	X	-31.12	65.25
18	MP2	Z	-53.9	65.25
19	MP2	X	-31.16	65.25



Member Point Loads (BLC 3 : Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
20	MP2	Z	-53.97	65.25
21	MP3	X	-29.85	12
22	MP3	Z	-51.7	12
23	MP3	X	-26.89	30
24	MP3	Z	-46.57	30
25	MP3	X	-6.73	59
26	MP3	Z	-11.66	59
27	MP1	X	-8.63	41
28	MP1	Z	-14.95	41
29	MP1	X	-8.63	41
30	MP1	Z	-14.95	41

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	-94.73	0
2	MP4	Z	-54.69	0
3	MP4	X	-94.73	71.2
4	MP4	Z	-54.69	71.2
5	MP3	X	-98.91	0
6	MP3	Z	-57.11	0
7	MP3	X	-98.91	71.2
8	MP3	Z	-57.11	71.2
9	MP1	X	-50.54	0
10	MP1	Z	-29.18	0
11	MP1	X	-50.54	55
12	MP1	Z	-29.18	55
13	MP2	X	-58.81	0
14	MP2	Z	-33.96	0
15	MP2	X	-58.81	72
16	MP2	Z	-33.96	72
17	MP2	X	-68.71	65.25
18	MP2	Z	-39.67	65.25
19	MP2	X	-68.95	65.25
20	MP2	Z	-39.81	65.25
21	MP3	X	-43.79	12
22	MP3	Z	-25.28	12
23	MP3	X	-35.49	30
24	MP3	Z	-20.49	30
25	MP3	X	-11.94	59
26	MP3	Z	-6.89	59
27	MP1	X	-25.49	41
28	MP1	Z	-14.72	41
29	MP1	X	-25.49	41
30	MP1	Z	-14.72	41

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	-93.42	0
2	MP4	Z	0	0
3	MP4	X	-93.42	71.2
4	MP4	Z	0	71.2
5	MP3	X	-100.26	0
6	MP3	Z	0	0
7	MP3	X	-100.26	71.2
8	MP3	Z	0	71.2
9	MP1	X	-47.82	0



Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	-94.93	0
2	MP4	Z	164.43	0
3	MP4	X	-94.93	71.2
4	MP4	Z	164.43	71.2
5	MP3	X	-92.28	0
6	MP3	Z	159.84	0
7	MP3	X	-92.28	71.2
8	MP3	Z	159.84	71.2
9	MP1	X	-39.71	0
10	MP1	Z	68.78	0
11	MP1	X	-39.71	55
12	MP1	Z	68.78	55
13	MP2	X	-33.13	0
14	MP2	Z	57.39	0
15	MP2	X	-33.13	72
16	MP2	Z	57.39	72
17	MP2	X	-31.12	65.25
18	MP2	Z	53.9	65.25
19	MP2	X	-31.16	65.25
20	MP2	Z	53.97	65.25
21	MP3	X	-29.85	12
22	MP3	Z	51.7	12
23	MP3	X	-26.89	30
24	MP3	Z	46.57	30
25	MP3	X	-6.73	59
26	MP3	Z	11.66	59
27	MP1	X	-8.63	41
28	MP1	Z	14.95	41
29	MP1	X	-8.63	41
30	MP1	Z	14.95	41

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	0	0
2	MP4	Z	205.83	0
3	MP4	X	0	71.2
4	MP4	Z	205.83	71.2
5	MP3	X	0	0
6	MP3	Z	198.52	0
7	MP3	X	0	71.2
8	MP3	Z	198.52	71.2
9	MP1	X	0	0
10	MP1	Z	89.96	0
11	MP1	X	0	55
12	MP1	Z	89.96	55
13	MP2	X	0	0
14	MP2	Z	65.94	0
15	MP2	X	0	72
16	MP2	Z	65.94	72
17	MP2	X	0	65.25
18	MP2	Z	53.68	65.25
19	MP2	X	0	65.25
20	MP2	Z	53.68	65.25
21	MP3	X	0	12
22	MP3	Z	64.26	12
23	MP3	X	0	30



Member Point Loads (BLC 10 : Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
14	MP2	Z	33.96	0
15	MP2	X	58.81	72
16	MP2	Z	33.96	72
17	MP2	X	68.71	65.25
18	MP2	Z	39.67	65.25
19	MP2	X	68.95	65.25
20	MP2	Z	39.81	65.25
21	MP3	X	43.79	12
22	MP3	Z	25.28	12
23	MP3	X	35.49	30
24	MP3	Z	20.49	30
25	MP3	X	11.94	59
26	MP3	Z	6.89	59
27	MP1	X	25.49	41
28	MP1	Z	14.72	41
29	MP1	X	25.49	41
30	MP1	Z	14.72	41

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	93.42	0
2	MP4	Z	0	0
3	MP4	X	93.42	71.2
4	MP4	Z	0	71.2
5	MP3	X	100.26	0
6	MP3	Z	0	0
7	MP3	X	100.26	71.2
8	MP3	Z	0	71.2
9	MP1	X	47.82	0
10	MP1	Z	0	0
11	MP1	X	47.82	55
12	MP1	Z	0	55
13	MP2	X	68.24	0
14	MP2	Z	0	0
15	MP2	X	68.24	72
16	MP2	Z	0	72
17	MP2	X	87.89	65.25
18	MP2	Z	0	65.25
19	MP2	X	88.26	65.25
20	MP2	Z	0	65.25
21	MP3	X	45.99	12
22	MP3	Z	0	12
23	MP3	X	34.58	30
24	MP3	Z	0	30
25	MP3	X	13.94	59
26	MP3	Z	0	59
27	MP1	X	35.53	41
28	MP1	Z	0	41
29	MP1	X	35.53	41
30	MP1	Z	0	41

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	115.75	0
2	MP4	Z	-66.83	0
3	MP4	X	115.75	71.2



Member Point Loads (BLC 12 : Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
4	MP4	Z	-66.83	71.2
5	MP3	X	117.29	0
6	MP3	Z	-67.72	0
7	MP3	X	117.29	71.2
8	MP3	Z	-67.72	71.2
9	MP1	X	50.54	0
10	MP1	Z	-29.18	0
11	MP1	X	50.54	55
12	MP1	Z	-29.18	55
13	MP2	X	58.38	0
14	MP2	Z	-33.71	0
15	MP2	X	58.38	72
16	MP2	Z	-33.71	72
17	MP2	X	68.71	65.25
18	MP2	Z	-39.67	65.25
19	MP2	X	68.95	65.25
20	MP2	Z	-39.81	65.25
21	MP3	X	43.79	12
22	MP3	Z	-25.28	12
23	MP3	X	35.49	30
24	MP3	Z	-20.49	30
25	MP3	X	11.94	59
26	MP3	Z	-6.89	59
27	MP1	X	25.49	41
28	MP1	Z	-14.72	41
29	MP1	X	25.49	41
30	MP1	Z	-14.72	41

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	94.93	0
2	MP4	Z	-164.43	0
3	MP4	X	94.93	71.2
4	MP4	Z	-164.43	71.2
5	MP3	X	92.28	0
6	MP3	Z	-159.84	0
7	MP3	X	92.28	71.2
8	MP3	Z	-159.84	71.2
9	MP1	X	39.71	0
10	MP1	Z	-68.78	0
11	MP1	X	39.71	55
12	MP1	Z	-68.78	55
13	MP2	X	33.13	0
14	MP2	Z	-57.39	0
15	MP2	X	33.13	72
16	MP2	Z	-57.39	72
17	MP2	X	31.12	65.25
18	MP2	Z	-53.9	65.25
19	MP2	X	31.16	65.25
20	MP2	Z	-53.97	65.25
21	MP3	X	29.85	12
22	MP3	Z	-51.7	12
23	MP3	X	26.89	30
24	MP3	Z	-46.57	30
25	MP3	X	6.73	59
26	MP3	Z	-11.66	59



Member Point Loads (BLC 13 : Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
27	MP1	X	8.63	41
28	MP1	Z	-14.95	41
29	MP1	X	8.63	41
30	MP1	Z	-14.95	41

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	Y	-91.719	0
2	MP4	Y	-91.719	71.2
3	MP3	Y	-93.001	0
4	MP3	Y	-93.001	71.2
5	MP1	Y	-41.94	0
6	MP1	Y	-41.94	55
7	MP2	Y	-71.816	0
8	MP2	Y	-71.816	72
9	MP2	Y	-53.96	65.25
10	MP2	Y	-54.097	65.25
11	MP3	Y	-47.746	12
12	MP3	Y	-41.294	30
13	MP3	Y	-14.741	59
14	MP1	Y	-19.623	41
15	MP1	Y	-19.623	41

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	0	0
2	MP4	Z	-18.3	0
3	MP4	X	0	71.2
4	MP4	Z	-18.3	71.2
5	MP3	X	0	0
6	MP3	Z	-18.51	0
7	MP3	X	0	71.2
8	MP3	Z	-18.51	71.2
9	MP1	X	0	0
10	MP1	Z	-9.92	0
11	MP1	X	0	55
12	MP1	Z	-9.92	55
13	MP2	X	0	0
14	MP2	Z	-13.81	0
15	MP2	X	0	72
16	MP2	Z	-13.81	72
17	MP2	X	0	65.25
18	MP2	Z	-8.02	65.25
19	MP2	X	0	65.25
20	MP2	Z	-8.02	65.25
21	MP3	X	0	12
22	MP3	Z	-7.08	12
23	MP3	X	0	30
24	MP3	Z	-6.63	30
25	MP3	X	0	59
26	MP3	Z	-2.56	59
27	MP1	X	0	41
28	MP1	Z	-2.46	41
29	MP1	X	0	41
30	MP1	Z	-2.46	41



Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	-8.03	0
2	MP4	Z	-13.9	0
3	MP4	X	-8.03	71.2
4	MP4	Z	-13.9	71.2
5	MP3	X	-8.1	0
6	MP3	Z	-14.03	0
7	MP3	X	-8.1	71.2
8	MP3	Z	-14.03	71.2
9	MP1	X	-4.63	0
10	MP1	Z	-8.01	0
11	MP1	X	-4.63	55
12	MP1	Z	-8.01	55
13	MP2	X	-6.75	0
14	MP2	Z	-11.69	0
15	MP2	X	-6.75	72
16	MP2	Z	-11.69	72
17	MP2	X	-4.23	65.25
18	MP2	Z	-7.33	65.25
19	MP2	X	-4.24	65.25
20	MP2	Z	-7.34	65.25
21	MP3	X	-3.42	12
22	MP3	Z	-5.93	12
23	MP3	X	-3.15	30
24	MP3	Z	-5.45	30
25	MP3	X	-1.29	59
26	MP3	Z	-2.24	59
27	MP1	X	-1.54	41
28	MP1	Z	-2.67	41
29	MP1	X	-1.54	41
30	MP1	Z	-2.67	41

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	-11.18	0
2	MP4	Z	-6.45	0
3	MP4	X	-11.18	71.2
4	MP4	Z	-6.45	71.2
5	MP3	X	-11.24	0
6	MP3	Z	-6.49	0
7	MP3	X	-11.24	71.2
8	MP3	Z	-6.49	71.2
9	MP1	X	-6.86	0
10	MP1	Z	-3.96	0
11	MP1	X	-6.86	55
12	MP1	Z	-3.96	55
13	MP2	X	-11.3	0
14	MP2	Z	-6.53	0
15	MP2	X	-11.3	72
16	MP2	Z	-6.53	72
17	MP2	X	-8.11	65.25
18	MP2	Z	-4.68	65.25
19	MP2	X	-8.12	65.25
20	MP2	Z	-4.69	65.25
21	MP3	X	-5.52	12
22	MP3	Z	-3.19	12
23	MP3	X	-4.85	30



Member Point Loads (BLC 19 : Ice Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
24	MP3	Z	-2.8	30
25	MP3	X	-2.27	59
26	MP3	Z	-1.31	59
27	MP1	X	-3.76	41
28	MP1	Z	-2.17	41
29	MP1	X	-3.76	41
30	MP1	Z	-2.17	41

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	-12.01	0
2	MP4	Z	0	0
3	MP4	X	-12.01	71.2
4	MP4	Z	0	71.2
5	MP3	X	-12.07	0
6	MP3	Z	0	0
7	MP3	X	-12.07	71.2
8	MP3	Z	0	71.2
9	MP1	X	-7.25	0
10	MP1	Z	0	0
11	MP1	X	-7.25	55
12	MP1	Z	0	55
13	MP2	X	-12.93	0
14	MP2	Z	0	0
15	MP2	X	-12.93	72
16	MP2	Z	0	72
17	MP2	X	-9.81	65.25
18	MP2	Z	0	65.25
19	MP2	X	-9.83	65.25
20	MP2	Z	0	65.25
21	MP3	X	-6.14	12
22	MP3	Z	0	12
23	MP3	X	-5.26	30
24	MP3	Z	0	30
25	MP3	X	-2.65	59
26	MP3	Z	0	59
27	MP1	X	-4.96	41
28	MP1	Z	0	41
29	MP1	X	-4.96	41
30	MP1	Z	0	41

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	-12.35	0
2	MP4	Z	7.13	0
3	MP4	X	-12.35	71.2
4	MP4	Z	7.13	71.2
5	MP3	X	-12.45	0
6	MP3	Z	7.19	0
7	MP3	X	-12.45	71.2
8	MP3	Z	7.19	71.2
9	MP1	X	-6.86	0
10	MP1	Z	3.96	0
11	MP1	X	-6.86	55
12	MP1	Z	3.96	55
13	MP2	X	-11.47	0



Company : Infinigy Engineering, PLLC
Designer : SJM
Job Number : 1039-Z0001-B
Model Name : 806353

Apr 16, 2020
4:33 PM
Checked By: _____

Member Point Loads (BLC 21 : Ice Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
14	MP2	Z	6.62	0
15	MP2	X	-11.47	72
16	MP2	Z	6.62	72
17	MP2	X	-8.11	65.25
18	MP2	Z	4.68	65.25
19	MP2	X	-8.12	65.25
20	MP2	Z	4.69	65.25
21	MP3	X	-5.52	12
22	MP3	Z	3.19	12
23	MP3	X	-4.85	30
24	MP3	Z	2.8	30
25	MP3	X	-2.27	59
26	MP3	Z	1.31	59
27	MP1	X	-3.76	41
28	MP1	Z	2.17	41
29	MP1	X	-3.76	41
30	MP1	Z	2.17	41

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	-8.7	0
2	MP4	Z	15.08	0
3	MP4	X	-8.7	71.2
4	MP4	Z	15.08	71.2
5	MP3	X	-8.8	0
6	MP3	Z	15.23	0
7	MP3	X	-8.8	71.2
8	MP3	Z	15.23	71.2
9	MP1	X	-4.63	0
10	MP1	Z	8.01	0
11	MP1	X	-4.63	55
12	MP1	Z	8.01	55
13	MP2	X	-6.84	0
14	MP2	Z	11.85	0
15	MP2	X	-6.84	72
16	MP2	Z	11.85	72
17	MP2	X	-4.23	65.25
18	MP2	Z	7.33	65.25
19	MP2	X	-4.24	65.25
20	MP2	Z	7.34	65.25
21	MP3	X	-3.42	12
22	MP3	Z	5.93	12
23	MP3	X	-3.15	30
24	MP3	Z	5.45	30
25	MP3	X	-1.29	59
26	MP3	Z	2.24	59
27	MP1	X	-1.54	41
28	MP1	Z	2.67	41
29	MP1	X	-1.54	41
30	MP1	Z	2.67	41

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	0	0
2	MP4	Z	18.3	0
3	MP4	X	0	71.2



Member Point Loads (BLC 23 : Ice Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
4	MP4	Z	18.3	71.2
5	MP3	X	0	0
6	MP3	Z	18.51	0
7	MP3	X	0	71.2
8	MP3	Z	18.51	71.2
9	MP1	X	0	0
10	MP1	Z	9.92	0
11	MP1	X	0	55
12	MP1	Z	9.92	55
13	MP2	X	0	0
14	MP2	Z	13.81	0
15	MP2	X	0	72
16	MP2	Z	13.81	72
17	MP2	X	0	65.25
18	MP2	Z	8.02	65.25
19	MP2	X	0	65.25
20	MP2	Z	8.02	65.25
21	MP3	X	0	12
22	MP3	Z	7.08	12
23	MP3	X	0	30
24	MP3	Z	6.63	30
25	MP3	X	0	59
26	MP3	Z	2.56	59
27	MP1	X	0	41
28	MP1	Z	2.46	41
29	MP1	X	0	41
30	MP1	Z	2.46	41

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP4	X	8.03	0
2	MP4	Z	13.9	0
3	MP4	X	8.03	71.2
4	MP4	Z	13.9	71.2
5	MP3	X	8.1	0
6	MP3	Z	14.03	0
7	MP3	X	8.1	71.2
8	MP3	Z	14.03	71.2
9	MP1	X	4.63	0
10	MP1	Z	8.01	0
11	MP1	X	4.63	55
12	MP1	Z	8.01	55
13	MP2	X	6.75	0
14	MP2	Z	11.69	0
15	MP2	X	6.75	72
16	MP2	Z	11.69	72
17	MP2	X	4.23	65.25
18	MP2	Z	7.33	65.25
19	MP2	X	4.24	65.25
20	MP2	Z	7.34	65.25
21	MP3	X	3.42	12
22	MP3	Z	5.93	12
23	MP3	X	3.15	30
24	MP3	Z	5.45	30
25	MP3	X	1.29	59
26	MP3	Z	2.24	59



Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
27	MP1	X	1.54	41
28	MP1	Z	2.67	41
29	MP1	X	1.54	41
30	MP1	Z	2.67	41

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP4	X	11.18	0
2	MP4	Z	6.45	0
3	MP4	X	11.18	71.2
4	MP4	Z	6.45	71.2
5	MP3	X	11.24	0
6	MP3	Z	6.49	0
7	MP3	X	11.24	71.2
8	MP3	Z	6.49	71.2
9	MP1	X	6.86	0
10	MP1	Z	3.96	0
11	MP1	X	6.86	55
12	MP1	Z	3.96	55
13	MP2	X	11.3	0
14	MP2	Z	6.53	0
15	MP2	X	11.3	72
16	MP2	Z	6.53	72
17	MP2	X	8.11	65.25
18	MP2	Z	4.68	65.25
19	MP2	X	8.12	65.25
20	MP2	Z	4.69	65.25
21	MP3	X	5.52	12
22	MP3	Z	3.19	12
23	MP3	X	4.85	30
24	MP3	Z	2.8	30
25	MP3	X	2.27	59
26	MP3	Z	1.31	59
27	MP1	X	3.76	41
28	MP1	Z	2.17	41
29	MP1	X	3.76	41
30	MP1	Z	2.17	41

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP4	X	12.01	0
2	MP4	Z	0	0
3	MP4	X	12.01	71.2
4	MP4	Z	0	71.2
5	MP3	X	12.07	0
6	MP3	Z	0	0
7	MP3	X	12.07	71.2
8	MP3	Z	0	71.2
9	MP1	X	7.25	0
10	MP1	Z	0	0
11	MP1	X	7.25	55
12	MP1	Z	0	55
13	MP2	X	12.93	0
14	MP2	Z	0	0
15	MP2	X	12.93	72
16	MP2	Z	0	72



Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
17	MP2	X	9.81	65.25
18	MP2	Z	0	65.25
19	MP2	X	9.83	65.25
20	MP2	Z	0	65.25
21	MP3	X	6.14	12
22	MP3	Z	0	12
23	MP3	X	5.26	30
24	MP3	Z	0	30
25	MP3	X	2.65	59
26	MP3	Z	0	59
27	MP1	X	4.96	41
28	MP1	Z	0	41
29	MP1	X	4.96	41
30	MP1	Z	0	41

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP4	X	12.35	0
2	MP4	Z	-7.13	0
3	MP4	X	12.35	71.2
4	MP4	Z	-7.13	71.2
5	MP3	X	12.45	0
6	MP3	Z	-7.19	0
7	MP3	X	12.45	71.2
8	MP3	Z	-7.19	71.2
9	MP1	X	6.86	0
10	MP1	Z	-3.96	0
11	MP1	X	6.86	55
12	MP1	Z	-3.96	55
13	MP2	X	11.47	0
14	MP2	Z	-6.62	0
15	MP2	X	11.47	72
16	MP2	Z	-6.62	72
17	MP2	X	8.11	65.25
18	MP2	Z	-4.68	65.25
19	MP2	X	8.12	65.25
20	MP2	Z	-4.69	65.25
21	MP3	X	5.52	12
22	MP3	Z	-3.19	12
23	MP3	X	4.85	30
24	MP3	Z	-2.8	30
25	MP3	X	2.27	59
26	MP3	Z	-1.31	59
27	MP1	X	3.76	41
28	MP1	Z	-2.17	41
29	MP1	X	3.76	41
30	MP1	Z	-2.17	41

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP4	X	8.7	0
2	MP4	Z	-15.08	0
3	MP4	X	8.7	71.2
4	MP4	Z	-15.08	71.2
5	MP3	X	8.8	0
6	MP3	Z	-15.23	0



Member Point Loads (BLC 28 : Ice Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
7	MP3	X	8.8	71.2
8	MP3	Z	-15.23	71.2
9	MP1	X	4.63	0
10	MP1	Z	-8.01	0
11	MP1	X	4.63	55
12	MP1	Z	-8.01	55
13	MP2	X	6.84	0
14	MP2	Z	-11.85	0
15	MP2	X	6.84	72
16	MP2	Z	-11.85	72
17	MP2	X	4.23	65.25
18	MP2	Z	-7.33	65.25
19	MP2	X	4.24	65.25
20	MP2	Z	-7.34	65.25
21	MP3	X	3.42	12
22	MP3	Z	-5.93	12
23	MP3	X	3.15	30
24	MP3	Z	-5.45	30
25	MP3	X	1.29	59
26	MP3	Z	-2.24	59
27	MP1	X	1.54	41
28	MP1	Z	-2.67	41
29	MP1	X	1.54	41
30	MP1	Z	-2.67	41

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	Z	-5.62	0
2	MP4	Z	-5.62	71.2
3	MP3	Z	-3.996	0
4	MP3	Z	-3.996	71.2
5	MP1	Z	-2.203	0
6	MP1	Z	-2.203	55
7	MP2	Z	-6.986	0
8	MP2	Z	-6.986	72
9	MP2	Z	-6.658	65.25
10	MP2	Z	-6.671	65.25
11	MP3	Z	-8.937	12
12	MP3	Z	-7.539	30
13	MP3	Z	-3.197	59
14	MP1	Z	-1.775	41
15	MP1	Z	-1.775	41

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb.-ft]	Location[in. %]
1	MP4	X	-5.62	0
2	MP4	X	-5.62	71.2
3	MP3	X	-3.996	0
4	MP3	X	-3.996	71.2
5	MP1	X	-2.203	0
6	MP1	X	-2.203	55
7	MP2	X	-6.986	0
8	MP2	X	-6.986	72
9	MP2	X	-6.658	65.25
10	MP2	X	-6.671	65.25
11	MP3	X	-8.937	12



Company : Infinigy Engineering, PLLC
 Designer : SJM
 Job Number : 1039-Z0001-B
 Model Name : 806353

Apr 16, 2020
 4:33 PM
 Checked By: _____

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
12	MP3	X	-7.539	30
13	MP3	X	-3.197	59
14	MP1	X	-1.775	41
15	MP1	X	-1.775	41

Member Point Loads (BLC 33 : Service Live Loads)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	M1	Y	-250	%100

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/in.F,psf]	End Magnitude[lb...Start Location[in,.... End Location[in, %]
1	M1	SZ	-72.051	-72.051 0 %100
2	M2	SZ	-72.051	-72.051 0 %100
3	MP4	SZ	-43.231	-43.231 0 %100
4	MP2	SZ	-43.231	-43.231 0 %100
5	MP1	SZ	-43.231	-43.231 0 %100
6	M7	SZ	-72.051	-72.051 0 %100
7	M8	SZ	-72.051	-72.051 0 %100
8	M9	SZ	-72.051	-72.051 0 %100
9	M10	SZ	-72.051	-72.051 0 %100
10	M11	SZ	-72.051	-72.051 0 %100
11	M12	SZ	-72.051	-72.051 0 %100
12	M13	SZ	-72.051	-72.051 0 %100
13	M14	SZ	-72.051	-72.051 0 %100
14	M15	SZ	-72.051	-72.051 0 %100
15	M16	SZ	-72.051	-72.051 0 %100
16	M17	SZ	-72.051	-72.051 0 %100
17	M18	SZ	0	0 0 %100
18	M19	SZ	0	0 0 %100
19	M20	SZ	-72.051	-72.051 0 %100
20	M21	SZ	-72.051	-72.051 0 %100
21	M22	SZ	-72.051	-72.051 0 %100
22	M23	SZ	-72.051	-72.051 0 %100
23	M24	SZ	-72.051	-72.051 0 %100
24	M25	SZ	-72.051	-72.051 0 %100
25	M26	SZ	-72.051	-72.051 0 %100
26	M27	SZ	-72.051	-72.051 0 %100
27	M30	SZ	0	0 0 %100
28	M31	SZ	0	0 0 %100
29	M34	SZ	0	0 0 %100
30	M35	SZ	0	0 0 %100
31	M36	SZ	0	0 0 %100
32	M37	SZ	0	0 0 %100
33	MP6	SZ	-43.231	-43.231 0 %100
34	M39	SZ	0	0 0 %100
35	M40	SZ	0	0 0 %100
36	MP5	SZ	-43.231	-43.231 0 %100
37	M42	SZ	0	0 0 %100
38	M43	SZ	0	0 0 %100
39	M41A	SZ	0	0 0 %100
40	M42A	SZ	0	0 0 %100
41	M43A	SZ	-43.231	-43.231 0 %100
42	M44	SZ	0	0 0 %100
43	M45	SZ	0	0 0 %100
44	MP3	SZ	-43.231	-43.231 0 %100



Company : Infinigy Engineering, PLLC
 Designer : SJM
 Job Number : 1039-Z0001-B
 Model Name : 806353

Apr 16, 2020
 4:33 PM
 Checked By: _____

Member Distributed Loads (BLC 14 : Distr. Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/in.F.psf]	End Magnitude[lb...	Start Location[in....	End Location[in.%]
45	M47	SZ	0	0	0	%100
46	M48	SZ	0	0	0	%100
47	M49	SZ	-43.231	-43.231	0	%100
48	M48A	SZ	-43.231	-43.231	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[lb/in.F.psf]	End Magnitude[lb...	Start Location[in....	End Location[in.%]
1	M1	SX	-72.051	-72.051	0	%100
2	M2	SX	-72.051	-72.051	0	%100
3	MP4	SX	-43.231	-43.231	0	%100
4	MP2	SX	-43.231	-43.231	0	%100
5	MP1	SX	-43.231	-43.231	0	%100
6	M7	SX	-72.051	-72.051	0	%100
7	M8	SX	-72.051	-72.051	0	%100
8	M9	SX	-72.051	-72.051	0	%100
9	M10	SX	-72.051	-72.051	0	%100
10	M11	SX	-72.051	-72.051	0	%100
11	M12	SX	-72.051	-72.051	0	%100
12	M13	SX	-72.051	-72.051	0	%100
13	M14	SX	-72.051	-72.051	0	%100
14	M15	SX	-72.051	-72.051	0	%100
15	M16	SX	-72.051	-72.051	0	%100
16	M17	SX	-72.051	-72.051	0	%100
17	M18	SX	0	0	0	%100
18	M19	SX	0	0	0	%100
19	M20	SX	-72.051	-72.051	0	%100
20	M21	SX	-72.051	-72.051	0	%100
21	M22	SX	-72.051	-72.051	0	%100
22	M23	SX	-72.051	-72.051	0	%100
23	M24	SX	-72.051	-72.051	0	%100
24	M25	SX	-72.051	-72.051	0	%100
25	M26	SX	-72.051	-72.051	0	%100
26	M27	SX	-72.051	-72.051	0	%100
27	M30	SX	0	0	0	%100
28	M31	SX	0	0	0	%100
29	M34	SX	0	0	0	%100
30	M35	SX	0	0	0	%100
31	M36	SX	0	0	0	%100
32	M37	SX	0	0	0	%100
33	MP6	SX	-43.231	-43.231	0	%100
34	M39	SX	0	0	0	%100
35	M40	SX	0	0	0	%100
36	MP5	SX	-43.231	-43.231	0	%100
37	M42	SX	0	0	0	%100
38	M43	SX	0	0	0	%100
39	M41A	SX	0	0	0	%100
40	M42A	SX	0	0	0	%100
41	M43A	SX	-43.231	-43.231	0	%100
42	M44	SX	0	0	0	%100
43	M45	SX	0	0	0	%100
44	MP3	SX	-43.231	-43.231	0	%100
45	M47	SX	0	0	0	%100
46	M48	SX	0	0	0	%100
47	M49	SX	-43.231	-43.231	0	%100
48	M48A	SX	-43.231	-43.231	0	%100



Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/in.F.psf]	End Magnitude[lb...	Start Location[in....	End Location[in.%]
1	M1	Y	-7.228	-7.228	0	%100
2	M2	Y	-7.228	-7.228	0	%100
3	MP4	Y	-5.047	-5.047	0	%100
4	MP2	Y	-5.047	-5.047	0	%100
5	MP1	Y	-5.047	-5.047	0	%100
6	M7	Y	-5.694	-5.694	0	%100
7	M8	Y	-5.694	-5.694	0	%100
8	M9	Y	-5.694	-5.694	0	%100
9	M10	Y	-5.694	-5.694	0	%100
10	M11	Y	-5.694	-5.694	0	%100
11	M12	Y	-5.694	-5.694	0	%100
12	M13	Y	-5.694	-5.694	0	%100
13	M14	Y	-6.701	-6.701	0	%100
14	M15	Y	-6.701	-6.701	0	%100
15	M16	Y	-6.701	-6.701	0	%100
16	M17	Y	-6.701	-6.701	0	%100
17	M18	Y	-1.663	-1.663	0	%100
18	M19	Y	-1.663	-1.663	0	%100
19	M20	Y	-5.694	-5.694	0	%100
20	M21	Y	-5.694	-5.694	0	%100
21	M22	Y	-5.694	-5.694	0	%100
22	M23	Y	-5.694	-5.694	0	%100
23	M24	Y	-5.694	-5.694	0	%100
24	M25	Y	-5.694	-5.694	0	%100
25	M26	Y	-5.694	-5.694	0	%100
26	M27	Y	-5.694	-5.694	0	%100
27	M30	Y	-1.663	-1.663	0	%100
28	M31	Y	-1.663	-1.663	0	%100
29	M34	Y	-1.663	-1.663	0	%100
30	M35	Y	-1.663	-1.663	0	%100
31	M36	Y	-1.663	-1.663	0	%100
32	M37	Y	-1.663	-1.663	0	%100
33	MP6	Y	-5.047	-5.047	0	%100
34	M39	Y	-1.663	-1.663	0	%100
35	M40	Y	-1.663	-1.663	0	%100
36	MP5	Y	-5.047	-5.047	0	%100
37	M42	Y	-1.663	-1.663	0	%100
38	M43	Y	-1.663	-1.663	0	%100
39	M41A	Y	-1.663	-1.663	0	%100
40	M42A	Y	-1.663	-1.663	0	%100
41	M43A	Y	-8.076	-8.076	0	%100
42	M44	Y	-1.663	-1.663	0	%100
43	M45	Y	-1.663	-1.663	0	%100
44	MP3	Y	-5.047	-5.047	0	%100
45	M47	Y	-1.663	-1.663	0	%100
46	M48	Y	-1.663	-1.663	0	%100
47	M49	Y	-4.028	-4.028	0	%100
48	M48A	Y	-5.047	-5.047	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/in.F.psf]	End Magnitude[lb...	Start Location[in....	End Location[in.%]
1	M1	SZ	-12.83	-12.83	0	%100
2	M2	SZ	-12.83	-12.83	0	%100
3	MP4	SZ	-15.922	-15.922	0	%100
4	MP2	SZ	-15.922	-15.922	0	%100
5	MP1	SZ	-15.922	-15.922	0	%100



Company : Infinigy Engineering, PLLC
 Designer : SJM
 Job Number : 1039-Z0001-B
 Model Name : 806353

Apr 16, 2020
 4:33 PM
 Checked By: _____

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/in.F.psf]	End Magnitude[lb...	Start Location[in....	End Location[in.%]
6	M7	SZ	-14.657	-14.657	0	%100
7	M8	SZ	-14.657	-14.657	0	%100
8	M9	SZ	-14.657	-14.657	0	%100
9	M10	SZ	-14.657	-14.657	0	%100
10	M11	SZ	-14.657	-14.657	0	%100
11	M12	SZ	-14.657	-14.657	0	%100
12	M13	SZ	-14.657	-14.657	0	%100
13	M14	SZ	-13.332	-13.332	0	%100
14	M15	SZ	-13.332	-13.332	0	%100
15	M16	SZ	-13.332	-13.332	0	%100
16	M17	SZ	-13.332	-13.332	0	%100
17	M18	SZ	0	0	0	%100
18	M19	SZ	0	0	0	%100
19	M20	SZ	-14.657	-14.657	0	%100
20	M21	SZ	-14.657	-14.657	0	%100
21	M22	SZ	-14.657	-14.657	0	%100
22	M23	SZ	-14.657	-14.657	0	%100
23	M24	SZ	-14.657	-14.657	0	%100
24	M25	SZ	-14.657	-14.657	0	%100
25	M26	SZ	-14.657	-14.657	0	%100
26	M27	SZ	-14.657	-14.657	0	%100
27	M30	SZ	0	0	0	%100
28	M31	SZ	0	0	0	%100
29	M34	SZ	0	0	0	%100
30	M35	SZ	0	0	0	%100
31	M36	SZ	0	0	0	%100
32	M37	SZ	0	0	0	%100
33	MP6	SZ	-15.922	-15.922	0	%100
34	M39	SZ	0	0	0	%100
35	M40	SZ	0	0	0	%100
36	MP5	SZ	-15.922	-15.922	0	%100
37	M42	SZ	0	0	0	%100
38	M43	SZ	0	0	0	%100
39	M41A	SZ	0	0	0	%100
40	M42A	SZ	0	0	0	%100
41	M43A	SZ	-12.196	-12.196	0	%100
42	M44	SZ	0	0	0	%100
43	M45	SZ	0	0	0	%100
44	MP3	SZ	-15.922	-15.922	0	%100
45	M47	SZ	0	0	0	%100
46	M48	SZ	0	0	0	%100
47	M49	SZ	-19.32	-19.32	0	%100
48	M48A	SZ	-15.922	-15.922	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[lb/in.F.psf]	End Magnitude[lb...	Start Location[in....	End Location[in.%]
1	M1	SX	-12.83	-12.83	0	%100
2	M2	SX	-12.83	-12.83	0	%100
3	MP4	SX	-15.922	-15.922	0	%100
4	MP2	SX	-15.922	-15.922	0	%100
5	MP1	SX	-15.922	-15.922	0	%100
6	M7	SX	-14.657	-14.657	0	%100
7	M8	SX	-14.657	-14.657	0	%100
8	M9	SX	-14.657	-14.657	0	%100
9	M10	SX	-14.657	-14.657	0	%100
10	M11	SX	-14.657	-14.657	0	%100



Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[lb/in.F.psf]	End Magnitude[lb...	Start Location[in....	End Location[in.%]
11	M12	SX	-14.657	-14.657	0	%100
12	M13	SX	-14.657	-14.657	0	%100
13	M14	SX	-13.332	-13.332	0	%100
14	M15	SX	-13.332	-13.332	0	%100
15	M16	SX	-13.332	-13.332	0	%100
16	M17	SX	-13.332	-13.332	0	%100
17	M18	SX	0	0	0	%100
18	M19	SX	0	0	0	%100
19	M20	SX	-14.657	-14.657	0	%100
20	M21	SX	-14.657	-14.657	0	%100
21	M22	SX	-14.657	-14.657	0	%100
22	M23	SX	-14.657	-14.657	0	%100
23	M24	SX	-14.657	-14.657	0	%100
24	M25	SX	-14.657	-14.657	0	%100
25	M26	SX	-14.657	-14.657	0	%100
26	M27	SX	-14.657	-14.657	0	%100
27	M30	SX	0	0	0	%100
28	M31	SX	0	0	0	%100
29	M34	SX	0	0	0	%100
30	M35	SX	0	0	0	%100
31	M36	SX	0	0	0	%100
32	M37	SX	0	0	0	%100
33	MP6	SX	-15.922	-15.922	0	%100
34	M39	SX	0	0	0	%100
35	M40	SX	0	0	0	%100
36	MP5	SX	-15.922	-15.922	0	%100
37	M42	SX	0	0	0	%100
38	M43	SX	0	0	0	%100
39	M41A	SX	0	0	0	%100
40	M42A	SX	0	0	0	%100
41	M43A	SX	-12.196	-12.196	0	%100
42	M44	SX	0	0	0	%100
43	M45	SX	0	0	0	%100
44	MP3	SX	-15.922	-15.922	0	%100
45	M47	SX	0	0	0	%100
46	M48	SX	0	0	0	%100
47	M49	SX	-19.32	-19.32	0	%100
48	M48A	SX	-15.922	-15.922	0	%100

APPENDIX D
ADDITIONAL CALCULATIONS

Bolt Calculation Tool, V1.4

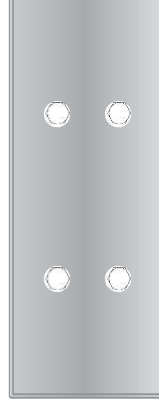
PROJECT DATA	
Site Name:	BRG 124 943066
Site Number:	806353
Job Code:	1039-Z0001-B
Connection Description:	Standoff-to-Tower Connection

APPLIED LOADS	
Bolt Tension:	3140.92 lbs
Bolt Shear:	532.06 lbs
Sliding Force:	2096.06 lbs
Torsion About Leg:	0.00 lbs-ft

BOLT PROPERTIES	
Bolt Type:	U-Bolt
Bolt Diameter:	0.5 in
Bolt Grade:	A307
# of U-Bolts:	2
Leg Diameter:	3.5 in
Threads Excluded?	No

BOLT CHECK	
Tensile Strength	6385.43
Shear Strength	4417.86
Tensile Usage	49.2%
Shear Usage	12.0%
Interaction Check	0.26
Result	Pass

SLIP CHECK	
Torsional Resistance	1310.64
Sliding Resistance	8987.27
Torsional Usage	0.0%
Sliding Usage	23.3%
Interaction Check	0.05
Result	Pass



≤1.05

≤1.05

Exhibit F

Power Density/RF Emissions Report



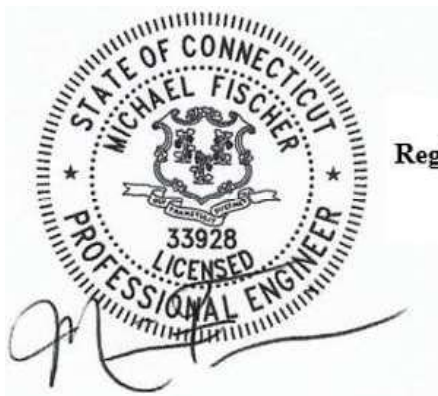
RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of AT&T Mobility, LLC

**BU: 806353
Site Name: BRG 124 943066
Order ID: 517058
128 Mather Street
Wilton, CT
6/11/2020**

Report Status:

The Site is Compliant



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

Signed 11 June 2020

Prepared By:

Site Safe, LLC

Engineering Statement in Re:
Electromagnetic Energy Analysis
AT&T Mobility, LLC
Wilton, 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 "BRG 124 943066" ("the site"); and

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

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

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

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

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

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

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is

no more than 0.519% 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 2.662% 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.

Note: Crown Castle has (3) Kathrein 800 10504 antennas at the 171' level that were excluded from this analysis. The antennas are listed as "Abandoned" status in the CCISites database and were previously identified as MetroPCS.

**AT&T Mobility, LLC
BRG 124 943066
Site Summary**

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.056 %
AT&T Mobility, LLC	0.050 %
AT&T Mobility, LLC	0.026 %
AT&T Mobility, LLC (Proposed)	0.171 %
AT&T Mobility, LLC (Proposed)	0.070 %
AT&T Mobility, LLC (Proposed)	0.081 %
AT&T Mobility, LLC (Proposed)	0.065 %
Sprint	0.142 %
Sprint	0.053 %
Sprint	0.105 %
T-Mobile	0.337 %
T-Mobile	0.169 %
T-Mobile	0.280 %
T-Mobile	0.304 %
Town of Wilton CT	0.000 %
Town of Wilton CT	0.254 %
Town of Wilton CT	0.010 %
Verizon Wireless	0.047 %
Verizon Wireless	0.082 %
Verizon Wireless	0.115 %
Verizon Wireless	0.121 %
Verizon Wireless	0.124 %
Composite Site MPE:	2.662 %

**AT&T Mobility, LLC
BRG 124 943066
Carrier Summary**

Frequency: 1900 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.56341 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.05634 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Quintel	QS66512-2	158	30	3127	0.248824	0.024882	0.528379	0.052838
Quintel	QS66512-2	158	150	3127	0.248824	0.024882	0.528379	0.052838
Quintel	QS66512-2	158	270	3127	0.248824	0.024882	0.528379	0.052838

**AT&T Mobility, LLC
BRG 124 943066
Carrier Summary**

Frequency: 2300 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.50352 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.05035 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Quintel	QS66512-2	158	30	2858	0.250775	0.025077	0.487988	0.048799
Quintel	QS66512-2	158	150	2858	0.250775	0.025077	0.487988	0.048799
Quintel	QS66512-2	158	270	2858	0.250775	0.025077	0.487988	0.048799

**AT&T Mobility, LLC
BRG 124 943066
Carrier Summary**

Frequency: 850 MHz
 Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.14765 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.02606 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Powerwave	7770.00	158	23	547	0.082170	0.014500	0.126525	0.022328
Powerwave	7770.00	158	143	547	0.082170	0.014500	0.126525	0.022328
Powerwave	7770.00	158	263	547	0.082170	0.014500	0.126525	0.022328

AT&T Mobility, LLC (Proposed)
BRG 124 943066
Carrier Summary

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.70898 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.17090 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	DMP65R-BU6D	158	30	4788	1.322776	0.132278	1.695222	0.169522
CCI	DMP65R-BU6D	158	150	4788	1.322776	0.132278	1.695222	0.169522
CCI	DMP65R-BU6D	158	270	4788	1.322776	0.132278	1.695222	0.169522

AT&T Mobility, LLC (Proposed)
BRG 124 943066
Carrier Summary

Frequency: 700 MHz
Maximum Permissible Exposure (MPE): 466.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.32835 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.07036 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	OPA65R-BU6D	158	30	2450	0.299376	0.064152	0.309086	0.066233
CCI	OPA65R-BU6D	158	150	2450	0.299376	0.064152	0.309086	0.066233
CCI	OPA65R-BU6D	158	270	2450	0.299376	0.064152	0.309086	0.066233

AT&T Mobility, LLC (Proposed)
BRG 124 943066
Carrier Summary

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.45845 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.08090 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	OPA65R-BU6D	158	30	2507	0.264409	0.046660	0.451109	0.079607
CCI	OPA65R-BU6D	158	150	2507	0.264409	0.046660	0.451109	0.079607
CCI	OPA65R-BU6D	158	270	2507	0.264409	0.046660	0.451109	0.079607

AT&T Mobility, LLC (Proposed)
BRG 124 943066
Carrier Summary

Frequency: 763 MHz
Maximum Permissible Exposure (MPE): 508.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.32835 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.06455 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI	OPA65R-BU6D	158	30	2450	0.299376	0.058855	0.309086	0.060764
CCI	OPA65R-BU6D	158	150	2450	0.299376	0.058855	0.309086	0.060764
CCI	OPA65R-BU6D	158	270	2450	0.299376	0.058855	0.309086	0.060764

Sprint
BRG 124 943066
Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.42323 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.14232 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSPP18-C-A20	143	350	7608	0.728767	0.072877	1.312358	0.131236
RFS	APXVSPP18-C-A20	143	110	7608	0.728767	0.072877	1.312358	0.131236
RFS	APXVSPP18-C-A20	143	230	7608	0.728767	0.072877	1.312358	0.131236

Sprint
BRG 124 943066
Carrier Summary

Frequency: 862 MHz
Maximum Permissible Exposure (MPE): 574.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.30709 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.05344 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSPP18-C-A20	143	350	2168	0.296920	0.051668	0.301606	0.052484
RFS	APXVSPP18-C-A20	143	110	2168	0.296920	0.051668	0.301606	0.052484
RFS	APXVSPP18-C-A20	143	230	2168	0.296920	0.051668	0.301606	0.052484

Sprint
BRG 124 943066
Carrier Summary

Frequency: 2500 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.05136 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.10514 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVTM14-C-I20	143	350	6168	0.431720	0.043172	0.810889	0.081089
RFS	APXVTM14-C-I20	143	110	6168	0.431720	0.043172	0.810889	0.081089
RFS	APXVTM14-C-I20	143	230	6168	0.431720	0.043172	0.810889	0.081089

**T-Mobile
BRG 124 943066
Carrier Summary**

Frequency: 2100 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 3.37004 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.33700 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 32 B2A/B66AA	93	80	2313	2.290976	0.229098	2.300220	0.230022
Ericsson	AIR 21 B2A B4P	93	80	2438	0.563002	0.056300	0.643137	0.064314
Ericsson	AIR 32 B2A/B66AA	93	200	2313	2.290976	0.229098	2.300220	0.230022
Ericsson	AIR 21 B2A B4P	93	200	2438	0.563002	0.056300	0.643137	0.064314
Ericsson	AIR 32 B2A/B66AA	93	320	2313	2.290976	0.229098	2.300220	0.230022
Ericsson	AIR 21 B2A B4P	93	320	2438	0.563002	0.056300	0.643137	0.064314

**T-Mobile
BRG 124 943066
Carrier Summary**

Frequency: 1900 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.69263 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.16926 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 32 B2A/B66AA	93	80	2313	0.534111	0.053411	0.610134	0.061013
Ericsson	AIR 21 B2A B4P	93	80	2061	0.476028	0.047603	0.543783	0.054378
Ericsson	AIR 32 B2A/B66AA	93	200	2313	0.534111	0.053411	0.610134	0.061013
Ericsson	AIR 21 B2A B4P	93	200	2061	0.476028	0.047603	0.543783	0.054378
Ericsson	AIR 32 B2A/B66AA	93	320	2313	0.534111	0.053411	0.610134	0.061013
Ericsson	AIR 21 B2A B4P	93	320	2061	0.476028	0.047603	0.543783	0.054378

**T-Mobile
BRG 124 943066
Carrier Summary**

Frequency: 700 MHz
 Maximum Permissible Exposure (MPE): 466.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.30461 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.27956 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVAARR24_43-U-NA20	93	80	3484	1.070351	0.229361	1.119499	0.239893
RFS	APXVAARR24_43-U-NA20	93	200	3484	1.070351	0.229361	1.119499	0.239893
RFS	APXVAARR24_43-U-NA20	93	320	3484	1.070351	0.229361	1.119499	0.239893

**T-Mobile
BRG 124 943066
Carrier Summary**

Frequency: 600 MHz
 Maximum Permissible Exposure (MPE): 400 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.21580 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.30395 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVAARR24_43-U-NA20	93	80	3335	1.101106	0.275276	1.128150	0.282037
RFS	APXVAARR24_43-U-NA20	93	200	3335	1.101106	0.275276	1.128150	0.282037
RFS	APXVAARR24_43-U-NA20	93	320	3335	1.101106	0.275276	1.128150	0.282037

**Town of Wilton CT
BRG 124 943066
Carrier Summary**

Frequency: 902 MHz
 Maximum Permissible Exposure (MPE): 601.33 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.00092 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.00015 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	PD10017	184	0	4	0.000916	0.000152	0.000916	0.000152

**Town of Wilton CT
BRG 124 943066
Carrier Summary**

Frequency: 33 MHz
 Maximum Permissible Exposure (MPE): 200 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.50722 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.25361 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	1142-2C	111	240	100	0.302264	0.151132	0.302264	0.151132
RFS	1142-2C	131	120	50	0.106403	0.053201	0.106403	0.053201
RFS	1142-2C	131	240	50	0.106403	0.053201	0.106403	0.053201

**Town of Wilton CT
BRG 124 943066
Carrier Summary**

Frequency: 154 MHz
 Maximum Permissible Exposure (MPE): 200 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.02070 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.01035 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	220-3BN	108	120	25	0.020695	0.010348	0.020695	0.010348

**Verizon Wireless
BRG 124 943066
Carrier Summary**

Frequency: 3550 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.47293 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.04729 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Samsung	CBRS	166	115	1262	0.069689	0.006969	0.237449	0.023745
Samsung	CBRS	166	220	1262	0.069689	0.006969	0.237449	0.023745
Samsung	CBRS	166	345	1262	0.069689	0.006969	0.237449	0.023745

**Verizon Wireless
BRG 124 943066
Carrier Summary**

Frequency: 751 MHz
 Maximum Permissible Exposure (MPE): 500.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.41044 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.08198 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Commscope	JAHH-65B-R3B	166	115	2661	0.255516	0.051035	0.374189	0.074738
Commscope	JAHH-65B-R3B	166	220	2661	0.255516	0.051035	0.374189	0.074738
Commscope	JAHH-65B-R3B	166	345	2661	0.255516	0.051035	0.374189	0.074738

**Verizon Wireless
BRG 124 943066
Carrier Summary**

Frequency: 2100 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.15252 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.11525 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Commscope	JAHH-65B-R3B	166	115	6069	0.628460	0.062846	1.100615	0.110061
Commscope	JAHH-65B-R3B	166	220	6069	0.628460	0.062846	1.100615	0.110061
Commscope	JAHH-65B-R3B	166	335	6069	0.628460	0.062846	1.100615	0.110061

**Verizon Wireless
BRG 124 943066
Carrier Summary**

Frequency: 1900 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.21435 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.12143 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Commscope	JAHH-65B-R3B	166	115	5890	0.701359	0.070136	1.139400	0.113940
Commscope	JAHH-65B-R3B	166	220	5890	0.701359	0.070136	1.139400	0.113940
Commscope	JAHH-65B-R3B	166	335	5890	0.701359	0.070136	1.139400	0.113940

**Verizon Wireless
BRG 124 943066
Carrier Summary**

Frequency: 850 MHz
 Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.70000 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.12353 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APL868013-42T0	166	105	1560	0.238787	0.042139	0.296636	0.052348
RFS	APL868013-42T0	166	105	1560	0.238787	0.042139	0.296636	0.052348
RFS	APL868013-42T0	166	220	1560	0.238787	0.042139	0.296636	0.052348
RFS	APL868013-42T0	166	220	1560	0.238787	0.042139	0.296636	0.052348
RFS	APL868013-42T0	166	335	1560	0.238787	0.042139	0.296636	0.052348
RFS	APL868013-42T0	166	335	1560	0.238787	0.042139	0.296636	0.052348