CROWN CASTLE

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

July 22, 2022

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

RE: **Notice of Exempt Modification for AT&T**
Crown Site ID#842879; AT&T Site ID#CTL05163
50 Woodfield Rd, Woodbridge, CT 06525
Latitude: 41.327639 / Longitude: -72.993567

Dear Ms. Bachman:

AT&T currently maintains (6) antennas at the 101-foot mounts on the existing 102-foot Monopole Tower located at **50 Woodfield Rd, Woodbridge, CT.** The property is owned by AT&T Network RE Administration and the Town of Woodbridge. The Tower is owned by Crown Castle. AT&T now intends to add (6) antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:

Tower:

REMOVE

(3) POWERWAVE - 7700 (alpha, beta & gamma sectors)
(6) POWERWAVE – LGP21401 TMA's
(1) Platform Mount

RELOCATE

(1) RAYCAP - DC9-48-60-24-8C-EV SQUID
(3) CCI-OPA-65R-BU6DA-K
(3) RRH's - Ericsson – 8843 B2/ B66A
(3) RRH's - Ericsson - 4478 B14
(3) RRH's - Ericsson – 4449 B5/B12
(3) CCI-DMP-65R-BU6DA
(1) RAYCAP – DC6-48-60-18-8F SQUID

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(3) RRH's - Ericsson - RRUS-32 B2
(3) RRH's – Ericsson – 4415 B 30
(6) Mounts - Dual RRH Mounts

INSTALL

(3) Ericsson – AIR6449 N77D
(3) Ericsson – AIR6419 N77G (antennas stacked)
(3) AT&T V-FRAME MOUNT- SABRE – C10857802
(9) 2 -1/2" x 8'-0" SCH. 40 Galvanized Pipe w / crossover hardware
(6) Dual Radio Mounts - Ericsson – SXK 107 2839
(6) 2 -1/2" x 6'-0" SCH. 40 Galvanized Pipe w / crossover hardware

Ground:

INSTALL:
(1) 6648 (+XCEDE)
(3) Rectifiers in Existing Power Plant

The facility was approved by the Town of Woodbridge Town Plan and Zoning Commission on July 3, 2000. This approval was given with conditions which this exempt modification complies with. A copy of the approval is included in this filing as Exhibit A.

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 a copy of this letter is being sent to Beth Heller, First Selectman, Kristine Sullivan, Land Use Analyst & Zoning Enforcement Officer and AT&T Network RE Administration and the Town of Woodbridge as the ground owners.

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.

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4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b)(2).

Sincerely,

Ersilia Davis

Ersilia Davis
Crown Castle, Agent for AT&T
edavis@nbcllc.com
(551)804-0667

Cc:

Beth Heller, First Selectman
Woodbridge Town Hall
11 Meetinghouse Lane
Woodbridge, CT 06525

Kristine Sullivan, Land Use Analyst
Woodbridge Town Hall
11 Meetinghouse Lane
Woodbridge, CT 06525

The Town of Woodbridge, Property Owner
11 Meetinghouse Lane
Woodbridge, CT 06525

AT&T Network RE Administration, Property Owner
754 Peachtree ST NE 16th Floor
Atlanta, GA 30308

Exhibit A

Original Facility Approval

TOWN PLAN AND ZONING COMMISSION
TOWN OF WOODBRIDGE
WOODBRIDGE, CONNECTICUT

TEL. (203) 389-3405

July 12, 2000

Christopher B. Fisher, Esq.
Cuddy & Feder & Worby LLP
733 Summor St.,
Stamford, CT. 06901

Re: Special Permit/Site Plan Application
Telecommunication Facility
Woodbridge Country Club,
50 Woodfield Road, Woodbridge, CT.

Dear Mr. Fisher:

The Commission at its meeting on July 3, 2000 reviewed your application for AT&T of a Special Permit/Site Plan approval for an unmanned telecommunication facility consisting of a one hundrod foot monopole, equipment shelter and other related improvements on a portion of lot owned by the Woodbridge Country Club, 50 Woodfield Road, Woodbridge, CT.

After discussion the Commission voted to approve the application subject to the following stipulations:

1. As offered at the Public Hearing the lower base will be designed to provide for future co-location transmission equipment which could be added upon an enlargement of the pole.

2. Any such enlargement would be subject to an application to and approval by the Town Plan & Zoning Commission.

3. AT&T will submit an estimate, based on unit cost, for the completion bond of the site improvements for the installation of the facility as shown on site plans T-1 and Z-1 prepared by URS Greiner Woodward Clyde revised to January 13, 2000.

4. This approval is conditioned upon compliance with all applicable provisions of the Woodbridge Zoning Regulations for telecommunication facilities.

Upon receipt of a completion bond satisfactory to the Commission the Enforcement Officer will be authorized to issue the necessary permits.

Sincerely yours,

Charles B. Swanson
Chairman

cc: Terry Gilbertson, Enforcement Officer

CERTIFIED MAIL RETURN RECEIPT NO. Z 720 381 193

WOOD1(WP)81

Exhibit B

Property Card

Town of Woodbridge, CT

Property Listing Report

Map Block Lot	3002/2040/52//	Building #	1	PID	102090	Account	3675

Property Information

Property Location	52 WOODFIELD RD
Owner	AT&T NETWORK RE ADMINISTRATION
Co-Owner	TOWER ASSET GROUP (TG) LA EAST TOWER
Mailing Address	754 PEACHTREE ST NE 16TH FL ATLANTA GA 30308
Land Use	1300 Vacant
Land Class	R
Zoning Code	A
Census Tract	

Neighborhood	
Acreage	0.23
Utilities	
Lot Setting/Desc	
Book / Page	0580/0058
Additional Info	

Photo

Sketch

No Photo Available

Primary Construction Details

Year Built	0
Building Desc.	Vacant
Building Style	UNKNOWN
Building Grade	NA
Stories	
Occupancy	
Exterior Walls	
Exterior Walls 2	NA
Roof Style	
Roof Cover	
Interior Walls	
Interior Walls 2	NA
Interior Floors 1	
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

(*Industrial / Commercial Details)

Building Use	
Building Condition	
Sprinkler %	NA
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA
Foundation	NA

Report Created On 7/20/2022

Town of Woodbridge, CT

Property Listing Report | Map Block Lot 3002/2040/52// | Building # 1 | PID 102090 | Account 3675

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

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Improvements		
Outbuildings	660000	462000
Land	0	0
Total	660000	462000

Outbuilding and Extra Features

Type	Description
Monopole Tower	225000 UNIT
Tower Bldg	30000 UNIT
Tower Bldg	30000 UNIT
Cell Tower Tenant	4 EACH

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
AT&T NETWORK RE ADMINISTRATION	0580/0058	2007-07-27	0

Report Created On 7/20/2022

Town of Woodbridge, CT

Property Listing Report

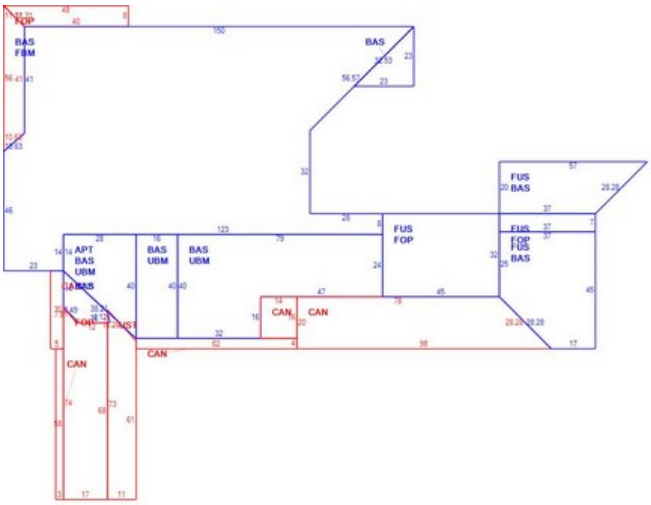
Map Block Lot	3002/2040/50//	Building #	1	PID	924	Account	103400

Property Information

Property Location	50 WOODFIELD RD
Owner	TOWN OF WOODBRIDGE
Co-Owner	
Mailing Address	11 MEETINGHOUSE LN WOODBRIDGE CT 06525
Land Use	903C Municipal 94
Land Class	E
Zoning Code	A
Census Tract	

Neighborhood	
Acreage	140.41
Utilities	Public Water,Public Sewer
Lot Setting/Desc	Rural Above
Book / Page	0628/0294
Additional Info	

Photo



Primary Construction Details

Year Built	1970
Building Desc.	Golf Course
Building Style	Country Club
Building Grade	B
Stories	2
Occupancy	1.00
Exterior Walls	Wood on Sheath
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall/Sheet
Interior Walls 2	NA
Interior Floors 1	Carpet
Interior Floors 2	

Heating Fuel	Oil
Heating Type	Hot Water
AC Type	03
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

(*Industrial / Commercial Details)

Building Use	Commercial
Building Condition	F
Sprinkler %	NA
Heat / AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & WALLS
Rooms / Prtns	AVERAGE
Wall Height	12.00
First Floor Use	NA
Foundation	NA

Report Created On 4/3/2020

Town of Woodbridge, CT

Property Listing Report | Map Block Lot **3002/2040/50//** | Building # **1** | PID **924** | Account **103400**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	2571000	1799700
Extras	45900	32130
Improvements		
Outbuildings	1766200	1236340
Land	1118100	782670
Total	5501200	3850840

Outbuilding and Extra Features

Type	Description
Sprinklers Wet	36185 S.F.
Fireplace	1 UNITS
Shed	112 S.F.
Bath House Gd	65 S.F.
Shed Good	171 S.F.
Tennis Court	4 UNIT
Paving Asphalt	55000 S.F.
Pool IG Concrt	3158 S.F.
Pool IG Concrt	314 S.F.
Gazebo	484 S.F

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Apartment	756	756
First Floor	17092	17092
Canopy	2556	0
Basement, Finished	10430	0
Open Porch	3610	0
Upper Story, Finished	4104	4104
Basement, Unfinished	3804	0
Utility, Storage, Unfinished	737	0
Total Area	43089	21952

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
TOWN OF WOODBRIDGE	0628/0294	2009-08-28	6900000
WOODBRIDGE COUNTRY CLUB	0087/0003	1967-10-25	0

Report Created On **4/3/2020**

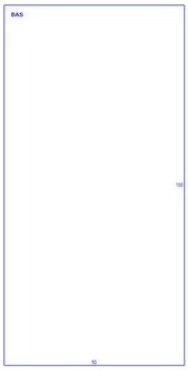
Town of Woodbridge, CT

Property Listing Report

Map Block Lot	3002/2040/50//	Building #	2	PID	924	Account	103400

Photo

Sketch



Primary Construction Details

Year Built	1980
Building Desc.	Industrial
Building Style	Warehouse
Building Grade	C
Stories	1
Occupancy	1.00
Exterior Walls	Pre-finsh Metl
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Metal/Tin
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	

Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	01
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

(*Industrial / Commercial Details)

Building Use	Golf Course
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	STEEL
Baths / Plumbing	NONE
Ceiling / Wall	CEILING ONLY
Rooms / Prtns	AVERAGE
Wall Height	14.00
First Floor Use	NA
Foundation	NA

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	5000	5000

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	5000	5000

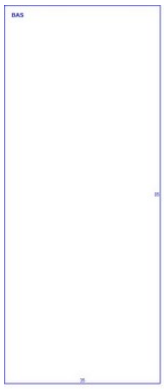
Report Created On 4/3/2020

Town of Woodbridge, CT

Property Listing Report | Map Block Lot 3002/2040/50// | Building # 3 | PID 924 | Account 103400

Photo

Sketch



Primary Construction Details

Year Built	1960
Building Desc.	Industrial
Building Style	Service Shop
Building Grade	C
Stories	1
Occupancy	1.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	

Heating Fuel	Coal or Wood
Heating Type	Forced Air-Duc
AC Type	01
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

(*Industrial / Commercial Details)

Building Use	Golf Course
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	NONE
Ceiling / Wall	CEILING ONLY
Rooms / Prtns	AVERAGE
Wall Height	8.00
First Floor Use	NA
Foundation	NA

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	2975	2975

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	2975	2975

Report Created On 4/3/2020

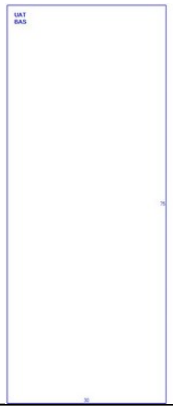
Town of Woodbridge, CT

Property Listing Report

Map Block Lot	3002/2040/50//	Building #	4	PID	924	Account	103400

Photo

Sketch



Primary Construction Details

Year Built	1960
Building Desc.	Industrial
Building Style	Service Shop
Building Grade	C-
Stories	1
Occupancy	1.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Minim/Masonry
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	

Heating Fuel	Gas
Heating Type	Hot Air-no Duc
AC Type	01
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

(*Industrial / Commercial Details)

Building Use	Golf Course
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	MASONRY
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEILING ONLY
Rooms / Prtns	AVERAGE
Wall Height	12.00
First Floor Use	NA
Foundation	NA

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	2250	2250
Attic, Unfinished	2250	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	4500	2250

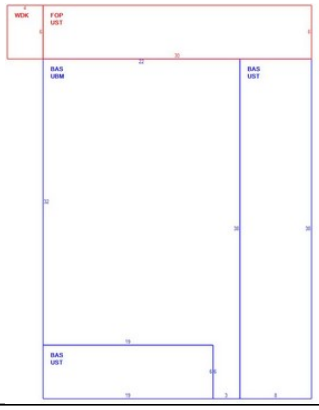
Report Created On 4/3/2020

Town of Woodbridge, CT

Property Listing Report | Map Block Lot 3002/2040/50// | Building # 5 | PID 924 | Account 103400

Photo

Sketch



Primary Construction Details

Year Built	1950
Building Desc.	Commercial
Building Style	Restaurant
Building Grade	C-
Stories	1
Occupancy	1.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	NA
Roof Style	Flat
Roof Cover	Rolled Compos
Interior Walls	Knotty Pine
Interior Walls 2	NA
Interior Floors 1	Carpet
Interior Floors 2	

Heating Fuel	Coal or Wood
Heating Type	None
AC Type	01
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

(*Industrial / Commercial Details)

Building Use	Golf Course
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	WOOD FRAME
Baths / Plumbing	AVERAGE
Ceiling / Wall	CEIL & MIN WL
Rooms / Prtns	AVERAGE
Wall Height	9.00
First Floor Use	NA
Foundation	NA

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1140	1140
Open Porch	180	0
Basement, Unfinished	722	0
Utility, Storage, Unfinished	598	0
Wood Deck	24	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	2664	1140

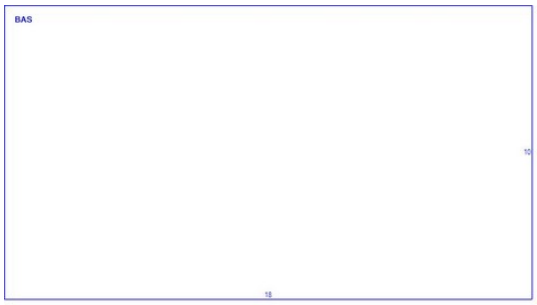
Report Created On 4/3/2020

Town of Woodbridge, CT

Property Listing Report | Map Block Lot 3002/2040/50// | Building # 6 | PID 924 | Account 103400

Photo

Sketch



Primary Construction Details

Year Built	1970
Building Desc.	Industrial
Building Style	Store
Building Grade	C-
Stories	1
Occupancy	1.00
Exterior Walls	Pre-Fab Wood
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall/Sheet
Interior Walls 2	NA
Interior Floors 1	Concr-Finished
Interior Floors 2	

Heating Fuel	Coal or Wood
Heating Type	None
AC Type	01
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	NA
Fin Bsmt Quality	NA
Bsmt Gar	NA
Fireplaces	NA

(*Industrial / Commercial Details)

Building Use	SFR OPEN MDL-96
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	WOOD FRAME
Baths / Plumbing	NONE
Ceiling / Wall	CEIL & MIN WL
Rooms / Prtns	AVERAGE
Wall Height	8.00
First Floor Use	NA
Foundation	NA

Sub Areas

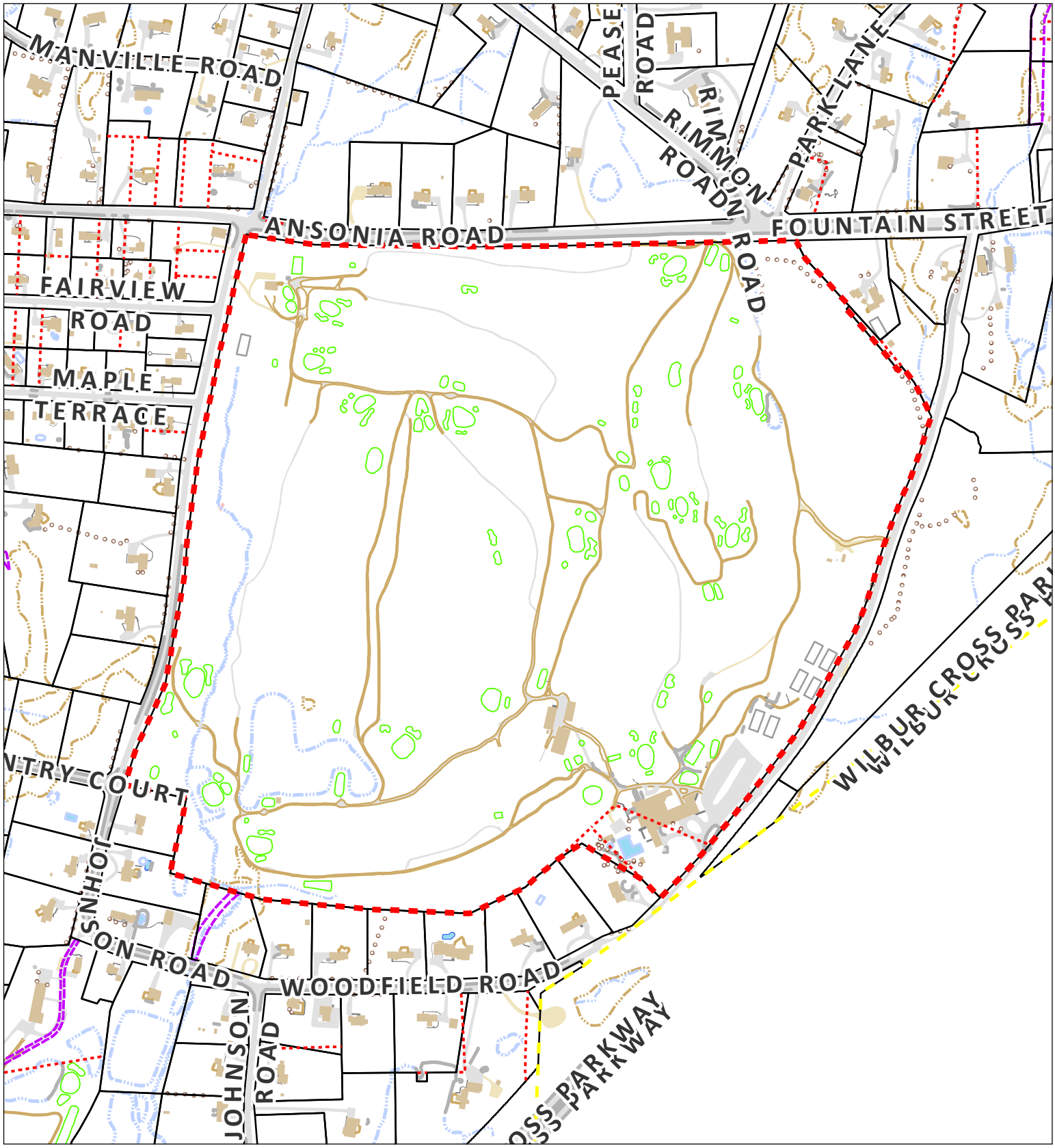
Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	180	180

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	180	180

Report Created On 4/3/2020

Town of Woodbridge, Connecticut - Assessment Parcel Map

GIS ID: 924 **Address:**



Approximate Scale:

1:6,000

Map Produced June 2021

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

Exhibit C

Construction Drawings

AT&T

AT&T SITE NUMBER: CTL05163
AT&T SITE NAME: WOODBRIDGE COUNTRY CLUB
AT&T FA CODE: 10071344
AT&T PACE NUMBER: MRCTB055022, MRCTB055051
AT&T PROJECT: 5G NR 1SR CBAND

BUSINESS UNIT #: 842879
SITE ADDRESS: 50 WOODFIELD ROAD WOODBRIDGE, CT 06525
COUNTY: NEW HAVEN
SITE TYPE: MONOPOLE
TOWER HEIGHT: 102'-0"

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	WOODBRIDGE COUNTRY CLUB
SITE ADDRESS:	50 WOODFIELD ROAD WOODBRIDGE, CT 06525
COUNTY:	NEW HAVEN
MAP/PARCEL #:	102090
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.327639
LONGITUDE:	-72.993567
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	353'
CURRENT ZONING:	A
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	AT&T NETWORK RE ADMINISTRATION 754 PEACHTREE ST NE 16TH FL ATLANTA, GA 30308
TOWER OWNER:	CROWN CASTLE USA INC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T TOWER ASSET GROUP 575 MOROSGO DRIVE ATLANTA, GA 30324-3300
ELECTRIC PROVIDER:	UNITED ILLUMINATING CO 800-722-5584
TELCO PROVIDER:	AT&T 866-620-6900

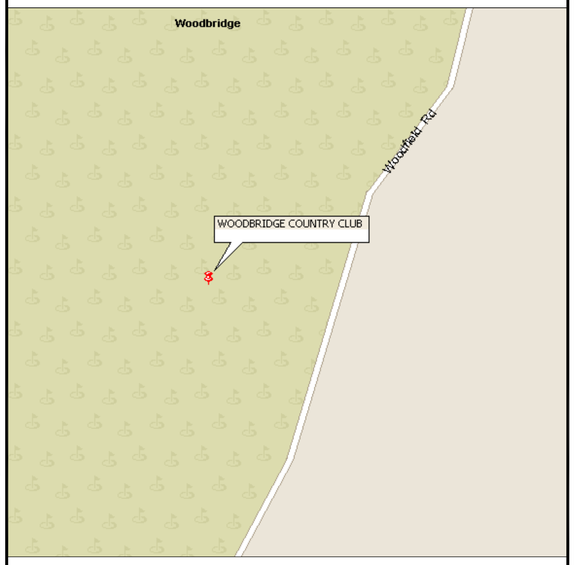
DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EXISTING & FINAL EQUIPMENT PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	FINAL EQUIPMENT SCHEDULE
C-4	EQUIPMENT MOUNTING DETAILS
C-5	EQUIPMENT SPECS
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM
ATTACHED	SECTOR MOUNT SPECS

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

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS
BEFORE YOU DIG!

LOCATION MAP



NO SCALE

SITE PHOTO

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065 VERONICA CHAPMAN - PROJECT MANAGER VERONICA.CHAPMAN@CROWNCASTLE.COM JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM

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

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (3) POWERWAVE - 7770 ANTENNAS
- REMOVE (6) POWERWAVE - LGP21401 TMAS
- REMOVE EXISTING PLATFORM MOUNT
- RELOCATE REMAINING EQUIPMENT TO NEW SECTOR MOUNTS
- INSTALL (3) SABRE - C10857802 SECTOR MOUNTS
- INSTALL (9) 2-1/2" SCH 40 X 8'-0" MOUNT PIPES
- INSTALL (6) 2-1/2" SCH 40 x 6'-0" LONG MOUNT PIPES W/ CROSSOVER HARDWARE
- INSTALL (6) ERICSSON - AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED ANTENNAS
- INSTALL (6) ERICSSON - SXK 107 2839 DUAL RADIO MOUNTS
- INSTALL (6) Y-CABLES

GROUND SCOPE OF WORK:
- INSTALL (3) RECTIFIERS IN EXISTING POWER PLANT
- INSTALL (1) 6648 W/ XCEDE CABLE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CONNECICUT SBC/2015 IBC
MECHANICAL	2018 CONNECICUT SBC/2015 IMC
ELECTRICAL	2018 CONNECICUT SBC/2015 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	CROWN CASTLE
DATED:	3/3/22
MOUNT ANALYSIS:	B+T GROUP
DATED:	2/25/22
RFDS REVISION:	-
DATED:	4/11/22
ORDER ID:	586276
REVISION:	0

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

AT&T SITE NUMBER: **CTL05163**

BU #: **842879**
WOODBRIDGE COUNTRY CLUB

50 WOODFIELD ROAD
WOODBRIDGE, CT 06525

EXISTING
102'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/17/22	TDG	PRELIMINARY REVIEW	KT
B	4/18/22	TDG	PRELIMINARY REVIEW	KT
0	5/26/22	TDG	CONSTRUCTION	KT

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: T-1
REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
   THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: AT&T
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER........40 ksi
   #5 BARS AND LARGER........60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH........3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 BARS AND LARGER........2"
   #5 BARS AND SMALLER........1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   SLAB AND WALLS........3/4"
   BEAMS AND COLUMNS........1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "AT&T".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

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SUITE 300
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AT&T SITE NUMBER: **CTL05163**

BU #: **842879**
WOODBRIDGE COUNTRY CLUB

50 WOODFIELD ROAD
WOODBRIDGE, CT 06525

EXISTING
102'-0" MONOPOLE

ISSUED FOR:

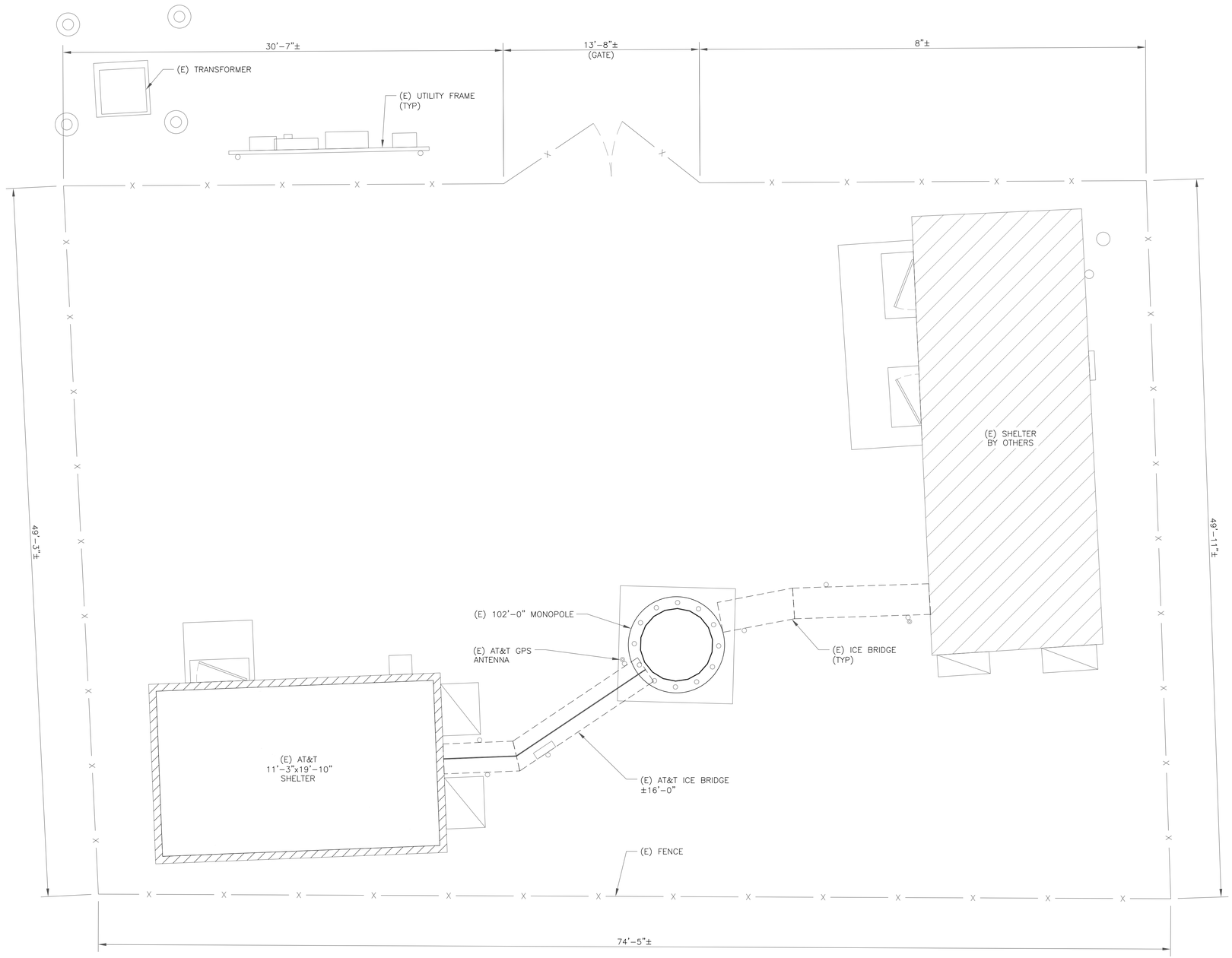
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/17/22	TDG	PRELIMINARY REVIEW	KT
B	4/18/22	TDG	PRELIMINARY REVIEW	KT
0	5/26/22	TDG	CONSTRUCTION	KT

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

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

SHEET NUMBER: **T-2**
REVISION: **0**

140443.007.01_842879_WOODBRIDGE COUNTRY CLUB.dwg – Sheet:T-2 – User: kevin.turkall – May 26, 2022 – 1:01pm



1 SITE PLAN
SCALE: 4' 3' 2' 1' 0 4'
1/4"=1'-0" (FULL SIZE)
1/8"=1'-0" (11x17)

N

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STATE OF CONNECTICUT
KEVIN T. TURKALL
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/26/22

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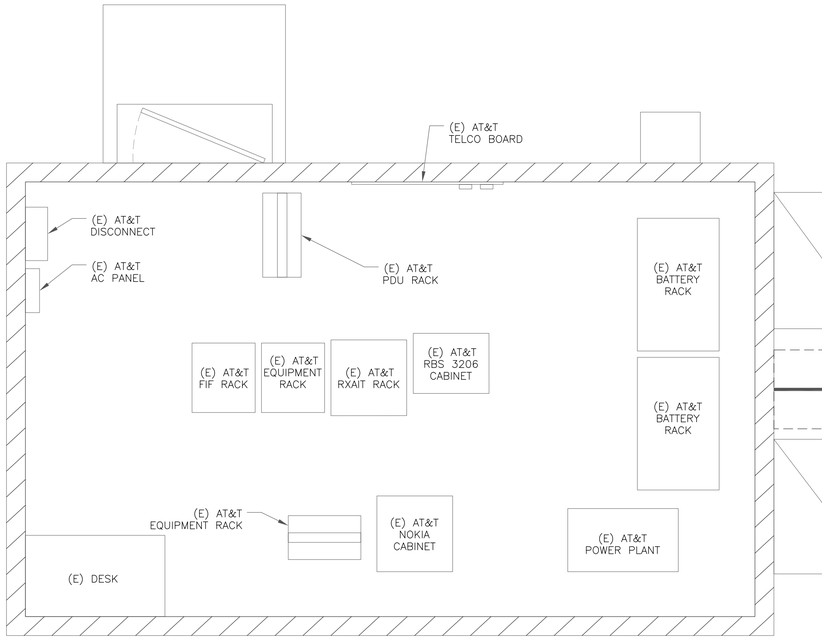
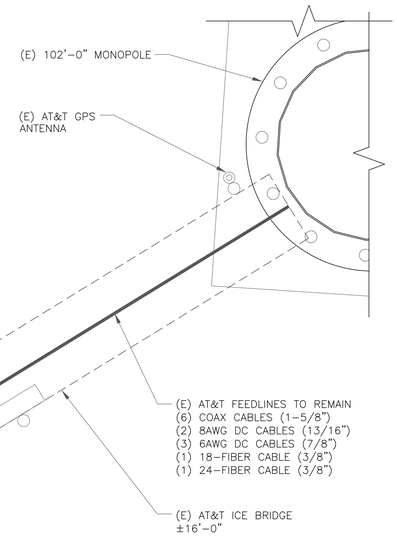
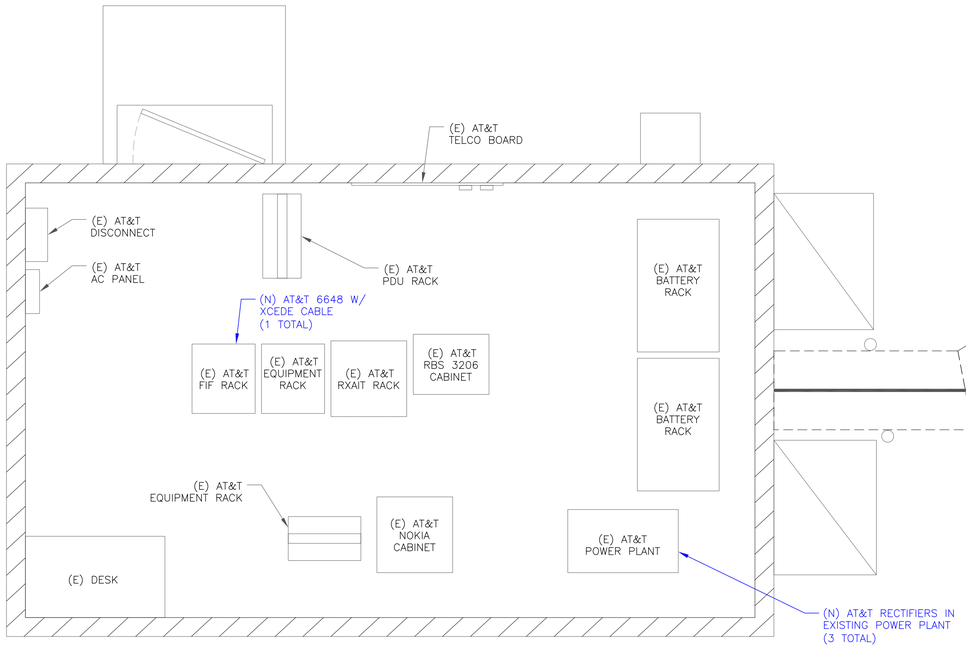
SHEET NUMBER: C-1.1
REVISION: 0

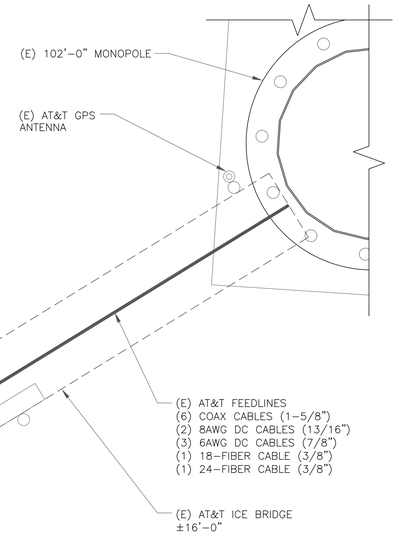




1 EXISTING EQUIPMENT PLAN

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





2 FINAL EQUIPMENT PLAN

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

GROUND SCOPE OF WORK:

- INSTALL (3) RECTIFIERS IN EXISTING POWER PLANT
- INSTALL (1) 6648 W/ XCEDE CABLE

NOTE:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

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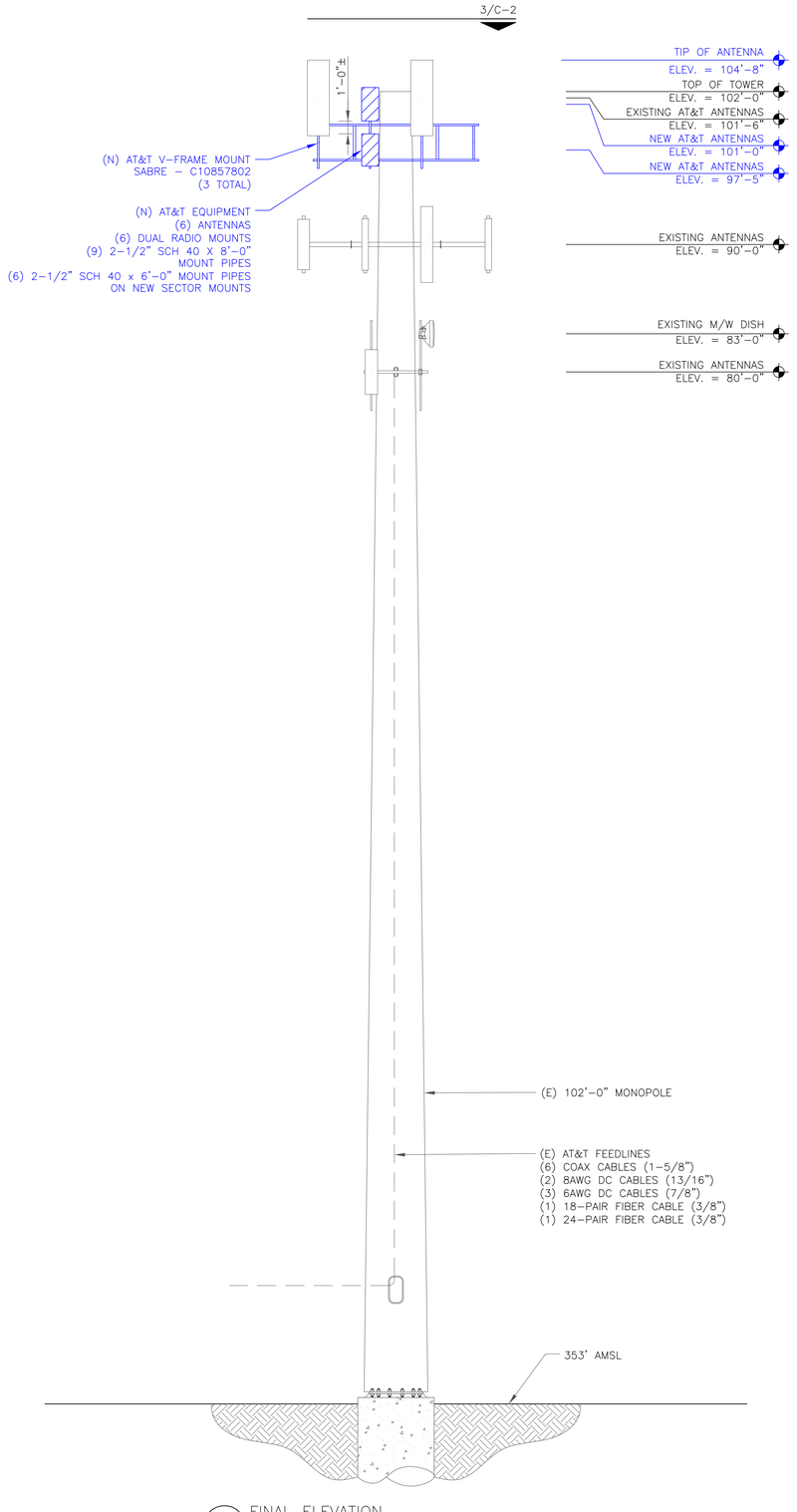
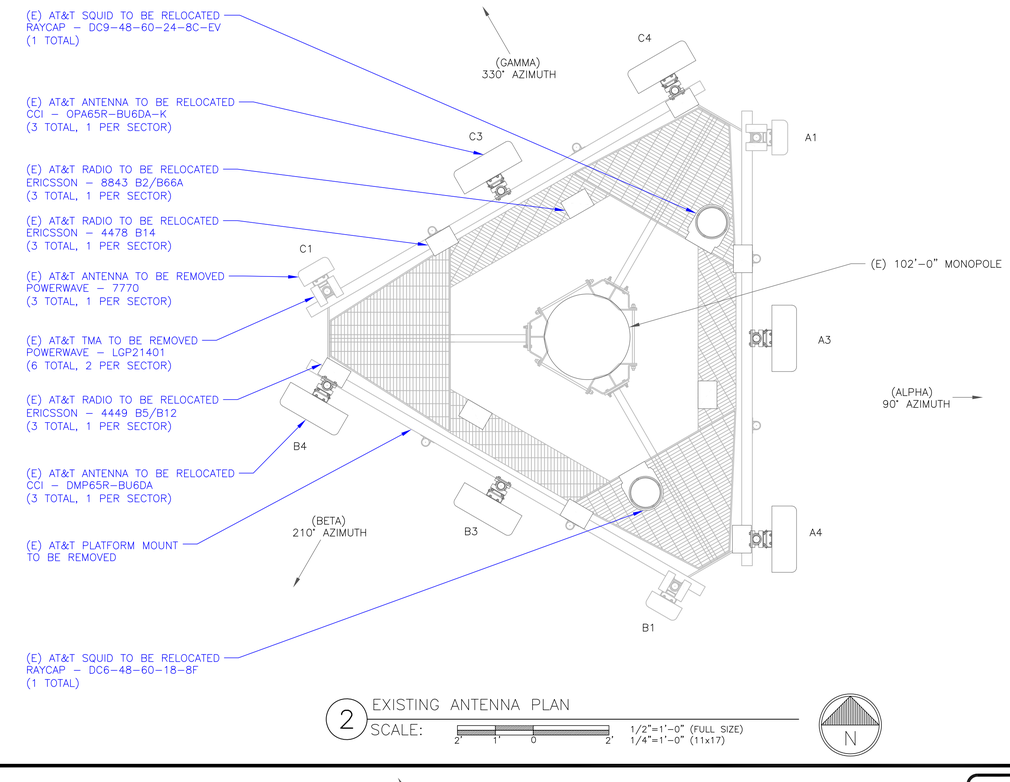
SHEET NUMBER: C-1.2

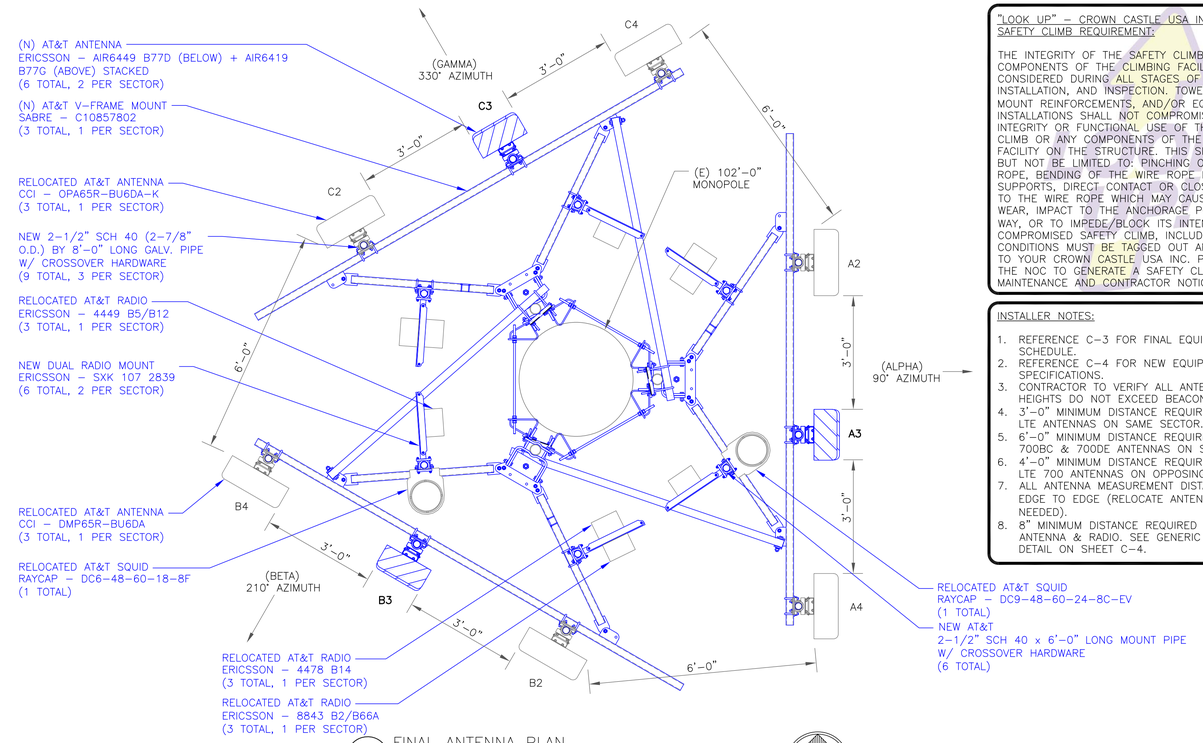
REVISION: 0



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
SCALE: 1/2"=1'-0" (FULL SIZE), 1/4"=1'-0" (11x17)



3 FINAL ANTENNA PLAN
SCALE: 1/2"=1'-0" (FULL SIZE), 1/4"=1'-0" (11x17)

"LOOK UP" - CROWN CASTLE USA INC.
SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY ALL ANTENNA TIP HEIGHTS DO NOT EXCEED BEACON BASE HEIGHT.
4. 3'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE ANTENNAS ON SAME SECTOR.
5. 6'-0" MINIMUM DISTANCE REQUIRED BETWEEN 700BC & 700DE ANTENNAS ON SAME SECTOR.
6. 4'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE 700 ANTENNAS ON OPPOSING SECTORS.
7. ALL ANTENNA MEASUREMENT DISTANCES MUST BE EDGE TO EDGE (RELOCATE ANTENNAS AS NEEDED).
8. 8" MINIMUM DISTANCE REQUIRED BETWEEN ANTENNA & RADIO. SEE GENERIC EXAMPLE DETAIL ON SHEET C-4.

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AT&T SITE NUMBER: **CTL05163**

BU #: **842879**
WOODBRIDGE COUNTRY CLUB

50 WOODFIELD ROAD
WOODBRIDGE, CT 06525

EXISTING
102'-0" MONOPOLE

ISSUED FOR:

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-2

REVISION: 0

FINAL ANTENNA AND FEEDLINE SCHEDULE

POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	SURGE PROTECTION	DC/FIBER CABLES	RRHs QTY & MODEL ON TOWER	LOCATION	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE
ALPHA SECTOR																		
A1	–	–	–	–	–	–	–	–	–	–	–	(1) DC9-48-60-24-8C-EV	(E)(1) 24-PAIR FIBER CABLE (3/8") (E)(3) 6AWG DC CABLES (7/8")	–	–	N	N	N
A2	LTE 700/LTE 1900/**5G 1900**	EXISTING	90°	CCI – OPA65R-BU6DA-K	101'-6"	0°	4°/6°/6°/6°	1 5/8"	151'-0"	2	–			(1) ERICSSON – 4478 B14 (1) ERICSSON – 8843 B2/B66A **(1) (N) Y-CABLE**	TOWER	N	N	N
A3	**5G CBAND/5G 3.5GHZ**	**NEW**	**90°**	**ERICSSON – AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED**	**97'-5" 101'-0"**	**0°**	**0°/0°**	–	–	–	–			–	–	N	N	N
A4	LTE 700/LTE WAS/**5G 850/5G AWS**	EXISTING	90°	CCI – DMP65R-BU6DA	101'-6"	0°	4°/6°/4°/4°	–	–	–	–			(1) ERICSSON – 4449 B5/B12 **(1) (N) Y-CABLE**	TOWER	N	N	N
BETA SECTOR																		
B1	–	–	–	–	–	–	–	–	–	–	–	(1) DC6-48-60-18-8F	(E)(1) 18-PAIR FIBER CABLE (3/8") (E)(2) 8AWG DC CABLES (13/16")	–	–	N	N	N
B2	LTE 700/LTE 1900/**5G 1900**	EXISTING	210°	CCI – OPA65R-BU6DA-K	101'-6"	0°	8°/2°/2°/2°	1 5/8"	151'-0"	2	–			(1) ERICSSON – 4478 B14 (1) ERICSSON – 8843 B2/B66A **(1) (N) Y-CABLE**	TOWER	N	N	N
B3	**5G CBAND/5G 3.5GHZ**	**NEW**	**210°**	**ERICSSON – AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED**	**97'-5" 101'-0"**	**0°**	**0°/0°**	–	–	–	–			–	–	N	N	N
B4	LTE 700/LTE WAS/**5G 850/5G AWS**	EXISTING	210°	CCI – DMP65R-BU6DA	101'-6"	0°	8°/2°/2°/2°	–	–	–	–			(1) ERICSSON – 4449 B5/B12 **(1) (N) Y-CABLE**	TOWER	N	N	N
GAMMA SECTOR																		
C1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	N	N	N
C2	LTE 700/LTE 1900/**5G 1900**	EXISTING	330°	CCI – OPA65R-BU6DA-K	101'-6"	0°	9°/6°/6°/6°	1 5/8"	151'-0"	2	–			(1) ERICSSON – 4478 B14 (1) ERICSSON – 8843 B2/B66A **(1) (N) Y-CABLE**	TOWER	N	N	N
C3	**5G CBAND/5G 3.5GHZ**	**NEW**	**330°**	**ERICSSON – AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED**	**97'-5" 101'-0"**	**0°**	**0°/0°**	–	–	–	–			–	–	N	N	N
C4	LTE 700/LTE WAS/**5G 850/5G AWS**	EXISTING	330°	CCI – DMP65R-BU6DA	101'-6"	0°	9°/6°/9°/9°	–	–	–	–			(1) ERICSSON – 4449 B5/B12 **(1) (N) Y-CABLE**	TOWER	N	N	N

NOTE: BOLD DENOTES NEW EQUIPMENT

1 FINAL ANTENNA AND FEEDLINE SCHEDULE
SCALE: NOT TO SCALE

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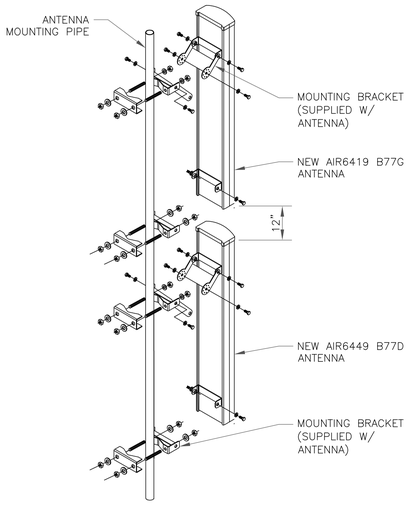
SHEET NUMBER: C-3

REVISION: 0



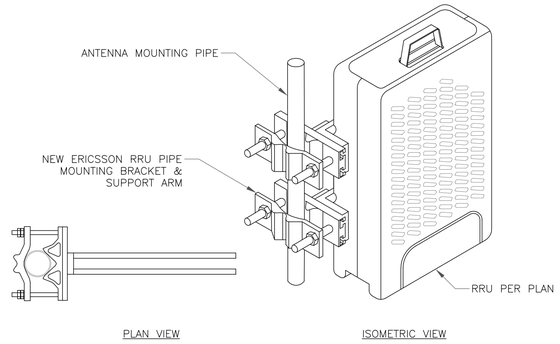
1 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

ERICSSON RRU MOUNTING KIT:

SXK 107 2839/1: SINGLE RRU SUPPORT KIT (PART # 5335) (OR ENGINEER APPROVED EQUIVALENT)
SXK 107 2839/2: EXPANSION KIT (PART # 5336) (OR ENGINEER APPROVED EQUIVALENT)

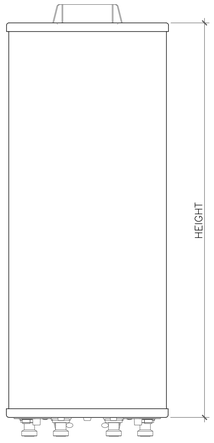
MOUNTING NOTES:

REFER TO PRODUCT SPECS FOR BOLT SIZE & PIPE DIAMETER TOLERANCES. THE PART NO. SXK107-2839/2 IS REQUIRED FOR (2) RRUS.



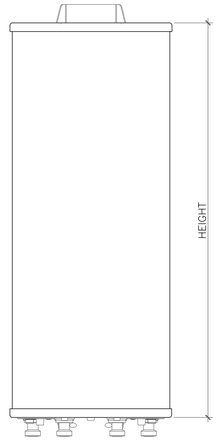
2 ERICSSON – SXK 107 2839
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE



ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
AIR 6419 B77G	31.10"	16.10"	7.30"	44.0 lbs

4 ANTENNA DETAIL
SCALE: NOT TO SCALE

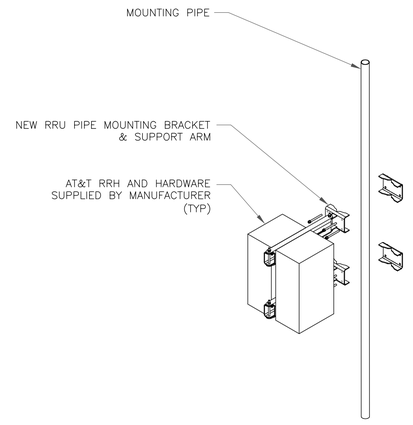


ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
AIR 6449 B77D	30.39"	15.87"	8.07"	81.60 lbs

5 ANTENNA DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
4. RRHs SHALL NOT BE INSTALLED CLOSER THAN 8" TO ANTENNAS.



6 DUAL RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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No. 23924
LICENSED
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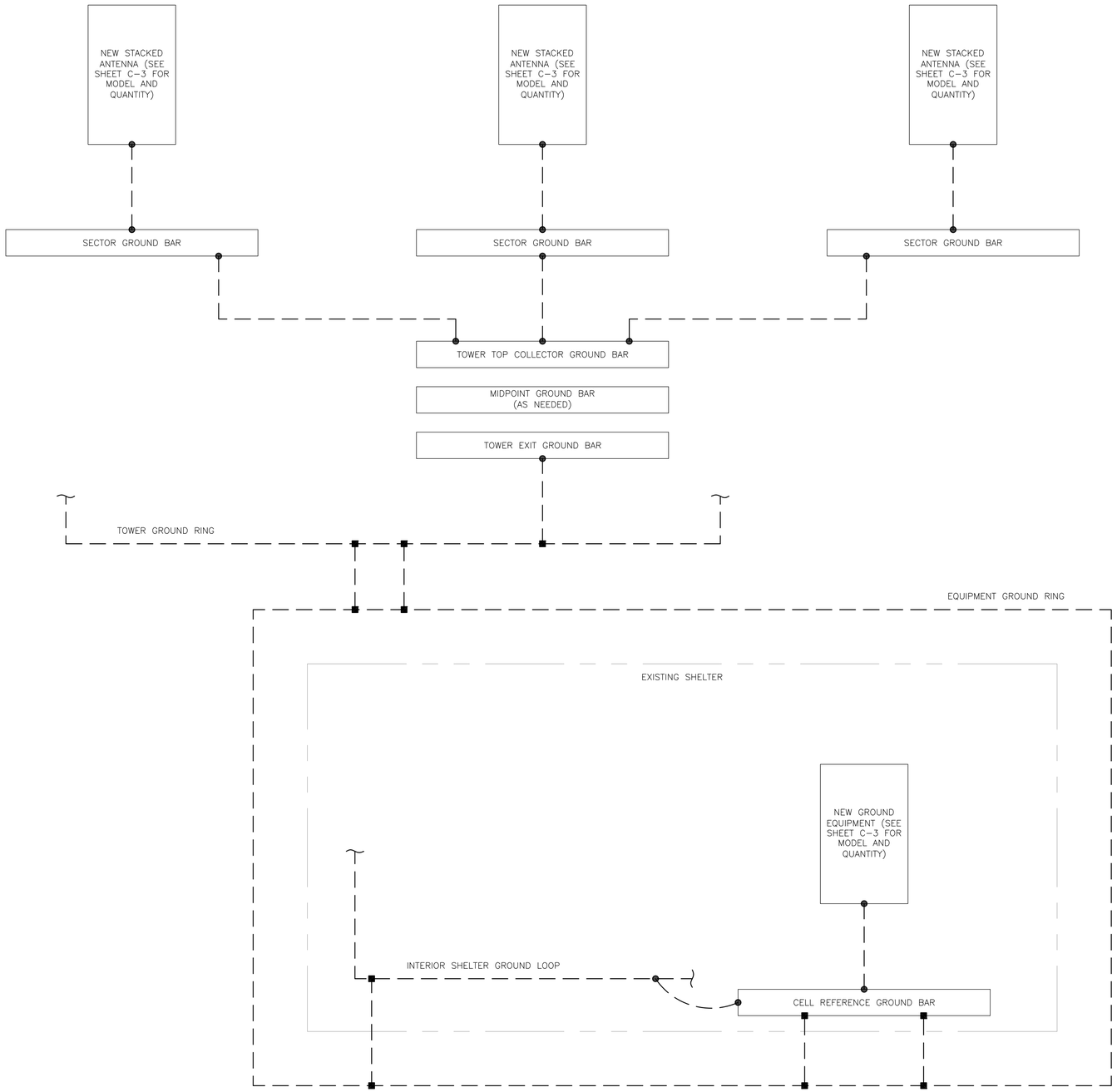
SHEET NUMBER: C-4

REVISION: 0



1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

- GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- COPPER GROUND ROD
- GROUND ROD W/ TEST WELL

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

AT&T SITE NUMBER: **CTL05163**

BU #: **842879**
WOODBRIDGE COUNTRY CLUB

50 WOODFIELD ROAD
WOODBRIDGE, CT 06525

EXISTING
102'-0" MONOPOLE

ISSUED FOR:

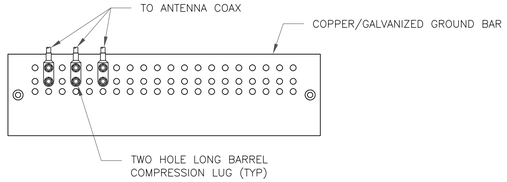
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/17/22	TDG	PRELIMINARY REVIEW	KT
B	4/18/22	TDG	PRELIMINARY REVIEW	KT
0	5/26/22	TDG	CONSTRUCTION	KT

STATE OF CONNECTICUT
No. 23024
LICENSED
PROFESSIONAL ENGINEER
5/26/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-1

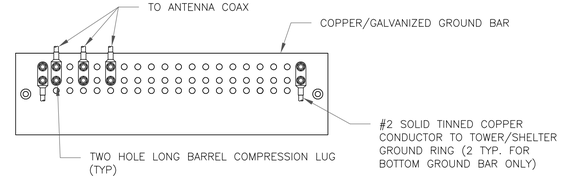
REVISION: 0



NOTES:

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

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

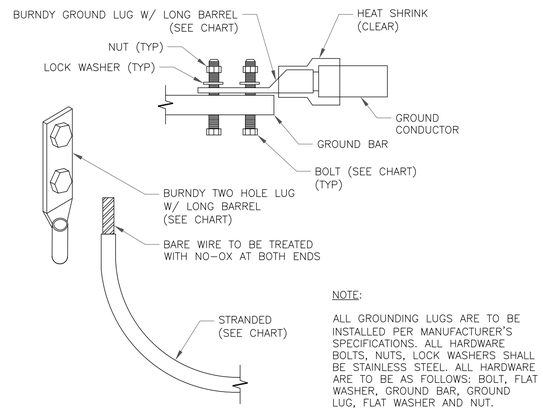


NOTES:

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

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

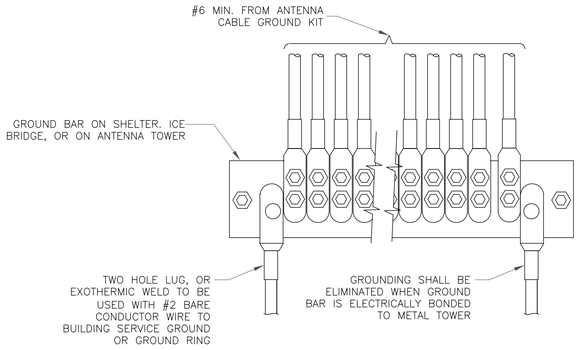
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



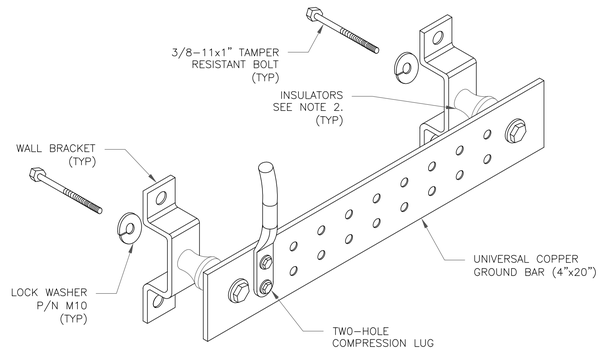
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

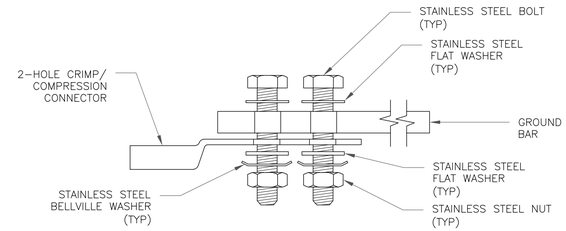


NOTES:

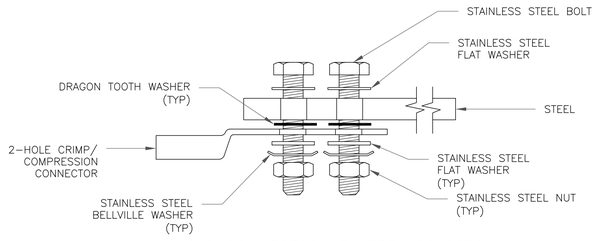
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

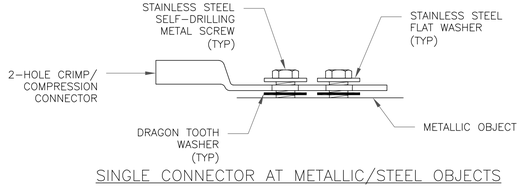
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

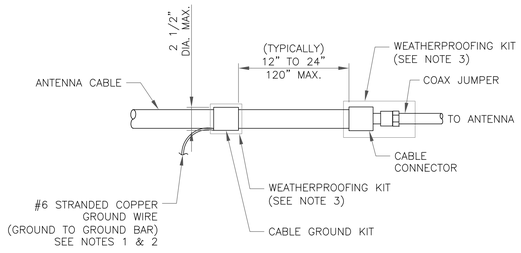


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

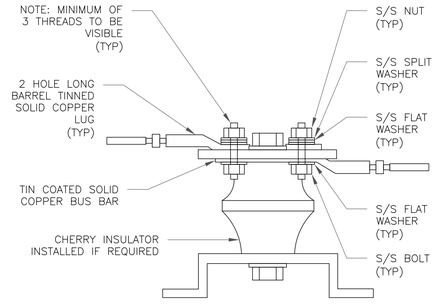
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

AT&T
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ATLANTA, GA 30324-3300

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AT&T SITE NUMBER: **CTL05163**

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WOODBRIDGE COUNTRY CLUB

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EXISTING
102'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/17/22	TDG	PRELIMINARY REVIEW	KT
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0	5/26/22	TDG	CONSTRUCTION	KT

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-2

REVISION: 0

ANTENNA POSITION 1

EMPTY

Antenna 2
LTE 700B14/ PCS

Broadband Octo Low 700/850 +45/-45 - +
Broadband Octo Low 700/850 +45/-45 - +
Broadband Octo High 4Tx/4Rx +45/-45 - +
Broadband Octo High 4Tx/4Rx +45/-45 - +
RET RET RET RET

Antenna 3
DoD + Cband

DoD +45/-45 - +
E// AIR C-BAND +45/-45 - +

Antenna 4
LTE 700BC/ 850 / AWS

Broadband Octo Low 700/850 +45/-45 - +
Broadband Octo Low 700/850 +45/-45 - +
Broadband Octo High 4Tx/4Rx +45/-45 - +
Broadband Octo High 4Tx/4Rx +45/-45 - +
RET RET RET RET

LTE RRUS-8843

LTE RRUS-4449 850/700 BC

Fiber/DC 9 Demarcation Box (Squid)

Fiber/DC Demarcation Box (Squid)

DC Plant

6648

6630 XMU

6630

IDLe

IDLe_Xcede

FU FU RU RU

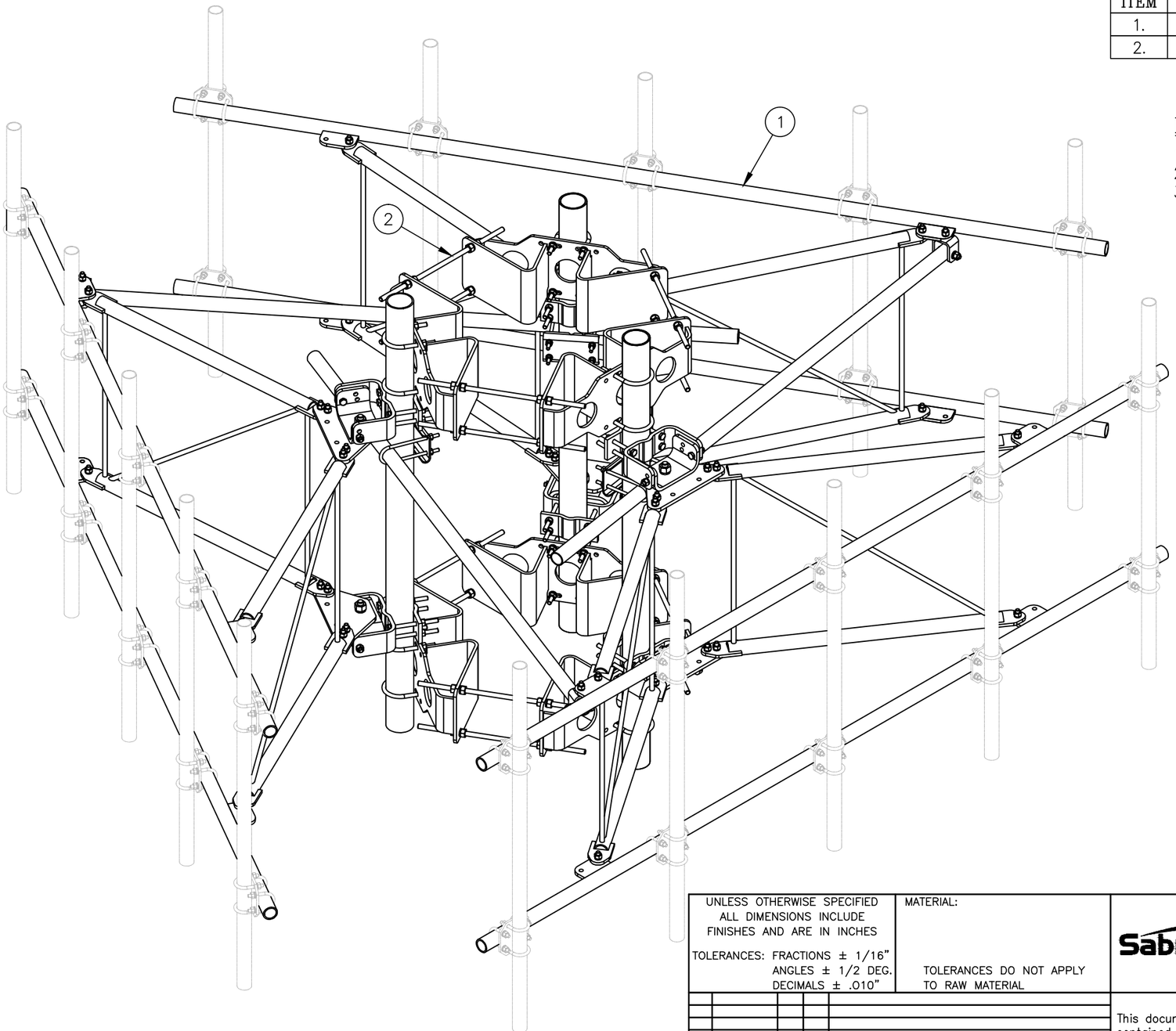
3206 DUW 2nd DUW

UMTS 1st NodeB
DB 3206

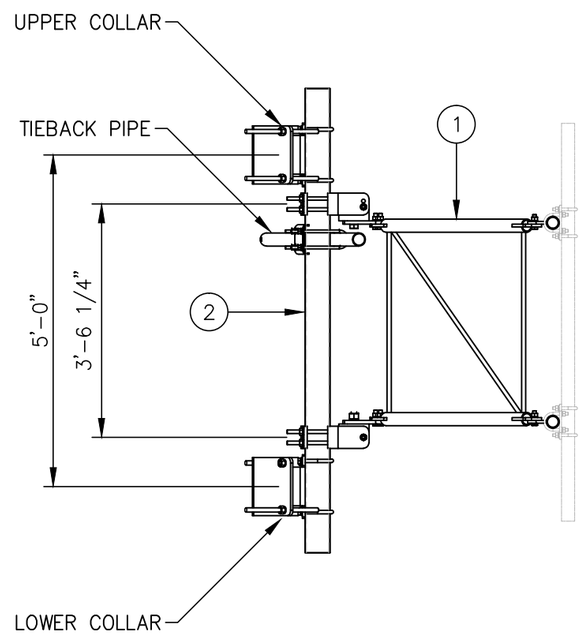
C10857802 12' HD V-BOOM ASSEMBLIES W/TIEBACK				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C10857001C	12' HD V-BOOM ASSEMBLY W/TIE BACK	1386
2.	1	C10899055	4 1/2" O.D. MONOPOLE PIPE MOUNT ASSEMBLY	994
			TOTAL WEIGHT	2380

NOTES:

1. MOUNTING PIPES & CROSSOVER PLATE KITS MUST BE PURCHASED SEPARATELY.
2. SEE DRAWING C10857001C FOR 12' V-BOOM ASSEMBLY.
3. SEE DRAWING C10899055 FOR 4 1/2" O.D. MONOPOLE PIPE MOUNT ASSEMBLY.



ISOMETRIC VIEW



VIEW A-A
FROM PAGE 2

REV	DATE	DRW	CHK	DESCRIPTION

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

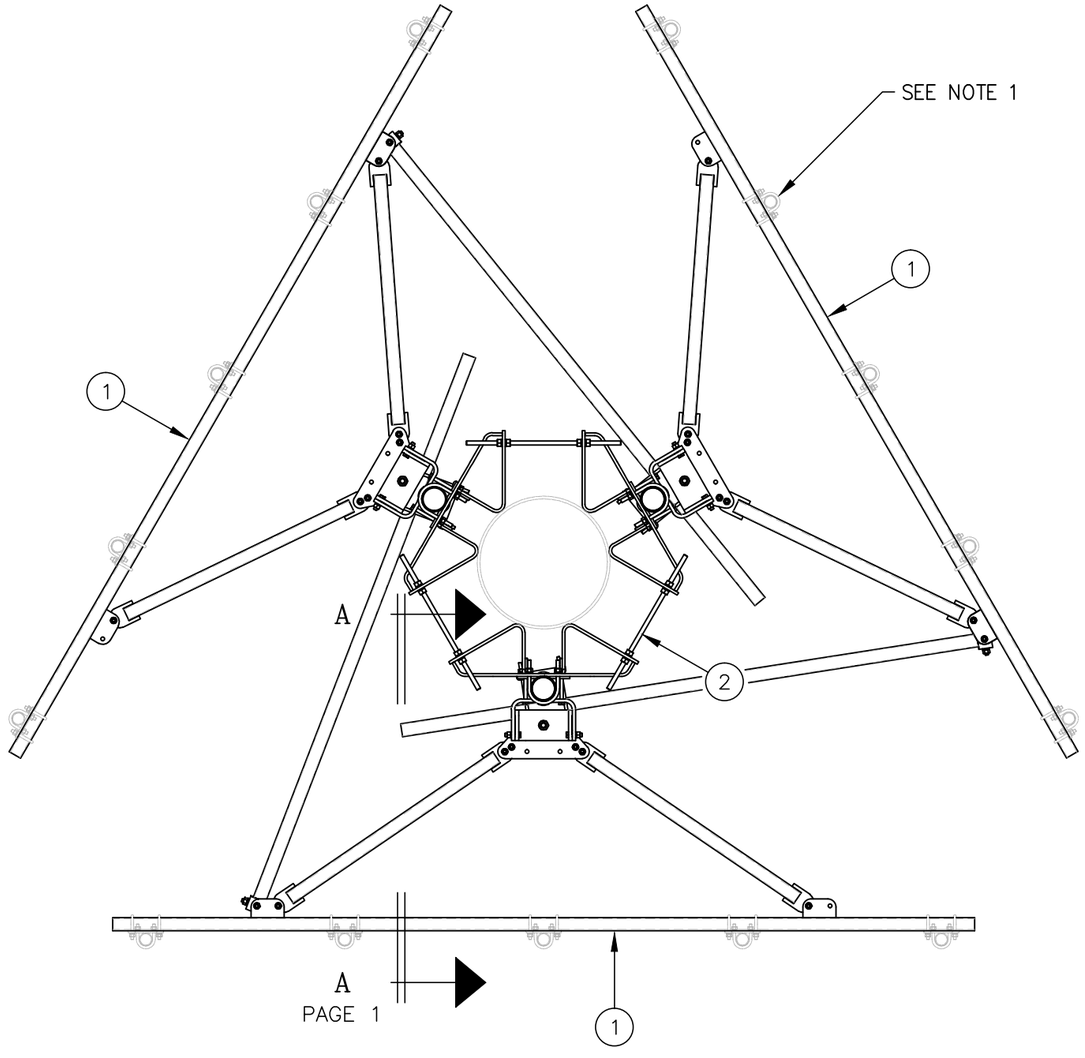
MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

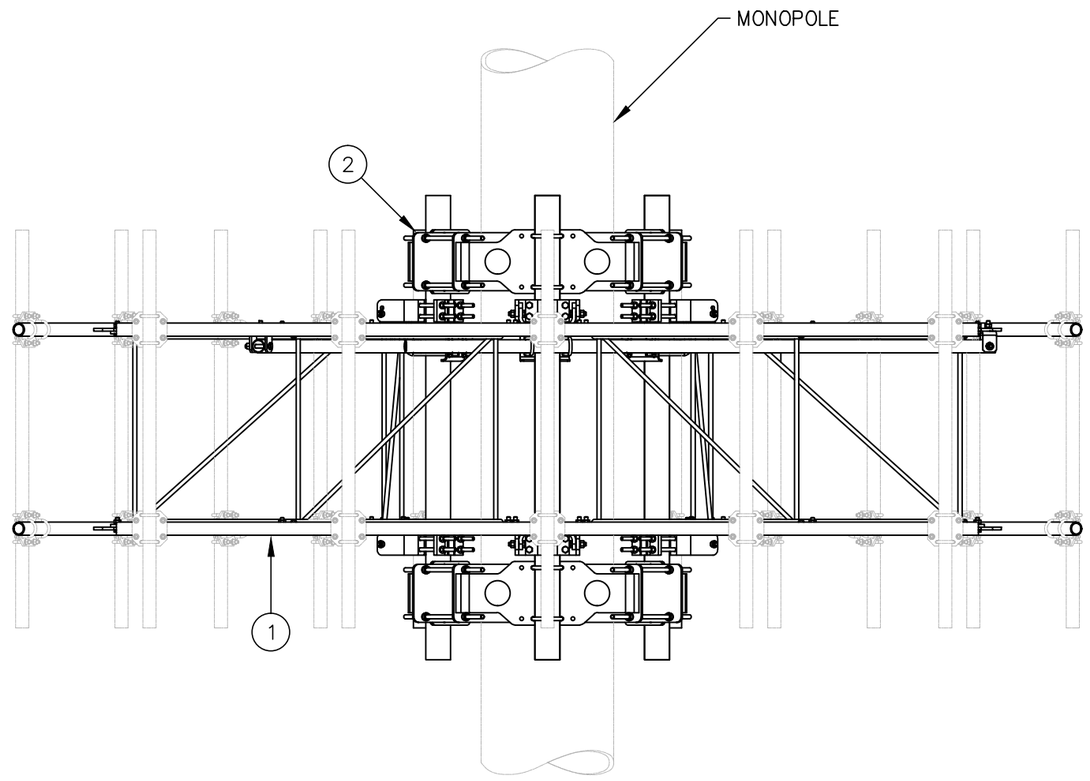
Sabre Industries™ Towers and Poles

12' HD V-BOOM ASSEMBLIES W/TIEBACK (3' STANDOFF) ON MONOPOLE PIPE MOUNT ASSEMBLY W/NO ANTENNA MOUNTING PIPES

		SIZE	DRAWING NO.	REV
DATE	9/24/18	B	C10857802	0
DRAWN BY	WRF			
CHECKED BY	WMN		SCALE None	PAGE 1 OF 2



PLAN VIEW



ELEVATION VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ Towers and Poles

12' HD V-BOOM ASSEMBLIES W/TIEBACK (3' STANDOFF) ON MONOPOLE PIPE MOUNT ASSEMBLY W/NO ANTENNA MOUNTING PIPES

DATE	09/24/18
DRAWN BY	WRF
CHECKED BY	WMN

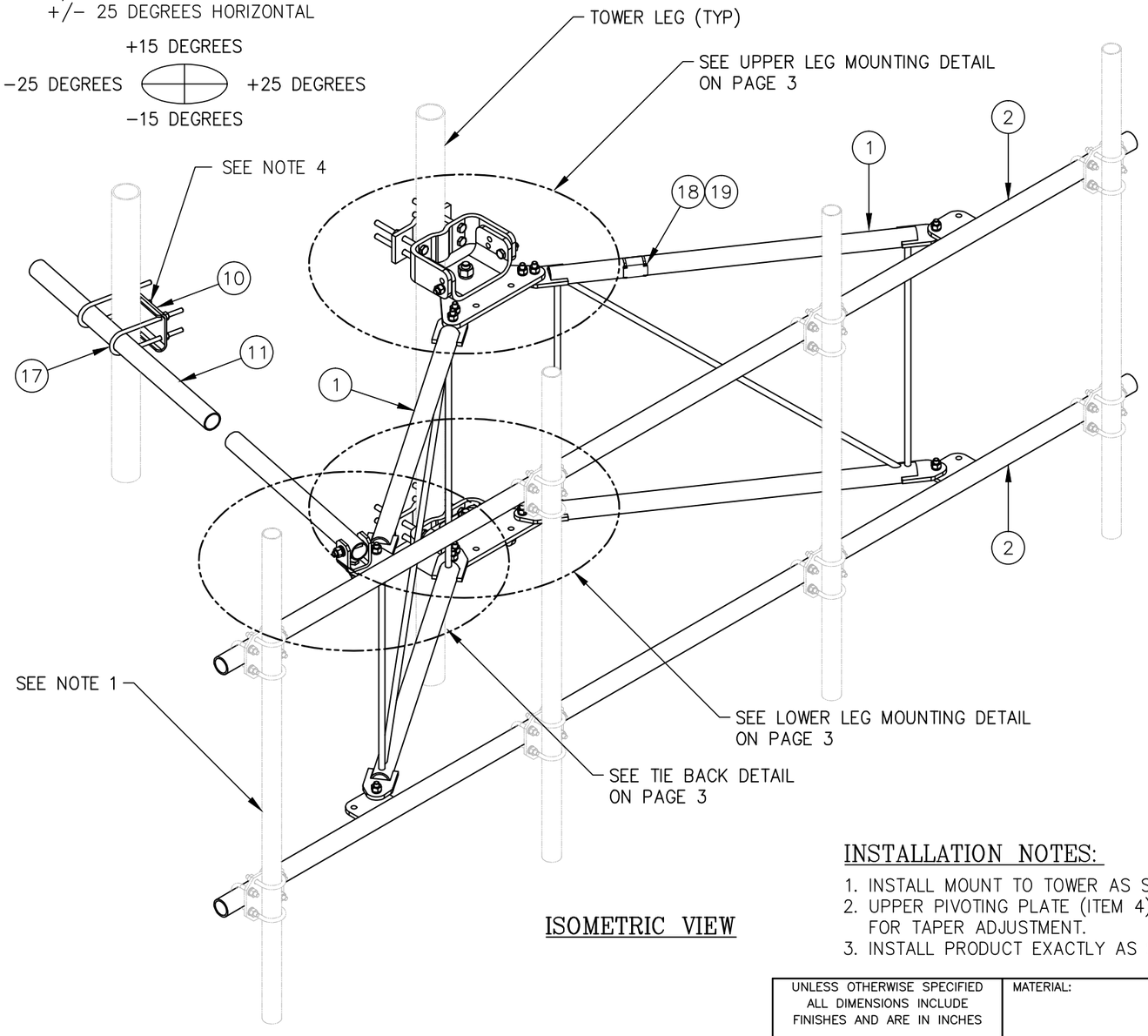
SIZE	DRAWING NO.	REV
B	C10857802	0

SCALE	PAGE
None	2 OF 2

TIEBACK ANGLE RANGE DETAIL

+/− 15 DEGREES VERTICAL
+/− 25 DEGREES HORIZONTAL

+15 DEGREES
−25 DEGREES +25 DEGREES
−15 DEGREES



ISOMETRIC VIEW

C10857001C 12' HD V-BOOM ASSEMBLY W/TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	2	CW01222	WELDMENT, STANDOFF ARM	126
2.	2	CW01223	WELDMENT, FACE PIPE	147
3.	2	CS03109	PLATE, ROTATING	34
4.	1	CS03110	PLATE, PIVOTING (UPPER)	16
5.	1	CS03111	PLATE, LEG CLAMP (UPPER)	17
6.	1	CS03112	PLATE, PIVOTING (LOWER)	14
7.	1	CS03113	PLATE, LEG CLAMP (LOWER)	17
8.	2	CS03114	PLATE, LEG CLAMP (BACK)	14
9.	1	CS00098	PLATE, TIE BACK SWIVEL	3
10.	1	CS03285	PLATE, TIE BACK CLAMP	4
11.	1	CS03333	PIPE, TIE BACK	38
12.	2	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	4
13.	8	C40140004	BOLT ASSEMBLY, 5/8 ø X 8 A307	13
14.	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
15.	12	C40026025	BOLT ASSEMBLY, 5/8 ø X 2 1/2 A325	6
16.	5	C40026024	BOLT ASSEMBLY, 5/8 ø X 2 1/4 A325	3
17.	2	C40034183	U-BOLT ASSEMBLY, 1/2 ø X 2 15/16 C-C	3
18.	1	Z30992001	MOUNT CLASSIFICATION TAG C10857001C	1
19.	2	C40062103	STAINLESS STEEL SELF-LOCKING CABLE TIE	1
			TOTAL WEIGHT	462

PACKAGING NOTE

CK00386 INCLUDES ITEMS 1, 3, 4, 5, 6, 7, 12 & 15 (8 QTY)
CK00387-HDW INCLUDES ITEMS 8, 9, 10, 13, 14, 15 (4 QTY), 16, 17, 18 & 19
CK00387-STL INCLUDES ITEMS 2 & 11

INSTALLATION NOTES:

1. INSTALL MOUNT TO TOWER AS SHOWN, SO THAT WELDED STANDOFF DIAGONAL IS SLOPING DOWNWARD FROM TOWER END TO FACE PIPE END.
2. UPPER PIVOTING PLATE (ITEM 4) HAS THREE HOLES ON EACH SIDE AND UPPER LEG CLAMP PLATE (ITEM 5) HAS TWO HOLES ON EACH SIDE FOR TAPER ADJUSTMENT.
3. INSTALL PRODUCT EXACTLY AS SHOWN IN DRAWING, WITH ALL BOLTS FACING UPWARDS.

NOTES:

1. MOUNTING PIPES & CROSSOVER PLATE KITS MUST BE PURCHASED SEPARATELY.
2. QUANTITIES SHOWN IN LISTS OF MATERIAL ARE FOR ONE (1) V-BOOM ONLY.
3. THIS V-BOOM WILL MOUNT TO THE FOLLOWING: 1 1/2"ø TO 5 9/16"ø ROUND LEG.
4. TIEBACK MUST BE CONNECTED TO A RIGID MEMBER THAT PROVIDES ADEQUATE SUPPORT WITHIN THE LIMITS NOTED ABOVE IN THE TIEBACK ANGLE RANGE DETAIL UNLESS APPROVED BY THE ENGINEER OF RECORD.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

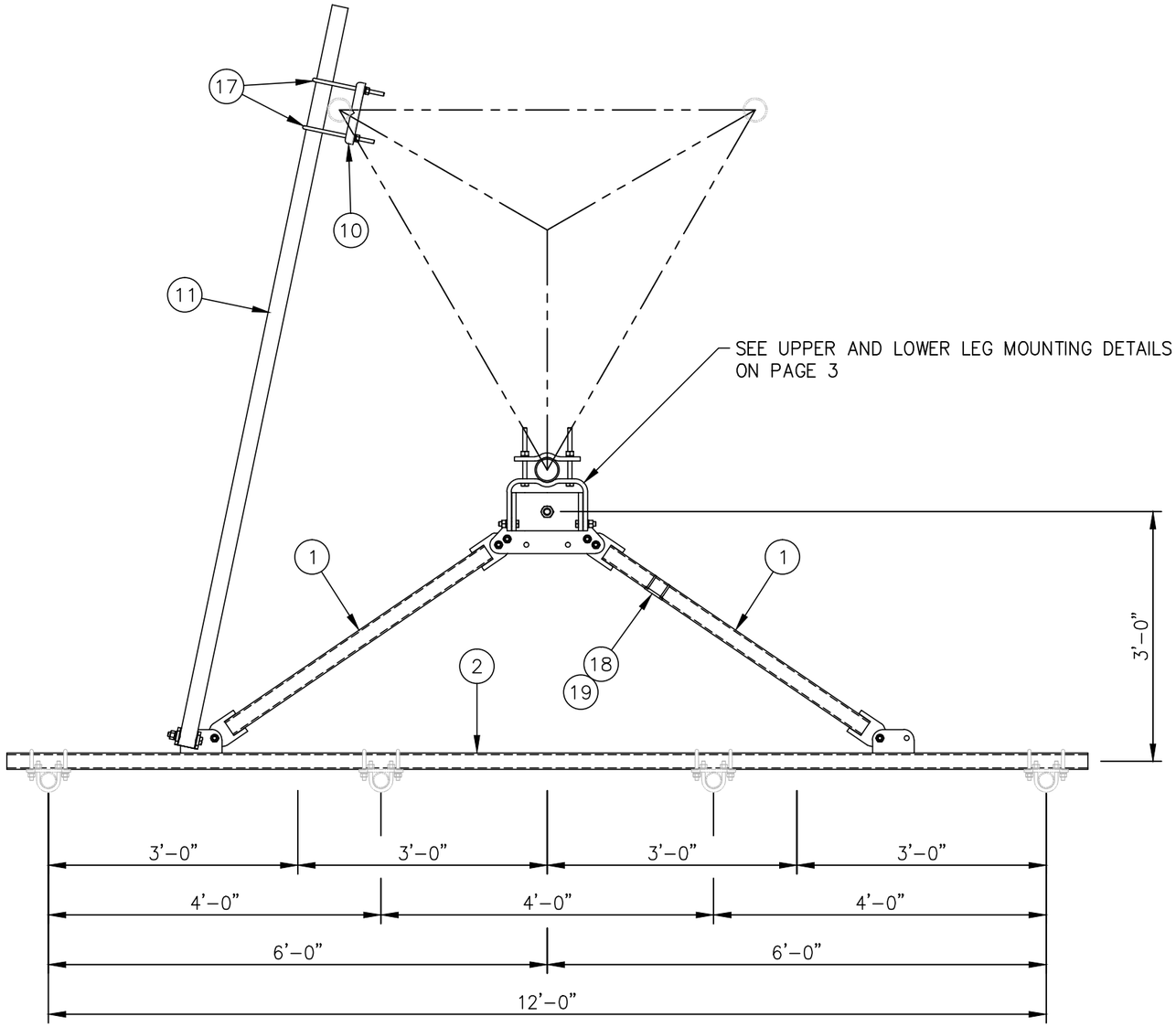
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	04/11/17	KLE	EK	REVISED PACKAGING NOTE
3	10/19/16	KLE	DEL	ADDED INSTALLATION NOTES
2	02/05/16	DLW	DEL	ADDED PACKAGING NOTE
1	01/21/16	KLE	EK	REVISED NOTES & ADDED TIEBACK ANGLE RANGE DETAIL

Sabre Industries™ Towers and Poles

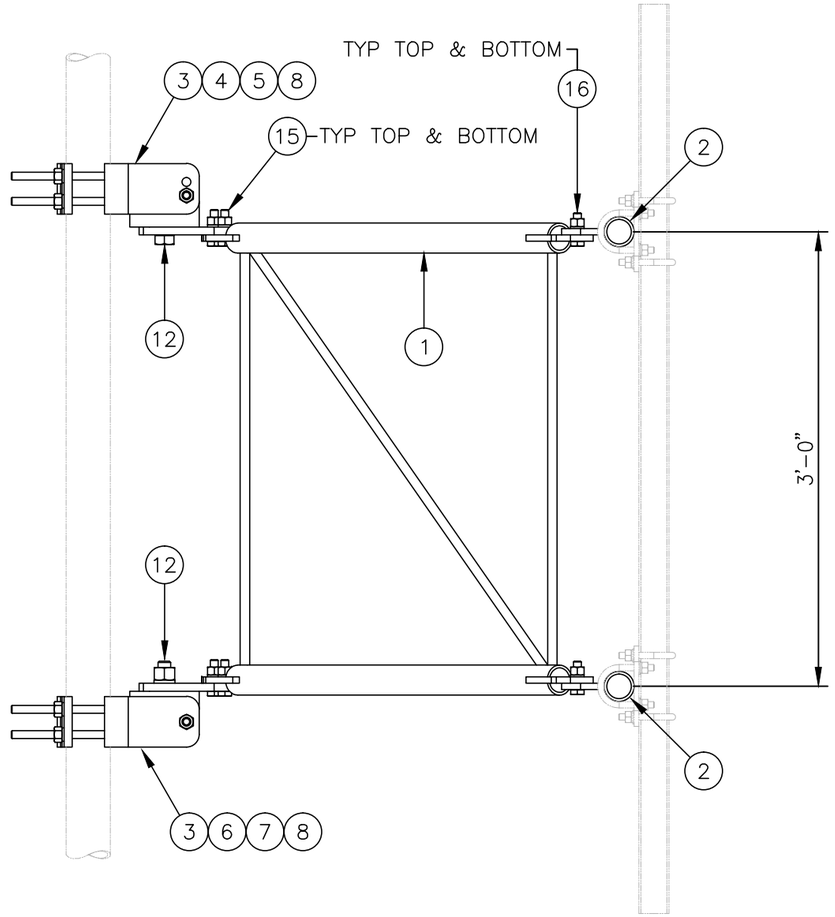
12' HD V-BOOM ASSEMBLY W/TIEBACK (3' STANDOFF) W/NO ANTENNA MOUNTING PIPES

		SIZE	DRAWING NO.	REV
DATE	12/22/15	B	C10857001C	4
DRAWN BY	WRF			
CHECKED BY	EK	SCALE None	PAGE 1 OF 3	



MOUNTING OPTIONS

SHOWING MOUNTING PIPE PLACEMENTS



SIDE VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	04/11/17	KLE	EK	REVISED PACKAGING NOTE
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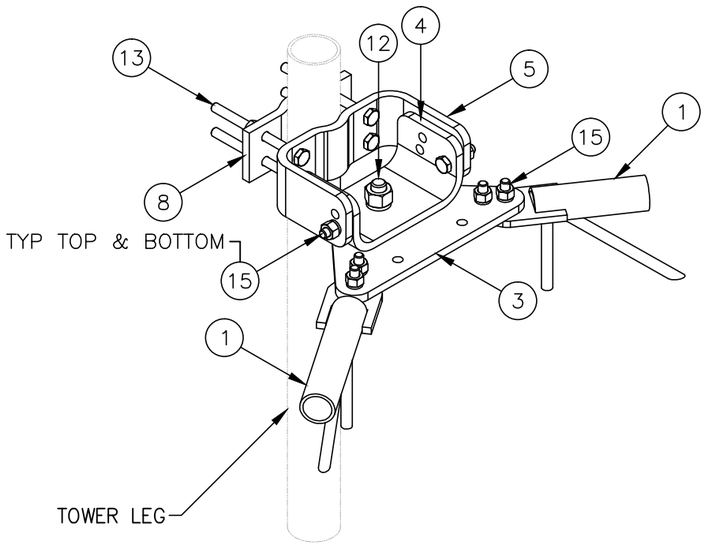
Sabre Industries™ Towers and Poles

12' HD V-BOOM ASSEMBLY W/TIEBACK (3' STANDOFF) W/NO ANTENNA MOUNTING PIPES

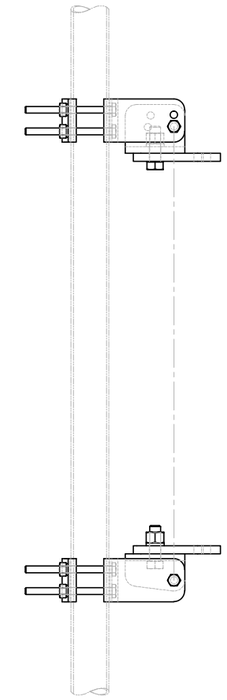
DATE	12/22/15
DRAWN BY	WRF
CHECKED BY	EK

SIZE	DRAWING NO.	REV
B	C10857001C	4

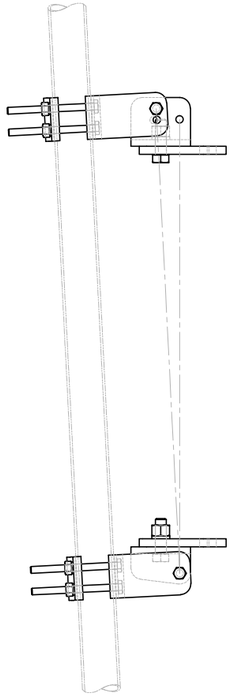
SCALE	PAGE
None	2 OF 3



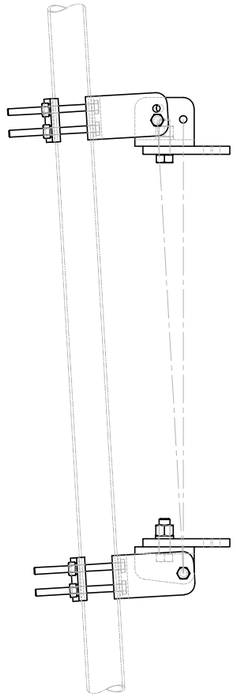
UPPER LEG MOUNTING DETAIL



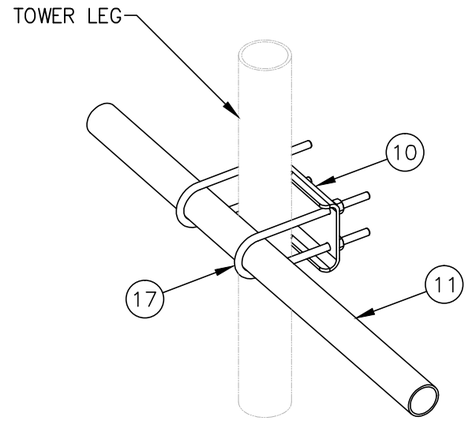
STRAIGHT
TOWER SECTION



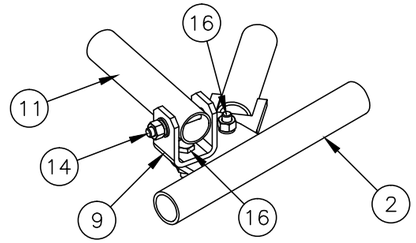
TAPERED
1'–9 IN 20' SLOPE



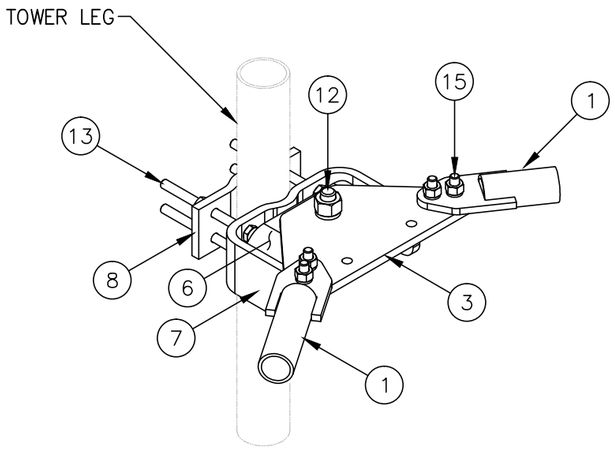
TAPERED
2' IN 20' SLOPE



TIE BACK DETAIL
AT TOWER LEG



TIE BACK DETAIL
AT ANTENNA MOUNTING FRAME



LOWER LEG MOUNTING DETAIL

--------PIVOTING OPTIONS--------

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
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3	10/19/16	KLE	DEL	ADDED INSTALLATION NOTES
2	02/05/16	DLW	DEL	ADDED PACKAGING NOTE
1	01/21/16	KLE	EK	REVISED NOTES & ADDED TIEBACK ANGLE RANGE DETAIL

Sabre Industries™
Towers and Poles

CONFIDENTIAL

12' HD V-BOOM ASSEMBLY W/TIEBACK (3' STANDOFF) W/NO ANTENNA MOUNTING PIPES

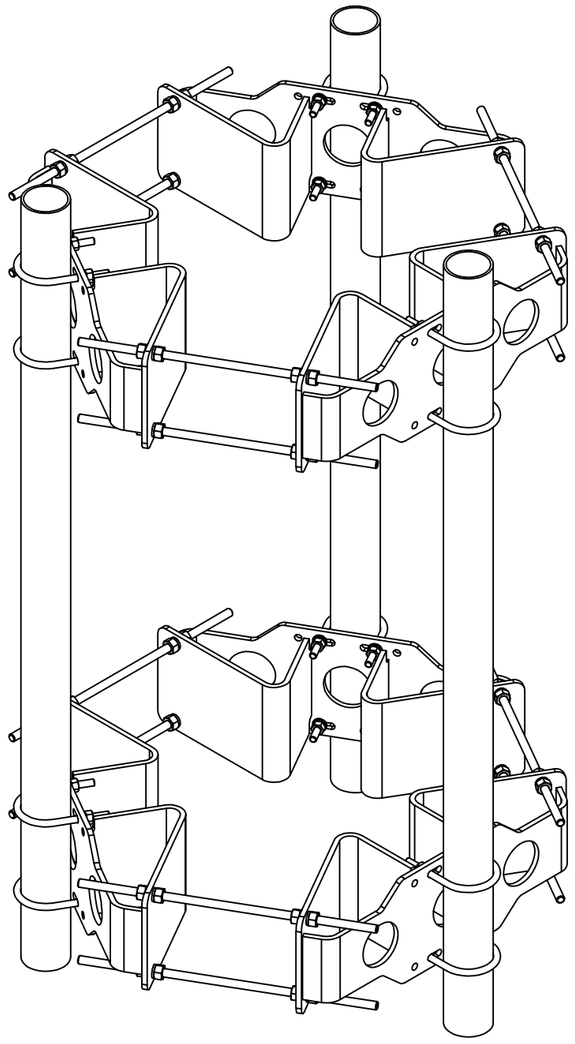
		SIZE	DRAWING NO.	REV
DATE	12/22/15	B	C10857001C	4
DRAWN BY	WRF			
CHECKED BY	EK		SCALE None	PAGE 3 OF 3

NOTE:

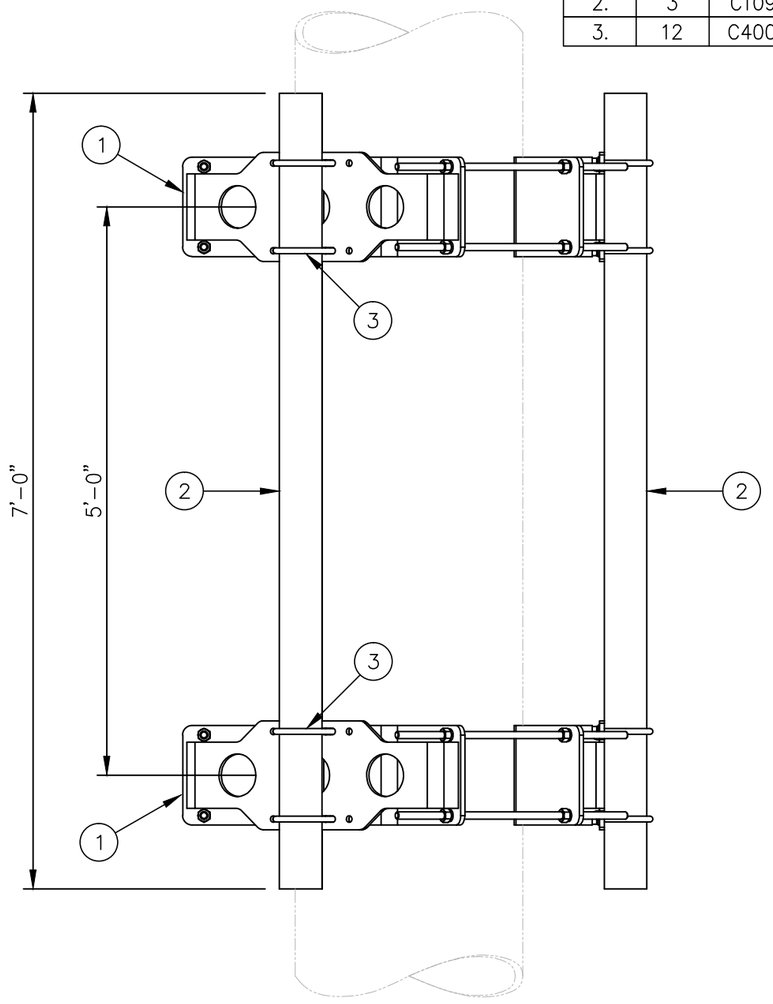
SEE DRAWING C10112378 FOR INSTALLATION OF TRI-COLLAR BRACKET ASSEMBLY

C10899055 4 1/2" O.D. PIPE MOUNT ASSEMBLY

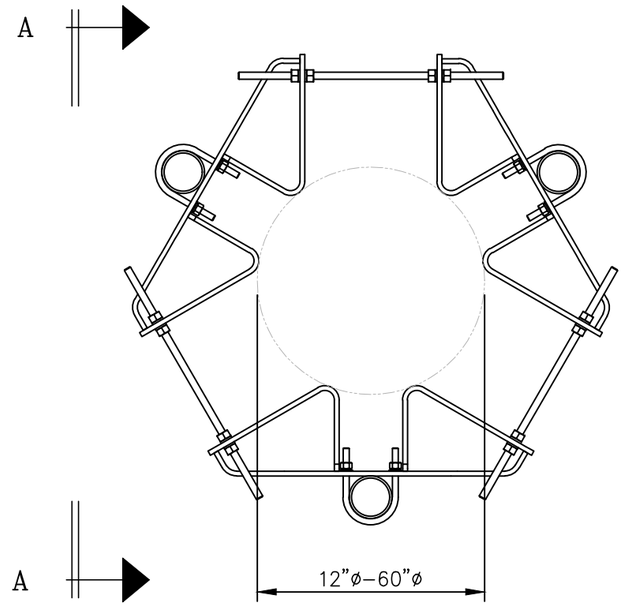
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	2	C10112378	TRI-COLLAR BRACKET ASSEMBLY	732
2.	3	C10901407	PIPE, 4 1/2 O.D. X .237 X 7'-0	236
3.	12	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16 C-C	26
			TOTAL WEIGHT	994



ISOMETRIC VIEW



VIEW A-A



PLAN VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	02/03/17	WRF	KLE	COLLAR WAS C10112301

Sabre Industries™
Towers and Poles

4 1/2" O.D. PIPE MOUNT ASSEMBLY FOR MONOPOLES (FITS 12" TO 60" DIAMETER)

		SIZE	DRAWING NO.	REV
DATE	01/26/16	B	C10899055	1
DRAWN BY	WRF			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	

Exhibit D

Structural Analysis Report

Date: **March 03, 2022**

Crown Castle
2000 Corporate Drive
Canonsburg. PA 15317
(724) 416-2000

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Site Number:	CTL05163
	Site Name:	WOODBRIDGE COUNTRY CLUB
	FA Number:	10071344
Crown Castle Designation:	**BU Number:**	842879
	Site Name:	WOODBRIDGE COUNTRY CLUB
	JDE Job Number:	686241
	Work Order Number:	2061495
	Order Number:	586276 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	2061495
Site Data:	**50 WOODFIELD ROAD, WOODBRIDGE, NEW HAVEN County, CT**	
	Latitude *41° 19' 39.5"*, Longitude *-72° 59' 36.84"*	
	102 Foot - Monopole Tower	

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

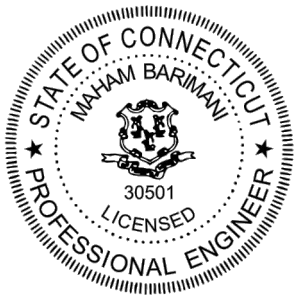
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity-29.4%**

This analysis utilizes an ultimate 3-second gust wind speed of 119 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: Kibreab Gebremariam

Respectfully submitted by:



Maham Barimani, P.E.
Senior Project Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 102 ft Monopole tower designed by EEI.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	119 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 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)
98.0	102.0	3	ericsson	RRUS 4449 B5/B12	2 2 3 6	3/8 13/16 7/8 1-5/8
		3	ericsson	RRUS 4478 B14_CCIV2		
		3	ericsson	RRUS 8843 B2/B66A_CCIV2		
		1	raycap	DC6-48-60-18-8F		
		1	raycap	DC9-48-60-24-8C-EV		
	101.0	3	cci antennas	DMP65R-BU6D w/ Mount Pipe		
		3	cci antennas	OPA65R-BU6D w/ Mount Pipe		
		3	ericsson	AIR 6419 B77G_CCIV3 w/ Mount Pipe		
	98.0	1	Sabre	part # C10-857-802 C10857001C		
	97.0	3	ericsson	AIR 6449 B77D w/ Mount Pipe		

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)
90.0	90.0	3	alcatel lucent	RRH2X40-AWS	13	1-5/8
		3	antel	BXA-171063-8BF-2 w/ Mount Pipe		
		3	antel	BXA-171063/8CF w/ Mount Pipe		
		3	antel	BXA-70063/6CF w/ Mount Pipe		
		3	antel	BXA-80063/4CF w/ Mount Pipe		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		1	tower mounts	Platform Mount [LP 303-1]		
80.0	83.0	1	dragonwave	A-ANT-18G-2-C	4 5	5/16 1/2
		1	dragonwave	A-ANT-18G-2-C		
		2	dragonwave	HORIZON DUO		
	80.0	3	argus technologies	LLPX310R w/ Mount Pipe		
		3	samsung	URAS-FLEXIBLE		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
			telecommunications			
		1	tower mounts	Side Arm Mount [SO 102-3]		
67.0	67.0	3	fujitsu	TA08025-B604	1	1-3/8
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	4529495	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	7160639	CCISITES
4-TOWER MANUFACTURER DRAWINGS	7160648	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	102 - 86.58	Pole	TP34.3925x29.58x0.3125	1	-5.55	1984.45	3.4	Pass
L2	86.58 - 42.7433	Pole	TP47.4475x32.2591x0.375	2	-21.19	3293.22	17.2	Pass
L3	42.7433 - 0	Pole	TP60x44.669x0.375	3	-36.76	4359.25	28.4	Pass
							Summary	
						Pole (L3)	28.4	Pass
						Rating =	28.4	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	22.9	Pass
1	Base Plate	0	29.4	Pass
1	Base Foundation (Structure)	0	28.3	Pass
1	Base Foundation (Soil Interaction)	0	29.3	Pass

Structure Rating (max from all components) =	29.4%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

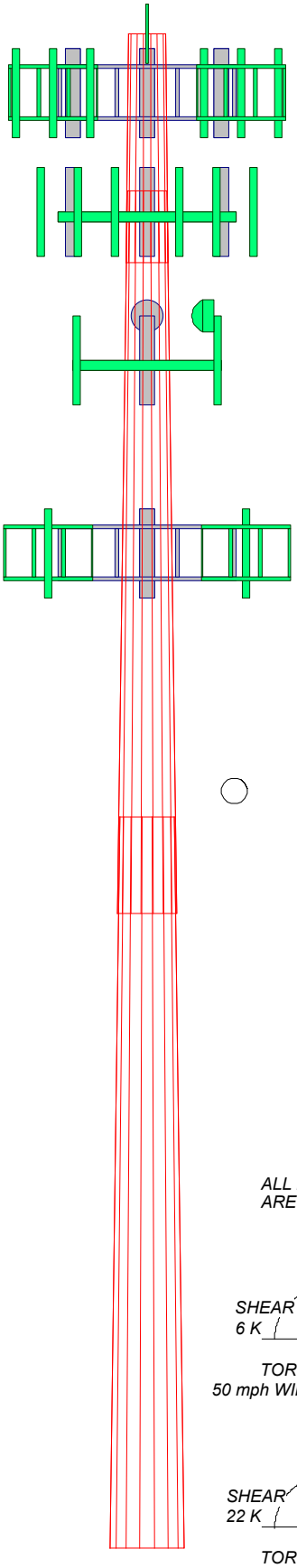
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	15.42	18	0.3125	4.83	29.5800	34.3925		1.6
2	48.67	18	0.3750	6.50	32.2591	47.4475	A572-65	7.8
3	49.24	18	0.3750		44.6690	60.0000		10.4
								19.8



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 119 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 28.4%

ALL REACTIONS ARE FACTORED

AXIAL 50 K
SHEAR 6 K
MOMENT 426 kip-ft
TORQUE 0 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 37 K
SHEAR 22 K
MOMENT 1572 kip-ft
TORQUE 1 kip-ft
REACTIONS - 119 mph WIND

CROWN CASTLE
The pathway to Possible
Crown Castle
2000 Corporate Drive
Canonsburg. PA 15317
Phone: (724) 416-2000
FAX:

Job: *BU 842879*			
Project:			
Client: Crown Castle	Drawn by: KGebremariam		App'd:
Code: TIA-222-H	Date: 03/03/22		Scale: NTS
Path: C:\Users\KGebremariam\Desktop\Work Area\842879\WO 2061495 - SA\Prod\842879.eri			Dwg No. E-1

Tower Input Data

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

- Tower is located in New Haven County, Connecticut.
- Tower base elevation above sea level: 360.00 ft.
- Basic wind speed of 119 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	102.00-86.58	15.42	4.83	18	29.5800	34.3925	0.3125	1.2500	A572-65 (65 ksi)
L2	86.58-42.74	48.67	6.50	18	32.2591	47.4475	0.3750	1.5000	A572-65 (65 ksi)
L3	42.74-0.00	49.24		18	44.6690	60.0000	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	29.9881	29.0297	3141.6028	10.3900	15.0266	209.0689	6287.3394	14.5176	4.6561	14.899
	34.8749	33.8031	4960.1311	12.0984	17.4714	283.9002	9926.7888	16.9048	5.5031	17.61
L2	34.2304	37.9500	4874.1199	11.3188	16.3876	297.4273	9754.6533	18.9786	5.0176	13.38
	48.1216	56.0280	15684.7439	16.7107	24.1033	650.7293	31390.1262	28.0193	7.6908	20.509
L3	47.3552	52.7210	13068.0765	15.7244	22.6919	575.8923	26153.3483	26.3655	7.2018	19.205
	60.8677	70.9687	31875.7797	21.1669	30.4800	1045.7933	63793.5023	35.4911	9.9000	26.4

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 102.00-86.58				1	1	1			
L2 86.58-42.74				1	1	1			
L3 42.74-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
* ***										
CU12PSM9P8XXX(1-3/8) *** ** *	C	No	Surface Ar (CaAa)	67.00 - 0.00	1	1	0.500 0.500	1.4110		1.66

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
* ***98***									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	98.00 - 0.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	98.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	98.00 - 0.00	2	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	98.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
WR-VG66ST-BRD(7/8)	A	No	No	Inside Pole	98.00 - 0.00	3	No Ice	0.00	0.91
							1/2" Ice	0.00	0.91
							1" Ice	0.00	0.91
90									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	90.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	C	No	No	Inside Pole	90.00 - 0.00	1	No Ice	0.00	1.07
							1/2" Ice	0.00	1.07
							1" Ice	0.00	1.07
80									
LDF4-50A(1/2)	B	No	No	Inside Pole	80.00 - 0.00	5	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
9207(5/16)	B	No	No	Inside Pole	80.00 - 0.00	4	No Ice	0.00	0.60
							1/2" Ice	0.00	0.60
							1" Ice	0.00	0.60
2" Flex Conduit	B	No	No	Inside Pole	80.00 - 0.00	2	No Ice	0.00	0.36
							1/2" Ice	0.00	0.36
							1" Ice	0.00	0.36
75									
***									
***									
**									
*									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	102.00-86.58	A	0.000	0.000	0.000	0.000	0.10
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L2	86.58-42.74	A	0.000	0.000	0.000	0.000	0.39
		B	0.000	0.000	0.000	0.000	0.14
		C	0.000	0.000	3.423	0.000	0.52
L3	42.74-0.00	A	0.000	0.000	0.000	0.000	0.38
		B	0.000	0.000	0.000	0.000	0.17
		C	0.000	0.000	6.031	0.000	0.54

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	102.00-86.58	A	0.944	0.000	0.000	0.000	0.000	0.10
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
L2	86.58-42.74	A	0.908	0.000	0.000	0.000	0.000	0.39
		B		0.000	0.000	0.000	0.000	0.14

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	8.002	0.000	0.58
L3	42.74-0.00	A	0.814	0.000	0.000	0.000	0.000	0.38
		B		0.000	0.000	0.000	0.000	0.17
		C		0.000	0.000	13.793	0.000	0.65

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	102.00-86.58	0.0000	0.0000	0.0000	0.0000
L2	86.58-42.74	-0.5900	0.3406	-0.7949	0.4590
L3	42.74-0.00	-0.9746	0.5627	-1.2976	0.7492

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L2	23	CU12PSM9P8XXX(1-3/8)	42.74 - 67.00	1.0000	1.0000
L3	23	CU12PSM9P8XXX(1-3/8)	0.00 - 42.74	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft
Lighting Rod 5/8" x 4' ***98***	C	None		0.0000	102.00
AIR 6419 B77G_CCIV3 w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.0000	98.00
AIR 6419 B77G_CCIV3 w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.0000	98.00
AIR 6419 B77G_CCIV3 w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	98.00
AIR 6449 B77D w/ Mount Pipe	A	From Leg	4.00 0.00 -1.00	0.0000	98.00
AIR 6449 B77D w/ Mount Pipe	B	From Leg	4.00 0.00 -1.00	0.0000	98.00

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* °	*Placement* *ft*
AIR 6449 B77D w/ Mount Pipe	C	From Leg	4.00 0.00 -1.00	0.0000	98.00
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.0000	98.00
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.0000	98.00
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	98.00
OPA65R-BU6D w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.0000	98.00
OPA65R-BU6D w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.0000	98.00
OPA65R-BU6D w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	98.00
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 4449 B5/B12	B	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 4449 B5/B12	C	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 4478 B14_CCIV2	A	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 4478 B14_CCIV2	B	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 4478 B14_CCIV2	C	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 8843 B2/B66A_CCIV2	A	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 8843 B2/B66A_CCIV2	B	From Leg	4.00 0.00 4.00	0.0000	98.00
RRUS 8843 B2/B66A_CCIV2	C	From Leg	4.00 0.00 4.00	0.0000	98.00
DC6-48-60-18-8F	B	From Leg	4.00 0.00 4.00	0.0000	98.00
DC9-48-60-24-8C-EV	B	From Leg	4.00 0.00 4.00	0.0000	98.00
Sabre part # C10-857-802 C10857001C	C	None		0.0000	98.00
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	98.00
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	98.00
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	98.00

90

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RRH2X40-AWS	A	From Leg	4.00 0.00 0.00	0.0000	90.00
RRH2X40-AWS	B	From Leg	4.00 0.00 0.00	0.0000	90.00
RRH2X40-AWS	C	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-171063-8BF-2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-171063-8BF-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-171063-8BF-2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-171063/8CF w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-171063/8CF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-171063/8CF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-80063/4CF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-80063/4CF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-80063/4CF w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-70063/6CF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-70063/6CF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	90.00
BXA-70063/6CF w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	90.00
DB-T1-6Z-8AB-0Z	A	From Leg	4.00 0.00 0.00	0.0000	90.00
Platform Mount [LP 303-1]	C	None		0.0000	90.00
80					
LLPX310R w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	80.00
LLPX310R w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	80.00
LLPX310R w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	80.00
HORIZON DUO	A	From Leg	4.00 0.00 3.00	0.0000	80.00
HORIZON DUO	B	From Leg	4.00 0.00 3.00	0.0000	80.00

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* °	*Placement* *ft*
URAS-FLEXIBLE	A	From Leg	4.00 0.00 0.00	0.0000	80.00
URAS-FLEXIBLE	B	From Leg	4.00 0.00 0.00	0.0000	80.00
URAS-FLEXIBLE	C	From Leg	4.00 0.00 0.00	0.0000	80.00
Side Arm Mount [SO 102-3]	C	None		0.0000	80.00
6' x 2" Mount Pipe	A	From Leg	2.00 0.00 0.00	0.0000	80.00
6' x 2" Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	80.00
6' x 2" Mount Pipe	C	From Leg	2.00 0.00 0.00	0.0000	80.00
75 ***					
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	67.00
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	67.00
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	67.00
TA08025-B604	A	From Leg	4.00 0.00 0.00	0.0000	67.00
TA08025-B604	B	From Leg	4.00 0.00 0.00	0.0000	67.00
TA08025-B604	C	From Leg	4.00 0.00 0.00	0.0000	67.00
TA08025-B605	A	From Leg	4.00 0.00 0.00	0.0000	67.00
TA08025-B605	B	From Leg	4.00 0.00 0.00	0.0000	67.00
TA08025-B605	C	From Leg	4.00 0.00 0.00	0.0000	67.00
RDIDC-9181-PF-48	A	From Leg	4.00 0.00 0.00	0.0000	67.00
(2) 8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	67.00
(2) 8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	67.00
(2) 8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	67.00
Commscope MC-PK8-DSH ***** ***** ***	C	None		0.0000	67.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral / Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter
				ft	°	°	ft	ft
dragonwave A-ANT-18G-2-C	A	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 3.00	0.0000		80.00	2.17
A-ANT-18G-2-C	B	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 3.00	0.0000		80.00	2.17

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

Comb. No.	Description
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	102 - 86.58	Pole	Max Tension	26	0.00	0.00	0.00
			Max. Compression	26	-9.36	-0.65	-0.37
			Max. Mx	8	-5.55	-50.58	-0.15
			Max. My	14	-5.55	-0.27	-50.47
			Max. Vy	20	-6.24	50.03	-0.15
			Max. Vx	14	6.24	-0.27	-50.47
			Max. Torque	5			-0.51
L2	86.58 - 42.7433	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.63	-1.70	1.07
			Max. Mx	20	-21.19	592.65	3.16
			Max. My	14	-21.19	-2.70	-598.74
			Max. Vy	20	-17.01	592.65	3.16
			Max. Vx	14	17.18	-2.70	-598.74
			Max. Torque	23			-0.86
L3	42.7433 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.11	-1.70	0.59
			Max. Mx	20	-36.76	1557.73	7.17
			Max. My	14	-36.76	-6.01	-1572.40
			Max. Vy	20	-22.10	1557.73	7.17
			Max. Vx	14	22.27	-6.01	-1572.40
			Max. Torque	23			-0.86

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	50.11	0.00	0.00
	Max. H_x	21	27.57	22.09	0.08
	Max. H_z	2	36.76	0.10	22.22
	Max. M_x	2	1569.91	0.10	22.22
	Max. M_z	8	1555.23	-22.05	-0.04
	Max. Torsion	13	0.85	-11.06	-19.29
	Min. Vert	7	27.57	-19.08	11.08
	Min. H_x	8	36.76	-22.05	-0.04
	Min. H_z	14	36.76	-0.07	-22.26
	Min. M_x	14	-1572.40	-0.07	-22.26
	Min. M_z	20	-1557.73	22.09	0.08
	Min. Torsion	23	-0.86	19.13	11.19

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	30.64	0.00	0.00	-0.03	-0.35	0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 0 deg - No Ice	36.76	-0.10	-22.22	-1569.91	8.36	0.69
0.9 Dead+1.0 Wind 0 deg - No Ice	27.57	-0.10	-22.22	-1565.50	8.45	0.69
1.2 Dead+1.0 Wind 30 deg - No Ice	36.76	10.99	-19.23	-1357.85	-775.10	0.49
0.9 Dead+1.0 Wind 30 deg - No Ice	27.57	10.99	-19.23	-1354.03	-772.82	0.49
1.2 Dead+1.0 Wind 60 deg - No Ice	36.76	19.08	-11.08	-782.51	-1345.96	-0.10
0.9 Dead+1.0 Wind 60 deg - No Ice	27.57	19.08	-11.08	-780.30	-1342.08	-0.10
1.2 Dead+1.0 Wind 90 deg - No Ice	36.76	22.05	0.04	3.11	-1555.23	-0.66
0.9 Dead+1.0 Wind 90 deg - No Ice	27.57	22.05	0.04	3.11	-1550.76	-0.66
1.2 Dead+1.0 Wind 120 deg - No Ice	36.76	19.08	11.20	792.51	-1345.84	-0.78
0.9 Dead+1.0 Wind 120 deg - No Ice	27.57	19.08	11.20	790.30	-1341.96	-0.79
1.2 Dead+1.0 Wind 150 deg - No Ice	36.76	11.06	19.29	1363.37	-780.78	-0.85
0.9 Dead+1.0 Wind 150 deg - No Ice	27.57	11.06	19.29	1359.55	-778.48	-0.85
1.2 Dead+1.0 Wind 180 deg - No Ice	36.76	0.07	22.26	1572.40	-6.01	-0.77
0.9 Dead+1.0 Wind 180 deg - No Ice	27.57	0.07	22.26	1568.00	-5.88	-0.77
1.2 Dead+1.0 Wind 210 deg - No Ice	36.76	-10.97	19.28	1362.68	772.47	-0.49
0.9 Dead+1.0 Wind 210 deg - No Ice	27.57	-10.97	19.28	1358.87	770.42	-0.49
1.2 Dead+1.0 Wind 240 deg - No Ice	36.76	-19.10	11.09	783.19	1346.42	0.10
0.9 Dead+1.0 Wind 240 deg - No Ice	27.57	-19.10	11.09	781.00	1342.75	0.10
1.2 Dead+1.0 Wind 270 deg - No Ice	36.76	-22.09	-0.08	-7.17	1557.73	0.66
0.9 Dead+1.0 Wind 270 deg - No Ice	27.57	-22.09	-0.08	-7.14	1553.47	0.66
1.2 Dead+1.0 Wind 300 deg - No Ice	36.76	-19.13	-11.19	-791.09	1348.81	0.86
0.9 Dead+1.0 Wind 300 deg - No Ice	27.57	-19.13	-11.19	-788.86	1345.13	0.86
1.2 Dead+1.0 Wind 330 deg - No Ice	36.76	-11.08	-19.28	-1362.42	781.70	0.85
0.9 Dead+1.0 Wind 330 deg - No Ice	27.57	-11.08	-19.28	-1358.58	779.62	0.85
1.2 Dead+1.0 Ice+1.0 Temp	50.11	0.00	0.00	-0.59	-1.70	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	50.11	-0.02	-6.20	-425.88	0.04	0.19
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	50.11	3.08	-5.37	-368.55	-212.38	0.15
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	50.11	5.34	-3.09	-212.75	-367.34	0.02
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	50.11	6.17	0.01	0.02	-424.12	-0.11
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	50.11	5.34	3.12	213.56	-367.31	-0.17
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	50.11	3.09	5.38	368.45	-213.54	-0.20
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	50.11	0.01	6.21	425.16	-2.89	-0.20
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	50.11	-3.07	5.38	368.30	208.52	-0.15
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	50.11	-5.34	3.10	211.66	364.10	-0.02
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	50.11	-6.17	-0.02	-2.07	421.30	0.11

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	50.11	-5.35	-3.11	-214.49	364.59	0.18
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	50.11	-3.09	-5.38	-369.48	210.40	0.20
Dead+Wind 0 deg - Service	30.64	-0.03	-5.32	-375.55	1.74	0.18
Dead+Wind 30 deg - Service	30.64	2.63	-4.61	-324.83	-185.67	0.13
Dead+Wind 60 deg - Service	30.64	4.57	-2.66	-187.20	-322.22	-0.01
Dead+Wind 90 deg - Service	30.64	5.28	0.01	0.72	-372.28	-0.15
Dead+Wind 120 deg - Service	30.64	4.57	2.68	189.55	-322.19	-0.19
Dead+Wind 150 deg - Service	30.64	2.65	4.62	326.10	-187.02	-0.21
Dead+Wind 180 deg - Service	30.64	0.02	5.33	376.10	-1.69	-0.20
Dead+Wind 210 deg - Service	30.64	-2.63	4.62	325.94	184.53	-0.14
Dead+Wind 240 deg - Service	30.64	-4.58	2.66	187.32	321.82	0.01
Dead+Wind 270 deg - Service	30.64	-5.29	-0.02	-1.74	372.36	0.15
Dead+Wind 300 deg - Service	30.64	-4.58	-2.68	-189.25	322.39	0.21
Dead+Wind 330 deg - Service	30.64	-2.65	-4.62	-325.92	186.73	0.21

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-30.64	0.00	0.00	30.64	0.00	0.000%
2	-0.10	-36.76	-22.22	0.10	36.76	22.22	0.000%
3	-0.10	-27.57	-22.22	0.10	27.57	22.22	0.000%
4	10.99	-36.76	-19.23	-10.99	36.76	19.23	0.000%
5	10.99	-27.57	-19.23	-10.99	27.57	19.23	0.000%
6	19.08	-36.76	-11.08	-19.08	36.76	11.08	0.000%
7	19.08	-27.57	-11.08	-19.08	27.57	11.08	0.000%
8	22.05	-36.76	0.04	-22.05	36.76	-0.04	0.000%
9	22.05	-27.57	0.04	-22.05	27.57	-0.04	0.000%
10	19.08	-36.76	11.20	-19.08	36.76	-11.20	0.000%
11	19.08	-27.57	11.20	-19.08	27.57	-11.20	0.000%
12	11.06	-36.76	19.29	-11.06	36.76	-19.29	0.000%
13	11.06	-27.57	19.29	-11.06	27.57	-19.29	0.000%
14	0.07	-36.76	22.26	-0.07	36.76	-22.26	0.000%
15	0.07	-27.57	22.26	-0.07	27.57	-22.26	0.000%
16	-10.97	-36.76	19.28	10.97	36.76	-19.28	0.000%
17	-10.97	-27.57	19.28	10.97	27.57	-19.28	0.000%
18	-19.10	-36.76	11.09	19.10	36.76	-11.09	0.000%
19	-19.10	-27.57	11.09	19.10	27.57	-11.09	0.000%
20	-22.09	-36.76	-0.08	22.09	36.76	0.08	0.000%
21	-22.09	-27.57	-0.08	22.09	27.57	0.08	0.000%
22	-19.13	-36.76	-11.19	19.13	36.76	11.19	0.000%
23	-19.13	-27.57	-11.19	19.13	27.57	11.19	0.000%
24	-11.08	-36.76	-19.28	11.08	36.76	19.28	0.000%
25	-11.08	-27.57	-19.28	11.08	27.57	19.28	0.000%
26	0.00	-50.11	0.00	0.00	50.11	0.00	0.000%
27	-0.02	-50.11	-6.20	0.02	50.11	6.20	0.000%
28	3.08	-50.11	-5.37	-3.08	50.11	5.37	0.000%
29	5.34	-50.11	-3.09	-5.34	50.11	3.09	0.000%
30	6.17	-50.11	0.01	-6.17	50.11	-0.01	0.000%
31	5.34	-50.11	3.12	-5.34	50.11	-3.12	0.000%
32	3.09	-50.11	5.38	-3.09	50.11	-5.38	0.000%
33	0.01	-50.11	6.21	-0.01	50.11	-6.21	0.000%
34	-3.07	-50.11	5.38	3.07	50.11	-5.38	0.000%
35	-5.34	-50.11	3.10	5.34	50.11	-3.10	0.000%
36	-6.17	-50.11	-0.02	6.17	50.11	0.02	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
37	-5.35	-50.11	-3.11	5.35	50.11	3.11	0.000%
38	-3.09	-50.11	-5.38	3.09	50.11	5.38	0.000%
39	-0.03	-30.64	-5.32	0.03	30.64	5.32	0.000%
40	2.63	-30.64	-4.61	-2.63	30.64	4.61	0.000%
41	4.57	-30.64	-2.66	-4.57	30.64	2.66	0.000%
42	5.28	-30.64	0.01	-5.28	30.64	-0.01	0.000%
43	4.57	-30.64	2.68	-4.57	30.64	-2.68	0.000%
44	2.65	-30.64	4.62	-2.65	30.64	-4.62	0.000%
45	0.02	-30.64	5.33	-0.02	30.64	-5.33	0.000%
46	-2.63	-30.64	4.62	2.63	30.64	-4.62	0.000%
47	-4.58	-30.64	2.66	4.58	30.64	-2.66	0.000%
48	-5.29	-30.64	-0.02	5.29	30.64	0.02	0.000%
49	-4.58	-30.64	-2.68	4.58	30.64	2.68	0.000%
50	-2.65	-30.64	-4.62	2.65	30.64	4.62	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00001611
3	Yes	4	0.00000001	0.00001056
4	Yes	4	0.00000001	0.00007881
5	Yes	4	0.00000001	0.00005178
6	Yes	4	0.00000001	0.00007099
7	Yes	4	0.00000001	0.00004651
8	Yes	4	0.00000001	0.00001162
9	Yes	4	0.00000001	0.00000751
10	Yes	4	0.00000001	0.00006671
11	Yes	4	0.00000001	0.00004360
12	Yes	4	0.00000001	0.00008299
13	Yes	4	0.00000001	0.00005457
14	Yes	4	0.00000001	0.00001912
15	Yes	4	0.00000001	0.00001259
16	Yes	4	0.00000001	0.00006600
17	Yes	4	0.00000001	0.00004315
18	Yes	4	0.00000001	0.00007191
19	Yes	4	0.00000001	0.00004718
20	Yes	4	0.00000001	0.00001277
21	Yes	4	0.00000001	0.00000830
22	Yes	4	0.00000001	0.00008170
23	Yes	4	0.00000001	0.00005375
24	Yes	4	0.00000001	0.00006560
25	Yes	4	0.00000001	0.00004284
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00010878
28	Yes	4	0.00000001	0.00011094
29	Yes	4	0.00000001	0.00011070
30	Yes	4	0.00000001	0.00010842
31	Yes	4	0.00000001	0.00011044
32	Yes	4	0.00000001	0.00011052
33	Yes	4	0.00000001	0.00010797
34	Yes	4	0.00000001	0.00010917
35	Yes	4	0.00000001	0.00010861
36	Yes	4	0.00000001	0.00010678
37	Yes	4	0.00000001	0.00010954
38	Yes	4	0.00000001	0.00011029
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001

47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	102 - 86.58	3.197	44	0.2420	0.0005
L2	91.4133 - 42.7433	2.662	45	0.2386	0.0005
L3	49.2433 - 0	0.851	45	0.1542	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
102.00	Lighting Rod 5/8" x 4'	44	3.197	0.2420	0.0005	243466
98.00	AIR 6419 B77G_CCIV3 w/ Mount Pipe	44	2.994	0.2412	0.0005	243466
90.00	RRH2X40-AWS	45	2.592	0.2376	0.0005	92181
83.00	dragonwave A-ANT-18G-2-C	45	2.246	0.2303	0.0004	48888
80.00	LLPX310R w/ Mount Pipe	45	2.101	0.2260	0.0004	40510
67.00	MX08FRO665-21 w/ Mount Pipe	45	1.510	0.2007	0.0003	23208

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	102 - 86.58	13.374	14	1.0120	0.0021
L2	91.4133 - 42.7433	11.138	14	0.9976	0.0019
L3	49.2433 - 0	3.561	14	0.6450	0.0007

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
102.00	Lighting Rod 5/8" x 4'	14	13.374	1.0120	0.0021	59658
98.00	AIR 6419 B77G_CCIV3 w/ Mount Pipe	14	12.527	1.0088	0.0020	59658
90.00	RRH2X40-AWS	14	10.842	0.9935	0.0019	22457
83.00	dragonwave A-ANT-18G-2-C	14	9.396	0.9628	0.0017	11756
80.00	LLPX310R w/ Mount Pipe	14	8.790	0.9449	0.0016	9723
67.00	MX08FRO665-21 w/ Mount Pipe	14	6.317	0.8395	0.0013	5555

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	102 - 86.58 (1)	TP34.3925x29.58x0.3125	15.42	0.00	0.0	32.3069	-5.55	1889.95	0.003
L2	86.58 - 42.7433 (2)	TP47.4475x32.2591x0.375	48.67	0.00	0.0	53.6137	-21.19	3136.40	0.007
L3	42.7433 - 0 (3)	TP60x44.669x0.375	49.24	0.00	0.0	70.9687	-36.76	4151.67	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	102 - 86.58 (1)	TP34.3925x29.58x0.3125	50.63	1567.97	0.032	0.00	1567.97	0.000
L2	86.58 - 42.7433 (2)	TP47.4475x32.2591x0.375	598.75	3456.07	0.173	0.00	3456.07	0.000
L3	42.7433 - 0 (3)	TP60x44.669x0.375	1572.41	5436.67	0.289	0.00	5436.67	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	102 - 86.58 (1)	TP34.3925x29.58x0.3125	6.24	566.99	0.011	0.00	1617.30	0.000
L2	86.58 - 42.7433 (2)	TP47.4475x32.2591x0.375	17.18	940.92	0.018	0.77	3711.68	0.000
L3	42.7433 - 0 (3)	TP60x44.669x0.375	22.27	1245.50	0.018	0.77	6503.57	0.000

Pole Interaction Design Data

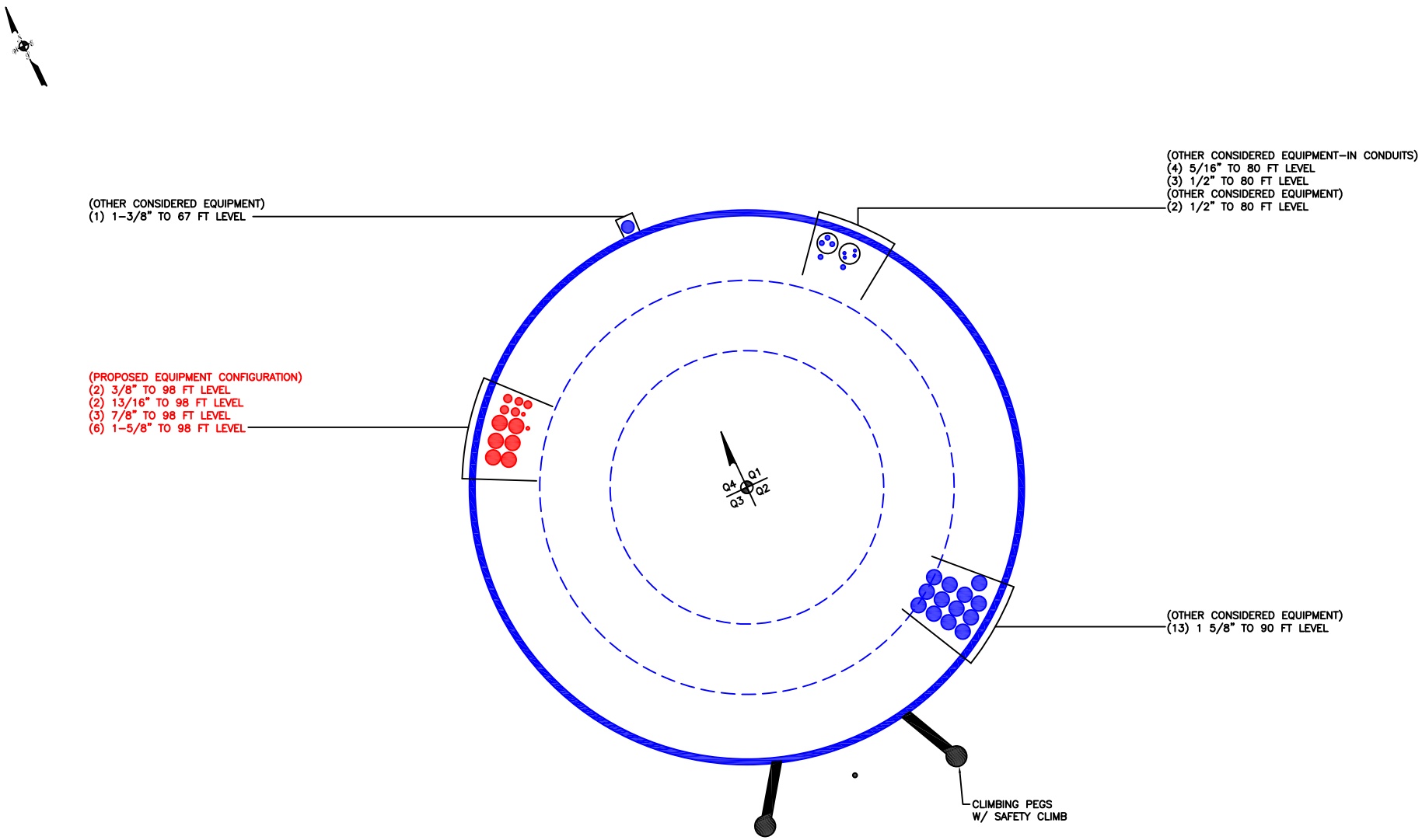
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	102 - 86.58 (1)	0.003	0.032	0.000	0.011	0.000	0.035	1.050	4.8.2
L2	86.58 - 42.7433 (2)	0.007	0.173	0.000	0.018	0.000	0.180	1.050	4.8.2
L3	42.7433 - 0 (3)	0.009	0.289	0.000	0.018	0.000	0.298	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	102 - 86.58	Pole	TP34.3925x29.58x0.3125	1	-5.55	1984.45	3.4	Pass
L2	86.58 - 42.7433	Pole	TP47.4475x32.2591x0.375	2	-21.19	3293.22	17.2	Pass
L3	42.7433 - 0	Pole	TP60x44.669x0.375	3	-36.76	4359.25	28.4	Pass
							Summary	
						Pole (L3)	28.4	Pass
						RATING =	**28.4**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(1) 1-3/8" TO 67 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN CONDUITS)
(4) 5/16" TO 80 FT LEVEL
(3) 1/2" TO 80 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 1/2" TO 80 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(2) 3/8" TO 98 FT LEVEL
(2) 13/16" TO 98 FT LEVEL
(3) 7/8" TO 98 FT LEVEL
(6) 1-5/8" TO 98 FT LEVEL
Q4
Q1
Q3
Q2
(OTHER CONSIDERED EQUIPMENT)
(13) 1 5/8" TO 90 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB

APPENDIX C

ADDITIONAL CALCULATIONS

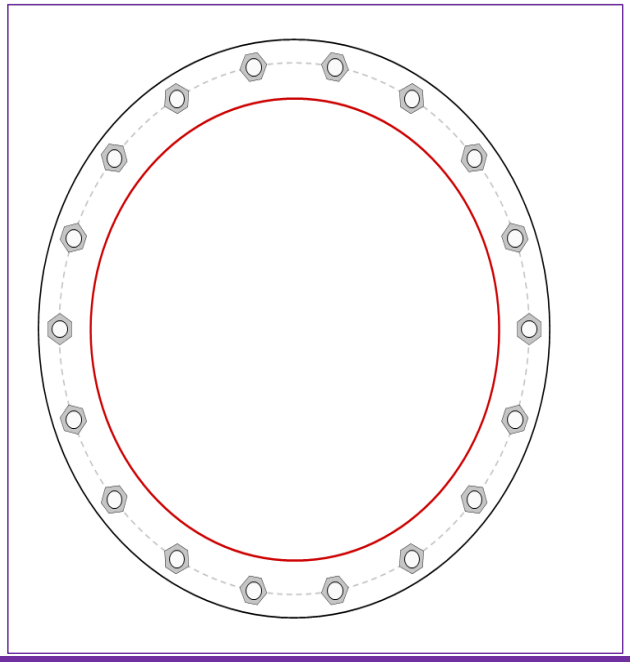
Monopole Base Plate Connection

Site Info	
BU #	842879
Site Name	ODBRIDGE COUNTRY C
Order #	586276, Rev 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2

Applied Loads	
Moment (kip-ft)	1572.00
Axial Force (kips)	37.00
Shear Force (kips)	22.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(18) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 69" BC

Base Plate Data

75" OD x 2" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

60" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary		*(units of kips, kip-in)*
Pu_t = 58.67	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.22	ϕVn = 149.1	**22.9%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary		
Max Stress (ksi):	16.69	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**29.4%**	**Pass**

Pier and Pad Foundation

BU # :	842879
Site Name:	WOODBRIDGE C(
App. Number:	586276, Rev 0

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☑
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions

Compression, P_{comp}:	37	kips
Base Shear, Vu_comp:	22	kips
Moment, M_u:	1572	ft-kips
Tower Height, **H**:	102	ft
BP Dist. Above Fdn, bp_{dist}:	4	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	7.5	ft
Ext. Above Grade, **E**:	1	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	40	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	4	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	5	in

Pad Properties

Depth, **D**:	5	ft
Pad Width, W_1:	27.5	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	24	
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	36	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	110	pcf
Ultimate Gross Bearing, Qult:	8.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:	60	
Base Friction, μ:		
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	n/a	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	178.63	22.00	**11.7%**	**Pass**
Bearing Pressure (ksf)	6.00	1.57	**24.9%**	**Pass**
*Overturning (kip*ft)*	5831.92	1711.33	**29.3%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	5517.45	1638.00	**28.3%**	**Pass**
Pier Compression (kip)	35802.00	67.38	**0.2%**	**Pass**
*Pad Flexure (kip*ft)*	3934.05	609.80	**14.8%**	**Pass**
Pad Shear - 1-way (kips)	986.16	87.37	**8.4%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.016	**8.3%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3898.96	982.80	**24.0%**	**Pass**

**Rating per TIA-222-H Section 15.5*

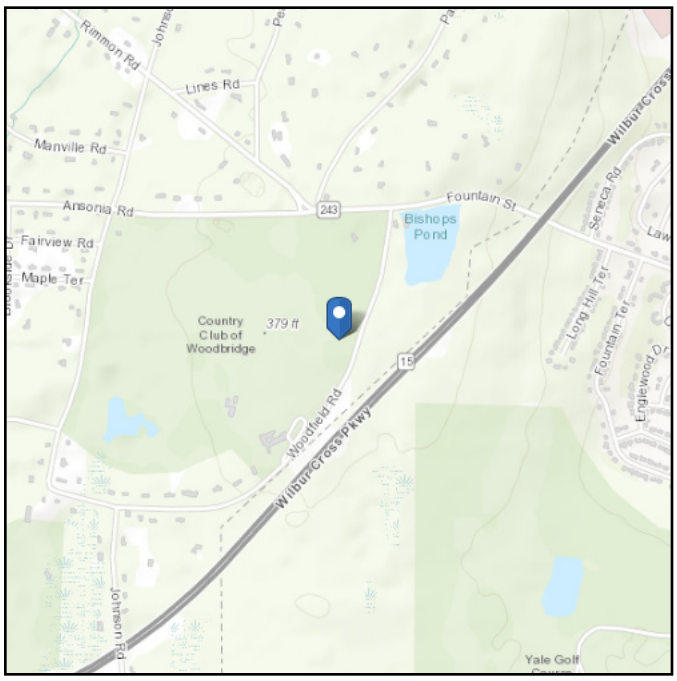
Structural Rating*:	**28.3%**
Soil Rating*:	**29.3%**

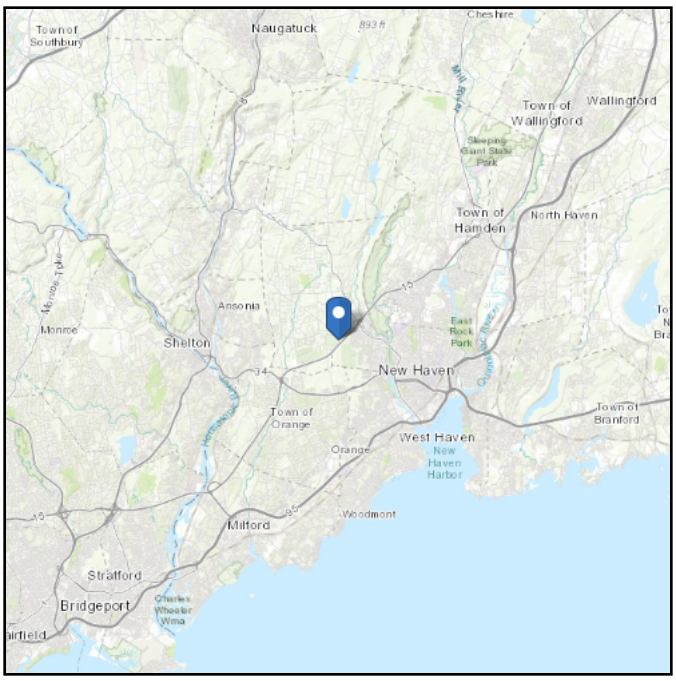
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 360.98 ft (NAVD 88)
Latitude: 41.327639
Longitude: -72.993567





Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Mar 03 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

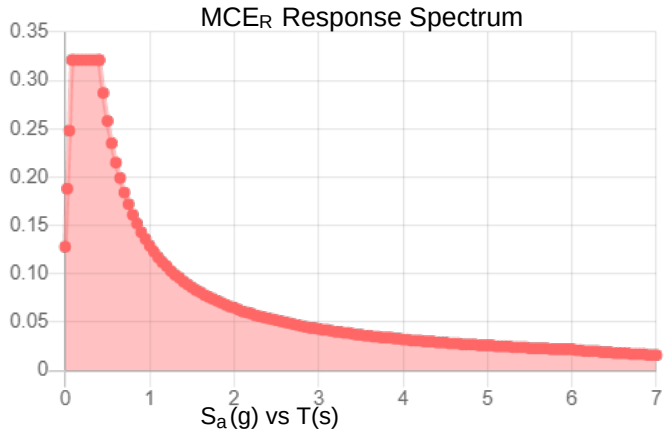
Seismic

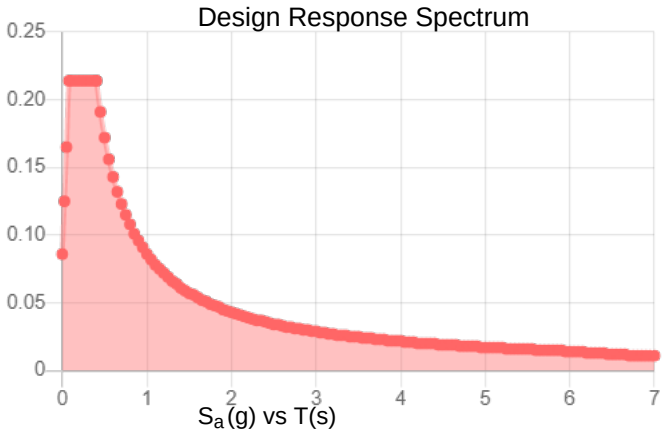
Site Soil Class: D - Stiff Soil

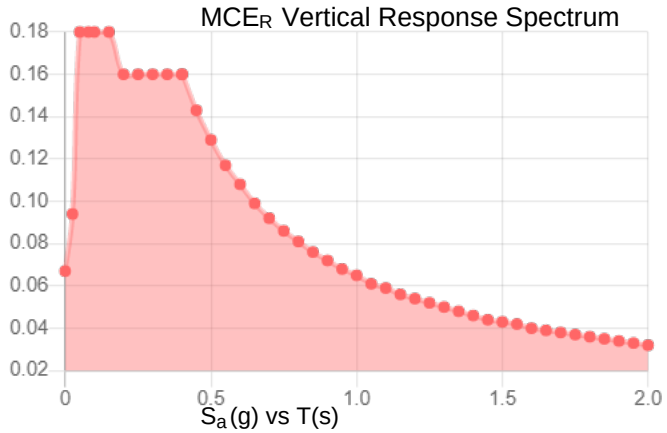
Results:

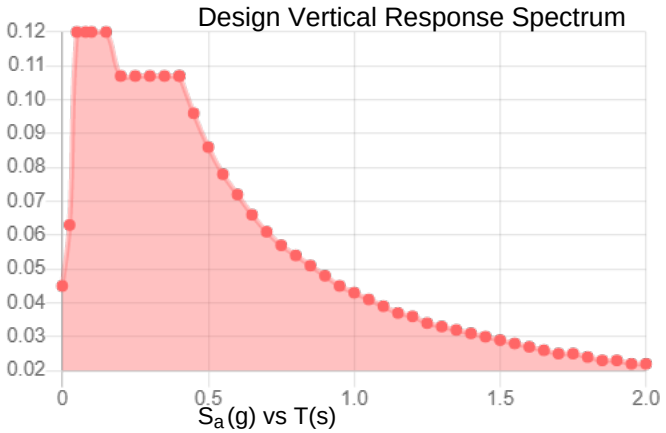
S_S :	0.2	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA_M :	0.177
S_{MS} :	0.321	F_{PGA} :	1.576
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.214	C_v :	0.701

Seismic Design Category B









Data Accessed: **Thu Mar 03 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Mar 03 2022

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

Exhibit E

Mount Analysis

Date: February 24, 2022

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

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**AT&T Mobility Equipment Change-Out**	
	Carrier Site Number:	CTL05163
	Carrier Site Name:	Woodbridge Country Club
	Carrier FA Number:	10071344
Crown Castle Designation:	**BU Number:**	842879
	Site Name:	Woodbridge Country Club
	JDE Job Number:	686241
	Order Number:	586276, Rev.0
Engineering Firm Designation:	**B+T Group Report Designation:**	140443.006.01
Site Data:	**50 Woodfield Road, Woodbridge, CT, New Haven County, 06525** **Latitude 41° 19' 39.50" Longitude -72° 59' 36.84"**	
Structure Information:	**Tower Height & Type:**	**102 ft. Monopole**
	Mount Elevation:	**98 ft.**
	Mount Type:	**13 ft. Sector Mount**

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

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

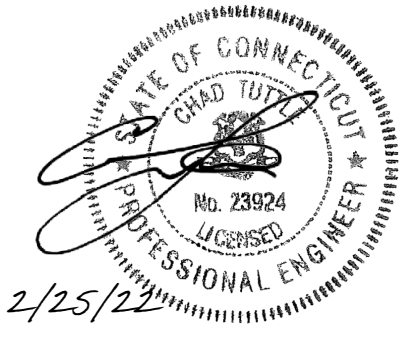
Sector Mount **Sufficient**

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

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 119 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Isaac Fulton

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2023



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is a proposed 3 - sector 13' Sector Mount, designed by Sabre (Part# C10-857-802).

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	119 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.2
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Qty.	Manufacturer	Model / Type	Mount / Modification Details
98	102	1	Raycap	DC6-48-60-18-8F	13 ft. Sector Mount
		1	Raycap	DC9-48-60-24-8C-EV	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4478 B14_CCIV2	
		3	Ericsson	RRUS 8843 B2/ B66A_CCIV2	
	101	3	CCI Antennas	DMP65R-BU6D	
		3	CCI Antennas	OPA65R-BU6D	
		3	Ericsson	AIR 6419 B77G_CCIV3	
	97	3	Ericsson	AIR 6449 B77D	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Proposed Loading Existing Loading	Date: 12/23/2021	Crown Castle
RFDS		Date: 10/08/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), 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.

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

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision D). In addition, this analysis is in accordance with *AT&T's Mount Technical Directive – R15.*

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
3. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members unless otherwise specified in this report.
4. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
   The following assumptions have been included in the analysis of the mount.

Component	Remarks	Length	Note
Proposed Mount Pipes	2' std. pipe	10'-0"	All Sectors

5. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
7. 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.
8. The following material grades were assumed (Unless Noted Otherwise):
   (a) Connection Bolts : ASTM A325
   (b) Steel Pipe : ASTM A53 (GR. 35)
   (c) HSS (Round) : ASTM 500 (GR. B-42)
   (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   (e) Channel : ASTM A36 (GR. 36)
   (f) Steel Solid Rod : ASTM A36 (GR. 36)
   (g) Steel Plate : ASTM A36 (GR. 36)
   (h) Steel Angle : ASTM A36 (GR. 36)
   (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1,2	Face Horizontals	98	5	49.9	Pass
	Support Arms	98	14	24.2	Pass
	Verticals	98	8	34.6	Pass
	Diagonals	98	44	12.9	Pass
	Connection Plates	98	2	21.8	Pass
	Mount Pipes	98	48	58.3	Pass
	Tiebacks	98	110	15.0	Pass
	Connection Pipe	98	39	21.9	Pass
3	Connection Bolts	98	-	44.4	Pass

Structure Rating (max from all components) =	58.3%

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) All sectors are typical
3) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

4.1) Recommendations

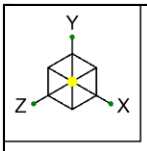
The proposed mount has sufficient capacity to support the proposed loading configuration. In order for the results of this analysis to be considered valid, the mount listed below shall be installed.

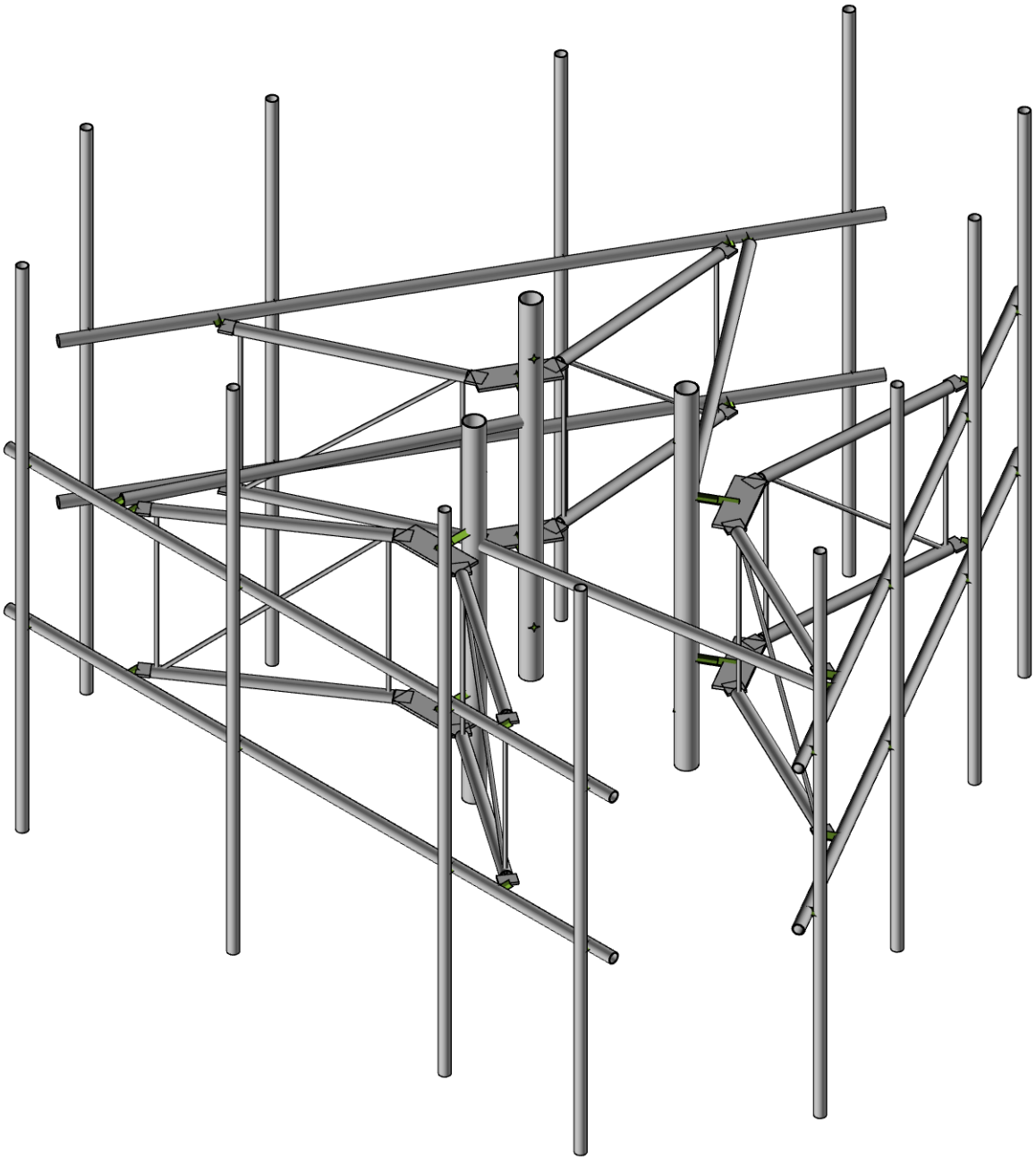
1. Mount replacement, Sabre (Part# C10-857-802) with (12) 2” STD mount pipes connected using (24) CommScope XP 2020.

Beyond the mount replacement, no structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

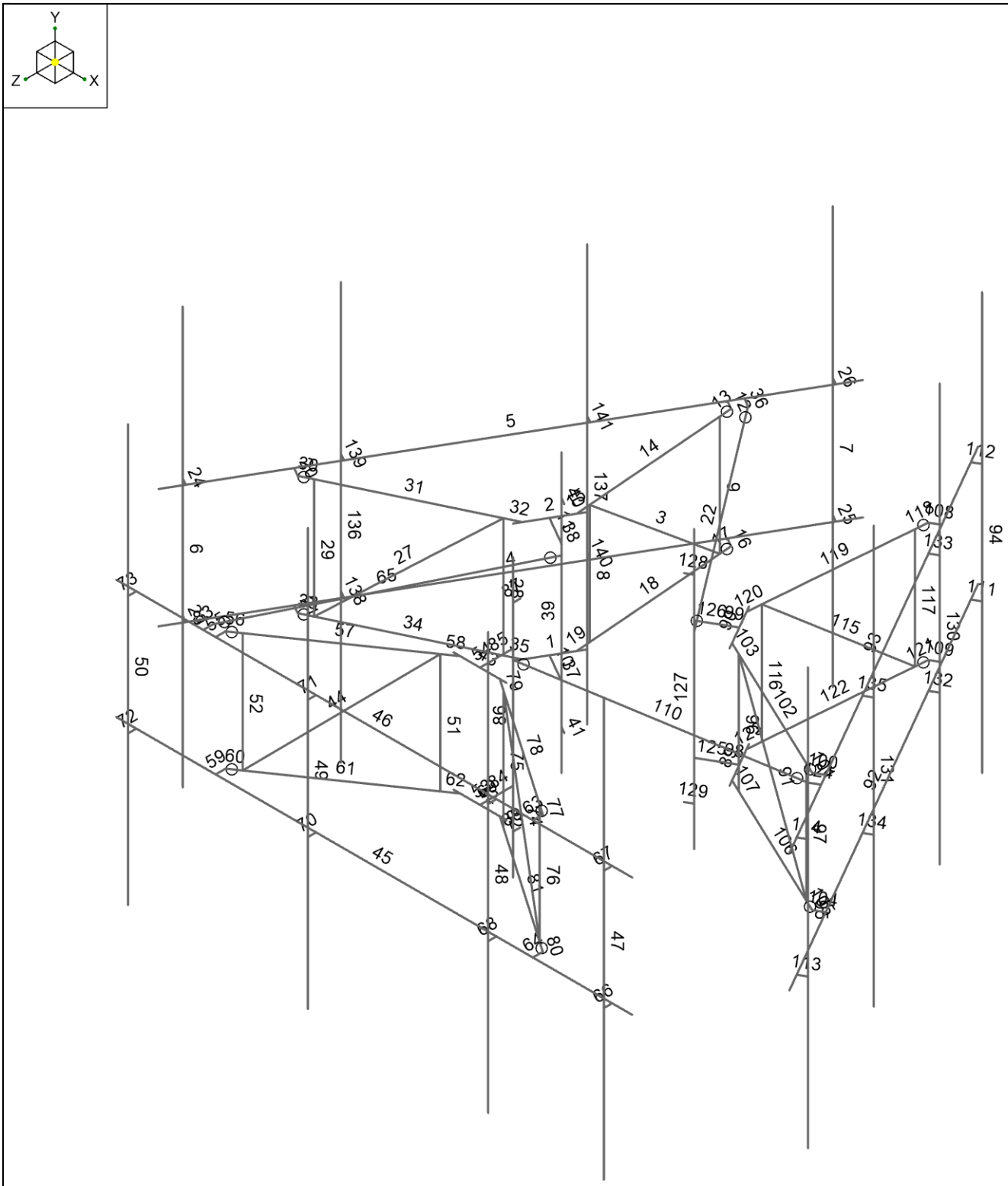
WIRE FRAME AND RENDERED MODELS





Envelope Only Solution

B+T Group	842879 - Woodbridge Country Club	SK-1
SUP		Feb 22, 2022
140443.006.01		140443_006_01_Woodbridge Cou…



Envelope Only Solution

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SUP		Feb 22, 2022
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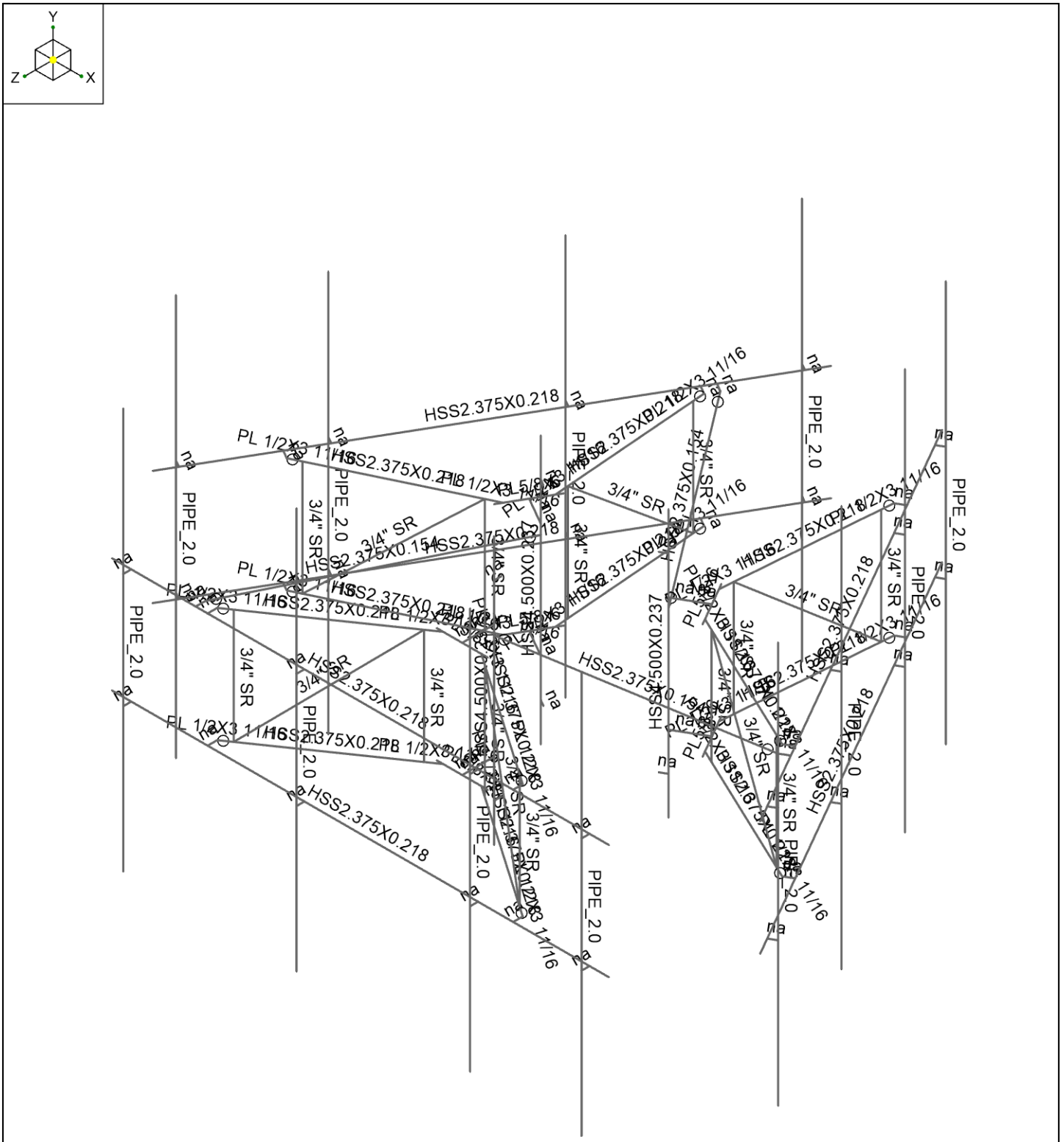

Envelope Only Solution

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SUP		Feb 22, 2022
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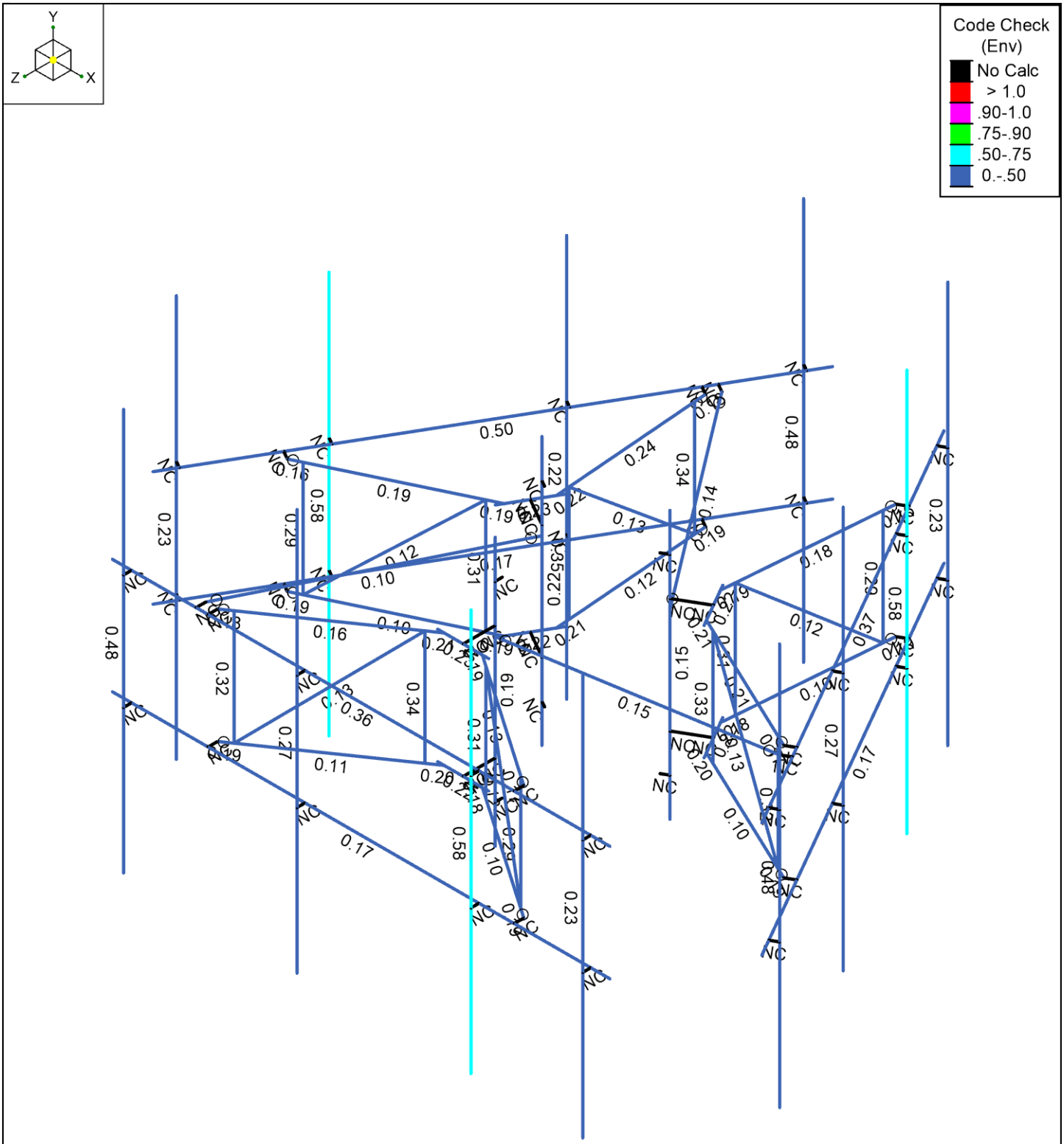

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	842879 - Woodbridge Country Club	SK-4
SUP		Feb 22, 2022
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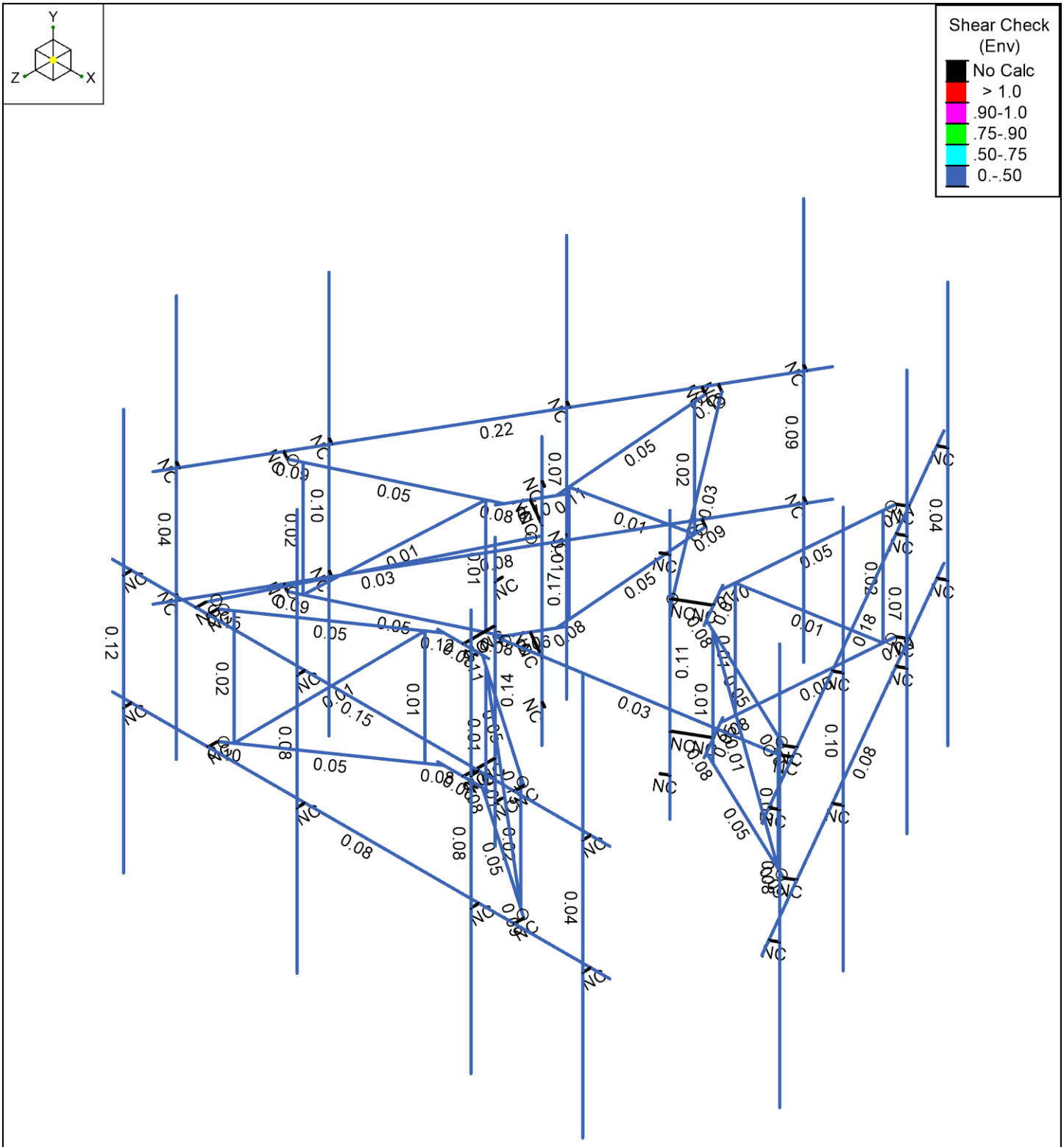


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	842879 - Woodbridge Country Club	SK-5
SUP		Feb 22, 2022
140443.006.01		140443_006_01_Woodbridge Cou…

APPENDIX B

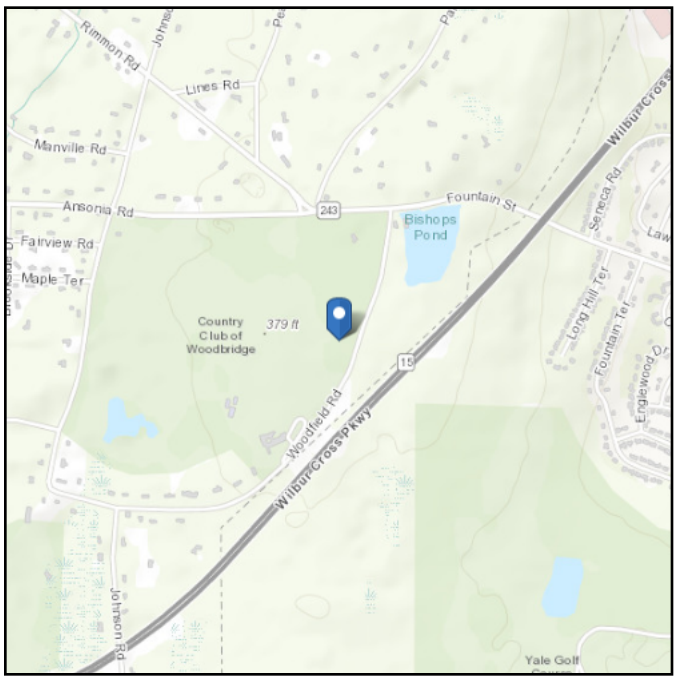
SOFTWARE INPUT CALCULATIONS

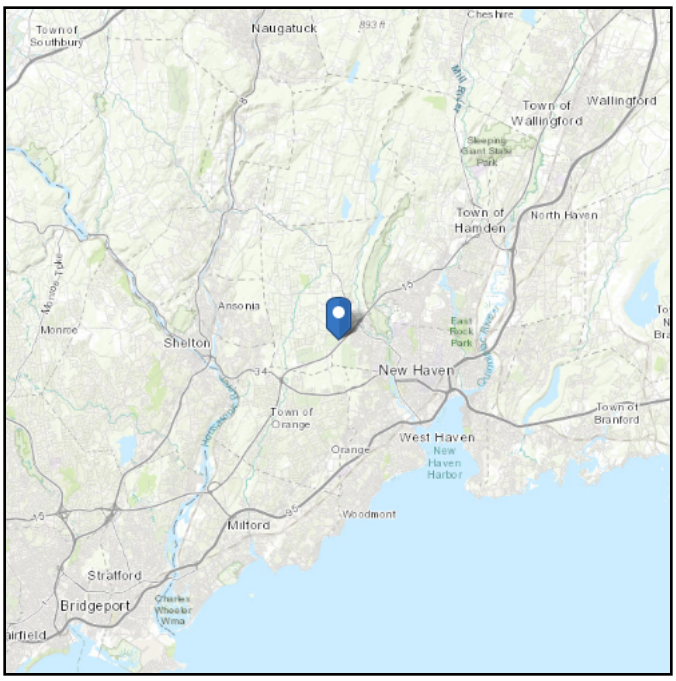
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 360.98 ft (NAVD 88)
Latitude: 41.327639
Longitude: -72.993567





Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Feb 22 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

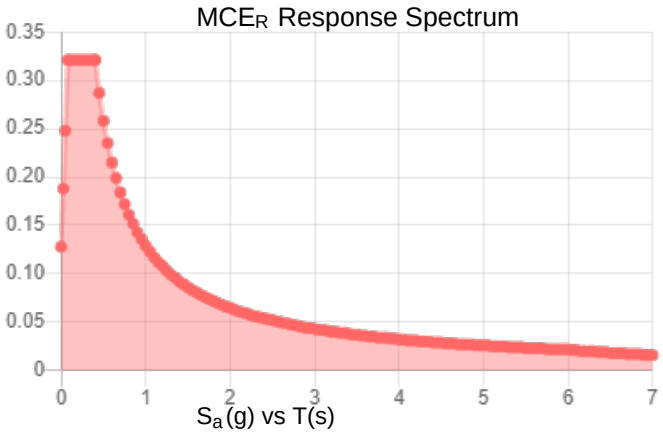
Seismic

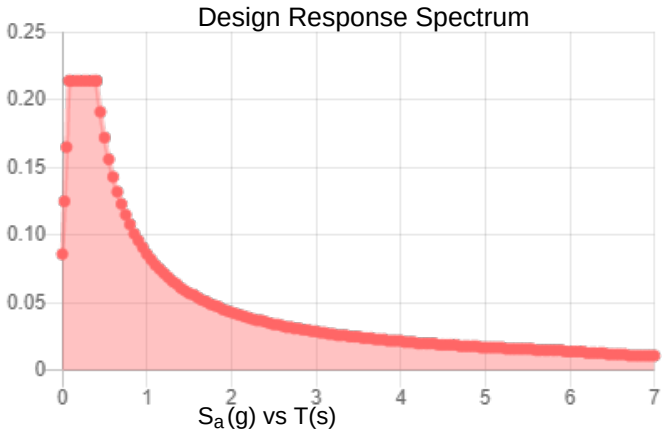
Site Soil Class: D - Default (see Section 11.4.3)

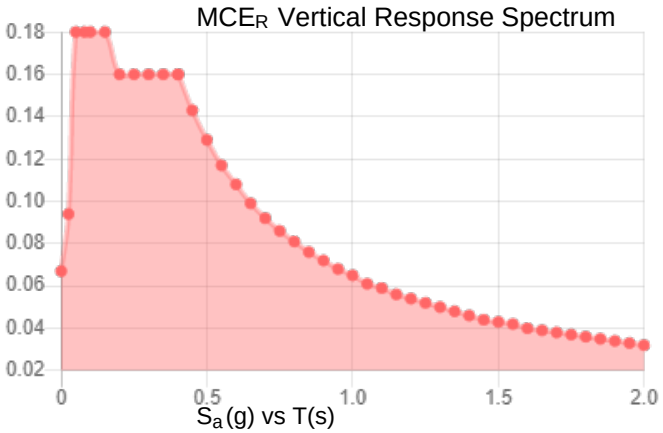
Results:

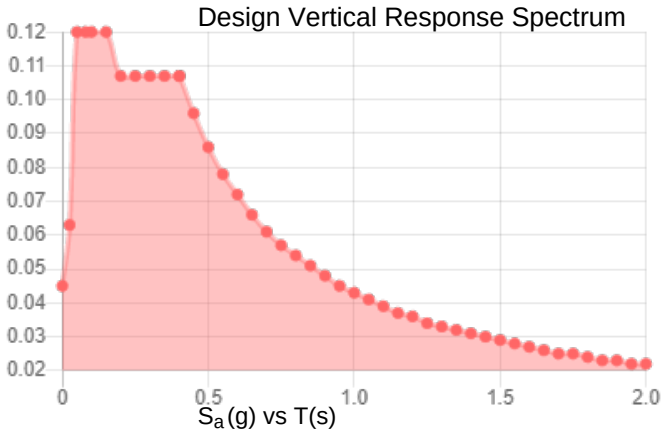
S_S :	0.2	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA_M :	0.177
S_{MS} :	0.321	F_{PGA} :	1.576
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.214	C_v :	0.701

Seismic Design Category B









Data Accessed: **Tue Feb 22 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue Feb 22 2022

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 500-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.

PROJECT	**140443.006.01 - Woodbridge**		**KSC**
SUBJECT	**Sector Mount Analysis**		
DATE	**02-22-22**	PAGE	OF

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

Tower Type		:	Monopole		
Ground Elevation	z_s	:	361	ft	[ASCE7 Hazard Tool]
Tower Height		:	102.00	ft	
Mount Elevation		:	98.00	ft	
Antenna Elevation		:	101.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	C		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	119	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	1.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.20		
	S_1	:	0.05		
	S_{DS}	:	0.21		
	S_{D1}	:	0.09		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.27		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.42		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.99		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	1.12	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.107		[Sec. 2.7.7.1]
Amplification	A_s	:	2.843137		[Sec. 16.7]

	q_z	:	42.84	psf

PROJECT	140443.006.01 - Woodbridge	KSC
SUBJECT	Sector Mount Analysis	
DATE	02-22-22	PAGE OF

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	6.11	2.27	6.88	2.93	0.26	0.10	0.05	0.02
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	6.11	2.27	6.88	2.93	0.26	0.10	0.05	0.02
ERICSSON	RRUS 4478 B14_CCIV2	1	1.35	1.20	1.68	1.04	2.21	1.48	0.08	0.05	0.01	0.01
ERICSSON	RRUS 8843 B2/B66A_CCIV2	1	1.36	1.20	1.65	1.41	2.17	1.90	0.08	0.07	0.01	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5	1.93	1.20	1.74	0.79	2.12	1.10	0.08	0.04	0.01	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5	1.93	1.20	1.74	0.79	2.12	1.10	0.08	0.04	0.01	0.01
ERICSSON	AIR 6449 B77D	0.5	1.91	1.20	1.82	0.86	2.19	1.17	0.08	0.04	0.02	0.01
ERICSSON	AIR 6449 B77D	0.5	1.91	1.20	1.82	0.86	2.19	1.17	0.08	0.04	0.02	0.01
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.97	2.24	6.72	2.89	0.26	0.10	0.05	0.02
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.97	2.24	6.72	2.89	0.26	0.10	0.05	0.02
ERICSSON	RRUS 4449 B5/B12	0.5	1.36	1.20	0.82	0.59	1.08	0.82	0.04	0.03	0.01	0.00
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	6.11	2.27	6.88	2.93	0.26	0.10	0.05	0.02
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	6.11	2.27	6.88	2.93	0.26	0.10	0.05	0.02
ERICSSON	RRUS 4478 B14_CCIV2	1	1.35	1.20	1.68	1.04	2.21	1.48	0.08	0.05	0.01	0.01
ERICSSON	RRUS 8843 B2/B66A_CCIV2	1	1.36	1.20	1.65	1.41	2.17	1.90	0.08	0.07	0.01	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5	1.93	1.20	1.74	0.79	2.12	1.10	0.08	0.04	0.01	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5	1.93	1.20	1.74	0.79	2.12	1.10	0.08	0.04	0.01	0.01
ERICSSON	AIR 6449 B77D	0.5	1.91	1.20	1.82	0.86	2.19	1.17	0.08	0.04	0.02	0.01
ERICSSON	AIR 6449 B77D	0.5	1.91	1.20	1.82	0.86	2.19	1.17	0.08	0.04	0.02	0.01
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.97	2.24	6.72	2.89	0.26	0.10	0.05	0.02
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.97	2.24	6.72	2.89	0.26	0.10	0.05	0.02
ERICSSON	RRUS 4449 B5/B12	0.5	1.36	1.20	0.82	0.59	1.08	0.82	0.04	0.03	0.01	0.00

PROJECT	140443.006.01 - Woodbridge	KSC
SUBJECT	Sector Mount Analysis	
DATE	02-22-22	PAGE 3 OF

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	6.11	2.27	6.88	2.93	0.26	0.10	0.05	0.02
CCI ANTENNAS	OPA65R-BU6D	0.5	3.39	1.24	6.11	2.27	6.88	2.93	0.26	0.10	0.05	0.02
ERICSSON	RRUS 4478 B14_CCIV2	1	1.35	1.20	1.68	1.04	2.21	1.48	0.08	0.05	0.01	0.01
ERICSSON	RRUS 8843 B2/B66A_CCIV2	1	1.36	1.20	1.65	1.41	2.17	1.90	0.08	0.07	0.01	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5	1.93	1.20	1.74	0.79	2.12	1.10	0.08	0.04	0.01	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5	1.93	1.20	1.74	0.79	2.12	1.10	0.08	0.04	0.01	0.01
ERICSSON	AIR 6449 B77D	0.5	1.91	1.20	1.82	0.86	2.19	1.17	0.08	0.04	0.02	0.01
ERICSSON	AIR 6449 B77D	0.5	1.91	1.20	1.82	0.86	2.19	1.17	0.08	0.04	0.02	0.01
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.97	2.24	6.72	2.89	0.26	0.10	0.05	0.02
CCI ANTENNAS	DMP65R-BU6D	0.5	3.44	1.24	5.97	2.24	6.72	2.89	0.26	0.10	0.05	0.02
ERICSSON	RRUS 4449 B5/B12	0.5	1.36	1.20	0.82	0.59	1.08	0.82	0.04	0.03	0.01	0.00
RAYCAP	TME-DC6-48-60-18-8F	1	2.84	0.51	2.39	2.39	3.08	3.08	0.05	0.05	0.01	0.01
RAYCAP	DC9-48-60-24-8C-EV	1	1.72	1.20	3.99	2.23	4.79	2.91	0.19	0.10	0.03	0.02

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	-1.452876	0	-8.344372	
2	2	-7.952876	0	2.913958	
3	3	-1.452876	3	-8.344372	
4	4	-7.952876	3	2.913958	
5	5	-2.060139	3	-1.959222	
6	6	-2.143472	3	-1.814884	
7	7	-1.883298	6.75	-8.015526	
8	8	-1.883298	-3.75	-8.015526	
9	9	-7.883298	6.75	2.376779	
10	10	-7.883298	-3.75	2.376779	
11	11	-2.726805	0	-0.804521	
12	12	-2.060139	0	-1.959222	
13	13	-2.143472	0	-1.814884	
14	14	-2.726805	3	-0.804521	
15	15	-2.393472	3	-1.381872	
16	16	-1.702876	0	-7.911359	
17	17	-7.702876	0	2.480946	
18	18	-1.702876	3	-7.911359	
19	19	-7.702876	3	2.480946	
20	20	-2.393472	0	-1.381872	
21	21	-2.104797	3	-1.215205	
22	22	-2.104797	0	-1.215205	
23	23	-2.48637	3	-6.054308	
24	24	-2.702876	3	-6.179308	
25	25	-2.48637	0	-6.054308	
26	26	-2.702876	0	-6.179308	
27	27	-6.48637	3	0.873895	
28	28	-6.702876	3	0.748895	
29	29	-6.48637	0	0.873895	
30	30	-6.702876	0	0.748895	
31	31	-1.883298	0	-8.015526	
32	32	-7.883298	0	2.376779	
33	33	-1.883298	3	-8.015526	
34	34	-7.883298	3	2.376779	
35	35	-2.468047	3	-5.827798	
36	36	-2.468047	0	-5.827798	
37	37	-2.461329	3	-5.744736	
38	38	-2.461329	0	-5.744736	
39	39	-2.172443	3	-2.173067	
40	40	-2.172443	0	-2.173067	
41	41	-2.165724	3	-2.090005	
42	42	-2.165724	0	-2.090005	
43	43	-2.643472	3	-0.948859	
44	44	-2.643472	0	-0.948859	
45	45	-6.281045	3	0.776507	
46	46	-6.281045	0	0.776507	
47	47	-6.205752	3	0.740795	
48	48	-6.205752	0	0.740795	
49	49	-2.968152	3	-0.794857	
50	50	-2.968152	0	-0.794857	
51	51	-2.892859	3	-0.83057	
52	52	-2.892859	0	-0.83057	
53	53	-2.33012	3	-6.324941	
54	54	-2.546626	3	-6.449941	
55	55	-1.671784	3	-0.965205	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-1.671784	0	-0.965205	
57	57	-1.671784	5	-0.965205	
58	58	-1.671784	-2	-0.965205	
59	59	-1.671784	4	-0.965205	
60	60	-1.671784	-1	-0.965205	
61	61	-1.509404	4	-0.871455	
62	62	-1.509404	-1	-0.871455	
63	63	-6.5	0	5.430423	
64	64	6.5	0	5.430423	
65	65	-6.5	3	5.430423	
66	66	6.5	3	5.430423	
67	67	-0.666667	3	2.763753	
68	68	-0.5	3	2.763753	
69	69	-6	6.75	5.638756	
70	70	-6	-3.75	5.638757	
71	71	-1.466667	6.75	5.638756	
72	72	-1.466667	-3.75	5.638756	
73	73	3.079167	6.75	5.638756	
74	74	3.079167	-3.75	5.638757	
75	75	6	6.75	5.638756	
76	76	6	-3.75	5.638756	
77	77	0.666667	0	2.763753	
78	78	-0.666667	0	2.763753	
79	79	-0.5	0	2.763753	
80	80	0.666667	3	2.763753	
81	81	0	3	2.763753	
82	82	-6	0	5.430423	
83	83	-1.466667	0	5.430423	
84	84	3.079167	0	5.430423	
85	85	6	0	5.430423	
86	86	-6	3	5.430423	
87	87	-1.466667	3	5.430423	
88	88	3.079167	3	5.430423	
89	89	6	3	5.430423	
90	90	0	0	2.763753	
91	91	0	3	2.43042	
92	92	0	0	2.43042	
93	93	-4	3	5.180423	
94	94	-4	3	5.430423	
95	95	-4	0	5.180423	
96	96	-4	0	5.430423	
97	97	4	3	5.180423	
98	98	4	3	5.430423	
99	99	4	0	5.180423	
100	100	4	0	5.430423	
101	101	-6	0	5.638756	
102	102	-1.466667	0	5.638756	
103	103	3.079167	0	5.638756	
104	104	6	0	5.638756	
105	105	-6	3	5.638756	
106	106	-1.466667	3	5.638756	
107	107	3.079167	3	5.638756	
108	108	6	3	5.638756	
109	109	-3.812998	3	5.051301	
110	110	-3.812998	0	5.051301	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	-3.744423	3	5.003951	
112	112	-3.744423	0	5.003951	
113	113	-0.79571	3	2.967934	
114	114	-0.79571	0	2.967934	
115	115	-0.727135	3	2.920585	
116	116	-0.727135	0	2.920585	
117	117	0.5	3	2.763753	
118	118	0.5	0	2.763753	
119	119	3.812998	3	5.051301	
120	120	3.812998	0	5.051301	
121	121	3.744423	3	5.003951	
122	122	3.744423	0	5.003951	
123	123	0.79571	3	2.967934	
124	124	0.79571	0	2.967934	
125	125	0.727135	3	2.920585	
126	126	0.727135	0	2.920585	
127	127	-4.3125	3	5.180423	
128	128	-4.3125	3	5.430423	
129	129	0	3	1.93042	
130	130	0	0	1.93042	
131	131	0	5	1.93042	
132	132	0	-2	1.93042	
133	133	0	4	1.93042	
134	134	0	-1	1.93042	
135	135	0	4	1.74292	
136	136	0	-1	1.74292	
137	137	7.952885	0	2.913953	
138	138	1.452885	0	-8.344377	
139	139	7.952885	3	2.913953	
140	140	1.452885	3	-8.344377	
141	141	2.726814	3	-0.804526	
142	142	2.643481	3	-0.948864	
143	143	7.883306	6.75	2.376774	
144	144	7.883307	-3.75	2.376774	
145	145	1.883306	6.75	-8.015531	
146	146	1.883306	-3.75	-8.015531	
147	147	2.060147	0	-1.959227	
148	148	2.726814	0	-0.804526	
149	149	2.643481	0	-0.948864	
150	150	2.060147	3	-1.959227	
151	151	2.393481	3	-1.381877	
152	152	7.702885	0	2.480941	
153	153	1.702885	0	-7.911364	
154	154	7.702885	3	2.480941	
155	155	1.702885	3	-7.911364	
156	156	2.393481	0	-1.381877	
157	157	2.104805	3	-1.21521	
158	158	2.104805	0	-1.21521	
159	159	6.486378	3	0.87389	
160	160	6.702885	3	0.74889	
161	161	6.486378	0	0.87389	
162	162	6.702885	0	0.74889	
163	163	2.486378	3	-6.054313	
164	164	2.702885	3	-6.179313	
165	165	2.486378	0	-6.054313	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
166	166	2.702885	0	-6.179313	
167	167	7.883306	0	2.376774	
168	168	1.883306	0	-8.015531	
169	169	7.883306	3	2.376774	
170	170	1.883306	3	-8.015531	
171	171	6.281054	3	0.776502	
172	172	6.281054	0	0.776502	
173	173	6.20576	3	0.74079	
174	174	6.20576	0	0.74079	
175	175	2.968161	3	-0.794862	
176	176	2.968161	0	-0.794862	
177	177	2.892868	3	-0.830575	
178	178	2.892868	0	-0.830575	
179	179	2.143481	3	-1.814889	
180	180	2.143481	0	-1.814889	
181	181	2.468056	3	-5.827803	
182	182	2.468056	0	-5.827803	
183	183	2.461338	3	-5.744741	
184	184	2.461338	0	-5.744741	
185	185	2.172451	3	-2.173072	
186	186	2.172451	0	-2.173072	
187	187	2.165733	3	-2.09001	
188	188	2.165733	0	-2.09001	
189	189	6.642628	3	1.144523	
190	190	6.859135	3	1.019523	
191	191	1.671793	3	-0.96521	
192	192	1.671793	0	-0.96521	
193	193	1.671793	5	-0.96521	
194	194	1.671793	-2	-0.96521	
195	195	1.671793	4	-0.96521	
196	196	1.671793	-1	-0.96521	
197	197	1.509413	4	-0.87146	
198	198	1.509413	-1	-0.87146	
199	199	-1.671784	2.75	-0.965205	
200	200	0	2.75	1.93042	
201	201	1.671793	2.75	-0.96521	
202	202	0	0	0	
203	203	5.61664	6.75	-1.549208	
204	204	5.61664	-3.75	-1.549208	
205	205	3.343723	6.75	-5.486015	
206	206	3.343723	-3.75	-5.486015	
207	207	5.436218	0	-1.445041	
208	208	3.163301	0	-5.381848	
209	209	5.436218	3	-1.445041	
210	210	3.163301	3	-5.381848	
211	211	5.61664	0	-1.549208	
212	212	3.343723	0	-5.486015	
213	213	5.61664	3	-1.549208	
214	214	3.343723	3	-5.486015	
215	215	-4.149973	6.75	-4.089549	
216	216	-4.149973	-3.75	-4.089549	
217	217	-6.42289	6.75	-0.152742	
218	218	-6.42289	-3.75	-0.152742	
219	219	-3.969543	0	-3.985377	
220	220	-6.242459	0	-0.04857	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
221	221	-3.969543	3	-3.985377	
222	222	-6.242459	3	-0.04857	
223	223	-4.149973	0	-4.089549	
224	224	-6.42289	0	-0.152742	
225	225	-4.149973	3	-4.089549	
226	226	-6.42289	3	-0.152742	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	61	Reaction	Reaction	Reaction	Reaction	Reaction
2	62	Reaction	Reaction	Reaction	Reaction	Reaction
3	135	Reaction	Reaction	Reaction	Reaction	Reaction
4	136	Reaction	Reaction	Reaction	Reaction	Reaction
5	197	Reaction	Reaction	Reaction	Reaction	Reaction
6	198	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A53 Gr.B 50	29000	11154	0.3	0.65	0.49	50	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Main Horizontals	HSS2.375X0.218	Beam	Pipe	A53 Gr.B 50	Typical	1.39	0.824	0.824	1.65
2	Supporting Horizontals	HSS2.375X0.218	Beam	Pipe	A53 Gr.B 50	Typical	1.39	0.824	0.824	1.65
3	Verticals	3/4" SR	Column	BAR	A572 Gr.50	Typical	0.442	0.016	0.016	0.031
4	Diagonals	3/4" SR	HBrace	BAR	A572 Gr.50	Typical	0.442	0.016	0.016	0.031
5	Connection Plate	PL5/8x6	Beam	RECT	A572 Gr.50	Typical	3.75	0.122	11.25	0.456
6	Plates	PL 1/2X3 11/16	Beam	RECT	A572 Gr.50	Typical	1.844	0.038	2.089	0.141
7	Mount-Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	Tieback	HSS2.375X0.154	Beam	Pipe	A53 Gr.B 50	Typical	1	0.627	0.627	1.25
9	Connection Pipe	HSS4.500X0.237	Column	Pipe	A53 Gr.B 50	Typical	2.96	6.79	6.79	13.6

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	12	11	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
2	2	5	14	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
3	3	38	39		Diagonals	HBrace	BAR	A572 Gr.50	Typical
4	4	1	2		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
5	5	3	4		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
6	6	9	10		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
7	7	7	8		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
8	8	39	40		Verticals	Column	BAR	A572 Gr.50	Typical
9	9	37	38		Verticals	Column	BAR	A572 Gr.50	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
10	10	22	20		RIGID	None	None	RIGID	Typical
11	11	21	15		RIGID	None	None	RIGID	Typical
12	12	23	24		RIGID	None	None	RIGID	Typical
13	13	23	35	90	Plates	Beam	RECT	A572 Gr.50	Typical
14	14	35	41		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
15	15	41	6	90	Plates	Beam	RECT	A572 Gr.50	Typical
16	16	25	26		RIGID	None	None	RIGID	Typical
17	17	25	36	90	Plates	Beam	RECT	A572 Gr.50	Typical
18	18	36	42		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
19	19	42	13	90	Plates	Beam	RECT	A572 Gr.50	Typical
20	20	27	28		RIGID	None	None	RIGID	Typical
21	21	29	30		RIGID	None	None	RIGID	Typical
22	22	53	201		Tieback	Beam	Pipe	A53 Gr.B 50	Typical
23	23	32	17		RIGID	None	None	RIGID	Typical
24	24	34	19		RIGID	None	None	RIGID	Typical
25	25	31	16		RIGID	None	None	RIGID	Typical
26	26	33	18		RIGID	None	None	RIGID	Typical
27	27	48	49		Diagonals	HBrace	BAR	A572 Gr.50	Typical
28	28	49	50		Verticals	Column	BAR	A572 Gr.50	Typical
29	29	47	48		Verticals	Column	BAR	A572 Gr.50	Typical
30	30	27	45	90	Plates	Beam	RECT	A572 Gr.50	Typical
31	31	45	51		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
32	32	51	43	90	Plates	Beam	RECT	A572 Gr.50	Typical
33	33	29	46	90	Plates	Beam	RECT	A572 Gr.50	Typical
34	34	46	52		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
35	35	52	44	90	Plates	Beam	RECT	A572 Gr.50	Typical
36	36	53	54		RIGID	None	None	RIGID	Typical
37	37	22	56		RIGID	None	None	RIGID	Typical
38	38	21	55		RIGID	None	None	RIGID	Typical
39	39	58	57		Connection Pipe	Column	Pipe	A53 Gr.B 50	Typical
40	40	59	61		RIGID	None	None	RIGID	Typical
41	41	60	62		RIGID	None	None	RIGID	Typical
42	42	78	77	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
43	43	67	80	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
44	44	112	113		Diagonals	HBrace	BAR	A572 Gr.50	Typical
45	45	63	64		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
46	46	65	66		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
47	47	75	76		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
48	48	73	74		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
49	49	71	72		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
50	50	69	70		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
51	51	113	114		Verticals	Column	BAR	A572 Gr.50	Typical
52	52	111	112		Verticals	Column	BAR	A572 Gr.50	Typical
53	53	92	90		RIGID	None	None	RIGID	Typical
54	54	91	81		RIGID	None	None	RIGID	Typical
55	55	93	94		RIGID	None	None	RIGID	Typical
56	56	93	109	90	Plates	Beam	RECT	A572 Gr.50	Typical
57	57	109	115		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
58	58	115	68	90	Plates	Beam	RECT	A572 Gr.50	Typical
59	59	95	96		RIGID	None	None	RIGID	Typical
60	60	95	110	90	Plates	Beam	RECT	A572 Gr.50	Typical
61	61	110	116		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
62	62	116	79	90	Plates	Beam	RECT	A572 Gr.50	Typical
63	63	97	98		RIGID	None	None	RIGID	Typical
64	64	99	100		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
65	65	127	199		Tieback	Beam	Pipe	A53 Gr.B 50	Typical
66	66	104	85		RIGID	None	None	RIGID	Typical
67	67	108	89		RIGID	None	None	RIGID	Typical
68	68	103	84		RIGID	None	None	RIGID	Typical
69	69	107	88		RIGID	None	None	RIGID	Typical
70	70	102	83		RIGID	None	None	RIGID	Typical
71	71	106	87		RIGID	None	None	RIGID	Typical
72	72	101	82		RIGID	None	None	RIGID	Typical
73	73	105	86		RIGID	None	None	RIGID	Typical
74	74	122	123		Diagonals	HBrace	BAR	A572 Gr.50	Typical
75	75	123	124		Verticals	Column	BAR	A572 Gr.50	Typical
76	76	121	122		Verticals	Column	BAR	A572 Gr.50	Typical
77	77	97	119	90	Plates	Beam	RECT	A572 Gr.50	Typical
78	78	119	125		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
79	79	125	117	90	Plates	Beam	RECT	A572 Gr.50	Typical
80	80	99	120	90	Plates	Beam	RECT	A572 Gr.50	Typical
81	81	120	126		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
82	82	126	118	90	Plates	Beam	RECT	A572 Gr.50	Typical
83	83	127	128		RIGID	None	None	RIGID	Typical
84	84	92	130		RIGID	None	None	RIGID	Typical
85	85	91	129		RIGID	None	None	RIGID	Typical
86	86	132	131		Connection Pipe	Column	Pipe	A53 Gr.B 50	Typical
87	87	133	135		RIGID	None	None	RIGID	Typical
88	88	134	136		RIGID	None	None	RIGID	Typical
89	89	148	147	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
90	90	141	150	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
91	91	174	175		Diagonals	HBrace	BAR	A572 Gr.50	Typical
92	92	137	138		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
93	93	139	140		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
94	94	145	146		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
95	95	143	144		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
96	96	175	176		Verticals	Column	BAR	A572 Gr.50	Typical
97	97	173	174		Verticals	Column	BAR	A572 Gr.50	Typical
98	98	158	156		RIGID	None	None	RIGID	Typical
99	99	157	151		RIGID	None	None	RIGID	Typical
100	100	159	160		RIGID	None	None	RIGID	Typical
101	101	159	171	90	Plates	Beam	RECT	A572 Gr.50	Typical
102	102	171	177		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
103	103	177	142	90	Plates	Beam	RECT	A572 Gr.50	Typical
104	104	161	162		RIGID	None	None	RIGID	Typical
105	105	161	172	90	Plates	Beam	RECT	A572 Gr.50	Typical
106	106	172	178		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
107	107	178	149	90	Plates	Beam	RECT	A572 Gr.50	Typical
108	108	163	164		RIGID	None	None	RIGID	Typical
109	109	165	166		RIGID	None	None	RIGID	Typical
110	110	189	200		Tieback	Beam	Pipe	A53 Gr.B 50	Typical
111	111	168	153		RIGID	None	None	RIGID	Typical
112	112	170	155		RIGID	None	None	RIGID	Typical
113	113	167	152		RIGID	None	None	RIGID	Typical
114	114	169	154		RIGID	None	None	RIGID	Typical
115	115	184	185		Diagonals	HBrace	BAR	A572 Gr.50	Typical
116	116	185	186		Verticals	Column	BAR	A572 Gr.50	Typical
117	117	183	184		Verticals	Column	BAR	A572 Gr.50	Typical
118	118	163	181	90	Plates	Beam	RECT	A572 Gr.50	Typical
119	119	181	187		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
120	120	187	179	90	Plates	Beam	RECT	A572 Gr.50	Typical
121	121	165	182	90	Plates	Beam	RECT	A572 Gr.50	Typical
122	122	182	188		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
123	123	188	180	90	Plates	Beam	RECT	A572 Gr.50	Typical
124	124	189	190		RIGID	None	None	RIGID	Typical
125	125	158	192		RIGID	None	None	RIGID	Typical
126	126	157	191		RIGID	None	None	RIGID	Typical
127	127	194	193		Connection Pipe	Column	Pipe	A53 Gr.B 50	Typical
128	128	195	197		RIGID	None	None	RIGID	Typical
129	129	196	198		RIGID	None	None	RIGID	Typical
130	130	205	206		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
131	131	203	204		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
132	132	212	208		RIGID	None	None	RIGID	Typical
133	133	214	210		RIGID	None	None	RIGID	Typical
134	134	211	207		RIGID	None	None	RIGID	Typical
135	135	213	209		RIGID	None	None	RIGID	Typical
136	136	217	218		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
137	137	215	216		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
138	138	224	220		RIGID	None	None	RIGID	Typical
139	139	226	222		RIGID	None	None	RIGID	Typical
140	140	223	219		RIGID	None	None	RIGID	Typical
141	141	225	221		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	1			Yes	N/A	None
2	2			Yes	N/A	None
3	3			Yes	** NA **	None
4	4			Yes	N/A	None
5	5			Yes	N/A	None
6	6			Yes	** NA **	None
7	7			Yes	** NA **	None
8	8			Yes	** NA **	None
9	9			Yes	** NA **	None
10	10			Yes	** NA **	None
11	11			Yes	** NA **	None
12	12			Yes	** NA **	None
13	13	BenPIN		Yes	N/A	None
14	14			Yes	N/A	None
15	15			Yes	N/A	None
16	16			Yes	** NA **	None
17	17	BenPIN		Yes	N/A	None
18	18			Yes	N/A	None
19	19			Yes	N/A	None
20	20			Yes	** NA **	None
21	21			Yes	** NA **	None
22	22	BenPIN	BenPIN	Yes	N/A	None
23	23			Yes	** NA **	None
24	24			Yes	** NA **	None
25	25			Yes	** NA **	None
26	26			Yes	** NA **	None
27	27			Yes	** NA **	None
28	28			Yes	** NA **	None
29	29			Yes	** NA **	None
30	30	BenPIN		Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
31	31			Yes	N/A	None
32	32			Yes	N/A	None
33	33	BenPIN		Yes	N/A	None
34	34			Yes	N/A	None
35	35			Yes	N/A	None
36	36			Yes	** NA **	None
37	37			Yes	** NA **	None
38	38			Yes	** NA **	None
39	39			Yes	** NA **	None
40	40			Yes	** NA **	None
41	41			Yes	** NA **	None
42	42			Yes	N/A	None
43	43			Yes	N/A	None
44	44			Yes	** NA **	None
45	45			Yes	N/A	None
46	46			Yes	N/A	None
47	47			Yes	** NA **	None
48	48			Yes	** NA **	None
49	49			Yes	** NA **	None
50	50			Yes	** NA **	None
51	51			Yes	** NA **	None
52	52			Yes	** NA **	None
53	53			Yes	** NA **	None
54	54			Yes	** NA **	None
55	55			Yes	** NA **	None
56	56	BenPIN		Yes	N/A	None
57	57			Yes	N/A	None
58	58			Yes	N/A	None
59	59			Yes	** NA **	None
60	60	BenPIN		Yes	N/A	None
61	61			Yes	N/A	None
62	62			Yes	N/A	None
63	63			Yes	** NA **	None
64	64			Yes	** NA **	None
65	65	BenPIN	BenPIN	Yes	N/A	None
66	66			Yes	** NA **	None
67	67			Yes	** NA **	None
68	68			Yes	** NA **	None
69	69			Yes	** NA **	None
70	70			Yes	** NA **	None
71	71			Yes	** NA **	None
72	72			Yes	** NA **	None
73	73			Yes	** NA **	None
74	74			Yes	** NA **	None
75	75			Yes	** NA **	None
76	76			Yes	** NA **	None
77	77	BenPIN		Yes	N/A	None
78	78			Yes	N/A	None
79	79			Yes	N/A	None
80	80	BenPIN		Yes	N/A	None
81	81			Yes	N/A	None
82	82			Yes	N/A	None
83	83			Yes	** NA **	None
84	84			Yes	** NA **	None
85	85			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
86	86			Yes	** NA **	None
87	87			Yes	** NA **	None
88	88			Yes	** NA **	None
89	89			Yes	N/A	None
90	90			Yes	N/A	None
91	91			Yes	** NA **	None
92	92			Yes	N/A	None
93	93			Yes	N/A	None
94	94			Yes	** NA **	None
95	95			Yes	** NA **	None
96	96			Yes	** NA **	None
97	97			Yes	** NA **	None
98	98			Yes	** NA **	None
99	99			Yes	** NA **	None
100	100			Yes	** NA **	None
101	101	BenPIN		Yes	N/A	None
102	102			Yes	N/A	None
103	103			Yes	N/A	None
104	104			Yes	** NA **	None
105	105	BenPIN		Yes	N/A	None
106	106			Yes	N/A	None
107	107			Yes	N/A	None
108	108			Yes	** NA **	None
109	109			Yes	** NA **	None
110	110	BenPIN	BenPIN	Yes	N/A	None
111	111			Yes	** NA **	None
112	112			Yes	** NA **	None
113	113			Yes	** NA **	None
114	114			Yes	** NA **	None
115	115			Yes	** NA **	None
116	116			Yes	** NA **	None
117	117			Yes	** NA **	None
118	118	BenPIN		Yes	N/A	None
119	119			Yes	N/A	None
120	120			Yes	N/A	None
121	121	BenPIN		Yes	N/A	None
122	122			Yes	N/A	None
123	123			Yes	N/A	None
124	124			Yes	** NA **	None
125	125			Yes	** NA **	None
126	126			Yes	** NA **	None
127	127			Yes	** NA **	None
128	128			Yes	** NA **	None
129	129			Yes	** NA **	None
130	130			Yes	** NA **	None
131	131			Yes	** NA **	None
132	132			Yes	** NA **	None
133	133			Yes	** NA **	None
134	134			Yes	** NA **	None
135	135			Yes	** NA **	None
136	136			Yes	** NA **	None
137	137			Yes	** NA **	None
138	138			Yes	** NA **	None
139	139			Yes	** NA **	None
140	140			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
141	141			Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	Connection Plate	1.333	Lbyy	Lateral
2	2	Connection Plate	1.333	Lbyy	Lateral
3	3	Diagonals	4.673	Lbyy	Lateral
4	4	Main Horizontals	13	Lbyy	Lateral
5	5	Main Horizontals	13	Lbyy	Lateral
6	6	Mount-Pipe	10.5	Lbyy	Lateral
7	7	Mount-Pipe	10.5	Lbyy	Lateral
8	8	Verticals	3	Lbyy	Lateral
9	9	Verticals	3	Lbyy	Lateral
10	13	Plates	0.227	Lbyy	Lateral
11	14	Supporting Horizontals	3.75	Lbyy	Lateral
12	15	Plates	0.276	Lbyy	Lateral
13	17	Plates	0.227	Lbyy	Lateral
14	18	Supporting Horizontals	3.75	Lbyy	Lateral
15	19	Plates	0.276	Lbyy	Lateral
16	22	Tieback	6.694	Lbyy	Lateral
17	27	Diagonals	4.673	Lbyy	Lateral
18	28	Verticals	3	Lbyy	Lateral
19	29	Verticals	3	Lbyy	Lateral
20	30	Plates	0.227	Lbyy	Lateral
21	31	Supporting Horizontals	3.75	Lbyy	Lateral
22	32	Plates	0.276	Lbyy	Lateral
23	33	Plates	0.227	Lbyy	Lateral
24	34	Supporting Horizontals	3.75	Lbyy	Lateral
25	35	Plates	0.276	Lbyy	Lateral
26	39	Connection Pipe	7	Lbyy	Lateral
27	42	Connection Plate	1.333	Lbyy	Lateral
28	43	Connection Plate	1.333	Lbyy	Lateral
29	44	Diagonals	4.673	Lbyy	Lateral
30	45	Main Horizontals	13	Lbyy	Lateral
31	46	Main Horizontals	13	Lbyy	Lateral
32	47	Mount-Pipe	10.5	Lbyy	Lateral
33	48	Mount-Pipe	10.5	Lbyy	Lateral
34	49	Mount-Pipe	10.5	Lbyy	Lateral
35	50	Mount-Pipe	10.5	Lbyy	Lateral
36	51	Verticals	3	Lbyy	Lateral
37	52	Verticals	3	Lbyy	Lateral
38	56	Plates	0.227	Lbyy	Lateral
39	57	Supporting Horizontals	3.75	Lbyy	Lateral
40	58	Plates	0.276	Lbyy	Lateral
41	60	Plates	0.227	Lbyy	Lateral
42	61	Supporting Horizontals	3.75	Lbyy	Lateral
43	62	Plates	0.276	Lbyy	Lateral
44	65	Tieback	6.694	Lbyy	Lateral
45	74	Diagonals	4.673	Lbyy	Lateral
46	75	Verticals	3	Lbyy	Lateral
47	76	Verticals	3	Lbyy	Lateral
48	77	Plates	0.227	Lbyy	Lateral
49	78	Supporting Horizontals	3.75	Lbyy	Lateral
50	79	Plates	0.276	Lbyy	Lateral
51	80	Plates	0.227	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
52	81	Supporting Horizontals	3.75	Lbyy	Lateral
53	82	Plates	0.276	Lbyy	Lateral
54	86	Connection Pipe	7	Lbyy	Lateral
55	89	Connection Plate	1.333	Lbyy	Lateral
56	90	Connection Plate	1.333	Lbyy	Lateral
57	91	Diagonals	4.673	Lbyy	Lateral
58	92	Main Horizontals	13	Lbyy	Lateral
59	93	Main Horizontals	13	Lbyy	Lateral
60	94	Mount-Pipe	10.5	Lbyy	Lateral
61	95	Mount-Pipe	10.5	Lbyy	Lateral
62	96	Verticals	3	Lbyy	Lateral
63	97	Verticals	3	Lbyy	Lateral
64	101	Plates	0.227	Lbyy	Lateral
65	102	Supporting Horizontals	3.75	Lbyy	Lateral
66	103	Plates	0.276	Lbyy	Lateral
67	105	Plates	0.227	Lbyy	Lateral
68	106	Supporting Horizontals	3.75	Lbyy	Lateral
69	107	Plates	0.276	Lbyy	Lateral
70	110	Tieback	6.694	Lbyy	Lateral
71	115	Diagonals	4.673	Lbyy	Lateral
72	116	Verticals	3	Lbyy	Lateral
73	117	Verticals	3	Lbyy	Lateral
74	118	Plates	0.227	Lbyy	Lateral
75	119	Supporting Horizontals	3.75	Lbyy	Lateral
76	120	Plates	0.276	Lbyy	Lateral
77	121	Plates	0.227	Lbyy	Lateral
78	122	Supporting Horizontals	3.75	Lbyy	Lateral
79	123	Plates	0.276	Lbyy	Lateral
80	127	Connection Pipe	7	Lbyy	Lateral
81	130	Mount-Pipe	10.5	Lbyy	Lateral
82	131	Mount-Pipe	10.5	Lbyy	Lateral
83	136	Mount-Pipe	10.5	Lbyy	Lateral
84	137	Mount-Pipe	10.5	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Y	-0.032	%5
2	48	Y	-0.032	%60
3	48	Y	-0.059	%15
4	48	Y	-0.075	%50
5	48	Y	0	0
6	49	Y	-0.022	%5
7	49	Y	-0.022	%25
8	49	Y	-0.041	%75
9	49	Y	-0.041	%95
10	49	Y	0	0
11	50	Y	-0.045	%5
12	50	Y	-0.045	%60
13	50	Y	-0.036	%50
14	50	Y	0	0
15	50	Y	0	0
16	136	Y	-0.032	%5
17	136	Y	-0.032	%60
18	136	Y	-0.059	%15
19	136	Y	-0.075	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
20	136	Y	0	0
21	137	Y	-0.022	%5
22	137	Y	-0.022	%25
23	137	Y	-0.041	%75
24	137	Y	-0.041	%95
25	137	Y	0	0
26	7	Y	-0.045	%5
27	7	Y	-0.045	%60
28	7	Y	-0.036	%50
29	7	Y	0	0
30	7	Y	0	0
31	130	Y	-0.032	%5
32	130	Y	-0.032	%60
33	130	Y	-0.059	%15
34	130	Y	-0.075	%50
35	130	Y	0	0
36	131	Y	-0.022	%5
37	131	Y	-0.022	%25
38	131	Y	-0.041	%75
39	131	Y	-0.041	%95
40	131	Y	0	0
41	95	Y	-0.045	%5
42	95	Y	-0.045	%60
43	95	Y	-0.036	%50
44	95	Y	0	0
45	95	Y	0	0
46	57	Y	-0.033	%50
47	57	Y	0	0
48	57	Y	0	0
49	57	Y	0	0
50	57	Y	0	0
51	14	Y	-0.026	%50
52	14	Y	0	0
53	14	Y	0	0
54	14	Y	0	0
55	14	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Z	-0.263	%5
2	48	Z	-0.263	%60
3	48	Z	-0.078	%15
4	48	Z	-0.077	%50
5	48	Z	0	0
6	49	Z	-0.081	%5
7	49	Z	-0.081	%25
8	49	Z	-0.079	%75
9	49	Z	-0.079	%95
10	49	Z	0	0
11	50	Z	-0.257	%5
12	50	Z	-0.257	%60
13	50	Z	-0.038	%50
14	50	Z	0	0
15	50	Z	0	0
16	136	Z	-0.263	%5

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	136	Z	-0.263	%60
18	136	Z	-0.078	%15
19	136	Z	-0.077	%50
20	136	Z	0	0
21	137	Z	-0.081	%5
22	137	Z	-0.081	%25
23	137	Z	-0.079	%75
24	137	Z	-0.079	%95
25	137	Z	0	0
26	7	Z	-0.257	%5
27	7	Z	-0.257	%60
28	7	Z	-0.038	%50
29	7	Z	0	0
30	7	Z	0	0
31	130	Z	-0.263	%5
32	130	Z	-0.263	%60
33	130	Z	-0.078	%15
34	130	Z	-0.077	%50
35	130	Z	0	0
36	131	Z	-0.081	%5
37	131	Z	-0.081	%25
38	131	Z	-0.079	%75
39	131	Z	-0.079	%95
40	131	Z	0	0
41	95	Z	-0.257	%5
42	95	Z	-0.257	%60
43	95	Z	-0.038	%50
44	95	Z	0	0
45	95	Z	0	0
46	57	Z	-0.047	%50
47	57	Z	0	0
48	57	Z	0	0
49	57	Z	0	0
50	57	Z	0	0
51	14	Z	-0.186	%50
52	14	Z	0	0
53	14	Z	0	0
54	14	Z	0	0
55	14	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	X	-0.098	%5
2	48	X	-0.098	%60
3	48	X	-0.048	%15
4	48	X	-0.066	%50
5	48	X	0	0
6	49	X	-0.037	%5
7	49	X	-0.037	%25
8	49	X	-0.037	%75
9	49	X	-0.037	%95
10	49	X	0	0
11	50	X	-0.097	%5
12	50	X	-0.097	%60
13	50	X	-0.027	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	50	X	0	0
15	50	X	0	0
16	136	X	-0.098	%5
17	136	X	-0.098	%60
18	136	X	-0.048	%15
19	136	X	-0.066	%50
20	136	X	0	0
21	137	X	-0.037	%5
22	137	X	-0.037	%25
23	137	X	-0.037	%75
24	137	X	-0.037	%95
25	137	X	0	0
26	7	X	-0.097	%5
27	7	X	-0.097	%60
28	7	X	-0.027	%50
29	7	X	0	0
30	7	X	0	0
31	130	X	-0.098	%5
32	130	X	-0.098	%60
33	130	X	-0.048	%15
34	130	X	-0.066	%50
35	130	X	0	0
36	131	X	-0.037	%5
37	131	X	-0.037	%25
38	131	X	-0.037	%75
39	131	X	-0.037	%95
40	131	X	0	0
41	95	X	-0.097	%5
42	95	X	-0.097	%60
43	95	X	-0.027	%50
44	95	X	0	0
45	95	X	0	0
46	57	X	-0.047	%50
47	57	X	0	0
48	57	X	0	0
49	57	X	0	0
50	57	X	0	0
51	14	X	-0.104	%50
52	14	X	0	0
53	14	X	0	0
54	14	X	0	0
55	14	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Z	-0.052	%5
2	48	Z	-0.052	%60
3	48	Z	-0.014	%15
4	48	Z	-0.014	%50
5	48	Z	0	0
6	49	Z	-0.014	%5
7	49	Z	-0.014	%25
8	49	Z	-0.017	%75
9	49	Z	-0.017	%95
10	49	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
11	50	Z	-0.051	%5
12	50	Z	-0.051	%60
13	50	Z	-0.007	%50
14	50	Z	0	0
15	50	Z	0	0
16	136	Z	-0.052	%5
17	136	Z	-0.052	%60
18	136	Z	-0.014	%15
19	136	Z	-0.014	%50
20	136	Z	0	0
21	137	Z	-0.014	%5
22	137	Z	-0.014	%25
23	137	Z	-0.017	%75
24	137	Z	-0.017	%95
25	137	Z	0	0
26	7	Z	-0.051	%5
27	7	Z	-0.051	%60
28	7	Z	-0.007	%50
29	7	Z	0	0
30	7	Z	0	0
31	130	Z	-0.052	%5
32	130	Z	-0.052	%60
33	130	Z	-0.014	%15
34	130	Z	-0.014	%50
35	130	Z	0	0
36	131	Z	-0.014	%5
37	131	Z	-0.014	%25
38	131	Z	-0.017	%75
39	131	Z	-0.017	%95
40	131	Z	0	0
41	95	Z	-0.051	%5
42	95	Z	-0.051	%60
43	95	Z	-0.007	%50
44	95	Z	0	0
45	95	Z	0	0
46	57	Z	-0.008	%50
47	57	Z	0	0
48	57	Z	0	0
49	57	Z	0	0
50	57	Z	0	0
51	14	Z	-0.033	%50
52	14	Z	0	0
53	14	Z	0	0
54	14	Z	0	0
55	14	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	X	-0.022	%5
2	48	X	-0.022	%60
3	48	X	-0.009	%15
4	48	X	-0.012	%50
5	48	X	0	0
6	49	X	-0.007	%5
7	49	X	-0.007	%25

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
8	49	X	-0.009	%75
9	49	X	-0.009	%95
10	49	X	0	0
11	50	X	-0.022	%5
12	50	X	-0.022	%60
13	50	X	-0.005	%50
14	50	X	0	0
15	50	X	0	0
16	136	X	-0.022	%5
17	136	X	-0.022	%60
18	136	X	-0.009	%15
19	136	X	-0.012	%50
20	136	X	0	0
21	137	X	-0.007	%5
22	137	X	-0.007	%25
23	137	X	-0.009	%75
24	137	X	-0.009	%95
25	137	X	0	0
26	7	X	-0.022	%5
27	7	X	-0.022	%60
28	7	X	-0.005	%50
29	7	X	0	0
30	7	X	0	0
31	130	X	-0.022	%5
32	130	X	-0.022	%60
33	130	X	-0.009	%15
34	130	X	-0.012	%50
35	130	X	0	0
36	131	X	-0.007	%5
37	131	X	-0.007	%25
38	131	X	-0.009	%75
39	131	X	-0.009	%95
40	131	X	0	0
41	95	X	-0.022	%5
42	95	X	-0.022	%60
43	95	X	-0.005	%50
44	95	X	0	0
45	95	X	0	0
46	57	X	-0.008	%50
47	57	X	0	0
48	57	X	0	0
49	57	X	0	0
50	57	X	0	0
51	14	X	-0.018	%50
52	14	X	0	0
53	14	X	0	0
54	14	X	0	0
55	14	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Z	-0.017	%5
2	48	Z	-0.017	%60
3	48	Z	-0.005	%15
4	48	Z	-0.005	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
5	48	Z	0	0
6	49	Z	-0.005	%5
7	49	Z	-0.005	%25
8	49	Z	-0.005	%75
9	49	Z	-0.005	%95
10	49	Z	0	0
11	50	Z	-0.016	%5
12	50	Z	-0.016	%60
13	50	Z	-0.002	%50
14	50	Z	0	0
15	50	Z	0	0
16	136	Z	-0.017	%5
17	136	Z	-0.017	%60
18	136	Z	-0.005	%15
19	136	Z	-0.005	%50
20	136	Z	0	0
21	137	Z	-0.005	%5
22	137	Z	-0.005	%25
23	137	Z	-0.005	%75
24	137	Z	-0.005	%95
25	137	Z	0	0
26	7	Z	-0.016	%5
27	7	Z	-0.016	%60
28	7	Z	-0.002	%50
29	7	Z	0	0
30	7	Z	0	0
31	130	Z	-0.017	%5
32	130	Z	-0.017	%60
33	130	Z	-0.005	%15
34	130	Z	-0.005	%50
35	130	Z	0	0
36	131	Z	-0.005	%5
37	131	Z	-0.005	%25
38	131	Z	-0.005	%75
39	131	Z	-0.005	%95
40	131	Z	0	0
41	95	Z	-0.016	%5
42	95	Z	-0.016	%60
43	95	Z	-0.002	%50
44	95	Z	0	0
45	95	Z	0	0
46	57	Z	-0.003	%50
47	57	Z	0	0
48	57	Z	0	0
49	57	Z	0	0
50	57	Z	0	0
51	14	Z	-0.012	%50
52	14	Z	0	0
53	14	Z	0	0
54	14	Z	0	0
55	14	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	X	-0.006	%5
2	48	X	-0.006	%60
3	48	X	-0.003	%15
4	48	X	-0.004	%50
5	48	X	0	0
6	49	X	-0.002	%5
7	49	X	-0.002	%25
8	49	X	-0.002	%75
9	49	X	-0.002	%95
10	49	X	0	0
11	50	X	-0.006	%5
12	50	X	-0.006	%60
13	50	X	-0.002	%50
14	50	X	0	0
15	50	X	0	0
16	136	X	-0.006	%5
17	136	X	-0.006	%60
18	136	X	-0.003	%15
19	136	X	-0.004	%50
20	136	X	0	0
21	137	X	-0.002	%5
22	137	X	-0.002	%25
23	137	X	-0.002	%75
24	137	X	-0.002	%95
25	137	X	0	0
26	7	X	-0.006	%5
27	7	X	-0.006	%60
28	7	X	-0.002	%50
29	7	X	0	0
30	7	X	0	0
31	130	X	-0.006	%5
32	130	X	-0.006	%60
33	130	X	-0.003	%15
34	130	X	-0.004	%50
35	130	X	0	0
36	131	X	-0.002	%5
37	131	X	-0.002	%25
38	131	X	-0.002	%75
39	131	X	-0.002	%95
40	131	X	0	0
41	95	X	-0.006	%5
42	95	X	-0.006	%60
43	95	X	-0.002	%50
44	95	X	0	0
45	95	X	0	0
46	57	X	-0.003	%50
47	57	X	0	0
48	57	X	0	0
49	57	X	0	0
50	57	X	0	0
51	14	X	-0.007	%50
52	14	X	0	0
53	14	X	0	0
54	14	X	0	0
55	14	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Y	-0.11	%5
2	48	Y	-0.11	%60
3	48	Y	-0.035	%15
4	48	Y	-0.038	%50
5	48	Y	0	0
6	49	Y	-0.033	%5
7	49	Y	-0.033	%25
8	49	Y	-0.072	%75
9	49	Y	-0.072	%95
10	49	Y	0	0
11	50	Y	-0.122	%5
12	50	Y	-0.122	%60
13	50	Y	-0.018	%50
14	50	Y	0	0
15	50	Y	0	0
16	136	Y	-0.11	%5
17	136	Y	-0.11	%60
18	136	Y	-0.035	%15
19	136	Y	-0.038	%50
20	136	Y	0	0
21	137	Y	-0.033	%5
22	137	Y	-0.033	%25
23	137	Y	-0.072	%75
24	137	Y	-0.072	%95
25	137	Y	0	0
26	7	Y	-0.122	%5
27	7	Y	-0.122	%60
28	7	Y	-0.018	%50
29	7	Y	0	0
30	7	Y	0	0
31	130	Y	-0.11	%5
32	130	Y	-0.11	%60
33	130	Y	-0.035	%15
34	130	Y	-0.038	%50
35	130	Y	0	0
36	131	Y	-0.033	%5
37	131	Y	-0.033	%25
38	131	Y	-0.072	%75
39	131	Y	-0.072	%95
40	131	Y	0	0
41	95	Y	-0.122	%5
42	95	Y	-0.122	%60
43	95	Y	-0.018	%50
44	95	Y	0	0
45	95	Y	0	0
46	57	Y	-0.043	%50
47	57	Y	0	0
48	57	Y	0	0
49	57	Y	0	0
50	57	Y	0	0
51	14	Y	-0.079	%50
52	14	Y	0	0
53	14	Y	0	0
54	14	Y	0	0
55	14	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Z	-0.019	%5
2	48	Z	-0.019	%60
3	48	Z	-0.018	%15
4	48	Z	-0.023	%50
5	48	Z	0	0
6	49	Z	-0.013	%5
7	49	Z	-0.013	%25
8	49	Z	-0.025	%75
9	49	Z	-0.025	%95
10	49	Z	0	0
11	50	Z	-0.027	%5
12	50	Z	-0.027	%60
13	50	Z	-0.022	%50
14	50	Z	0	0
15	50	Z	0	0
16	136	Z	-0.019	%5
17	136	Z	-0.019	%60
18	136	Z	-0.018	%15
19	136	Z	-0.023	%50
20	136	Z	0	0
21	137	Z	-0.013	%5
22	137	Z	-0.013	%25
23	137	Z	-0.025	%75
24	137	Z	-0.025	%95
25	137	Z	0	0
26	7	Z	-0.027	%5
27	7	Z	-0.027	%60
28	7	Z	-0.022	%50
29	7	Z	0	0
30	7	Z	0	0
31	130	Z	-0.019	%5
32	130	Z	-0.019	%60
33	130	Z	-0.018	%15
34	130	Z	-0.023	%50
35	130	Z	0	0
36	131	Z	-0.013	%5
37	131	Z	-0.013	%25
38	131	Z	-0.025	%75
39	131	Z	-0.025	%95
40	131	Z	0	0
41	95	Z	-0.027	%5
42	95	Z	-0.027	%60
43	95	Z	-0.022	%50
44	95	Z	0	0
45	95	Z	0	0
46	57	Z	-0.01	%50
47	57	Z	0	0
48	57	Z	0	0
49	57	Z	0	0
50	57	Z	0	0
51	14	Z	-0.008	%50
52	14	Z	0	0
53	14	Z	0	0
54	14	Z	0	0
55	14	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	X	-0.019	%5
2	48	X	-0.019	%60
3	48	X	-0.018	%15
4	48	X	-0.023	%50
5	48	X	0	0
6	49	X	-0.013	%5
7	49	X	-0.013	%25
8	49	X	-0.025	%75
9	49	X	-0.025	%95
10	49	X	0	0
11	50	X	-0.027	%5
12	50	X	-0.027	%60
13	50	X	-0.022	%50
14	50	X	0	0
15	50	X	0	0
16	136	X	-0.019	%5
17	136	X	-0.019	%60
18	136	X	-0.018	%15
19	136	X	-0.023	%50
20	136	X	0	0
21	137	X	-0.013	%5
22	137	X	-0.013	%25
23	137	X	-0.025	%75
24	137	X	-0.025	%95
25	137	X	0	0
26	7	X	-0.027	%5
27	7	X	-0.027	%60
28	7	X	-0.022	%50
29	7	X	0	0
30	7	X	0	0
31	130	X	-0.019	%5
32	130	X	-0.019	%60
33	130	X	-0.018	%15
34	130	X	-0.023	%50
35	130	X	0	0
36	131	X	-0.013	%5
37	131	X	-0.013	%25
38	131	X	-0.025	%75
39	131	X	-0.025	%95
40	131	X	0	0
41	95	X	-0.027	%5
42	95	X	-0.027	%60
43	95	X	-0.022	%50
44	95	X	0	0
45	95	X	0	0
46	57	X	-0.01	%50
47	57	X	0	0
48	57	X	0	0
49	57	X	0	0
50	57	X	0	0
51	14	X	-0.008	%50
52	14	X	0	0
53	14	X	0	0
54	14	X	0	0
55	14	X	0	0

Member Point Loads (BLC 16 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	46	Y	-0.25	%95

Member Point Loads (BLC 17 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	45	Y	-0.25	%95

Member Point Loads (BLC 18 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	5	Y	-0.25	%95

Member Point Loads (BLC 19 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Y	-0.25	%95

Member Point Loads (BLC 21 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	92	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	57	Y	-0.25	%50

Member Point Loads (BLC 23 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Y	-0.25	%50

Member Point Loads (BLC 24 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	78	Y	-0.25	%50

Member Point Loads (BLC 25 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	81	Y	-0.25	%50

Member Point Loads (BLC 26 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%50

Member Point Loads (BLC 27 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	34	Y	-0.25	%50

Member Point Loads (BLC 28 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	14	Y	-0.25	%50

Member Point Loads (BLC 29 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.25	%50

Member Point Loads (BLC 30 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	102	Y	-0.25	%50

Member Point Loads (BLC 31 : Maint LL 16)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	106	Y	-0.25	%50

Member Point Loads (BLC 32 : Maint LL 17)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	119	Y	-0.25	%50

Member Point Loads (BLC 33 : Maint LL 18)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	122	Y	-0.25	%50

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.003	-0.003	0	%100
4	4	Z	-0.009	-0.009	0	%100
5	5	Z	-0.009	-0.009	0	%100
6	6	Z	-0.009	-0.009	0	%100
7	7	Z	-0.009	-0.009	0	%100
8	8	Z	-0.003	-0.003	0	%100
9	9	Z	-0.003	-0.003	0	%100
10	13	Z	-0.002	-0.002	0	%100
11	14	Z	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	15	Z	-0.002	-0.002	0	%100
13	17	Z	-0.002	-0.002	0	%100
14	18	Z	-0.008	-0.008	0	%100
15	19	Z	-0.002	-0.002	0	%100
16	22	Z	-0.009	-0.009	0	%100
17	27	Z	-0.003	-0.003	0	%100
18	28	Z	-0.003	-0.003	0	%100
19	29	Z	-0.003	-0.003	0	%100
20	30	Z	-0.002	-0.002	0	%100
21	31	Z	-0.008	-0.008	0	%100
22	32	Z	-0.002	-0.002	0	%100
23	33	Z	-0.002	-0.002	0	%100
24	34	Z	-0.008	-0.008	0	%100
25	35	Z	-0.002	-0.002	0	%100
26	39	Z	-0.009	-0.009	0	%100
27	42	Z	-0.004	-0.004	0	%100
28	43	Z	-0.004	-0.004	0	%100
29	44	Z	-0.003	-0.003	0	%100
30	45	Z	-0.009	-0.009	0	%100
31	46	Z	-0.009	-0.009	0	%100
32	47	Z	-0.009	-0.009	0	%100
33	48	Z	-0.009	-0.009	0	%100
34	49	Z	-0.009	-0.009	0	%100
35	50	Z	-0.009	-0.009	0	%100
36	51	Z	-0.003	-0.003	0	%100
37	52	Z	-0.003	-0.003	0	%100
38	56	Z	-0.002	-0.002	0	%100
39	57	Z	-0.008	-0.008	0	%100
40	58	Z	-0.002	-0.002	0	%100
41	60	Z	-0.002	-0.002	0	%100
42	61	Z	-0.008	-0.008	0	%100
43	62	Z	-0.002	-0.002	0	%100
44	65	Z	-0.009	-0.009	0	%100
45	74	Z	-0.003	-0.003	0	%100
46	75	Z	-0.003	-0.003	0	%100
47	76	Z	-0.003	-0.003	0	%100
48	77	Z	-0.002	-0.002	0	%100
49	78	Z	-0.008	-0.008	0	%100
50	79	Z	-0.002	-0.002	0	%100
51	80	Z	-0.002	-0.002	0	%100
52	81	Z	-0.008	-0.008	0	%100
53	82	Z	-0.002	-0.002	0	%100
54	86	Z	-0.009	-0.009	0	%100
55	89	Z	-0.004	-0.004	0	%100
56	90	Z	-0.004	-0.004	0	%100
57	91	Z	-0.003	-0.003	0	%100
58	92	Z	-0.009	-0.009	0	%100
59	93	Z	-0.009	-0.009	0	%100
60	94	Z	-0.009	-0.009	0	%100
61	95	Z	-0.009	-0.009	0	%100
62	96	Z	-0.003	-0.003	0	%100
63	97	Z	-0.003	-0.003	0	%100
64	101	Z	-0.002	-0.002	0	%100
65	102	Z	-0.008	-0.008	0	%100
66	103	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
67	105	Z	-0.002	-0.002	0	%100
68	106	Z	-0.008	-0.008	0	%100
69	107	Z	-0.002	-0.002	0	%100
70	110	Z	-0.009	-0.009	0	%100
71	115	Z	-0.003	-0.003	0	%100
72	116	Z	-0.003	-0.003	0	%100
73	117	Z	-0.003	-0.003	0	%100
74	118	Z	-0.002	-0.002	0	%100
75	119	Z	-0.008	-0.008	0	%100
76	120	Z	-0.002	-0.002	0	%100
77	121	Z	-0.002	-0.002	0	%100
78	122	Z	-0.008	-0.008	0	%100
79	123	Z	-0.002	-0.002	0	%100
80	127	Z	-0.009	-0.009	0	%100
81	130	Z	-0.009	-0.009	0	%100
82	131	Z	-0.009	-0.009	0	%100
83	136	Z	-0.009	-0.009	0	%100
84	137	Z	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.004	-0.004	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.003	-0.003	0	%100
4	4	X	-0.009	-0.009	0	%100
5	5	X	-0.009	-0.009	0	%100
6	6	X	-0.009	-0.009	0	%100
7	7	X	-0.009	-0.009	0	%100
8	8	X	-0.003	-0.003	0	%100
9	9	X	-0.003	-0.003	0	%100
10	13	X	-0.002	-0.002	0	%100
11	14	X	-0.008	-0.008	0	%100
12	15	X	-0.002	-0.002	0	%100
13	17	X	-0.002	-0.002	0	%100
14	18	X	-0.008	-0.008	0	%100
15	19	X	-0.002	-0.002	0	%100
16	22	X	-0.009	-0.009	0	%100
17	27	X	-0.003	-0.003	0	%100
18	28	X	-0.003	-0.003	0	%100
19	29	X	-0.003	-0.003	0	%100
20	30	X	-0.002	-0.002	0	%100
21	31	X	-0.008	-0.008	0	%100
22	32	X	-0.002	-0.002	0	%100
23	33	X	-0.002	-0.002	0	%100
24	34	X	-0.008	-0.008	0	%100
25	35	X	-0.002	-0.002	0	%100
26	39	X	-0.009	-0.009	0	%100
27	42	X	-0.004	-0.004	0	%100
28	43	X	-0.004	-0.004	0	%100
29	44	X	-0.003	-0.003	0	%100
30	45	X	-0.009	-0.009	0	%100
31	46	X	-0.009	-0.009	0	%100
32	47	X	-0.009	-0.009	0	%100
33	48	X	-0.009	-0.009	0	%100
34	49	X	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
35	50	X	-0.009	-0.009	0	%100
36	51	X	-0.003	-0.003	0	%100
37	52	X	-0.003	-0.003	0	%100
38	56	X	-0.002	-0.002	0	%100
39	57	X	-0.008	-0.008	0	%100
40	58	X	-0.002	-0.002	0	%100
41	60	X	-0.002	-0.002	0	%100
42	61	X	-0.008	-0.008	0	%100
43	62	X	-0.002	-0.002	0	%100
44	65	X	-0.009	-0.009	0	%100
45	74	X	-0.003	-0.003	0	%100
46	75	X	-0.003	-0.003	0	%100
47	76	X	-0.003	-0.003	0	%100
48	77	X	-0.002	-0.002	0	%100
49	78	X	-0.008	-0.008	0	%100
50	79	X	-0.002	-0.002	0	%100
51	80	X	-0.002	-0.002	0	%100
52	81	X	-0.008	-0.008	0	%100
53	82	X	-0.002	-0.002	0	%100
54	86	X	-0.009	-0.009	0	%100
55	89	X	-0.004	-0.004	0	%100
56	90	X	-0.004	-0.004	0	%100
57	91	X	-0.003	-0.003	0	%100
58	92	X	-0.009	-0.009	0	%100
59	93	X	-0.009	-0.009	0	%100
60	94	X	-0.009	-0.009	0	%100
61	95	X	-0.009	-0.009	0	%100
62	96	X	-0.003	-0.003	0	%100
63	97	X	-0.003	-0.003	0	%100
64	101	X	-0.002	-0.002	0	%100
65	102	X	-0.008	-0.008	0	%100
66	103	X	-0.002	-0.002	0	%100
67	105	X	-0.002	-0.002	0	%100
68	106	X	-0.008	-0.008	0	%100
69	107	X	-0.002	-0.002	0	%100
70	110	X	-0.009	-0.009	0	%100
71	115	X	-0.003	-0.003	0	%100
72	116	X	-0.003	-0.003	0	%100
73	117	X	-0.003	-0.003	0	%100
74	118	X	-0.002	-0.002	0	%100
75	119	X	-0.008	-0.008	0	%100
76	120	X	-0.002	-0.002	0	%100
77	121	X	-0.002	-0.002	0	%100
78	122	X	-0.008	-0.008	0	%100
79	123	X	-0.002	-0.002	0	%100
80	127	X	-0.009	-0.009	0	%100
81	130	X	-0.009	-0.009	0	%100
82	131	X	-0.009	-0.009	0	%100
83	136	X	-0.009	-0.009	0	%100
84	137	X	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
3	3	Z	-0.002	-0.002	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.002	-0.002	0	%100
10	13	Z	-0.004	-0.004	0	%100
11	14	Z	-0.002	-0.002	0	%100
12	15	Z	-0.004	-0.004	0	%100
13	17	Z	-0.004	-0.004	0	%100
14	18	Z	-0.002	-0.002	0	%100
15	19	Z	-0.004	-0.004	0	%100
16	22	Z	-0.002	-0.002	0	%100
17	27	Z	-0.002	-0.002	0	%100
18	28	Z	-0.002	-0.002	0	%100
19	29	Z	-0.002	-0.002	0	%100
20	30	Z	-0.004	-0.004	0	%100
21	31	Z	-0.002	-0.002	0	%100
22	32	Z	-0.004	-0.004	0	%100
23	33	Z	-0.004	-0.004	0	%100
24	34	Z	-0.002	-0.002	0	%100
25	35	Z	-0.004	-0.004	0	%100
26	39	Z	-0.002	-0.002	0	%100
27	42	Z	-0.004	-0.004	0	%100
28	43	Z	-0.004	-0.004	0	%100
29	44	Z	-0.002	-0.002	0	%100
30	45	Z	-0.002	-0.002	0	%100
31	46	Z	-0.002	-0.002	0	%100
32	47	Z	-0.002	-0.002	0	%100
33	48	Z	-0.002	-0.002	0	%100
34	49	Z	-0.002	-0.002	0	%100
35	50	Z	-0.002	-0.002	0	%100
36	51	Z	-0.002	-0.002	0	%100
37	52	Z	-0.002	-0.002	0	%100
38	56	Z	-0.004	-0.004	0	%100
39	57	Z	-0.002	-0.002	0	%100
40	58	Z	-0.004	-0.004	0	%100
41	60	Z	-0.004	-0.004	0	%100
42	61	Z	-0.002	-0.002	0	%100
43	62	Z	-0.004	-0.004	0	%100
44	65	Z	-0.002	-0.002	0	%100
45	74	Z	-0.002	-0.002	0	%100
46	75	Z	-0.002	-0.002	0	%100
47	76	Z	-0.002	-0.002	0	%100
48	77	Z	-0.004	-0.004	0	%100
49	78	Z	-0.002	-0.002	0	%100
50	79	Z	-0.004	-0.004	0	%100
51	80	Z	-0.004	-0.004	0	%100
52	81	Z	-0.002	-0.002	0	%100
53	82	Z	-0.004	-0.004	0	%100
54	86	Z	-0.002	-0.002	0	%100
55	89	Z	-0.004	-0.004	0	%100
56	90	Z	-0.004	-0.004	0	%100
57	91	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
58	92	Z	-0.002	-0.002	0	%100
59	93	Z	-0.002	-0.002	0	%100
60	94	Z	-0.002	-0.002	0	%100
61	95	Z	-0.002	-0.002	0	%100
62	96	Z	-0.002	-0.002	0	%100
63	97	Z	-0.002	-0.002	0	%100
64	101	Z	-0.004	-0.004	0	%100
65	102	Z	-0.002	-0.002	0	%100
66	103	Z	-0.004	-0.004	0	%100
67	105	Z	-0.004	-0.004	0	%100
68	106	Z	-0.002	-0.002	0	%100
69	107	Z	-0.004	-0.004	0	%100
70	110	Z	-0.002	-0.002	0	%100
71	115	Z	-0.002	-0.002	0	%100
72	116	Z	-0.002	-0.002	0	%100
73	117	Z	-0.002	-0.002	0	%100
74	118	Z	-0.004	-0.004	0	%100
75	119	Z	-0.002	-0.002	0	%100
76	120	Z	-0.004	-0.004	0	%100
77	121	Z	-0.004	-0.004	0	%100
78	122	Z	-0.002	-0.002	0	%100
79	123	Z	-0.004	-0.004	0	%100
80	127	Z	-0.002	-0.002	0	%100
81	130	Z	-0.002	-0.002	0	%100
82	131	Z	-0.002	-0.002	0	%100
83	136	Z	-0.002	-0.002	0	%100
84	137	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.004	-0.004	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.002	-0.002	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.002	-0.002	0	%100
10	13	X	-0.004	-0.004	0	%100
11	14	X	-0.002	-0.002	0	%100
12	15	X	-0.004	-0.004	0	%100
13	17	X	-0.004	-0.004	0	%100
14	18	X	-0.002	-0.002	0	%100
15	19	X	-0.004	-0.004	0	%100
16	22	X	-0.002	-0.002	0	%100
17	27	X	-0.002	-0.002	0	%100
18	28	X	-0.002	-0.002	0	%100
19	29	X	-0.002	-0.002	0	%100
20	30	X	-0.004	-0.004	0	%100
21	31	X	-0.002	-0.002	0	%100
22	32	X	-0.004	-0.004	0	%100
23	33	X	-0.004	-0.004	0	%100
24	34	X	-0.002	-0.002	0	%100
25	35	X	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
26	39	X	-0.002	-0.002	0	%100
27	42	X	-0.004	-0.004	0	%100
28	43	X	-0.004	-0.004	0	%100
29	44	X	-0.002	-0.002	0	%100
30	45	X	-0.002	-0.002	0	%100
31	46	X	-0.002	-0.002	0	%100
32	47	X	-0.002	-0.002	0	%100
33	48	X	-0.002	-0.002	0	%100
34	49	X	-0.002	-0.002	0	%100
35	50	X	-0.002	-0.002	0	%100
36	51	X	-0.002	-0.002	0	%100
37	52	X	-0.002	-0.002	0	%100
38	56	X	-0.004	-0.004	0	%100
39	57	X	-0.002	-0.002	0	%100
40	58	X	-0.004	-0.004	0	%100
41	60	X	-0.004	-0.004	0	%100
42	61	X	-0.002	-0.002	0	%100
43	62	X	-0.004	-0.004	0	%100
44	65	X	-0.002	-0.002	0	%100
45	74	X	-0.002	-0.002	0	%100
46	75	X	-0.002	-0.002	0	%100
47	76	X	-0.002	-0.002	0	%100
48	77	X	-0.004	-0.004	0	%100
49	78	X	-0.002	-0.002	0	%100
50	79	X	-0.004	-0.004	0	%100
51	80	X	-0.004	-0.004	0	%100
52	81	X	-0.002	-0.002	0	%100
53	82	X	-0.004	-0.004	0	%100
54	86	X	-0.002	-0.002	0	%100
55	89	X	-0.004	-0.004	0	%100
56	90	X	-0.004	-0.004	0	%100
57	91	X	-0.002	-0.002	0	%100
58	92	X	-0.002	-0.002	0	%100
59	93	X	-0.002	-0.002	0	%100
60	94	X	-0.002	-0.002	0	%100
61	95	X	-0.002	-0.002	0	%100
62	96	X	-0.002	-0.002	0	%100
63	97	X	-0.002	-0.002	0	%100
64	101	X	-0.004	-0.004	0	%100
65	102	X	-0.002	-0.002	0	%100
66	103	X	-0.004	-0.004	0	%100
67	105	X	-0.004	-0.004	0	%100
68	106	X	-0.002	-0.002	0	%100
69	107	X	-0.004	-0.004	0	%100
70	110	X	-0.002	-0.002	0	%100
71	115	X	-0.002	-0.002	0	%100
72	116	X	-0.002	-0.002	0	%100
73	117	X	-0.002	-0.002	0	%100
74	118	X	-0.004	-0.004	0	%100
75	119	X	-0.002	-0.002	0	%100
76	120	X	-0.004	-0.004	0	%100
77	121	X	-0.004	-0.004	0	%100
78	122	X	-0.002	-0.002	0	%100
79	123	X	-0.004	-0.004	0	%100
80	127	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
81	130	X	-0.002	-0.002	0	%100
82	131	X	-0.002	-0.002	0	%100
83	136	X	-0.002	-0.002	0	%100
84	137	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0003	-0.0003	0	%100
2	2	Z	-0.0003	-0.0003	0	%100
3	3	Z	-1e-04	-1e-04	0	%100
4	4	Z	-0.0003	-0.0003	0	%100
5	5	Z	-0.0003	-0.0003	0	%100
6	6	Z	-0.0003	-0.0003	0	%100
7	7	Z	-0.0003	-0.0003	0	%100
8	8	Z	-1e-04	-1e-04	0	%100
9	9	Z	-1e-04	-1e-04	0	%100
10	13	Z	-1e-04	-1e-04	0	%100
11	14	Z	-0.0003	-0.0003	0	%100
12	15	Z	-1e-04	-1e-04	0	%100
13	17	Z	-1e-04	-1e-04	0	%100
14	18	Z	-0.0003	-0.0003	0	%100
15	19	Z	-1e-04	-1e-04	0	%100
16	22	Z	-0.0003	-0.0003	0	%100
17	27	Z	-1e-04	-1e-04	0	%100
18	28	Z	-1e-04	-1e-04	0	%100
19	29	Z	-1e-04	-1e-04	0	%100
20	30	Z	-1e-04	-1e-04	0	%100
21	31	Z	-0.0003	-0.0003	0	%100
22	32	Z	-1e-04	-1e-04	0	%100
23	33	Z	-1e-04	-1e-04	0	%100
24	34	Z	-0.0003	-0.0003	0	%100
25	35	Z	-1e-04	-1e-04	0	%100
26	39	Z	-0.0006	-0.0006	0	%100
27	42	Z	-0.0003	-0.0003	0	%100
28	43	Z	-0.0003	-0.0003	0	%100
29	44	Z	-1e-04	-1e-04	0	%100
30	45	Z	-0.0003	-0.0003	0	%100
31	46	Z	-0.0003	-0.0003	0	%100
32	47	Z	-0.0003	-0.0003	0	%100
33	48	Z	-0.0003	-0.0003	0	%100
34	49	Z	-0.0003	-0.0003	0	%100
35	50	Z	-0.0003	-0.0003	0	%100
36	51	Z	-1e-04	-1e-04	0	%100
37	52	Z	-1e-04	-1e-04	0	%100
38	56	Z	-1e-04	-1e-04	0	%100
39	57	Z	-0.0003	-0.0003	0	%100
40	58	Z	-1e-04	-1e-04	0	%100
41	60	Z	-1e-04	-1e-04	0	%100
42	61	Z	-0.0003	-0.0003	0	%100
43	62	Z	-1e-04	-1e-04	0	%100
44	65	Z	-0.0003	-0.0003	0	%100
45	74	Z	-1e-04	-1e-04	0	%100
46	75	Z	-1e-04	-1e-04	0	%100
47	76	Z	-1e-04	-1e-04	0	%100
48	77	Z	-1e-04	-1e-04	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
49	78	Z	-0.0003	-0.0003	0	%100
50	79	Z	-1e-04	-1e-04	0	%100
51	80	Z	-1e-04	-1e-04	0	%100
52	81	Z	-0.0003	-0.0003	0	%100
53	82	Z	-1e-04	-1e-04	0	%100
54	86	Z	-0.0006	-0.0006	0	%100
55	89	Z	-0.0003	-0.0003	0	%100
56	90	Z	-0.0003	-0.0003	0	%100
57	91	Z	-1e-04	-1e-04	0	%100
58	92	Z	-0.0003	-0.0003	0	%100
59	93	Z	-0.0003	-0.0003	0	%100
60	94	Z	-0.0003	-0.0003	0	%100
61	95	Z	-0.0003	-0.0003	0	%100
62	96	Z	-1e-04	-1e-04	0	%100
63	97	Z	-1e-04	-1e-04	0	%100
64	101	Z	-1e-04	-1e-04	0	%100
65	102	Z	-0.0003	-0.0003	0	%100
66	103	Z	-1e-04	-1e-04	0	%100
67	105	Z	-1e-04	-1e-04	0	%100
68	106	Z	-0.0003	-0.0003	0	%100
69	107	Z	-1e-04	-1e-04	0	%100
70	110	Z	-0.0003	-0.0003	0	%100
71	115	Z	-1e-04	-1e-04	0	%100
72	116	Z	-1e-04	-1e-04	0	%100
73	117	Z	-1e-04	-1e-04	0	%100
74	118	Z	-1e-04	-1e-04	0	%100
75	119	Z	-0.0003	-0.0003	0	%100
76	120	Z	-1e-04	-1e-04	0	%100
77	121	Z	-1e-04	-1e-04	0	%100
78	122	Z	-0.0003	-0.0003	0	%100
79	123	Z	-1e-04	-1e-04	0	%100
80	127	Z	-0.0006	-0.0006	0	%100
81	130	Z	-0.0003	-0.0003	0	%100
82	131	Z	-0.0003	-0.0003	0	%100
83	136	Z	-0.0003	-0.0003	0	%100
84	137	Z	-0.0003	-0.0003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0003	-0.0003	0	%100
2	2	X	-0.0003	-0.0003	0	%100
3	3	X	-1e-04	-1e-04	0	%100
4	4	X	-0.0003	-0.0003	0	%100
5	5	X	-0.0003	-0.0003	0	%100
6	6	X	-0.0003	-0.0003	0	%100
7	7	X	-0.0003	-0.0003	0	%100
8	8	X	-1e-04	-1e-04	0	%100
9	9	X	-1e-04	-1e-04	0	%100
10	13	X	-1e-04	-1e-04	0	%100
11	14	X	-0.0003	-0.0003	0	%100
12	15	X	-1e-04	-1e-04	0	%100
13	17	X	-1e-04	-1e-04	0	%100
14	18	X	-0.0003	-0.0003	0	%100
15	19	X	-1e-04	-1e-04	0	%100
16	22	X	-0.0003	-0.0003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
17	27	X	-1e-04	-1e-04	0	%100
18	28	X	-1e-04	-1e-04	0	%100
19	29	X	-1e-04	-1e-04	0	%100
20	30	X	-1e-04	-1e-04	0	%100
21	31	X	-0.0003	-0.0003	0	%100
22	32	X	-1e-04	-1e-04	0	%100
23	33	X	-1e-04	-1e-04	0	%100
24	34	X	-0.0003	-0.0003	0	%100
25	35	X	-1e-04	-1e-04	0	%100
26	39	X	-0.0006	-0.0006	0	%100
27	42	X	-0.0003	-0.0003	0	%100
28	43	X	-0.0003	-0.0003	0	%100
29	44	X	-1e-04	-1e-04	0	%100
30	45	X	-0.0003	-0.0003	0	%100
31	46	X	-0.0003	-0.0003	0	%100
32	47	X	-0.0003	-0.0003	0	%100
33	48	X	-0.0003	-0.0003	0	%100
34	49	X	-0.0003	-0.0003	0	%100
35	50	X	-0.0003	-0.0003	0	%100
36	51	X	-1e-04	-1e-04	0	%100
37	52	X	-1e-04	-1e-04	0	%100
38	56	X	-1e-04	-1e-04	0	%100
39	57	X	-0.0003	-0.0003	0	%100
40	58	X	-1e-04	-1e-04	0	%100
41	60	X	-1e-04	-1e-04	0	%100
42	61	X	-0.0003	-0.0003	0	%100
43	62	X	-1e-04	-1e-04	0	%100
44	65	X	-0.0003	-0.0003	0	%100
45	74	X	-1e-04	-1e-04	0	%100
46	75	X	-1e-04	-1e-04	0	%100
47	76	X	-1e-04	-1e-04	0	%100
48	77	X	-1e-04	-1e-04	0	%100
49	78	X	-0.0003	-0.0003	0	%100
50	79	X	-1e-04	-1e-04	0	%100
51	80	X	-1e-04	-1e-04	0	%100
52	81	X	-0.0003	-0.0003	0	%100
53	82	X	-1e-04	-1e-04	0	%100
54	86	X	-0.0006	-0.0006	0	%100
55	89	X	-0.0003	-0.0003	0	%100
56	90	X	-0.0003	-0.0003	0	%100
57	91	X	-1e-04	-1e-04	0	%100
58	92	X	-0.0003	-0.0003	0	%100
59	93	X	-0.0003	-0.0003	0	%100
60	94	X	-0.0003	-0.0003	0	%100
61	95	X	-0.0003	-0.0003	0	%100
62	96	X	-1e-04	-1e-04	0	%100
63	97	X	-1e-04	-1e-04	0	%100
64	101	X	-1e-04	-1e-04	0	%100
65	102	X	-0.0003	-0.0003	0	%100
66	103	X	-1e-04	-1e-04	0	%100
67	105	X	-1e-04	-1e-04	0	%100
68	106	X	-0.0003	-0.0003	0	%100
69	107	X	-1e-04	-1e-04	0	%100
70	110	X	-0.0003	-0.0003	0	%100
71	115	X	-1e-04	-1e-04	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
72	116	X	-1e-04	-1e-04	0	%100
73	117	X	-1e-04	-1e-04	0	%100
74	118	X	-1e-04	-1e-04	0	%100
75	119	X	-0.0003	-0.0003	0	%100
76	120	X	-1e-04	-1e-04	0	%100
77	121	X	-1e-04	-1e-04	0	%100
78	122	X	-0.0003	-0.0003	0	%100
79	123	X	-1e-04	-1e-04	0	%100
80	127	X	-0.0006	-0.0006	0	%100
81	130	X	-0.0003	-0.0003	0	%100
82	131	X	-0.0003	-0.0003	0	%100
83	136	X	-0.0003	-0.0003	0	%100
84	137	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.01	-0.01	0	%100
2	2	Y	-0.01	-0.01	0	%100
3	3	Y	-0.003	-0.003	0	%100
4	4	Y	-0.005	-0.005	0	%100
5	5	Y	-0.005	-0.005	0	%100
6	6	Y	-0.005	-0.005	0	%100
7	7	Y	-0.005	-0.005	0	%100
8	8	Y	-0.003	-0.003	0	%100
9	9	Y	-0.003	-0.003	0	%100
10	13	Y	-0.007	-0.007	0	%100
11	14	Y	-0.005	-0.005	0	%100
12	15	Y	-0.007	-0.007	0	%100
13	17	Y	-0.007	-0.007	0	%100
14	18	Y	-0.005	-0.005	0	%100
15	19	Y	-0.007	-0.007	0	%100
16	22	Y	-0.005	-0.005	0	%100
17	27	Y	-0.003	-0.003	0	%100
18	28	Y	-0.003	-0.003	0	%100
19	29	Y	-0.003	-0.003	0	%100
20	30	Y	-0.007	-0.007	0	%100
21	31	Y	-0.005	-0.005	0	%100
22	32	Y	-0.007	-0.007	0	%100
23	33	Y	-0.007	-0.007	0	%100
24	34	Y	-0.005	-0.005	0	%100
25	35	Y	-0.007	-0.007	0	%100
26	39	Y	-0.008	-0.008	0	%100
27	42	Y	-0.01	-0.01	0	%100
28	43	Y	-0.01	-0.01	0	%100
29	44	Y	-0.003	-0.003	0	%100
30	45	Y	-0.005	-0.005	0	%100
31	46	Y	-0.005	-0.005	0	%100
32	47	Y	-0.005	-0.005	0	%100
33	48	Y	-0.005	-0.005	0	%100
34	49	Y	-0.005	-0.005	0	%100
35	50	Y	-0.005	-0.005	0	%100
36	51	Y	-0.003	-0.003	0	%100
37	52	Y	-0.003	-0.003	0	%100
38	56	Y	-0.007	-0.007	0	%100
39	57	Y	-0.005	-0.005	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
40	58	Y	-0.007	-0.007	0	%100
41	60	Y	-0.007	-0.007	0	%100
42	61	Y	-0.005	-0.005	0	%100
43	62	Y	-0.007	-0.007	0	%100
44	65	Y	-0.005	-0.005	0	%100
45	74	Y	-0.003	-0.003	0	%100
46	75	Y	-0.003	-0.003	0	%100
47	76	Y	-0.003	-0.003	0	%100
48	77	Y	-0.007	-0.007	0	%100
49	78	Y	-0.005	-0.005	0	%100
50	79	Y	-0.007	-0.007	0	%100
51	80	Y	-0.007	-0.007	0	%100
52	81	Y	-0.005	-0.005	0	%100
53	82	Y	-0.007	-0.007	0	%100
54	86	Y	-0.008	-0.008	0	%100
55	89	Y	-0.01	-0.01	0	%100
56	90	Y	-0.01	-0.01	0	%100
57	91	Y	-0.003	-0.003	0	%100
58	92	Y	-0.005	-0.005	0	%100
59	93	Y	-0.005	-0.005	0	%100
60	94	Y	-0.005	-0.005	0	%100
61	95	Y	-0.005	-0.005	0	%100
62	96	Y	-0.003	-0.003	0	%100
63	97	Y	-0.003	-0.003	0	%100
64	101	Y	-0.007	-0.007	0	%100
65	102	Y	-0.005	-0.005	0	%100
66	103	Y	-0.007	-0.007	0	%100
67	105	Y	-0.007	-0.007	0	%100
68	106	Y	-0.005	-0.005	0	%100
69	107	Y	-0.007	-0.007	0	%100
70	110	Y	-0.005	-0.005	0	%100
71	115	Y	-0.003	-0.003	0	%100
72	116	Y	-0.003	-0.003	0	%100
73	117	Y	-0.003	-0.003	0	%100
74	118	Y	-0.007	-0.007	0	%100
75	119	Y	-0.005	-0.005	0	%100
76	120	Y	-0.007	-0.007	0	%100
77	121	Y	-0.007	-0.007	0	%100
78	122	Y	-0.005	-0.005	0	%100
79	123	Y	-0.007	-0.007	0	%100
80	127	Y	-0.008	-0.008	0	%100
81	130	Y	-0.005	-0.005	0	%100
82	131	Y	-0.005	-0.005	0	%100
83	136	Y	-0.005	-0.005	0	%100
84	137	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.0007	-0.0007	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.001	-0.001	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	8	Z	-0.0007	-0.0007	0	%100
9	9	Z	-0.0007	-0.0007	0	%100
10	13	Z	-0.002	-0.002	0	%100
11	14	Z	-0.002	-0.002	0	%100
12	15	Z	-0.002	-0.002	0	%100
13	17	Z	-0.002	-0.002	0	%100
14	18	Z	-0.002	-0.002	0	%100
15	19	Z	-0.002	-0.002	0	%100
16	22	Z	-0.001	-0.001	0	%100
17	27	Z	-0.0007	-0.0007	0	%100
18	28	Z	-0.0007	-0.0007	0	%100
19	29	Z	-0.0007	-0.0007	0	%100
20	30	Z	-0.002	-0.002	0	%100
21	31	Z	-0.002	-0.002	0	%100
22	32	Z	-0.002	-0.002	0	%100
23	33	Z	-0.002	-0.002	0	%100
24	34	Z	-0.002	-0.002	0	%100
25	35	Z	-0.002	-0.002	0	%100
26	39	Z	-0.003	-0.003	0	%100
27	42	Z	-0.004	-0.004	0	%100
28	43	Z	-0.004	-0.004	0	%100
29	44	Z	-0.0007	-0.0007	0	%100
30	45	Z	-0.002	-0.002	0	%100
31	46	Z	-0.002	-0.002	0	%100
32	47	Z	-0.001	-0.001	0	%100
33	48	Z	-0.001	-0.001	0	%100
34	49	Z	-0.001	-0.001	0	%100
35	50	Z	-0.001	-0.001	0	%100
36	51	Z	-0.0007	-0.0007	0	%100
37	52	Z	-0.0007	-0.0007	0	%100
38	56	Z	-0.002	-0.002	0	%100
39	57	Z	-0.002	-0.002	0	%100
40	58	Z	-0.002	-0.002	0	%100
41	60	Z	-0.002	-0.002	0	%100
42	61	Z	-0.002	-0.002	0	%100
43	62	Z	-0.002	-0.002	0	%100
44	65	Z	-0.001	-0.001	0	%100
45	74	Z	-0.0007	-0.0007	0	%100
46	75	Z	-0.0007	-0.0007	0	%100
47	76	Z	-0.0007	-0.0007	0	%100
48	77	Z	-0.002	-0.002	0	%100
49	78	Z	-0.002	-0.002	0	%100
50	79	Z	-0.002	-0.002	0	%100
51	80	Z	-0.002	-0.002	0	%100
52	81	Z	-0.002	-0.002	0	%100
53	82	Z	-0.002	-0.002	0	%100
54	86	Z	-0.003	-0.003	0	%100
55	89	Z	-0.004	-0.004	0	%100
56	90	Z	-0.004	-0.004	0	%100
57	91	Z	-0.0007	-0.0007	0	%100
58	92	Z	-0.002	-0.002	0	%100
59	93	Z	-0.002	-0.002	0	%100
60	94	Z	-0.001	-0.001	0	%100
61	95	Z	-0.001	-0.001	0	%100
62	96	Z	-0.0007	-0.0007	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
63	97	Z	-0.0007	-0.0007	0	%100
64	101	Z	-0.002	-0.002	0	%100
65	102	Z	-0.002	-0.002	0	%100
66	103	Z	-0.002	-0.002	0	%100
67	105	Z	-0.002	-0.002	0	%100
68	106	Z	-0.002	-0.002	0	%100
69	107	Z	-0.002	-0.002	0	%100
70	110	Z	-0.001	-0.001	0	%100
71	115	Z	-0.0007	-0.0007	0	%100
72	116	Z	-0.0007	-0.0007	0	%100
73	117	Z	-0.0007	-0.0007	0	%100
74	118	Z	-0.002	-0.002	0	%100
75	119	Z	-0.002	-0.002	0	%100
76	120	Z	-0.002	-0.002	0	%100
77	121	Z	-0.002	-0.002	0	%100
78	122	Z	-0.002	-0.002	0	%100
79	123	Z	-0.002	-0.002	0	%100
80	127	Z	-0.003	-0.003	0	%100
81	130	Z	-0.001	-0.001	0	%100
82	131	Z	-0.001	-0.001	0	%100
83	136	Z	-0.001	-0.001	0	%100
84	137	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.004	-0.004	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.0007	-0.0007	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.0007	-0.0007	0	%100
9	9	X	-0.0007	-0.0007	0	%100
10	13	X	-0.002	-0.002	0	%100
11	14	X	-0.002	-0.002	0	%100
12	15	X	-0.002	-0.002	0	%100
13	17	X	-0.002	-0.002	0	%100
14	18	X	-0.002	-0.002	0	%100
15	19	X	-0.002	-0.002	0	%100
16	22	X	-0.001	-0.001	0	%100
17	27	X	-0.0007	-0.0007	0	%100
18	28	X	-0.0007	-0.0007	0	%100
19	29	X	-0.0007	-0.0007	0	%100
20	30	X	-0.002	-0.002	0	%100
21	31	X	-0.002	-0.002	0	%100
22	32	X	-0.002	-0.002	0	%100
23	33	X	-0.002	-0.002	0	%100
24	34	X	-0.002	-0.002	0	%100
25	35	X	-0.002	-0.002	0	%100
26	39	X	-0.003	-0.003	0	%100
27	42	X	-0.004	-0.004	0	%100
28	43	X	-0.004	-0.004	0	%100
29	44	X	-0.0007	-0.0007	0	%100
30	45	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
31	46	X	-0.002	-0.002	0	%100
32	47	X	-0.001	-0.001	0	%100
33	48	X	-0.001	-0.001	0	%100
34	49	X	-0.001	-0.001	0	%100
35	50	X	-0.001	-0.001	0	%100
36	51	X	-0.0007	-0.0007	0	%100
37	52	X	-0.0007	-0.0007	0	%100
38	56	X	-0.002	-0.002	0	%100
39	57	X	-0.002	-0.002	0	%100
40	58	X	-0.002	-0.002	0	%100
41	60	X	-0.002	-0.002	0	%100
42	61	X	-0.002	-0.002	0	%100
43	62	X	-0.002	-0.002	0	%100
44	65	X	-0.001	-0.001	0	%100
45	74	X	-0.0007	-0.0007	0	%100
46	75	X	-0.0007	-0.0007	0	%100
47	76	X	-0.0007	-0.0007	0	%100
48	77	X	-0.002	-0.002	0	%100
49	78	X	-0.002	-0.002	0	%100
50	79	X	-0.002	-0.002	0	%100
51	80	X	-0.002	-0.002	0	%100
52	81	X	-0.002	-0.002	0	%100
53	82	X	-0.002	-0.002	0	%100
54	86	X	-0.003	-0.003	0	%100
55	89	X	-0.004	-0.004	0	%100
56	90	X	-0.004	-0.004	0	%100
57	91	X	-0.0007	-0.0007	0	%100
58	92	X	-0.002	-0.002	0	%100
59	93	X	-0.002	-0.002	0	%100
60	94	X	-0.001	-0.001	0	%100
61	95	X	-0.001	-0.001	0	%100
62	96	X	-0.0007	-0.0007	0	%100
63	97	X	-0.0007	-0.0007	0	%100
64	101	X	-0.002	-0.002	0	%100
65	102	X	-0.002	-0.002	0	%100
66	103	X	-0.002	-0.002	0	%100
67	105	X	-0.002	-0.002	0	%100
68	106	X	-0.002	-0.002	0	%100
69	107	X	-0.002	-0.002	0	%100
70	110	X	-0.001	-0.001	0	%100
71	115	X	-0.0007	-0.0007	0	%100
72	116	X	-0.0007	-0.0007	0	%100
73	117	X	-0.0007	-0.0007	0	%100
74	118	X	-0.002	-0.002	0	%100
75	119	X	-0.002	-0.002	0	%100
76	120	X	-0.002	-0.002	0	%100
77	121	X	-0.002	-0.002	0	%100
78	122	X	-0.002	-0.002	0	%100
79	123	X	-0.002	-0.002	0	%100
80	127	X	-0.003	-0.003	0	%100
81	130	X	-0.001	-0.001	0	%100
82	131	X	-0.001	-0.001	0	%100
83	136	X	-0.001	-0.001	0	%100
84	137	X	-0.001	-0.001	0	%100

Member Area Loads

No Data to Print...

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	16	L	Y	-0.5
2	82	L	Y	-0.5
3	152	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	83	L	Y	-0.5
2	207	L	Y	-0.5
3	219	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	84	L	Y	-0.5
2	208	L	Y	-0.5
3	220	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	17	L	Y	-0.5
2	85	L	Y	-0.5
3	153	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	Dead	DL	-1		55	
2	0 Wind - No Ice	WLZ			55	84
3	90 Wind - No Ice	WLX			55	84
4	0 Wind - Ice	WLZ			55	84
5	90 Wind - Ice	WLX			55	84
6	0 Wind - Service	WLZ			55	84
7	90 Wind - Service	WLX			55	84
8	Ice	OL1			55	84
9	0 Seismic	ELZ			55	84
10	90 Seismic	ELX			55	84
11	Live Load a	LL		3		
12	Live Load b	LL		3		
13	Live Load c	LL		3		
14	Live Load d	LL		3		
15	Live Load e	LL				
16	Maint LL 1	LL			1	
17	Maint LL 2	LL			1	
18	Maint LL 3	LL			1	
19	Maint LL 4	LL			1	
20	Maint LL 5	LL			1	
21	Maint LL 6	LL			1	
22	Maint LL 7	LL			1	

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
23	Maint LL 8	LL			1	
24	Maint LL 9	LL			1	
25	Maint LL 10	LL			1	
26	Maint LL 11	LL			1	
27	Maint LL 12	LL			1	
28	Maint LL 13	LL			1	
29	Maint LL 14	LL			1	
30	Maint LL 15	LL			1	
31	Maint LL 16	LL			1	
32	Maint LL 17	LL			1	
33	Maint LL 18	LL			1	
34	Maint LL 19	LL				
35	Maint LL 20	LL				
36	Maint LL 21	LL				
37	Maint LL 22	LL				
38	Maint LL 23	LL				
39	Maint LL 24	LL				

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL e + Service - 0 W	Yes	Y	1	1.2	6	1			15	1.5
87	1.2 D + 1.5 LL e + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	15	1.5
88	1.2 D + 1.5 LL e + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	15	1.5
89	1.2 D + 1.5 LL e + Service - 90 W	Yes	Y	1	1.2	7	1			15	1.5
90	1.2 D + 1.5 LL e + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	15	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
91	1.2 D + 1.5 LL e + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	15	1.5
92	1.2 D + 1.5 LL e + Service - 180 W	Yes	Y	1	1.2	6	-1			15	1.5
93	1.2 D + 1.5 LL e + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	15	1.5
94	1.2 D + 1.5 LL e + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	15	1.5
95	1.2 D + 1.5 LL e + Service - 270 W	Yes	Y	1	1.2	7	-1			15	1.5
96	1.2 D + 1.5 LL e + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	15	1.5
97	1.2 D + 1.5 LL e + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	15	1.5
98	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					16	1.5
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					17	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					18	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					19	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					20	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					21	1.5
104	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					22	1.5
105	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					23	1.5
106	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					24	1.5
107	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					25	1.5
108	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					26	1.5
109	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					27	1.5
110	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					28	1.5
111	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					29	1.5
112	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					30	1.5
113	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					31	1.5
114	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					32	1.5
115	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					33	1.5
116	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					34	1.5
117	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					35	1.5
118	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					36	1.5
119	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					37	1.5
120	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					38	1.5
121	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					39	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	61	max	2.005	2	1.366	16	4.732	2	2.784	8	0	121	1.03	2
2		min	-0.63	8	0.485	10	-3.681	8	-3.111	2	0	1	-0.66	8
3	62	max	-0.312	4	1.324	20	0.588	2	0.959	2	0	121	0.644	82
4		min	-1.802	82	0.438	2	-1.841	44	-1.305	8	0	1	0.003	4
5	135	max	2.715	7	1.363	20	1.518	13	1.855	7	0	121	2.055	7
6		min	-2.492	13	0.443	2	-3.247	7	-1.366	13	0	1	-1.962	13
7	136	max	1.008	78	1.299	24	2.122	25	0.886	13	0	121	0.86	13
8		min	-1.22	49	0.49	6	0.173	7	-0.356	7	0	1	-0.768	7
9	197	max	2.01	4	1.323	25	1.643	78	0.66	12	0	121	1.7	4
10		min	-3.568	10	0.453	7	-0.466	12	-0.836	6	0	1	-2.155	10
11	198	max	2.017	17	1.257	15	0.27	39	0.202	41	0	121	0.517	11
12		min	-0.043	11	0.435	9	-1.618	81	-0.636	83	0	1	-1.017	5
13	Totals:	max	5.035	5	7.774	17	7.743	2						
14		min	-5.035	11	3.528	12	-7.743	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	PL5/8x6	0.223	0.667	44	0.056	0.667	y	21	94.955	168.75	2.197	21.094	1.584	H1-1b
2	2	PL5/8x6	0.228	0.667	38	0.099	0.667	y	2	94.955	168.75	2.197	21.094	1.577	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
3	3	3/4" SR	0.128	4.673	43	0.011	0		13	1.116	19.88	0.249	0.249	2.343	H1-1b*
4	4	HSS2.375X0.218	0.17	5.01	55	0.076	2.437		43	7.649	62.55	3.6	3.6	2.872	H1-1b
5	5	HSS2.375X0.218	0.499	2.437	8	0.218	2.437		8	7.649	62.55	3.6	3.6	1.996	H1-1a
6	6	PIPE_2.0	0.225	3.828	78	0.041	3.828		77	8.922	32.13	1.872	1.872	3	H1-1b
7	7	PIPE_2.0	0.478	3.719	2	0.088	3.828		3	8.922	32.13	1.872	1.872	2.984	H1-1b
8	8	3/4" SR	0.346	3	20	0.009	0		38	2.707	19.88	0.249	0.249	2.265	H1-1a
9	9	3/4" SR	0.336	3	20	0.024	0		7	2.707	19.88	0.249	0.249	2.249	H1-1a
10	13	PL 1/2X3 11/16	0.181	0.227	8	0.131	0.227	y	3	80.831	82.969	0.864	6.374	1.667	H1-1b
11	14	HSS2.375X0.218	0.242	3.633	8	0.054	3.75		15	48.725	62.55	3.6	3.6	2.527	H1-1b
12	15	PL 1/2X3 11/16	0.218	0	8	0.11	0	y	2	79.835	82.969	0.864	6.374	1.021	H1-1b
13	17	PL 1/2X3 11/16	0.189	0.227	39	0.095	0.002	y	60	80.831	82.969	0.864	6.374	1.666	H1-1b
14	18	HSS2.375X0.218	0.122	3.672	8	0.052	3.75		20	48.725	62.55	3.6	3.6	1.815	H1-1b
15	19	PL 1/2X3 11/16	0.21	0	20	0.076	0.276	y	59	79.835	82.969	0.864	6.374	1.019	H1-1b
16	22	HSS2.375X0.154	0.142	0	13	0.028	6.694		45	21.206	45	2.674	2.674	1.136	H1-1b*
17	27	3/4" SR	0.119	4.673	84	0.012	0		8	1.116	19.88	0.249	0.249	2.413	H1-1b*
18	28	3/4" SR	0.309	3	85	0.009	3		38	2.707	19.88	0.249	0.249	2.239	H1-1a
19	29	3/4" SR	0.288	3	81	0.022	0		7	2.707	19.88	0.249	0.249	2.278	H1-1a
20	30	PL 1/2X3 11/16	0.158	0.227	81	0.091	0	y	4	80.831	82.969	0.864	6.374	1.666	H1-1b
21	31	HSS2.375X0.218	0.195	3.75	13	0.047	3.75		63	48.725	62.55	3.6	3.6	1.719	H1-1b
22	32	PL 1/2X3 11/16	0.193	0	79	0.085	0.276	y	17	79.835	82.969	0.864	6.374	1.024	H1-1b
23	33	PL 1/2X3 11/16	0.189	0.227	75	0.087	0	y	20	80.831	82.969	0.864	6.374	1.666	H1-1b
24	34	HSS2.375X0.218	0.102	1.875	109	0.049	0.078		63	48.725	62.55	3.6	3.6	1.346	H1-1b
25	35	PL 1/2X3 11/16	0.186	0	85	0.081	0	y	19	79.835	82.969	0.864	6.374	1.016	H1-1b
26	39	HSS4.500X0.237	0.219	5.979	2	0.171	5.979		2	106.372	133.2	15.113	15.113	2.809	H1-1b
27	42	PL5/8x6	0.223	0.667	48	0.055	0.667	y	14	94.955	168.75	2.197	21.094	1.593	H1-1b
28	43	PL5/8x6	0.227	0.667	43	0.082	0.667	y	7	94.955	168.75	2.197	21.094	1.603	H1-1b
29	44	3/4" SR	0.129	4.673	46	0.008	0		4	1.116	19.88	0.249	0.249	2.33	H1-1b*
30	45	HSS2.375X0.218	0.169	5.01	58	0.076	2.438		47	7.649	62.55	3.6	3.6	2.813	H1-1b
31	46	HSS2.375X0.218	0.357	2.573	7	0.151	10.427		2	7.649	62.55	3.6	3.6	2.345	H1-1a
32	47	PIPE_2.0	0.226	3.828	81	0.041	3.828		81	8.922	32.13	1.872	1.872	3	H1-1b
33	48	PIPE_2.0	0.583	3.719	8	0.082	3.828		7	8.922	32.13	1.872	1.872	2.331	H1-1b
34	49	PIPE_2.0	0.269	3.828	9	0.083	3.828		10	8.922	32.13	1.872	1.872	3	H1-1b
35	50	PIPE_2.0	0.478	3.719	8	0.121	3.828		8	8.922	32.13	1.872	1.872	2.876	H1-1b
36	51	3/4" SR	0.34	3	48	0.009	3		45	2.707	19.88	0.249	0.249	2.265	H1-1a
37	52	3/4" SR	0.324	3	24	0.018	0		11	2.707	19.88	0.249	0.249	2.336	H1-1a
38	56	PL 1/2X3 11/16	0.175	0.227	49	0.154	0.227	y	8	80.831	82.969	0.864	6.374	1.666	H1-1b
39	57	HSS2.375X0.218	0.158	3.633	12	0.054	3.75		20	48.725	62.55	3.6	3.6	2.244	H1-1b
40	58	PL 1/2X3 11/16	0.206	0	42	0.117	0.276	y	7	79.835	82.969	0.864	6.374	1.026	H1-1b
41	60	PL 1/2X3 11/16	0.19	0.227	44	0.095	0.227	y	51	80.831	82.969	0.864	6.374	1.666	H1-1b
42	61	HSS2.375X0.218	0.106	1.875	105	0.051	3.75		25	48.725	62.55	3.6	3.6	1.334	H1-1b
43	62	PL 1/2X3 11/16	0.203	0	48	0.077	0.276	y	51	79.835	82.969	0.864	6.374	1.017	H1-1b
44	65	HSS2.375X0.154	0.1	0	5	0.028	6.694		49	21.206	45	2.674	2.674	1.136	H1-1b*
45	74	3/4" SR	0.119	4.673	76	0.008	0		12	1.116	19.88	0.249	0.249	2.409	H1-1b*
46	75	3/4" SR	0.309	3	77	0.009	0		44	2.707	19.88	0.249	0.249	2.252	H1-1a
47	76	3/4" SR	0.29	3	74	0.017	0		10	2.707	19.88	0.249	0.249	2.264	H1-1a
48	77	PL 1/2X3 11/16	0.166	0.227	2	0.127	0	y	8	80.831	82.969	0.864	6.374	1.66	H1-1b
49	78	HSS2.375X0.218	0.132	3.75	5	0.048	3.75		68	48.725	62.55	3.6	3.6	2.013	H1-1b
50	79	PL 1/2X3 11/16	0.191	0	83	0.108	0.276	y	9	79.835	82.969	0.864	6.374	1.023	H1-1b
51	80	PL 1/2X3 11/16	0.189	0.227	80	0.086	0	y	24	80.831	82.969	0.864	6.374	1.666	H1-1b
52	81	HSS2.375X0.218	0.102	1.875	107	0.05	0.078		68	48.725	62.55	3.6	3.6	1.346	H1-1b
53	82	PL 1/2X3 11/16	0.184	0	78	0.081	0	y	22	79.835	82.969	0.864	6.374	1.014	H1-1b
54	86	HSS4.500X0.237	0.187	5.979	7	0.143	5.979		7	106.372	133.2	15.113	15.113	3	H1-1b
55	89	PL5/8x6	0.216	0.667	40	0.053	0.667	y	15	94.955	168.75	2.197	21.094	1.593	H1-1b
56	90	PL5/8x6	0.222	0.667	46	0.069	0.667	y	10	94.955	168.75	2.197	21.094	1.584	H1-1b
57	91	3/4" SR	0.127	4.673	38	0.011	0		9	1.116	19.88	0.249	0.249	2.398	H1-1b*

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
58	92	HSS2.375X0.218	0.171	5.01	50	0.076	2.437		39	7.649	62.55	3.6	3.6	2.854	H1-1b
59	93	HSS2.375X0.218	0.365	2.437	3	0.185	2.437		3	7.649	62.55	3.6	3.6	2.062	H1-1a
60	94	PIPE_2.0	0.227	3.828	74	0.041	3.828		74	8.922	32.13	1.872	1.872	3	H1-1b
61	95	PIPE_2.0	0.478	3.719	8	0.085	3.828		13	8.922	32.13	1.872	1.872	2.247	H1-1b
62	96	3/4" SR	0.328	3	39	0.009	3		38	2.707	19.88	0.249	0.249	2.239	H1-1a
63	97	3/4" SR	0.316	3	40	0.024	0		3	2.707	19.88	0.249	0.249	2.244	H1-1a
64	101	PL 1/2X3 11/16	0.174	0.227	41	0.101	0	y	12	80.831	82.969	0.864	6.374	1.666	H1-1b
65	102	HSS2.375X0.218	0.206	3.633	3	0.05	3.75		24	48.725	62.55	3.6	3.6	2.277	H1-1b
66	103	PL 1/2X3 11/16	0.209	0	3	0.082	0.276	y	59	79.835	82.969	0.864	6.374	1.021	H1-1b
67	105	PL 1/2X3 11/16	0.189	0.227	49	0.095	0.002	y	56	80.831	82.969	0.864	6.374	1.666	H1-1b
68	106	HSS2.375X0.218	0.105	1.875	113	0.047	3.75		17	48.725	62.55	3.6	3.6	1.339	H1-1b
69	107	PL 1/2X3 11/16	0.197	0	39	0.076	0.276	y	55	79.835	82.969	0.864	6.374	1.016	H1-1b
70	110	HSS2.375X0.154	0.15	0	9	0.027	6.694		42	21.206	45	2.674	2.674	1.136	H1-1b*
71	115	3/4" SR	0.119	4.673	80	0.008	0		4	1.116	19.88	0.249	0.249	2.41	H1-1b*
72	116	3/4" SR	0.309	3	81	0.009	3		46	2.707	19.88	0.249	0.249	2.275	H1-1a
73	117	3/4" SR	0.285	3	78	0.023	0		3	2.707	19.88	0.249	0.249	2.185	H1-1a
74	118	PL 1/2X3 11/16	0.156	0.227	78	0.11	0.227	y	13	80.831	82.969	0.864	6.374	1.666	H1-1b
75	119	HSS2.375X0.218	0.177	3.75	3	0.047	3.75		73	48.725	62.55	3.6	3.6	2.148	H1-1b
76	120	PL 1/2X3 11/16	0.192	0	75	0.095	0	y	2	79.835	82.969	0.864	6.374	1.024	H1-1b
77	121	PL 1/2X3 11/16	0.187	0.227	83	0.087	0	y	16	80.831	82.969	0.864	6.374	1.666	H1-1b
78	122	HSS2.375X0.218	0.102	1.875	115	0.049	0.078		72	48.725	62.55	3.6	3.6	1.346	H1-1b
79	123	PL 1/2X3 11/16	0.185	0	81	0.081	0	y	14	79.835	82.969	0.864	6.374	1.015	H1-1b
80	127	HSS4.500X0.237	0.147	5.979	10	0.114	5.979		10	106.372	133.2	15.113	15.113	3	H1-1b
81	130	PIPE_2.0	0.582	3.719	8	0.067	3.828		9	8.922	32.13	1.872	1.872	3	H1-1b
82	131	PIPE_2.0	0.268	3.828	2	0.098	3.828		2	8.922	32.13	1.872	1.872	2.487	H1-1b
83	136	PIPE_2.0	0.582	3.719	2	0.095	3.828		2	8.922	32.13	1.872	1.872	2.34	H1-1b
84	137	PIPE_2.0	0.224	3.719	2	0.069	3.828		6	8.922	32.13	1.872	1.872	1.972	H1-1b

APPENDIX D

ADDITIONAL CALCUATIONS

PROJECT	**140443.006.01 - Woodbridge Country**				**KSC**
SUBJECT	**Sector Mount Analysis**				
DATE	**02/25/22**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.575	k
Vertical Shear	:	1.375	k
Horizontal Shear	:	2.767	k
Torsion	:	2.1	k.ft
Moment from Horizontal Forces	:	0	k.ft
Moment from Vertical Forces	:	1.889	k.ft

Bolt Parameters

Bolt Grade	:	Other		Input	Tensile Stress	Fu	:	56.00	ksi [AISC Table 2-5]
Bolt Diameter	:	0.625	in						
Nominal Bolt Area	:	0.307	in^2						
Bolt spacing, Horizontal	:	6	in						
Bolt spacing, Vertical	:	6	in						
Bolt edge distance, plate height	:	1.5	in						
Bolt edge distance, plate width	:	1.5	in						
Total Number of Bolts	:	4	bolts						

Summary of Forces

Shear Resultant Force	:	3.09	k
Force from Horz. Moment	:	0.00	k
Force from Vert. Moment	:	3.42	k
Shear Load / Bolt	:	0.77	k
Tension Load / Bolt	:	0.39	k
Resultant from Moments / Bolt	:	1.71	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	42.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	9.67	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**21.76%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	22.40	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	5.16	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**22.61%**		**OKAY**
Unity Check, Combined	:	**44.37%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**2.23%**		**OKAY**

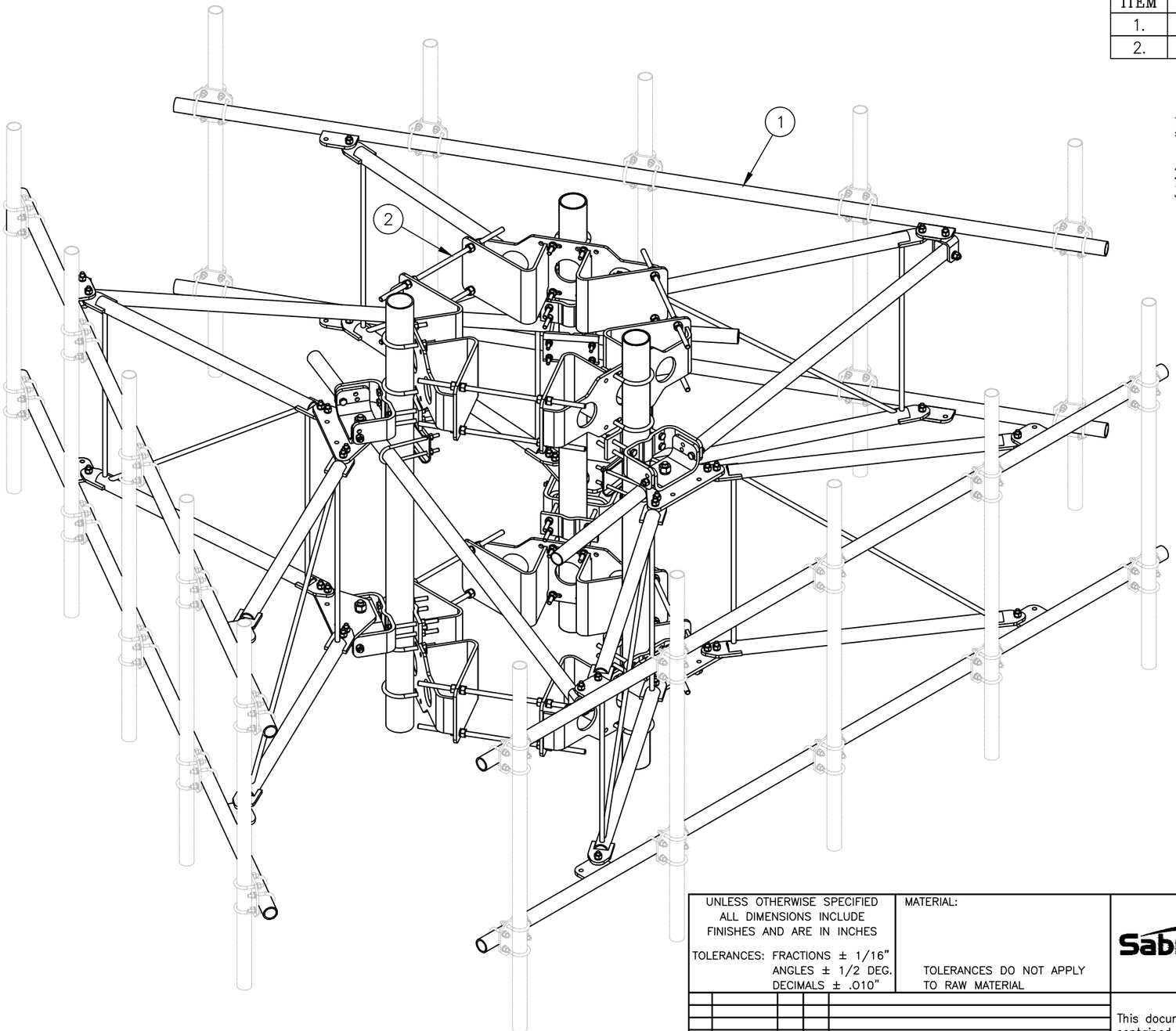
APPENDIX E

SUPPLEMENTAL DRAWINGS

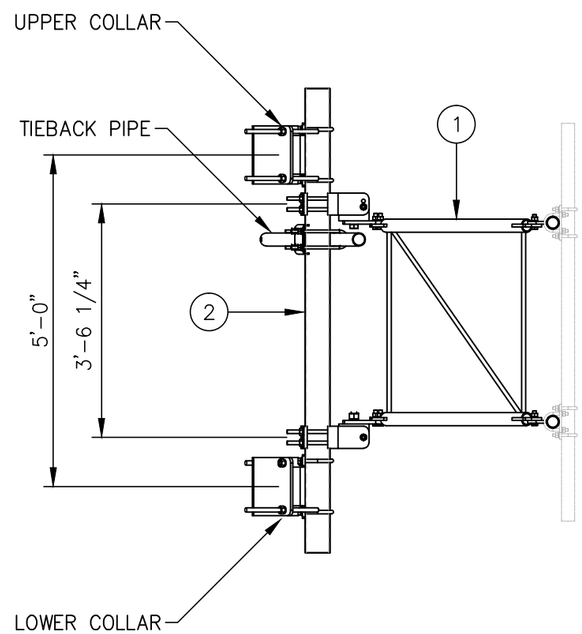
C10857802 12' HD V-BOOM ASSEMBLIES W/TIEBACK				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C10857001C	12' HD V-BOOM ASSEMBLY W/TIE BACK	1386
2.	1	C10899055	4 1/2" O.D. MONOPOLE PIPE MOUNT ASSEMBLY	994
			TOTAL WEIGHT	2380

NOTES:

1. MOUNTING PIPES & CROSSOVER PLATE KITS MUST BE PURCHASED SEPARATELY.
2. SEE DRAWING C10857001C FOR 12' V-BOOM ASSEMBLY.
3. SEE DRAWING C10899055 FOR 4 1/2" O.D. MONOPOLE PIPE MOUNT ASSEMBLY.



ISOMETRIC VIEW



VIEW A-A
FROM PAGE 2

REV	DATE	DRW	CHK	DESCRIPTION

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

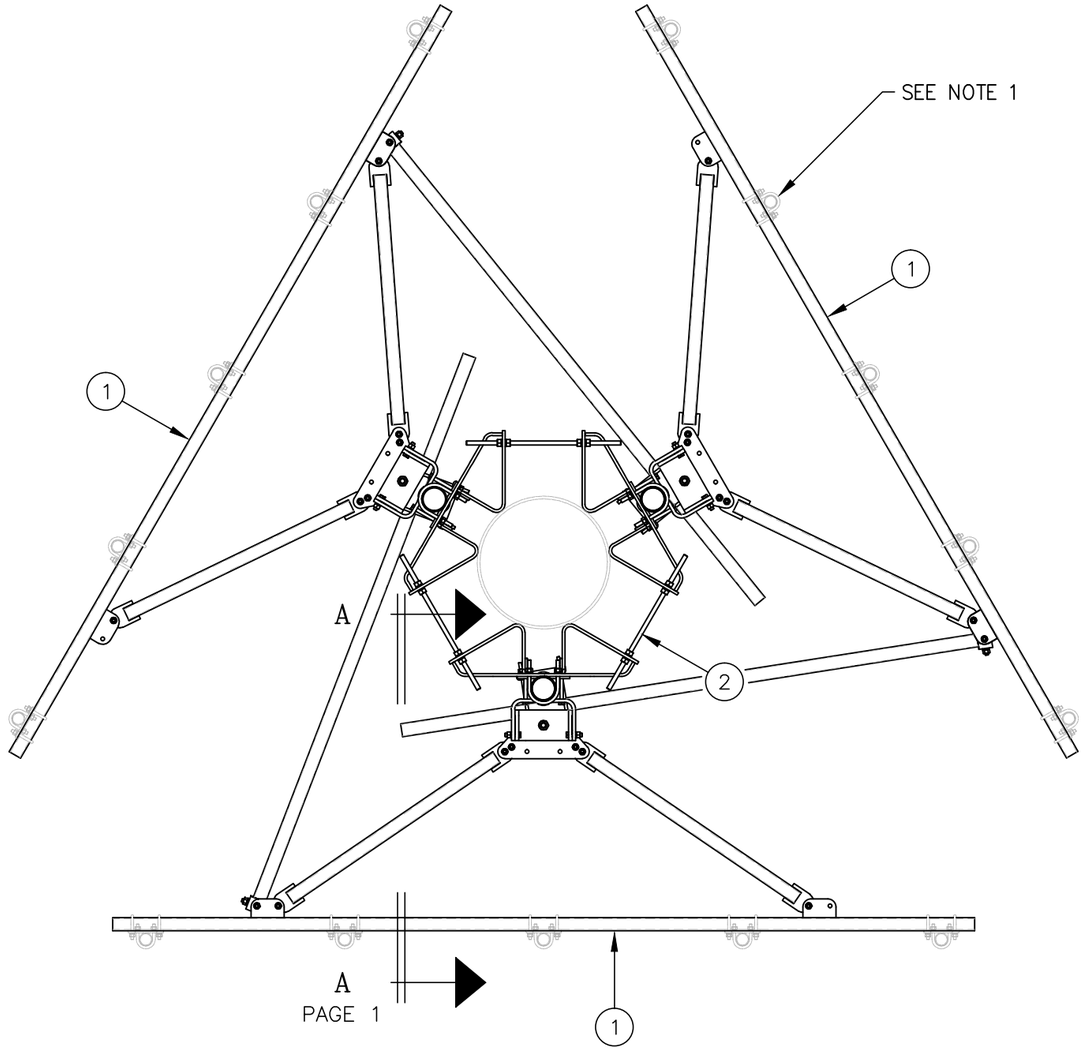
MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

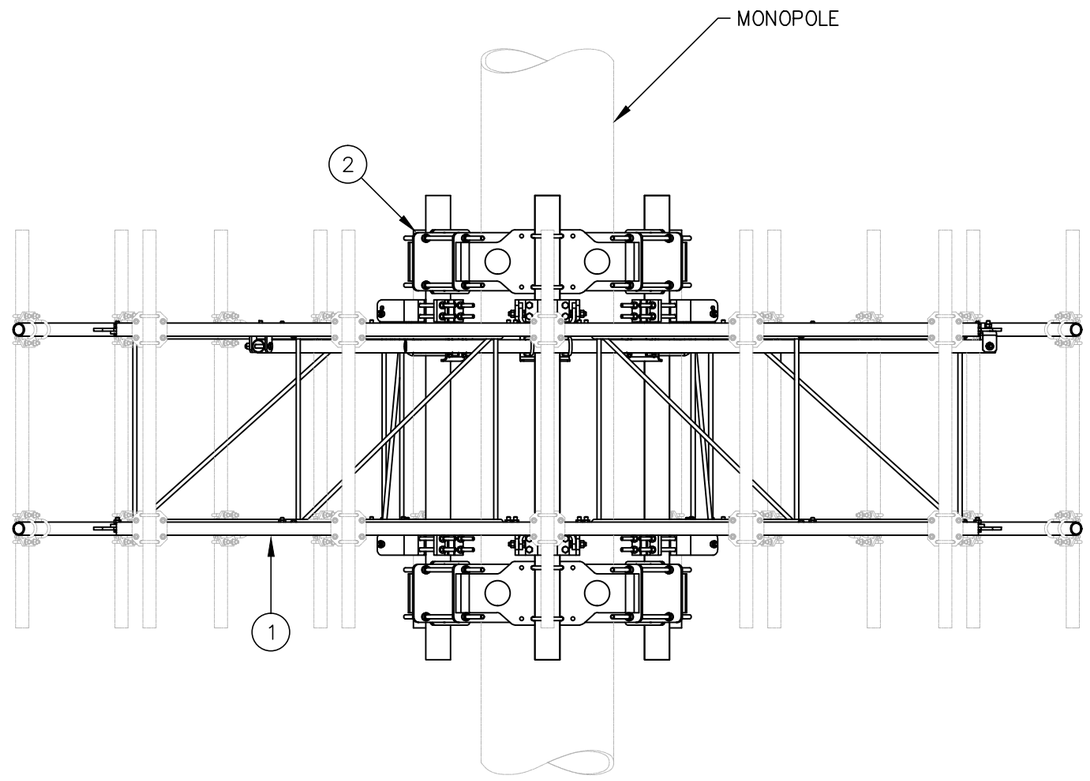
Sabre Industries™ Towers and Poles

12' HD V-BOOM ASSEMBLIES W/TIEBACK (3' STANDOFF) ON MONOPOLE PIPE MOUNT ASSEMBLY W/NO ANTENNA MOUNTING PIPES

		SIZE	DRAWING NO.	REV
DATE	9/24/18	B	C10857802	0
DRAWN BY	WRF			
CHECKED BY	WMN		SCALE None	PAGE 1 OF 2



PLAN VIEW



ELEVATION VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ Towers and Poles

12' HD V-BOOM ASSEMBLIES W/TIEBACK (3' STANDOFF) ON MONOPOLE PIPE MOUNT ASSEMBLY W/NO ANTENNA MOUNTING PIPES

DATE	09/24/18
DRAWN BY	WRF
CHECKED BY	WMN

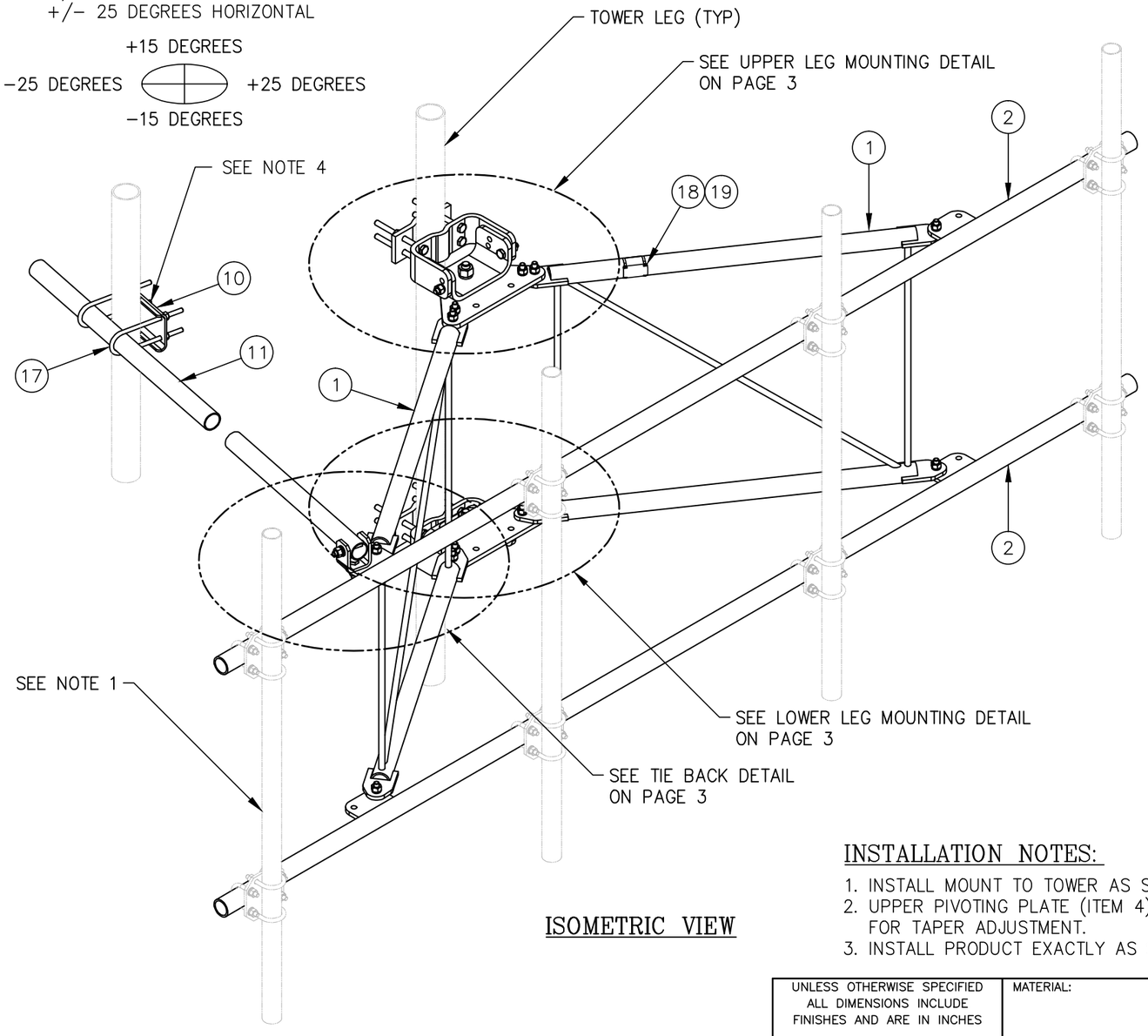
SIZE	DRAWING NO.	REV
B	C10857802	0

SCALE	PAGE
None	2 OF 2

TIEBACK ANGLE RANGE DETAIL

+/− 15 DEGREES VERTICAL
+/− 25 DEGREES HORIZONTAL

+15 DEGREES
−25 DEGREES +25 DEGREES
−15 DEGREES



ISOMETRIC VIEW

C10857001C 12' HD V-BOOM ASSEMBLY W/TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	2	CW01222	WELDMENT, STANDOFF ARM	126
2.	2	CW01223	WELDMENT, FACE PIPE	147
3.	2	CS03109	PLATE, ROTATING	34
4.	1	CS03110	PLATE, PIVOTING (UPPER)	16
5.	1	CS03111	PLATE, LEG CLAMP (UPPER)	17
6.	1	CS03112	PLATE, PIVOTING (LOWER)	14
7.	1	CS03113	PLATE, LEG CLAMP (LOWER)	17
8.	2	CS03114	PLATE, LEG CLAMP (BACK)	14
9.	1	CS00098	PLATE, TIE BACK SWIVEL	3
10.	1	CS03285	PLATE, TIE BACK CLAMP	4
11.	1	CS03333	PIPE, TIE BACK	38
12.	2	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	4
13.	8	C40140004	BOLT ASSEMBLY, 5/8 ø X 8 A307	13
14.	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
15.	12	C40026025	BOLT ASSEMBLY, 5/8 ø X 2 1/2 A325	6
16.	5	C40026024	BOLT ASSEMBLY, 5/8 ø X 2 1/4 A325	3
17.	2	C40034183	U-BOLT ASSEMBLY, 1/2 ø X 2 15/16 C-C	3
18.	1	Z30992001	MOUNT CLASSIFICATION TAG C10857001C	1
19.	2	C40062103	STAINLESS STEEL SELF-LOCKING CABLE TIE	1
			TOTAL WEIGHT	462

PACKAGING NOTE

CK00386 INCLUDES ITEMS 1, 3, 4, 5, 6, 7, 12 & 15 (8 QTY)
CK00387-HDW INCLUDES ITEMS 8, 9, 10, 13, 14, 15 (4 QTY), 16, 17, 18 & 19
CK00387-STL INCLUDES ITEMS 2 & 11

INSTALLATION NOTES:

1. INSTALL MOUNT TO TOWER AS SHOWN, SO THAT WELDED STANDOFF DIAGONAL IS SLOPING DOWNWARD FROM TOWER END TO FACE PIPE END.
2. UPPER PIVOTING PLATE (ITEM 4) HAS THREE HOLES ON EACH SIDE AND UPPER LEG CLAMP PLATE (ITEM 5) HAS TWO HOLES ON EACH SIDE FOR TAPER ADJUSTMENT.
3. INSTALL PRODUCT EXACTLY AS SHOWN IN DRAWING, WITH ALL BOLTS FACING UPWARDS.

NOTES:

1. MOUNTING PIPES & CROSSOVER PLATE KITS MUST BE PURCHASED SEPARATELY.
2. QUANTITIES SHOWN IN LISTS OF MATERIAL ARE FOR ONE (1) V-BOOM ONLY.
3. THIS V-BOOM WILL MOUNT TO THE FOLLOWING: 1 1/2"ø TO 5 9/16"ø ROUND LEG.
4. TIEBACK MUST BE CONNECTED TO A RIGID MEMBER THAT PROVIDES ADEQUATE SUPPORT WITHIN THE LIMITS NOTED ABOVE IN THE TIEBACK ANGLE RANGE DETAIL UNLESS APPROVED BY THE ENGINEER OF RECORD.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

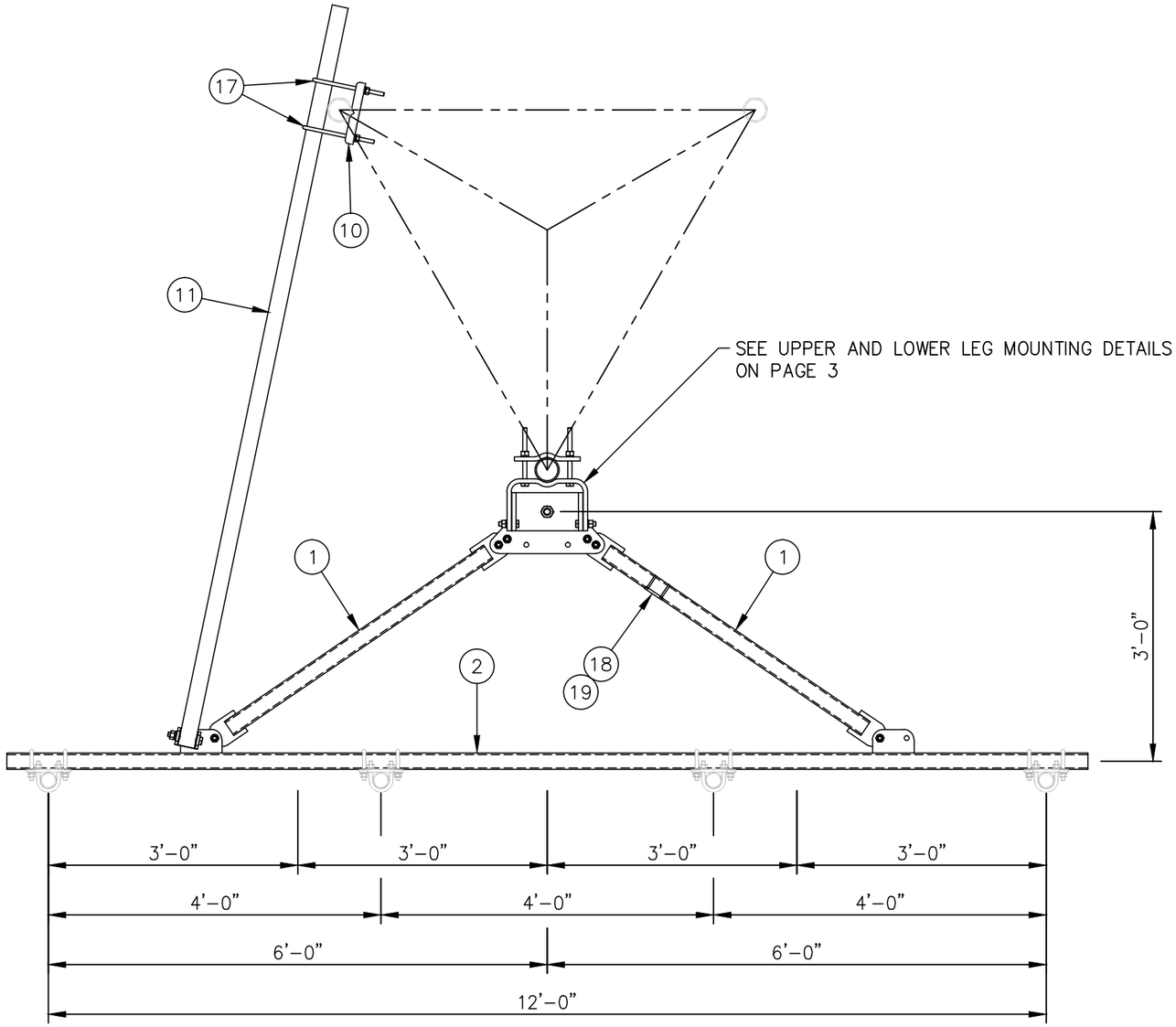
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	04/11/17	KLE	EK	REVISED PACKAGING NOTE
3	10/19/16	KLE	DEL	ADDED INSTALLATION NOTES
2	02/05/16	DLW	DEL	ADDED PACKAGING NOTE
1	01/21/16	KLE	EK	REVISED NOTES & ADDED TIEBACK ANGLE RANGE DETAIL

Sabre Industries™ Towers and Poles

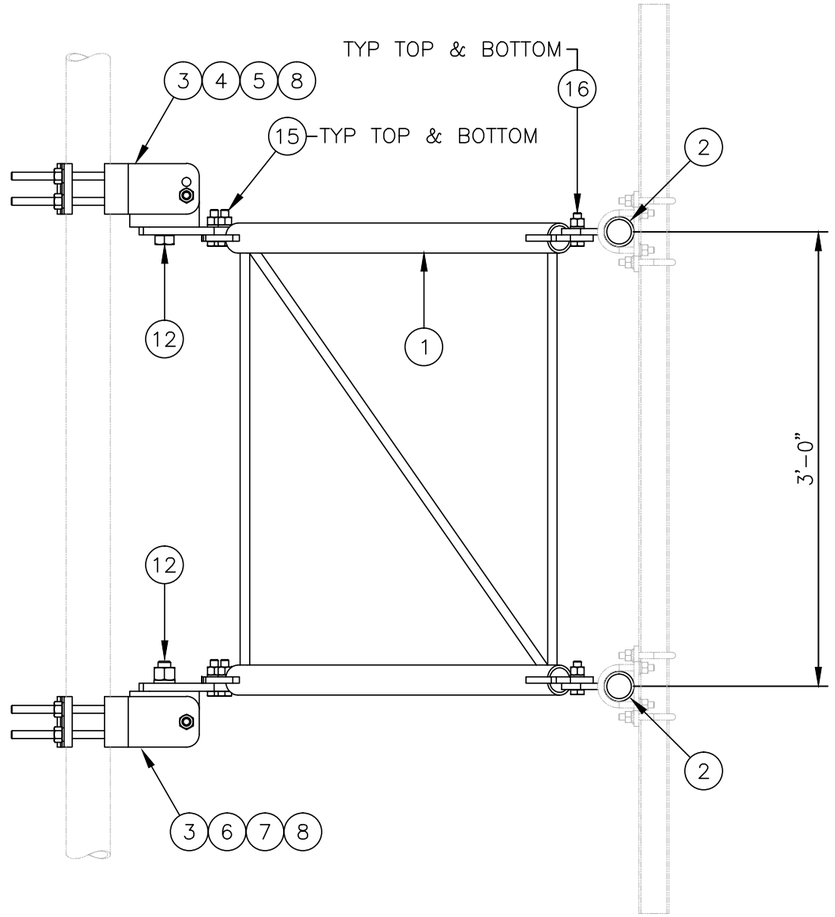
12' HD V-BOOM ASSEMBLY W/TIEBACK (3' STANDOFF) W/NO ANTENNA MOUNTING PIPES

		SIZE	DRAWING NO.	REV
DATE	12/22/15	B	C10857001C	4
DRAWN BY	WRF			
CHECKED BY	EK	SCALE None	PAGE 1 OF 3	



MOUNTING OPTIONS

SHOWING MOUNTING PIPE PLACEMENTS



SIDE VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	04/11/17	KLE	EK	REVISED PACKAGING NOTE
3	10/19/16	KLE	DEL	ADDED INSTALLATION NOTES
2	02/05/16	DLW	DEL	ADDED PACKAGING NOTE
1	01/21/16	KLE	EK	REVISED NOTES & ADDED TIEBACK ANGLE RANGE DETAIL

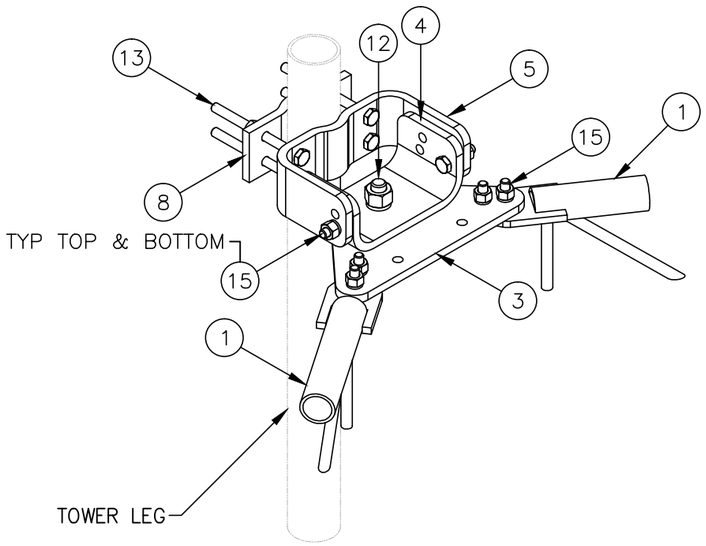
Sabre Industries™ Towers and Poles

12' HD V-BOOM ASSEMBLY W/TIEBACK (3' STANDOFF) W/NO ANTENNA MOUNTING PIPES

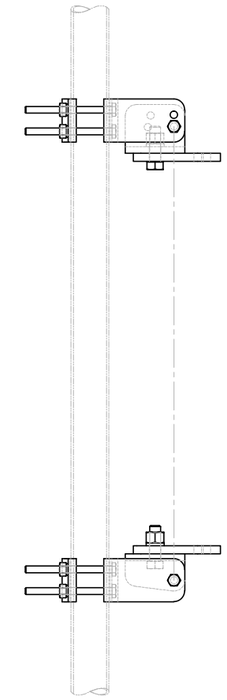
DATE	12/22/15
DRAWN BY	WRF
CHECKED BY	EK

SIZE	DRAWING NO.	REV
B	C10857001C	4

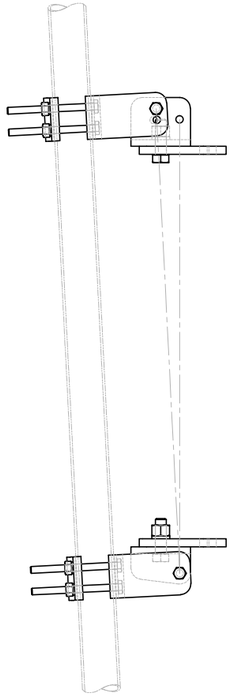
SCALE	PAGE
None	2 OF 3



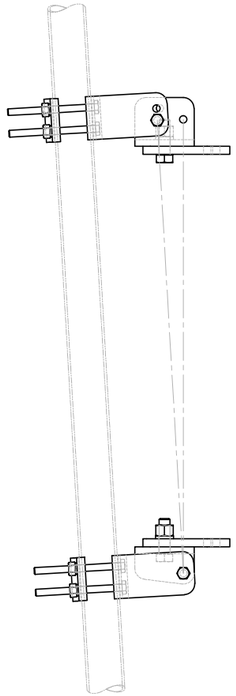
UPPER LEG MOUNTING DETAIL



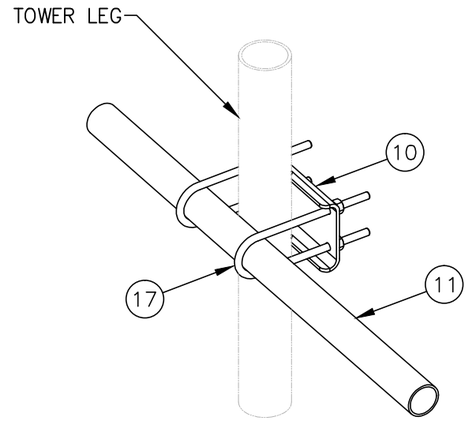
STRAIGHT
TOWER SECTION



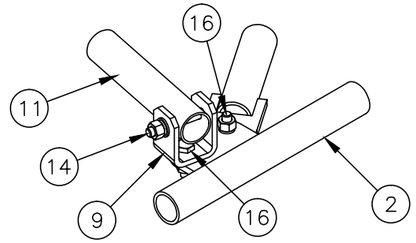
TAPERED
1'–9 IN 20' SLOPE



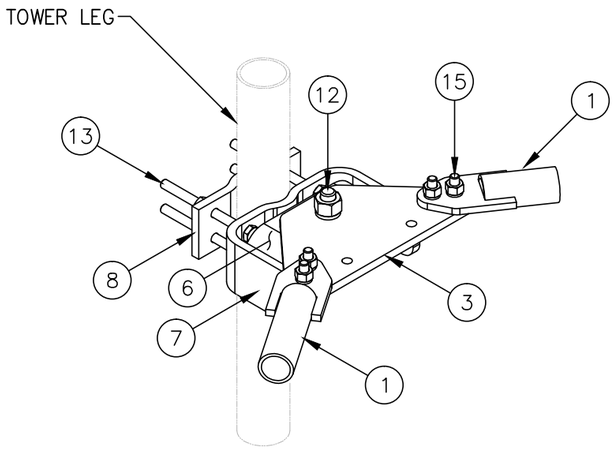
TAPERED
2' IN 20' SLOPE



TIE BACK DETAIL
AT TOWER LEG



TIE BACK DETAIL
AT ANTENNA MOUNTING FRAME



LOWER LEG MOUNTING DETAIL

--------PIVOTING OPTIONS--------

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	04/11/17	KLE	EK	REVISED PACKAGING NOTE
3	10/19/16	KLE	DEL	ADDED INSTALLATION NOTES
2	02/05/16	DLW	DEL	ADDED PACKAGING NOTE
1	01/21/16	KLE	EK	REVISED NOTES & ADDED TIEBACK ANGLE RANGE DETAIL

Sabre Industries™
Towers and Poles

CONFIDENTIAL

12' HD V-BOOM ASSEMBLY W/TIEBACK (3' STANDOFF) W/NO ANTENNA MOUNTING PIPES

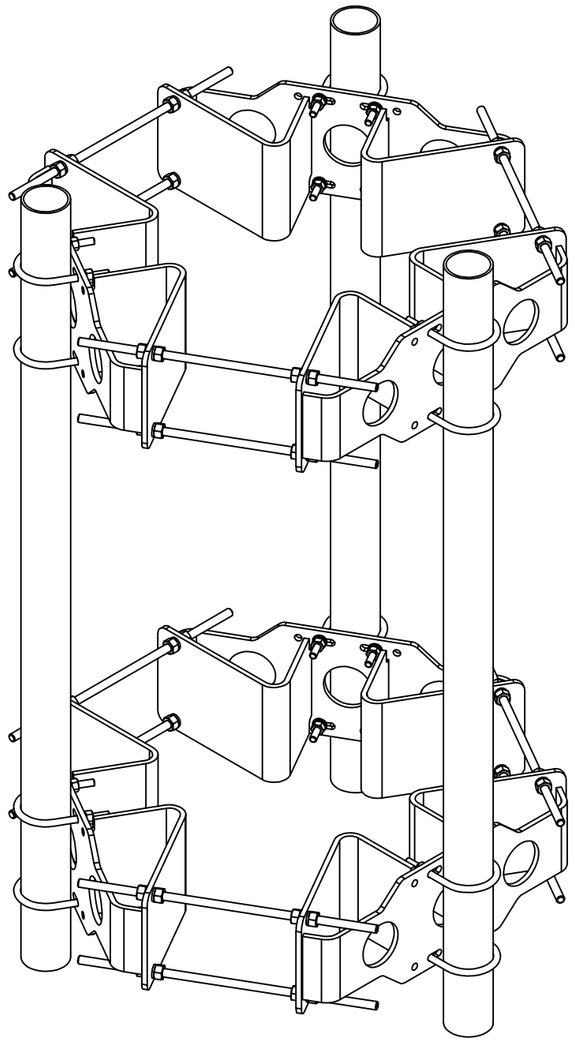
		SIZE	DRAWING NO.	REV
DATE	12/22/15	B	C10857001C	4
DRAWN BY	WRF			
CHECKED BY	EK		SCALE None	PAGE 3 OF 3

NOTE:

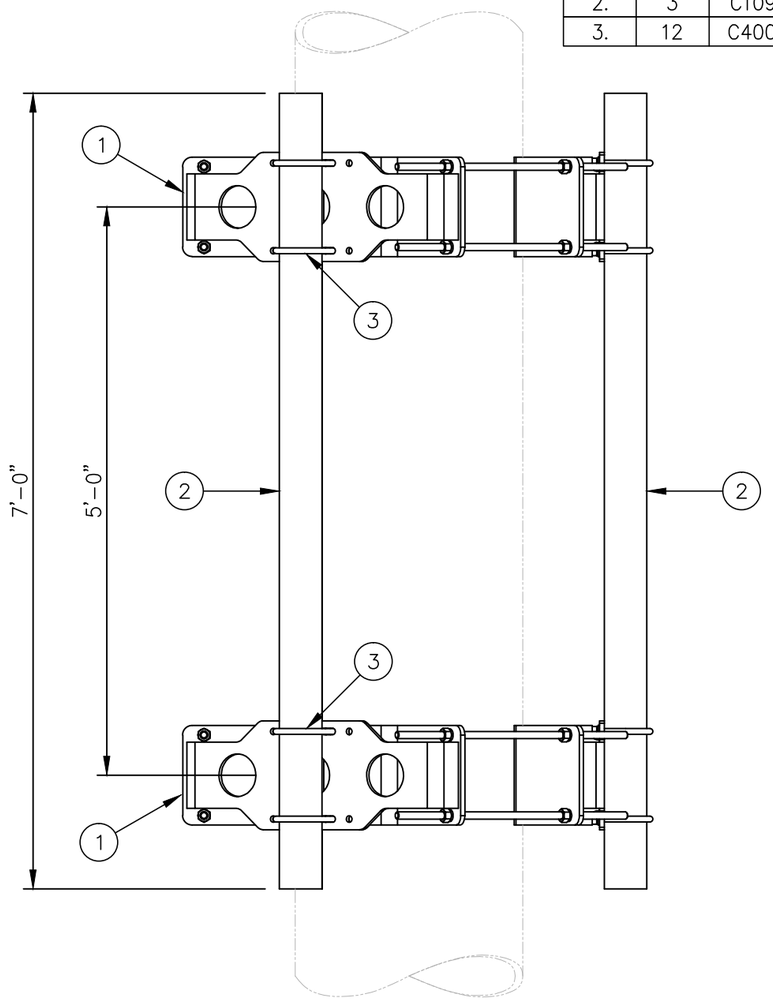
SEE DRAWING C10112378 FOR INSTALLATION OF TRI-COLLAR BRACKET ASSEMBLY

C10899055 4 1/2" O.D. PIPE MOUNT ASSEMBLY

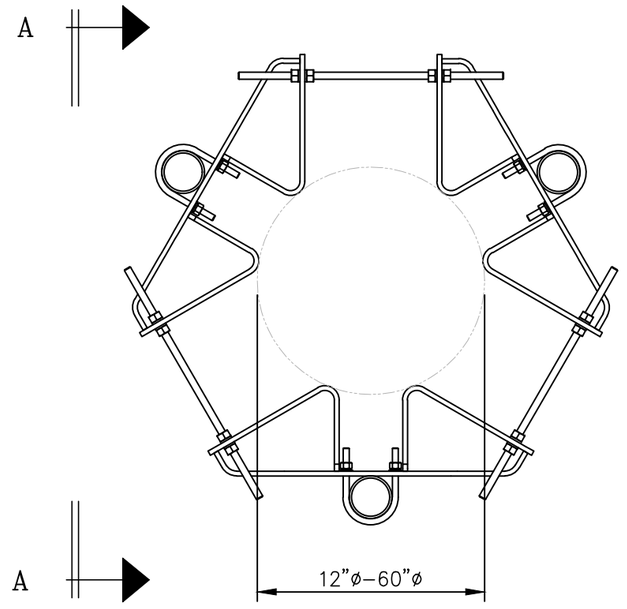
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	2	C10112378	TRI-COLLAR BRACKET ASSEMBLY	732
2.	3	C10901407	PIPE, 4 1/2 O.D. X .237 X 7'-0	236
3.	12	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16 C-C	26
			TOTAL WEIGHT	994



ISOMETRIC VIEW



VIEW A-A



PLAN VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	02/03/17	WRF	KLE	COLLAR WAS C10112301

Sabre Industries™
Towers and Poles

4 1/2" O.D. PIPE MOUNT ASSEMBLY FOR MONOPOLES (FITS 12" TO 60" DIAMETER)

		SIZE	DRAWING NO.	REV
DATE	01/26/16	B	C10899055	1
DRAWN BY	WRF			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Safety Survey Report Predictive (RFSSRP) Prepared For AT&T

Site Name:	WOODBRIDGE COUNTRY CLUB
FA#	10071344
USID:	14243
Site ID:	CTL05163
Address:	50 WOODFIELD ROAD WOODBRIDGE CT 06525
County:	NEW HAVEN
Latitude:	41.3277919
Longitude:	-72.9938989
Structure Type:	MONOPOLE
Property Owner:	AT&T NETWORK RE ADMINISTRATION
Pace Job:	MRCTB055022
RFDS Technology:	5G NR 1SR CBAND

Report Information

Report Writer: Sunita Sati

Report Generated Date: 07-12-2022

Compliance Statement

AT&T Mobility Compliance Statement: Based on the information collected, AT&T Mobility will be Compliant when the remediation recommended in section 5 or appropriate remediation determined by AT&T is implemented

Table of Contents

1. Executive Summary

1.1 Site Summary

Max Predictive Spatial Average MPE% & Location on Site (General Public)	391468.0% on Antennas Centerline Level & at AT&T Sec-C antenna no. #C3-2
Max Predictive Spatial Average MPE% at Ground Level (General Public)	2.2%
AT&T Mobility Site Compliance	AT&T Mobility will be Compliant by implementing remediation recommended as per section 5 in this report.

TABLE 1: Site Summary

1.2 Signage Summary (Proposed)

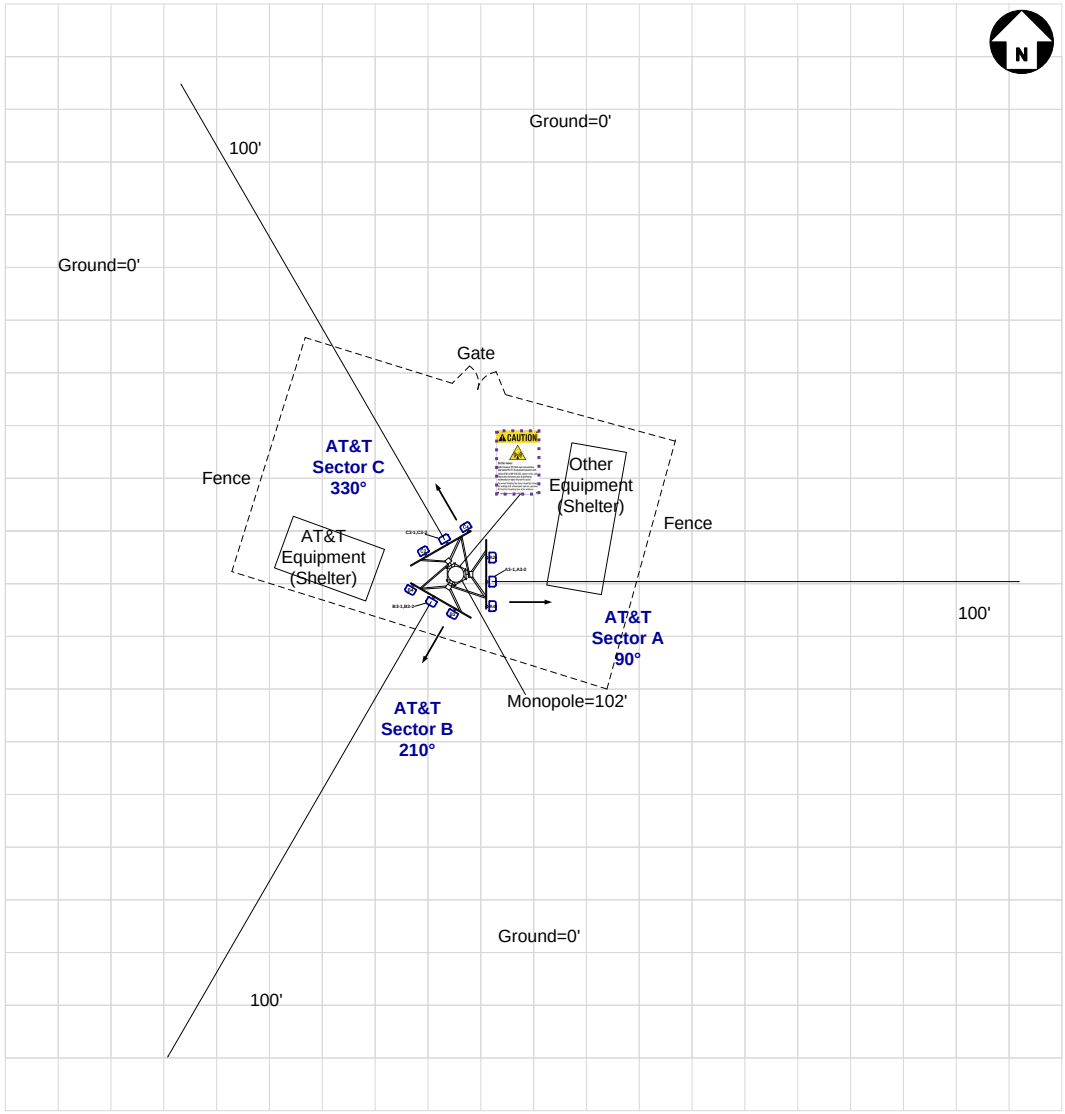
AT&T Signage Locations	Sign Type									
	Safety Instructions	Notice Sign 2	Caution Sign 2	Caution Sign 2B	Caution Sign 2C	Caution 7"x7"	Warning Sign 1B	RF Exposure Map	Lock	Barriers
Access Point(s)				1						
Alpha										
Beta										
Gamma										

TABLE 2: Signage Summary (Proposed)

1.3 List of Documents used to prepare this Report

- *842879 CD*
- *842879_586276 RFDS*

2. Site Scale Map



AT&T Antenna	Proposed	Proposed Signage									
Panel	Barrier	Safety Instructions	Notice 2	Caution 2	Caution 2B	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	***Map Scale = 10 ft***
OMNI	Posts										

3. Antenna Inventory

Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (0)	HBW (0)	Antenna Gain (dBd)	Antenna Aperture (ft)	Transmitter Power (Watts)	Total Loss (dB)	Total ERP (Watts)	Total EIRP (Watts)
A2	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(FN)	90	73	12.15	6	120.00	0.5	1754.61	2878.60
A2	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	90	68	15.95	6	120.00	0.5	4209.02	6905.28
A3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	90	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	90	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	90	74	11.85	6	120.00	0.5	1637.50	2686.47
A4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	90	63	12.45	6	120.00	0.5	1880.10	3084.47
A4	AT&T	CCI	DMP65R-BU6D	Panel	2100	LTE/5G	90	68	15.95	6	120.00	0.5	4209.02	6905.28
B2	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(FN)	210	73	12.15	6	120.00	0.5	1754.61	2878.60
B2	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	210	68	15.95	6	120.00	0.5	4209.02	6905.28
B3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	210	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	210	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	210	74	11.85	6	120.00	0.5	1637.50	2686.47
B4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	210	63	12.45	6	120.00	0.5	1880.10	3084.47
B4	AT&T	CCI	DMP65R-BU6D	Panel	2100	LTE/5G	210	68	15.95	6	120.00	0.5	4209.02	6905.28
C2	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(FN)	330	73	12.15	6	120.00	0.5	1754.61	2878.60
C2	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	330	68	15.95	6	120.00	0.5	4209.02	6905.28
C3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	330	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	330	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	330	74	11.85	6	120.00	0.5	1637.50	2686.47
C4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	330	63	12.45	6	120.00	0.5	1880.10	3084.47
C4	AT&T	CCI	DMP65R-BU6D	Panel	2100	LTE/5G	330	68	15.95	6	120.00	0.5	4209.02	6905.28

Table 3.1: Antenna Inventory Table

Note: **^ Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.**
* 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor[1] are used to calculate Transmitter Power & ERP/EiRP

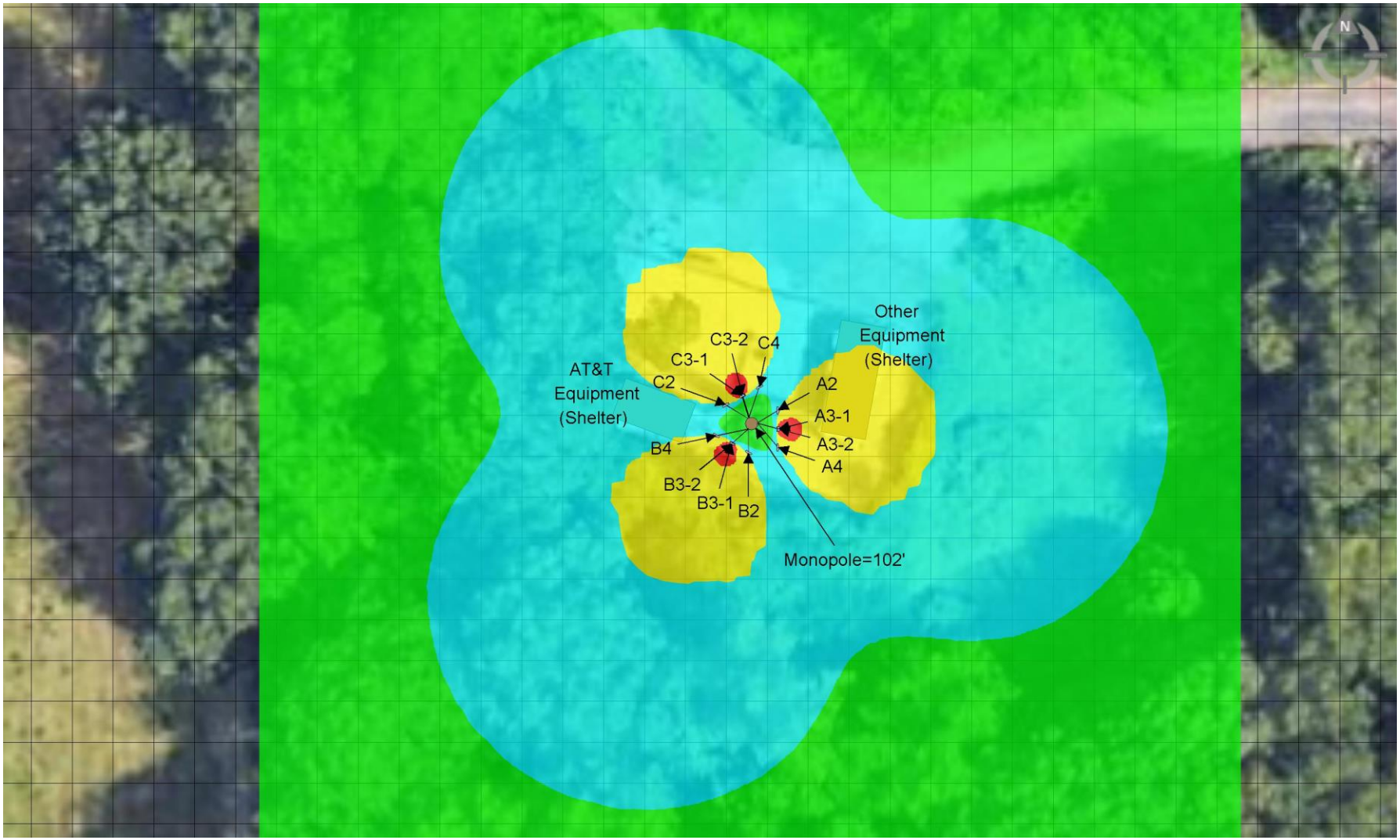
Antenna Heights (Z)

Ant ID	Operator	Antenna Radiation Centerline	Z-Height from Ground
A2	AT&T	101.50	98.50
A3-1	AT&T	101.00	99.73
A3-2	AT&T	97.41	96.14
A4	AT&T	101.50	98.50
B2	AT&T	101.50	98.50
B3-1	AT&T	101.00	99.73
B3-2	AT&T	97.41	96.14
B4	AT&T	101.50	98.50
C2	AT&T	101.50	98.50
C3-1	AT&T	101.00	99.73
C3-2	AT&T	97.41	96.14
C4	AT&T	101.50	98.50

Table 3.2: Antenna Height(s) Summary Table

4. Predicted Emission

4.1 Predictive Cumulative MPE Contribution from All Sources at Antennas Centerline Level (97.41 ft.)



Max. Predictive Spatial Average MPE% = **391468.0%**

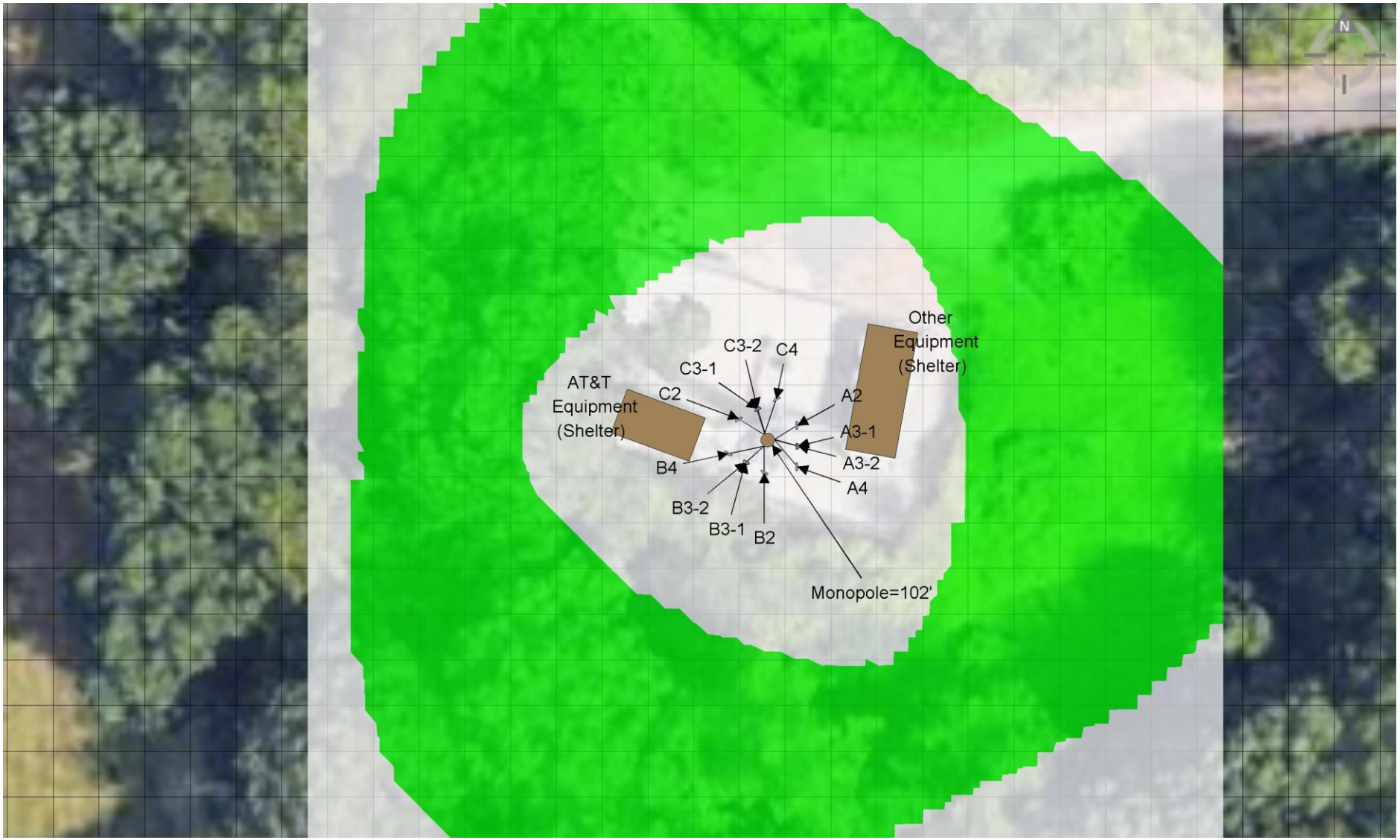
Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.2 Predictive Cumulative MPE Contribution from All Sources at Ground Level (0 ft.)



Max. Predictive Spatial Average MPE% = **2.2%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

5. Statement of Compliance

5.1 Statement of AT&T Mobility Compliance

At the time of our Analysis, AT&T Mobility is required to take action to fulfill their Obligations to comply with the FCC's mandate as defined in OET-65

Recommendations

AT&T Alpha Sector:

- No Action Required

AT&T Beta Sector:

- No Action Required

AT&T Gamma Sector:

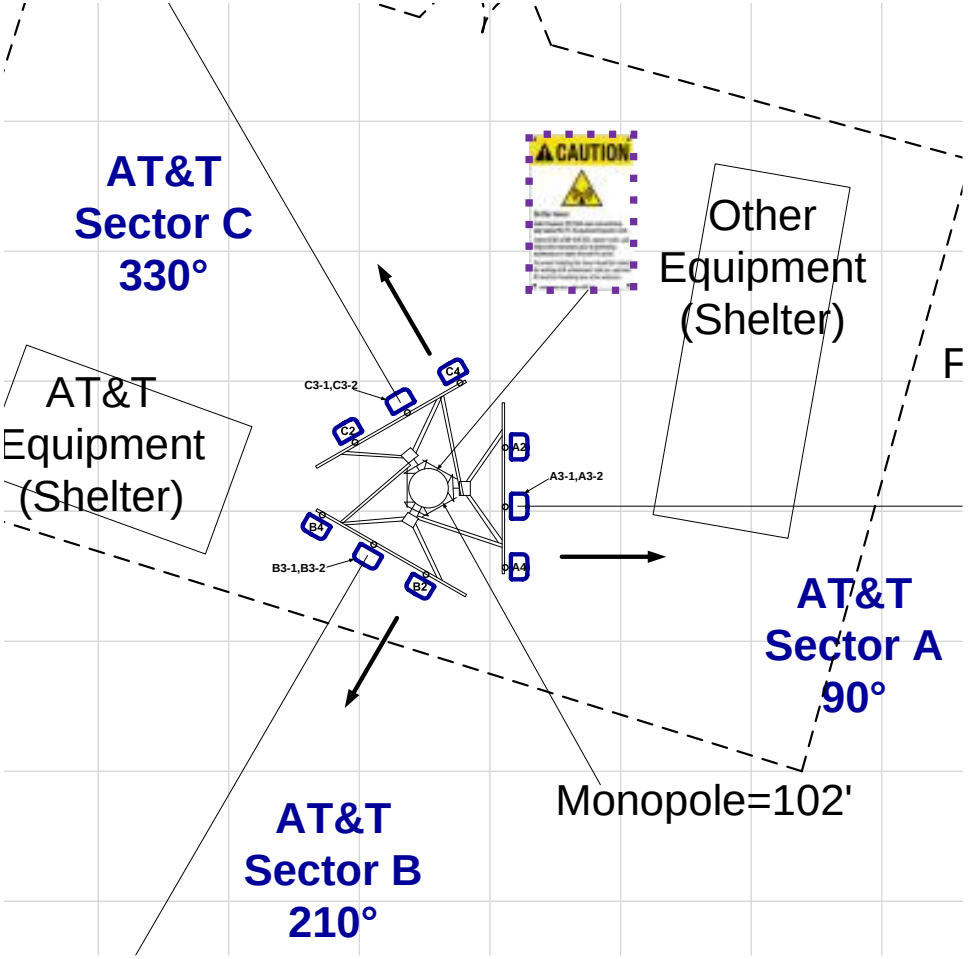
- No Action Required

Monopole:

- One Caution 2B Sign to be posted on the Monopole at climbing access, facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 10. (1 Total Sign)

Recommendations Map – Detailed View

AT&T Alpha, Beta & Gamma Sectors



AT&T Antenna	Proposed	Proposed Signage									
Panel	Barrier	Safety Instructions	Notice 2	Caution 2	Caution 2B	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	*Map Scale = 10 ft*
OMNI	Posts										

Appendix A – Statement of Limiting Conditions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at full power at all times. AT&T has further recommended to assume a 75% duty cycle of maximum radiated power for all LTE & 5G carriers (& consider 100% duty cycle for all UMTS carriers).

In this site compliance report, it is assumed that Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS^ antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.

AT&T recommended to consider - For C-BAND and/or DoD AAS^ antenna(s) 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor[1] are used to calculate Transmitter Power & ERP/EiRP.

AT&T recommended to use worst-case tilts for the simulations.

*[1] **Power Reduction Factor**: IEC Standard 62232: 2017 allows for a statistically conservative power density model to more realistically define the RF exposure area. AT&T recommends a "0.32" factor to calculate the "Actual Maximum" (time averaged) power value, which accounts for "Beam Scanning," "Scheduling," and "RBS Utilization" This recommended value is a conservative figure modelled and supported by other vendors and through measurements published in scientific articles and white papers by IEEE and others. Those publication are listed below:*

1. IEEE Access, Time-Averaged Realistic Maximum Power Levels for the Assessment of RF Exposure for 5G Radio Base Stations Using Massive MIMO (Published Sept. 18, 2017 / BJÖRN THORS, ANDERS FURUSKÄR, DAVIDE COLOMBI, AND CHRISTER TÖRNEVIK)
2. IEEE Explore, A Statistical Approach for RF Exposure Compliance Boundary Assessment in Massive MIMO Systems (Published Jan. 25, 2018 / Paolo Baracca, Andreas Weber, Thorsten Wild, Christophe Grangeat)
3. IEEE Access, In-situ Measurement Methodology for the Assessment of 5G NR Massive MIMO Base Station Exposure at Sub-6 GHz Frequencies (Published Dec. 20, 2019 / SAM AERTS, LEEN VERLOOCK, MATTHIAS VAN DEN BOSSCHE, DAVIDE COLOMBI, LUC MARTENS, CHRISTER TÖRNEVIK AND WOUT JOSEPH)
4. Applied Sciences, Analysis of the Actual Power and EMF Exposure from Base Stations in a Commercial 5G Network (Published July 30, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)
5. Ofcom Technical Report, Electromagnetic Field (EMF) measurements near 5G mobile phone base stations (Published Feb. 21, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)

MobileComm believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor). Thus, at any time, if power density measurements were made, we believe the real time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modelling in this way, MobileComm has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Other Carrier" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, MobileComm uses the closest frequency in the antenna's range that corresponds to the highest Maximum Exposure Limit (MPE), resulting in a conservative analysis.

Appendix B – FCC Guidelines and Emissions Threshold Limits

All power density values used in this report were analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2).The number of µW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General Population/Uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (µW/cm2). The general population exposure limit for the 700 and 800 MHz Bands is approximately 467 µW/cm2 and 567 µW/cm2 respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS bands is 1000 µW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure, have been properly trained in RF safety and can exercise control over their exposure. Occupational/Controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-I,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-I,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations.

A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- *are exposed to RF energy as a consequence of their employment;*
- *have been made aware of the possibility of exposure; and*
- *can exercise control over their exposure.*

FCC guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

Appendix D – General Safety Recommendations

The following are general recommendations appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.

2. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:

- *adding new antennas that may have been located on the site*
- *removing of any existing antennas*
- *changes in the radiating power or number of RF emitters*

3. Post the appropriate SAFETY INSTRUCTIONS, NOTICE, CAUTION & WARNING sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in the report section above, to inform everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.

4. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.

5. For a General Public environment the five color levels identified in measured RF emission diagram can be interpreted in the following manner:

- *White represents areas predicted to be greater than or equal to 0% and less than 1% of the MPE general public limits*
- *Green represents areas predicted to be greater than or equal to 1% and less than 100% of the MPE general public limits*
- *Blue represents areas predicted to be greater than or equal to 100% and lesser than 500% of the MPE general public limits.*
- *Yellow represents areas predicted to be greater than or equal to 500% and lesser than 5000% of the MPE general public limits.*
- *Red areas indicates predicted levels greater than or equal to 5000% of the MPE general public limits.*

Appendix E – References

1 - FCC Definition

FCC defines an Occupational or Controlled environment as one where persons are exposed to RF fields as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Typical criteria for an Occupational or Controlled environment is restricted access (i.e. locked doors, gates, etc.) to areas where antennas are located coupled with proper RF warning signage.

FCC defines a site as a General Public or Uncontrolled environment when human exposure to RF fields occurs to the general public or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over the exposure. Typical criteria for a General Public or Uncontrolled environment are unrestricted access (i.e. unlocked or no restrictions) to areas where antennas are located without proper RF warning signage being posted.

2 - Physical Testing measurement procedure and Tools

The Narda Broadband Field Meter NBM-550 can make rapid conformance measurements with evaluation in the time domain when used in conjunction EA5091 probe. This probe is a so-called Shaped Probe, i.e. it is frequency weighted so that it automatically takes account of the FCC Occupational limit values. To collect data, the probe is pointed towards the potential source(s) of EME radiation and moved slowly from ground level up to slightly above head height (approx. 6 ft).

Spatial Average Measurement A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.

3 - Site Safety Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: *Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.*

Training and Qualification Verification: *All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).*

Physical Access Control: *Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:*

- *Locked door or gate*
- *Alarmed door*
- *Locked ladder access*
- *Restrictive Barrier at antenna locations (e.g. Chain link with posted RF Sign)*

RF Signage: *Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.*

Assume all antennas are active: *Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.*

Maintain a 3 foot clearance from all antennas: *There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.*

Rooftop RF Emissions Diagram: *Section 4 of this report contains an RF Emissions Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas on the rooftop. This analysis is all theoretical and assumes a duty cycle of 75% for each transmitting antenna at full power. This analysis is a worst case scenario. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.*

4 - Definitions

Compliance- *The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.*

Decibel (dB) – *A unit for measuring power or strength of a signal.*

Duty Cycle – *The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 75% corresponds to continuous operation.*

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – *The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna, this product is divided by the cable losses*

Effective Radiated Power (ERP) – *In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.*

Gain (of an antenna in dbd) – *The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from a reference dipole. Gain is a measure of the relative efficiency of a directional antennas as compared to a reference dipole.*

General Population/Uncontrolled Environment – *Defined by the FCC, as an area where RFR exposure may occur to persons who are unaware of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.*

Generic Antenna – *For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.*

Isotropic Antenna – *An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.*

Maximum Measurement – *This measurement represents the single largest measurement recorded when performing a spatial average measurement.*

Maximum Exposure Limit (MPE) – *The RMS and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.*

Occupational/Controlled Environment – *Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are aware of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.*

Radio Frequency Radiation – *Electromagnetic waves that are propagated from antennas through space.*

Spatial Average Measurement – *A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.*

Transmitter Power Output (TPO) – *The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.*

Appendix F – Proprietary Statement

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by MobileComm are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to MobileComm so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

July 26, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 777450922141

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:	K.SULLIVAN	**Delivery Location:**	11 MEETINGHOUSE LN
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		WOODBRIDGE, CT, 06525
		Delivery date:	Jul 25, 2022 12:01

Shipping Information:

Tracking number:	777450922141	**Ship Date:**	Jul 21, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Kristine Sullivan, Woodbridge Town Hall
11 Meetinghouse Lane
WOODBRIDGE, CT, US, 06525

Shipper:
Ersilia Davis, Crown Castle
1777 Sentry Parkway W
VEVA 17, Suite 400
BLUE BELL, PA, US, 19422

Reference 100788

Thank you for choosing FedEx

July 26, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 777450704905

Delivery Information:

Status:	Delivered	**Delivered To:**	Mailroom
Signed for by:	T.MOSLEY	**Delivery Location:**	754 PEACHTREE ST NE
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		ATLANTA, GA, 30308
		Delivery date:	Jul 25, 2022 10:23

Shipping Information:

Tracking number:	777450704905	**Ship Date:**	Jul 21, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
AT&T Network RE Administration, AT&T
754 Peachtree Street NE
16th floor
ATLANTA, GA, US, 30308

Shipper:
Ersilia Davis, Crown Castle
1777 Sentry Parkway W
VEVA 17, Suite 400
BLUE BELL, PA, US, 19422

Reference 100788

Thank you for choosing FedEx

July 26, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 777450829897

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:	M.MASTRIANNI	**Delivery Location:**	11 MEETINGHOUSE LN
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		WOODBRIDGE, CT, 06525
		Delivery date:	Jul 25, 2022 12:00

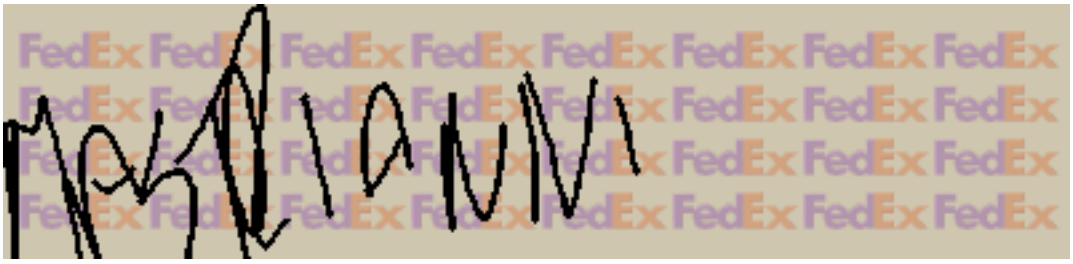
Shipping Information:

Tracking number:	777450829897	**Ship Date:**	Jul 21, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Beth Heller, Woodbridge Town Hall
11 Meetinghouse Lane
WOODBRIDGE, CT, US, 06525

Shipper:
Ersilia Davis, Crown Castle
1777 Sentry Parkway W
VEVA 17, Suite 400
BLUE BELL, PA, US, 19422

Reference 100788



Thank you for choosing FedEx

July 26, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 777451001123

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:	K.BERCHEM	**Delivery Location:**	11 MEETINGHOUSE LN
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		WOODBRIDGE, CT, 06525
		Delivery date:	Jul 25, 2022 12:02

Shipping Information:

Tracking number:	777451001123	**Ship Date:**	Jul 21, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Town of Woodbridge,
11 Meetinghouse Lane
WOODBRIDGE, CT, US, 06525

Shipper:
Ersilia Davis, Crown Castle
1777 Sentry Parkway W
VEVA 17, Suite 400
BLUE BELL, PA, US, 19422

Reference 100788

Thank you for choosing FedEx