



1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

April 30, 2021

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

RE: **Notice of Exempt Modification for T-Mobile**
Crown Site ID# 876330; T-Mobile Site ID# CTHA278A
299 Paxton Way Glastonbury, CT 06798
Latitude: 41.69273611/ Longitude: -72.55496388

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 147-foot mount on the existing 150-foot Monopole Tower located at 299 Paxton Way in Glastonbury. The property is owned by Feldspar Quarry LLC and the Tower by Crown Castle. T-Mobile now intends to replace six (6) existing antennas and add three (3) 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 and Replace:

(3) RFS – APXVTM14-C-120 Antennas **(REMOVE)** – (3) RFS-APX16DWV-16DWV-S-E-A20 Antennas **(REPLACE)**

(3) RFS – APXVSPP18C-A20 Antennas **(REMOVE)** - (3) RFS APXVAALL24_43-U-NA20 Antennas **(REPLACE)**

(3) Sprint RRUs Radios **(REMOVE)** – (3) Ericsson 4449 B71+B85 Radios **(REPLACE)**

(3) Sprint RRUs Radios **(REMOVE)** – (3) Ericsson 4415 B66A Radios **(REPLACE)**

(3) Sprint RRUs Radios **(REMOVE)** - (3) Ericsson 4424 B25 Radios **(REPLACE)**

(3) Hybrid Cables **(REMOVE)** – (3) 6x12 HCS Hybrid Cables **(REPLACE)**

Install New:

(3) Ericsson-AIR6449 B41 Antennas

(1) GPS and (1) GPS Line

The Foundation for a Wireless World.

CrownCastle.com



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Remove:

(1) RRH Mount

Ground:

Remove and Replace:

(1) MMBS Cabinet **(REMOVE)** – (1) 6160 Equipment Cabinet **(REPLACE)**

(1) BBU Cabinet **(REMOVE)** – (1) B160 Battery Cabinet **(REPLACE)**

Install New:

(1) BB6648 in 6160 Cabinet

(3) BB6630 in 6160 Cabinet

(1) PSU 4813 Booster in 6160 Cabinet

(1) CSR IXRE V2 (Gen 2) in 6160 Cabinet

Upgrade Service to 200AMP

(1) 6601

The original facility approval has not been made available as of the time of this filing.

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 Thomas P. Gullotta, Chairman of the Town of Glastonbury and Peter R. Carey, Building Official, for the Town of Glastonbury. A copy will also be sent to the property owner.

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

For the foregoing reasons, T-Mobile 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).

The Foundation for a Wireless World.

CrownCastle.com



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Sincerely,

Colin Robinson

Colin Robinson
Project Manager
NETWORK BUILDING + CONSULTING
100 Apollo Drive Suite 303
Chelmsford, MA 01824
crobenson@nbcllc.com
(360) 561-3311

cc:

Thomas P. Gullotta, Chairman (*via email only to thomas.gullotta@glastonbury-ct.gov*)
Glastonbury, CT
2155 Main Street
Glastonbury, CT 06033
(860) 652-7710

Peter R Carey, Building Official (*via email only to peter.carey@glastonbury-ct.gov*)
Glastonbury, CT
2155 Main Street
Glastonbury, CT 06033
(860) 652-7524

Feldspar Quarry LLC (*via email only to bluehills200@cox.net*)
C/O Jack Oliveri
PO Box 2117
Westerly, RI 02891

Colin Robinson

From: Colin Robinson
Sent: Friday, April 30, 2021 4:00 PM
To: thomas.gullotta@glastonbury-ct.gov
Cc: Colin Robinson
Subject: CSC Exempt Modification Application 299 Paxton Way Glastonbury CT 876330
Attachments: CSC Exempt Modification Application 299 Paxton Way Glastonbury CT 876330 04302021.pdf

Good Afternoon Chairman Gullotta,

Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 299 Paxton Way Glastonbury CT.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,

Colin

Colin Robinson

Project Manager

NETWORK BUILDING + CONSULTING

100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824
M 360.561.3311



Colin Robinson

From: Colin Robinson
Sent: Friday, April 30, 2021 3:59 PM
To: peter.carey@glastonbury-ct.gov
Cc: Colin Robinson
Subject: CSC Exempt Modification Application 299 Paxton Way Glastonbury CT 876330
Attachments: CSC Exempt Modification Application 299 Paxton Way Glastonbury CT 876330 04302021.pdf

Good Afternoon Building Official Carey,

Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 299 Paxton Way Glastonbury CT.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,

Colin

Colin Robinson

Project Manager

NETWORK BUILDING + CONSULTING

100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824
M 360.561.3311



Colin Robinson

From: Colin Robinson
Sent: Friday, April 30, 2021 3:59 PM
To: bluehills200@cox.net
Cc: Colin Robinson
Subject: CSC Exempt Modification Application 299 Paxton Way Glastonbury CT 876330
Attachments: CSC Exempt Modification Application 299 Paxton Way Glastonbury CT 876330 04302021.pdf

Good Afternoon,

Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 299 Paxton Way Glastonbury CT. You are being notified as the building owner.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,

Colin

Colin Robinson

Project Manager

NETWORK BUILDING + CONSULTING

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Exhibit A

Original Facility Approval

The original facility approval has not been made available as of the time of this filing.

Exhibit B

Property Card

NEW LONDON TPKE

Location NEW LONDON TPKE

Mblu H8/ 4760/ N0055/ /

Acct# 47600055N

Owner FELDSPAR QUARRY LLC

Assessment \$374,000

Appraisal \$534,300

PID 227

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$1,900	\$532,400	\$534,300
Assessment			
Valuation Year	Improvements	Land	Total
2019	\$1,300	\$372,700	\$374,000

Owner of Record

Owner	FELDSPAR QUARRY LLC	Sale Price	\$485,000
Co-Owner	C/O JACK OLIVERI	Certificate	
Address	PO BOX 2117	Book & Page	1742/0090
	WESTERLY , RI 02891-0918	Sale Date	02/05/2003
		Instrument	00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
E OF APPLE HILL INC	\$120,000		1224/0109	00	12/10/1998
ARMANDO ELIZABETH	\$0		0336/0544	62	12/19/1986

Building Information

Building 1 : Section 1

Year Built:	1978
Living Area:	0
Replacement Cost:	\$0
Replacement Cost	
Less Depreciation:	\$1,900

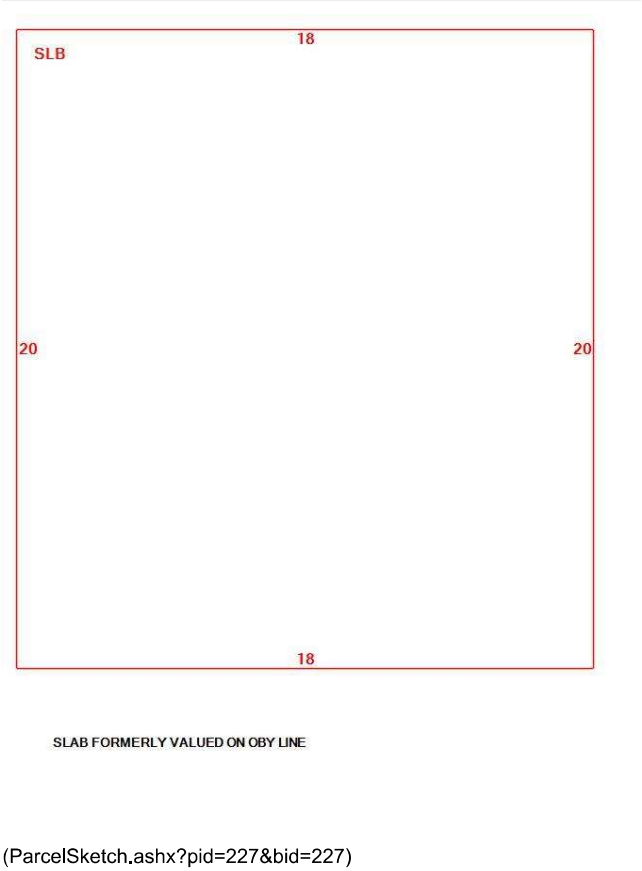
Building Attributes	
Field	Description
Style:	Support Shed
Model	Ind/Comm
Grade	D
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	None
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	Cell Tower
Total Rooms	
Total Bedrms	
Total Baths	
Inspection	
Int Condition	
1st Floor Use:	
Heat/AC	03
Frame Type	NONE
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0.00
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/GlastonburyCTPhotos/\02\01\16\45.jpg>)

Building Layout



Building Sub-Areas (sq ft)			
Code	Description	Gross Area	Living Area
SLB	Slab	360	0
		360	0

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use		Land Line Valuation	
Use Code	350	Size (Acres)	17.20
Description	Cell Tower	Assessed Value	\$372,700
Zone	RR	Appraised Value	\$532,400
Category			

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$1,900	\$532,400	\$534,300

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$1,300	\$372,700	\$374,000

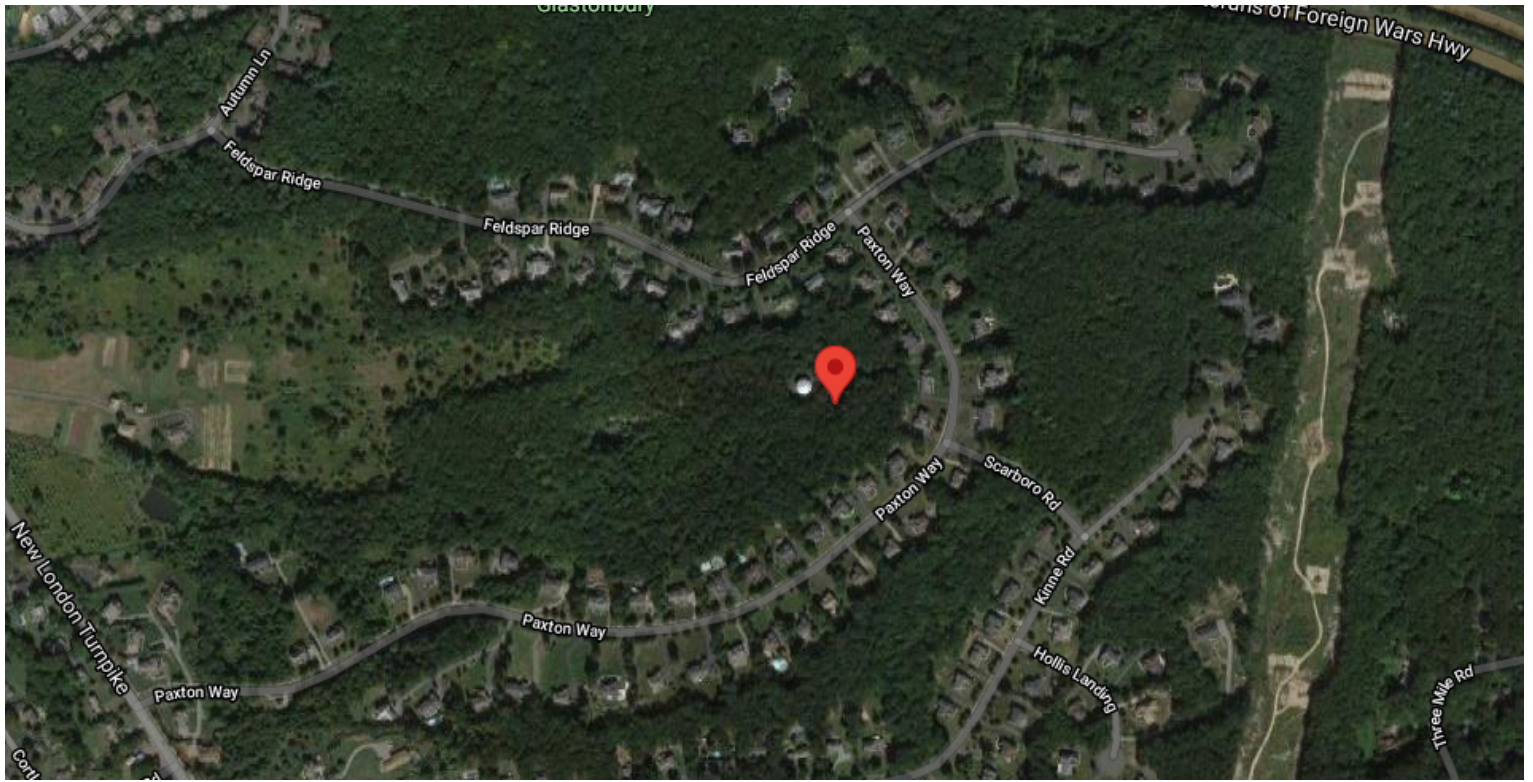


Exhibit C

Construction Drawings



T-MOBILE SITE NUMBER: CTHA278A

T-MOBILE SITE NAME: CTHA278A

SITE TYPE: MONOPOLE

TOWER HEIGHT: 150'-0"

T-MOBILE SPRINT RETAIN SITE CONFIGURATION: 67D5A998C 6160 (GSM ONLY)

BUSINESS UNIT #: 876330

**SITE ADDRESS: 299 PAXTON WAY
GLASTONBURY, CT 06798**

COUNTY: HARTFORD

JURISDICTION: HARTFORD COUNTY



35 GRIFFIN ROAD
BLOOMFIELD, CT 06002



1500 CORPORATE DRIVE
CANONSBURG, PA 15317



**T-MOBILE SITE NUMBER:
CTHA278A**

**BU #: 876330
DARRYL H.'S QUARRY SITE
(ABOVE)**

**299 PAXTON WAY
GLASTONBURY, CT 06798
EXISTING 150'-0" MONOPOLE**

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/31/20	RCD	PRELIMINARY	SS
B	04/06/21	PEG	REVISED COMMENTS	SS
C	04/27/21	PEG	FINAL CDS	SS

SITE INFORMATION

CROWN CASTLE USA INC.
SITE NAME: DARRYL H.'S QUARRY SITE (ABOVE)
SITE ADDRESS: 299 PAXTON WAY
GLASTONBURY, CT 06798
COUNTY: HARTFORD
MAP/PARCEL #: VERIFY
AREA OF CONSTRUCTION: EXISTING
LATITUDE: 41.69273611° (41° 41' 33.85")
LONGITUDE: -72.55496388° (-72° 33' 17.87")
LAT/LONG TYPE: NAD83
GROUND ELEVATION: 501.9 FT
CURRENT ZONING: RR
JURISDICTION: HARTFORD COUNTY
OCCUPANCY CLASSIFICATION: U
TYPE OF CONSTRUCTION: IIB
A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR
HUMAN HABITATION
PROPERTY OWNER: METROPOLITAN DISTRICT
555 MAIN STREET
HARTFORD, CT
06103-2926
TOWER OWNER: CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
CARRIER/APPLICANT: T-MOBILE
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002
ELECTRIC PROVIDER: TBD
TELCO PROVIDER: TBD

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS

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

PROJECT DESCRIPTION

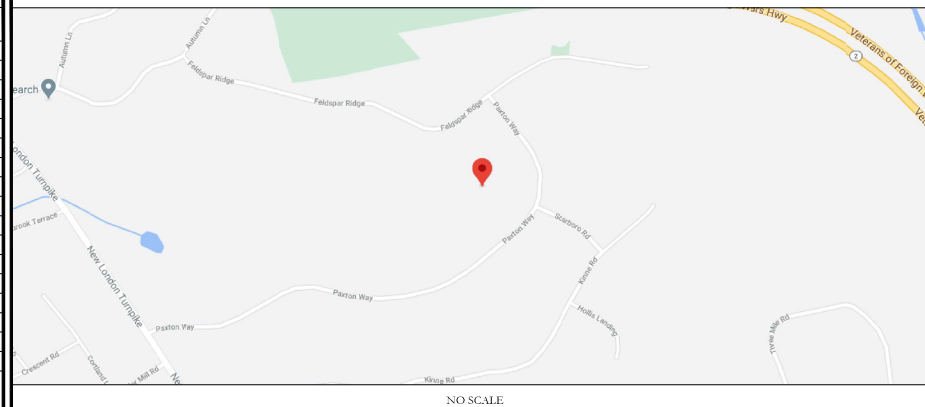
THE PURPOSE OF THIS PROJECT IS TO ENHANCE
BROADBAND CONNECTIVITY AND CAPACITY TO THE
EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
• REMOVE (6) ANTENNAS
• REMOVE (9) RRHs
• REMOVE (1) RRH MOUNT
• REMOVE (5) HYBRID CABLES
• INSTALL (9) ANTENNAS
• INSTALL (9) RRHs
• INSTALL (5) HYBRID CABLES
• INSTALL (1) GPS AND (1) GPS LINE

GROUND SCOPE OF WORK:
• REMOVE (1) MMBS EQUIPMENT CABINET
• REMOVE (1) BBU EQUIPMENT CABINET
• INSTALL (1) 6160 & (1) B160 BATTERY CABINETS
• INSTALL (1) BB 6648
• INSTALL (5) BB 6630
• INSTALL (1) PSU 4813
• INSTALL (1) CSR IGR6 V2 (GEN2)
• UPGRADE SERVICE TO 200AMP
• INSTALL (1) 6601

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

LOCATION MAP



**APPLICABLE CODES/REFERENCE
DOCUMENTS**

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

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

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	
MOUNT ANALYSIS:	B+T GROUP
DATED:	03/25/2021
RFDS REVISION:	1
DATED:	01/12/2021
ORDER ID:	538761
REVISION:	0



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



APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.	_____	_____
LAND USE PLANNER	_____	_____
T-MOBILE	_____	_____
OPERATIONS	_____	_____
RF	_____	_____
NETWORK	_____	_____
BACKHAUL	_____	_____
CONSTRUCTION MANAGER	_____	_____

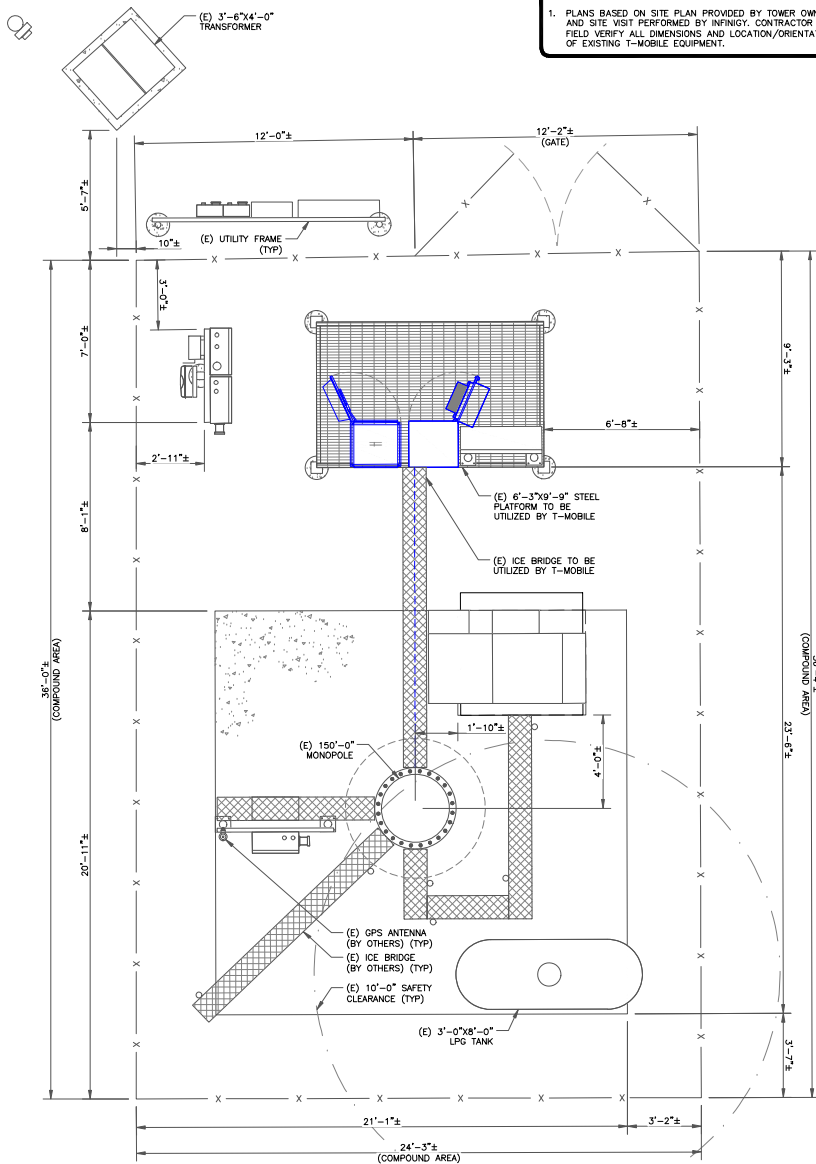
THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS
AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE
CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS
ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND
ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

SHEET NUMBER:

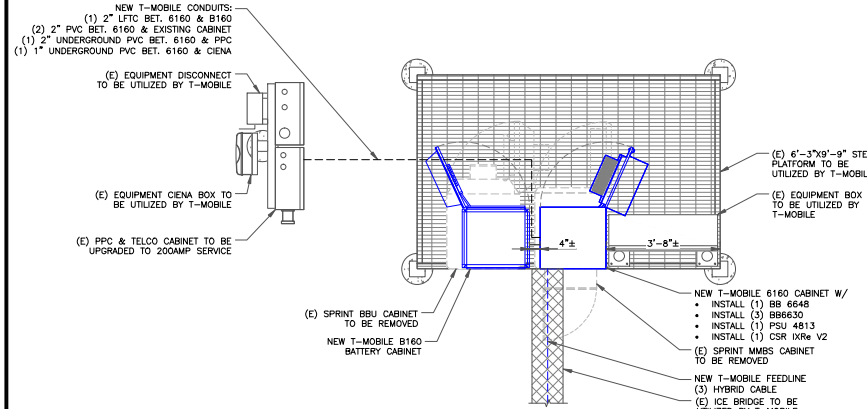
T-1

REVISION:

B



1 SITE PLAN
SCALE: 3/8"=1'-0" (FULL SIZE)
3/16"=1'-0" (11x17)



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

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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
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the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CTHA278A

BU #: 876330
DARRYL H.'S QUARRY SITE
(ABOVE)

299 PAXTON WAY
GLASTONBURY, CT 06798
EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/31/20	RCD	PRELIMINARY	SS
B	04/06/21	PRG	REVISED COMMENTS	SS
C	04/27/21	PRG	FINAL CDS	SS

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: **C-1** REVISION: **B**

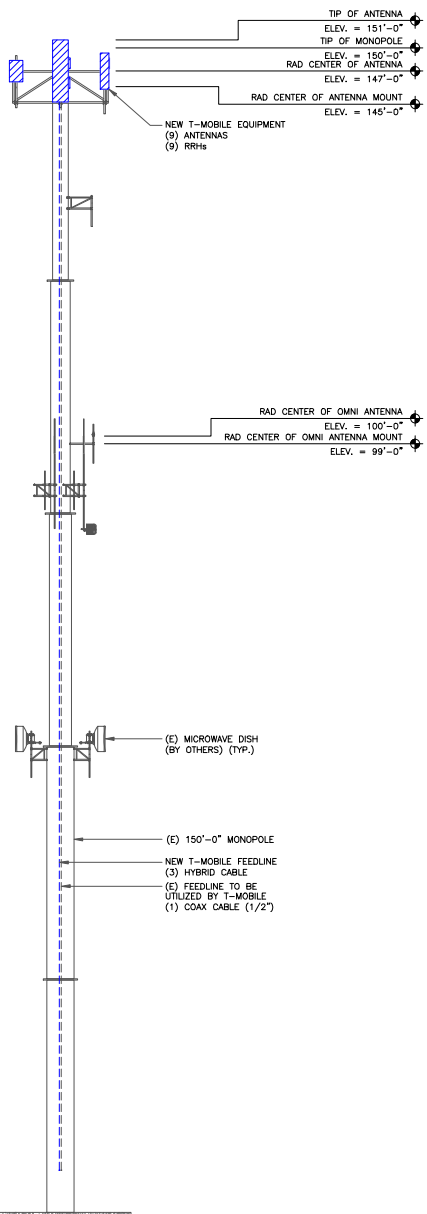
NOTES:

1. ELEVATION BASED ON DRAWING PROVIDED BY TOWER OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.
2. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.

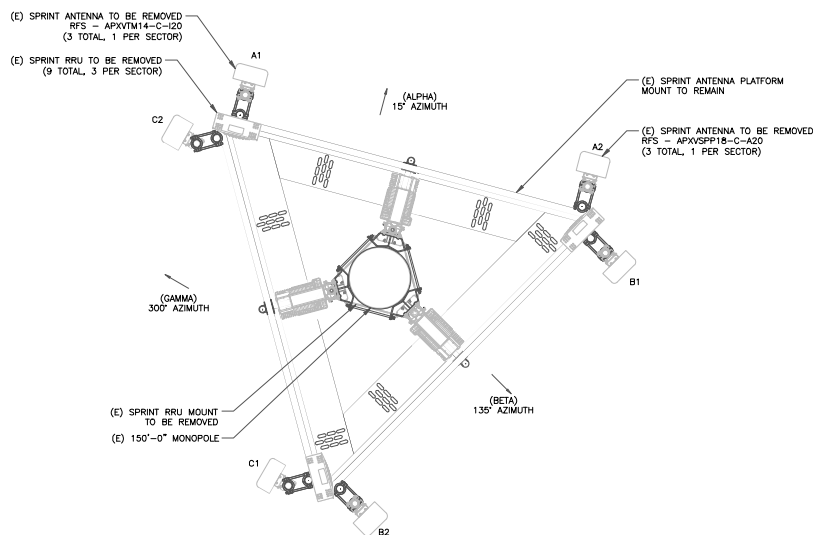
T-MOBILE EQUIPMENT

ANTENNA CL: 147'-0"
MOUNT CL: 145'-0"
ANTENNA CL: 100'-0"
MOUNT CL: 99'-0"

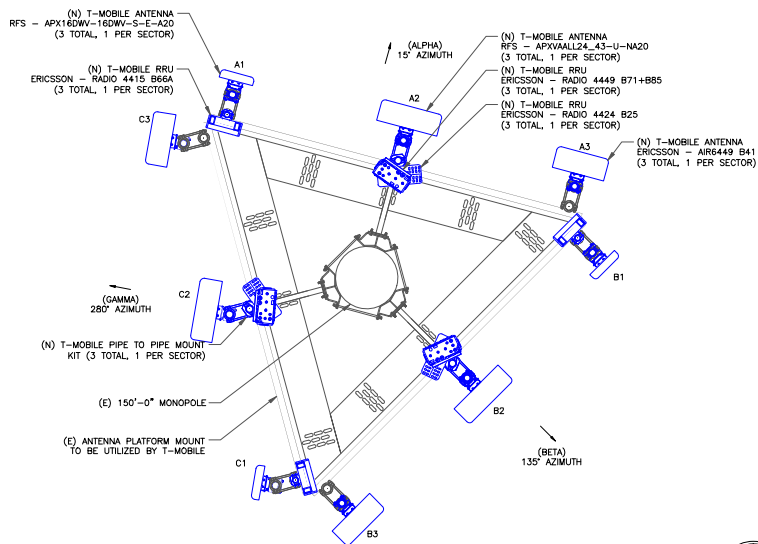
ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

NOTE:
A STRUCTURAL EVALUATION OF THE T-MOBILE ANTENNA MOUNTS HAS BEEN PERFORMED BY B+T GROUP. REFER TO ANTENNA MOUNT STRUCTURAL ANALYSIS DATED 03-25-2021 PRIOR TO CONSTRUCTION.

INFINIGY HAS NOT EVALUATED THE TOWER FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. CONTRACTOR TO COORDINATE LOADINGS WITH RF ENGINEER. REFER TO STRUCTURAL ANALYSIS PERFORMED BY OTHERS PRIOR TO CONSTRUCTION.

T-Mobile

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BLOOMFIELD, CT 06002

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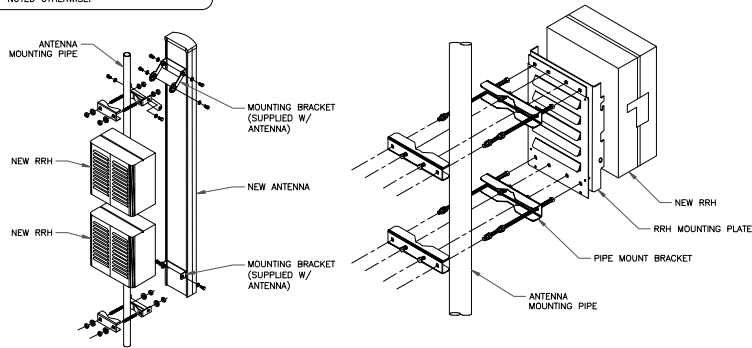
C-2

B

ANTENNA SCHEDULE										
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2100	147°-0"	15°	RFS	APX16DWV-16DWV-S-E-A20	0°	---	(1) ERICSSON - RRUS 4415 B25	(1) 6X12 HCS HYBRID (SHARED)
ALPHA	A3	L700, L600, N600, L1900, G1900	147°-0"	15°	RFS	APXVAALL24_43-U-NA20	0°	---	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4415 B66A	(1) 6X12 HCS HYBRID (SHARED)
ALPHA	A4	L2500, N2500	147°-0"	15°	ERICSSON	AIR6449 B41	0°	---	---	(1) 6X12 HCS HYBRID (SHARED)
BETA	B1	L2100	147°-0"	135°	RFS	APX16DWV-16DWV-S-E-A20	0°	---	(1) ERICSSON - RRUS 4415 B25	(1) 6X12 HCS HYBRID (SHARED)
BETA	B3	L700, L600, N600, L1900, G1900	147°-0"	135°	RFS	APXVAALL24_43-U-NA20	0°	---	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4415 B66A	(1) 6X12 HCS HYBRID (SHARED)
BETA	B4	L2500, N2500	147°-0"	135°	ERICSSON	AIR6449 B41	0°	---	---	(1) 6X12 HCS HYBRID (SHARED)
GAMMA	C1	L2100	147°-0"	280°	RFS	APX16DWV-16DWV-S-E-A20	0°	---	(1) ERICSSON - RRUS 4415 B25	(1) 6X12 HCS HYBRID (SHARED)
GAMMA	C3	L700, L600, N600, L1900, G1900	147°-0"	280°	RFS	APXVAALL24_43-U-NA20	0°	---	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4415 B66A	(1) 6X12 HCS HYBRID (SHARED)
GAMMA	C4	L2500, N2500	147°-0"	280°	ERICSSON	AIR6449 B41	0°	---	---	(1) 6X12 HCS HYBRID (SHARED)

1 ANTENNA AND CABLE SCHEDULE
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.



NOTE:
1. CONTRACTOR SHALL INSTALL 3RD DUAL RRH MOUNT TO ACCOMMODATE ALL RRH BRACKETS HOLES IF NECESSARY.

2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

T-Mobile

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BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
CANONSBURG, PA 15317

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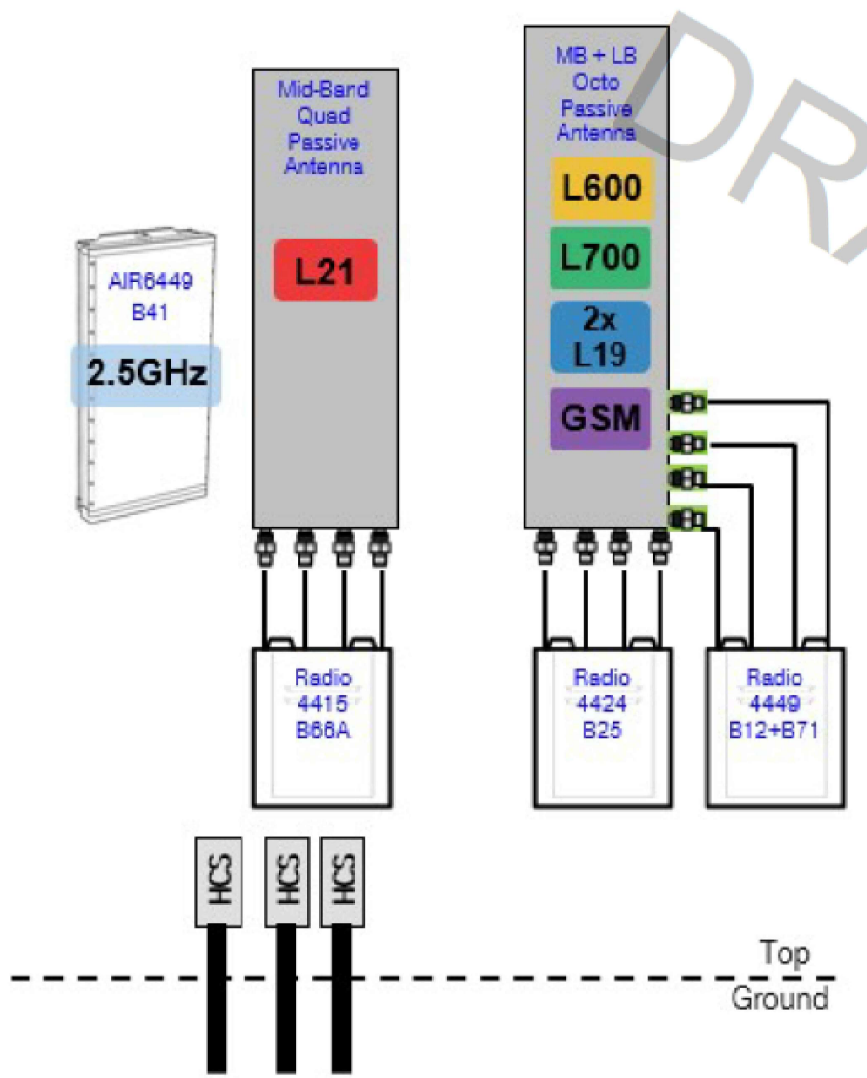
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B

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1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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BU #: 876330
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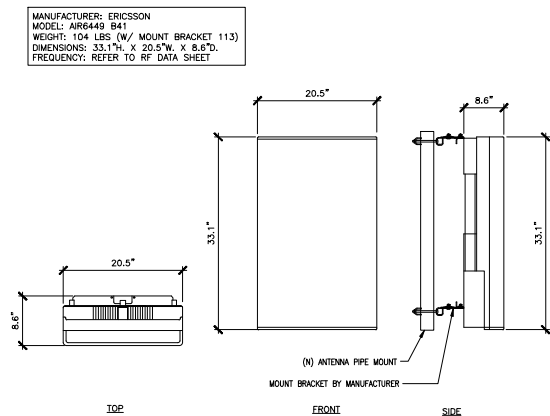
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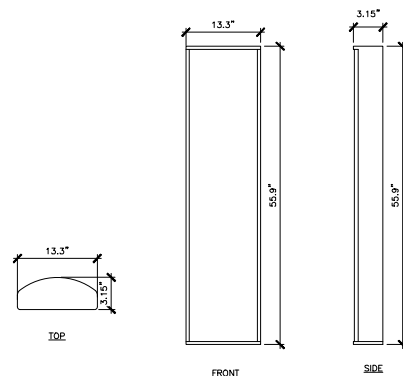
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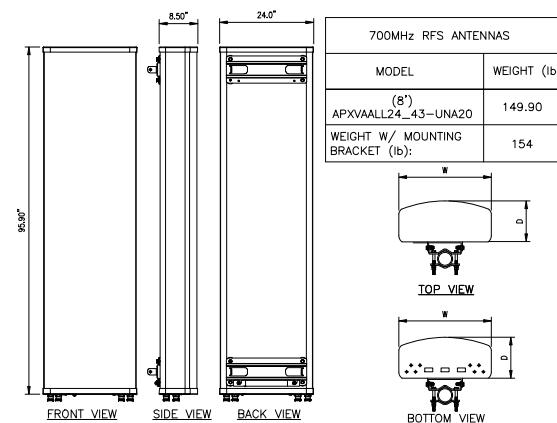
MANUFACTURER: RFS
MODEL: APX16DWV-16DWV-S-E-A20
WEIGHT: 40.7 LBS
DIMENSIONS: 55.9"H. X 13.3"W. X 3.15"D.
FREQUENCY: REFER TO RF DATA SHEET



① (N) AIR6449 B41 ANTENNA SPEC
SCALE: NOT TO SCALE



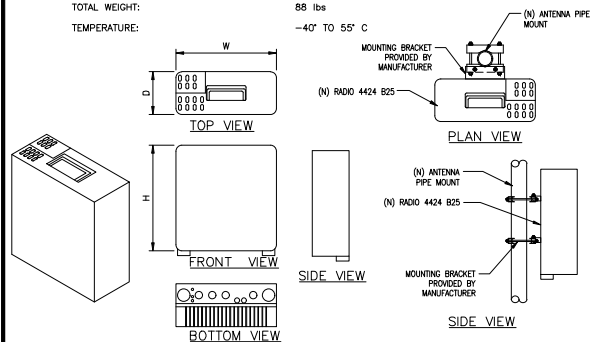
② (N) APX16DWV-16DWV-S-E-A20 ANTENNA SPEC
SCALE: NOT TO SCALE



③ (N) APXVAALL24_43-UNA20 ANTENNA SPEC
SCALE: NOT TO SCALE

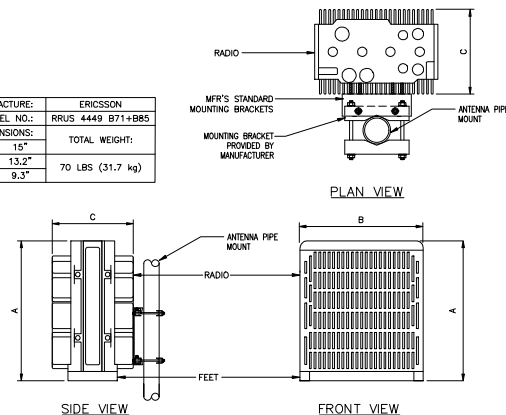
ERICSSON RADIO-4424 B25

DIMENSIONS, WxDxH: 13.5"x9.6"x16.5"
MAX OUTPUT POWER: 4x80W (2x(2x80W))
TOTAL WEIGHT: 88 lbs
TEMPERATURE: -40° TO 55° C



④ (N) RADIO 4424 B25 SPEC
SCALE: NOT TO SCALE

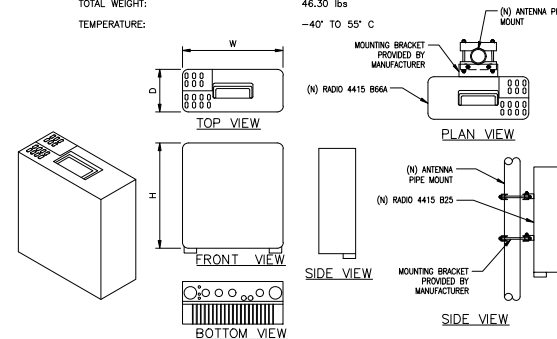
MANUFACTURE:	ERICSSON
MODEL NO.:	RRUS-4449 B71+B85
DIMENSIONS:	TOTAL WEIGHT:
A 15"	
B 13.2"	70 LBS (31.7 kg)
C 9.3"	



⑤ (N) RADIO 4449 B71+B85 SPEC
SCALE: NOT TO SCALE

ERICSSON RADIO-4415 B66A

DIMENSIONS, WxDxH: 14.90"x5.40"x13.20"
POWER CONSUMPTION: 660 WATTS
TOTAL WEIGHT: 46.30 lbs
TEMPERATURE: -40° TO 55° C



⑥ (N) RADIO 4415 B66A SPEC
SCALE: NOT TO SCALE

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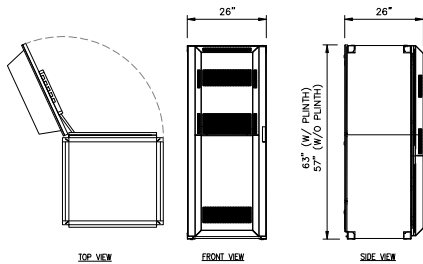
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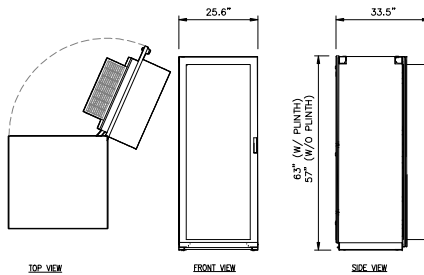
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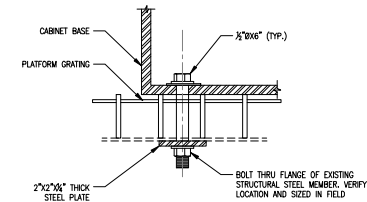
ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HMM:	63" x 25.6" x 25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

1 (N) B160 CABINET DETAIL
SCALE: NOT TO SCALE

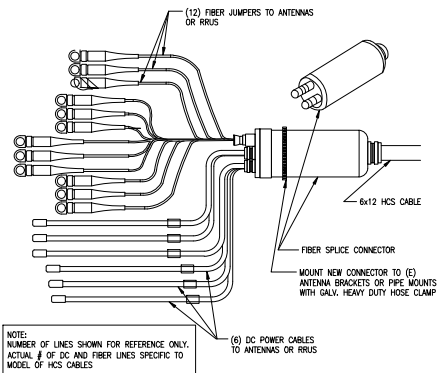


ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HMM:	63" x 25.6" x 25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

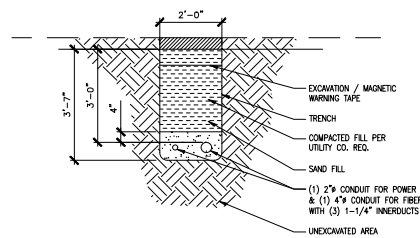
2 (N) 6160 CABINET DETAIL
SCALE: NOT TO SCALE



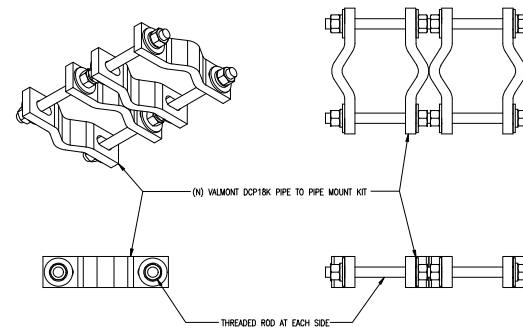
3 (N) EQUIPMENT CABINET MOUNTING DETAIL
SCALE: NOT TO SCALE



4 (N) 6X12 HCS CABLE DETAIL
SCALE: NOT TO SCALE



5 (N) CONDUIT TRENCH DETAIL
SCALE: NOT TO SCALE



6 (N) PIPE TO PIPE MOUNT KIT DETAIL
SCALE: NOT TO SCALE

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EXISTING 150'-0" MONOPOLE

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B	04/06/21	PEG	REVISED COMMENTS	SS
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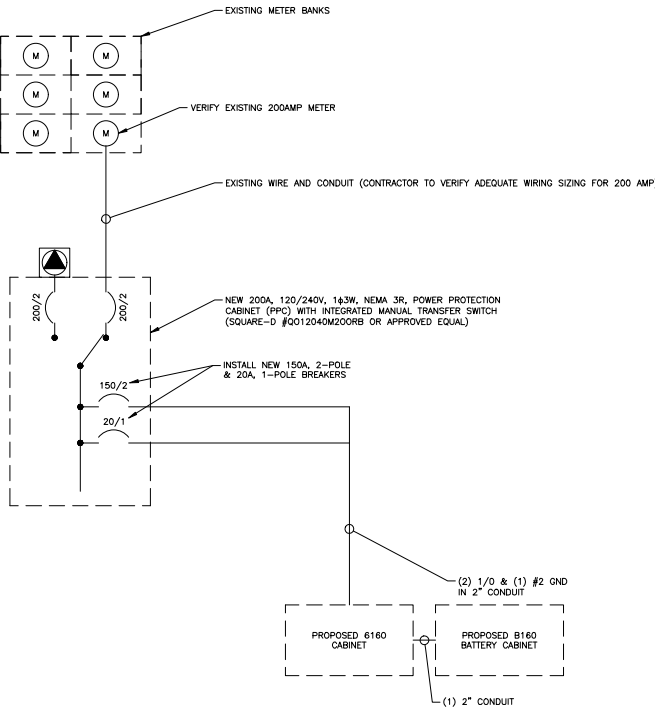
REVISION:

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T-MOBILE PANEL SCHEDULE												
MAIN: 200A MAIN BREAKER				VOTAGE/PHASE: 120/240V, 1-PHASE, 3-WIRE					SHORT CIRCUIT CURRENT RATING: --			
MOUNTING: INSIDE PPC ENC.OSURE				ENCLOSURE: NEMA 3R					SURGE PROTECTION DEVICE: YES			
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	PHASE LOADS(VA)		CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION	
					A	B						
AC SURGE	0	NC	60	1	180		2	20	NC	180	TELCO GFCI	
6160*	3500	C	150	3	3500	0	4	30	NC	0	GENERATOR	
	3500	C		5		3500	6		NC	0		
6160 GFI*	180	NC	20	9	180		10					
BLANK				11			12				BLANK	
				13	0		14					
				15			16					
				17	0		18					
				19			20					
				21	0		22					
				23			24					
BASE LOAD (VA) =					3860	3500	C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD					
25% OF CONTINUOUS LOAD (VA) =					1750	1750	*INDICATES NEW LOAD. ALL OTHER LOADS ARE EXISTING.					
TOTAL LOAD (VA) =					5610	3250	NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING.					
TOTAL LOAD (A) =					46.8	43.8	CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED VALUES.					

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE

- NOTES:
1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
 2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 3. ALL GROUNDING AND BONDING PER THE NEC.



2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

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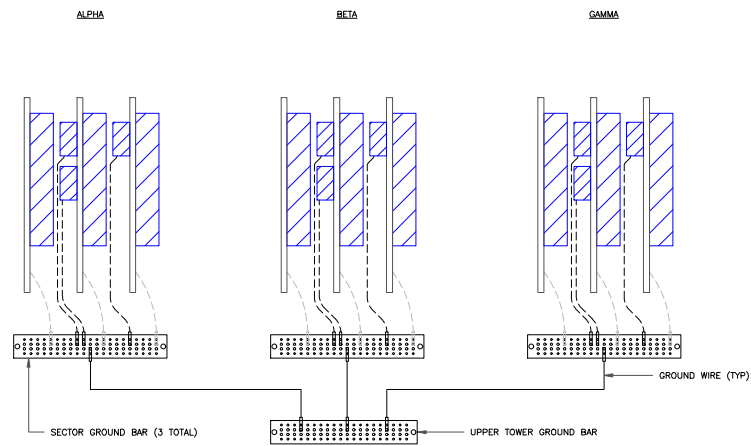
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EXISTING 150'-0" MONOPOLE

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NOTE:
ALL NEW GROUNDS TO BE #6 STRANDED
COPPER WITH GREEN INSULATION UNLESS
NOTED OTHERWISE.

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

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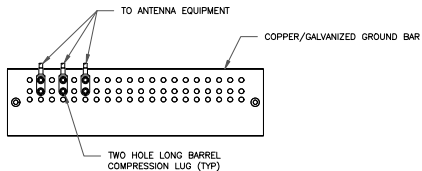
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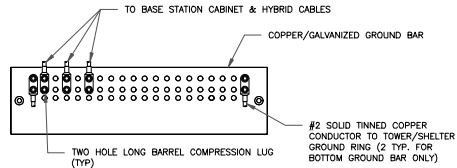
B



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.

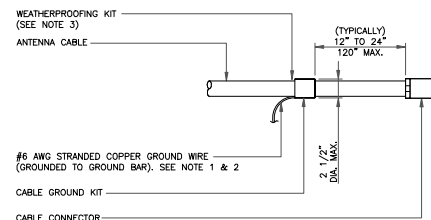
① ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

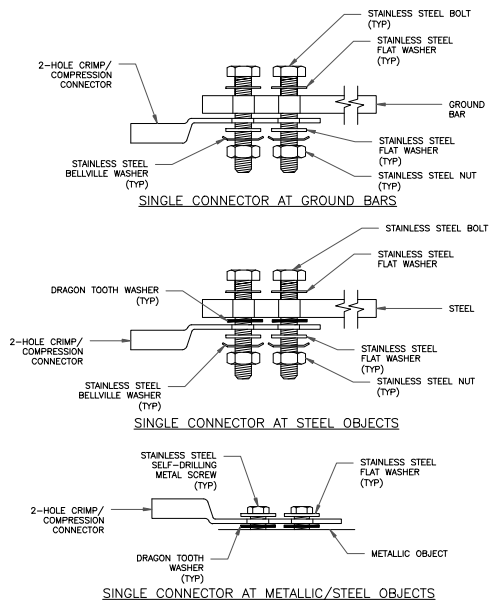
② TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

③ CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



④ HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE

⑤ NOT USED
SCALE: NOT TO SCALE

⑥ NOT USED
SCALE: NOT TO SCALE

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Exhibit D

Structural Analysis Report

Date: **April 8, 2021**



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation:

Site Number: CTHA278A
Site Name: N/A

Crown Castle Designation:

BU Number: 876330
Site Name: Darryl H.'S Quarry Site (Above
JDE Job Number: 628840
Work Order Number: 1919209
Order Number: 538761 Rev. 1

Engineering Firm Designation:

TEP Project Number: 25667.526622

Site Data:

299 Paxton Way, Glastonbury, Hartford County, CT 06033
Latitude 41° 41' 33.85", Longitude -72° 33' 17.87"
150 Foot - Monopole Tower

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

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

LC5: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Gautam Sopal, E.I. / PRS

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

04/08/2021

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Table 2 - Other Considered Equipment

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4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Table 5 - Tower Component Stresses vs. Capacity

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 150-ft monopole tower designed by Rohn. The tower has been modified per reinforcement drawings prepared by Tower Engineering Professional in August of 2008.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	2.0 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)
145.0	147.0	3	RFS Celwave	APX16DWV-16DWVS-E-A20 w/ Mount Pipe	4	1-5/8
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	Ericsson	RADIO 4415 B66A		
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	Ericsson	RADIO 4424 B25_TMO		
99.0	145.0	1	Tower Mounts	Platform Mount [LP 502-1]	1	1/2
	100.0	1	Lucent	KS24019-L112A		
	99.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

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)
140.0	140.0	3	Kathrein	742 213 w/ Mount Pipe	6	1-5/8
130.0	130.0	1	Tower Mounts	Side Arm Mount [SO 701-3]	-	-
93.0	100.0	1	RFS Celwave	BA6312-1	2	7/8
	99.0	1	Tx Rx Systems	101D-90-06-0-03		
	93.0	1	Tower Mounts	Pipe Mount [PM 502-3]		
59.0	66.0	1	Sinclair	SC381-L	2	3/8 7/8
	61.0	2	Commscope	VHLP3-11W		
	59.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		
		2	Tower Mounts	Side Arm Mount [SO 304-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	2192533	CCISites
Tower Foundation Drawings	1614584	CCISites
Tower Manufacturer Drawings	1614573	CCISites
Tower Reinforcement Drawings	2296225	CCISites
Post Modification Inspection	2296225	CCISites

3.1) Analysis Method

tnxTower (version 8.0.7.5), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

3.2) Assumptions

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

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals 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)	ΦP_{allow} (k)	% Capacity	Pass / Fail
L1	150 - 120	Pole	P24x1/4	1	-6.14	695.38	32.3	Pass
L2	120 - 90	Pole	P30x3/8	2	-11.43	1376.61	34.8	Pass
L3	90 - 60	Pole	P36x3/8	3	-17.27	1564.60	44.8	Pass
L4	60 - 30	Pole	P42x3/8	4	-24.14	1752.31	52.9	Pass
L5	30 - 0	Pole	P42x1/2	5	-32.85	2530.92	54.5	Pass
							Summary	
						Pole (L5)	54.5	Pass
						RATING =	54.5	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2,3	Flange Connection	120.0	32.3	Pass
1,2,3	Flange Connection	90.0	34.8	Pass
1,2,3	Flange Connection	60.0	44.8	Pass
1,2,3	Flange Connection	30.0	52.9	Pass
1,2	Anchor Rods	-	43.9	Pass
1,2,3	Base Plate	-	54.5	Pass
1,2	Base Foundation Soil Interaction	-	54.3	Pass
1,2	Base Foundation Structural	-	50.7	Pass

Structure Rating (max from all components) =	54.5%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
- 2) Rating per TIA-222-H Section 15.5
- 3) Base/Flange plates are assumed to have the same capacity as their respective shaft.

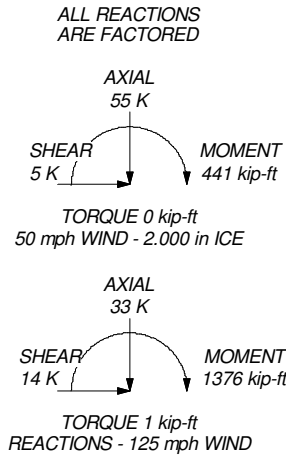
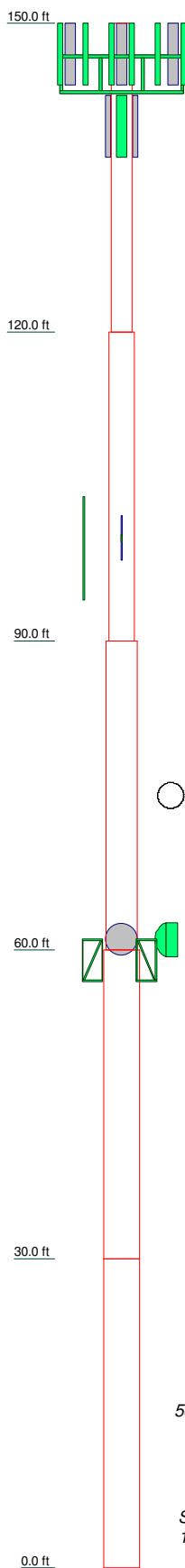
4.1) Recommendations

- 1) 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	1	2	3	4	5	
Size	P24x1/4	P30x3/8	P36x3/8	P42x3/8	P42x1/2	
Length (ft)	30.00	30.00	30.00	30.00	30.00	
Grade	A53-B-42					
Weight (K)	1.9	3.6	4.3	5.0	6.7	21.4



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 54.5%

 Tower Engineering Professionals	Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350		Job: Darryl H.'s Quarry Site (Above (BU 876330))		
			Project: TEP No. 25667.526622		
			Client: Crown Castle	Drawn by: PRS	App'd:
			Code: TIA-222-H	Date: 04/08/21	Scale: NTS
			Path:	Dwg No. E-1	CU:\projects\new\Design\Structural\T&E Files\876330\Issued Draft\Pro-Sect\876330_1919209_1.C3d

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Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Tower base elevation above sea level: 494.00 ft.

Basic wind speed of 125 mph.

Risk Category II.

Exposure Category B.

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

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 2.000 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 1.05.

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

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

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

Options

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

Pole Section Geometry

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Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	150.00-120.00	30.00	P24x1/4	A53-B-42 (42 ksi)	
L2	120.00-90.00	30.00	P30x3/8	A53-B-42 (42 ksi)	
L3	90.00-60.00	30.00	P36x3/8	A53-B-42 (42 ksi)	
L4	60.00-30.00	30.00	P42x3/8	A53-B-42 (42 ksi)	
L5	30.00-0.00	30.00	P42x1/2	A53-B-42 (42 ksi)	

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 150.00-120.00				1	1	1			
L2 120.00-90.00				1	1	1			
L3 90.00-60.00				1	1	1			
L4 60.00-30.00				1	1	1			
L5 30.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	B	No	Surface Ar (CaAa)	150.00 - 0.00	1	1	0.250 0.250	0.375		0.22

LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	99.00 - 0.00	1	1	0.000 0.000	0.625		0.15

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf

HB158-21U6S24-xx M_TMO(1-5/8)	A	No	No	Inside Pole	145.00 - 0.00	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	2.50 2.50 2.50 2.50

AVA7-50(1-5/8)	A	No	No	Inside Pole	140.00 - 0.00	6	No Ice 1/2" Ice	0.00 0.00	0.70 0.70

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
*** LDF5-50A(7/8)	C	No	No	Inside Pole	93.00 - 0.00	2	1" Ice	0.00	0.70
							2" Ice	0.00	0.70
							No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
*** CNT-400(3/8)	C	No	No	Inside Pole	59.00 - 0.00	2	2" Ice	0.00	0.33
							No Ice	0.00	0.07
							1/2" Ice	0.00	0.07
							1" Ice	0.00	0.07
							2" Ice	0.00	0.07
LDF5-50A(7/8)	C	No	No	Inside Pole	59.00 - 0.00	1	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
*** *****									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	150.00-120.00	A	0.000	0.000	0.000	0.000	0.33
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L2	120.00-90.00	A	0.000	0.000	0.000	0.000	0.43
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	0.563	0.000	0.00
L3	90.00-60.00	A	0.000	0.000	0.000	0.000	0.43
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	1.875	0.000	0.02
L4	60.00-30.00	A	0.000	0.000	0.000	0.000	0.43
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	1.875	0.000	0.04
L5	30.00-0.00	A	0.000	0.000	0.000	0.000	0.43
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	1.875	0.000	0.04

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	150.00-120.00	A	1.957	0.000	0.000	0.000	0.000	0.33
		B		0.000	0.000	12.868	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.00
L2	120.00-90.00	A	1.909	0.000	0.000	0.000	0.000	0.43
		B		0.000	0.000	12.577	0.000	0.17
		C		0.000	0.000	3.998	0.000	0.06

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_{AA} In Face ft²</i>	<i>C_{AA} Out Face ft²</i>	<i>Weight K</i>
L3	90.00-60.00	A	1.845	0.000	0.000	0.000	0.000	0.43
		B		0.000	0.000	12.198	0.000	0.16
		C		0.000	0.000	12.948	0.000	0.19
L4	60.00-30.00	A	1.754	0.000	0.000	0.000	0.000	0.43
		B		0.000	0.000	11.646	0.000	0.14
		C		0.000	0.000	12.396	0.000	0.19
L5	30.00-0.00	A	1.571	0.000	0.000	0.000	0.000	0.43
		B		0.000	0.000	10.552	0.000	0.12
		C		0.000	0.000	11.302	0.000	0.16

Feed Line Center of Pressure

<i>Section</i>	<i>Elevation ft</i>	<i>CP_X in</i>	<i>CP_Z in</i>	<i>CP_X Ice in</i>	<i>CP_Z Ice in</i>
L1	150.00-120.00	0.369	0.000	1.623	0.000
L2	120.00-90.00	0.366	0.184	1.618	0.519
L3	90.00-60.00	0.359	0.602	1.538	1.644
L4	60.00-30.00	0.361	0.605	1.537	1.645
L5	30.00-0.00	0.361	0.605	1.421	1.531

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

Shielding Factor Ka

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
L1	2	Safety Line 3/8	120.00 - 150.00	1.0000	1.0000
L2	2	Safety Line 3/8	90.00 - 120.00	1.0000	1.0000
L2	8	LDF4-50A(1/2)	90.00 - 99.00	1.0000	1.0000
L3	2	Safety Line 3/8	60.00 - 90.00	1.0000	1.0000
L3	8	LDF4-50A(1/2)	60.00 - 90.00	1.0000	1.0000
L4	2	Safety Line 3/8	30.00 - 60.00	1.0000	1.0000
L4	8	LDF4-50A(1/2)	30.00 - 60.00	1.0000	1.0000
L5	2	Safety Line 3/8	0.00 - 30.00	1.0000	1.0000
L5	8	LDF4-50A(1/2)	0.00 - 30.00	1.0000	1.0000

Discrete Tower Loads

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
145									
APX16DWV-16DWVS-E-A 20 w/ Mount Pipe	A	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.29 6.86 7.45 8.68	2.76 3.27 3.79 4.90	0.06 0.11 0.16 0.29
APX16DWV-16DWVS-E-A 20 w/ Mount Pipe	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.29 6.86 7.45 8.68	2.76 3.27 3.79 4.90	0.06 0.11 0.16 0.29
APX16DWV-16DWVS-E-A 20 w/ Mount Pipe	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.29 6.86 7.45 8.68	2.76 3.27 3.79 4.90	0.06 0.11 0.16 0.29
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.87 6.23 6.61 7.38	3.27 3.73 4.20 5.20	0.13 0.18 0.23 0.36
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.87 6.23 6.61 7.38	3.27 3.73 4.20 5.20	0.13 0.18 0.23 0.36
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.87 6.23 6.61 7.38	3.27 3.73 4.20 5.20	0.13 0.18 0.23 0.36
RADIO 4415 B66A	A	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.86 2.03 2.20 2.58	0.87 1.00 1.13 1.43	0.05 0.06 0.08 0.12
RADIO 4415 B66A	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.86 2.03 2.20 2.58	0.87 1.00 1.13 1.43	0.05 0.06 0.08 0.12
RADIO 4415 B66A	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.86 2.03 2.20 2.58	0.87 1.00 1.13 1.43	0.05 0.06 0.08 0.12
RADIO 4449 B71 B85A_T-MOBILE	A	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.15 2.33 2.72	1.59 1.75 1.92 2.28	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.15 2.33 2.72	1.59 1.75 1.92 2.28	0.07 0.09 0.12 0.17

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>	
RADIO 4449 B71 B85A_T-MOBILE	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 1.97 1/2" Ice 2.15 1" Ice 2.33 2" Ice 2.72	1.59 1.75 1.92 2.28	0.07 0.09 0.12 0.17	
RADIO 4424 B25_TMO	A	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 2.05 1/2" Ice 2.23 1" Ice 2.42 2" Ice 2.81	1.61 1.77 1.94 2.30	0.09 0.11 0.13 0.19	
RADIO 4424 B25_TMO	B	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 2.05 1/2" Ice 2.23 1" Ice 2.42 2" Ice 2.81	1.61 1.77 1.94 2.30	0.09 0.11 0.13 0.19	
RADIO 4424 B25_TMO	C	From Centroid-Le g	4.00 0.00 2.00	0.0000	145.00	No Ice 2.05 1/2" Ice 2.23 1" Ice 2.42 2" Ice 2.81	1.61 1.77 1.94 2.30	0.09 0.11 0.13 0.19	
Platform Mount [LP 502-1]	C	None		0.0000	145.00	No Ice 18.28 1/2" Ice 23.54 1" Ice 28.53 2" Ice 38.85	18.28 23.54 28.53 38.85	0.93 1.43 2.07 3.71	
140									
742 213 w/ Mount Pipe	A	From Face	0.50 0.00 0.00	0.0000	140.00	No Ice 3.54 1/2" Ice 4.13 1" Ice 4.74 2" Ice 6.01	2.98 3.57 4.17 5.42	0.05 0.09 0.14 0.27	
742 213 w/ Mount Pipe	B	From Face	0.50 0.00 0.00	0.0000	140.00	No Ice 3.54 1/2" Ice 4.13 1" Ice 4.74 2" Ice 6.01	2.98 3.57 4.17 5.42	0.05 0.09 0.14 0.27	
742 213 w/ Mount Pipe	C	From Face	0.50 0.00 0.00	0.0000	140.00	No Ice 3.54 1/2" Ice 4.13 1" Ice 4.74 2" Ice 6.01	2.98 3.57 4.17 5.42	0.05 0.09 0.14 0.27	
130									
2.4" Dia. x 6-ft	A	From Leg	3.00 0.00 0.00	0.0000	130.00	No Ice 1.43 1/2" Ice 1.92 1" Ice 2.29 2" Ice 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09	
2.4" Dia. x 6-ft	B	From Leg	3.00 0.00 0.00	0.0000	130.00	No Ice 1.43 1/2" Ice 1.92 1" Ice 2.29 2" Ice 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09	
2.4" Dia. x 6-ft	C	From Leg	3.00 0.00 0.00	0.0000	130.00	No Ice 1.43 1/2" Ice 1.92 1" Ice 2.29 2" Ice 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09	
Side Arm Mount [SO 701-3]	C	None		0.0000	130.00	No Ice 3.02 1/2" Ice 4.18 1" Ice 5.33 2" Ice 7.63	3.02 4.18 5.33 7.63	0.20 0.24 0.28 0.36	
99									
KS24019-L112A	C	From Face	3.00 0.00 1.00	0.0000	99.00	No Ice 0.08 1/2" Ice 0.13 1" Ice 0.19 2" Ice 0.35	0.08 0.13 0.19 0.35	0.01 0.01 0.01 0.02	
Side Arm Mount [SO 701-1]	C	From Face	1.50 0.00	0.0000	99.00	No Ice 0.85 1/2" Ice 1.14	1.67 2.34	0.07 0.08	

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
			0.00			1" Ice 1.43 2" Ice 2.01	3.01 4.35	0.09 0.12
93 BA6312-1	A	From Leg	3.00 0.00 7.00	0.0000	93.00	No Ice 0.44 1/2" Ice 0.90 1" Ice 1.20 2" Ice 1.77	0.44 0.90 1.20 1.77	0.00 0.01 0.01 0.04
101D-90-06-0-03	C	From Leg	3.00 0.00 6.00	0.0000	93.00	No Ice 3.50 1/2" Ice 4.54 1" Ice 5.30 2" Ice 6.53	3.50 4.54 5.30 6.53	0.04 0.07 0.10 0.18
2.4" Dia. x 6-ft	A	From Leg	3.00 0.00 -3.00	0.0000	93.00	No Ice 1.43 1/2" Ice 1.92 1" Ice 2.29 2" Ice 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
Pipe Mount [PM 502-3]	C	None		0.0000	93.00	No Ice 6.30 1/2" Ice 8.95 1" Ice 11.22 2" Ice 15.79	6.30 8.95 11.22 15.79	0.30 0.39 0.52 0.89
59 SC381-L	C	From Leg	3.00 0.00 7.00	0.0000	59.00	No Ice 5.46 1/2" Ice 7.38 1" Ice 8.76 2" Ice 10.39	5.46 7.38 8.76 10.39	0.06 0.10 0.15 0.28
1.9" x 2-ft Pipe	C	From Leg	3.00 0.00 0.00	0.0000	59.00	No Ice 0.29 1/2" Ice 0.42 1" Ice 0.56 2" Ice 0.86	0.29 0.42 0.56 0.86	0.01 0.01 0.01 0.03
Side Arm Mount [SO 701-1]	C	From Leg	1.50 0.00 0.00	0.0000	59.00	No Ice 0.85 1/2" Ice 1.14 1" Ice 1.43 2" Ice 2.01	0.85 1.14 1.43 2.01	0.07 0.08 0.09 0.12
Side Arm Mount [SO 304-1]	B	From Leg	1.00 0.00 0.00	0.0000	59.00	No Ice 0.31 1/2" Ice 0.50 1" Ice 0.73 2" Ice 1.29	0.31 0.50 0.73 1.29	0.02 0.03 0.05 0.09
Side Arm Mount [SO 304-1]	A	From Leg	1.00 0.00 0.00	0.0000	59.00	No Ice 0.31 1/2" Ice 0.50 1" Ice 0.73 2" Ice 1.29	0.31 0.50 0.73 1.29	0.02 0.03 0.05 0.09
** *****								

Dishes

<i>Description</i>	<i>Face or Leg</i>	<i>Dish Type</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft</i>	<i>Azimuth Adjustment °</i>	<i>3 dB Beam Width °</i>	<i>Elevation ft</i>	<i>Outside Diameter ft</i>	<i>Aperture Area ft²</i>	<i>Weight K</i>
VHLP3-11W	A	Paraboloid	From	2.00	0.0000		59.00	3.28	No Ice 8.47	0.05

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
		w/Shroud (HP)	Leg	0.00 2.00				1/2" Ice 1" Ice 2" Ice	8.90 9.34 10.21	0.10 0.14 0.24
VHLP3-11W	B	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 2.00	0.0000		59.00	3.28	No Ice 1/2" Ice 1" Ice 2" Ice	0.05 8.90 9.34 10.21

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

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<i>Comb. No.</i>	<i>Description</i>
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

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
L1	150 - 120	Pole	Max Tension	20	0.00	-0.00	0.00
			Max. Compression	26	-16.10	-0.15	0.09
			Max. Mx	8	-6.14	-130.42	-0.01
			Max. My	14	-6.14	-0.01	-130.41
			Max. Vy	20	-5.87	130.41	0.01
			Max. Vx	14	5.87	-0.01	-130.41
			Max. Torque	2			0.00
L2	120 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.70	0.33	-0.16
			Max. Mx	20	-11.43	337.52	-0.18
			Max. My	14	-11.43	0.13	-337.29
			Max. Vy	20	-8.23	337.52	-0.18
			Max. Vx	14	8.19	0.13	-337.29
			Max. Torque	24			0.44
L3	90 - 60	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.73	-0.57	0.10
			Max. Mx	20	-17.27	613.95	0.10
			Max. My	14	-17.27	-0.19	-612.91
			Max. Vy	20	-10.67	613.95	0.10
			Max. Vx	14	10.69	-0.19	-612.91
			Max. Torque	24			0.44
L4	60 - 30	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.99	0.56	-0.83
			Max. Mx	20	-24.14	969.66	4.32
			Max. My	14	-24.14	-3.24	-969.32
			Max. Vy	20	-12.71	969.66	4.32
			Max. Vx	14	12.74	-3.24	-969.32
			Max. Torque	24			0.85
L5	30 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.29	0.38	-0.96
			Max. Mx	20	-32.85	1372.89	8.78
			Max. My	14	-32.85	-6.73	-1373.46
			Max. Vy	20	-14.14	1372.89	8.78
			Max. Vx	14	14.17	-6.73	-1373.46
			Max. Torque	24			0.84

Maximum Reactions

<i>Location</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Vertical K</i>	<i>Horizontal, X K</i>	<i>Horizontal, Z K</i>
Pole	Max. Vert	32	55.29	-2.27	-3.92
	Max. H _x	20	32.85	14.12	0.15

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<i>Location</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Vertical K</i>	<i>Horizontal, X K</i>	<i>Horizontal, Z K</i>
	Max. H _z	2	32.85	0.18	14.10
	Max. M _x	2	1369.29	0.18	14.10
	Max. M _z	8	1367.62	-14.05	-0.06
	Max. Torsion	24	0.84	7.12	12.27
	Min. Vert	7	24.64	-12.15	7.00
	Min. H _x	8	32.85	-14.05	-0.06
	Min. H _z	14	32.85	-0.12	-14.15
	Min. M _x	14	-1373.46	-0.12	-14.15
	Min. M _z	20	-1372.89	14.12	0.15
	Min. Torsion	12	-0.84	-7.09	-12.29

Tower Mast Reaction Summary

<i>Load Combination</i>	<i>Vertical K</i>	<i>Shear_x K</i>	<i>Shear_z K</i>	<i>Overturning Moment, M_x kip-ft</i>	<i>Overturning Moment, M_z kip-ft</i>	<i>Torque kip-ft</i>
Dead Only	27.38	0.00	0.00	0.33	0.35	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	32.85	-0.18	-14.10	-1369.29	11.81	-0.75
0.9 Dead+1.0 Wind 0 deg - No Ice	24.64	-0.18	-14.10	-1357.69	11.63	-0.75
1.2 Dead+1.0 Wind 30 deg - No Ice	32.85	6.97	-12.17	-1183.57	-680.14	-0.18
0.9 Dead+1.0 Wind 30 deg - No Ice	24.64	6.97	-12.17	-1173.55	-674.42	-0.18
1.2 Dead+1.0 Wind 60 deg - No Ice	32.85	12.15	-7.00	-681.32	-1183.14	-0.04
0.9 Dead+1.0 Wind 60 deg - No Ice	24.64	12.15	-7.00	-675.59	-1173.12	-0.04
1.2 Dead+1.0 Wind 90 deg - No Ice	32.85	14.05	0.06	4.40	-1367.62	0.12
0.9 Dead+1.0 Wind 90 deg - No Ice	24.64	14.05	0.06	4.28	-1356.03	0.12
1.2 Dead+1.0 Wind 120 deg - No Ice	32.85	12.15	7.21	695.11	-1182.86	0.72
0.9 Dead+1.0 Wind 120 deg - No Ice	24.64	12.15	7.21	689.10	-1172.84	0.71
1.2 Dead+1.0 Wind 150 deg - No Ice	32.85	7.09	12.29	1191.59	-687.34	0.84
0.9 Dead+1.0 Wind 150 deg - No Ice	24.64	7.09	12.29	1181.31	-681.58	0.84
1.2 Dead+1.0 Wind 180 deg - No Ice	32.85	0.12	14.15	1373.46	-6.73	0.58
0.9 Dead+1.0 Wind 180 deg - No Ice	24.64	0.12	14.15	1361.63	-6.80	0.58
1.2 Dead+1.0 Wind 210 deg - No Ice	32.85	-6.93	12.28	1190.81	678.71	0.14
0.9 Dead+1.0 Wind 210 deg - No Ice	24.64	-6.93	12.28	1180.54	672.77	0.14
1.2 Dead+1.0 Wind 240 deg - No Ice	32.85	-12.18	7.02	683.14	1185.74	0.04
0.9 Dead+1.0 Wind 240 deg - No Ice	24.64	-12.18	7.02	677.19	1175.49	0.04
1.2 Dead+1.0 Wind 270 deg - No Ice	32.85	-14.12	-0.15	-8.78	1372.89	-0.07
0.9 Dead+1.0 Wind 270 deg - No Ice	24.64	-14.12	-0.15	-8.84	1361.05	-0.07

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 300 deg - No Ice	32.85	-12.23	-7.18	-692.32	1188.74	-0.54
0.9 Dead+1.0 Wind 300 deg - No Ice	24.64	-12.23	-7.18	-686.53	1178.47	-0.54
1.2 Dead+1.0 Wind 330 deg - No Ice	32.85	-7.12	-12.27	-1189.41	690.55	-0.84
0.9 Dead+1.0 Wind 330 deg - No Ice	24.64	-7.12	-12.27	-1179.36	684.55	-0.84
1.2 Dead+1.0 Ice+1.0 Temp	55.29	0.00	0.00	0.96	0.38	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	55.29	-0.04	-4.51	-437.47	2.70	-0.27
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	55.29	2.24	-3.90	-378.25	-218.32	-0.11
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	55.29	3.90	-2.24	-217.55	-379.45	-0.01
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	55.29	4.51	0.01	1.88	-438.52	0.09
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	55.29	3.90	2.29	222.26	-379.46	0.26
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	55.29	2.27	3.92	381.79	-219.84	0.31
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	55.29	0.02	4.52	440.19	-1.04	0.24
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	55.29	-2.23	3.92	381.57	218.72	0.11
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	55.29	-3.90	2.25	219.81	380.63	0.01
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	55.29	-4.52	-0.03	-0.82	440.22	-0.08
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	55.29	-3.91	-2.28	-219.80	381.28	-0.23
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	55.29	-2.27	-3.92	-379.46	221.13	-0.31
Dead+Wind 0 deg - Service	27.38	-0.04	-3.06	-295.28	2.82	-0.16
Dead+Wind 30 deg - Service	27.38	1.51	-2.64	-255.19	-146.52	-0.04
Dead+Wind 60 deg - Service	27.38	2.64	-1.52	-146.79	-255.08	-0.01
Dead+Wind 90 deg - Service	27.38	3.05	0.01	1.21	-294.90	0.03
Dead+Wind 120 deg - Service	27.38	2.64	1.56	150.28	-255.02	0.16
Dead+Wind 150 deg - Service	27.38	1.54	2.67	257.43	-148.08	0.18
Dead+Wind 180 deg - Service	27.38	0.03	3.07	296.69	-1.19	0.13
Dead+Wind 210 deg - Service	27.38	-1.50	2.66	257.26	146.75	0.03
Dead+Wind 240 deg - Service	27.38	-2.64	1.52	147.69	256.18	0.01
Dead+Wind 270 deg - Service	27.38	-3.06	-0.03	-1.65	296.58	-0.02
Dead+Wind 300 deg - Service	27.38	-2.65	-1.56	-149.17	256.83	-0.12
Dead+Wind 330 deg - Service	27.38	-1.55	-2.66	-256.46	149.31	-0.18

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-27.38	0.00	0.00	27.38	0.00	0.000%
2	-0.18	-32.85	-14.10	0.18	32.85	14.10	0.000%
3	-0.18	-24.64	-14.10	0.18	24.64	14.10	0.000%
4	6.97	-32.85	-12.17	-6.97	32.85	12.17	0.000%
5	6.97	-24.64	-12.17	-6.97	24.64	12.17	0.000%
6	12.15	-32.85	-7.00	-12.15	32.85	7.00	0.000%
7	12.15	-24.64	-7.00	-12.15	24.64	7.00	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
8	14.05	-32.85	0.06	-14.05	32.85	-0.06	0.000%
9	14.05	-24.64	0.06	-14.05	24.64	-0.06	0.000%
10	12.15	-32.85	7.21	-12.15	32.85	-7.21	0.000%
11	12.15	-24.64	7.21	-12.15	24.64	-7.21	0.000%
12	7.09	-32.85	12.29	-7.09	32.85	-12.29	0.000%
13	7.09	-24.64	12.29	-7.09	24.64	-12.29	0.000%
14	0.12	-32.85	14.15	-0.12	32.85	-14.15	0.000%
15	0.12	-24.64	14.15	-0.12	24.64	-14.15	0.000%
16	-6.93	-32.85	12.28	6.93	32.85	-12.28	0.000%
17	-6.93	-24.64	12.28	6.93	24.64	-12.28	0.000%
18	-12.18	-32.85	7.02	12.18	32.85	-7.02	0.000%
19	-12.18	-24.64	7.02	12.18	24.64	-7.02	0.000%
20	-14.12	-32.85	-0.15	14.12	32.85	0.15	0.000%
21	-14.12	-24.64	-0.15	14.12	24.64	0.15	0.000%
22	-12.23	-32.85	-7.18	12.23	32.85	7.18	0.000%
23	-12.23	-24.64	-7.18	12.23	24.64	7.18	0.000%
24	-7.12	-32.85	-12.27	7.12	32.85	12.27	0.000%
25	-7.12	-24.64	-12.27	7.12	24.64	12.27	0.000%
26	0.00	-55.29	0.00	0.00	55.29	0.00	0.000%
27	-0.04	-55.29	-4.51	0.04	55.29	4.51	0.000%
28	2.24	-55.29	-3.90	-2.24	55.29	3.90	0.000%
29	3.90	-55.29	-2.24	-3.90	55.29	2.24	0.000%
30	4.51	-55.29	0.01	-4.51	55.29	-0.01	0.000%
31	3.90	-55.29	2.29	-3.90	55.29	-2.29	0.000%
32	2.27	-55.29	3.92	-2.27	55.29	-3.92	0.000%
33	0.02	-55.29	4.52	-0.02	55.29	-4.52	0.000%
34	-2.23	-55.29	3.92	2.23	55.29	-3.92	0.000%
35	-3.90	-55.29	2.25	3.90	55.29	-2.25	0.000%
36	-4.52	-55.29	-0.03	4.52	55.29	0.03	0.000%
37	-3.91	-55.29	-2.28	3.91	55.29	2.28	0.000%
38	-2.27	-55.29	-3.92	2.27	55.29	3.92	0.000%
39	-0.04	-27.38	-3.06	0.04	27.38	3.06	0.000%
40	1.51	-27.38	-2.64	-1.51	27.38	2.64	0.000%
41	2.64	-27.38	-1.52	-2.64	27.38	1.52	0.000%
42	3.05	-27.38	0.01	-3.05	27.38	-0.01	0.000%
43	2.64	-27.38	1.56	-2.64	27.38	-1.56	0.000%
44	1.54	-27.38	2.67	-1.54	27.38	-2.67	0.000%
45	0.03	-27.38	3.07	-0.03	27.38	-3.07	0.000%
46	-1.50	-27.38	2.66	1.50	27.38	-2.66	0.000%
47	-2.64	-27.38	1.52	2.64	27.38	-1.52	0.000%
48	-3.06	-27.38	-0.03	3.06	27.38	0.03	0.000%
49	-2.65	-27.38	-1.56	2.65	27.38	1.56	0.000%
50	-1.55	-27.38	-2.66	1.55	27.38	2.66	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	0.00044428
3	Yes	4	0.00000001	0.00029865
4	Yes	5	0.00000001	0.00022329
5	Yes	5	0.00000001	0.00011127
6	Yes	5	0.00000001	0.00022615
7	Yes	5	0.00000001	0.00011276
8	Yes	4	0.00000001	0.00017930

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Darryl H.'s Quarry Site (Above (BU 876330)	Page	13 of 14
	Project	TEP No. 25667.526622	Date	17:40:47 04/08/21
	Client	Crown Castle	Designed by	PRS

9	Yes	4	0.00000001	0.00010325
10	Yes	5	0.00000001	0.00023576
11	Yes	5	0.00000001	0.00011756
12	Yes	5	0.00000001	0.00022064
13	Yes	5	0.00000001	0.00010968
14	Yes	4	0.00000001	0.00028224
15	Yes	4	0.00000001	0.00018314
16	Yes	5	0.00000001	0.00022848
17	Yes	5	0.00000001	0.00011380
18	Yes	5	0.00000001	0.00022671
19	Yes	5	0.00000001	0.00011289
20	Yes	4	0.00000001	0.00013820
21	Yes	4	0.00000001	0.00006830
22	Yes	5	0.00000001	0.00022355
23	Yes	5	0.00000001	0.00011118
24	Yes	5	0.00000001	0.00023662
25	Yes	5	0.00000001	0.00011798
26	Yes	4	0.00000001	0.00000001
27	Yes	5	0.00000001	0.00033876
28	Yes	5	0.00000001	0.00037283
29	Yes	5	0.00000001	0.00037351
30	Yes	5	0.00000001	0.00033952
31	Yes	5	0.00000001	0.00037640
32	Yes	5	0.00000001	0.00037527
33	Yes	5	0.00000001	0.00034052
34	Yes	5	0.00000001	0.00037606
35	Yes	5	0.00000001	0.00037592
36	Yes	5	0.00000001	0.00034073
37	Yes	5	0.00000001	0.00037514
38	Yes	5	0.00000001	0.00037580
39	Yes	4	0.00000001	0.00002754
40	Yes	4	0.00000001	0.00006708
41	Yes	4	0.00000001	0.00006921
42	Yes	4	0.00000001	0.00002231
43	Yes	4	0.00000001	0.00007714
44	Yes	4	0.00000001	0.00006529
45	Yes	4	0.00000001	0.00002544
46	Yes	4	0.00000001	0.00007161
47	Yes	4	0.00000001	0.00006965
48	Yes	4	0.00000001	0.00002217
49	Yes	4	0.00000001	0.00006637
50	Yes	4	0.00000001	0.00007854

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	150 - 120 (1)	P24x1/4	30.00	0.00	0.0	18.653	-6.14	662.26	0.009
L2	120 - 90 (2)	P30x3/8	30.00	0.00	0.0	34.901	-11.43	1311.06	0.009
L3	90 - 60 (3)	P36x3/8	30.00	0.00	0.0	41.970	-17.27	1490.10	0.012
L4	60 - 30 (4)	P42x3/8	30.00	0.00	0.0	49.038	-24.14	1668.87	0.014
L5	30 - 0 (5)	P42x1/2	30.00	0.00	0.0	65.188	-32.85	2410.40	0.014

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Darryl H.'s Quarry Site (Above (BU 876330))	Page	14 of 14
	Project	TEP No. 25667.526622	Date	17:40:47 04/08/21
	Client	Crown Castle	Designed by	PRS

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	150 - 120 (1)	P24x1/4	130.42	396.68	0.329	0.00	396.68	0.000
L2	120 - 90 (2)	P30x3/8	337.52	947.86	0.356	0.00	947.86	0.000
L3	90 - 60 (3)	P36x3/8	613.95	1338.81	0.459	0.00	1338.81	0.000
L4	60 - 30 (4)	P42x3/8	970.79	1796.56	0.540	0.00	1796.56	0.000
L5	30 - 0 (5)	P42x1/2	1375.64	2463.61	0.558	0.00	2463.61	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	150 - 120 (1)	P24x1/4	5.87	201.86	0.029	0.00	324.23	0.000
L2	120 - 90 (2)	P30x3/8	8.23	395.78	0.021	0.19	994.73	0.000
L3	90 - 60 (3)	P36x3/8	10.67	454.19	0.023	0.34	1094.28	0.000
L4	60 - 30 (4)	P42x3/8	12.77	429.27	0.030	0.54	1207.68	0.000
L5	30 - 0 (5)	P42x1/2	14.19	739.23	0.019	0.54	2419.02	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	150 - 120 (1)	0.009	0.329	0.000	0.029	0.000	0.339	1.050	4.8.2
L2	120 - 90 (2)	0.009	0.356	0.000	0.021	0.000	0.365	1.050	4.8.2
L3	90 - 60 (3)	0.012	0.459	0.000	0.023	0.000	0.471	1.050	4.8.2
L4	60 - 30 (4)	0.014	0.540	0.000	0.030	0.000	0.556	1.050	4.8.2
L5	30 - 0 (5)	0.014	0.558	0.000	0.019	0.000	0.572	1.050	4.8.2

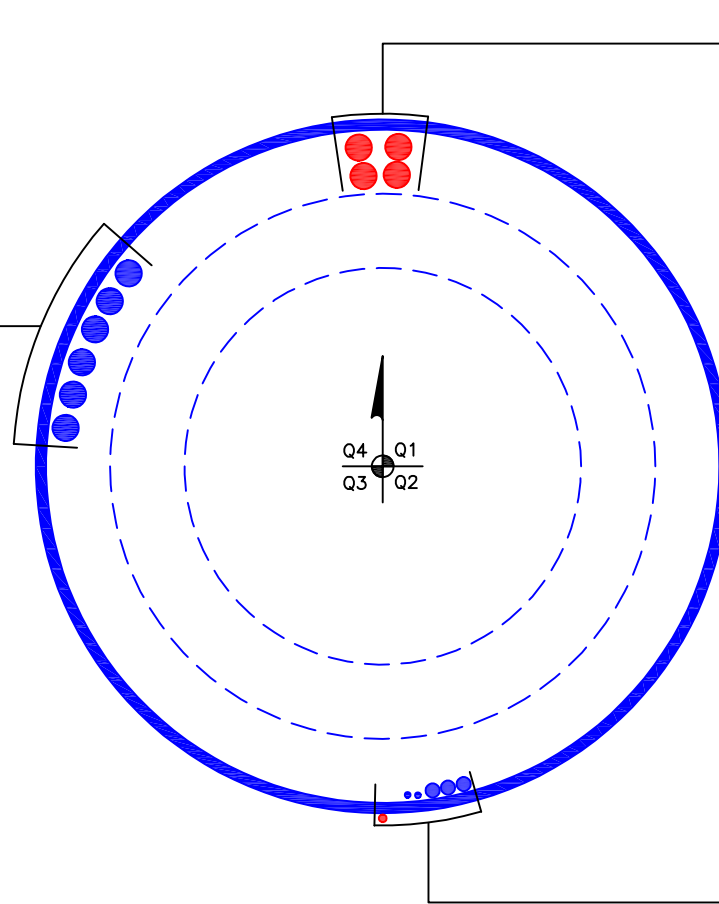
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 120	Pole	P24x1/4	1	-6.14	695.38	32.3	Pass
L2	120 - 90	Pole	P30x3/8	2	-11.43	1376.61	34.8	Pass
L3	90 - 60	Pole	P36x3/8	3	-17.27	1564.60	44.8	Pass
L4	60 - 30	Pole	P42x3/8	4	-24.14	1752.31	52.9	Pass
L5	30 - 0	Pole	P42x1/2	5	-32.85	2530.92	54.5	Pass
							Summary	
							Pole (L5)	54.5
							RATING =	54.5
								Pass

APPENDIX B
BASE LEVEL DRAWING



(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 140 FT LEVEL



(PROPOSED EQUIPMENT CONFIGURATION)
(4) 1-5/8" TO 145 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(2) 3/8" TO 59 FT LEVEL
(1) 7/8" TO 59 FT LEVEL
(2) 7/8" TO 93 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1/2" TO 99 FT LEVEL

APPENDIX C

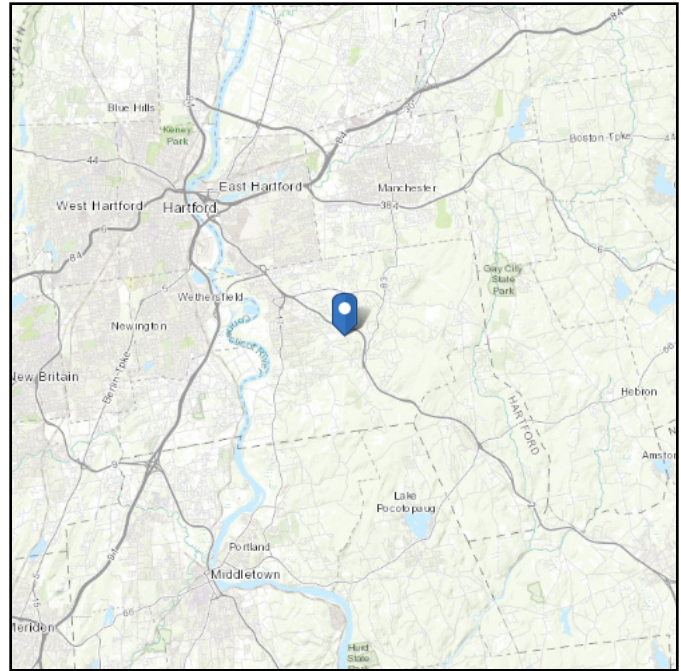
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 493.69 ft (NAVD 88)
Latitude: 41.692736
Longitude: -72.554964



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	101 Vmph

Data Sources: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

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 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

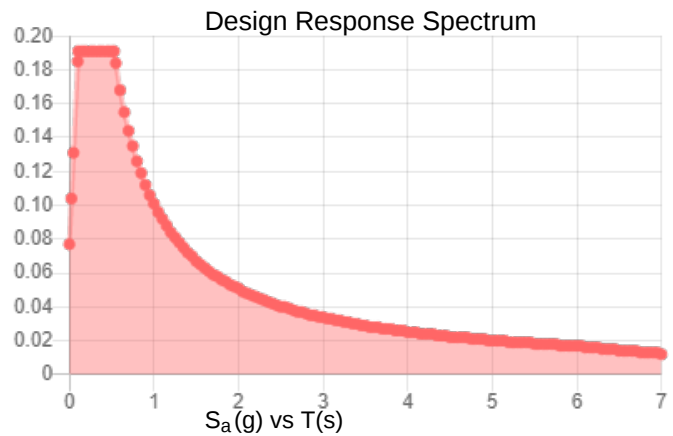
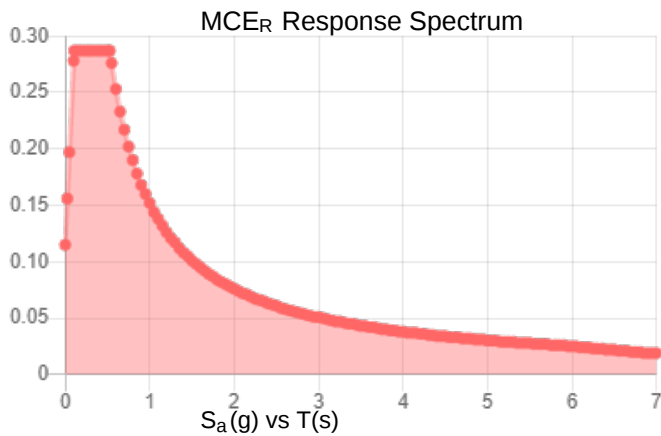
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.18	S_{DS} :	0.191
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.287	PGA_M :	0.145
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Apr 06 2021

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

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

Date Accessed: Tue Apr 06 2021

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

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

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

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

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

Monopole Flange Plate Connection

Elevation = 120 ft.

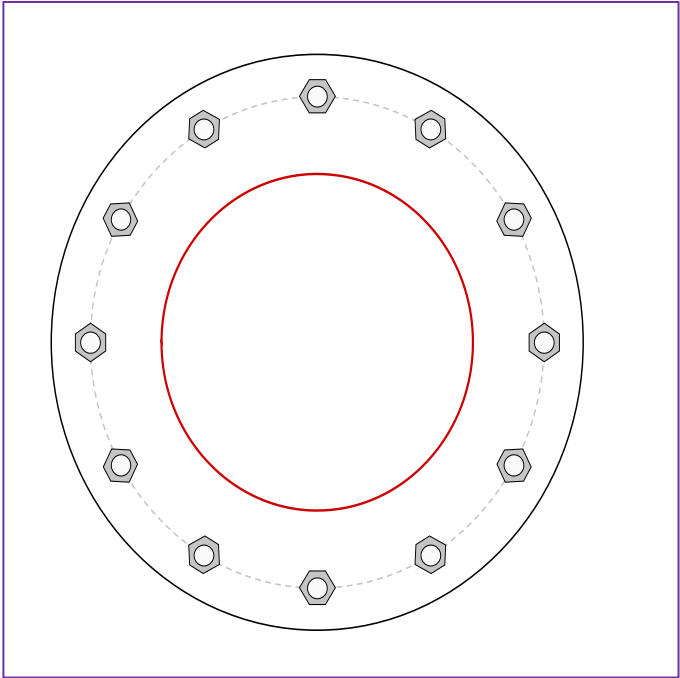


BU #	876330
Site Name	ryl H.'s Quarry Site (Ab
Order #	538761 Rev. 1
TIA-222 Revision	H

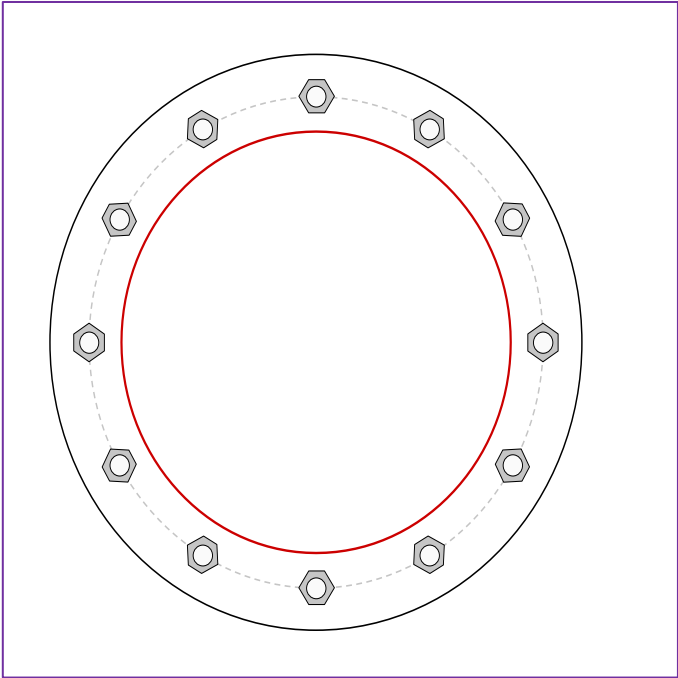
Applied Loads	
Moment (kip-ft)	130.42
Axial Force (kips)	6.14
Shear Force (kips)	5.87

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1-1/2" $\varnothing$ bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 35" BC

Top Plate Data

41" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

24" x 0.25" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

41" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

30" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	14.38
Allowable (kips)	126.90
Stress Rating:	10.8% Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Monopole Flange Plate Connection

Elevation = 90 ft.

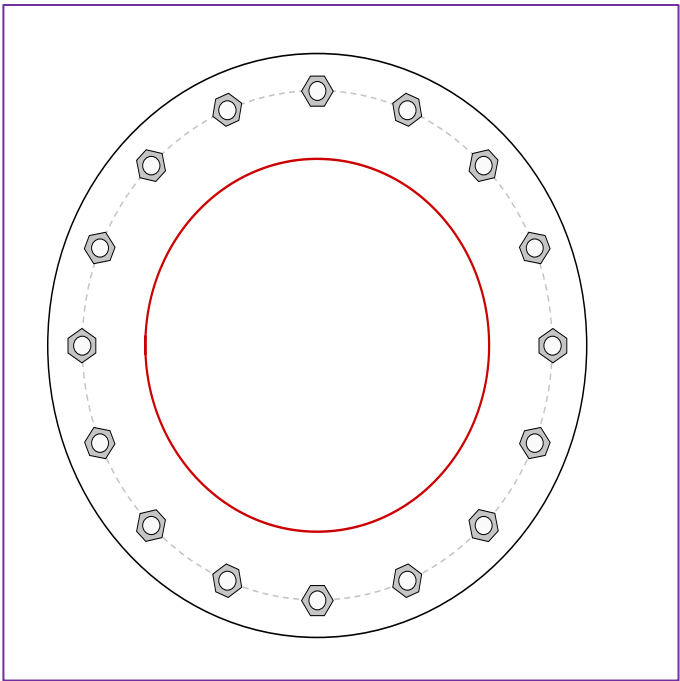


BU #	876330
Site Name	ryl H.'s Quarry Site (Ab
Order #	538761 Rev. 1
TIA-222 Revision	H

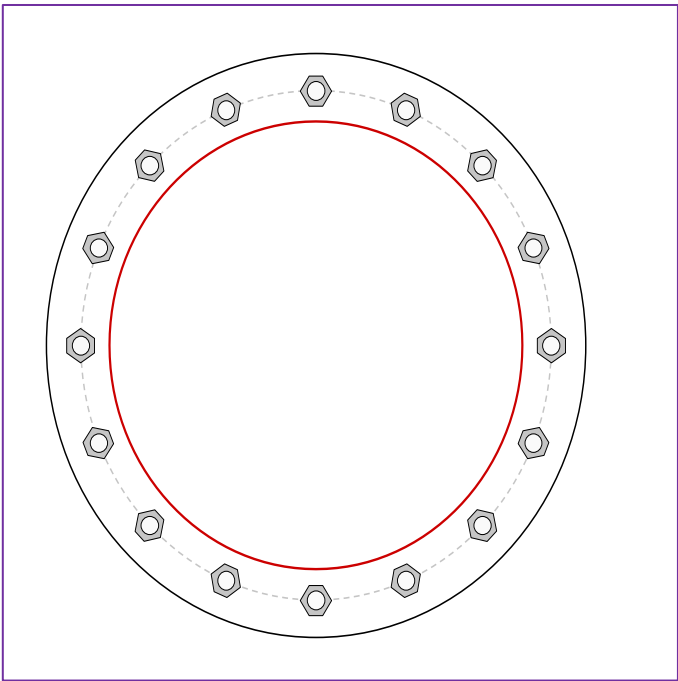
Applied Loads	
Moment (kip-ft)	337.52
Axial Force (kips)	11.43
Shear Force (kips)	8.23

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 41" BC

Top Plate Data

47" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

30" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

47" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	23.97
Allowable (kips)	126.90
Stress Rating:	18.0% Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Monopole Flange Plate Connection

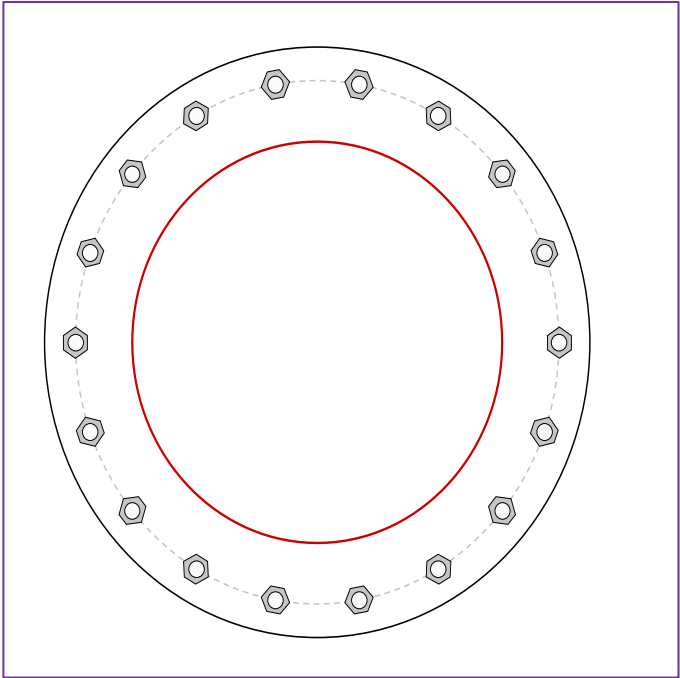
Elevation = 60 ft.



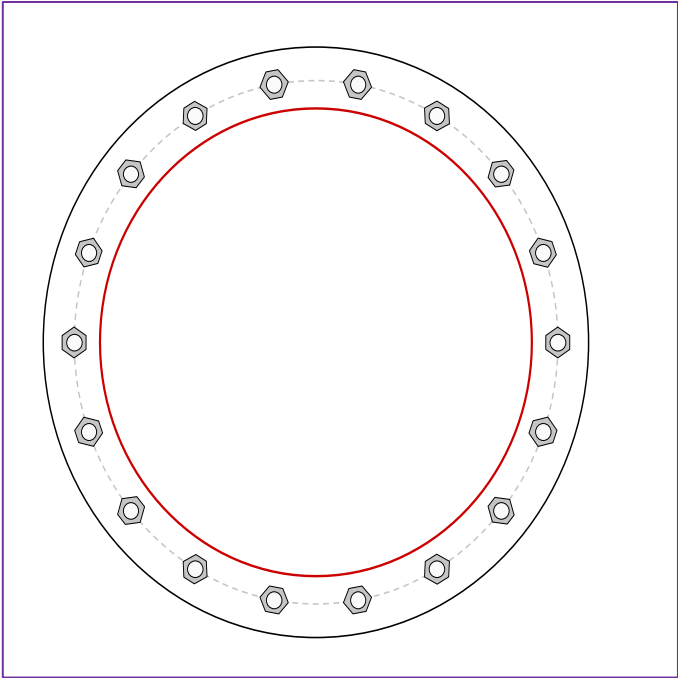
BU #	876330
Site Name	ryl H.'s Quarry Site (Ab
Order #	538761 Rev. 1
TIA-222 Revision	H

Applied Loads	
Moment (kip-ft)	613.95
Axial Force (kips)	17.27
Shear Force (kips)	10.67
*TIA-222-H Section 15.5 Applied	

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(18) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 47" BC

Top Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

42" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	33.86
Allowable (kips)	126.90
Stress Rating:	25.4% Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Monopole Flange Plate Connection

Elevation = 30 ft.

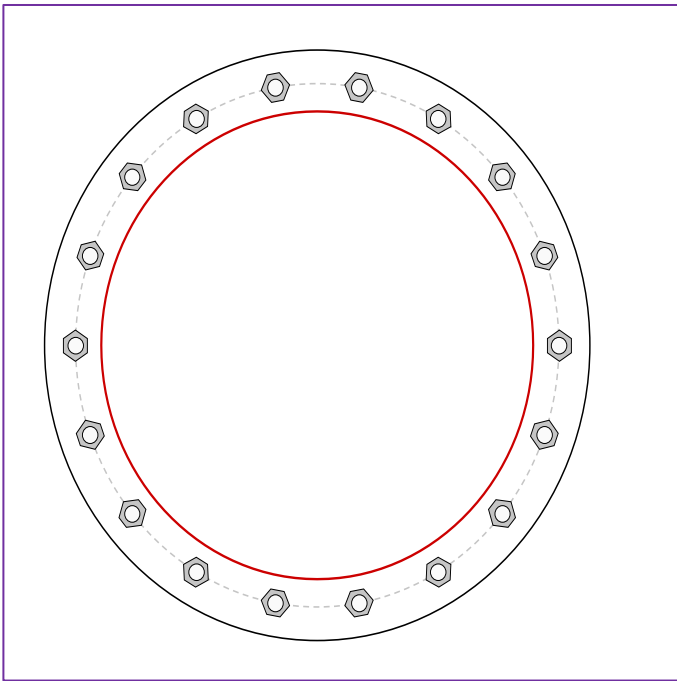


BU #	876330
Site Name	ryl H.'s Quarry Site (Ab
Order #	538761 Rev. 1
TIA-222 Revision	H

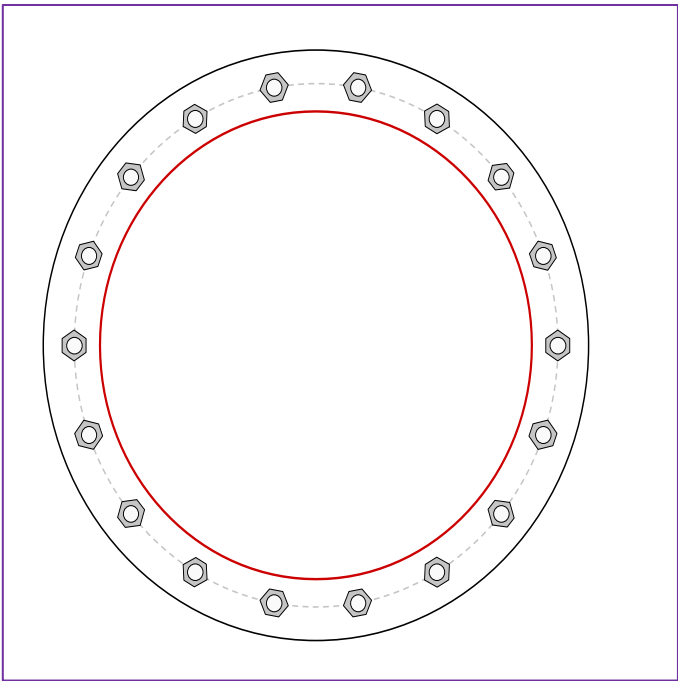
Applied Loads	
Moment (kip-ft)	970.79
Axial Force (kips)	24.14
Shear Force (kips)	12.77

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(18) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 47" BC

Top Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

42" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

42" x 0.5" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	53.72
Allowable (kips)	126.89
Stress Rating:	40.3% Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Rohn OK
Tension Side Stress Rating:	Rohn OK

Monopole Base Plate Connection

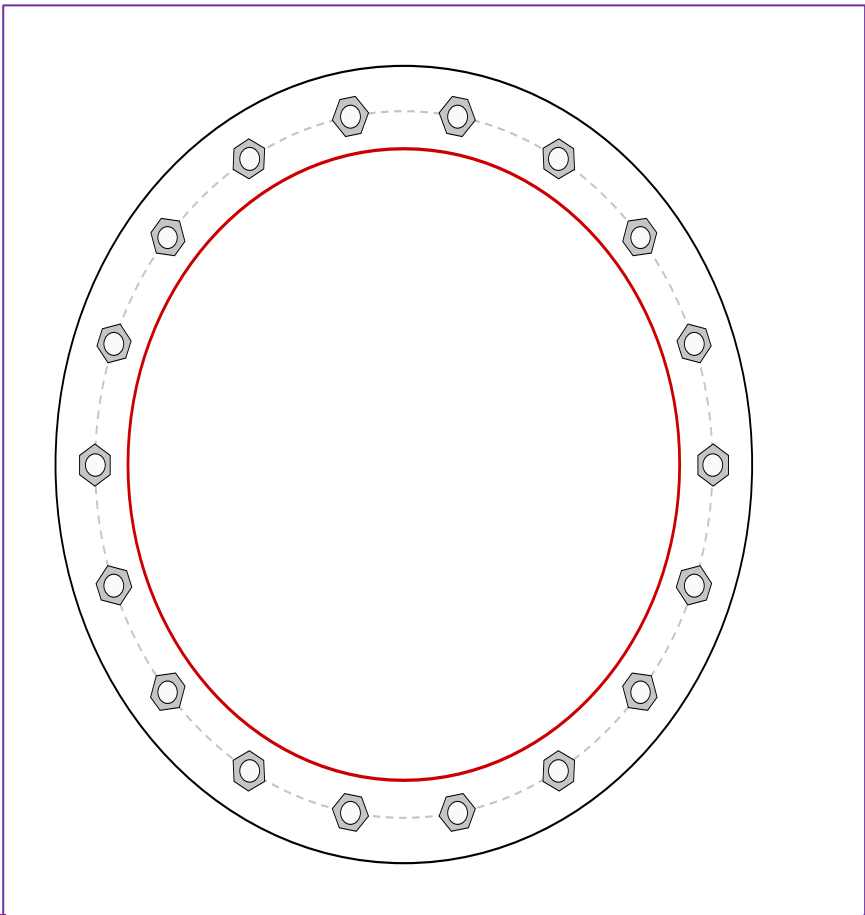


Site Info	
BU #	876330
Site Name	ryl H.'s Quarry Site (Ab
Order #	538761 Rev. 1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l _{ar} (in)	1.25

Applied Loads	
Moment (kip-ft)	1375.64
Axial Force (kips)	32.85
Shear Force (kips)	14.19

*TIA-222-H Section 15.5 Applied



Connection Properties		Analysis Results	
Anchor Rod Data		Anchor Rod Summary <i>(units of kips, kip-in)</i>	
(18) 1-1/2" $\varnothing$ bolts (A354-BC N; Fy=109 ksi, Fu=125 ksi) on 47" BC		Pu_c = 79.84	ϕPn_c = 173.36 Stress Rating
Base Plate Data		Vu = 0.79	ϕVn = 78.01 43.9%
53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)		Mu = n/a	ϕMn = n/a Pass
Stiffener Data		Base Plate Summary	
N/A		Max Stress (ksi):	-
Pole Data		Allowable Stress (ksi):	-
42" x 0.5" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)		Stress Rating:	Rohn OK

Capacity: 50.7% PASS

TEP #: 25667.526622

Analysis: GJS 04/08/21

Check: PRS 04/08/21

ACI 318 - Appendix D Analysis

Foundation

FDN centered on Pole? Yes

f'c: 3000 psi

FDN Crit. Width: 18.50 ft

FDN Crit. Length: 18.50 ft

hef: 54.00 in

s1: 46.29 in

s2: 19.42 in

ca1: 87.86 in

ca2: 87.86 in

ca3: 87.50 in

ca4: 115.08 in

1.5hef: 81 in

Anc: 37787.09 in²

Anco: 26244 in²

Post-Installed? No

kc: 24

Nb: 676.09 kips

Ncbg: 1167.98 kips

Ø: 0.70

Design Strength: 817.59 kips

Total Uplift, Tu: 434.84 kips

Capacity: 50.7% PASS

e'N (x): 0 in

Ψ_{ec,N} (x): 1.00

e'N (y): 3.39 in

Ψ_{ec,N} (y): 0.96

ca,min: 87.50 in

Ψ_{ed,N}: 1.00

Ψ_{c,N}: 1.25

cac,: 135 in

Ψ_{cp,N}: 1

Pier and Pad Foundation



BU # : 876330
 Site Name: Darryl H.'s Quarry S
 App. Number: 538761 Rev. 1

TIA-222 Revision: H
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	33	kips
Base Shear, Vu_{comp} :	14	kips
Moment, M_u :	1376	ft-kips
Tower Height, H :	150	ft
BP Dist. Above Fdn, bp_{dist} :	2.75	in
Bolt Circle / Bearing Plate Width, BC :	47	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	124.89	14.00	10.7%	Pass
<i>Bearing Pressure (ksf)</i>	23.02	2.24	9.7%	Pass
<i>Overturning (kip*ft)</i>	2696.75	1463.21	54.3%	Pass
<i>Pad Flexure (kip*ft)</i>	4739.72	593.20	11.9%	Pass
<i>Pad Shear - 1-way (kips)</i>	1231.14	46.40	3.6%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.001	0.6%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	9049.52	0.00	0.0%	Pass

*Rating per TIA-222-H Section 15.5

Soil Rating*:	54.3%
Structural Rating*:	11.9%

Pad Properties		
Depth, D :	5.5	ft
Pad Width, W_1 :	18.5	ft
Pad Thickness, T :	6	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	20	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	125	pcf
Ultimate Net Bearing, Q_{net} :	30.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	33	degrees
SPT Blow Count, N_{blows} :	15	
Base Friction, μ :	0.3	
Neglected Depth, N :	3.30	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	None	ft

<--Toggle between Gross and Net

Exhibit E

Mount Analysis

Date: March 25, 2021



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

Subject: Mount Analysis Report

Carrier Designation: Sprint PCS Equipment Change-Out
Carrier Site Number: CTHA278A

Crown Castle Designation: Crown Castle BU Number: 876330
Crown Castle Site Name: Darryl H.'s Quarry Site (Above
Crown Castle JDE Job Number: 628840
Crown Castle Order Number: 538761, Rev. 1

Engineering Firm Designation: B+T Group Report Designation: 147960.002.01

Site Data: 299 Paxton Way, Glastonbury, CT, Hartford County, 06033
Latitude 41° 41' 33.85" Longitude -72° 33' 17.87"

Structure Information: Tower Height & Type: 150 ft. Monopole
Mount Elevation: 145 ft.
Mount Type: 12.5 ft. Platform Mount

B+T Group is pleased to submit this "Mount Analysis Report" to determine the structural integrity of Sprint PCS'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:

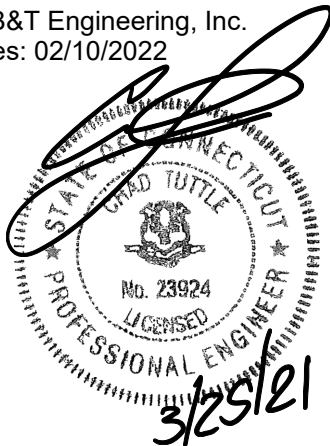
Platform Mount

Sufficient

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Jacob Johnson, E.I.T.

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2022



Chad E. Tuttle, P.E.

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Additional Calculations

1) INTRODUCTION

This is an existing 12.5' Platform Mount, mapped by B+T Group.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	2 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.18
Seismic S_1:	0.063
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
145	147	3	Ericsson	AIR6449 B41 T-Mobile	12.5' Platform Mount
		3	RFS/Celwave	APX16DWV-16DWVS-E-A20	
		3	RFS/Celwave	APXVAALL24 43-U-NA20 TMO	
		3	Ericsson	Radio 4415 B66A	
		3	Ericsson	Radio 4424 B25 TMO	
		3	Ericsson	Radio 4449 B71 B85A T-Mobile	
99	100	1	Lucent	KS24019-L112A	--

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 01/28/2021	Crown Castle
RFDS		Date: 01/12/2021	
Mount Mapping	B+T Group	Date: 03/15/2021	On File

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.1), 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 OTHER SOW.

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 mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

The following assumptions have been included in the analysis of the mount:

Component	Section	Length	Note
Proposed Mount Pipes	2" Std. Pipe	9'-0"	Position 2, All Sectors
Connection Plates	PL1/4x2 1/2"	--	--

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
10. The following material grades were assumed (Unless Noted Otherwise):
 - (a) Connection Bolts : ASTM A325
 - (b) Steel Pipe : ASTM A53 (GR. 35)
 - (c) HSS (Round) : ASTM 500 (GR. B-42)
 - (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - (e) Channel : ASTM A36 (GR. 36)
 - (f) Steel Solid Rod : ASTM A36 (GR. 36)
 - (g) Steel Plate : ASTM A36 (GR. 36)
 - (h) Steel Angle : ASTM A36 (GR. 36)
 - (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1	Main Horizontals	145	32	49.4	Pass
	Support Rails	145	3	42.0	Pass
	Mount Pipes	145	100	43.4	Pass
	Support Arms	145	36	50.4	Pass
	Verticals	145	22	31.2	Pass
	Diagonals	145	83	53.0	Pass
	Support Angles	145	99	4.6	Pass
	Connection Plates	145	92	45.2	Pass
2	Connection Bolts	145	--	39.8	Pass

Structure Rating (max from all components) =	53.0%
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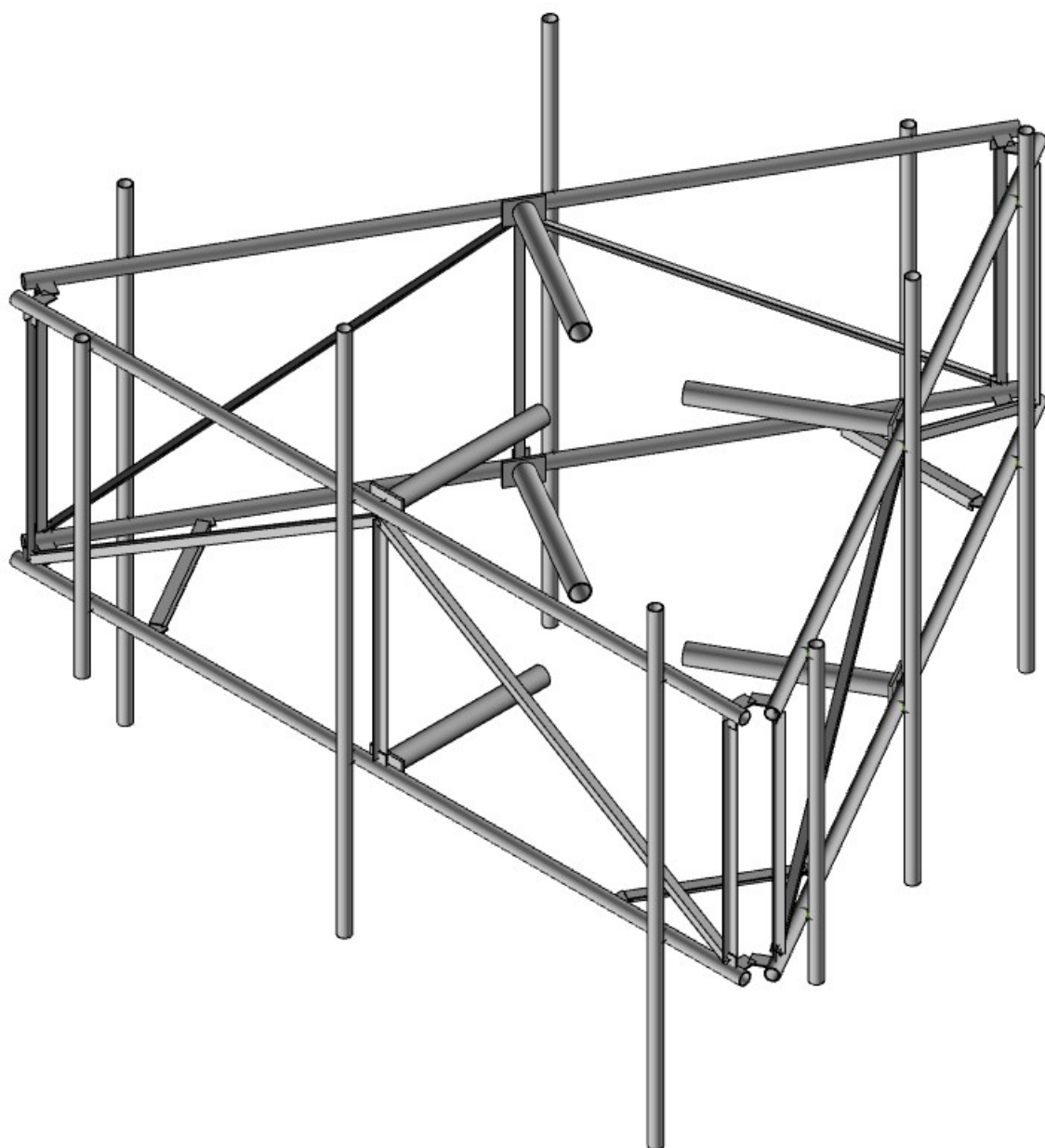
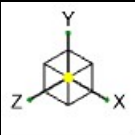
Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported

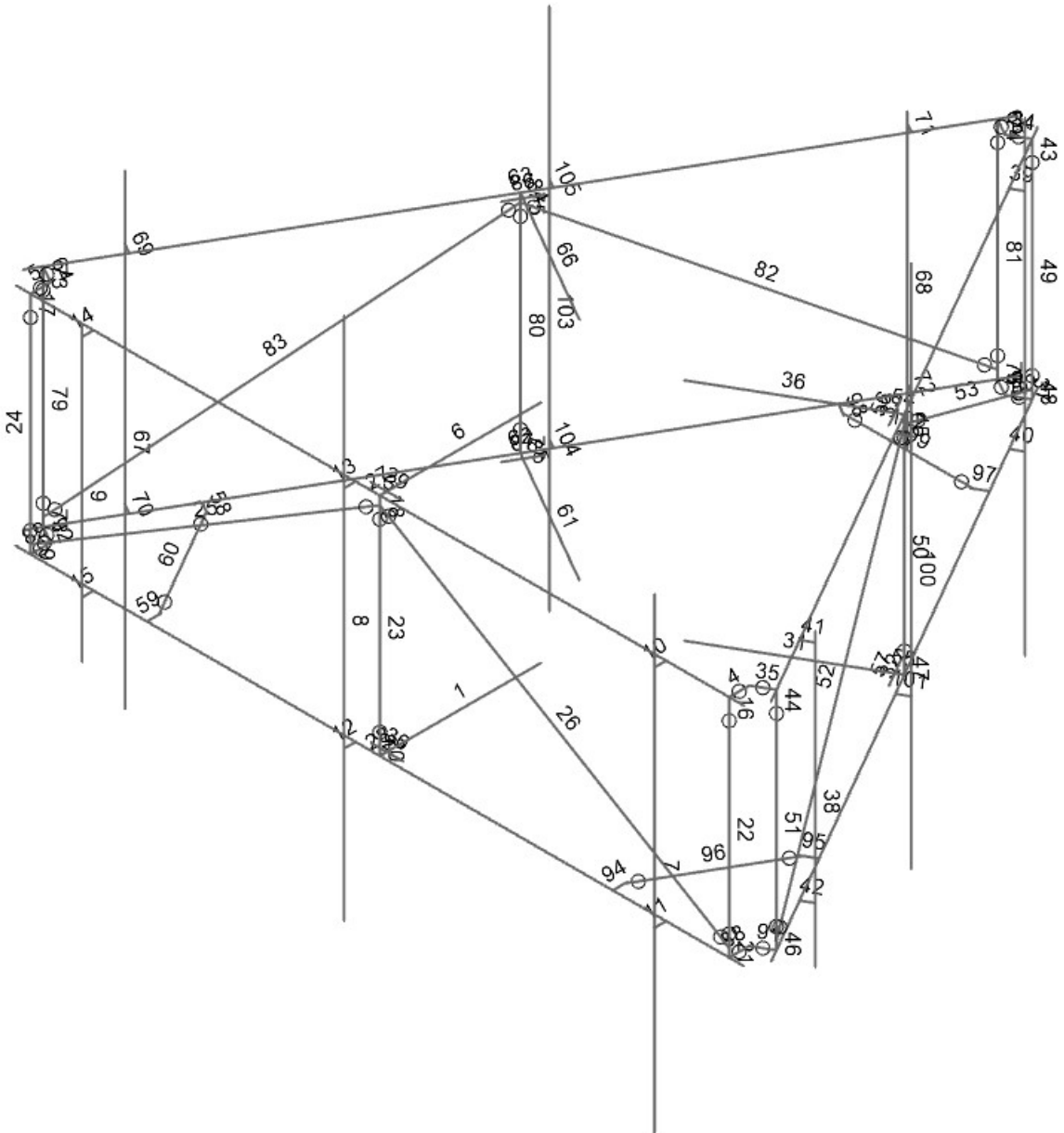
4.1) Recommendations

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

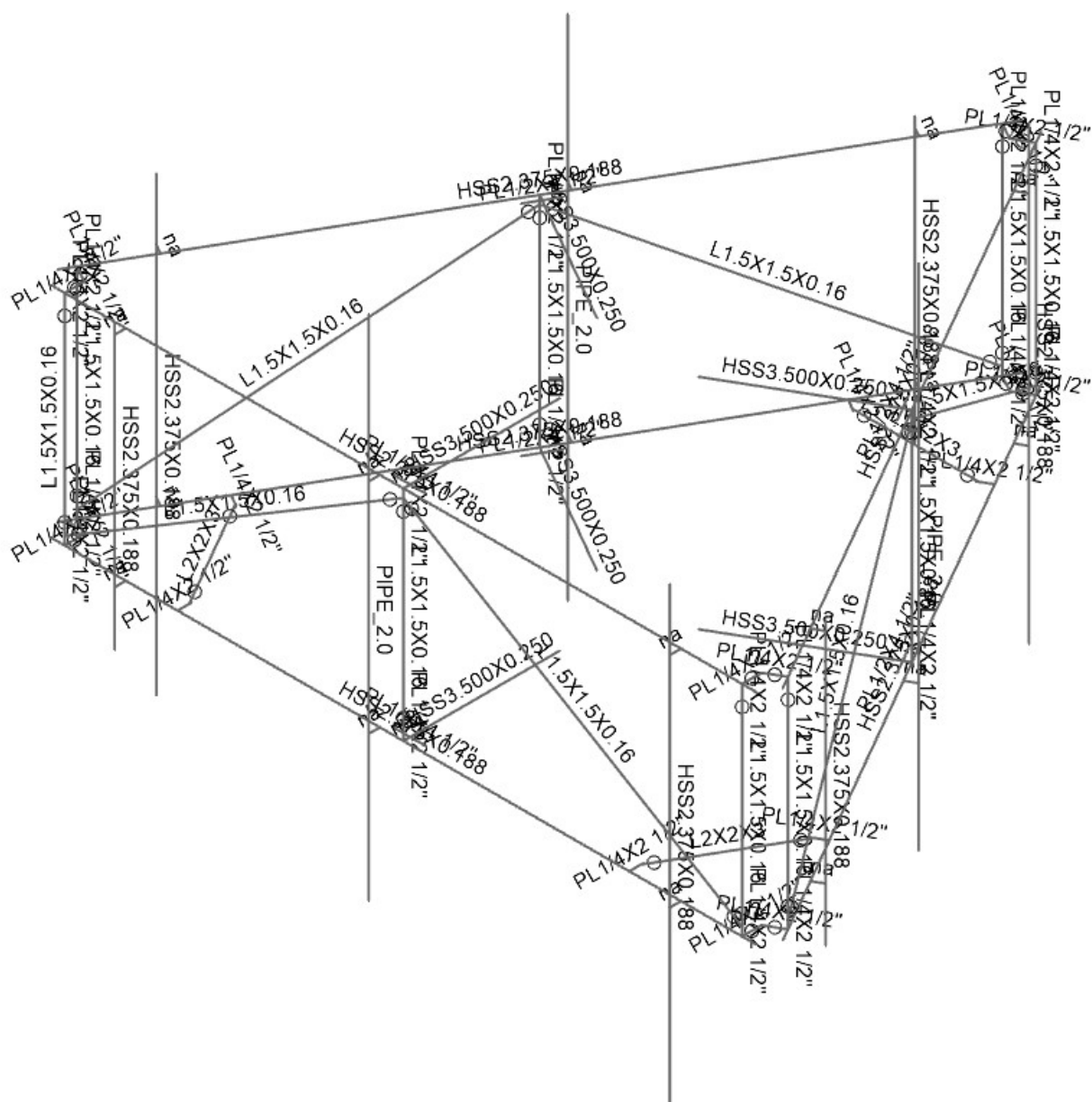
APPENDIX A
WIRE FRAME AND RENDERED MODELS



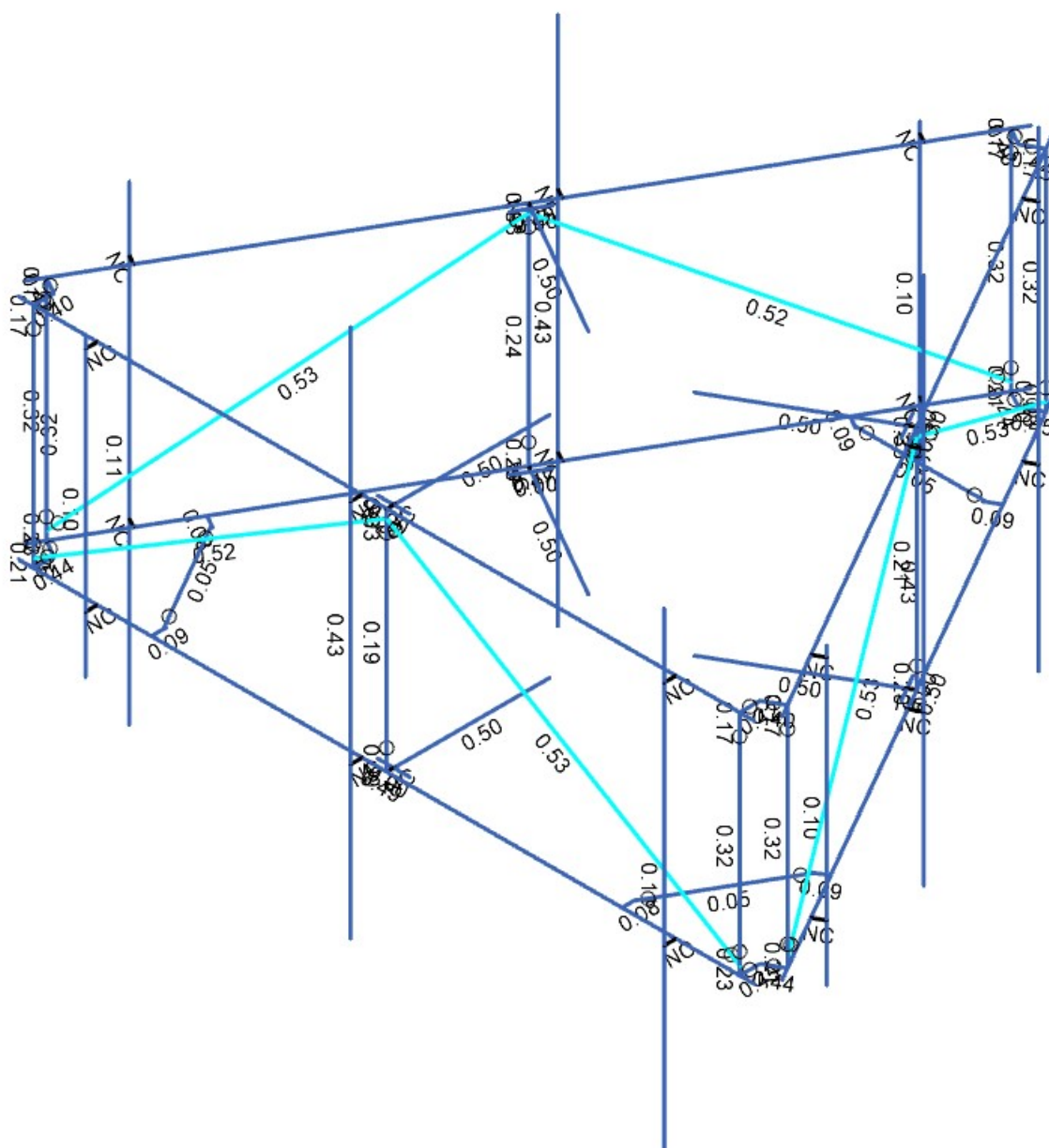
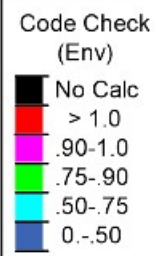
B+T Group	876330 - Darryl H.'s Quarry Site (Above	KR1
KR		Mar 23, 2021
147960.002.01		147960_002_01_Darryl H.'s Qua...



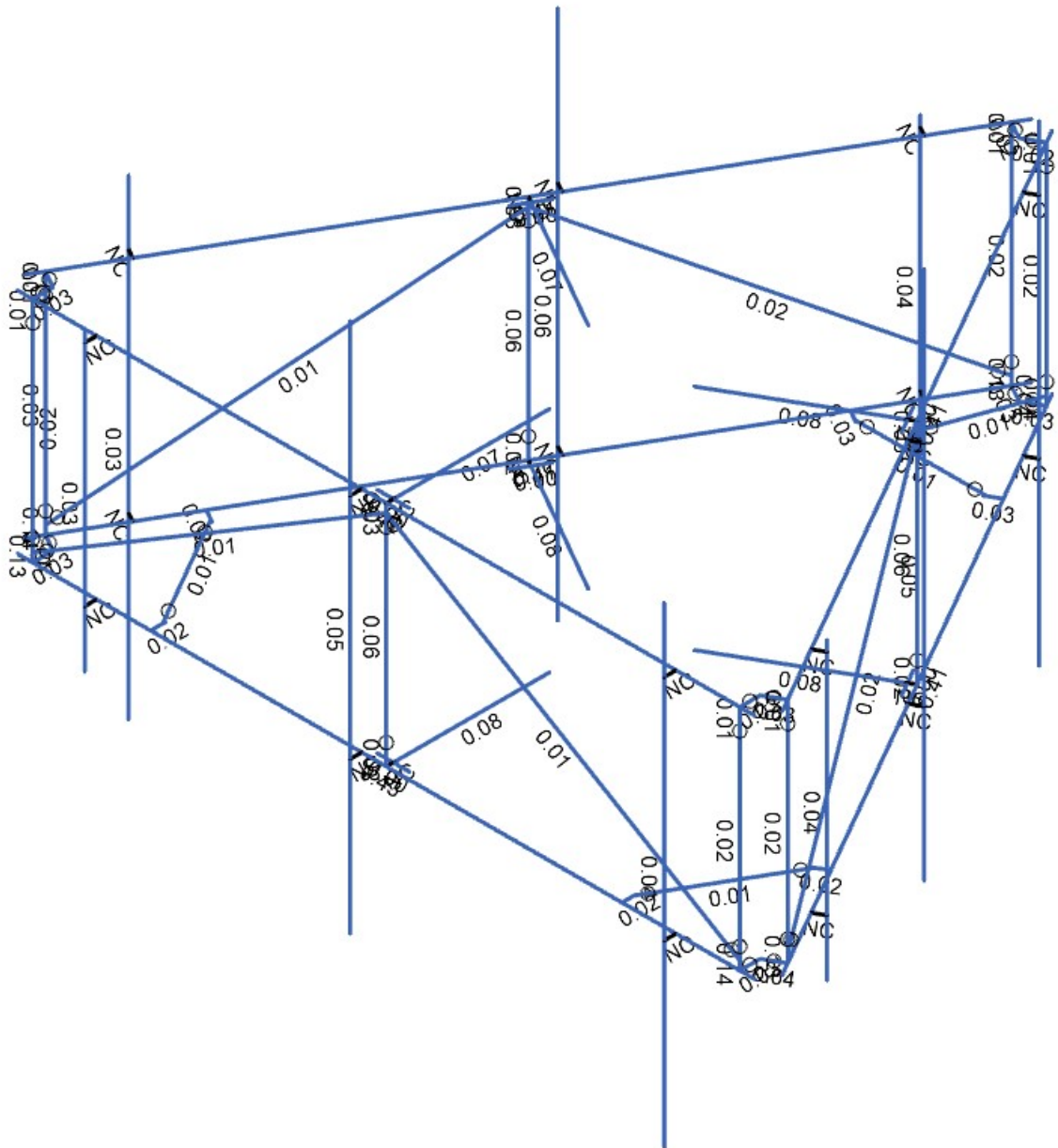
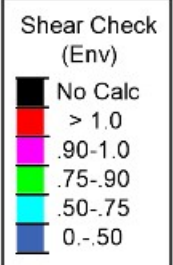
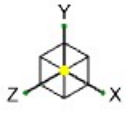
B+T Group	876330 - Darryl H.'s Quarry Site (Above	KR2
KR		Mar 23, 2021
147960.002.01		147960_002_01_Darryl H.'s Qua...



B+T Group	876330 - Darryl H.'s Quarry Site (Above	KR3
KR		Mar 23, 2021
147960.002.01		147960 002 01 Darryl H.'s Qua...



B+T Group	876330 - Darryl H.'s Quarry Site (Above	KR4
KR		Mar 23, 2021
147960.002.01		147960 002 01 Darryl H.'s Qua...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	876330 - Darryl H.'s Quarry Site (Above	KR5
KR		Mar 23, 2021
147960.002.01		147960_002_01_Darryl H.'s Qua...

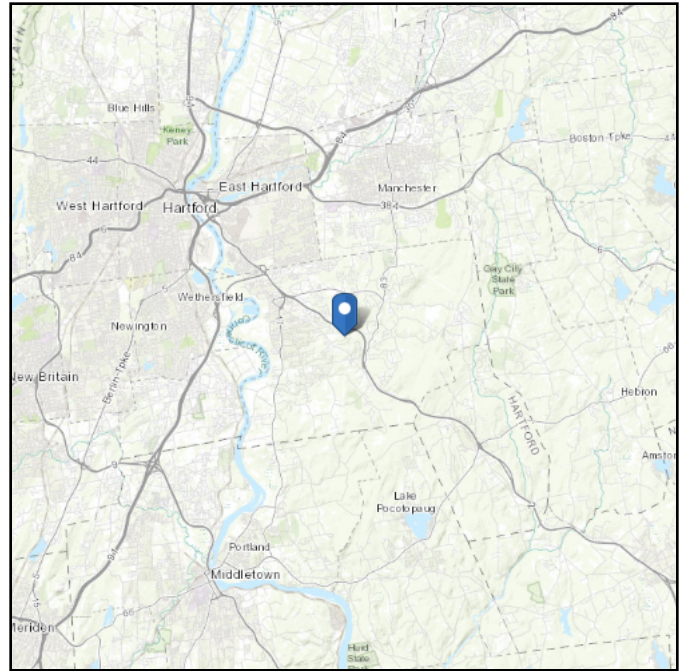
APPENDIX B
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 493.69 ft (NAVD 88)
Latitude: 41.692736
Longitude: -72.554964

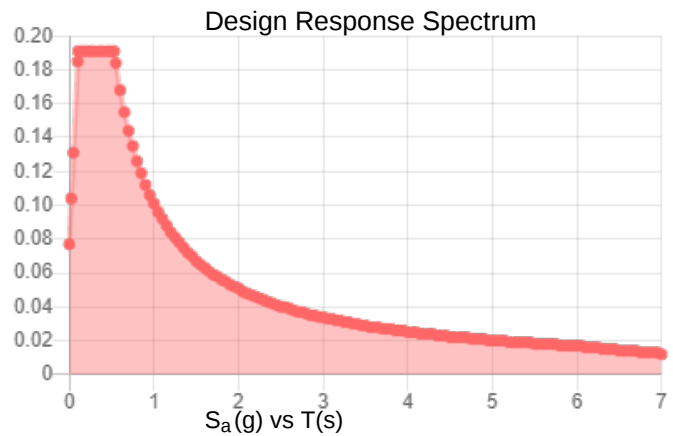
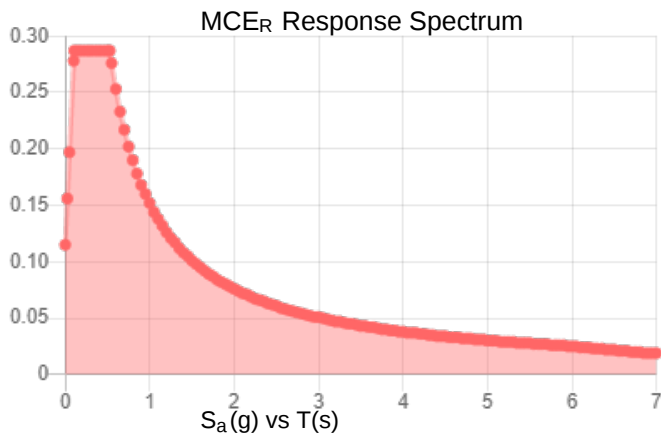


Site Soil Class: D - Stiff Soil

Results:

S_S :	0.18	S_{DS} :	0.191
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.287	PGA_M :	0.145
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Mar 23 2021

Date Source:

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

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 5 F
Gust Speed: 50 mph

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

Date Accessed: Tue Mar 23 2021

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

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

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

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

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

PROJECT	147960.002.01 - Darryl H.'s Q		KSC
SUBJECT	Platform Mount Mount Analysis		
DATE	03/23/21	PAGE	OF

Tower Type	:	Monopole	
Ground Elevation	z_s :	494 ft	[ASCE7 Hazard Tool]
Tower Height	:	150.00 ft	
Mount Elevation	:	145.00 ft	
Antenna Elevation	:	147.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	B	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V :	125 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 :	2.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_s :	0.18	
	S_1 :	0.06	
	S_{DS} :	0.19	
	S_{D1} :	0.10	
Gust Factor	G_h :	1.00	[Sec. 16.6]
Pressure Coefficient	K_z :	1.10	[Sec. 2.6.5.2]
Topography Factor	K_{zt} :	1.00	[Sec. 2.6.6]
Elevation Factor	K_e :	0.98	[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} :	2.32 in	[Sec. 2.6.10]
Importance Factor	I_e :	1	[Table 2-3]
Response Coefficient	C_s :	0.096	[Sec. 2.7.7.1]
Amplification	A_s :	2.866667	[Sec. 16.7]
	q_z :	41.02 psf	

PROJECT	147960.002.01 - Darryl H.'s Q		KSC
SUBJECT	Platform Mount Mount Analysis		
DATE	03/23/21	PAGE	OF



Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _N (ft ²)	EPA _T (ft ²)	EPA _{N-Ice} (ft ²)	EPA _{T-Ice} (ft ²)	F _A No Ice (N)	F _A No Ice (T)	F _A Ice (N)	F _A Ice (T)
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.03	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.03	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.66	1.61	0.07	0.03	0.01	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.06	0.03
ERICSSON	RADIO 4424 B25_TMO	1	1.19	1.20	1.71	1.34	2.87	2.41	0.08	0.06	0.01	0.01
ERICSSON	RADIO 4449 B71 B85A_T-MOBILE	1	1.36	1.20	1.64	1.32	2.79	2.39	0.07	0.06	0.01	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.03	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.03	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.66	1.61	0.07	0.03	0.01	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.06	0.03
ERICSSON	RADIO 4424 B25_TMO	1	1.19	1.20	1.71	1.34	2.87	2.41	0.08	0.06	0.01	0.01
ERICSSON	RADIO 4449 B71 B85A_T-MOBILE	1	1.36	1.20	1.64	1.32	2.79	2.39	0.07	0.06	0.01	0.01

PROJECT	147960.002.01 - Darryl H.'s Q			KSC
SUBJECT	Platform Mount Mount Analysis			
DATE	03/23/21	PAGE	3	OF



Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _N (ft²)	EPA _T (ft²)	EPA _{N-Ice} (ft²)	EPA _{T-Ice} (ft²)	F _{A No Ice (N)}	F _{A No Ice (T)}	F _{A Ice (N)}	F _{A Ice (T)}
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.00	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.00	0.04	0.02	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.00	0.03	0.03	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.00	0.03	0.03	0.01
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.66	1.61	0.00	0.03	0.01	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.00	0.11	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.00	0.11	0.06	0.03
ERICSSON	RADIO 4424 B25_TMO	1	1.19	1.20	1.71	1.34	2.87	2.41	0.00	0.06	0.01	0.01
ERICSSON	RADIO 4449 B71 B85A_T-MOBILE	1	1.36	1.20	1.64	1.32	2.79	2.39	0.00	0.06	0.01	0.01

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	F1-H1	HSS2.375X0.188	Beam	HSS Pipe	A500 Gr.B RND	Typical	1.2	0.733	0.733	1.47
2	F1-MP1	HSS2.375X0.188	Column	HSS Pipe	A500 Gr.B RND	Typical	1.2	0.733	0.733	1.47
3	S1-P1	HSS3.500X0.250	Beam	HSS Pipe	A500 Gr.B RND	Typical	2.39	3.21	3.21	6.41
4	Verticals	L1.5X1.5X0.16	Column	Single Angle	A36 Gr.36	Typical	0.454	0.096	0.096	0.004
5	Diagonals	L1.5X1.5X0.16	VBrace	Single Angle	A36 Gr.36	Typical	0.454	0.096	0.096	0.004
6	SF-H1	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
7	C1-PL1	PL1/2x4 1/2"	Beam	RECT	A36 Gr.36	Typical	2.25	0.047	3.797	0.174
8	C1-PL2	PL1/4x2 1/2"	Beam	RECT	A36 Gr.36	Typical	0.625	0.003	0.326	0.012
9	F1-MP2	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
10	C1-PL3	PL1/4x2 1/2"	Column	RECT	A36 Gr.36	Typical	0.625	0.003	0.326	0.012

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	2	45		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
2	2	3	4		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
3	3	5	6		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
4	4	26	145	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
5	5	28	146	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
6	6	7	44		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
7	7	8	9		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
8	8	10	11		F1-MP2	Column	Pipe	A53 Gr.B	Typical
9	9	12	13		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
10	10	14	15		RIGID	None	None	RIGID	Typical
11	11	16	17		RIGID	None	None	RIGID	Typical
12	12	18	19		RIGID	None	None	RIGID	Typical
13	13	20	21		RIGID	None	None	RIGID	Typical
14	14	22	23		RIGID	None	None	RIGID	Typical
15	15	24	25		RIGID	None	None	RIGID	Typical
16	16	26	27		C1-PL3	Column	RECT	A36 Gr.36	Typical
17	17	28	29		C1-PL3	Column	RECT	A36 Gr.36	Typical
18	18	30	31		C1-PL3	Column	RECT	A36 Gr.36	Typical
19	19	32	33		C1-PL3	Column	RECT	A36 Gr.36	Typical
20	20	34	35		C1-PL3	Column	RECT	A36 Gr.36	Typical
21	21	36	37		C1-PL3	Column	RECT	A36 Gr.36	Typical
22	22	38	42	180	Verticals	Column	Single Angle	A36 Gr.36	Typical
23	23	43	39	180	Verticals	Column	Single Angle	A36 Gr.36	Typical
24	24	41	40		Verticals	Column	Single Angle	A36 Gr.36	Typical
25	25	41	43	180	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
26	26	42	43	90	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
27	27	30	44		RIGID	None	None	RIGID	Typical
28	28	35	45		RIGID	None	None	RIGID	Typical
29	29	48	50		C1-PL1	Beam	RECT	A36 Gr.36	Typical
30	30	49	51		C1-PL1	Beam	RECT	A36 Gr.36	Typical
31	31	52	89		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
32	32	53	54		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
33	33	55	56		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
34	34	70	144	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
35	35	72	145	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
36	36	57	88		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
37	37	58	59		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
38	38	60	61		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
39	39	62	63		RIGID	None	None	RIGID	Typical
40	40	64	65		RIGID	None	None	RIGID	Typical
41	41	66	67		RIGID	None	None	RIGID	Typical
42	42	68	69		RIGID	None	None	RIGID	Typical
43	43	70	71	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
44	44	72	73	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
45	45	74	75	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
46	46	76	77	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
47	47	78	79	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
48	48	80	81	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
49	49	82	86	60	Verticals	Column	Single Angle	A36 Gr.36	Typical
50	50	87	83	60	Verticals	Column	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
51	51	84	85	150	Verticals	Column	Single Angle	A36 Gr.36	Typical
52	52	85	87	180	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
53	53	86	87	90	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
54	54	74	88		RIGID	None	None	RIGID	Typical
55	55	79	89		RIGID	None	None	RIGID	Typical
56	56	92	94		C1-PL1	Beam	RECT	A36 Gr.36	Typical
57	57	93	95		C1-PL1	Beam	RECT	A36 Gr.36	Typical
58	58	96	97	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
59	59	98	150	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
60	60	99	151	90	SF-H1	Beam	Single Angle	A36 Gr.36	Typical
61	61	100	137		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
62	62	101	102		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
63	63	103	104		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
64	64	118	146	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
65	65	120	144	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
66	66	105	136		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
67	67	106	107		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
68	68	108	109		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
69	69	110	111		RIGID	None	None	RIGID	Typical
70	70	112	113		RIGID	None	None	RIGID	Typical
71	71	114	115		RIGID	None	None	RIGID	Typical
72	72	116	117		RIGID	None	None	RIGID	Typical
73	73	118	119	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
74	74	120	121	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
75	75	122	123	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
76	76	124	125	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
77	77	126	127	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
78	78	128	129	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
79	79	130	134	300	Verticals	Column	Single Angle	A36 Gr.36	Typical
80	80	135	131	300	Verticals	Column	Single Angle	A36 Gr.36	Typical
81	81	132	133	30	Verticals	Column	Single Angle	A36 Gr.36	Typical
82	82	133	135	180	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
83	83	134	135	90	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
84	84	122	136		RIGID	None	None	RIGID	Typical
85	85	127	137		RIGID	None	None	RIGID	Typical
86	86	140	142		C1-PL1	Beam	RECT	A36 Gr.36	Typical
87	87	141	143		C1-PL1	Beam	RECT	A36 Gr.36	Typical
88	88	37	148	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
89	89	33	149	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
90	90	81	147	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
91	91	77	148	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
92	92	129	149	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
93	93	125	147	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
94	94	152	153	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
95	95	154	156	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
96	96	155	157	90	SF-H1	Beam	Single Angle	A36 Gr.36	Typical
97	97	158	159	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
98	98	160	162	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
99	99	161	163	90	SF-H1	Beam	Single Angle	A36 Gr.36	Typical
100	100	164	165		F1-MP2	Column	Pipe	A53 Gr.B	Typical
101	101	166	167		RIGID	None	None	RIGID	Typical
102	102	168	169		RIGID	None	None	RIGID	Typical
103	103	170	171		F1-MP2	Column	Pipe	A53 Gr.B	Typical
104	104	172	173		RIGID	None	None	RIGID	Typical
105	105	174	175		RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		45		3
2	0 Wind - No Ice	WLZ			45	81	
3	90 Wind - No Ice	WLX			45	81	
4	0 Wind - Ice	WLZ			45	81	
5	90 Wind - Ice	WLX			45	81	

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
6	0 Wind - Service	WLZ			45	81	
7	90 Wind - Service	WLX			45	81	
8	Ice	OL1			45	81	3
9	0 Seismic	ELZ			45	81	
10	90 Seismic	ELX			45	81	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	Maint LL 16	LL			1		
31	Maint LL 17	LL			1		
32	Maint LL 18	LL			1		
33	BLC 1 Transient Area Loads	None				30	
34	BLC 8 Transient Area Loads	None				30	

Load Combinations

	Description	Solve	PDelta	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		

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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				
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 Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	Y	-0.057	%5
2	9	Y	-0.057	%60
3	9	Y	0	0
4	9	Y	0	0
5	9	Y	0	0
6	7	Y	-0.02	%5
7	7	Y	-0.02	%70
8	7	Y	-0.05	%35
9	7	Y	0	0
10	7	Y	0	0
11	8	Y	-0.075	%5
12	8	Y	-0.075	%95
13	8	Y	-0.086	%20
14	8	Y	-0.073	%50
15	8	Y	0	0
16	68	Y	-0.057	%5
17	68	Y	-0.057	%60
18	68	Y	0	0
19	68	Y	0	0
20	68	Y	0	0
21	67	Y	-0.02	%5
22	67	Y	-0.02	%70
23	67	Y	-0.05	%35
24	67	Y	0	0
25	67	Y	0	0
26	103	Y	-0.075	%5
27	103	Y	-0.075	%95
28	103	Y	-0.086	%20
29	103	Y	-0.073	%50
30	103	Y	0	0
31	38	Y	-0.057	%5
32	38	Y	-0.057	%60
33	38	Y	0	0
34	38	Y	0	0
35	38	Y	0	0
36	37	Y	-0.02	%5
37	37	Y	-0.02	%70
38	37	Y	-0.05	%35
39	37	Y	0	0
40	37	Y	0	0
41	100	Y	-0.075	%5
42	100	Y	-0.075	%95
43	100	Y	-0.086	%20
44	100	Y	-0.073	%50
45	100	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	Z	-0.105	%5
2	9	Z	-0.105	%60

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
3	9	Z	0	0
4	9	Z	0	0
5	9	Z	0	0
6	7	Z	-0.129	%5
7	7	Z	-0.129	%70
8	7	Z	-0.069	%35
9	7	Z	0	0
10	7	Z	0	0
11	8	Z	-0.302	%5
12	8	Z	-0.302	%95
13	8	Z	-0.076	%20
14	8	Z	-0.073	%50
15	8	Z	0	0
16	68	Z	-0.105	%5
17	68	Z	-0.105	%60
18	68	Z	0	0
19	68	Z	0	0
20	68	Z	0	0
21	67	Z	-0.129	%5
22	67	Z	-0.129	%70
23	67	Z	-0.069	%35
24	67	Z	0	0
25	67	Z	0	0
26	103	Z	-0.302	%5
27	103	Z	-0.302	%95
28	103	Z	-0.076	%20
29	103	Z	-0.073	%50
30	103	Z	0	0
31	38	Z	-0.105	%5
32	38	Z	-0.105	%60
33	38	Z	0	0
34	38	Z	0	0
35	38	Z	0	0
36	37	Z	-0.129	%5
37	37	Z	-0.129	%70
38	37	Z	-0.069	%35
39	37	Z	0	0
40	37	Z	0	0
41	100	Z	-0.302	%5
42	100	Z	-0.302	%95
43	100	Z	-0.076	%20
44	100	Z	-0.073	%50
45	100	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	X	-0.044	%5
2	9	X	-0.044	%60
3	9	X	0	0
4	9	X	0	0
5	9	X	0	0
6	7	X	-0.031	%5
7	7	X	-0.031	%70
8	7	X	-0.032	%35
9	7	X	0	0
10	7	X	0	0
11	8	X	-0.11	%5
12	8	X	-0.11	%95
13	8	X	-0.06	%20
14	8	X	-0.059	%50
15	8	X	0	0
16	68	X	-0.044	%5
17	68	X	-0.044	%60

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	67	X	-0.031	%5
22	67	X	-0.031	%70
23	67	X	-0.032	%35
24	67	X	0	0
25	67	X	0	0
26	103	X	-0.11	%5
27	103	X	-0.11	%95
28	103	X	-0.06	%20
29	103	X	-0.059	%50
30	103	X	0	0
31	38	X	-0.044	%5
32	38	X	-0.044	%60
33	38	X	0	0
34	38	X	0	0
35	38	X	0	0
36	37	X	-0.031	%5
37	37	X	-0.031	%70
38	37	X	-0.032	%35
39	37	X	0	0
40	37	X	0	0
41	100	X	-0.11	%5
42	100	X	-0.11	%95
43	100	X	-0.06	%20
44	100	X	-0.059	%50
45	100	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	Z	-0.017	%5
2	9	Z	-0.017	%60
3	9	Z	0	0
4	9	Z	0	0
5	9	Z	0	0
6	7	Z	-0.029	%5
7	7	Z	-0.029	%70
8	7	Z	-0.011	%35
9	7	Z	0	0
10	7	Z	0	0
11	8	Z	-0.059	%5
12	8	Z	-0.059	%95
13	8	Z	-0.012	%20
14	8	Z	-0.012	%50
15	8	Z	0	0
16	68	Z	-0.017	%5
17	68	Z	-0.017	%60
18	68	Z	0	0
19	68	Z	0	0
20	68	Z	0	0
21	67	Z	-0.029	%5
22	67	Z	-0.029	%70
23	67	Z	-0.011	%35
24	67	Z	0	0
25	67	Z	0	0
26	103	Z	-0.059	%5
27	103	Z	-0.059	%95
28	103	Z	-0.012	%20
29	103	Z	-0.012	%50
30	103	Z	0	0
31	38	Z	-0.017	%5
32	38	Z	-0.017	%60

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
33	38	Z	0	0
34	38	Z	0	0
35	38	Z	0	0
36	37	Z	-0.029	%5
37	37	Z	-0.029	%70
38	37	Z	-0.011	%35
39	37	Z	0	0
40	37	Z	0	0
41	100	Z	-0.059	%5
42	100	Z	-0.059	%95
43	100	Z	-0.012	%20
44	100	Z	-0.012	%50
45	100	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	X	-0.007	%5
2	9	X	-0.007	%60
3	9	X	0	0
4	9	X	0	0
5	9	X	0	0
6	7	X	-0.012	%5
7	7	X	-0.012	%70
8	7	X	-0.005	%35
9	7	X	0	0
10	7	X	0	0
11	8	X	-0.027	%5
12	8	X	-0.027	%95
13	8	X	-0.01	%20
14	8	X	-0.009	%50
15	8	X	0	0
16	68	X	-0.007	%5
17	68	X	-0.007	%60
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	67	X	-0.012	%5
22	67	X	-0.012	%70
23	67	X	-0.005	%35
24	67	X	0	0
25	67	X	0	0
26	103	X	-0.027	%5
27	103	X	-0.027	%95
28	103	X	-0.01	%20
29	103	X	-0.009	%50
30	103	X	0	0
31	38	X	-0.007	%5
32	38	X	-0.007	%60
33	38	X	0	0
34	38	X	0	0
35	38	X	0	0
36	37	X	-0.012	%5
37	37	X	-0.012	%70
38	37	X	-0.005	%35
39	37	X	0	0
40	37	X	0	0
41	100	X	-0.027	%5
42	100	X	-0.027	%95
43	100	X	-0.01	%20
44	100	X	-0.009	%50
45	100	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	Z	-0.006	%5
2	9	Z	-0.006	%60
3	9	Z	0	0
4	9	Z	0	0
5	9	Z	0	0
6	7	Z	-0.007	%5
7	7	Z	-0.007	%70
8	7	Z	-0.004	%35
9	7	Z	0	0
10	7	Z	0	0
11	8	Z	-0.017	%5
12	8	Z	-0.017	%95
13	8	Z	-0.004	%20
14	8	Z	-0.004	%50
15	8	Z	0	0
16	68	Z	-0.006	%5
17	68	Z	-0.006	%60
18	68	Z	0	0
19	68	Z	0	0
20	68	Z	0	0
21	67	Z	-0.007	%5
22	67	Z	-0.007	%70
23	67	Z	-0.004	%35
24	67	Z	0	0
25	67	Z	0	0
26	103	Z	-0.017	%5
27	103	Z	-0.017	%95
28	103	Z	-0.004	%20
29	103	Z	-0.004	%50
30	103	Z	0	0
31	38	Z	-0.006	%5
32	38	Z	-0.006	%60
33	38	Z	0	0
34	38	Z	0	0
35	38	Z	0	0
36	37	Z	-0.007	%5
37	37	Z	-0.007	%70
38	37	Z	-0.004	%35
39	37	Z	0	0
40	37	Z	0	0
41	100	Z	-0.017	%5
42	100	Z	-0.017	%95
43	100	Z	-0.004	%20
44	100	Z	-0.004	%50
45	100	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	X	-0.003	%5
2	9	X	-0.003	%60
3	9	X	0	0
4	9	X	0	0
5	9	X	0	0
6	7	X	-0.002	%5
7	7	X	-0.002	%70
8	7	X	-0.002	%35
9	7	X	0	0
10	7	X	0	0
11	8	X	-0.006	%5
12	8	X	-0.006	%95
13	8	X	-0.003	%20
14	8	X	-0.003	%50
15	8	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
16	68	X	-0.003	%5
17	68	X	-0.003	%60
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	67	X	-0.002	%5
22	67	X	-0.002	%70
23	67	X	-0.002	%35
24	67	X	0	0
25	67	X	0	0
26	103	X	-0.006	%5
27	103	X	-0.006	%95
28	103	X	-0.003	%20
29	103	X	-0.003	%50
30	103	X	0	0
31	38	X	-0.003	%5
32	38	X	-0.003	%60
33	38	X	0	0
34	38	X	0	0
35	38	X	0	0
36	37	X	-0.002	%5
37	37	X	-0.002	%70
38	37	X	-0.002	%35
39	37	X	0	0
40	37	X	0	0
41	100	X	-0.006	%5
42	100	X	-0.006	%95
43	100	X	-0.003	%20
44	100	X	-0.003	%50
45	100	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	Y	-0.096	%5
2	9	Y	-0.096	%60
3	9	Y	0	0
4	9	Y	0	0
5	9	Y	0	0
6	7	Y	-0.103	%5
7	7	Y	-0.103	%70
8	7	Y	-0.067	%35
9	7	Y	0	0
10	7	Y	0	0
11	8	Y	-0.325	%5
12	8	Y	-0.325	%95
13	8	Y	-0.083	%20
14	8	Y	-0.082	%50
15	8	Y	0	0
16	68	Y	-0.096	%5
17	68	Y	-0.096	%60
18	68	Y	0	0
19	68	Y	0	0
20	68	Y	0	0
21	67	Y	-0.103	%5
22	67	Y	-0.103	%70
23	67	Y	-0.067	%35
24	67	Y	0	0
25	67	Y	0	0
26	103	Y	-0.325	%5
27	103	Y	-0.325	%95
28	103	Y	-0.083	%20
29	103	Y	-0.082	%50
30	103	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
31	38	Y	-0.096	%5
32	38	Y	-0.096	%60
33	38	Y	0	0
34	38	Y	0	0
35	38	Y	0	0
36	37	Y	-0.103	%5
37	37	Y	-0.103	%70
38	37	Y	-0.067	%35
39	37	Y	0	0
40	37	Y	0	0
41	100	Y	-0.325	%5
42	100	Y	-0.325	%95
43	100	Y	-0.083	%20
44	100	Y	-0.082	%50
45	100	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	Z	-0.031	%5
2	9	Z	-0.031	%60
3	9	Z	0	0
4	9	Z	0	0
5	9	Z	0	0
6	7	Z	-0.011	%5
7	7	Z	-0.011	%70
8	7	Z	-0.014	%35
9	7	Z	0	0
10	7	Z	0	0
11	8	Z	-0.041	%5
12	8	Z	-0.041	%95
13	8	Z	-0.024	%20
14	8	Z	-0.02	%50
15	8	Z	0	0
16	68	Z	-0.031	%5
17	68	Z	-0.031	%60
18	68	Z	0	0
19	68	Z	0	0
20	68	Z	0	0
21	67	Z	-0.011	%5
22	67	Z	-0.011	%70
23	67	Z	-0.014	%35
24	67	Z	0	0
25	67	Z	0	0
26	103	Z	-0.041	%5
27	103	Z	-0.041	%95
28	103	Z	-0.024	%20
29	103	Z	-0.02	%50
30	103	Z	0	0
31	38	Z	-0.031	%5
32	38	Z	-0.031	%60
33	38	Z	0	0
34	38	Z	0	0
35	38	Z	0	0
36	37	Z	-0.011	%5
37	37	Z	-0.011	%70
38	37	Z	-0.014	%35
39	37	Z	0	0
40	37	Z	0	0
41	100	Z	-0.041	%5
42	100	Z	-0.041	%95
43	100	Z	-0.024	%20
44	100	Z	-0.02	%50
45	100	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	9	X	-0.031	%5
2	9	X	-0.031	%60
3	9	X	0	0
4	9	X	0	0
5	9	X	0	0
6	7	X	-0.011	%5
7	7	X	-0.011	%70
8	7	X	-0.014	%35
9	7	X	0	0
10	7	X	0	0
11	8	X	-0.041	%5
12	8	X	-0.041	%95
13	8	X	-0.024	%20
14	8	X	-0.02	%50
15	8	X	0	0
16	68	X	-0.031	%5
17	68	X	-0.031	%60
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	67	X	-0.011	%5
22	67	X	-0.011	%70
23	67	X	-0.014	%35
24	67	X	0	0
25	67	X	0	0
26	103	X	-0.041	%5
27	103	X	-0.041	%95
28	103	X	-0.024	%20
29	103	X	-0.02	%50
30	103	X	0	0
31	38	X	-0.031	%5
32	38	X	-0.031	%60
33	38	X	0	0
34	38	X	0	0
35	38	X	0	0
36	37	X	-0.011	%5
37	37	X	-0.011	%70
38	37	X	-0.014	%35
39	37	X	0	0
40	37	X	0	0
41	100	X	-0.041	%5
42	100	X	-0.041	%95
43	100	X	-0.024	%20
44	100	X	-0.02	%50
45	100	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	33	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	32	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	63	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	62	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	33	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	32	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	63	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	62	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%50

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	36	Y	-0.25	%50

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.25	%50

Member Point Loads (BLC 30 : Maint LL 16)

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

Member Point Loads (BLC 31 : Maint LL 17)

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

Member Point Loads (BLC 32 : Maint LL 18)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	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	-0.009	-0.009	0	%100
2	2	Z	-0.009	-0.009	0	%100
3	3	Z	-0.009	-0.009	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.009	-0.009	0	%100
7	7	Z	-0.009	-0.009	0	%100
8	8	Z	-0.009	-0.009	0	%100
9	9	Z	-0.009	-0.009	0	%100
10	16	Z	-0.009	-0.009	0	%100
11	17	Z	-0.009	-0.009	0	%100
12	18	Z	-0.009	-0.009	0	%100
13	19	Z	-0.009	-0.009	0	%100
14	20	Z	-0.009	-0.009	0	%100
15	21	Z	-0.009	-0.009	0	%100
16	22	Z	-0.009	-0.009	0	%100
17	23	Z	-0.009	-0.009	0	%100
18	24	Z	-0.009	-0.009	0	%100
19	25	Z	-0.009	-0.009	0	%100
20	26	Z	-0.009	-0.009	0	%100
21	29	Z	-0.017	-0.017	0	%100
22	30	Z	-0.017	-0.017	0	%100
23	31	Z	-0.009	-0.009	0	%100
24	32	Z	-0.009	-0.009	0	%100
25	33	Z	-0.009	-0.009	0	%100
26	34	Z	-0.001	-0.001	0	%100
27	35	Z	-0.001	-0.001	0	%100
28	36	Z	-0.009	-0.009	0	%100
29	37	Z	-0.009	-0.009	0	%100
30	38	Z	-0.009	-0.009	0	%100
31	43	Z	-0.009	-0.009	0	%100
32	44	Z	-0.009	-0.009	0	%100
33	45	Z	-0.009	-0.009	0	%100
34	46	Z	-0.009	-0.009	0	%100
35	47	Z	-0.009	-0.009	0	%100
36	48	Z	-0.009	-0.009	0	%100
37	49	Z	-0.009	-0.009	0	%100
38	50	Z	-0.009	-0.009	0	%100
39	51	Z	-0.009	-0.009	0	%100
40	52	Z	-0.009	-0.009	0	%100
41	53	Z	-0.009	-0.009	0	%100
42	56	Z	-0.017	-0.017	0	%100
43	57	Z	-0.017	-0.017	0	%100
44	58	Z	-0.001	-0.001	0	%100
45	59	Z	-0.001	-0.001	0	%100
46	60	Z	-0.01	-0.01	0	%100
47	61	Z	-0.009	-0.009	0	%100
48	62	Z	-0.009	-0.009	0	%100
49	63	Z	-0.009	-0.009	0	%100
50	64	Z	-0.001	-0.001	0	%100
51	65	Z	-0.001	-0.001	0	%100
52	66	Z	-0.009	-0.009	0	%100
53	67	Z	-0.009	-0.009	0	%100
54	68	Z	-0.009	-0.009	0	%100
55	73	Z	-0.009	-0.009	0	%100
56	74	Z	-0.009	-0.009	0	%100
57	75	Z	-0.009	-0.009	0	%100
58	76	Z	-0.009	-0.009	0	%100
59	77	Z	-0.009	-0.009	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, %)]
60	78	Z	-0.009	0	%100
61	79	Z	-0.009	0	%100
62	80	Z	-0.009	0	%100
63	81	Z	-0.009	0	%100
64	82	Z	-0.009	0	%100
65	83	Z	-0.009	0	%100
66	86	Z	-0.017	0	%100
67	87	Z	-0.017	0	%100
68	88	Z	-0.001	0	%100
69	89	Z	-0.001	0	%100
70	90	Z	-0.001	0	%100
71	91	Z	-0.001	0	%100
72	92	Z	-0.001	0	%100
73	93	Z	-0.001	0	%100
74	94	Z	-0.001	0	%100
75	95	Z	-0.001	0	%100
76	96	Z	-0.01	0	%100
77	97	Z	-0.001	0	%100
78	98	Z	-0.001	0	%100
79	99	Z	-0.01	0	%100
80	100	Z	-0.009	0	%100
81	103	Z	-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	-0.009	0	%100
2	2	X	-0.009	0	%100
3	3	X	-0.009	0	%100
4	4	X	-0.001	0	%100
5	5	X	-0.001	0	%100
6	6	X	-0.009	0	%100
7	7	X	-0.009	0	%100
8	8	X	-0.009	0	%100
9	9	X	-0.009	0	%100
10	16	X	-0.009	0	%100
11	17	X	-0.009	0	%100
12	18	X	-0.009	0	%100
13	19	X	-0.009	0	%100
14	20	X	-0.009	0	%100
15	21	X	-0.009	0	%100
16	22	X	-0.009	0	%100
17	23	X	-0.009	0	%100
18	24	X	-0.009	0	%100
19	25	X	-0.009	0	%100
20	26	X	-0.009	0	%100
21	29	X	-0.017	0	%100
22	30	X	-0.017	0	%100
23	31	X	-0.009	0	%100
24	32	X	-0.009	0	%100
25	33	X	-0.009	0	%100
26	34	X	-0.001	0	%100
27	35	X	-0.001	0	%100
28	36	X	-0.009	0	%100
29	37	X	-0.009	0	%100
30	38	X	-0.009	0	%100
31	43	X	-0.009	0	%100
32	44	X	-0.009	0	%100
33	45	X	-0.009	0	%100
34	46	X	-0.009	0	%100
35	47	X	-0.009	0	%100
36	48	X	-0.009	0	%100
37	49	X	-0.009	0	%100
38	50	X	-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, %)]
39	51	X	-0.009	0	%100
40	52	X	-0.009	0	%100
41	53	X	-0.009	0	%100
42	56	X	-0.017	0	%100
43	57	X	-0.017	0	%100
44	58	X	-0.001	0	%100
45	59	X	-0.001	0	%100
46	60	X	-0.01	0	%100
47	61	X	-0.009	0	%100
48	62	X	-0.009	0	%100
49	63	X	-0.009	0	%100
50	64	X	-0.001	0	%100
51	65	X	-0.001	0	%100
52	66	X	-0.009	0	%100
53	67	X	-0.009	0	%100
54	68	X	-0.009	0	%100
55	73	X	-0.009	0	%100
56	74	X	-0.009	0	%100
57	75	X	-0.009	0	%100
58	76	X	-0.009	0	%100
59	77	X	-0.009	0	%100
60	78	X	-0.009	0	%100
61	79	X	-0.009	0	%100
62	80	X	-0.009	0	%100
63	81	X	-0.009	0	%100
64	82	X	-0.009	0	%100
65	83	X	-0.009	0	%100
66	86	X	-0.017	0	%100
67	87	X	-0.017	0	%100
68	88	X	-0.001	0	%100
69	89	X	-0.001	0	%100
70	90	X	-0.001	0	%100
71	91	X	-0.001	0	%100
72	92	X	-0.001	0	%100
73	93	X	-0.001	0	%100
74	94	X	-0.001	0	%100
75	95	X	-0.001	0	%100
76	96	X	-0.01	0	%100
77	97	X	-0.001	0	%100
78	98	X	-0.001	0	%100
79	99	X	-0.01	0	%100
80	100	X	-0.009	0	%100
81	103	X	-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	-0.003	0	%100
2	2	Z	-0.002	0	%100
3	3	Z	-0.002	0	%100
4	4	Z	-0.009	0	%100
5	5	Z	-0.009	0	%100
6	6	Z	-0.003	0	%100
7	7	Z	-0.002	0	%100
8	8	Z	-0.002	0	%100
9	9	Z	-0.002	0	%100
10	16	Z	-0.011	0	%100
11	17	Z	-0.011	0	%100
12	18	Z	-0.011	0	%100
13	19	Z	-0.011	0	%100
14	20	Z	-0.011	0	%100
15	21	Z	-0.011	0	%100
16	22	Z	-0.007	0	%100
17	23	Z	-0.007	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, %)]
18	24	Z	-0.007	-0.007	0	%100
19	25	Z	-0.006	-0.006	0	%100
20	26	Z	-0.006	-0.006	0	%100
21	29	Z	-0.009	-0.009	0	%100
22	30	Z	-0.009	-0.009	0	%100
23	31	Z	-0.003	-0.003	0	%100
24	32	Z	-0.002	-0.002	0	%100
25	33	Z	-0.002	-0.002	0	%100
26	34	Z	-0.009	-0.009	0	%100
27	35	Z	-0.009	-0.009	0	%100
28	36	Z	-0.003	-0.003	0	%100
29	37	Z	-0.002	-0.002	0	%100
30	38	Z	-0.002	-0.002	0	%100
31	43	Z	-0.011	-0.011	0	%100
32	44	Z	-0.011	-0.011	0	%100
33	45	Z	-0.011	-0.011	0	%100
34	46	Z	-0.011	-0.011	0	%100
35	47	Z	-0.011	-0.011	0	%100
36	48	Z	-0.011	-0.011	0	%100
37	49	Z	-0.007	-0.007	0	%100
38	50	Z	-0.007	-0.007	0	%100
39	51	Z	-0.007	-0.007	0	%100
40	52	Z	-0.006	-0.006	0	%100
41	53	Z	-0.006	-0.006	0	%100
42	56	Z	-0.009	-0.009	0	%100
43	57	Z	-0.009	-0.009	0	%100
44	58	Z	-0.01	-0.01	0	%100
45	59	Z	-0.01	-0.01	0	%100
46	60	Z	-0.006	-0.006	0	%100
47	61	Z	-0.003	-0.003	0	%100
48	62	Z	-0.002	-0.002	0	%100
49	63	Z	-0.002	-0.002	0	%100
50	64	Z	-0.009	-0.009	0	%100
51	65	Z	-0.009	-0.009	0	%100
52	66	Z	-0.003	-0.003	0	%100
53	67	Z	-0.002	-0.002	0	%100
54	68	Z	-0.002	-0.002	0	%100
55	73	Z	-0.011	-0.011	0	%100
56	74	Z	-0.011	-0.011	0	%100
57	75	Z	-0.011	-0.011	0	%100
58	76	Z	-0.011	-0.011	0	%100
59	77	Z	-0.011	-0.011	0	%100
60	78	Z	-0.011	-0.011	0	%100
61	79	Z	-0.007	-0.007	0	%100
62	80	Z	-0.007	-0.007	0	%100
63	81	Z	-0.007	-0.007	0	%100
64	82	Z	-0.006	-0.006	0	%100
65	83	Z	-0.006	-0.006	0	%100
66	86	Z	-0.009	-0.009	0	%100
67	87	Z	-0.009	-0.009	0	%100
68	88	Z	-0.009	-0.009	0	%100
69	89	Z	-0.009	-0.009	0	%100
70	90	Z	-0.009	-0.009	0	%100
71	91	Z	-0.009	-0.009	0	%100
72	92	Z	-0.009	-0.009	0	%100
73	93	Z	-0.009	-0.009	0	%100
74	94	Z	-0.01	-0.01	0	%100
75	95	Z	-0.01	-0.01	0	%100
76	96	Z	-0.006	-0.006	0	%100
77	97	Z	-0.01	-0.01	0	%100
78	98	Z	-0.01	-0.01	0	%100
79	99	Z	-0.006	-0.006	0	%100
80	100	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, %)]
81	103	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	-0.003	-0.003	0 %100
2	2	X	-0.002	-0.002	0 %100
3	3	X	-0.002	-0.002	0 %100
4	4	X	-0.009	-0.009	0 %100
5	5	X	-0.009	-0.009	0 %100
6	6	X	-0.003	-0.003	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	16	X	-0.011	-0.011	0 %100
11	17	X	-0.011	-0.011	0 %100
12	18	X	-0.011	-0.011	0 %100
13	19	X	-0.011	-0.011	0 %100
14	20	X	-0.011	-0.011	0 %100
15	21	X	-0.011	-0.011	0 %100
16	22	X	-0.007	-0.007	0 %100
17	23	X	-0.007	-0.007	0 %100
18	24	X	-0.007	-0.007	0 %100
19	25	X	-0.006	-0.006	0 %100
20	26	X	-0.006	-0.006	0 %100
21	29	X	-0.009	-0.009	0 %100
22	30	X	-0.009	-0.009	0 %100
23	31	X	-0.003	-0.003	0 %100
24	32	X	-0.002	-0.002	0 %100
25	33	X	-0.002	-0.002	0 %100
26	34	X	-0.009	-0.009	0 %100
27	35	X	-0.009	-0.009	0 %100
28	36	X	-0.003	-0.003	0 %100
29	37	X	-0.002	-0.002	0 %100
30	38	X	-0.002	-0.002	0 %100
31	43	X	-0.011	-0.011	0 %100
32	44	X	-0.011	-0.011	0 %100
33	45	X	-0.011	-0.011	0 %100
34	46	X	-0.011	-0.011	0 %100
35	47	X	-0.011	-0.011	0 %100
36	48	X	-0.011	-0.011	0 %100
37	49	X	-0.007	-0.007	0 %100
38	50	X	-0.007	-0.007	0 %100
39	51	X	-0.007	-0.007	0 %100
40	52	X	-0.006	-0.006	0 %100
41	53	X	-0.006	-0.006	0 %100
42	56	X	-0.009	-0.009	0 %100
43	57	X	-0.009	-0.009	0 %100
44	58	X	-0.01	-0.01	0 %100
45	59	X	-0.01	-0.01	0 %100
46	60	X	-0.006	-0.006	0 %100
47	61	X	-0.003	-0.003	0 %100
48	62	X	-0.002	-0.002	0 %100
49	63	X	-0.002	-0.002	0 %100
50	64	X	-0.009	-0.009	0 %100
51	65	X	-0.009	-0.009	0 %100
52	66	X	-0.003	-0.003	0 %100
53	67	X	-0.002	-0.002	0 %100
54	68	X	-0.002	-0.002	0 %100
55	73	X	-0.011	-0.011	0 %100
56	74	X	-0.011	-0.011	0 %100
57	75	X	-0.011	-0.011	0 %100
58	76	X	-0.011	-0.011	0 %100
59	77	X	-0.011	-0.011	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, %)]
60	78	X	-0.011	-0.011	0	%100
61	79	X	-0.007	-0.007	0	%100
62	80	X	-0.007	-0.007	0	%100
63	81	X	-0.007	-0.007	0	%100
64	82	X	-0.006	-0.006	0	%100
65	83	X	-0.006	-0.006	0	%100
66	86	X	-0.009	-0.009	0	%100
67	87	X	-0.009	-0.009	0	%100
68	88	X	-0.009	-0.009	0	%100
69	89	X	-0.009	-0.009	0	%100
70	90	X	-0.009	-0.009	0	%100
71	91	X	-0.009	-0.009	0	%100
72	92	X	-0.009	-0.009	0	%100
73	93	X	-0.009	-0.009	0	%100
74	94	X	-0.01	-0.01	0	%100
75	95	X	-0.01	-0.01	0	%100
76	96	X	-0.006	-0.006	0	%100
77	97	X	-0.01	-0.01	0	%100
78	98	X	-0.01	-0.01	0	%100
79	99	X	-0.006	-0.006	0	%100
80	100	X	-0.002	-0.002	0	%100
81	103	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	-0.0004	-0.0004	0	%100
2	2	Z	-0.0003	-0.0003	0	%100
3	3	Z	-0.0003	-0.0003	0	%100
4	4	Z	-1e-04	-1e-04	0	%100
5	5	Z	-1e-04	-1e-04	0	%100
6	6	Z	-0.0004	-0.0004	0	%100
7	7	Z	-0.0003	-0.0003	0	%100
8	8	Z	-0.0003	-0.0003	0	%100
9	9	Z	-0.0003	-0.0003	0	%100
10	16	Z	-0.0005	-0.0005	0	%100
11	17	Z	-0.0005	-0.0005	0	%100
12	18	Z	-0.0005	-0.0005	0	%100
13	19	Z	-0.0005	-0.0005	0	%100
14	20	Z	-0.0005	-0.0005	0	%100
15	21	Z	-0.0005	-0.0005	0	%100
16	22	Z	-0.0005	-0.0005	0	%100
17	23	Z	-0.0005	-0.0005	0	%100
18	24	Z	-0.0005	-0.0005	0	%100
19	25	Z	-0.0005	-0.0005	0	%100
20	26	Z	-0.0005	-0.0005	0	%100
21	29	Z	-0.001	-0.001	0	%100
22	30	Z	-0.001	-0.001	0	%100
23	31	Z	-0.0004	-0.0004	0	%100
24	32	Z	-0.0003	-0.0003	0	%100
25	33	Z	-0.0003	-0.0003	0	%100
26	34	Z	-1e-04	-1e-04	0	%100
27	35	Z	-1e-04	-1e-04	0	%100
28	36	Z	-0.0004	-0.0004	0	%100
29	37	Z	-0.0003	-0.0003	0	%100
30	38	Z	-0.0003	-0.0003	0	%100
31	43	Z	-0.0005	-0.0005	0	%100
32	44	Z	-0.0005	-0.0005	0	%100
33	45	Z	-0.0005	-0.0005	0	%100
34	46	Z	-0.0005	-0.0005	0	%100
35	47	Z	-0.0005	-0.0005	0	%100
36	48	Z	-0.0005	-0.0005	0	%100
37	49	Z	-0.0005	-0.0005	0	%100
38	50	Z	-0.0005	-0.0005	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, %)]
39	51	Z	-0.0005	-0.0005	0 %100
40	52	Z	-0.0005	-0.0005	0 %100
41	53	Z	-0.0005	-0.0005	0 %100
42	56	Z	-0.001	-0.001	0 %100
43	57	Z	-0.001	-0.001	0 %100
44	58	Z	-1e-04	-1e-04	0 %100
45	59	Z	-1e-04	-1e-04	0 %100
46	60	Z	-0.0006	-0.0006	0 %100
47	61	Z	-0.0004	-0.0004	0 %100
48	62	Z	-0.0003	-0.0003	0 %100
49	63	Z	-0.0003	-0.0003	0 %100
50	64	Z	-1e-04	-1e-04	0 %100
51	65	Z	-1e-04	-1e-04	0 %100
52	66	Z	-0.0004	-0.0004	0 %100
53	67	Z	-0.0003	-0.0003	0 %100
54	68	Z	-0.0003	-0.0003	0 %100
55	73	Z	-0.0005	-0.0005	0 %100
56	74	Z	-0.0005	-0.0005	0 %100
57	75	Z	-0.0005	-0.0005	0 %100
58	76	Z	-0.0005	-0.0005	0 %100
59	77	Z	-0.0005	-0.0005	0 %100
60	78	Z	-0.0005	-0.0005	0 %100
61	79	Z	-0.0005	-0.0005	0 %100
62	80	Z	-0.0005	-0.0005	0 %100
63	81	Z	-0.0005	-0.0005	0 %100
64	82	Z	-0.0005	-0.0005	0 %100
65	83	Z	-0.0005	-0.0005	0 %100
66	86	Z	-0.001	-0.001	0 %100
67	87	Z	-0.001	-0.001	0 %100
68	88	Z	-1e-04	-1e-04	0 %100
69	89	Z	-1e-04	-1e-04	0 %100
70	90	Z	-1e-04	-1e-04	0 %100
71	91	Z	-1e-04	-1e-04	0 %100
72	92	Z	-1e-04	-1e-04	0 %100
73	93	Z	-1e-04	-1e-04	0 %100
74	94	Z	-1e-04	-1e-04	0 %100
75	95	Z	-1e-04	-1e-04	0 %100
76	96	Z	-0.0006	-0.0006	0 %100
77	97	Z	-1e-04	-1e-04	0 %100
78	98	Z	-1e-04	-1e-04	0 %100
79	99	Z	-0.0006	-0.0006	0 %100
80	100	Z	-0.0003	-0.0003	0 %100
81	103	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	-0.0004	-0.0004	0 %100
2	2	X	-0.0003	-0.0003	0 %100
3	3	X	-0.0003	-0.0003	0 %100
4	4	X	-1e-04	-1e-04	0 %100
5	5	X	-1e-04	-1e-04	0 %100
6	6	X	-0.0004	-0.0004	0 %100
7	7	X	-0.0003	-0.0003	0 %100
8	8	X	-0.0003	-0.0003	0 %100
9	9	X	-0.0003	-0.0003	0 %100
10	16	X	-0.0005	-0.0005	0 %100
11	17	X	-0.0005	-0.0005	0 %100
12	18	X	-0.0005	-0.0005	0 %100
13	19	X	-0.0005	-0.0005	0 %100
14	20	X	-0.0005	-0.0005	0 %100
15	21	X	-0.0005	-0.0005	0 %100
16	22	X	-0.0005	-0.0005	0 %100
17	23	X	-0.0005	-0.0005	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, %)]
18	24	X	-0.0005	0	%100
19	25	X	-0.0005	0	%100
20	26	X	-0.0005	0	%100
21	29	X	-0.001	0	%100
22	30	X	-0.001	0	%100
23	31	X	-0.0004	0	%100
24	32	X	-0.0003	0	%100
25	33	X	-0.0003	0	%100
26	34	X	-1e-04	0	%100
27	35	X	-1e-04	0	%100
28	36	X	-0.0004	0	%100
29	37	X	-0.0003	0	%100
30	38	X	-0.0003	0	%100
31	43	X	-0.0005	0	%100
32	44	X	-0.0005	0	%100
33	45	X	-0.0005	0	%100
34	46	X	-0.0005	0	%100
35	47	X	-0.0005	0	%100
36	48	X	-0.0005	0	%100
37	49	X	-0.0005	0	%100
38	50	X	-0.0005	0	%100
39	51	X	-0.0005	0	%100
40	52	X	-0.0005	0	%100
41	53	X	-0.0005	0	%100
42	56	X	-0.001	0	%100
43	57	X	-0.001	0	%100
44	58	X	-1e-04	0	%100
45	59	X	-1e-04	0	%100
46	60	X	-0.0006	0	%100
47	61	X	-0.0004	0	%100
48	62	X	-0.0003	0	%100
49	63	X	-0.0003	0	%100
50	64	X	-1e-04	0	%100
51	65	X	-1e-04	0	%100
52	66	X	-0.0004	0	%100
53	67	X	-0.0003	0	%100
54	68	X	-0.0003	0	%100
55	73	X	-0.0005	0	%100
56	74	X	-0.0005	0	%100
57	75	X	-0.0005	0	%100
58	76	X	-0.0005	0	%100
59	77	X	-0.0005	0	%100
60	78	X	-0.0005	0	%100
61	79	X	-0.0005	0	%100
62	80	X	-0.0005	0	%100
63	81	X	-0.0005	0	%100
64	82	X	-0.0005	0	%100
65	83	X	-0.0005	0	%100
66	86	X	-0.001	0	%100
67	87	X	-0.001	0	%100
68	88	X	-1e-04	0	%100
69	89	X	-1e-04	0	%100
70	90	X	-1e-04	0	%100
71	91	X	-1e-04	0	%100
72	92	X	-1e-04	0	%100
73	93	X	-1e-04	0	%100
74	94	X	-1e-04	0	%100
75	95	X	-1e-04	0	%100
76	96	X	-0.0006	0	%100
77	97	X	-1e-04	0	%100
78	98	X	-1e-04	0	%100
79	99	X	-0.0006	0	%100
80	100	X	-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, %)]
81	103	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	-0.017	-0.017	0 %100
2	2	Y	-0.013	-0.013	0 %100
3	3	Y	-0.013	-0.013	0 %100
4	4	Y	-0.014	-0.014	0 %100
5	5	Y	-0.014	-0.014	0 %100
6	6	Y	-0.017	-0.017	0 %100
7	7	Y	-0.013	-0.013	0 %100
8	8	Y	-0.013	-0.013	0 %100
9	9	Y	-0.013	-0.013	0 %100
10	16	Y	-0.014	-0.014	0 %100
11	17	Y	-0.014	-0.014	0 %100
12	18	Y	-0.014	-0.014	0 %100
13	19	Y	-0.014	-0.014	0 %100
14	20	Y	-0.014	-0.014	0 %100
15	21	Y	-0.014	-0.014	0 %100
16	22	Y	-0.013	-0.013	0 %100
17	23	Y	-0.013	-0.013	0 %100
18	24	Y	-0.013	-0.013	0 %100
19	25	Y	-0.013	-0.013	0 %100
20	26	Y	-0.013	-0.013	0 %100
21	29	Y	-0.019	-0.019	0 %100
22	30	Y	-0.019	-0.019	0 %100
23	31	Y	-0.017	-0.017	0 %100
24	32	Y	-0.013	-0.013	0 %100
25	33	Y	-0.013	-0.013	0 %100
26	34	Y	-0.014	-0.014	0 %100
27	35	Y	-0.014	-0.014	0 %100
28	36	Y	-0.017	-0.017	0 %100
29	37	Y	-0.013	-0.013	0 %100
30	38	Y	-0.013	-0.013	0 %100
31	43	Y	-0.014	-0.014	0 %100
32	44	Y	-0.014	-0.014	0 %100
33	45	Y	-0.014	-0.014	0 %100
34	46	Y	-0.014	-0.014	0 %100
35	47	Y	-0.014	-0.014	0 %100
36	48	Y	-0.014	-0.014	0 %100
37	49	Y	-0.013	-0.013	0 %100
38	50	Y	-0.013	-0.013	0 %100
39	51	Y	-0.013	-0.013	0 %100
40	52	Y	-0.013	-0.013	0 %100
41	53	Y	-0.013	-0.013	0 %100
42	56	Y	-0.019	-0.019	0 %100
43	57	Y	-0.019	-0.019	0 %100
44	58	Y	-0.014	-0.014	0 %100
45	59	Y	-0.014	-0.014	0 %100
46	60	Y	-0.015	-0.015	0 %100
47	61	Y	-0.017	-0.017	0 %100
48	62	Y	-0.013	-0.013	0 %100
49	63	Y	-0.013	-0.013	0 %100
50	64	Y	-0.014	-0.014	0 %100
51	65	Y	-0.014	-0.014	0 %100
52	66	Y	-0.017	-0.017	0 %100
53	67	Y	-0.013	-0.013	0 %100
54	68	Y	-0.013	-0.013	0 %100
55	73	Y	-0.014	-0.014	0 %100
56	74	Y	-0.014	-0.014	0 %100
57	75	Y	-0.014	-0.014	0 %100
58	76	Y	-0.014	-0.014	0 %100
59	77	Y	-0.014	-0.014	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, %)]
60	78	Y	-0.014	0	%100
61	79	Y	-0.013	0	%100
62	80	Y	-0.013	0	%100
63	81	Y	-0.013	0	%100
64	82	Y	-0.013	0	%100
65	83	Y	-0.013	0	%100
66	86	Y	-0.019	0	%100
67	87	Y	-0.019	0	%100
68	88	Y	-0.014	0	%100
69	89	Y	-0.014	0	%100
70	90	Y	-0.014	0	%100
71	91	Y	-0.014	0	%100
72	92	Y	-0.014	0	%100
73	93	Y	-0.014	0	%100
74	94	Y	-0.014	0	%100
75	95	Y	-0.014	0	%100
76	96	Y	-0.015	0	%100
77	97	Y	-0.014	0	%100
78	98	Y	-0.014	0	%100
79	99	Y	-0.015	0	%100
80	100	Y	-0.013	0	%100
81	103	Y	-0.013	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	-0.002	0	%100
2	2	Z	-0.001	0	%100
3	3	Z	-0.001	0	%100
4	4	Z	-0.0005	0	%100
5	5	Z	-0.0005	0	%100
6	6	Z	-0.002	0	%100
7	7	Z	-0.001	0	%100
8	8	Z	-0.001	0	%100
9	9	Z	-0.001	0	%100
10	16	Z	-0.0005	0	%100
11	17	Z	-0.0005	0	%100
12	18	Z	-0.0005	0	%100
13	19	Z	-0.0005	0	%100
14	20	Z	-0.0005	0	%100
15	21	Z	-0.0005	0	%100
16	22	Z	-0.0004	0	%100
17	23	Z	-0.0004	0	%100
18	24	Z	-0.0004	0	%100
19	25	Z	-0.0004	0	%100
20	26	Z	-0.0004	0	%100
21	29	Z	-0.002	0	%100
22	30	Z	-0.002	0	%100
23	31	Z	-0.002	0	%100
24	32	Z	-0.001	0	%100
25	33	Z	-0.001	0	%100
26	34	Z	-0.0005	0	%100
27	35	Z	-0.0005	0	%100
28	36	Z	-0.002	0	%100
29	37	Z	-0.001	0	%100
30	38	Z	-0.001	0	%100
31	43	Z	-0.0005	0	%100
32	44	Z	-0.0005	0	%100
33	45	Z	-0.0005	0	%100
34	46	Z	-0.0005	0	%100
35	47	Z	-0.0005	0	%100
36	48	Z	-0.0005	0	%100
37	49	Z	-0.0004	0	%100
38	50	Z	-0.0004	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, %)]
39	51	Z	-0.0004	-0.0004	0 %100
40	52	Z	-0.0004	-0.0004	0 %100
41	53	Z	-0.0004	-0.0004	0 %100
42	56	Z	-0.002	-0.002	0 %100
43	57	Z	-0.002	-0.002	0 %100
44	58	Z	-0.0005	-0.0005	0 %100
45	59	Z	-0.0005	-0.0005	0 %100
46	60	Z	-0.0007	-0.0007	0 %100
47	61	Z	-0.002	-0.002	0 %100
48	62	Z	-0.001	-0.001	0 %100
49	63	Z	-0.001	-0.001	0 %100
50	64	Z	-0.0005	-0.0005	0 %100
51	65	Z	-0.0005	-0.0005	0 %100
52	66	Z	-0.002	-0.002	0 %100
53	67	Z	-0.001	-0.001	0 %100
54	68	Z	-0.001	-0.001	0 %100
55	73	Z	-0.0005	-0.0005	0 %100
56	74	Z	-0.0005	-0.0005	0 %100
57	75	Z	-0.0005	-0.0005	0 %100
58	76	Z	-0.0005	-0.0005	0 %100
59	77	Z	-0.0005	-0.0005	0 %100
60	78	Z	-0.0005	-0.0005	0 %100
61	79	Z	-0.0004	-0.0004	0 %100
62	80	Z	-0.0004	-0.0004	0 %100
63	81	Z	-0.0004	-0.0004	0 %100
64	82	Z	-0.0004	-0.0004	0 %100
65	83	Z	-0.0004	-0.0004	0 %100
66	86	Z	-0.002	-0.002	0 %100
67	87	Z	-0.002	-0.002	0 %100
68	88	Z	-0.0005	-0.0005	0 %100
69	89	Z	-0.0005	-0.0005	0 %100
70	90	Z	-0.0005	-0.0005	0 %100
71	91	Z	-0.0005	-0.0005	0 %100
72	92	Z	-0.0005	-0.0005	0 %100
73	93	Z	-0.0005	-0.0005	0 %100
74	94	Z	-0.0005	-0.0005	0 %100
75	95	Z	-0.0005	-0.0005	0 %100
76	96	Z	-0.0007	-0.0007	0 %100
77	97	Z	-0.0005	-0.0005	0 %100
78	98	Z	-0.0005	-0.0005	0 %100
79	99	Z	-0.0007	-0.0007	0 %100
80	100	Z	-0.001	-0.001	0 %100
81	103	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	-0.002	-0.002	0 %100
2	2	X	-0.001	-0.001	0 %100
3	3	X	-0.001	-0.001	0 %100
4	4	X	-0.0005	-0.0005	0 %100
5	5	X	-0.0005	-0.0005	0 %100
6	6	X	-0.002	-0.002	0 %100
7	7	X	-0.001	-0.001	0 %100
8	8	X	-0.001	-0.001	0 %100
9	9	X	-0.001	-0.001	0 %100
10	16	X	-0.0005	-0.0005	0 %100
11	17	X	-0.0005	-0.0005	0 %100
12	18	X	-0.0005	-0.0005	0 %100
13	19	X	-0.0005	-0.0005	0 %100
14	20	X	-0.0005	-0.0005	0 %100
15	21	X	-0.0005	-0.0005	0 %100
16	22	X	-0.0004	-0.0004	0 %100
17	23	X	-0.0004	-0.0004	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, %)]
18	24	X	-0.0004	-0.0004	0 %100
19	25	X	-0.0004	-0.0004	0 %100
20	26	X	-0.0004	-0.0004	0 %100
21	29	X	-0.002	-0.002	0 %100
22	30	X	-0.002	-0.002	0 %100
23	31	X	-0.002	-0.002	0 %100
24	32	X	-0.001	-0.001	0 %100
25	33	X	-0.001	-0.001	0 %100
26	34	X	-0.0005	-0.0005	0 %100
27	35	X	-0.0005	-0.0005	0 %100
28	36	X	-0.002	-0.002	0 %100
29	37	X	-0.001	-0.001	0 %100
30	38	X	-0.001	-0.001	0 %100
31	43	X	-0.0005	-0.0005	0 %100
32	44	X	-0.0005	-0.0005	0 %100
33	45	X	-0.0005	-0.0005	0 %100
34	46	X	-0.0005	-0.0005	0 %100
35	47	X	-0.0005	-0.0005	0 %100
36	48	X	-0.0005	-0.0005	0 %100
37	49	X	-0.0004	-0.0004	0 %100
38	50	X	-0.0004	-0.0004	0 %100
39	51	X	-0.0004	-0.0004	0 %100
40	52	X	-0.0004	-0.0004	0 %100
41	53	X	-0.0004	-0.0004	0 %100
42	56	X	-0.002	-0.002	0 %100
43	57	X	-0.002	-0.002	0 %100
44	58	X	-0.0005	-0.0005	0 %100
45	59	X	-0.0005	-0.0005	0 %100
46	60	X	-0.0007	-0.0007	0 %100
47	61	X	-0.002	-0.002	0 %100
48	62	X	-0.001	-0.001	0 %100
49	63	X	-0.001	-0.001	0 %100
50	64	X	-0.0005	-0.0005	0 %100
51	65	X	-0.0005	-0.0005	0 %100
52	66	X	-0.002	-0.002	0 %100
53	67	X	-0.001	-0.001	0 %100
54	68	X	-0.001	-0.001	0 %100
55	73	X	-0.0005	-0.0005	0 %100
56	74	X	-0.0005	-0.0005	0 %100
57	75	X	-0.0005	-0.0005	0 %100
58	76	X	-0.0005	-0.0005	0 %100
59	77	X	-0.0005	-0.0005	0 %100
60	78	X	-0.0005	-0.0005	0 %100
61	79	X	-0.0004	-0.0004	0 %100
62	80	X	-0.0004	-0.0004	0 %100
63	81	X	-0.0004	-0.0004	0 %100
64	82	X	-0.0004	-0.0004	0 %100
65	83	X	-0.0004	-0.0004	0 %100
66	86	X	-0.002	-0.002	0 %100
67	87	X	-0.002	-0.002	0 %100
68	88	X	-0.0005	-0.0005	0 %100
69	89	X	-0.0005	-0.0005	0 %100
70	90	X	-0.0005	-0.0005	0 %100
71	91	X	-0.0005	-0.0005	0 %100
72	92	X	-0.0005	-0.0005	0 %100
73	93	X	-0.0005	-0.0005	0 %100
74	94	X	-0.0005	-0.0005	0 %100
75	95	X	-0.0005	-0.0005	0 %100
76	96	X	-0.0007	-0.0007	0 %100
77	97	X	-0.0005	-0.0005	0 %100
78	98	X	-0.0005	-0.0005	0 %100
79	99	X	-0.0007	-0.0007	0 %100
80	100	X	-0.001	-0.001	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, %)]
81	103	X	-0.001	-0.001	0 %100

Member Distributed Loads (BLC 33 : BLC 1 Transient Area Loads)

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	58	Y	-0.007	-0.007	0 0.25
2	60	Y	-0.00034	-0.007	0 1.346
3	61	Y	-0.014	-0.014	1.592 2.347
4	62	Y	-0.0004187	-0.005	1.25 3.25
5	62	Y	-0.005	-0.005	3.25 5.25
6	62	Y	-0.005	-0.005	5.25 7.25
7	62	Y	-0.005	-0.005	7.25 9.25
8	62	Y	-0.005	-0.0004187	9.25 11.25
9	98	Y	-0.007	-0.007	0 0.25
10	99	Y	-0.0003308	-0.007	0.897 2.244
11	31	Y	-0.014	-0.014	1.592 2.347
12	32	Y	-0.0004186	-0.005	1.25 3.25
13	32	Y	-0.005	-0.005	3.25 5.25
14	32	Y	-0.005	-0.005	5.25 7.25
15	32	Y	-0.005	-0.005	7.25 9.25
16	32	Y	-0.005	-0.0004186	9.25 11.25
17	95	Y	-0.007	-0.007	0 0.25
18	96	Y	-0.0003308	-0.007	0.897 2.244
19	97	Y	-0.007	-0.007	0 0.25
20	99	Y	-0.0002532	-0.007	0 1.346
21	1	Y	-0.014	-0.014	1.592 2.347
22	2	Y	-0.0004187	-0.005	1.25 3.25
23	2	Y	-0.005	-0.005	3.25 5.25
24	2	Y	-0.005	-0.005	5.25 7.25
25	2	Y	-0.005	-0.005	7.25 9.25
26	2	Y	-0.005	-0.0004187	9.25 11.25
27	59	Y	-0.007	-0.007	0 0.25
28	60	Y	-0.0003308	-0.007	0.897 2.244
29	94	Y	-0.007	-0.007	0 0.25
30	96	Y	-0.00034	-0.007	0 1.346

Member Distributed Loads (BLC 34 : BLC 8 Transient Area Loads)

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	58	Y	-0.008	-0.008	0 0.25
2	60	Y	-0.0003761	-0.008	0 1.346
3	61	Y	-0.016	-0.016	1.592 2.347
4	62	Y	-0.000463	-0.006	1.25 3.25
5	62	Y	-0.006	-0.006	3.25 5.25
6	62	Y	-0.006	-0.006	5.25 7.25
7	62	Y	-0.006	-0.006	7.25 9.25
8	62	Y	-0.006	-0.000463	9.25 11.25
9	98	Y	-0.008	-0.008	0 0.25
10	99	Y	-0.0003658	-0.008	0.897 2.244
11	31	Y	-0.016	-0.016	1.592 2.347
12	32	Y	-0.0004604	-0.006	1.25 3.25
13	32	Y	-0.006	-0.005	3.25 5.25
14	32	Y	-0.005	-0.005	5.25 7.25
15	32	Y	-0.005	-0.006	7.25 9.25
16	32	Y	-0.006	-0.0004604	9.25 11.25
17	95	Y	-0.008	-0.008	0 0.25
18	96	Y	-0.0003638	-0.008	0.897 2.244
19	97	Y	-0.008	-0.008	0 0.25
20	99	Y	-0.0002785	-0.008	0 1.346
21	1	Y	-0.016	-0.016	1.592 2.347
22	2	Y	-0.0004605	-0.006	1.25 3.25
23	2	Y	-0.006	-0.005	3.25 5.25
24	2	Y	-0.005	-0.005	5.25 7.25
25	2	Y	-0.005	-0.006	7.25 9.25

Member Distributed Loads (BLC 34 : BLC 8 Transient Area Loads) (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	2	Y	-0.006	-0.0004605	9.25
27	59	Y	-0.008	-0.008	0
28	60	Y	-0.0003638	-0.008	0.897
29	94	Y	-0.008	-0.008	0
30	96	Y	-0.0003741	-0.008	0

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	179	177	178	181	Y	Two Way	-0.01
2	178	176	183	184	Y	Two Way	-0.01
3	181	184	182	180	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	179	177	178	181	Y	Two Way	-0.011
2	178	176	183	184	Y	Two Way	-0.011
3	181	184	182	180	Y	Two Way	-0.011

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	24	L	Y	-0.5
2	68	L	Y	-0.5
3	116	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*s ² /ft, k*s ² *ft)]
1	18	L	Y	-0.5
2	166	L	Y	-0.5
3	172	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*s ² /ft, k*s ² *ft)]
1	16	L	Y	-0.5
2	64	L	Y	-0.5
3	112	L	Y	-0.5

PROJECT	147960.002.01 - Darryl H.'s Q		KSC
SUBJECT	Platform Mount Mount Analysis		
DATE	03/25/21	PAGE	OF



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

Tower Type	:	Monopole	
Ground Elevation	Z_s :	494 ft	[ASCE7 Hazard Tool]
Tower Height	:	150.00 ft	
Mount Elevation	:	145.00 ft	
Antenna Elevation	:	147.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	B	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V :	125 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 :	2.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_s :	0.18	
	S_1 :	0.06	
	S_{DS} :	0.19	
	S_{D1} :	0.10	
Gust Factor	G_h :	1.00	[Sec. 16.6]
Pressure Coefficient	K_z :	1.10	[Sec. 2.6.5.2]
Topography Factor	K_{zt} :	1.00	[Sec. 2.6.6]
Elevation Factor	K_e :	0.98	[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} :	2.32 in	[Sec. 2.6.10]
Importance Factor	I_e :	1	[Table 2-3]
Response Coefficient	C_s :	0.096	[Sec. 2.7.7.1]
Amplification	A_s :	2.866667	[Sec. 16.7]
	q_z :	41.02 psf	

PROJECT	147960.002.01 - Darryl H.'s Q		KSC
SUBJECT	Platform Mount Mount Analysis		
DATE	03/25/21	PAGE	OF



Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _N (ft ²)	EPA _T (ft ²)	EPA _{N-Ice} (ft ²)	EPA _{T-Ice} (ft ²)	F _A No Ice (N)	F _A No Ice (T)	F _A Ice (N)	F _A Ice (T)
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	#NUM!	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.00	0.00
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.00	0.00
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.66	1.61	0.07	0.03	0.01	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.00	0.00
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.00	0.00
ERICSSON	RADIO 4424 B25_TMO	1	1.19	1.20	1.71	1.34	2.87	2.41	0.08	0.06	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBII	1	1.36	1.20	1.64	1.32	2.79	2.39	0.07	0.06	0.01	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.36	0.98	3.30	1.73	0.10	0.04	0.02	0.01
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.00	0.00
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	0.5	4.61	1.29	2.70	0.66	3.95	1.75	0.13	0.03	0.00	0.00
ERICSSON	RADIO 4415 B66A	1	1.22	1.20	1.55	0.72	2.66	1.61	0.07	0.03	0.01	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.00	0.00
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	0.5	4.00	1.27	7.99	2.83	10.00	4.59	0.30	0.11	0.00	0.00
ERICSSON	RADIO 4424 B25_TMO	1	1.19	1.20	1.71	1.34	2.87	2.41	0.08	0.06	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBII	1	1.36	1.20	1.64	1.32	2.79	2.39	0.07	0.06	0.01	0.01

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

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
1 105 max	0.682	6	1.792	22	1.213	2	1.977	23	2.421	13	-0.864	92
2 min	-0.475	12	0.453	4	-1.048	8	0.513	6	-2.377	7	-3.335	21
3 57 max	0.468	4	1.801	19	1.163	2	1.902	15	2.452	9	3.39	19
4 min	-0.714	10	0.394	13	-1.067	8	0.471	8	-2.403	3	0.853	2
5 7 max	0.769	5	1.809	14	0.705	2	-1.013	94	1.654	5	0.087	69
6 min	-0.728	11	0.353	8	-0.965	8	-3.887	14	-1.607	11	-0.118	3
7 2 max	0.759	5	1.803	20	0.917	2	-0.863	2	1.547	5	0.077	62
8 min	-0.8	11	0.282	2	-0.676	8	-3.864	20	-1.595	11	-0.127	44
9 52 max	0.686	4	1.79	25	1.083	2	1.85	23	2.253	9	3.374	25
10 min	-0.459	10	0.359	7	-1.168	8	0.477	96	-2.299	3	0.817	7
11 100 max	0.483	6	1.782	16	1.032	2	1.989	15	2.216	13	-0.853	9
12 min	-0.67	12	0.409	9	-1.187	8	0.491	9	-2.267	7	-3.291	15
13 Totals: max	3.8	5	10.599	19	6.112	2						
14 min	-3.8	11	3.179	2	-6.112	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	HSS3.500X0.250	0.497	0	22	0.079	0	21	86.334	90.342	7.844	7.844	1.93	H1-1b		
2 2	HSS2.375X0.188	0.493	6.25	21	0.427	6.25	20	7.36	45.36	2.662	2.662	1.561	H3-6		
3 3	HSS2.375X0.188	0.285	6.25	18	0.42	6.25	14	7.36	45.36	2.662	2.662	1.583	H3-6		
4 4	PL1/4x2 1/2"	0.417	0	44	0.027	0	y 13	17.06	20.25	0.105	1.055	1.667	H1-1b		
5 5	PL1/4x2 1/2"	0.402	0	38	0.027	0	y 3	17.06	20.25	0.105	1.055	1.667	H1-1b		
6 6	HSS3.500X0.250	0.501	0	16	0.075	0	15	86.334	90.342	7.844	7.844	1.925	H1-1b		
7 7	HSS2.375X0.188	0.105	1.083	68	0.035	1.083	3	17.957	45.36	2.662	2.662	2.054	H1-1b		
8 8	PIPE 2.0	0.432	6.375	15	0.054	6.375	24	12.144	32.13	1.872	1.872	3	H1-1b		
9 9	HSS2.375X0.188	0.098	0.208	45	0.031	0.208	13	31.584	45.36	2.662	2.662	1.724	H1-1b		
10 16	PL1/4x2 1/2"	0.167	0	67	0.015	0.146	y 64	18.489	20.25	0.105	1.055	1.069	H1-1b		
11 17	PL1/4x2 1/2"	0.166	0	45	0.015	0.146	y 48	18.489	20.25	0.105	1.055	1.068	H1-1b		
12 18	PL1/4x2 1/2"	0.328	0	20	0.033	0	y 71	18.489	20.25	0.105	1.055	1.193	H1-1b		
13 19	PL1/4x2 1/2"	0.208	0.25	14	0.131	0.104	y 23	18.489	20.25	0.105	1.055	2.107	H1-1b		
14 20	PL1/4x2 1/2"	0.286	0.25	25	0.025	0.104	z 14	18.489	20.25	0.105	1.055	1.127	H1-1b		
15 21	PL1/4x2 1/2"	0.232	0.25	15	0.139	0.104	y 17	18.489	20.25	0.105	1.055	2.186	H1-1b		
16 22	L1.5X1.5X0.16	0.318	3.471	70	0.025	0.075	z 65	4.812	14.723	0.26	0.538	1.5	H2-1		
17 23	L1.5X1.5X0.16	0.192	3.471	23	0.061	0	z 14	4.812	14.723	0.26	0.538	1.5	H2-1		
18 24	L1.5X1.5X0.16	0.318	0.112	43	0.025	3.583	z 48	4.812	14.723	0.26	0.538	1.5	H2-1		
19 25	L1.5X1.5X0.16	0.525	3.494	24	0.015	6.989	y 24	1.265	14.723	0.26	0.411	1.136	H2-1		
20 26	L1.5X1.5X0.16	0.53	3.494	16	0.015	6.989	z 16	1.265	14.723	0.26	0.411	1.136	H2-1		
21 29	PL1/2x4 1/2"	0	0.271	8	0	0.271	y 24	65.52	72.9	0.759	6.834	1.562	H1-1b		
22 30	PL1/2x4 1/2"	0	0.271	8	0	0.271	y 23	65.52	72.9	0.759	6.834	1.562	H1-1b		
23 31	HSS3.500X0.250	0.501	0	15	0.08	0	14	86.334	90.342	7.844	7.844	1.927	H1-1b		
24 32	HSS2.375X0.188	0.495	6.25	14	0.412	6.25	25	7.36	45.36	2.662	2.662	1.56	H3-6		
25 33	HSS2.375X0.188	0.296	6.25	22	0.408	6.25	19	7.36	45.36	2.662	2.662	1.538	H3-6		
26 34	PL1/4x2 1/2"	0.417	0	41	0.018	0	y 5	17.06	20.25	0.105	1.055	1.667	H1-1b		
27 35	PL1/4x2 1/2"	0.403	0	44	0.028	0	y 7	17.06	20.25	0.105	1.055	1.668	H1-1b		
28 36	HSS3.500X0.250	0.504	0	21	0.076	0	20	86.334	90.342	7.844	7.844	1.923	H1-1b		
29 37	HSS2.375X0.188	0.104	1.083	71	0.044	1.083	8	17.957	45.36	2.662	2.662	2.398	H1-1b		
30 38	HSS2.375X0.188	0.098	0.208	38	0.036	0.208	3	31.584	45.36	2.662	2.662	1.013	H1-1b		
31 43	PL1/4x2 1/2"	0.167	0	71	0.015	0.146	y 68	18.489	20.25	0.105	1.055	1.069	H1-1b		
32 44	PL1/4x2 1/2"	0.167	0	49	0.015	0.146	y 39	18.489	20.25	0.105	1.055	1.068	H1-1b		
33 45	PL1/4x2 1/2"	0.326	0	24	0.033	0.146	y 65	18.489	20.25	0.105	1.055	1.181	H1-1b		
34 46	PL1/4x2 1/2"	0.208	0.25	17	0.131	0.104	y 15	18.489	20.25	0.105	1.055	2.206	H1-1b		
35 47	PL1/4x2 1/2"	0.286	0.25	17	0.025	0.104	z 18	18.489	20.25	0.105	1.055	1.126	H1-1b		
36 48	PL1/4x2 1/2"	0.232	0.25	19	0.139	0.104	y 21	18.489	20.25	0.105	1.055	2.189	H1-1b		
37 49	L1.5X1.5X0.16	0.318	3.471	62	0.025	0	z 68	4.812	14.723	0.26	0.538	1.5	H2-1		
38 50	L1.5X1.5X0.16	0.208	3.471	3	0.061	0	z 18	4.812	14.723	0.26	0.538	1.5	H2-1		
39 51	L1.5X1.5X0.16	0.318	3.471	47	0.025	0.075	y 39	4.812	14.723	0.26	0.538	1.5	H2-1		
40 52	L1.5X1.5X0.16	0.525	3.494	16	0.015	6.989	y 16	1.265	14.723	0.26	0.411	1.136	H2-1		
41 53	L1.5X1.5X0.16	0.53	3.494	20	0.015	6.989	z 20	1.265	14.723	0.26	0.411	1.136	H2-1		
42 56	PL1/2x4 1/2"	0	0.271	12	0	0.271	y 16	65.52	72.9	0.759	6.834	1.562	H1-1b		
43 57	PL1/2x4 1/2"	0	0.271	12	0	0.271	y 15	65.52	72.9	0.759	6.834	1.562	H1-1b		
44 58	PL1/4x2 1/2"	0.085	0	18	0.018	0.201	y 7	18.489	20.25	0.105	1.055	1.97	H1-1b		
45 59	PL1/4x2 1/2"	0.091	0	18	0.019	0.201	y 7	18.489	20.25	0.105	1.055	1.97	H1-1b		
46 60	L2x2x3	0.046	1.145	18	0.007	2.244	z 21	18.179	23.393	0.558	1.213	1.153	H2-1		

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
47	61	HSS3.500X0.250	0.499	0	25	0.077	0		18	86.334	90.342	7.844	7.844	1.917	H1-1b						
48	62	HSS2.375X0.188	0.473	6.25	19	0.414	6.25		15	7.36	45.36	2.662	2.662	1.547	H3-6						
49	63	HSS2.375X0.188	0.296	6.25	14	0.406	6.25		21	7.36	45.36	2.662	2.662	1.533	H3-6						
50	64	PL1/4x2 1/2"	0.417	0	49	0.027	0	y	9	17.06	20.25	0.105	1.055	1.666	H1-1b						
51	65	PL1/4x2 1/2"	0.4	0	42	0.018	0	y	11	17.06	20.25	0.105	1.055	1.667	H1-1b						
52	66	HSS3.500X0.250	0.503	0	25	0.074	0		25	86.334	90.342	7.844	7.844	1.911	H1-1b						
53	67	HSS2.375X0.188	0.105	1.083	62	0.031	1.083		13	17.957	45.36	2.662	2.662	1.612	H1-1b						
54	68	HSS2.375X0.188	0.098	0.208	42	0.044	0.208		8	31.584	45.36	2.662	2.662	2.166	H1-1b						
55	73	PL1/4x2 1/2"	0.167	0	63	0.015	0.146	y	72	18.489	20.25	0.105	1.055	1.069	H1-1b						
56	74	PL1/4x2 1/2"	0.166	0	42	0.015	0.146	y	44	18.489	20.25	0.105	1.055	1.069	H1-1b						
57	75	PL1/4x2 1/2"	0.327	0	16	0.033	0	y	67	18.489	20.25	0.105	1.055	1.2	H1-1b						
58	76	PL1/4x2 1/2"	0.208	0.25	21	0.131	0.104	y	19	18.489	20.25	0.105	1.055	2.206	H1-1b						
59	77	PL1/4x2 1/2"	0.288	0.25	21	0.025	0.104	z	22	18.489	20.25	0.105	1.055	1.124	H1-1b						
60	78	PL1/4x2 1/2"	0.23	0.25	23	0.14	0.104	y	25	18.489	20.25	0.105	1.055	2.188	H1-1b						
61	79	L1.5X1.5X0.16	0.318	3.471	66	0.025	0.075	z	73	4.812	14.723	0.26	0.538	1.5	H2-1						
62	80	L1.5X1.5X0.16	0.24	3.471	8	0.061	0	z	22	4.812	14.723	0.26	0.538	1.5	H2-1						
63	81	L1.5X1.5X0.16	0.318	3.471	39	0.025	0	y	44	4.812	14.723	0.26	0.538	1.5	H2-1						
64	82	L1.5X1.5X0.16	0.525	3.494	20	0.015	6.989	y	20	1.265	14.723	0.26	0.411	1.136	H2-1						
65	83	L1.5X1.5X0.16	0.53	3.494	24	0.015	6.989	z	24	1.265	14.723	0.26	0.411	1.136	H2-1						
66	86	PL1/2x4 1/2"	0	0.271	4	0	0.271	y	19	65.52	72.9	0.759	6.834	1.562	H1-1b						
67	87	PL1/2x4 1/2"	0	0.271	4	0	0.271	y	19	65.52	72.9	0.759	6.834	1.562	H1-1b						
68	88	PL1/4x2 1/2"	0.451	0	42	0.029	0	y	6	17.06	20.25	0.105	1.055	1.667	H1-1b						
69	89	PL1/4x2 1/2"	0.442	0	39	0.032	0	y	10	17.06	20.25	0.105	1.055	1.667	H1-1b						
70	90	PL1/4x2 1/2"	0.451	0	46	0.027	0	y	10	17.06	20.25	0.105	1.055	1.667	H1-1b						
71	91	PL1/4x2 1/2"	0.442	0	44	0.043	0	y	2	17.06	20.25	0.105	1.055	1.667	H1-1b						
72	92	PL1/4x2 1/2"	0.454	0	38	0.035	0	y	2	17.06	20.25	0.105	1.055	1.667	H1-1b						
73	93	PL1/4x2 1/2"	0.439	0	47	0.033	0	y	6	17.06	20.25	0.105	1.055	1.667	H1-1b						
74	94	PL1/4x2 1/2"	0.085	0	22	0.02	0.201	y	9	18.489	20.25	0.105	1.055	1.97	H1-1b						
75	95	PL1/4x2 1/2"	0.091	0	22	0.02	0.201	y	9	18.489	20.25	0.105	1.055	1.97	H1-1b						
76	96	L2x2x3	0.046	1.145	22	0.008	2.244	z	14	18.179	23.393	0.558	1.213	1.153	H2-1						
77	97	PL1/4x2 1/2"	0.087	0	14	0.025	0.201	y	2	18.489	20.25	0.105	1.055	1.97	H1-1b						
78	98	PL1/4x2 1/2"	0.093	0	14	0.025	0.201	y	2	18.489	20.25	0.105	1.055	1.97	H1-1b						
79	99	L2x2x3	0.047	1.145	14	0.007	2.244	z	19	18.179	23.393	0.558	1.213	1.153	H2-1						
80	100	PIPE 2.0	0.434	6.375	19	0.054	6.375		16	12.144	32.13	1.872	1.872	3	H1-1b						
81	103	PIPE 2.0	0.43	6.375	24	0.055	6.375		20	12.144	32.13	1.872	1.872	3	H1-1b						

APPENDIX D
ADDITIONAL CALCULATIONS

PROJECT	147960.002.01 - Darryl H.'s Quarry Sit KSC		
SUBJECT	Platform Mount Mount Analysis		
DATE	03/25/21	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	:	1.213	k
Vertical Shear	:	1.809	k
Horizontal Shear	:	0.769	k
Torsion	:	-0.864	k.ft
Moment from Horizontal Forces	:	2.421	k.ft
Moment from Vertical Forces	:	-0.863	k.ft

Bolt Parameters

Bolt Grade	:	A307	
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	:	1.97	k
Force from Horz. Moment	:	4.39	k
Force from Vert. Moment	:	-1.56	k
Shear Load / Bolt	:	0.49	k
Tension Load / Bolt	:	0.30	k
Resultant from Moments / Bolt	:	2.33	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	45.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	10.36	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	25.39%		OKAY
Nominal Shear Stress, F_{nv}	:	24.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	5.53	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	14.38%		OKAY
Unity Check, Combined	:	39.77%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.42%		OKAY

PROJECT	147960.002.01 - Darryl H.'s Quarry Sit KSC			
SUBJECT	Platform Mount Mount Analysis			
DATE	03/25/21	PAGE	1	OF 1



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

[REF: AISC 360-05]

Connecting Member Parameters

Plate Yield Strength, F_y	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	9.00	in	
Plate Width	:	9.00	in	
Plate Thickness	:	0.50	in	
Edge Distance	:	1.06	in	
Gross Tension Area, A_{gt}	:	4.50	in ²	
Gross Shear Area, A_{gv}	:	0.75	in ²	
Net Area for tension, A_{nt}	:	4.16	in ²	
Net Area for shear, A_{nt}	:	3.00	in ²	

Plate Check

Available Tensile Yield	:	145.80	k	[Eq. J4-1]
Available Tensile Rupture	:	180.80	k	[Eq. J4-2]
Unity Check, Plate Tension	:	1.80%		OKAY
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	104.40	k	[Eq. J4-4]
Unity Check, Plate Shear	:	12.13%		OKAY
Available Block Shear, ΦR_n	:	77.40	k	[Eq. J4-5]
Unity Check, Block Shear	:	2.54%		OKAY

Exhibit F

Power Density/RF Emissions Report

**RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL
TO NON-IONIZING EMISSIONS**

T-Mobile Existing Facility

Site ID: CTHA278A

**299 Paxton Way
Glastonbury, Connecticut 06798**

April 21, 2021

EBI Project Number: 6221001882

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	7.22%



April 21, 2021

T-Mobile

Attn: Jason Overbey, RF Manager

35 Griffin Road South

Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTHA278A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **299 Paxton Way in Glastonbury, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 population 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 population 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. 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 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 and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 299 Paxton Way in Glastonbury, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.



- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 9) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 10) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 11) The antennas used in this modeling are the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.



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- 12) The antenna mounting height centerline of the proposed antennas is 147 feet above ground level (AGL).
- 13) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 14) All calculations were done with respect to uncontrolled / general population threshold limits.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna AI MPE %:	0.84%	Antenna BI MPE %:	0.84%	Antenna CI MPE %:	0.84%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,569.87	ERP (W):	12,569.87	ERP (W):	12,569.87
Antenna A2 MPE %:	3.31%	Antenna B2 MPE %:	3.31%	Antenna C2 MPE %:	3.31%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A3 MPE %:	2.33%	Antenna B3 MPE %:	2.33%	Antenna C3 MPE %:	2.33%



Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	6.48%
Sprint	0.74%
Site Total MPE % :	7.22%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	6.48%
T-Mobile Sector B Total:	6.48%
T-Mobile Sector C Total:	6.48%
Site Total MPE % :	7.22%

T-Mobile Maximum MPE Power Values (Sector A)							
T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz LTE	2	2334.27	147.0	8.44	2100 MHz LTE	1000	0.84%
T-Mobile 600 MHz LTE	2	591.73	147.0	2.14	600 MHz LTE	400	0.54%
T-Mobile 600 MHz NR	1	1577.94	147.0	2.85	600 MHz NR	400	0.71%
T-Mobile 700 MHz LTE	2	695.22	147.0	2.51	700 MHz LTE	467	0.54%
T-Mobile 1900 MHz GSM	4	1052.26	147.0	7.61	1900 MHz GSM	1000	0.76%
T-Mobile 1900 MHz LTE	2	2104.51	147.0	7.61	1900 MHz LTE	1000	0.76%
T-Mobile 2500 MHz LTE	1	6444.38	147.0	11.65	2500 MHz LTE	1000	1.17%
T-Mobile 2500 MHz NR	1	6444.38	147.0	11.65	2500 MHz NR	1000	1.17%
						Total:	6.48%

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	6.48%
Sector B:	6.48%
Sector C:	6.48%
T-Mobile Maximum MPE % (Sector A):	6.48%
Site Total:	7.22%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **7.22%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.