



1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

April 27, 2022

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

RE: **Notice of Exempt Modification for AT&T
Crown Site ID #807133; AT&T Site ID#CTL02122
50 Rockland Rd Norwalk, CT 06854
Latitude: 41.081788 / Longitude: -73.430422**

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 160-foot mount on the existing 182-foot Monopole Tower located at 50 Rockland Rd Norwalk. The property and tower are owned by Crown Castle. AT&T now intends to replace nine (9) antennas and add (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

(2) CCI - HPA-65R-BUU-H6 Antennas (**REMOVE**), (2) QUINTEL - QD6616-7 Antennas (**REPLACE**)

(2) CCI - OPA65R-BU6DA Antennas (**REMOVE**), (2) CCI - DMP65R-BU6DA Antennas (**REPLACE**)

(2) QUNITEL - QS66512-2 Antennas (**REMOVE**), (2) ERICSSON - AIR6449 B77D+ AIR6419 B77G ANTENNAS (antennas stacked) (**REPLACE**)

(1) ANDREW - SBNHH-1D65A Antennas (**REMOVE**), (1) QUINTEL - QD4616-7 Antennas (**REPLACE**)

(1) CCI - OPA65R-BU4DA Antennas (**REMOVE**), (1) CI - DMP65R-BU4DA Antennas (**REPLACE**)

(1) QUINTEL - QS46512-2 Antennas (**REMOVE**), (1) ERICSSON - AIR6449 B77D+ AIR6419 B77G Antennas (antennas stacked) (**REPLACE**)



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(3) ERICSSON - 4478 B5 RADIOS (**REMOVE**), (3) ERICSSON - 4449 B5/B12 RADIOS (**REPLACE**)

REMOVE

(3) ERICSSON - RRUS11 B12 RADIOS
(4) 8AWG CABLES (13/16")

RELOCATE

(3) ERICSSON - 4426 B66 RADIOS
(3) ERICSSON - 4478 B14 RADIO
(3) ERICSSON - RRUS-32 B2 RAD
(3) ERICSSON - RRUS-3

INSTALL

(3) ERICSSON - AIR6449 B77D+ AIR6419 B77G ANTENNAS (antennas stacked)
(3) PIPE MOUNTS
Y-CABLES
(4) 4AWG DC CABLES (1-1/8")

Ground:

REMOVE:

(1) XMU
(1) 6630

INSTALL:

(4) RECTIFIERS
(6) APTDC-BDFDM-DB
(1) 6648-Xcede
(3) ERICSSON - RRUS E2 B29 RADIOS

The Facility was approved by the Connecticut Siting Council by way of a Certificate of Environmental Compatibility on April 1, 1987.

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 Harry W. Rilling, Mayor of the City of Norwalk, Steven Kleppin, Director of Planning and Zoning for the City of Norwalk. A copy was also sent to the property owner.



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

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

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:

Harry W. Rilling, Mayor (*Via Federal Express*)
125 East Ave.
Norwalk, CT 06856
(203) 854-7701

Steven Kleppin, Director of Planning and Zoning (*Via Federal Express*)
125 East Ave.
Room 129
Norwalk, CT 06856
(203) 854-7780

Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Thursday, April 28, 2022 11:01 AM
To: Colin Robinson
Subject: FedEx Shipment 776695989683: Your package has been delivered



Hi. Your package was
delivered Thu, 04/28/2022 at
11:00am.



Delivered to 125 East Ave., NORWALK, CT 06856
Received by V.VULMA

OBTAIN PROOF OF DELIVERY

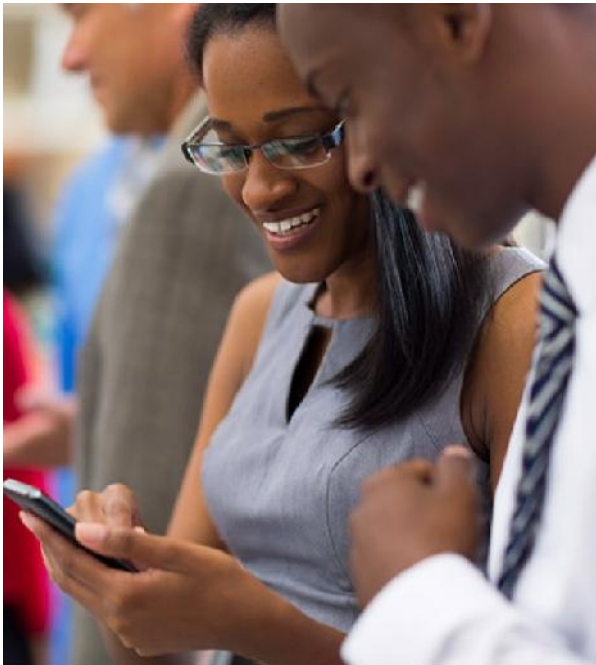
TRACKING NUMBER [776695989683](#)

FROM NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

TO City of Norwalk
Harry W. Rilling, Mayor

125 East Ave.
NORWALK, CT, US, 06856

REFERENCE	100788 NB+C
SHIPPER REFERENCE	100788 NB+C
SHIP DATE	Tue 4/26/2022 06:20 PM
DELIVERED TO	Shipping/Receiving
PACKAGING TYPE	FedEx Envelope
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	NORWALK, CT, US, 06856
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Express Saver



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Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Thursday, April 28, 2022 11:01 AM
To: Colin Robinson
Subject: FedEx Shipment 776696021965: Your package has been delivered



Hi. Your package was
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11:00am.



Delivered to 125 East Ave., NORWALK, CT 06856
Received by V.VULMA

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [776696021965](#)

FROM NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

TO City of Norwalk
Steven Kleppin, Director

125 East Ave.
Room 129 Planning and Zoning
NORWALK, CT, US, 06856

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Exhibit A

Original Facility Approval

DOCKET NO. 73

AN APPLICATION OF METRO MOBILE CTS OF
FAIRFIELD COUNTY, INC., FOR CERTIFICATES
OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC
NEED FOR THE CONSTRUCTION, MAINTENANCE,
AND OPERATION OF THREE FACILITIES
CONSISTING OF TELECOMMUNICATIONS TOWERS
AND ASSOCIATED EQUIPMENT FOR THE PURPOSE
OF PROVIDING DOMESTIC PUBLIC CELLULAR
RADIO TELECOMMUNICATIONS SERVICE IN THE
TOWN OF GREENWICH AND IN THE CITIES OF
NORWALK AND STAMFORD, CONNECTICUT.

: CONNECTICUT SITING
COUNCIL

:
April 1, 1987

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Connecticut Siting Council (Council) hereby directs that a Certificate of Environmental Compatibility and Public Need, as provided by Section 16-50k of the General Statutes of Connecticut (CGS), be issued to Metro Mobile CTS of Fairfield County, Inc., for the construction, operation, and maintenance of cellular mobile telecommunications equipment in the Town of Greenwich, and the Cities of Norwalk and Stamford, Connecticut.

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

1. The Norwalk tower, including antennas, shall be no taller than necessary to provide the proposed service, and in no event shall exceed 193 feet.
2. A fence not lower than eight feet shall surround the Norwalk tower.
3. Unless necessary to comply with condition number four, below, no lights shall be installed on the Norwalk tower.
4. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations.

5. The certificate holder shall prepare a development and management (D&M) plan for the Norwalk site in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall provide for evergreen screening around the perimeter of the fence at this site, and for other landscaping to improve the appearance of the facility.
6. The receive antennas at the Greenwich and Stamford sites shall be mounted below the high points of the facades of their respective buildings to minimize their visibility.
7. No construction activities shall take place outside the hours of 7:00 A.M. to 7:00 P.M., Monday through Saturday.
8. The certificate holder or its successor shall notify the Council if and when directional antennas or any equipment other than that listed in this application is added to these facilities.
9. The certificate holder or its successor shall permit public or private entities to share space on the Norwalk tower, for due consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
10. If these facilities do not provide or permanently cease to provide cellular service following completion of construction, this Decision and Order shall be void, and the tower and all associated equipment in this application shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.

11. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the issuance of this Decision and Order, or within three years of the completion of any appeal taken in this Decision.
12. The certificate holder shall comply with any future radio frequency (RF) standards promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facilities granted in this Decision shall continue to be in compliance with such standards.

Pursuant to CGS section 16-50p, we hereby direct that a copy of the Decision and Order be served on each person listed below. A notice of the issuance shall be published in the Stamford Advocate, the Greenwich Times, the Norwalk Hour, and the Bridgeport Post.

The parties to the proceeding are:

Mr. Armand Mascioli
General Manager
Metro Mobile CTS of Fairfield
County, Inc.
5 Eversley Avenue
Norwalk, Connecticut 06855

(Applicant)

Howard L. Slater, Esquire
Byrne, Slater, Sandler,
Shulman & Rouse, P.C.
330 Main Street
P.O. Box 3216
Hartford, Connecticut 06103

(its attorney)

Richard Rubin, Esquire
Fleischman and Walsh, P.C.
1725 N Street, N.W.
Washington, D.C. 20036

(its attorney)

Southern New England
Telephone Company

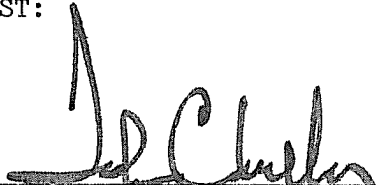
(its attorney)

Mr. Peter J. Tyrrell
Senior Attorney
Southern New England
Telephone Company
227 Church Street
New Haven, Connecticut 06506

STATE OF CONNECTICUT)
 :
COUNTY OF HARTFORD) ss. New Britain, April 1, 1987

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.


ATTEST:



John C. Kelly
Executive Director
Connecticut Siting Council

I certify that a copy of the opinion and decision and order have been forwarded by mail to all parties of record on April 3, 1987.

ATTEST:



Robert K. Erling
Siting Analyst
Connecticut Siting Council

Exhibit B

Property Card

50 ROCKLAND RD

Location 50 ROCKLAND RD

Mblu 5/ 82/ 58/ 0/

Acct# 25665

Owner CROWN ATLANTIC COMPANY
LLC

Assessment \$3,369,910

Appraisal \$4,814,150

PID 25665

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$4,161,500	\$652,650	\$4,814,150

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$2,913,050	\$456,860	\$3,369,910

Owner of Record

Owner CROWN ATLANTIC COMPANY LLC
Co-Owner
Address PMB 353
4017 WASHINGTON RD
McMURRAY, PA 15317-0000

Sale Price \$1,600,000
Certificate
Book & Page 3701/331
Sale Date 04/16/1999
Instrument

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
CROWN ATLANTIC COMPANY LLC	\$1,600,000		3701/331		04/16/1999
CELLCO PARTNERSHIP,	\$1,020,000		3489/348		04/03/1998
DEVIVO MARIO + WENCHE	\$0		0/0		

Building Information

Building 1 : Section 1

Year Built: 1987
Living Area: 21,115
Replacement Cost: \$1,257,359

Building Percent Good: 66
Replacement Cost
Less Depreciation: \$829,860

Building Attributes

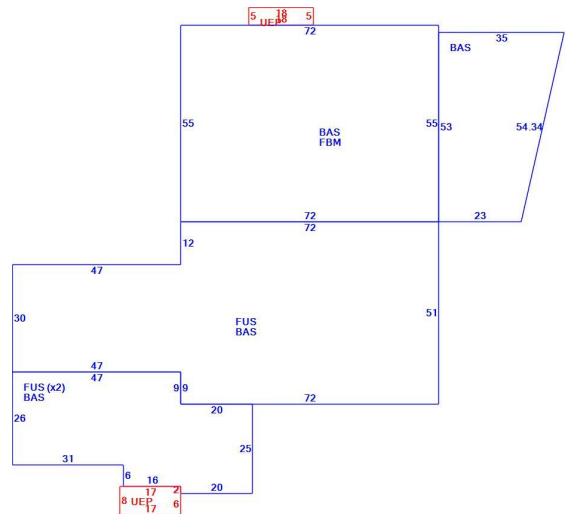
Field	Description
Style:	Light Indust
Model:	Industrial
Grade	C+
Stories:	3.00
Occupancy	1.00
Exterior Wall 1	Concrete
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Rolled Compos
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Concrete
Heating Fuel	Gas
Heating Type	Forced Air
AC Percent	60
Heat Percent	100
Bldg Use	Industrial
Total Rooms	0
Bedrooms	0
Full Baths	0
Half Baths	6
Extra Fixtures	0
FBM Area	
Heat/AC	Heat/AC Pkg
Frame	Masonry
Plumbing	Average
Foundation	Slab
Partitions	Average
Wall Height	13.00
% Sprinkler	40.00
# of Heat Systems	1
Insulation	Typical

Building Photo



(<http://images.vgsi.com/photos/NorwalkCTPhotos//00\00\72\74.jpg>)

Building Layout



(ParcelSketch.ashx?pid=25665&bid=25665)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	12,397	12,397
FUS	Finished Upper Story	8,718	8,718
FBM	Finished Basement	3,960	0
UEP	Utility Enclosed Porch	226	0
		25,301	21,115

Extra Features

Code	Description	Size	Value	Bldg #
ELV1	Commercial	3.00 STOP	\$56,250	1
A/C	Air Conditioning	12669.00 S.F.	\$38,010	1
SPR	Sprinklers	8446.00 S.F.	\$31,670	1

Land

Land Use		Land Line Valuation	
Use Code	301	Size (Acres)	0.82
Description	Industrial	Frontage	
Zone	RI	Depth	
Neighborhood	C530	Assessed Value	\$456,860
		Appraised Value	\$652,650

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving Asph.			16900.00 S.F.	\$21,970	1
FN6	Fence 6'			450.00 L.F.	\$4,090	1
SHD4	Cell Equip	FR	Frame	128.00 S.F.	\$12,800	1
CEL1	Cell Tower		Steel	5.00 UNITS	\$750,000	1
SHD4	Cell Equip	FR	Frame	128.00 S.F.	\$12,800	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$4,161,500	\$652,650	\$4,814,150
2019	\$4,161,500	\$652,650	\$4,814,150
2018	\$4,161,500	\$652,650	\$4,814,150

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$2,913,050	\$456,860	\$3,369,910
2019	\$2,913,040	\$456,860	\$3,369,900
2018	\$2,913,040	\$456,860	\$3,369,900

Exhibit C

Construction Drawings



AT&T SITE NUMBER: CTL02122
AT&T SITE NAME: NORWALK ROCKLAND RD
AT&T FA CODE: 10035123
AT&T PACE NUMBER: MRCTB053094, MRCTB058169, MRCTB057752, MRCTB057761, MRCTB051760, MRCTB052361, MRCTB051772
AT&T PROJECT: LTE 7C, 4TX4RX SOFTWARE RETROFIT, 5G NR ACTIVATION, 5G NR 1SR CBAND, 4TXRX ANTENNA RETROFIT

BUSINESS UNIT #: 807133
SITE ADDRESS: 50 ROCKLAND ROAD NORWALK OFC - MTSO SO NORWALK, CT 06854
COUNTY: FAIRFIELD
SITE TYPE: SELF-SUPPORT TOWER
TOWER HEIGHT: 182'-0"



AT&T SITE NUMBER: CTL02122

BU #: 807133
BRG 134 943057

50 ROCKLAND ROAD
 NORWALK OFC - MTSO
 SO NORWALK, CT 06854

EXISTING
 182'-0" SELF-SUPPORT
 TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DWG./QA
A	11/19/21	GAC	PRELIMINARY REVIEW	JHW
B	12/08/21	GAC	PRELIMINARY REVIEW	JHW
0	4/12/22	GAC	CONSTRUCTION	JHW

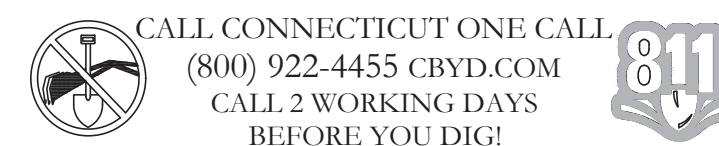
SITE INFORMATION

CROWN CASTLE USA INC. BRG 134 943057
 SITE NAME:
 SITE ADDRESS: 50 ROCKLAND ROAD NORWALK OFC - MTSO SO NORWALK, CT 06854
 COUNTY: FAIRFIELD
 MAP/PARCEL #: 5-82-58-0
 AREA OF CONSTRUCTION: EXISTING
 LATITUDE: 41.081788°
 LONGITUDE: -73.430422°
 LAT/LONG TYPE: NAD83
 GROUND ELEVATION: 61'
 CURRENT ZONING: RI
 JURISDICTION: CONNECTICUT SITING COUNCIL
 OCCUPANCY CLASSIFICATION: U
 TYPE OF CONSTRUCTION: IIB
 A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
 PROPERTY OWNER: CROWN ATLANTIC COMPANY LLC 4017 WASHINGTON RD MCMURRY, PA 15317
 TOWER OWNER: CROWN CASTLE USA INC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
 CARRIER/APPLICANT: AT&T TOWER ASSET GROUP 575 MOROSGO DRIVE ATLANTA, GA 30324-3300
 ELECTRIC PROVIDER: NORTHEAST UTILITIES (800) 286-5000
 TELCO PROVIDER: LIGHTOWER (855) 91-FIBER

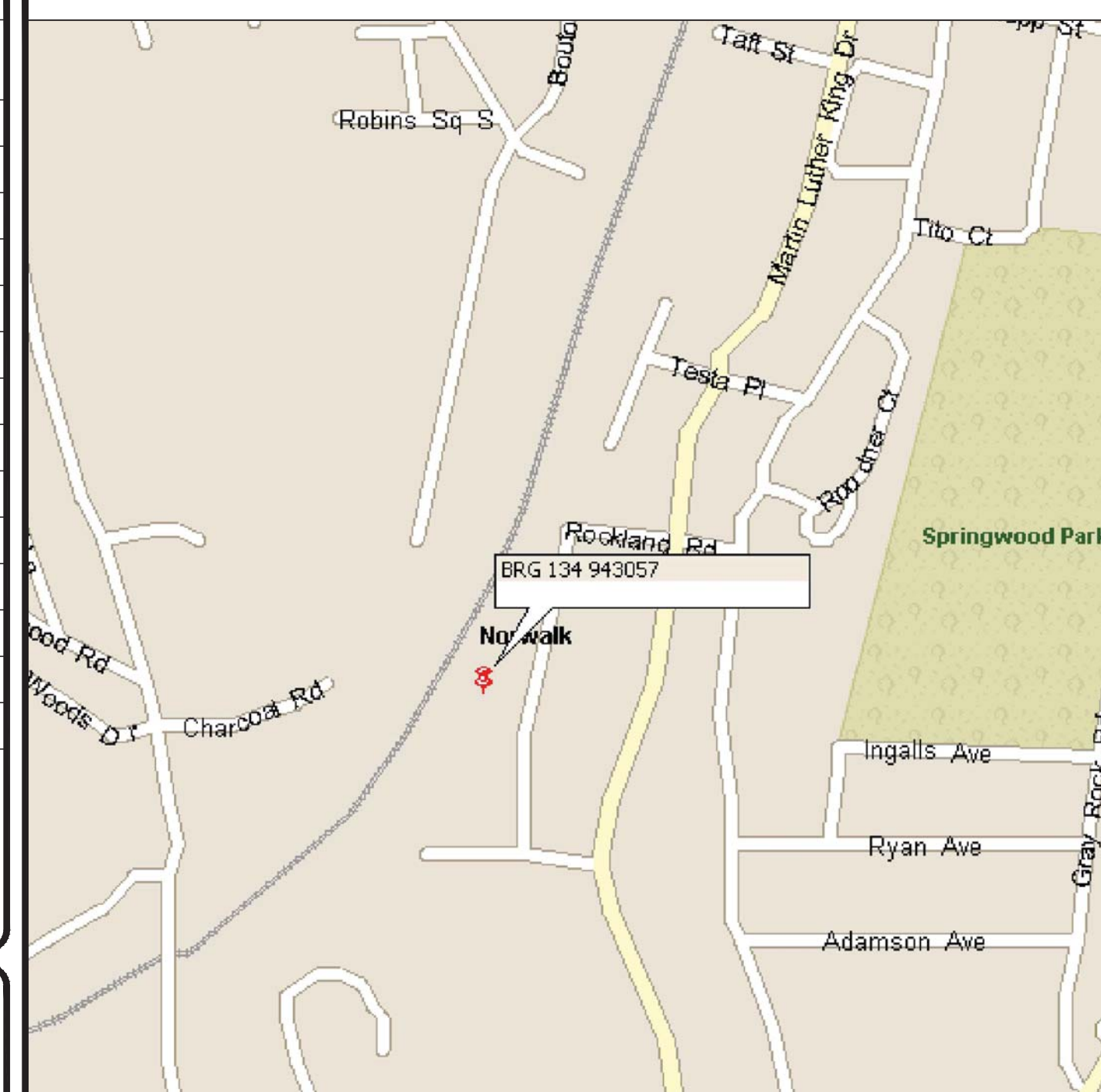
DRAWING INDEX

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

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



LOCATION MAP



NO SCALE

SITE PHOTO



PROJECT TEAM

A&E FIRM: B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS MARVIN.PHILLIPS@BTGRP.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS: 3530 TORINGDON WAY, SUITE 300 CHARLOTTE, NC 28277
 PAUL PEDICONE - PROJECT MANAGER PAUL.PEDICONE@CROWNCastle.COM
 JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCastle.COM

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

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:

- REMOVE (2) CCI - HPA-65R-BUU-H6 ANTENNAS
- REMOVE (2) CCI - OPA65R-BU6DA ANTENNAS
- REMOVE (2) QUNITEL - QS66512-2 ANTENNAS
- REMOVE (1) ANDREW - SBNHH-1D65A ANTENNAS
- REMOVE (1) CCI - OPA65R-BU4DA ANTENNAS
- REMOVE (1) QUNTEL - QS46512-2 ANTENNAS
- REMOVE (3) ERICSSON - 4478 B5 RADIOS
- REMOVE (3) ERICSSON - RRUS11 B12 RADIOS
- REMOVE (4) 8AWG CABLES (13/16")
- RELOCATE (3) ERICSSON - 4426 B66 RADIOS
- RELOCATE (3) ERICSSON - 4478 B14 RADIOS
- RELOCATE (3) ERICSSON - RRUS-32 B2 RADIOS
- RELOCATE (3) ERICSSON - RRUS-32 B30 RADIOS
- INSTALL (2) QUNTEL - QD6616-7 ANTENNAS
- INSTALL (6) ERICSSON - AIR6449 B77D+ AIR6419 B77G ANTENNAS
- INSTALL (2) CCI - DMP65R-BU6DA ANTENNAS
- INSTALL (1) QUNTEL - QD4616-7 ANTENNAS
- INSTALL (1) CCI - DMP65R-BU4DA ANTENNAS
- INSTALL (3) ERICSSON - 4449 B5/B12 RADIOS
- INSTALL (3) PIPE MOUNTS W/ASSOCIATED HARDWARE
- INSTALL Y-CABLES FOR DUAL BAND RADIOS
- INSTALL (4) 4AWG DC CABLES (1-1/8")

GROUND SCOPE OF WORK:

- REMOVE (1) XMU
- REMOVE (1) 6630
- INSTALL (4) RECTIFIERS IN EXISTING POWER PLANT
- INSTALL (6) APTDC-BDFDM-DB
- INSTALL (1) 6648-Xcode
- INSTALL (3) ERICSSON - RRUS E2 B29 RADIOS

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	2015 IBC W/ AMENDMENTS
MECHANICAL	2015 IMC W/ AMENDMENTS
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GROUP
DATED:	10/22/21
MOUNT ANALYSIS:	TEP
DATED:	10/20/21
RFDS REVISION:	PRELIMINARY
DATED:	2/17/22
ORDER ID:	556500
REVISION:	3



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

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

SHEET NUMBER:

T-1

REVISION:

0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GREENFIELD GROUNDING NOTES:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

ABBREVIATIONS:

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

APWA UNIFORM COLOR CODE:


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



575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277



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

AT&T SITE NUMBER:
CTL02122


BU #: 807133
BRG 134 943057

50 ROCKLAND ROAD
NORWALK OFC - MTSO
SO NORWALK, CT 06854

EXISTING
182'-0" SELF-SUPPORT
TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/19/21	GAC	PRELIMINARY REVIEW	JHW
B	12/08/21	GAC	PRELIMINARY REVIEW	JHW
0	4/12/22	GAC	CONSTRUCTION	JHW



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



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182'-0" SELF-SUPPORT
TOWER

ISSUED FOR:

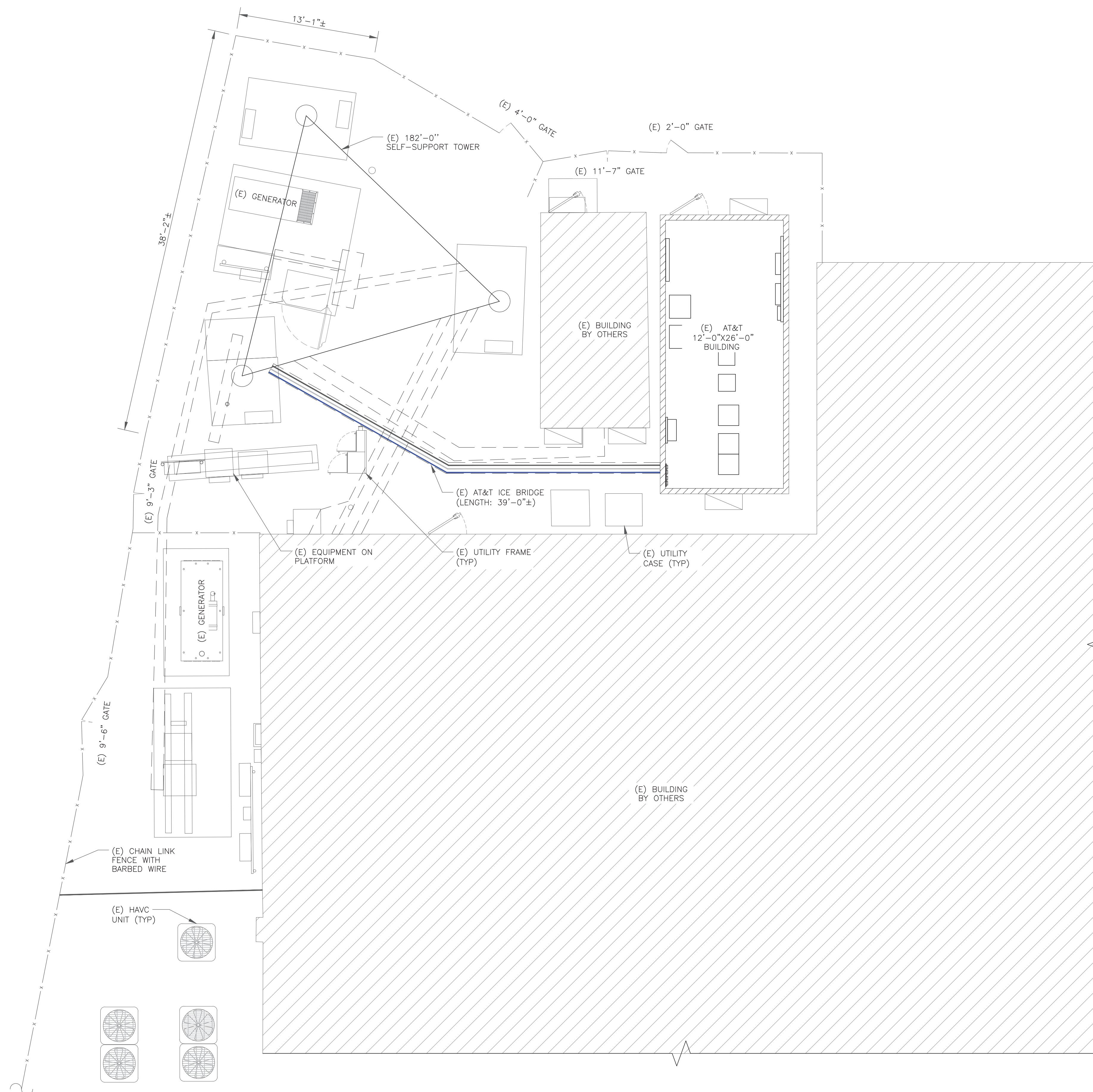
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1 SITE PLAN
SCALE: 3/16"=1'-0" (FULL SIZE)
3/32"=1'-0" (11x17)





575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277



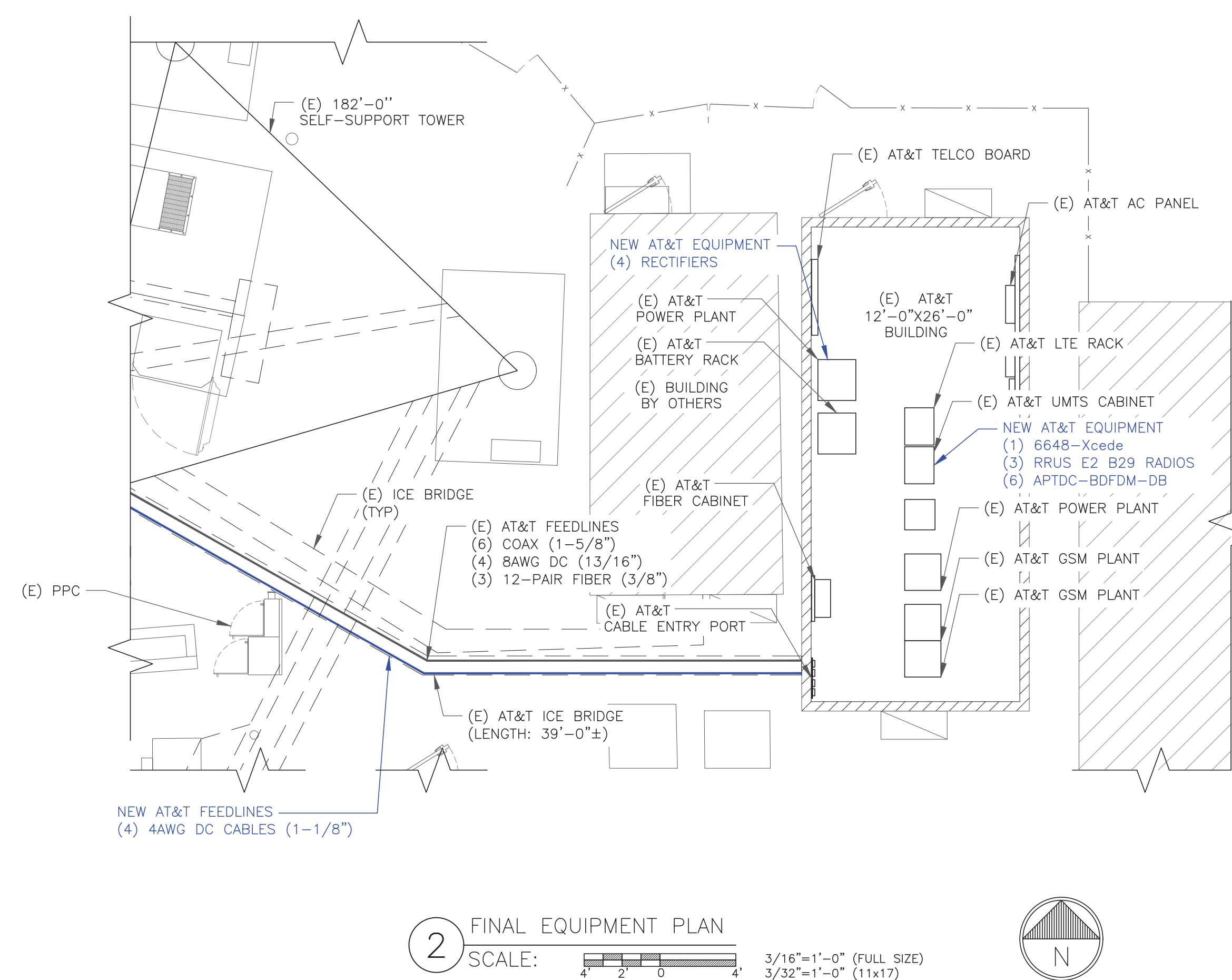
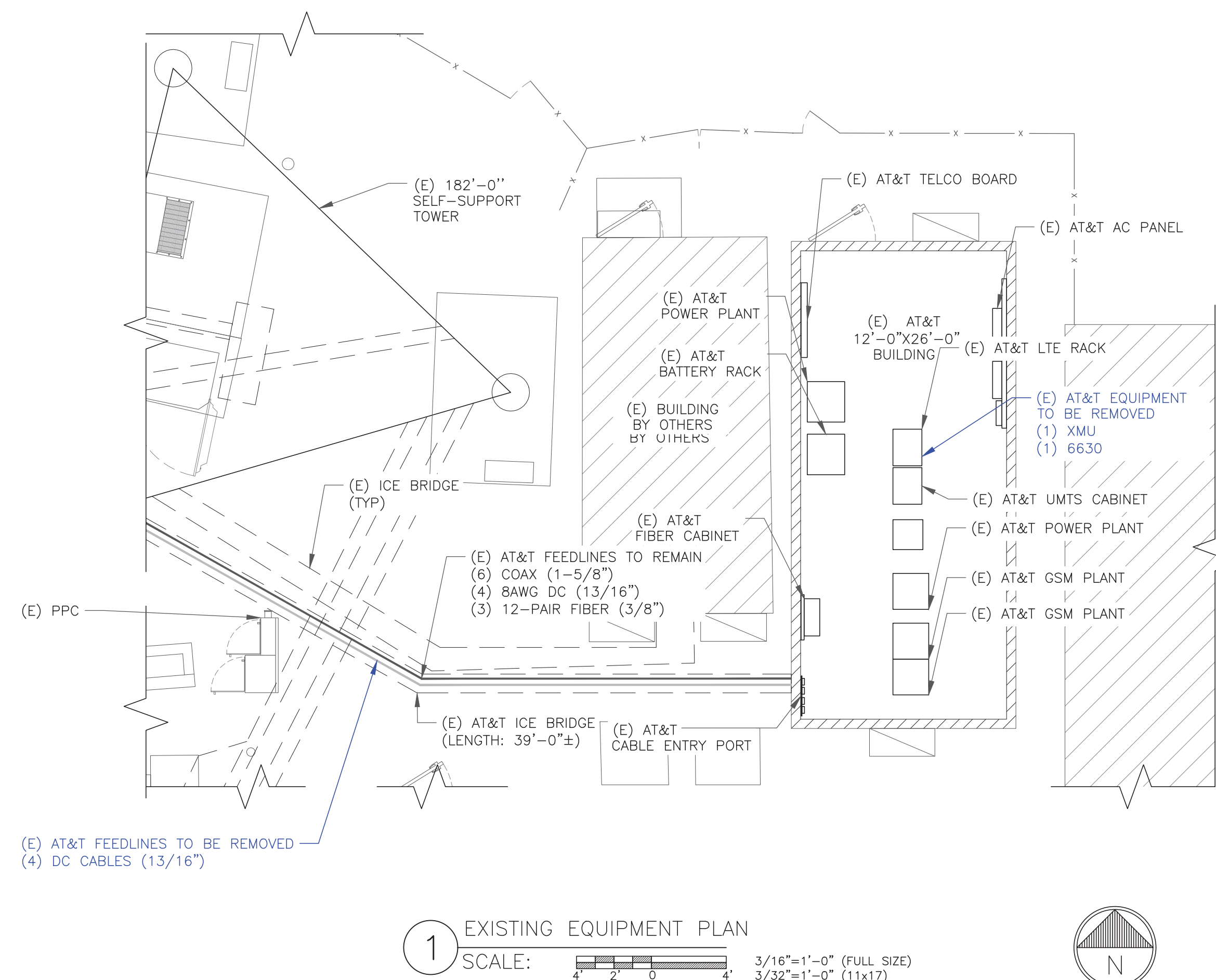
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TOWER



GROUND SCOPE OF WORK:

- REMOVE (1) XMU
- REMOVE (1) 6630
- INSTALL (4) RECTIFIERS IN EXISTING POWER PLANT
- INSTALL (6) APTDC-BDFDM-DB
- INSTALL (1) 6648-Xcede
- INSTALL (3) ERICSSON - RRUS E2 B29 RADIOS

NOTE:

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

ISSUED FOR:

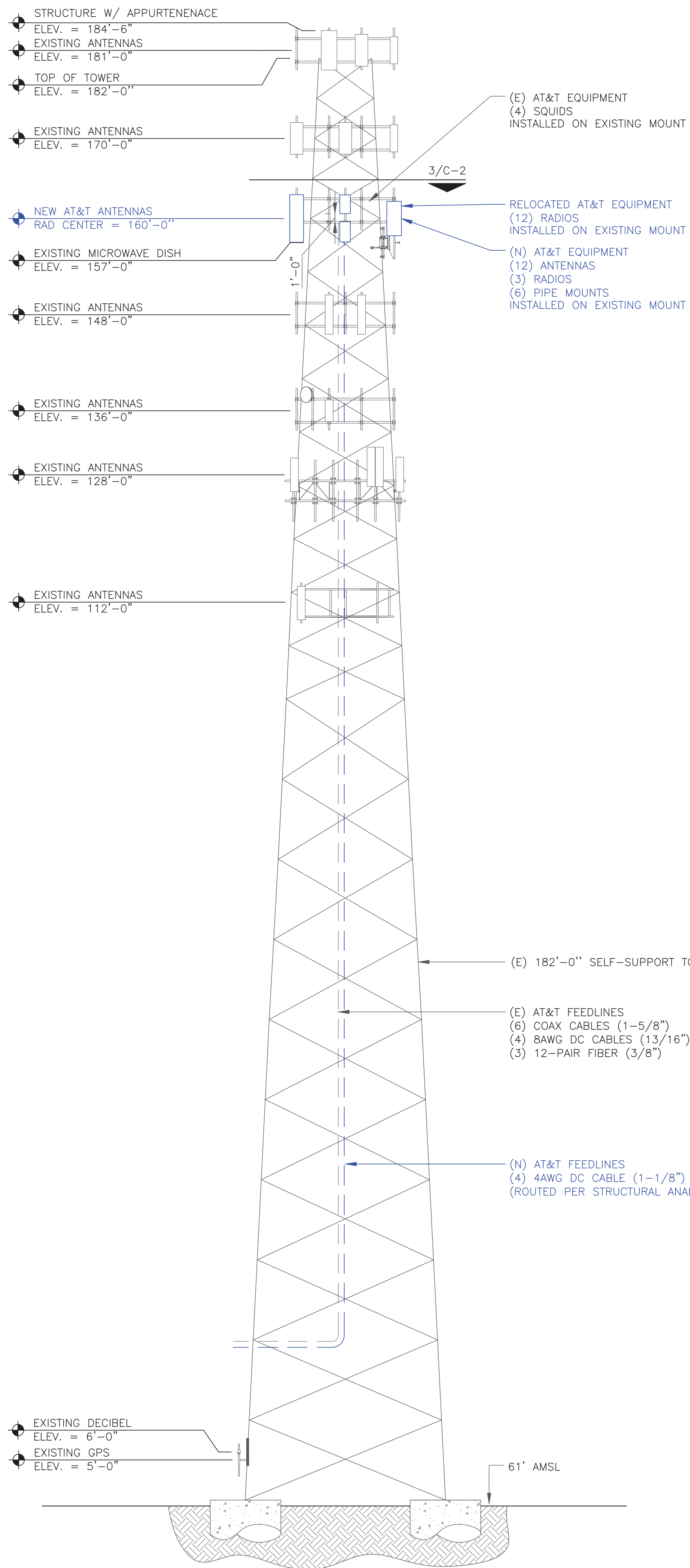
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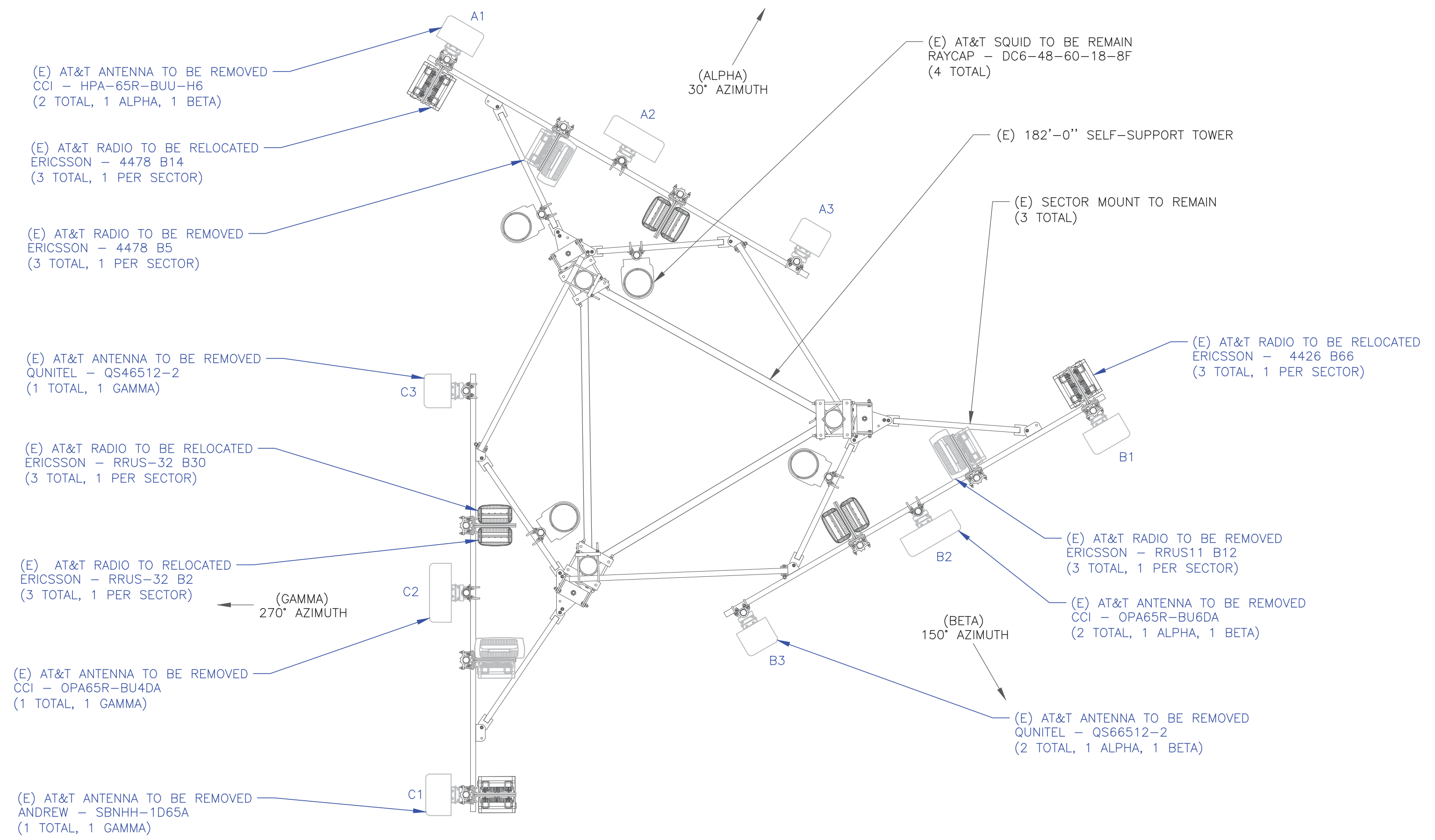
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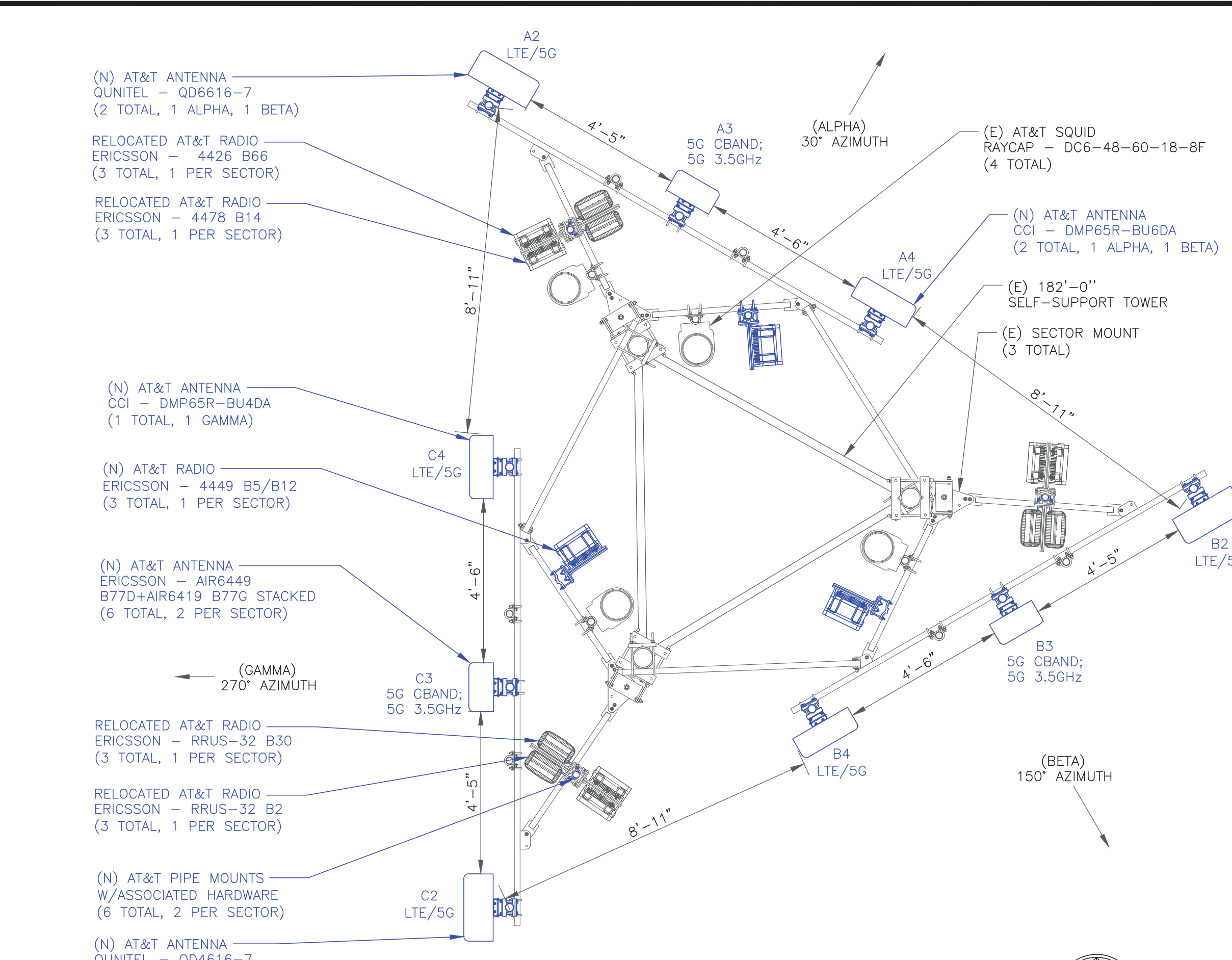
SHEET NUMBER: **C-1.2** REVISION: **0**



1 FINAL ELEVATION
SCALE: NOT TO SCALE



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



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

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

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

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

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



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CTL02122

BU #: **807133**
BRG **134 943057**

50 ROCKLAND ROAD
NORWALK OFC - MTSO
SO NORWALK, CT 06854

EXISTING
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TOWER

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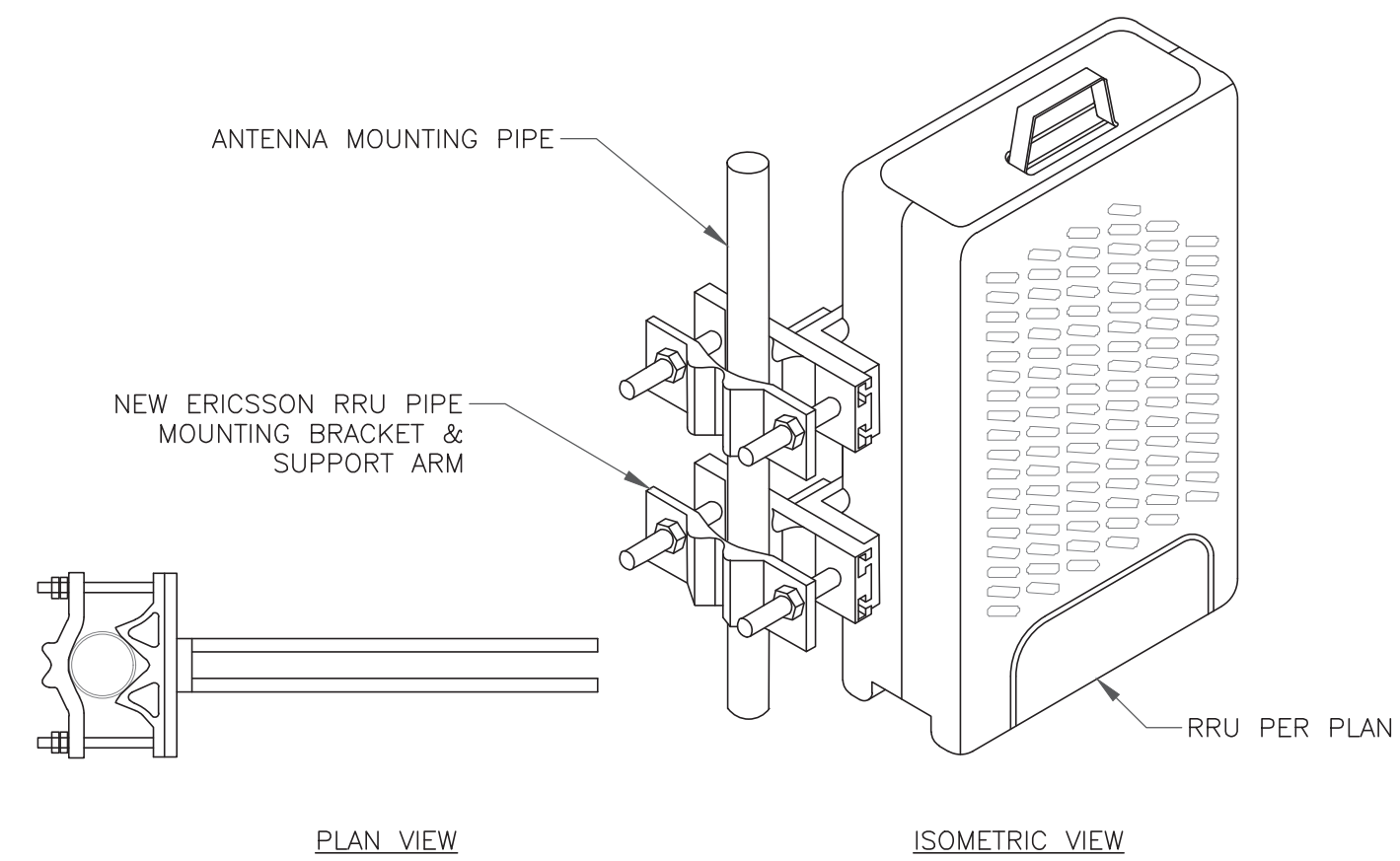
FINAL ANTENNA AND FEEDLINE SCHEDULE

POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	SURGE PROTECTION	DC/FIBER CABLES	RRHs QTY & MODEL	LOCATION	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE		
ALPHA SECTOR																				
A2	LTE/5G	NEW	30°	QUNITEL – QD6616-7	160'-0"	-	3°/3°/2°/7°/2°/2°/7°	1-5/8"	211'-0"	2	-	(4)(E) DC6-48-60-18-8F	(4)(E) 8AWG DC (3)(E) 12-PAIR FIBER (4)(N) 4AWG DC	(1)(E) ERICSSON – 4478 B14 (1)(E) ERICSSON – 4426 B66 (1)(E) ERICSSON – RRUS-32 B2 (1)(N) ERICSSON – RRUS-E2 B29	TOWER TOWER TOWER GROUND	N	N	N		
A3	5G CBAND; 5G 3.5 GHz	NEW	30°	ERICSSON – AIR6449 B77D ERICSSON – AIR6419 B77G	160'-0"	-	0°/0°	-	-	-	-			-	-	-	-	N	N	N
A4	LTE/5G	NEW	30°	CCI – DMP65R-BU6DA	160'-0"	-	10°/0°/10°	-	-	-	-			-	-	(1)(N) ERICSSON – 4449 B5/B12 (1)(E) ERICSSON – RRUS-32 B30	TOWER TOWER	N	N	N
BETA SECTOR																				
B2	LTE/5G	NEW	150°	QUNITEL – QD6616-7	160'-0"	-	3°/3°/2°/3°/2°/2°/3°	1-5/8"	211'-0"	2	-	(4)(E) DC6-48-60-18-8F	(4)(E) 8AWG DC (3)(E) 12-PAIR FIBER (4)(N) 4AWG DC	(1)(E) ERICSSON – 4478 B14 (1)(E) ERICSSON – 4426 B66 (1)(E) ERICSSON – RRUS-32 B2 (1)(N) ERICSSON – RRUS-E2 B29	TOWER TOWER TOWER GROUND	N	N	N		
B3	5G CBAND; 5G 3.5 GHz	NEW	150°	ERICSSON – AIR6449 B77D ERICSSON – AIR6419 B77G	160'-0"	-	0°/0°	-	-	-	-			-	-	-	-	N	N	N
B4	LTE/5G	NEW	150°	CCI – DMP65R-BU6DA	160'-0"	-	2°/0°/2°	-	-	-	-			-	-	(1)(N) ERICSSON – 4449 B5/B12 (1)(E) ERICSSON – RRUS-32 B30	TOWER TOWER	N	N	N
GAMMA SECTOR																				
C2	LTE/5G	NEW	270°	QUNITEL – QD4616-7	160'-0"	-	3°/3°/2°/7°/2°/2°/7°	1-5/8"	211'-0"	2	-	(4)(E) DC6-48-60-18-8F	(4)(E) 8AWG DC (3)(E) 12-PAIR FIBER (4)(N) 4AWG DC	(1)(E) ERICSSON – 4478 B14 (1)(E) ERICSSON – 4426 B66 (1)(E) ERICSSON – RRUS-32 B2 (1)(N) ERICSSON – RRUS-E2 B29	TOWER TOWER TOWER GROUND	N	N	N		
C3	5G CBAND; 5G 3.5 GHz	NEW	270°	ERICSSON – AIR6449 B77D ERICSSON – AIR6419 B77G	160'-0"	-	0°/0°	-	-	-	-			-	-	-	-	N	N	N
C4	LTE/5G	NEW	270°	CCI – DMP65R-BU4DA	160'-0"	-	8°/0°/8°	-	-	-	-			-	-	(1)(N) ERICSSON – 4449 B5/B12 (1)(E) ERICSSON – RRUS-32 B30	TOWER TOWER	N	N	N

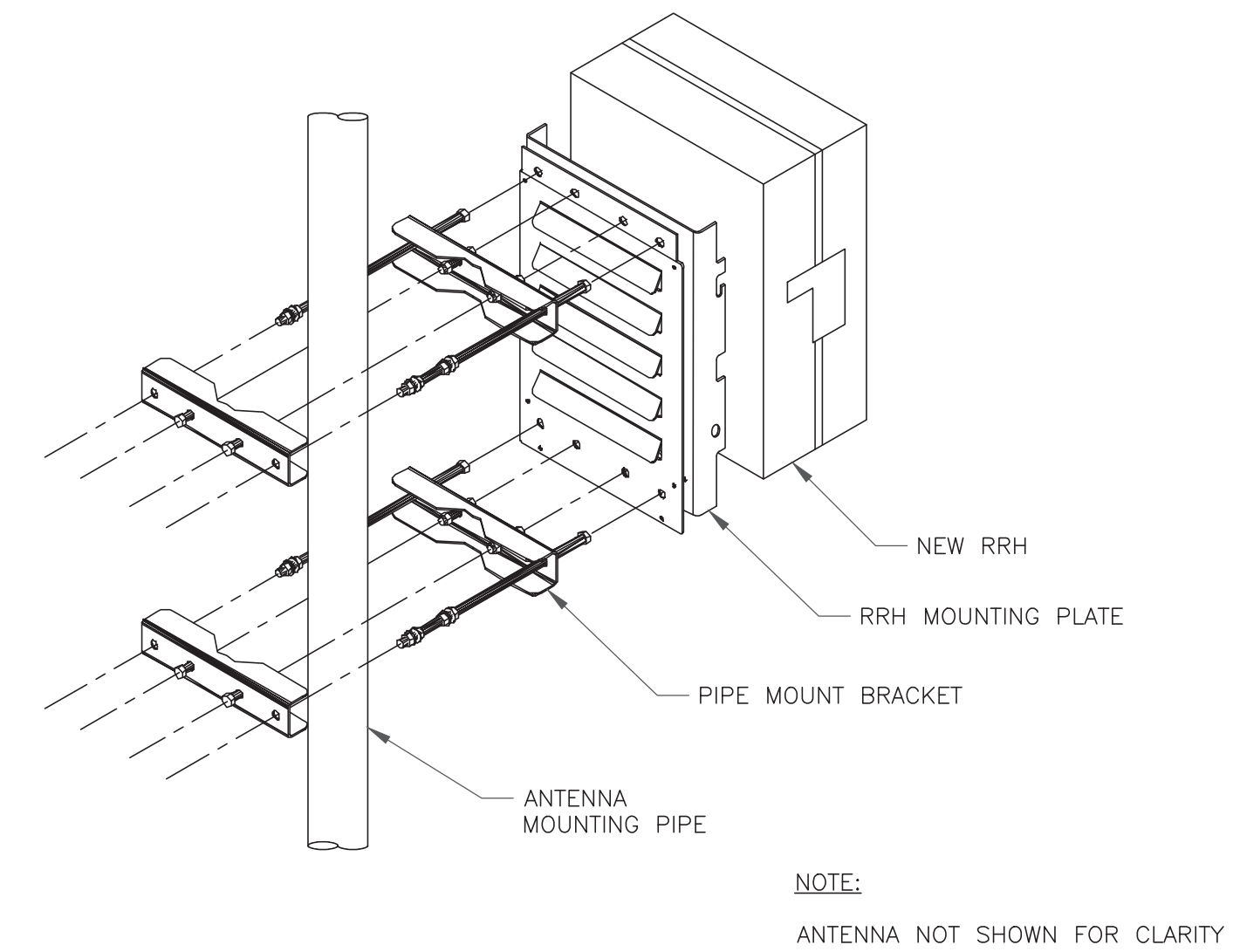
NOTE: BLUE DENOTES NEW EQUIPMENT

1 NOT USED
SCALE: NOT TO SCALE

ERICSSON RRU MOUNTING KIT:
 SXX 107 2839/1: SINGLE RRU SUPPORT KIT (PART # 5335) (OR ENGINEER APPROVED EQUIVALENT)
 SXX 107 2839/2: EXPANSION KIT (PART # 5336) (OR ENGINEER APPROVED EQUIVALENT)
MOUNTING NOTES:
 REFER TO PRODUCT SPECS FOR BOLT SIZE & PIPE DIAMETER TOLERANCES. THE PART NO. SXX107-2839/2 IS REQUIRED FOR (2) RRUS.

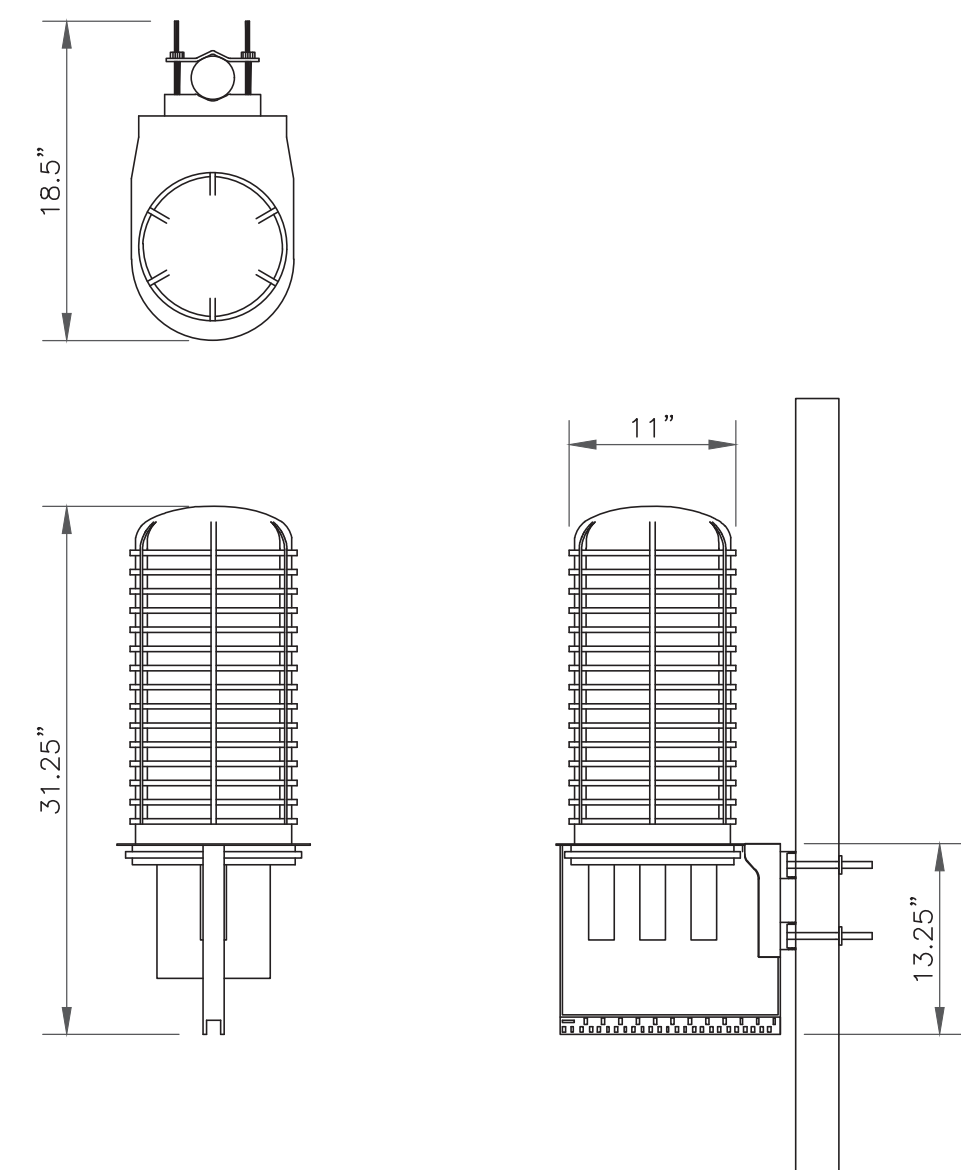


2 ERICSSON - SXX 107 2839
SCALE: NOT TO SCALE



3 SINGLE RRU MOUNTING DETAIL
SCALE: NOT TO SCALE

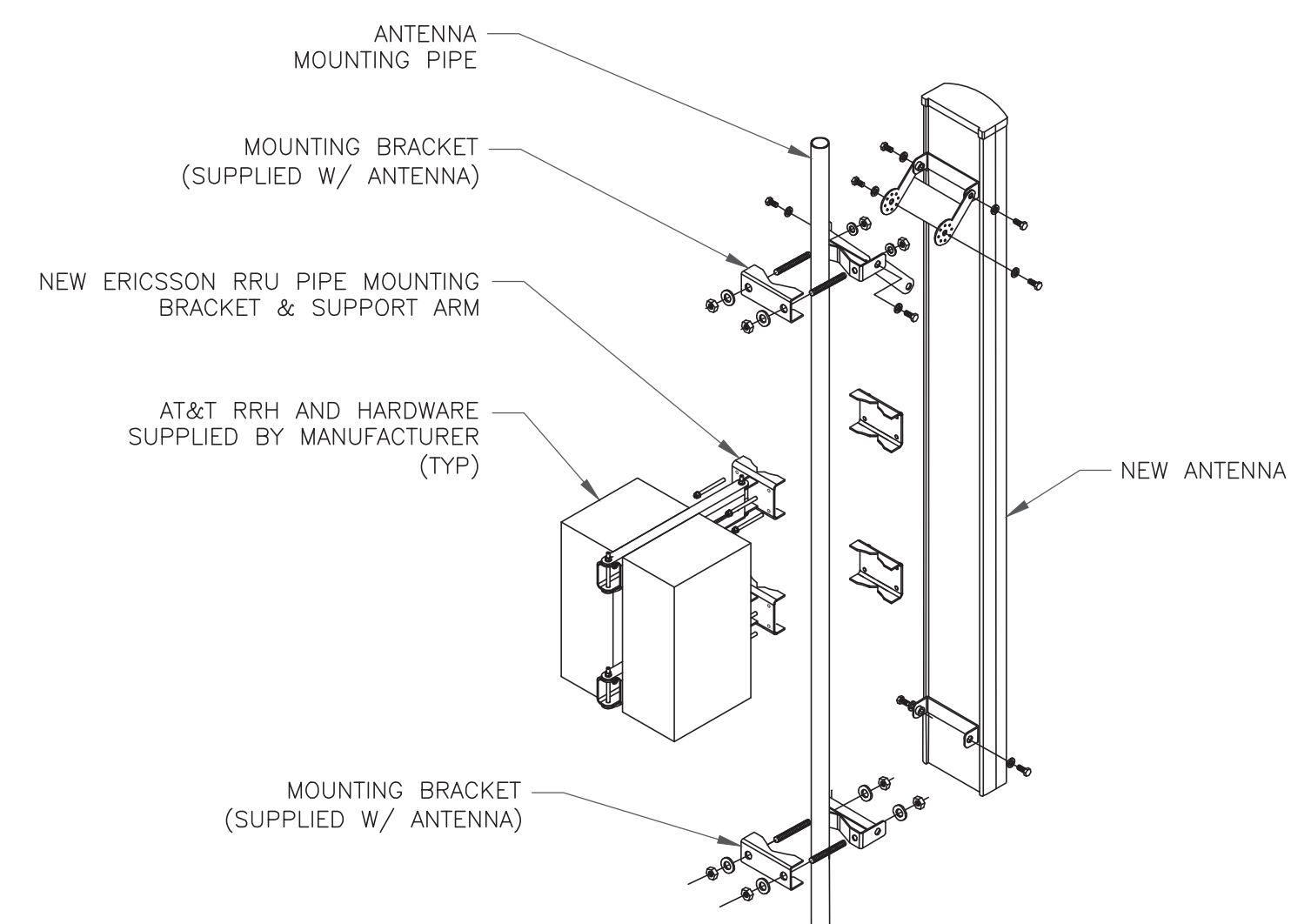
RAYCAP
 DC6-48-60-18-8F
 RAYCAP - DC6-48-60-18-8F
 SIZE: 11x31.25 IN.
 WEIGHT: 32.8 LBS
 NOMINAL OPERATING VOLTAGE: 48 VDC
 VOLTAGE PROTECTION RATING: 400 V
 WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
 WIND LOADING: 195 MPH GUST (213.6 LBS)



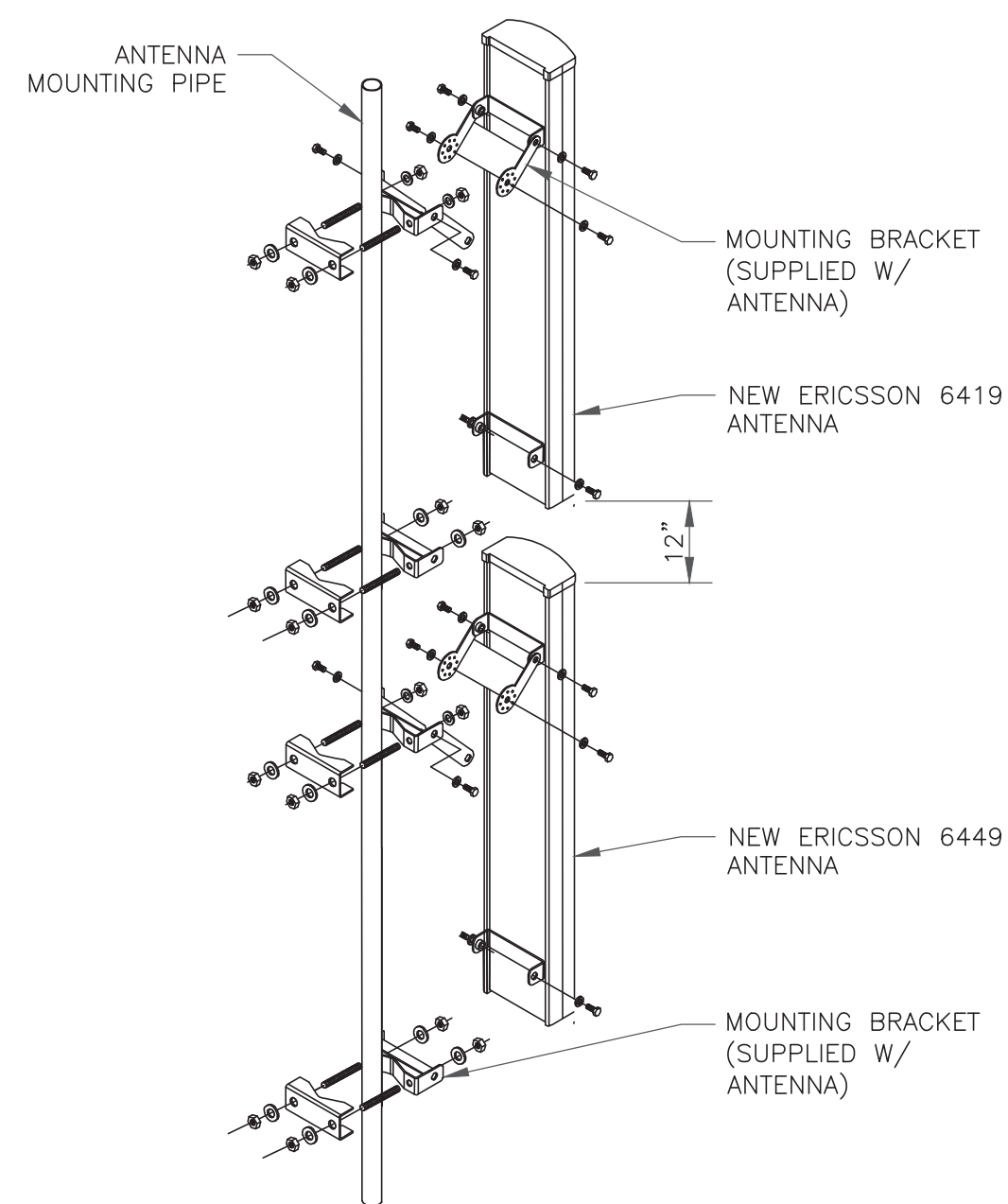
6 SQUID MOUNTING DETAIL
SCALE: NOT TO SCALE

CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING BOLTS DURING INSTALLATION

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



5 ANTENNA WITH DUAL RRU MOUNTING DETAIL
SCALE: NOT TO SCALE



1 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

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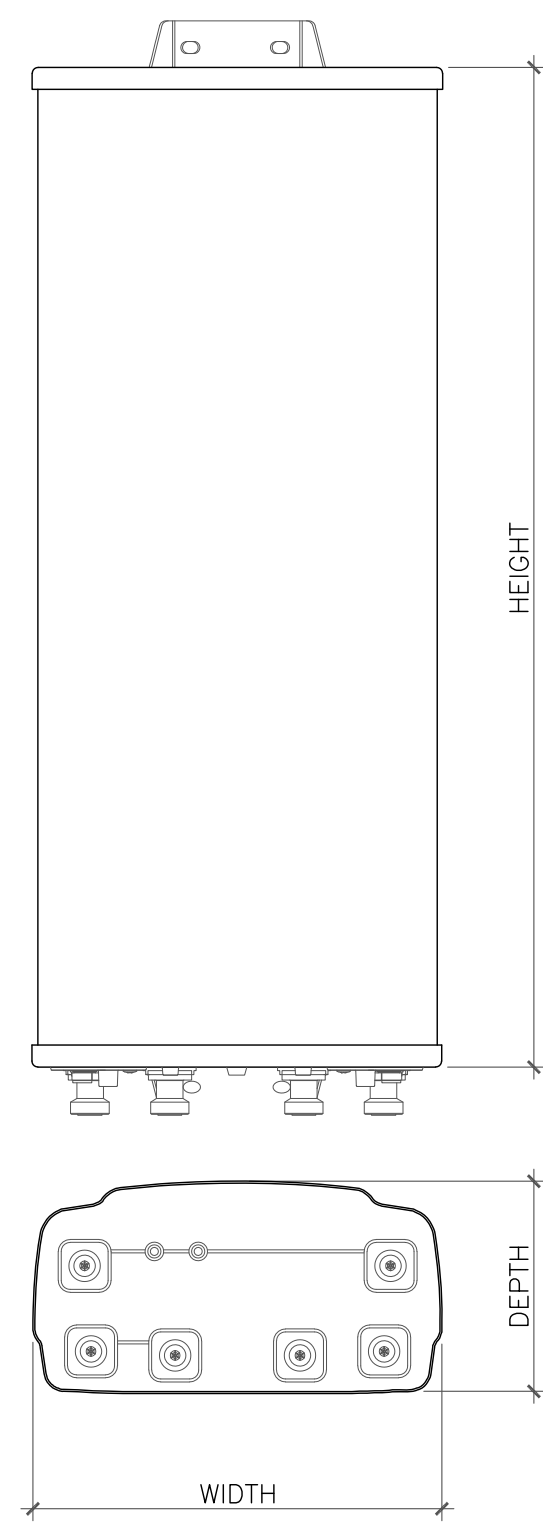
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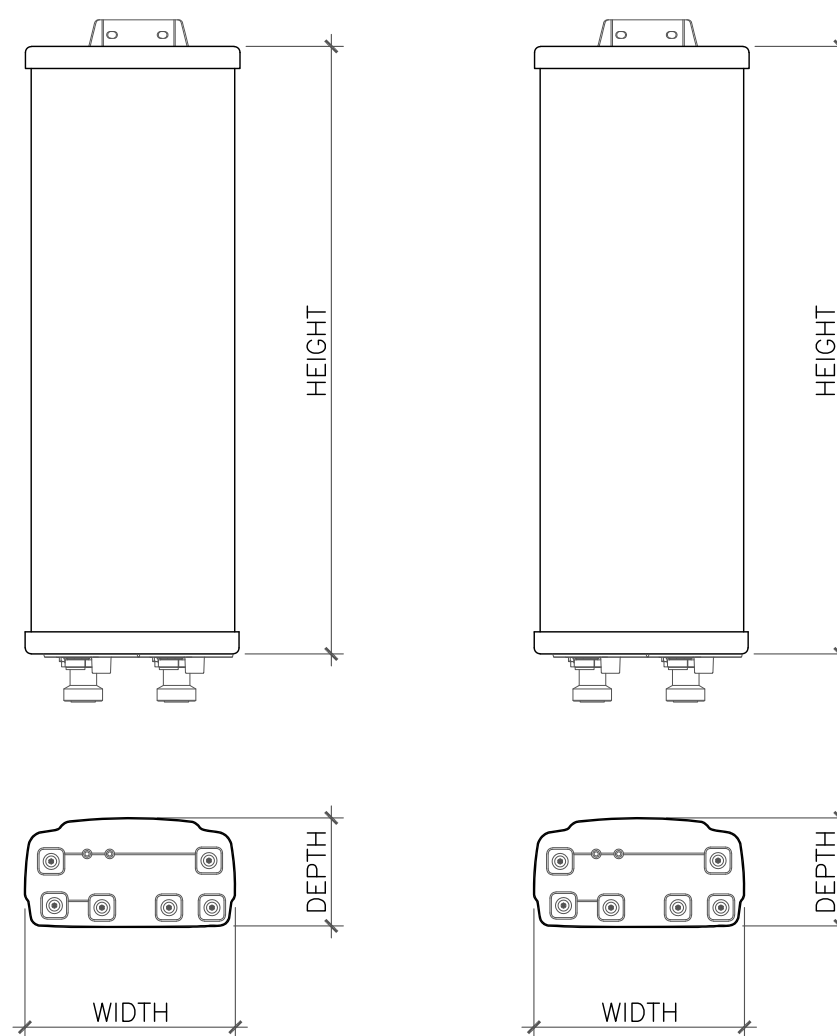
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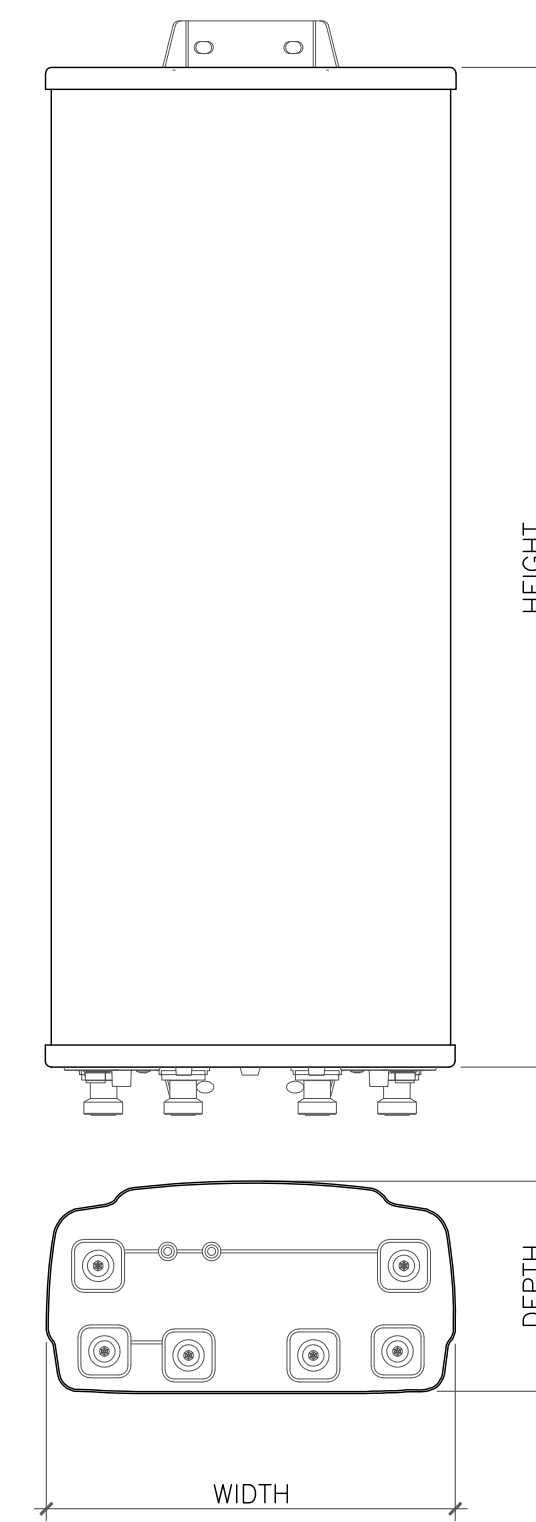
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
QD6616-7	72.00"	22.0"	9.60"	130.00lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



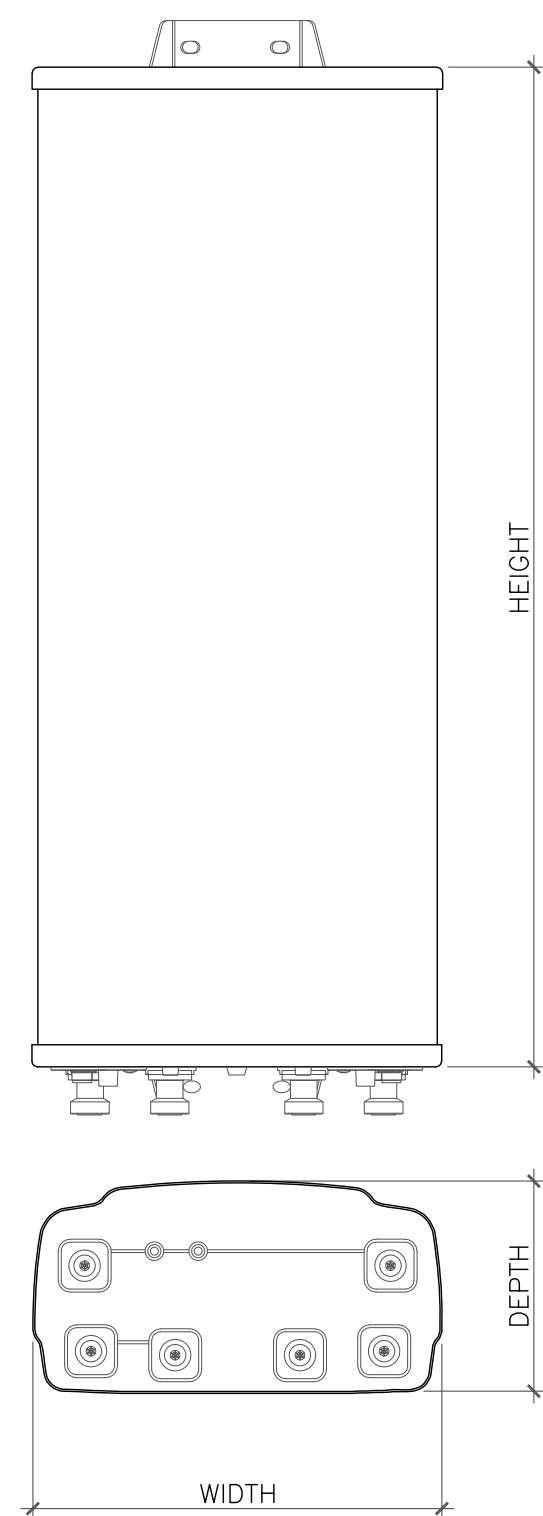
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
AIR6449 B77D	30.39"	15.87"	8.07"	81.60 lbs
AIR6419 B77G	27.95"	15.75"	6.68"	66.20 lbs

2 ANTENNA DETAIL
SCALE: NOT TO SCALE



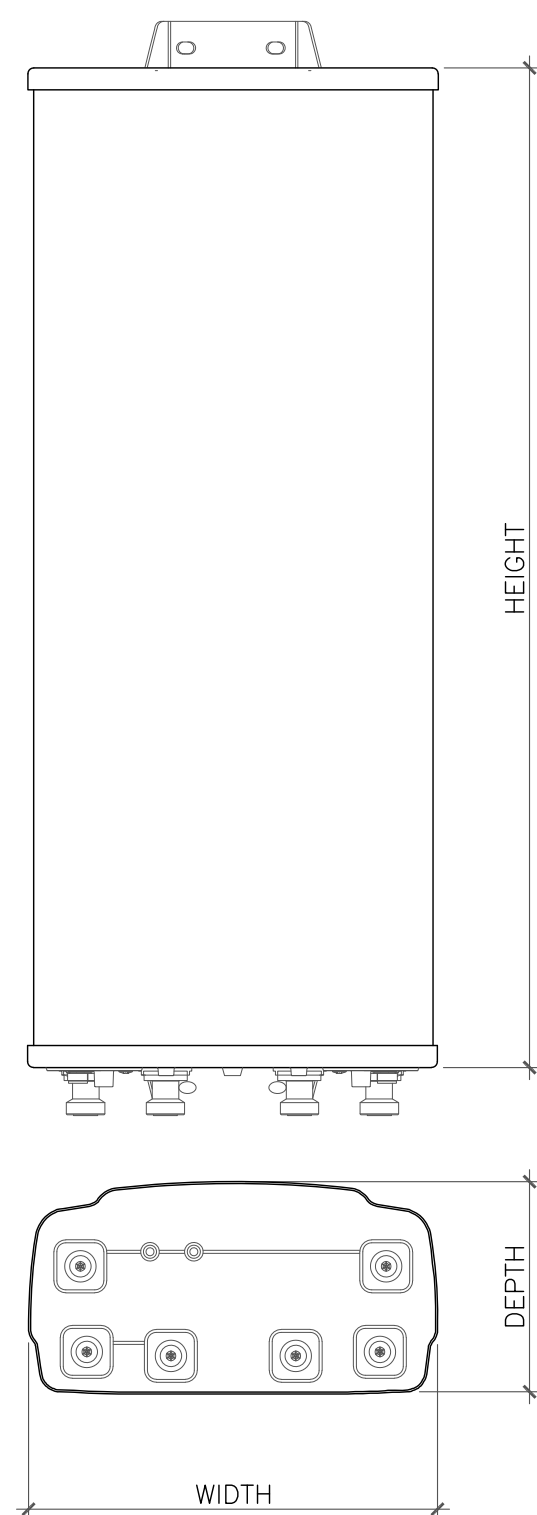
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU6DA	71.20"	20.70"	7.70"	89.30 lbs

3 ANTENNA DETAIL
SCALE: NOT TO SCALE



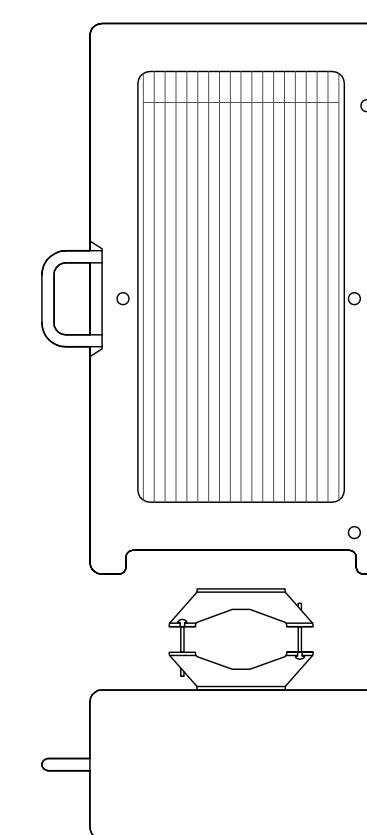
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
QD4616-7	51.50"	22.0"	9.60"	109.00lbs

4 ANTENNA DETAIL
SCALE: NOT TO SCALE



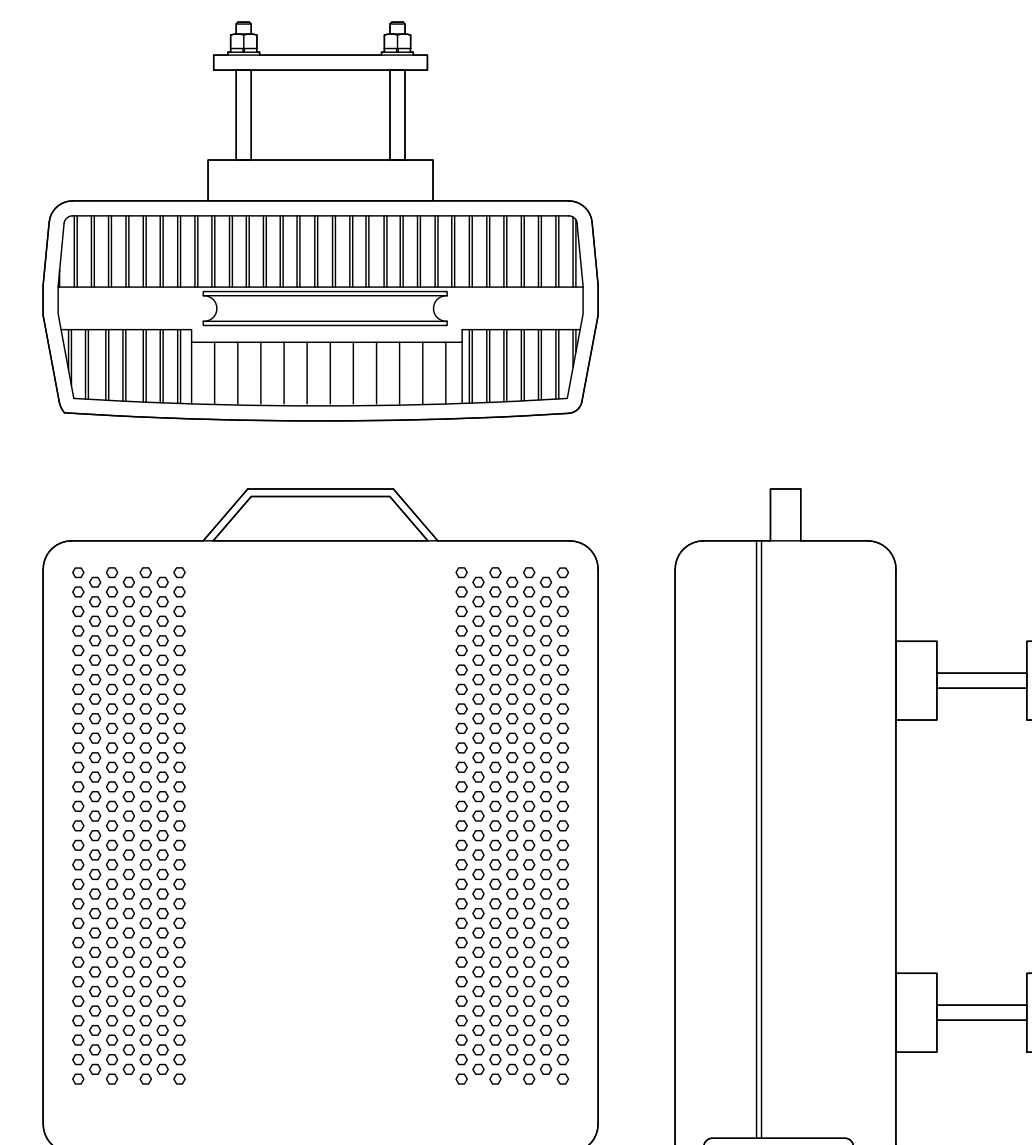
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU4DA	48.00"	20.70"	7.70"	76.50 lbs

5 ANTENNA DETAIL
SCALE: NOT TO SCALE



ERICSSON - 4449 B5/B12
WEIGHT (FULLY EQUIPPED): 71.00 LBS
SIZE (HxWxD): 17.90x13.19x9.44 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

6 ERICSSON - 4449 B5/B12
SCALE: NOT TO SCALE



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

7 ERICSSON - RRUS E2
SCALE: NOT TO SCALE

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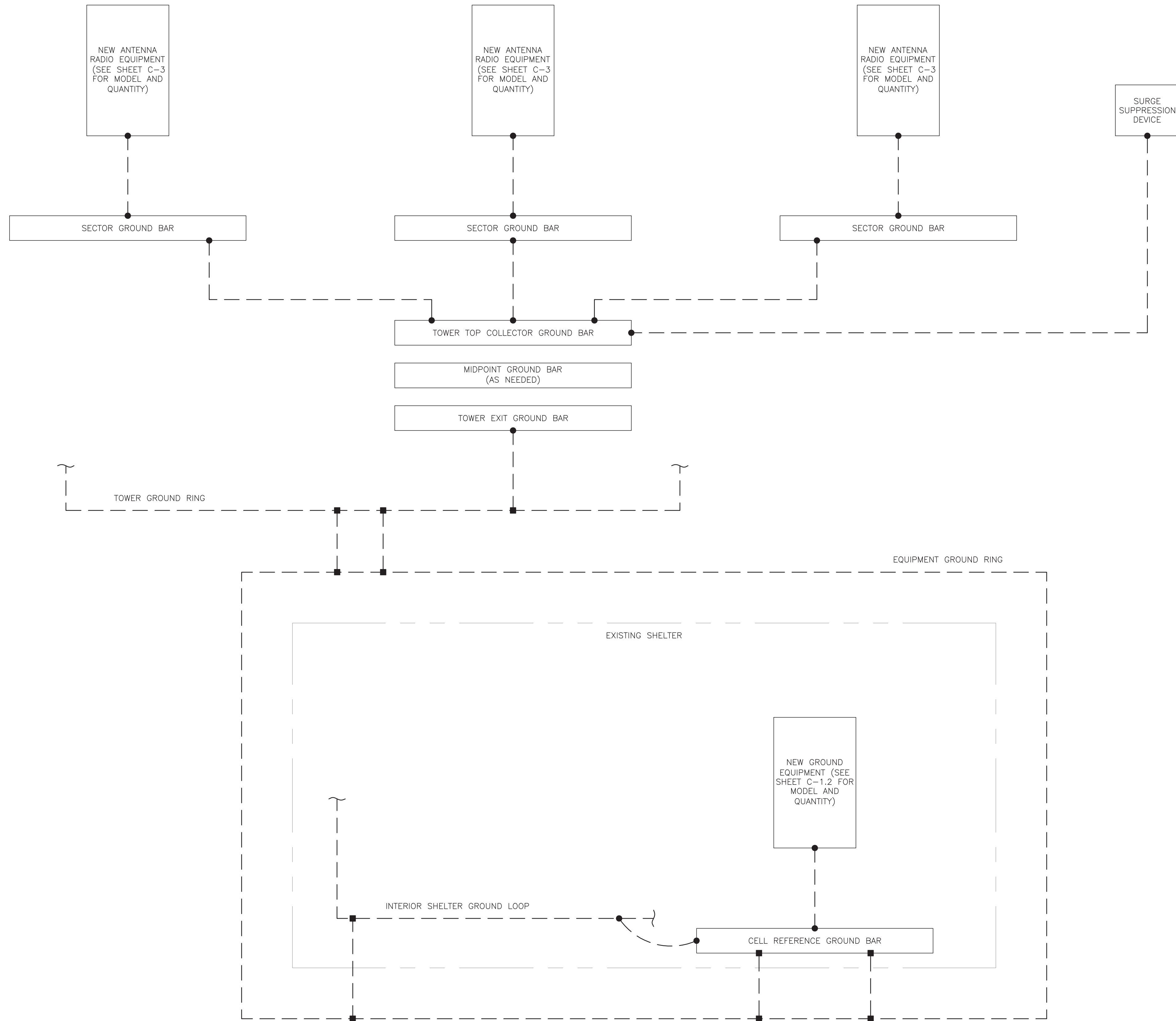
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SHEET NUMBER:

C-5

REVISION:

0



GROUNDING PLAN LEGEND:

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

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

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

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

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

575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

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

AT&T SITE NUMBER:
CTL02122

BU #: 807133
BRG 134 943057

50 ROCKLAND ROAD
NORWALK OFC - MTSO
SO NORWALK, CT 06854

EXISTING
182'-0" SELF-SUPPORT
TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/19/21	GAC	PRELIMINARY REVIEW	JHW
B	12/08/21	GAC	PRELIMINARY REVIEW	JHW
0	4/12/22	GAC	CONSTRUCTION	JHW

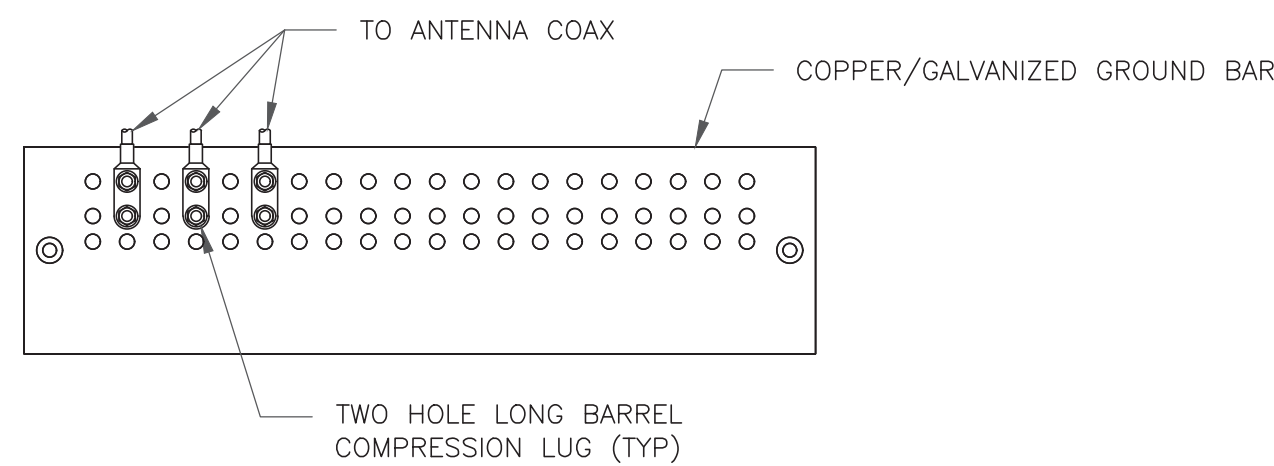
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

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1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

SHEET NUMBER:
G-1

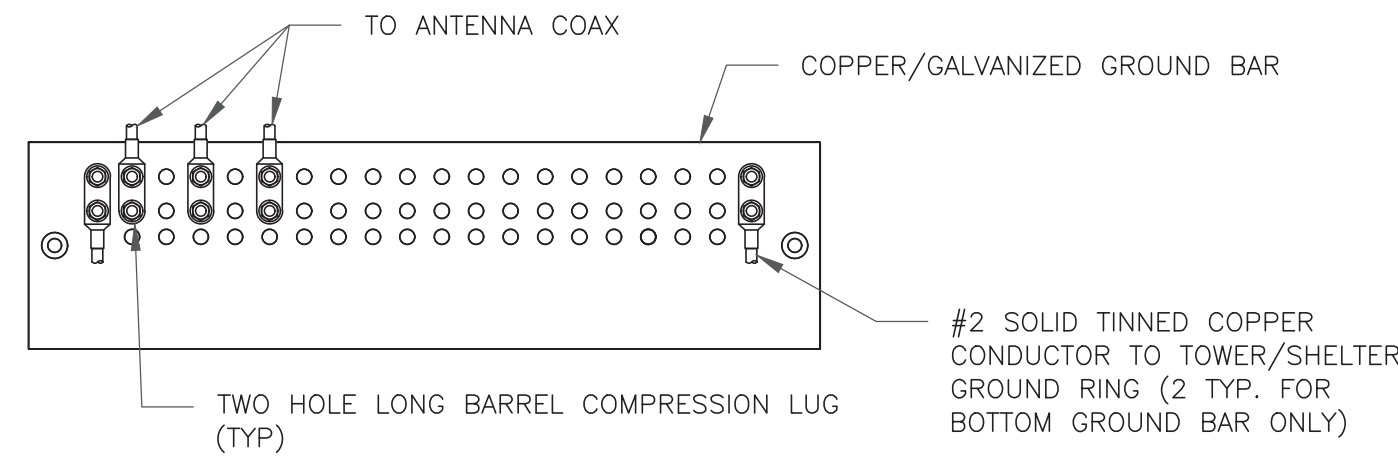
REVISION:
0



NOTES:

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

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

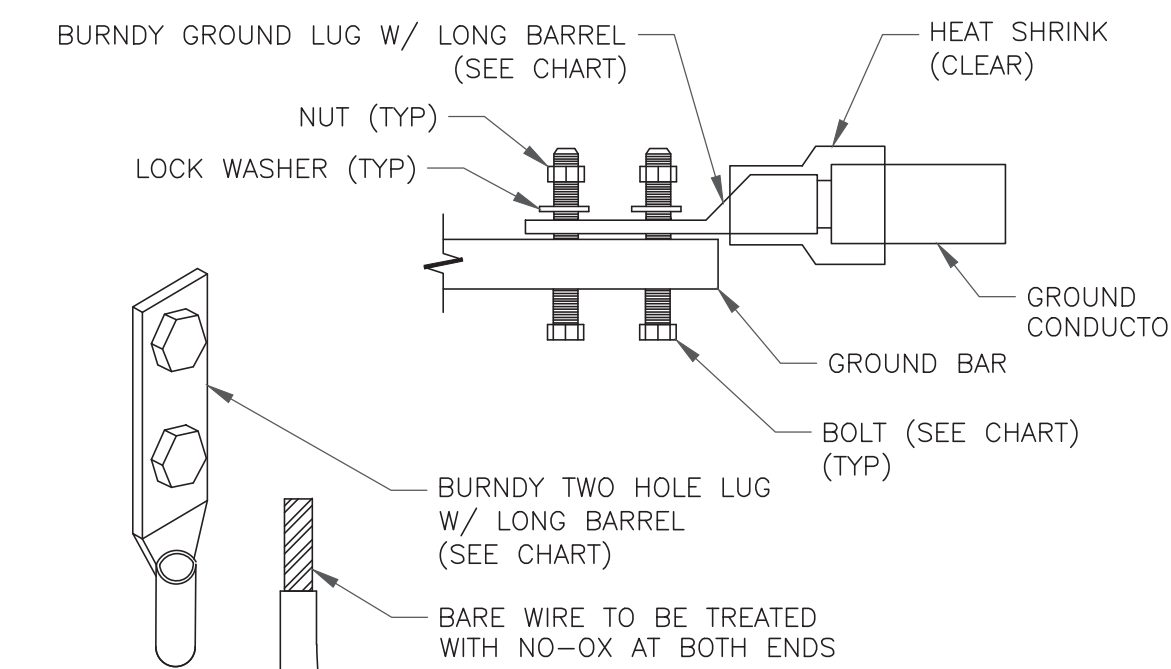


NOTES:

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

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

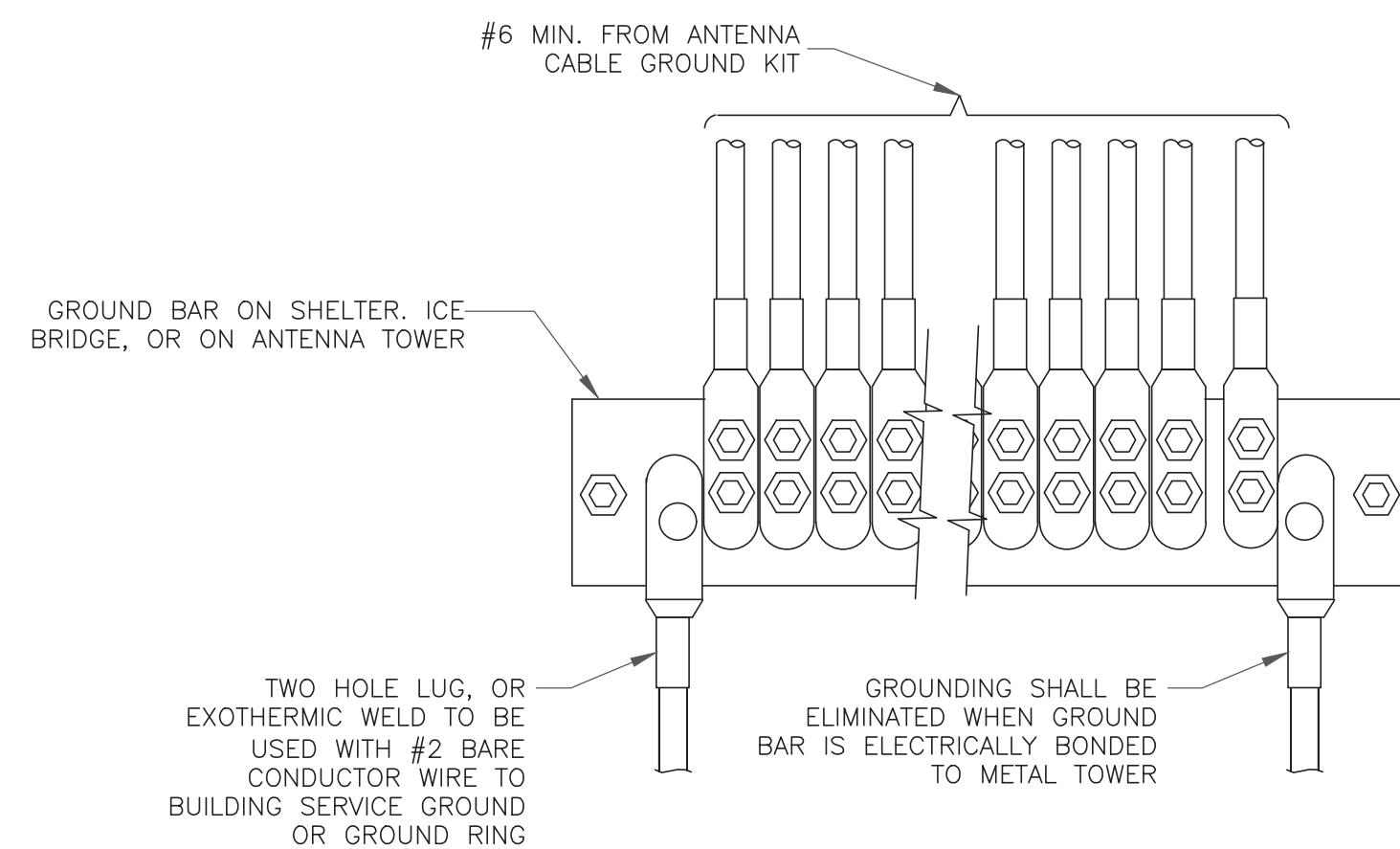
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



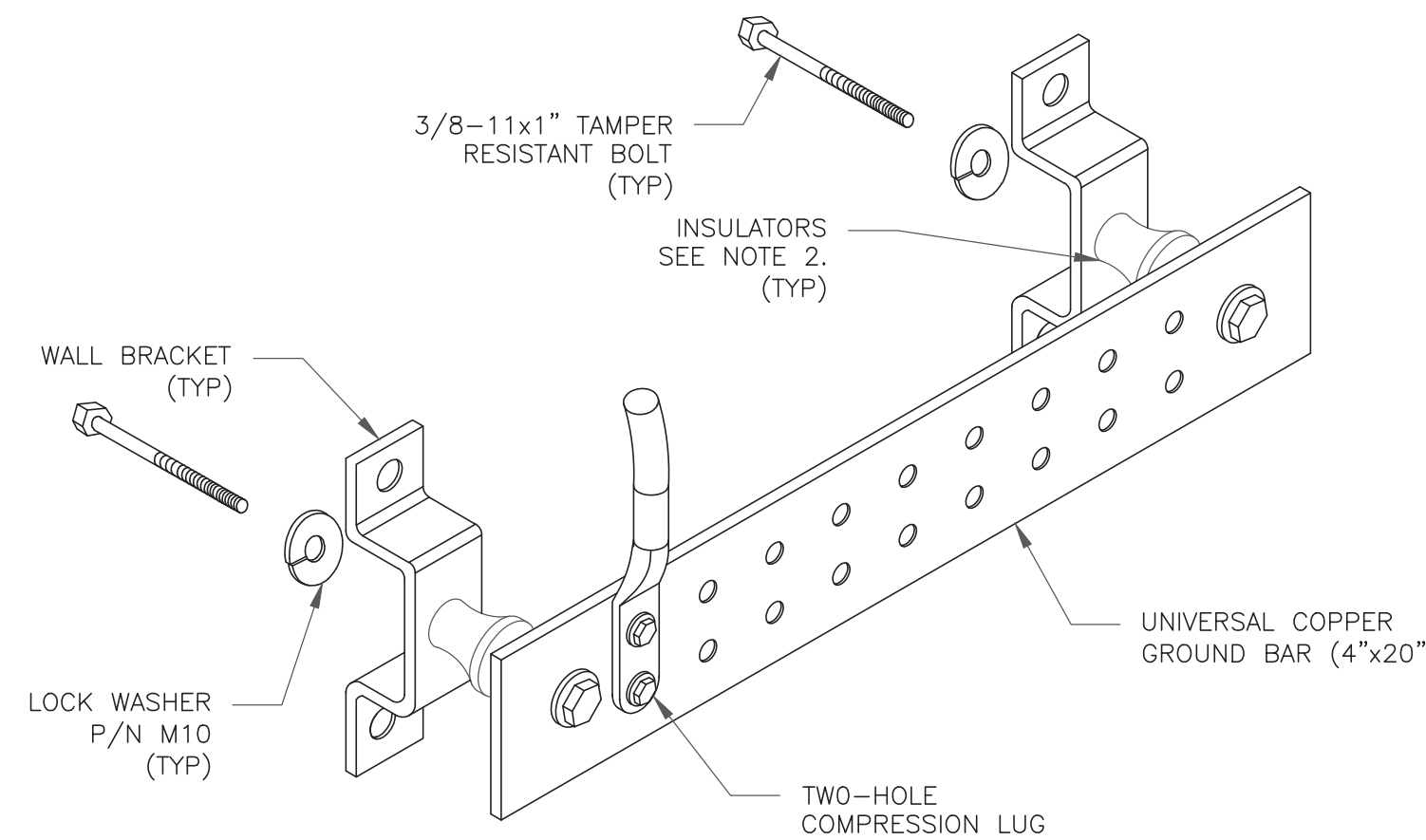
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



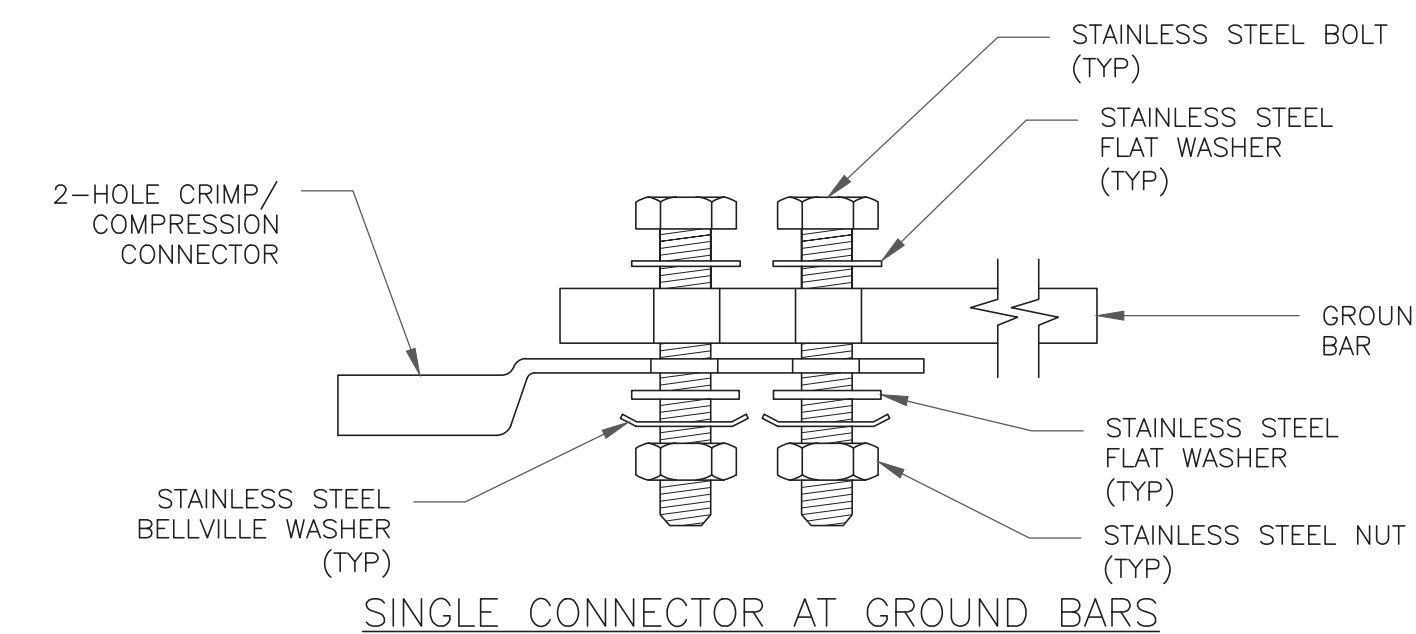
4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



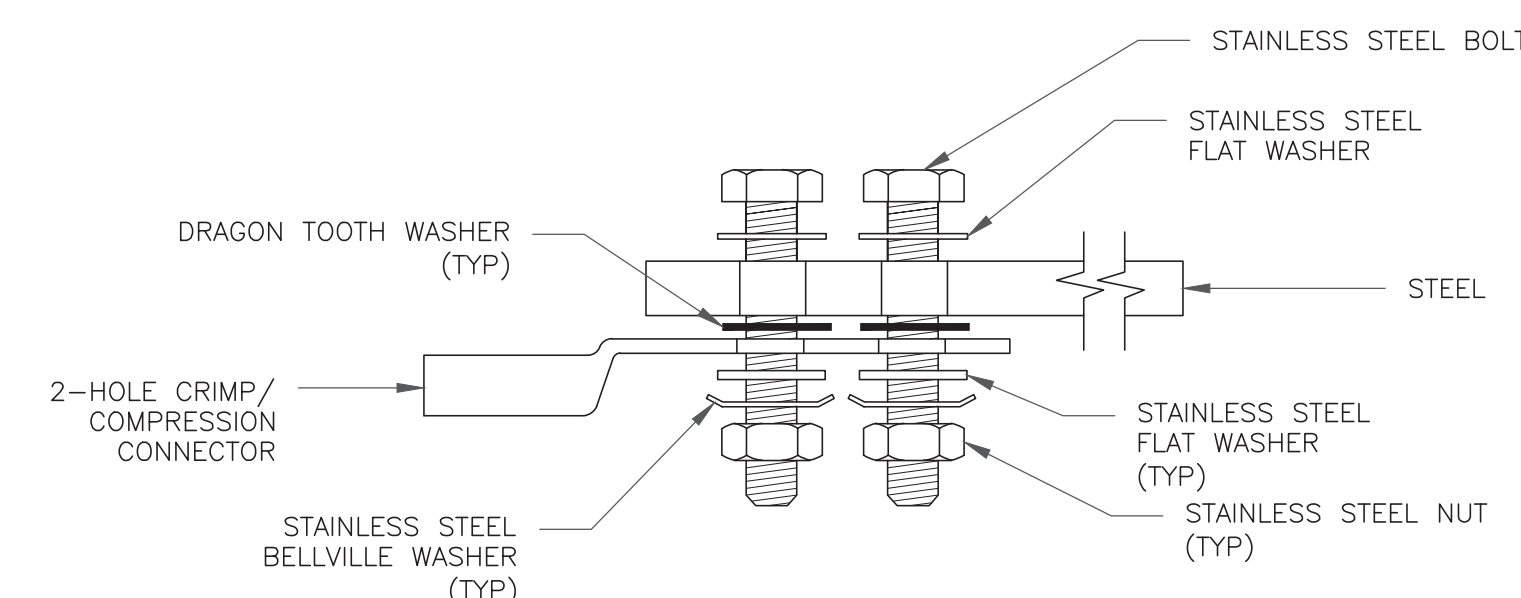
NOTES:

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

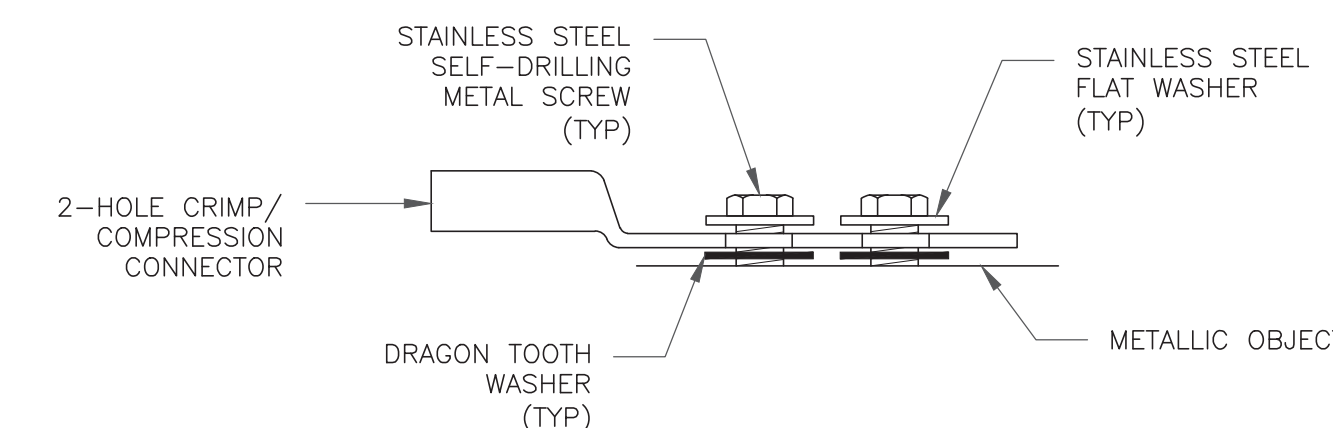
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



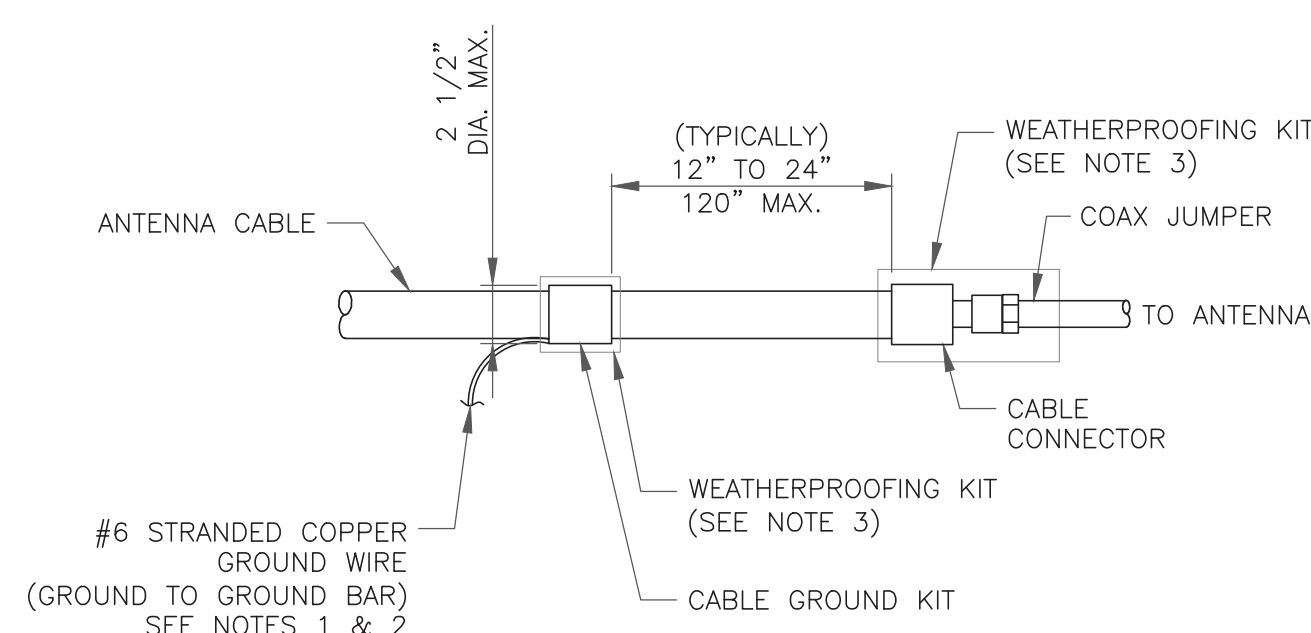
SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



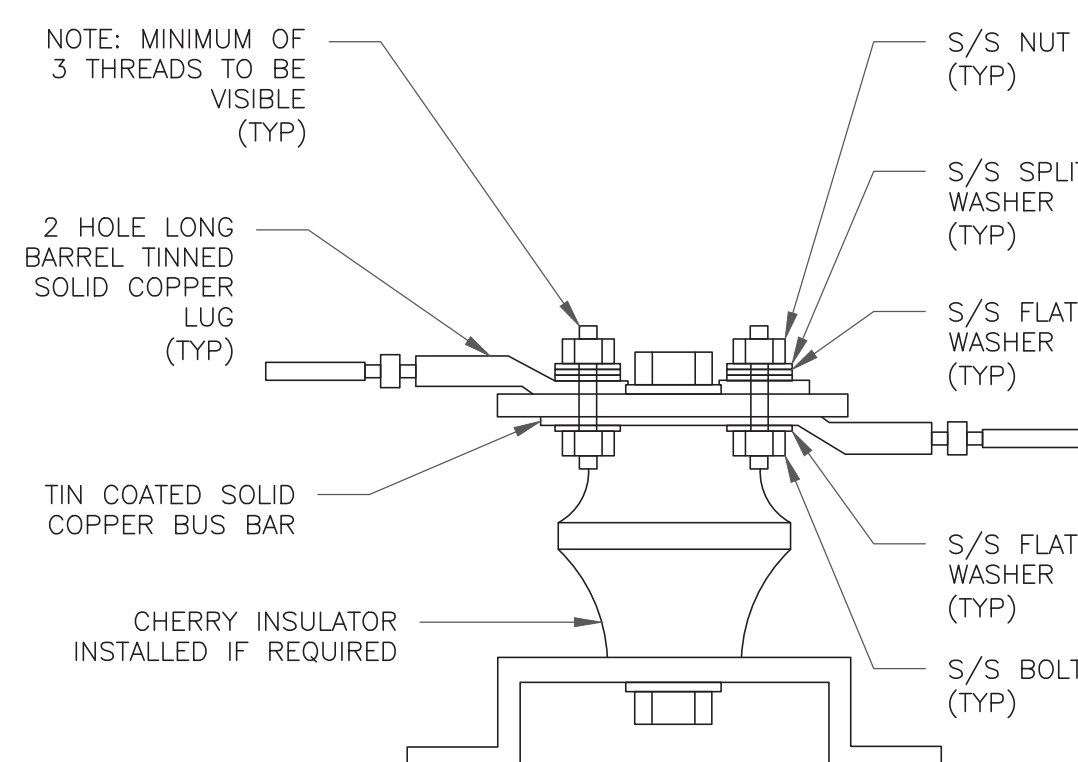
SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



AT&T SITE NUMBER:
CTL02122

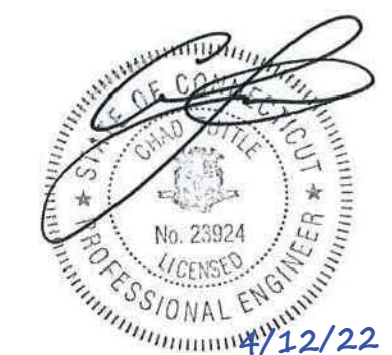
BU #: 807133
BRG 134 943057

50 ROCKLAND ROAD
NORWALK OFC - MTSO
SO NORWALK, CT 06854

EXISTING
182'-0" SELF-SUPPORT
TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/19/21	GAC	PRELIMINARY REVIEW	JHW
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0	4/12/22	GAC	CONSTRUCTION	JHW



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

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SHEET NUMBER:

G-2

REVISION:

0

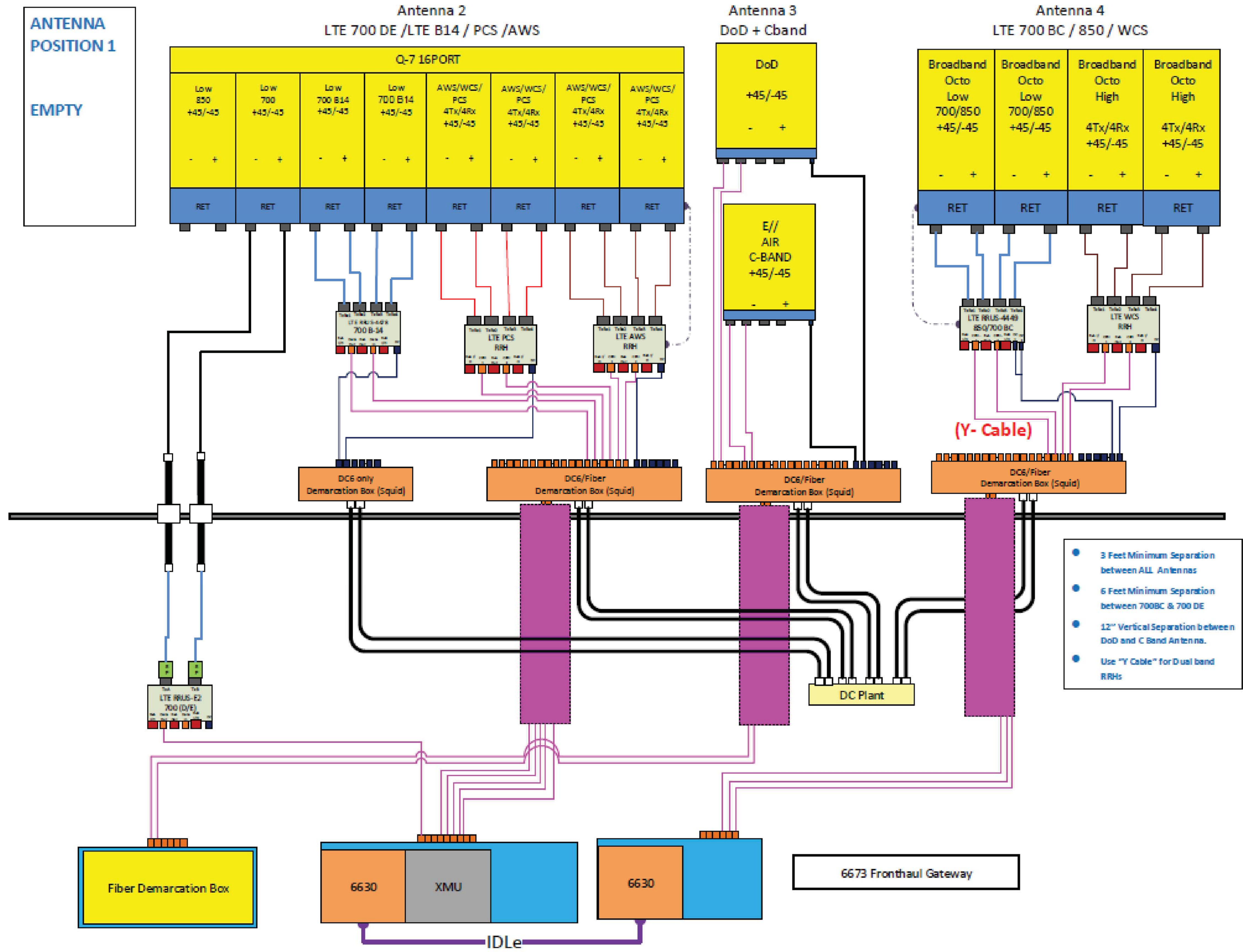


Exhibit D

Structural Analysis Report

Exhibit E

Mount Analysis

Date: **October 20, 2021**



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
PHX_Structures@tepgroup.net

Subject: **Mount Analysis Report**

Carrier Designation: **AT&T Equipment Change-Out**
Carrier Site Number: CTL02122
Carrier Site Name: Norwalk Rockland Road
Carrier FA Number: 10035123

Crown Castle Designation: **BU Number:** 807133
Site Name: BRG 134 943057
JDE Job Number: 649382
Order Number: 556500 Rev. 2

Engineering Firm Designation: **TEP Project Number:** 144550.614286

Site Data: **50 Rockland Road Norwalk OFC - MTSO**
SO Norwalk, Fairfield County, CT 06854
Latitude 41° 4' 54.44", Longitude -73° 25' 49.52"

Structure Information: **Tower Height & Type:** 180.0±ft Self-Supporting Tower
Mount Elevation: 161.0 ft
Mount Width & Type: 13.0 ft Sector Mount

Tower Engineering Professionals is pleased to submit this “**Mount Analysis Report**” to determine the structural integrity of AT&T’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 stress level. Based on our analysis, we have determined the mount stress level to be:

Sector Mount (typical)

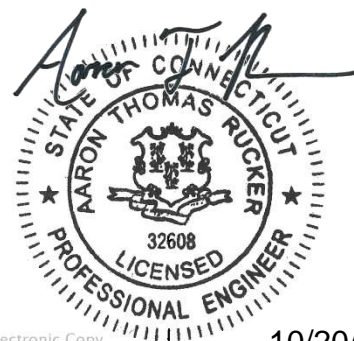
Sufficient

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 118 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Nicholas A. Madden, E.I. / PHX

Respectfully submitted by:

Aaron T. Rucker, P.E.
Division Manager
(919) 661-6351
arucker@tepgroup.net



Electronic Copy

10/20/2021

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Additional Calculations

1) INTRODUCTION

This is an existing, 3-sector, 13.0' Sector mount designed by Sabre.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	C
Topographic Factor at Base:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.244
Seismic S_1:	0.057
Live Loading Wind Speed:	30 mph
Live Loading at Mid/End-Points:	250 lb
Man Live Loading at Mount Pipes:	500 lb
Ka:	0.9

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details	
161.0	163.0	3	CCI	C-Band Antenna N	Sector Mount	
	161.0		1	CCI Antennas		DMP65R-BU4D
			2	CCI Antennas		DMP65R-BU6D
			1	Quintel Tech.		QD4616-7
			2	Quintel Tech.		QD6616-7
			3	Ericsson		RRUS 32 B2
			3	Ericsson		RRUS 32 B30
			3	Ericsson		RRUS 4426 B66
			3	Ericsson		RRUS 4449 B5/B12
			3	Ericsson		RRUS 4478 B14
			4	Raycap		DC6-48-60-18-8F
	159.0	3	Ericsson	AIR 6449 B77D		

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Mount Manufacturer Drawings	Sabre	C10857001C	TEP

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed by TEP, using Microsoft Excel, was used to calculate wind and seismic loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

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

3.2) Assumptions

- 1) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer’s specifications.
- 2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

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 antenna mounting system.

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontals	FF-TH2	161.0	24.9	Pass
	Support Horizontals	SF2-TH		15.7	Pass
	Support Bracing	SF2-V1		14.0	Pass
	Stabilizer Arms	SA-1		5.3	Pass
	Mount Pipes	MP-2		28.5	Pass
2	Connection Bolts	-		11.3	Pass
	Connection Plate	-		1.7	Pass

Structure Rating (max from all components) =	28.5%
---	--------------

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 listed.
- 3) All sectors are typical.

Table 4 - Tieback Connection Data Table

Tower Connection Node No.	Existing/ Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity (lb) ³	Notes
SA-1B	Existing	1,166	Leg	Rohn 3 EH	5,530	1, 3

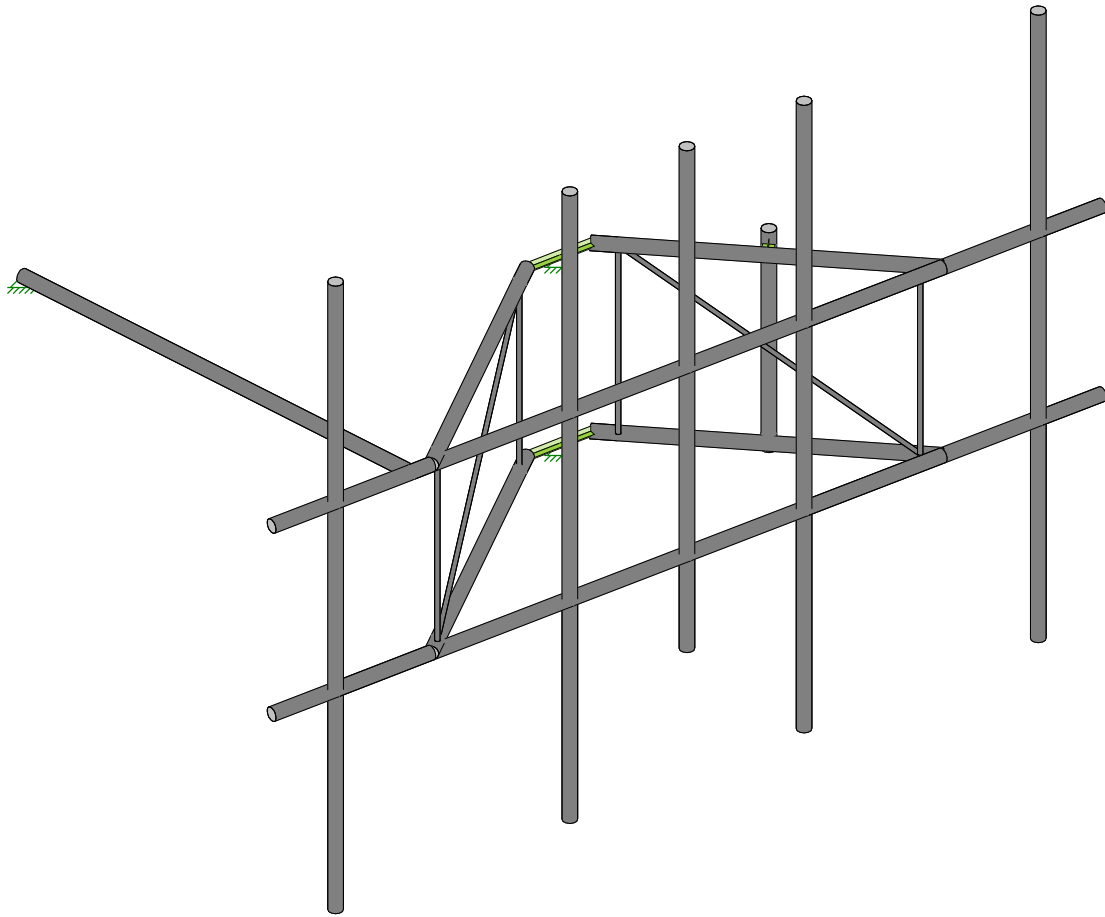
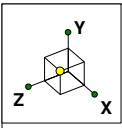
Notes:

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

4.1) Recommendations

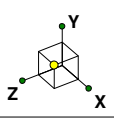
- 1) The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A
WIRE FRAME AND RENDERED MODELS

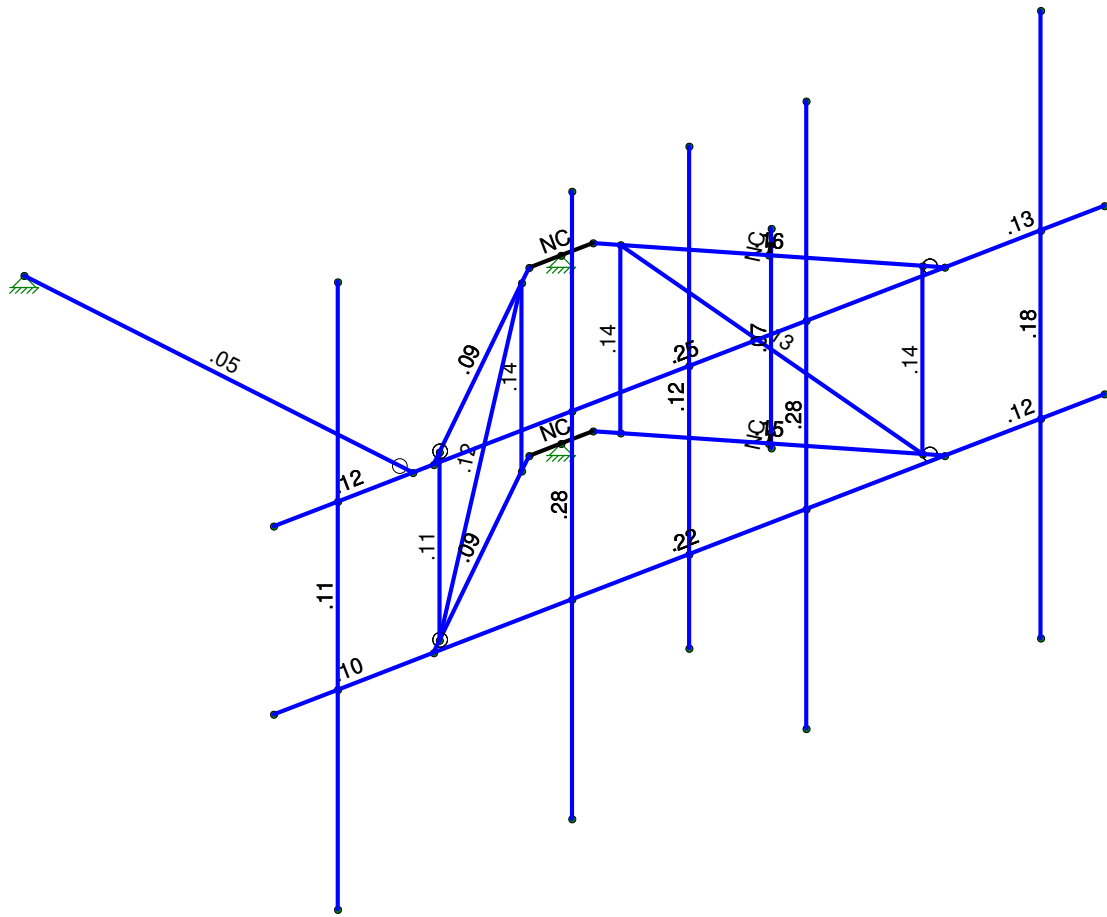


Envelope Only Solution

Tower Engineering Profes...	BRG 134 943057 (BU 807133)	SK - 2
NAM		Oct 19, 2021 at 11:09 AM
TEP No. 144550.614286		Mount.r3d

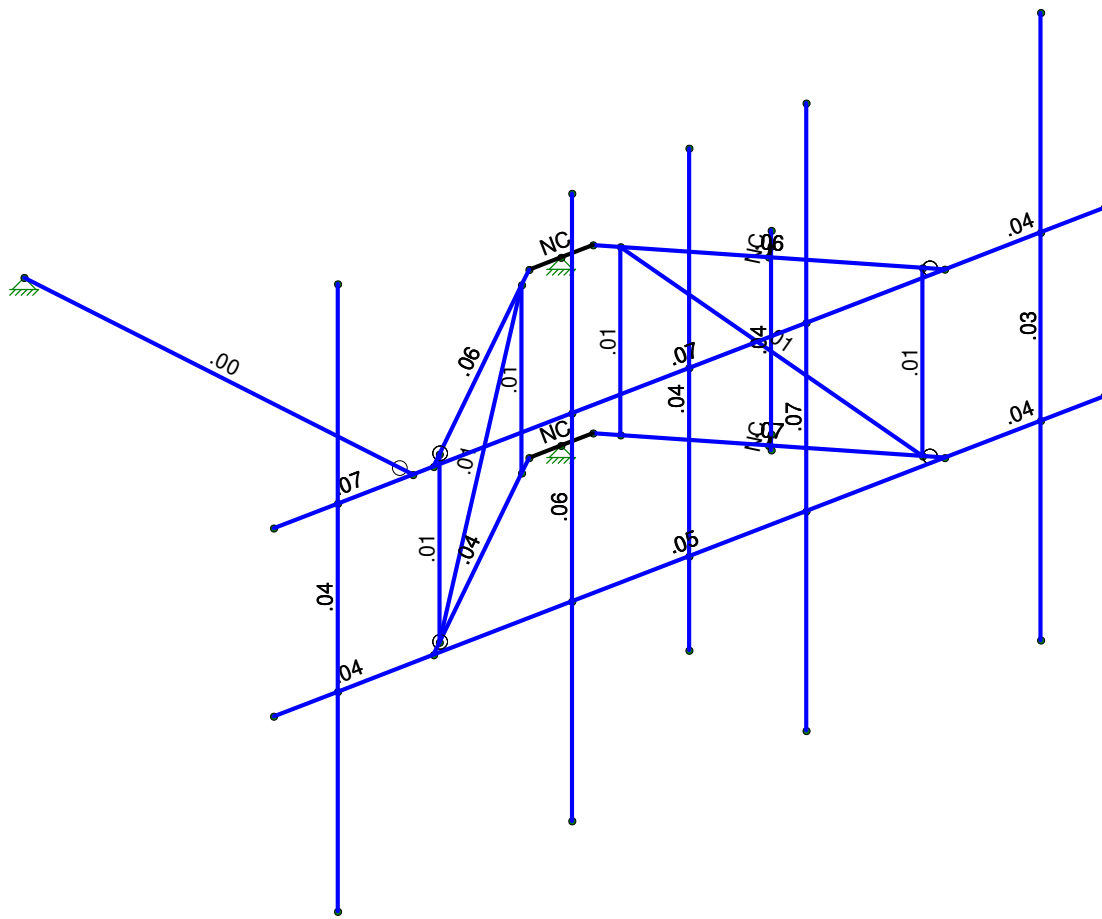
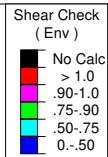
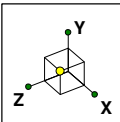


Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Profes...	BRG 134 943057 (BU 807133)	SK - 3
NAM		Oct 19, 2021 at 11:09 AM
TEP No. 144550.614286		Mount.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Profes...	BRG 134 943057 (BU 807133)	SK - 4
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TEP No. 144550.614286		Mount.r3d

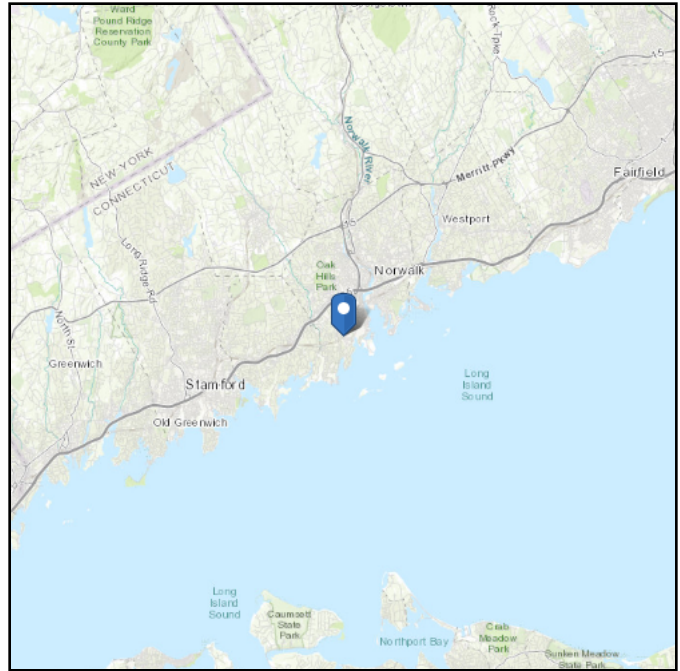
APPENDIX B
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 60.78 ft (NAVD 88)
Latitude: 41.081789
Longitude: -73.430422



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Tue Oct 19 2021

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

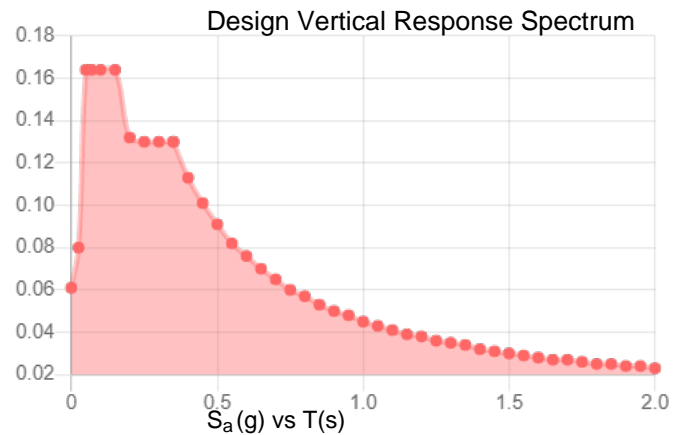
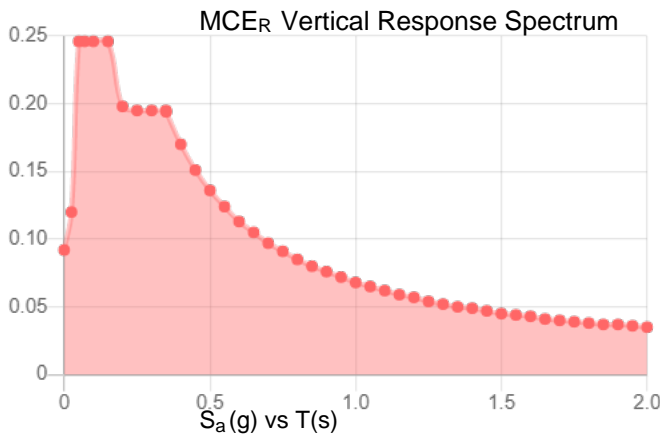
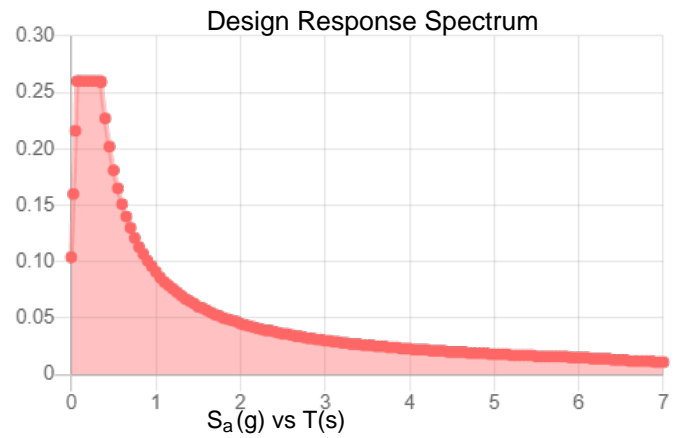
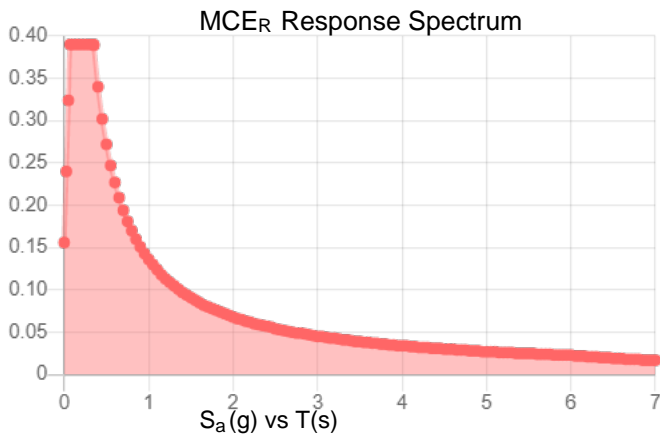
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.244	S_{D1} :	0.091
S_1 :	0.057	T_L :	6
F_a :	1.6	PGA :	0.144
F_v :	2.4	PGA _M :	0.218
S_{MS} :	0.39	F_{PGA} :	1.511
S_{M1} :	0.136	I_e :	1
S_{DS} :	0.26	C_v :	0.788

Seismic Design Category B



Data Accessed: Tue Oct 19 2021
Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Tue Oct 19 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 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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.



Code Revisions:	TIA-222-H	IBC 2018
Tower Type:	3 Sided Self-Support	

Wind Inputs:		
Ult. Wind Velocity:	118.0	mph
Live Load Velocity:	30.0	mph
Ice Wind Velocity:	50.0	mph
Base Ice Thickness:	1.00	inches
Mount Centerline:	161.0	ft
Antenna Centerline:	163.0	ft
Exposure Category:	C	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	61	ft

Wind Calculations:		
K_{zt} :	1.000	Section 2.6.6
K_d :	0.950	
$K_{z-Mount}$:	1.399	Section 2.6.5.2
$K_{z-Antenna}$:	1.403	Section 2.6.5.2
K_{iz} :	1.172	Section 2.6.10
Ice Thickness:	1.172	inches - Section 2.6.10

Without Ice - (psf)	With Ice - (psf)
$(q_z G_h)_{Mount}$: 47.27	$(q_z G_h)_{Mount}$: 8.49
$(q_z G_h)_{Antenna}$: 47.40	$(q_z G_h)_{Antenna}$: 8.51

Seismic Code Revisions:	TIA-222-H
Seismic Risk Category:	II

Seismic Input		
S_{DS} :	0.260	Design Short Period Spectral Accel.
I_p :	1.0	Importance Factor
R_p :	2.0	Response Modification Factor
ρ :	1.0	
A_5 :	1.0	Applification Factor - TIA-222-H Section 2.7.8.1
S_1 :	0.057	Spectral Acceleration at a Period of 1 Second

Seismic Design Force			
Cs:	0.130	kips/kip	TIA-H Sec 2.7.7.1.1
Cs-min:	0.030	kips/kip	TIA-H Sec 2.7.7.1.1



BRG 134 943057 (BU 807133)

TEP No. 144550.614286

Analysis By: NAM 10/19/2021

Checked By: PHX 10/19/2021

Antenna Loads are Calculated in Accordance with TIA-222-H

Azimuth is the absolute angle measured clockwise from RISA-3D global X-axis.

MFR	Model	Height (in)	Width (in)	Depth (in)	Wt. (lbs)	Azimuth°	Qty	Shape	Member Label	Distance from start node of the member		
										Location #1 (ft,%)	Location #2 (ft,%)	Location #3 (ft,%)
CCI	C-BAND ANTENNA N	29.50	17.70	9.50	99.21	0.00	1	Flat	MP-1	1.77	4.23	
ERICSSON	AIR 6449 B77D	30.39	15.87	8.07	81.60	0.00	1	Flat	MP-1	5.73	8.27	
CCI ANTENNAS	DMP65R-BU6D	71.20	20.70	7.70	89.30	0.00	1	Flat	MP-2	2.03	7.97	
QUINTEL TECHNOLOGY	QD6616-7	72.00	22.00	9.60	130.00	0.00	1	Flat	MP-4	2.00	8.00	
ERICSSON	RRUS 32 B2	27.20	12.05	7.00	52.90	90.00	1	Flat	MP-2	5.00		
ERICSSON	RRUS 4426 B66	14.96	13.19	5.80	48.40	90.00	1	Flat	MP-2	5.00		
ERICSSON	RRUS 4449 B5/B12	17.90	13.19	9.44	71.00	0.00	1	Flat	MP-2	1.75		
ERICSSON	RRUS 32 B30	27.20	12.05	7.00	52.90	0.00	1	Flat	MP-4	5.00		
RAYCAP	DC6-48-60-18-8F	24.00	11.00	11.00	18.90	0.00	1	Round	MP-4	1.50		
ERICSSON	RRUS 4478 B14	16.50	13.40	7.70	59.90	0.00	1	Flat	MP-5	5.00		
RAYCAP	DC6-48-60-18-8F	24.00	11.00	11.00	18.90	0.00	1	Round	MP-A	1.75		



BRG 134 943057 (BU 807133)

TEP No. 144550.614286

Analysis By: NAM 10/19/2021

Checked By: PHX 10/19/2021

Member Forces are Calculated in Accordance with TIA-222-H

Member Name	Wind Proj. (in)	Length (in)	Shape	θ (°)	Perimeter (in)
FF-BH1	2.375	156.00	Round	90.00	7.46
FF-BH2	2.375	156.00	Round	90.00	7.46
FF-BH3	2.375	156.00	Round	90.00	7.46
FF-TH1	2.375	156.00	Round	90.00	7.46
FF-TH2	2.375	156.00	Round	90.00	7.46
FF-TH3	2.375	156.00	Round	90.00	7.46
MP-1	2.375	120.00	Round		7.46
MP-2	2.375	120.00	Round		7.46
MP-3	2.375	96.00	Round		7.46
MP-4	2.375	120.00	Round		7.46
MP-5	2.375	120.00	Round		7.46
MP-A	2.375	42.00	Round		7.46
SA-1	2.375	120.00	Round	14.98	7.46
SF2-D1	0.750	59.61	Round		2.36
SF3-D1	0.750	59.61	Round		2.36
SF2-BH	2.375	55.32	Round	49.40	7.46
SF2-TH	2.375	55.32	Round	49.40	7.46
SF3-BH	2.375	55.32	Round	-49.40	7.46
SF3-TH	2.375	55.32	Round	-49.40	7.46
SF2-V1	0.750	36.00	Round		2.36
SF2-V2	0.750	36.00	Round		2.36
SF3-V1	0.750	36.00	Round		2.36
SF3-V2	0.750	36.00	Round		2.36

APPENDIX C
SOFTWARE ANALYSIS OUTPUT



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	No
RISACONNECTION CODE	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



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(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	General				
2	RIGID		4	2.5	0
3	Total General		4	2.5	0
4					
5	Hot Rolled Steel				
6	A53 Gr.B	PIPE 2.0 Nominal	6	51.5	.188
7	A53-B-50	PIPE 2.0 Nominal	1	6.7	.025
8	A53-B-50	PIPE 2.0X Nominal	10	44.4	.223
9	A572 Gr.50	.75 Dia.	6	21.9	.033
10	Total HR Steel		23	124.6	.469

Hot Rolled Steel Properties

Label	E [ksi]	G [ksi]	Nu	Therm (/1 E..)	Density[k/ft...]	Yield[ksi]	Ry	Fu[ksi]	Rt	
1	A992	29000	11154	.3	.65	.49	50	1.1	.65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	.65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A53-B-50	29000	11154	.3	.65	.49	50	1.6	60	1.2

Hot Rolled Steel Section Sets

Label	Shape	Type	Design...	Material	Design...	A [in2]	Iy [in4]	Izz [in4]	J [in4]		
1	Stabilizer Arm	PIPE	2.0 Nominal	Beam	Pipe	A53-B-50	Typical	1.075	.666	.666	1.331
2	Face Horizontals	PIPE	2.0X Nominal	Beam	Pipe	A53-B-50	Typical	1.477	.868	.868	1.736
3	Mount Pipes	PIPE	2.0 Nominal	Column	Pipe	A53 Gr.B	Typical	1.075	.666	.666	1.331



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Hot Rolled Steel Section Sets (Continued)

Label	Shape	Type	Design	Material	Design	A Lin2	Ivy Lin4	Izz Lin4	J Lin4
4 Support Diagonals	.75 Dia.	VBrace	BAR	A572 Gr.50	Typical	.442	.016	.016	.031
5 Support Verticals	.75 Dia.	Column	BAR	A572 Gr.50	Typical	.442	.016	.016	.031
6 Support Horizont...	PIPE 2.0X Nominal	Beam	Pipe	A53-B-50	Typical	1.477	.868	.868	1.736

Member Primary Data

Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rul...
1 FF-BH1	FF3	SF2-4			Face Horizontals	Beam	Pipe	A53-B-50	Typical
2 FF-BH2	SF2-4	SF3-4			Face Horizontals	Beam	Pipe	A53-B-50	Typical
3 FF-BH3	SF3-4	FF4			Face Horizontals	Beam	Pipe	A53-B-50	Typical
4 FF-TH1	FF1	SF2-3			Face Horizontals	Beam	Pipe	A53-B-50	Typical
5 FF-TH2	SF2-3	SF3-3			Face Horizontals	Beam	Pipe	A53-B-50	Typical
6 FF-TH3	SF3-3	FF2			Face Horizontals	Beam	Pipe	A53-B-50	Typical
7 MP-1	MP-1A	MP-1B			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
8 MP-2	MP-2A	MP-2B			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
9 MP-3	N41	N42			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
10 MP-4	MP-3A	MP-3B			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
11 MP-5	MP-4A	MP-4B			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
12 MP-A	N49	N50			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
13 M12	N23	N23A			RIGID	None	None	RIGID	Typical
14 M13	N24	N24A			RIGID	None	None	RIGID	Typical
15 M25	N45	N47			RIGID	None	None	RIGID	Typical
16 M26	N46	N48			RIGID	None	None	RIGID	Typical
17 SA-1	SA-1A	SA-1B			Stabilizer Arm	Beam	Pipe	A53-B-50	Typical
18 SF2-D1	N33	N38			Support Diagonals	VBrace	BAR	A572 Gr.50	Typical
19 SF3-D1	N35	N40			Support Diagonals	VBrace	BAR	A572 Gr.50	Typical
20 SF2-BH	N24A	SF2-4			Support Horizontals	Beam	Pipe	A53-B-50	Typical
21 SF2-TH	N23A	SF2-3			Support Horizontals	Beam	Pipe	A53-B-50	Typical
22 SF3-BH	N24	SF3-4			Support Horizontals	Beam	Pipe	A53-B-50	Typical
23 SF3-TH	N23	SF3-3			Support Horizontals	Beam	Pipe	A53-B-50	Typical
24 SF2-V1	N33	N34			Support Verticals	Column	BAR	A572 Gr.50	Typical
25 SF2-V2	N37	N38			Support Verticals	Column	BAR	A572 Gr.50	Typical
26 SF3-V1	N35	N36			Support Verticals	Column	BAR	A572 Gr.50	Typical
27 SF3-V2	N39	N40			Support Verticals	Column	BAR	A572 Gr.50	Typical

Member Advanced Data

Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical Defl Ra. Analysis	Inactive	Seismi...
1 FF-BH1						Yes		None
2 FF-BH2						Yes		None
3 FF-BH3						Yes		None
4 FF-TH1						Yes		None
5 FF-TH2						Yes		None
6 FF-TH3						Yes		None
7 MP-1						Yes	** NA **	None
8 MP-2						Yes	** NA **	None
9 MP-3						Yes	** NA **	None
10 MP-4						Yes	** NA **	None
11 MP-5						Yes	** NA **	None
12 MP-A						Yes	** NA **	None
13 M12						Yes	** NA **	None
14 M13						Yes	** NA **	None
15 M25						Yes	** NA **	None
16 M26						Yes	** NA **	None
17 SA-1	BenPIN					Yes		None
18 SF2-D1						Yes	** NA **	None



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Member Advanced Data (Continued)

Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical Defl Ra. Analysis	Inactive	Seismi...
19 SF3-D1						Yes	** NA **	None
20 SF2-BH		BenPIN				Yes		None
21 SF2-TH		BenPIN				Yes		None
22 SF3-BH		BenPIN				Yes		None
23 SF3-TH		BenPIN				Yes		None
24 SF2-V1						Yes	** NA **	None
25 SF2-V2						Yes	** NA **	None
26 SF3-V1						Yes	** NA **	None
27 SF3-V2						Yes	** NA **	None

Hot Rolled Steel Design Parameters

Label	Shape	Length(ft)	Lbyy(ft)	Lbzz(ft)	Lcomp top...	Lcomp bot[ft]-L-torq...	Kyy	Kzz	Cb	Functi...
1 FF-BH1	Face Horizontals	2.5					2.1	2.1		Lateral
2 FF-BH2	Face Horizontals	8					1	1		Lateral
3 FF-BH3	Face Horizontals	2.5					2.1	2.1		Lateral
4 FF-TH1	Face Horizontals	2.5					2.1	2.1		Lateral
5 FF-TH2	Face Horizontals	8					1	1		Lateral
6 FF-TH3	Face Horizontals	2.5					2.1	2.1		Lateral
7 MP-1	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
8 MP-2	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
9 MP-3	Mount Pipes	8	Segment	Segment			2.1	2.1		Lateral
10 MP-4	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
11 MP-5	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
12 MP-A	Mount Pipes	3.5	Segment	Segment			2.1	2.1		Lateral
13 SA-1	Stabilizer Arm	6.729					1	1		Lateral
14 SF2-D1	Support Diagonals	4.967					.65	.65		Lateral
15 SF3-D1	Support Diagonals	4.967					.65	.65		Lateral
16 SF2-BH	Support Horizontals	4.61		Segment			1	1		Lateral
17 SF2-TH	Support Horizontals	4.61		Segment			1	1		Lateral
18 SF3-BH	Support Horizontals	4.61		Segment			1	1		Lateral
19 SF3-TH	Support Horizontals	4.61		Segment			1	1		Lateral
20 SF2-V1	Support Verticals	3					.65	.65		Lateral
21 SF2-V2	Support Verticals	3					.65	.65		Lateral
22 SF3-V1	Support Verticals	3					.65	.65		Lateral
23 SF3-V2	Support Verticals	3					.65	.65		Lateral

Joint Boundary Conditions

Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1 SF2-1	Reaction	Reaction	Reaction			
2 SF2-2	Reaction	Reaction	Reaction			
3 SA-1B	Reaction	Reaction	Reaction			

Basic Load Cases

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1 Dead	None		-1			15		
2 0 Wind - No Ice	None					15	23	
3 30 Wind - No Ice	None					30	46	
4 45 Wind - No Ice	None					30	46	
5 60 Wind - No Ice	None					30	46	
6 90 Wind - No Ice	None					15	23	
7 120 Wind - No Ice	None					30	46	
8 135 Wind - No Ice	None					30	46	



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Basic Load Cases (Continued)

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...)	Surface(P...
9 150 Wind - No Ice	None					30	46	
10 180 Wind - No Ice	None					15	23	
11 210 Wind - No Ice	None					30	46	
12 225 Wind - No Ice	None					30	46	
13 240 Wind - No Ice	None					30	46	
14 270 Wind - No Ice	None					15	23	
15 300 Wind - No Ice	None					30	46	
16 315 Wind - No Ice	None					30	46	
17 330 Wind - No Ice	None					30	46	
18 Ice Weight	None					15	23	
19 0 Wind - Ice	None					15	23	
20 30 Wind - Ice	None					30	46	
21 45 Wind - Ice	None					30	46	
22 60 Wind - Ice	None					30	46	
23 90 Wind - Ice	None					15	23	
24 120 Wind - Ice	None					30	46	
25 135 Wind - Ice	None					30	46	
26 150 Wind - Ice	None					30	46	
27 180 Wind - Ice	None					15	23	
28 210 Wind - Ice	None					30	46	
29 225 Wind - Ice	None					30	46	
30 240 Wind - Ice	None					30	46	
31 270 Wind - Ice	None					15	23	
32 300 Wind - Ice	None					30	46	
33 315 Wind - Ice	None					30	46	
34 330 Wind - Ice	None					30	46	
35 Lm	None				1			
36 Lv	None				1			
37 Seismic Load X	ELX	-1				15		
38 Seismic Load Z	ELZ			-1		15		

Load Combinations

Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
1 1.4D	Yes	Y		1	1.4								
2 0.9D+1.0 0-Wind	Yes	Y		1	.9	2	1						
3 0.9D+1.0 30-Wind	Yes	Y		1	.9	3	1						
4 0.9D+1.0 45-Wind	Yes	Y		1	.9	4	1						
5 0.9D+1.0 60-Wind	Yes	Y		1	.9	5	1						
6 0.9D+1.0 90-Wind	Yes	Y		1	.9	6	1						
7 0.9D+1.0 120-Wind	Yes	Y		1	.9	7	1						
8 0.9D+1.0 135-Wind	Yes	Y		1	.9	8	1						
9 0.9D+1.0 150-Wind	Yes	Y		1	.9	9	1						
10 0.9D+1.0 180-Wind	Yes	Y		1	.9	10	1						
11 0.9D+1.0 210-Wind	Yes	Y		1	.9	11	1						
12 0.9D+1.0 225-Wind	Yes	Y		1	.9	12	1						
13 0.9D+1.0 240-Wind	Yes	Y		1	.9	13	1						
14 0.9D+1.0 270-Wind	Yes	Y		1	.9	14	1						
15 0.9D+1.0 300-Wind	Yes	Y		1	.9	15	1						
16 0.9D+1.0 315-Wind	Yes	Y		1	.9	16	1						
17 0.9D+1.0 330-Wind	Yes	Y		1	.9	17	1						
18 1.2D+1.0 0-Wind	Yes	Y		1	1.2	2	1						
19 1.2D+1.0 30-Wind	Yes	Y		1	1.2	3	1						
20 1.2D+1.0 45-Wind	Yes	Y		1	1.2	4	1						
21 1.2D+1.0 60-Wind	Yes	Y		1	1.2	5	1						
22 1.2D+1.0 90-Wind	Yes	Y		1	1.2	6	1						



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Load Combinations (Continued)

Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
23 1.2D+1.0 120-Wind	Yes	Y		1	1.2	7	1						
24 1.2D+1.0 135-Wind	Yes	Y		1	1.2	8	1						
25 1.2D+1.0 150-Wind	Yes	Y		1	1.2	9	1						
26 1.2D+1.0 180-Wind	Yes	Y		1	1.2	10	1						
27 1.2D+1.0 210-Wind	Yes	Y		1	1.2	11	1						
28 1.2D+1.0 225-Wind	Yes	Y		1	1.2	12	1						
29 1.2D+1.0 240-Wind	Yes	Y		1	1.2	13	1						
30 1.2D+1.0 270-Wind	Yes	Y		1	1.2	14	1						
31 1.2D+1.0 300-Wind	Yes	Y		1	1.2	15	1						
32 1.2D+1.0 315-Wind	Yes	Y		1	1.2	16	1						
33 1.2D+1.0 330-Wind	Yes	Y		1	1.2	17	1						
34 1.2D+1.0Di+1.0 0-...	Yes	Y		1	1.2	18	1	19	1				
35 1.2D+1.0Di+1.0 30-...	Yes	Y		1	1.2	18	1	20	1				
36 1.2D+1.0Di+1.0 45-...	Yes	Y		1	1.2	18	1	21	1				
37 1.2D+1.0Di+1.0 60-...	Yes	Y		1	1.2	18	1	22	1				
38 1.2D+1.0Di+1.0 90-...	Yes	Y		1	1.2	18	1	23	1				
39 1.2D+1.0Di+1.0 12-...	Yes	Y		1	1.2	18	1	24	1				
40 1.2D+1.0Di+1.0 13-...	Yes	Y		1	1.2	18	1	25	1				
41 1.2D+1.0Di+1.0 15-...	Yes	Y		1	1.2	18	1	26	1				
42 1.2D+1.0Di+1.0 18-...	Yes	Y		1	1.2	18	1	27	1				
43 1.2D+1.0Di+1.0 21-...	Yes	Y		1	1.2	18	1	28	1				
44 1.2D+1.0Di+1.0 22-...	Yes	Y		1	1.2	18	1	29	1				
45 1.2D+1.0Di+1.0 24-...	Yes	Y		1	1.2	18	1	30	1				
46 1.2D+1.0Di+1.0 27-...	Yes	Y		1	1.2	18	1	31	1				
47 1.2D+1.0Di+1.0 30-...	Yes	Y		1	1.2	18	1	32	1				
48 1.2D+1.0Di+1.0 31-...	Yes	Y		1	1.2	18	1	33	1				
49 1.2D+1.0Di+1.0 33-...	Yes	Y		1	1.2	18	1	34	1				
50 1.2D+1.5Lv	Yes	Y		36	1.5	1	1.2						
51 1.2D+1.5Lm+1.0 0-...	Yes	Y		1	1.2	2	.065	35	1.5				
52 1.2D+1.5Lm+1.0 30-...	Yes	Y		1	1.2	3	.065	35	1.5				
53 1.2D+1.5Lm+1.0 45-...	Yes	Y		1	1.2	4	.065	35	1.5				
54 1.2D+1.5Lm+1.0 60-...	Yes	Y		1	1.2	5	.065	35	1.5				
55 1.2D+1.5Lm+1.0 90-...	Yes	Y		1	1.2	6	.065	35	1.5				
56 1.2D+1.5Lm+1.0 12-...	Yes	Y		1	1.2	7	.065	35	1.5				
57 1.2D+1.5Lm+1.0 13-...	Yes	Y		1	1.2	8	.065	35	1.5				
58 1.2D+1.5Lm+1.0 15-...	Yes	Y		1	1.2	9	.065	35	1.5				
59 1.2D+1.5Lm+1.0 18-...	Yes	Y		1	1.2	10	.065	35	1.5				
60 1.2D+1.5Lm+1.0 21-...	Yes	Y		1	1.2	11	.065	35	1.5				
61 1.2D+1.5Lm+1.0 22-...	Yes	Y		1	1.2	12	.065	35	1.5				
62 1.2D+1.5Lm+1.0 24-...	Yes	Y		1	1.2	13	.065	35	1.5				
63 1.2D+1.5Lm+1.0 27-...	Yes	Y		1	1.2	14	.065	35	1.5				
64 1.2D+1.5Lm+1.0 30-...	Yes	Y		1	1.2	15	.065	35	1.5				
65 1.2D+1.5Lm+1.0 31-...	Yes	Y		1	1.2	16	.065	35	1.5				
66 1.2D+1.5Lm+1.0 33-...	Yes	Y		1	1.2	17	.065	35	1.5				
67 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	.13	0					
68 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	.113	ELZ	.065				
69 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	.092	ELZ	.092				
70 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	.065	ELZ	.113				
71 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	0		ELZ	.13				
72 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	-.065	ELZ	.113				
73 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	-.092	ELZ	.092				
74 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	-.113	ELZ	.065				
75 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	-.13	0					
76 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	-.113	ELZ	-.065				
77 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	-.092	ELZ	-.092				
78 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	ELX	-.065	ELZ	-.113				
79 (1.2+0.2Sds)D+1.0 ...	Yes	Y		1	1.252	0		ELZ	-.13				



Load Combinations (Continued)

Description	So.	P	S	BLC Fac.	BLC Fac.	BLC Fac.	BLC Fac.	BLC Fac.	BLC Fac.	BLC Fac.	BLC Fac.	BLC Fac.
80 (1.2+0.2Sds)D+1.0...	Yes	Y	1	1.252	ELX	.065	ELZ	-.113				
81 (1.2+0.2Sds)D+1.0...	Yes	Y	1	1.252	ELX	.092	ELZ	-.092				
82 (1.2+0.2Sds)D+1.0...	Yes	Y	1	1.252	ELX	.113	ELZ	-.065				
83 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	.13	0					
84 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	.113	ELZ	.065				
85 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	.092	ELZ	.092				
86 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	.065	ELZ	.113				
87 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	0		ELZ	.13				
88 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	-.065	ELZ	.113				
89 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	-.092	ELZ	.092				
90 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	-.113	ELZ	.065				
91 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	-.13	0					
92 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	-.113	ELZ	-.065				
93 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	-.092	ELZ	-.092				
94 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	-.065	ELZ	-.113				
95 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	0		ELZ	-.13				
96 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	.065	ELZ	-.113				
97 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	.092	ELZ	-.092				
98 (0.9-0.2Sds)*DL+1....	Yes	Y	1	.848	ELX	.113	ELZ	-.065				

Joint Coordinates and Temperatures

Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1 FF1	3	1.5	-6.5	0	
2 FF2	3	1.5	6.5	0	
3 FF3	3	-1.5	-6.5	0	
4 FF4	3	-1.5	6.5	0	
5 MP-1A	3	5	-5.5	0	
6 MP-2A	3	5	-1.833333	0	
7 MP-3A	3	5	1.833333	0	
8 MP-4A	3	5	5.5	0	
9 MP-1B	3	-5	-5.5	0	
10 MP-2B	3	-5	-1.833333	0	
11 MP-3B	3	-5	1.833333	0	
12 MP-4B	3	-5	5.5	0	
13 SA-1A	3	1.5	4.322917	0	
14 SA-1B	-3.5	1.5	6.062178	0	
15 SF2-1	0	1.5	0	0	
16 SF2-2	0	-1.5	0	0	
17 SF2-3	3	1.5	-4	0	
18 SF2-4	3	-1.5	-4	0	
19 SF3-3	3	1.5	4	0	
20 SF3-4	3	-1.5	4	0	
21 N23	0	1.5	.5	0	
22 N24	0	-1.5	.5	0	
23 N23A	0	1.5	-.5	0	
24 N24A	0	-1.5	-.5	0	
25 N25	3	1.5	-5.5	0	
26 N26	3	1.5	-1.833333	0	
27 N27	3	1.5	1.833333	0	
28 N28	3	1.5	5.5	0	
29 N29	3	-1.5	-5.5	0	
30 N30	3	-1.5	-1.833333	0	
31 N31	3	-1.5	1.833333	0	
32 N32	3	-1.5	5.5	0	
33 N33	0.233829	1.5	-0.772801	0	



Joint Coordinates and Temperatures (Continued)

Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
34 N34	0.233829	-1.5	-0.772801	0	
35 N35	0.233829	1.5	0.772801	0	
36 N36	0.233829	-1.5	0.772801	0	
37 N37	2.810312	1.5	-3.778698	0	
38 N38	2.810312	-1.5	-3.778698	0	
39 N39	2.810312	1.5	3.778698	0	
40 N40	2.810312	-1.5	3.778698	0	
41 N41	3	5	-0.	0	
42 N42	3	-3	0	0	
43 N43	3	1.5	-0.	0	
44 N44	3	-1.5	-0.	0	
45 N45	1.500074	1.5	-2.250086	0	
46 N46	1.500074	-1.5	-2.250086	0	
47 N47	1.31026	1.5	-2.412784	0	
48 N48	1.31026	-1.5	-2.412784	0	
49 N49	1.31026	1.75	-2.412784	0	
50 N50	1.31026	-1.75	-2.412784	0	

Joint Loads and Enforced Displacements (BLC 35 : Lm)

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

Joint Loads and Enforced Displacements (BLC 36 : Lv)

Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft...)]
1 FF3	L	Y	-.25

Member Point Loads (BLC 1 : Dead)

Member Label	Direction	Magnitude[(k.k-ft)]	Location[ft.%]
1 MP-1	Y	-.05	1.771
2 MP-1	Y	-.041	5.734
3 MP-2	Y	-.045	2.033
4 MP-4	Y	-.065	2
5 MP-2	Y	-.053	5
6 MP-2	Y	-.048	5
7 MP-2	Y	-.071	1.75
8 MP-4	Y	-.053	5
9 MP-4	Y	-.019	1.5
10 MP-5	Y	-.06	5
11 MP-A	Y	-.019	1.75
12 MP-1	Y	-.05	4.229
13 MP-1	Y	-.041	8.266
14 MP-2	Y	-.045	7.967
15 MP-4	Y	-.065	8

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

Member Label	Direction	Magnitude[(k.k-ft)]	Location[ft.%]
1 MP-1	X	-.093	1.771
2 MP-1	X	-.078	5.734
3 MP-2	X	-.254	2.033
4 MP-4	X	-.29	2
5 MP-2	X	-.071	5
6 MP-2	X	-.031	5
7 MP-2	X	-.084	1.75



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
8	MP-4	X	-117	5
9	MP-4	X	-039	1.5
10	MP-5	X	-079	5
11	MP-A	X	-039	1.75
12	MP-1	X	-093	4.229
13	MP-1	X	-078	8.266
14	MP-2	X	-254	7.967
15	MP-4	X	-29	8

Member Point Loads (BLC 3 : 30 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-071	1.771
2	MP-1	X	-058	5.734
3	MP-2	X	-186	2.033
4	MP-4	X	-219	2
5	MP-2	X	-071	5
6	MP-2	X	-035	5
7	MP-2	X	-068	1.75
8	MP-4	X	-091	5
9	MP-4	X	-034	1.5
10	MP-5	X	-061	5
11	MP-A	X	-034	1.75
12	MP-1	X	-071	4.229
13	MP-1	X	-058	8.266
14	MP-2	X	-186	7.967
15	MP-4	X	-219	8
16	MP-1	Z	-041	1.771
17	MP-1	Z	-034	5.734
18	MP-2	Z	-107	2.033
19	MP-4	Z	-127	2
20	MP-2	Z	-041	5
21	MP-2	Z	-02	5
22	MP-2	Z	-039	1.75
23	MP-4	Z	-053	5
24	MP-4	Z	-02	1.5
25	MP-5	Z	-035	5
26	MP-A	Z	-02	1.75
27	MP-1	Z	-041	4.229
28	MP-1	Z	-034	8.266
29	MP-2	Z	-107	7.967
30	MP-4	Z	-127	8

Member Point Loads (BLC 4 : 45 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-051	1.771
2	MP-1	X	-04	5.734
3	MP-2	X	-124	2.033
4	MP-4	X	-154	2
5	MP-2	X	-066	5
6	MP-2	X	-036	5
7	MP-2	X	-051	1.75
8	MP-4	X	-066	5
9	MP-4	X	-028	1.5
10	MP-5	X	-044	5
11	MP-A	X	-028	1.75
12	MP-1	X	-051	4.229



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Member Point Loads (BLC 4 : 45 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
13	MP-1	X	-04	8.266
14	MP-2	X	-124	7.967
15	MP-4	X	-154	8
16	MP-1	Z	-051	1.771
17	MP-1	Z	-04	5.734
18	MP-2	Z	-124	2.033
19	MP-4	Z	-154	2
20	MP-2	Z	-066	5
21	MP-2	Z	-036	5
22	MP-2	Z	-051	1.75
23	MP-4	Z	-066	5
24	MP-4	Z	-028	1.5
25	MP-5	Z	-044	5
26	MP-A	Z	-028	1.75
27	MP-1	Z	-051	4.229
28	MP-1	Z	-04	8.266
29	MP-2	Z	-124	7.967
30	MP-4	Z	-154	8

Member Point Loads (BLC 5 : 60 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-031	1.771
2	MP-1	X	-023	5.734
3	MP-2	X	-068	2.033
4	MP-4	X	-091	2
5	MP-2	X	-053	5
6	MP-2	X	-03	5
7	MP-2	X	-033	1.75
8	MP-4	X	-041	5
9	MP-4	X	-02	1.5
10	MP-5	X	-027	5
11	MP-A	X	-02	1.75
12	MP-1	X	-031	4.229
13	MP-1	X	-023	8.266
14	MP-2	X	-068	7.967
15	MP-4	X	-091	8
16	MP-1	Z	-053	1.771
17	MP-1	Z	-041	5.734
18	MP-2	Z	-117	2.033
19	MP-4	Z	-157	2
20	MP-2	Z	-091	5
21	MP-2	Z	-052	5
22	MP-2	Z	-057	1.75
23	MP-4	Z	-071	5
24	MP-4	Z	-034	1.5
25	MP-5	Z	-046	5
26	MP-A	Z	-034	1.75
27	MP-1	Z	-053	4.229
28	MP-1	Z	-041	8.266
29	MP-2	Z	-117	7.967
30	MP-4	Z	-157	8

Member Point Loads (BLC 6 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Z	-051	1.771
2	MP-1	Z	-037	5.734



Member Point Loads (BLC 6 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
3	MP-2	Z	-0.96	2.033
4	MP-4	Z	-.145	2
5	MP-2	Z	-.117	5
6	MP-2	Z	-.07	5
7	MP-2	Z	-.06	1.75
8	MP-4	Z	-.071	5
9	MP-4	Z	-.039	1.5
10	MP-5	Z	-.045	5
11	MP-A	Z	-.039	1.75
12	MP-1	Z	-.051	4.229
13	MP-1	Z	-.037	8.266
14	MP-2	Z	-.096	7.967
15	MP-4	Z	-.145	8

Member Point Loads (BLC 7 : 120 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.031	1.771
2	MP-1	X	.023	5.734
3	MP-2	X	.068	2.033
4	MP-4	X	.091	2
5	MP-2	X	.053	5
6	MP-2	X	.03	5
7	MP-2	X	.033	1.75
8	MP-4	X	.041	5
9	MP-4	X	.02	1.5
10	MP-5	X	.027	5
11	MP-A	X	.02	1.75
12	MP-1	X	.031	4.229
13	MP-1	X	.023	8.266
14	MP-2	X	.068	7.967
15	MP-4	X	.091	8
16	MP-1	Z	-.053	1.771
17	MP-1	Z	-.041	5.734
18	MP-2	Z	-.117	2.033
19	MP-4	Z	-.157	2
20	MP-2	Z	-.091	5
21	MP-2	Z	-.052	5
22	MP-2	Z	-.057	1.75
23	MP-4	Z	-.071	5
24	MP-4	Z	-.034	1.5
25	MP-5	Z	-.046	5
26	MP-A	Z	-.034	1.75
27	MP-1	Z	-.053	4.229
28	MP-1	Z	-.041	8.266
29	MP-2	Z	-.117	7.967
30	MP-4	Z	-.157	8

Member Point Loads (BLC 8 : 135 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.051	1.771
2	MP-1	X	.04	5.734
3	MP-2	X	.124	2.033
4	MP-4	X	.154	2
5	MP-2	X	.066	5
6	MP-2	X	.036	5
7	MP-2	X	.051	1.75



Member Point Loads (BLC 8 : 135 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
8	MP-4	X	.066	5
9	MP-4	X	.028	1.5
10	MP-5	X	.044	5
11	MP-A	X	.028	1.75
12	MP-1	X	.051	4.229
13	MP-1	X	.04	8.266
14	MP-2	X	.124	7.967
15	MP-4	X	.154	8
16	MP-1	Z	-.051	1.771
17	MP-1	Z	-.04	5.734
18	MP-2	Z	-.124	2.033
19	MP-4	Z	-.154	2
20	MP-2	Z	-.066	5
21	MP-2	Z	-.036	5
22	MP-2	Z	-.051	1.75
23	MP-4	Z	-.066	5
24	MP-4	Z	-.028	1.5
25	MP-5	Z	-.044	5
26	MP-A	Z	-.028	1.75
27	MP-1	Z	-.051	4.229
28	MP-1	Z	-.04	8.266
29	MP-2	Z	-.124	7.967
30	MP-4	Z	-.154	8

Member Point Loads (BLC 9 : 150 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.071	1.771
2	MP-1	X	.058	5.734
3	MP-2	X	.186	2.033
4	MP-4	X	.219	2
5	MP-2	X	.071	5
6	MP-2	X	.035	5
7	MP-2	X	.068	1.75
8	MP-4	X	.091	5
9	MP-4	X	.034	1.5
10	MP-5	X	.061	5
11	MP-A	X	.034	1.75
12	MP-1	X	.071	4.229
13	MP-1	X	.058	8.266
14	MP-2	X	.186	7.967
15	MP-4	X	.219	8
16	MP-1	Z	-.041	1.771
17	MP-1	Z	-.034	5.734
18	MP-2	Z	-.107	2.033
19	MP-4	Z	-.127	2
20	MP-2	Z	-.041	5
21	MP-2	Z	-.02	5
22	MP-2	Z	-.039	1.75
23	MP-4	Z	-.053	5
24	MP-4	Z	-.02	1.5
25	MP-5	Z	-.035	5
26	MP-A	Z	-.02	1.75
27	MP-1	Z	-.041	4.229
28	MP-1	Z	-.034	8.266
29	MP-2	Z	-.107	7.967
30	MP-4	Z	-.127	8



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Member Point Loads (BLC 10 : 180 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	X	.093	1.771
2	MP-1	X	.078	5.734
3	MP-2	X	.254	2.033
4	MP-4	X	.29	2
5	MP-2	X	.071	5
6	MP-2	X	.031	5
7	MP-2	X	.084	1.75
8	MP-4	X	.117	5
9	MP-4	X	.039	1.5
10	MP-5	X	.079	5
11	MP-A	X	.039	1.75
12	MP-1	X	.093	4.229
13	MP-1	X	.078	8.266
14	MP-2	X	.254	7.967
15	MP-4	X	.29	8

Member Point Loads (BLC 11 : 210 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	X	.071	1.771
2	MP-1	X	.058	5.734
3	MP-2	X	.186	2.033
4	MP-4	X	.219	2
5	MP-2	X	.071	5
6	MP-2	X	.035	5
7	MP-2	X	.068	1.75
8	MP-4	X	.091	5
9	MP-4	X	.034	1.5
10	MP-5	X	.061	5
11	MP-A	X	.034	1.75
12	MP-1	X	.071	4.229
13	MP-1	X	.058	8.266
14	MP-2	X	.186	7.967
15	MP-4	X	.219	8
16	MP-1	Z	.041	1.771
17	MP-1	Z	.034	5.734
18	MP-2	Z	.107	2.033
19	MP-4	Z	.127	2
20	MP-2	Z	.041	5
21	MP-2	Z	.02	5
22	MP-2	Z	.039	1.75
23	MP-4	Z	.053	5
24	MP-4	Z	.02	1.5
25	MP-5	Z	.035	5
26	MP-A	Z	.02	1.75
27	MP-1	Z	.041	4.229
28	MP-1	Z	.034	8.266
29	MP-2	Z	.107	7.967
30	MP-4	Z	.127	8

Member Point Loads (BLC 12 : 225 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	X	.051	1.771
2	MP-1	X	.04	5.734
3	MP-2	X	.124	2.033
4	MP-4	X	.154	2
5	MP-2	X	.066	5



Company : Tower Engineering Professionals
 Designer : NAM
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 Model Name : BRG 134 943057 (BU 807133)

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Member Point Loads (BLC 12 : 225 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
6	MP-2	X	.036	5
7	MP-2	X	.051	1.75
8	MP-4	X	.066	5
9	MP-4	X	.028	1.5
10	MP-5	X	.044	5
11	MP-A	X	.028	1.75
12	MP-1	X	.051	4.229
13	MP-1	X	.04	8.266
14	MP-2	X	.124	7.967
15	MP-4	X	.154	8
16	MP-1	Z	.051	1.771
17	MP-1	Z	.04	5.734
18	MP-2	Z	.124	2.033
19	MP-4	Z	.154	2
20	MP-2	Z	.066	5
21	MP-2	Z	.036	5
22	MP-2	Z	.051	1.75
23	MP-4	Z	.066	5
24	MP-4	Z	.028	1.5
25	MP-5	Z	.044	5
26	MP-A	Z	.028	1.75
27	MP-1	Z	.051	4.229
28	MP-1	Z	.04	8.266
29	MP-2	Z	.124	7.967
30	MP-4	Z	.154	8

Member Point Loads (BLC 13 : 240 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	X	.031	1.771
2	MP-1	X	.023	5.734
3	MP-2	X	.068	2.033
4	MP-4	X	.091	2
5	MP-2	X	.053	5
6	MP-2	X	.03	5
7	MP-2	X	.033	1.75
8	MP-4	X	.041	5
9	MP-4	X	.02	1.5
10	MP-5	X	.027	5
11	MP-A	X	.02	1.75
12	MP-1	X	.031	4.229
13	MP-1	X	.023	8.266
14	MP-2	X	.068	7.967
15	MP-4	X	.091	8
16	MP-1	Z	.053	1.771
17	MP-1	Z	.041	5.734
18	MP-2	Z	.117	2.033
19	MP-4	Z	.157	2
20	MP-2	Z	.091	5
21	MP-2	Z	.052	5
22	MP-2	Z	.057	1.75
23	MP-4	Z	.071	5
24	MP-4	Z	.034	1.5
25	MP-5	Z	.046	5
26	MP-A	Z	.034	1.75
27	MP-1	Z	.053	4.229
28	MP-1	Z	.041	8.266



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Member Point Loads (BLC 13 : 240 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
29	MP-2	Z	.117	7.967
30	MP-4	Z	.157	8

Member Point Loads (BLC 14 : 270 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Z	.051	1.771
2	MP-1	Z	.037	5.734
3	MP-2	Z	.096	2.033
4	MP-4	Z	.145	2
5	MP-2	Z	.117	5
6	MP-2	Z	.07	5
7	MP-2	Z	.06	1.75
8	MP-4	Z	.071	5
9	MP-4	Z	.039	1.5
10	MP-5	Z	.045	5
11	MP-A	Z	.039	1.75
12	MP-1	Z	.051	4.229
13	MP-1	Z	.037	8.266
14	MP-2	Z	.096	7.967
15	MP-4	Z	.145	8

Member Point Loads (BLC 15 : 300 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.031	1.771
2	MP-1	X	-.023	5.734
3	MP-2	X	-.068	2.033
4	MP-4	X	-.091	2
5	MP-2	X	-.053	5
6	MP-2	X	-.03	5
7	MP-2	X	-.033	1.75
8	MP-4	X	-.041	5
9	MP-4	X	-.02	1.5
10	MP-5	X	-.027	5
11	MP-A	X	-.02	1.75
12	MP-1	X	-.031	4.229
13	MP-1	X	-.023	8.266
14	MP-2	X	-.068	7.967
15	MP-4	X	-.091	8
16	MP-1	Z	.053	1.771
17	MP-1	Z	.041	5.734
18	MP-2	Z	.117	2.033
19	MP-4	Z	.157	2
20	MP-2	Z	.091	5
21	MP-2	Z	.052	5
22	MP-2	Z	.057	1.75
23	MP-4	Z	.071	5
24	MP-4	Z	.034	1.5
25	MP-5	Z	.046	5
26	MP-A	Z	.034	1.75
27	MP-1	Z	.053	4.229
28	MP-1	Z	.041	8.266
29	MP-2	Z	.117	7.967
30	MP-4	Z	.157	8

Member Point Loads (BLC 16 : 315 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
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Member Point Loads (BLC 16 : 315 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.051	1.771
2	MP-1	X	-.04	5.734
3	MP-2	X	-.124	2.033
4	MP-4	X	-.154	2
5	MP-2	X	-.066	5
6	MP-2	X	-.036	5
7	MP-2	X	-.051	1.75
8	MP-4	X	-.066	5
9	MP-4	X	-.028	1.5
10	MP-5	X	-.044	5
11	MP-A	X	-.028	1.75
12	MP-1	X	-.051	4.229
13	MP-1	X	-.04	8.266
14	MP-2	X	-.124	7.967
15	MP-4	X	-.154	8
16	MP-1	Z	.051	1.771
17	MP-1	Z	.04	5.734
18	MP-2	Z	.124	2.033
19	MP-4	Z	.154	2
20	MP-2	Z	.066	5
21	MP-2	Z	.036	5
22	MP-2	Z	.051	1.75
23	MP-4	Z	.066	5
24	MP-4	Z	.028	1.5
25	MP-5	Z	.044	5
26	MP-A	Z	.028	1.75
27	MP-1	Z	.051	4.229
28	MP-1	Z	.04	8.266
29	MP-2	Z	.124	7.967
30	MP-4	Z	.154	8

Member Point Loads (BLC 17 : 330 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.071	1.771
2	MP-1	X	-.058	5.734
3	MP-2	X	-.186	2.033
4	MP-4	X	-.219	2
5	MP-2	X	-.071	5
6	MP-2	X	-.035	5
7	MP-2	X	-.068	1.75
8	MP-4	X	-.091	5
9	MP-4	X	-.034	1.5
10	MP-5	X	-.061	5
11	MP-A	X	-.034	1.75
12	MP-1	X	-.071	4.229
13	MP-1	X	-.058	8.266
14	MP-2	X	-.186	7.967
15	MP-4	X	-.219	8
16	MP-1	Z	.041	1.771
17	MP-1	Z	.034	5.734
18	MP-2	Z	.107	2.033
19	MP-4	Z	.127	2
20	MP-2	Z	.041	5
21	MP-2	Z	.02	5
22	MP-2	Z	.039	1.75
23	MP-4	Z	.053	5



Company : Tower Engineering Professionals
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Member Point Loads (BLC 17 : 330 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
24	MP-4	Z	.02	1.5
25	MP-5	Z	.035	5
26	MP-A	Z	.02	1.75
27	MP-1	Z	.041	4.229
28	MP-1	Z	.034	8.266
29	MP-2	Z	.107	7.967
30	MP-4	Z	.127	8

Member Point Loads (BLC 18 : Ice Weight)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Y	-.042	1.771
2	MP-1	Y	-.038	5.734
3	MP-2	Y	-.092	2.033
4	MP-4	Y	-.104	2
5	MP-2	Y	-.054	5
6	MP-2	Y	-.034	5
7	MP-2	Y	-.048	1.75
8	MP-4	Y	-.054	5
9	MP-4	Y	-.038	1.5
10	MP-5	Y	-.041	5
11	MP-A	Y	-.038	1.75
12	MP-1	Y	-.042	4.229
13	MP-1	Y	-.038	8.266
14	MP-2	Y	-.092	7.967
15	MP-4	Y	-.104	8

Member Point Loads (BLC 19 : 0 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.02	1.771
2	MP-1	X	-.017	5.734
3	MP-2	X	-.052	2.033
4	MP-4	X	-.059	2
5	MP-2	X	-.027	5
6	MP-2	X	-.017	5
7	MP-2	X	-.02	1.75
8	MP-4	X	-.027	5
9	MP-4	X	-.009	1.5
10	MP-5	X	-.019	5
11	MP-A	X	-.009	1.75
12	MP-1	X	-.02	4.229
13	MP-1	X	-.017	8.266
14	MP-2	X	-.052	7.967
15	MP-4	X	-.059	8

Member Point Loads (BLC 20 : 30 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.016	1.771
2	MP-1	X	-.013	5.734
3	MP-2	X	-.038	2.033
4	MP-4	X	-.045	2
5	MP-2	X	-.018	5
6	MP-2	X	-.01	5
7	MP-2	X	-.016	1.75
8	MP-4	X	-.022	5
9	MP-4	X	-.008	1.5



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Member Point Loads (BLC 20 : 30 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
10	MP-5	X	-.015	5
11	MP-A	X	-.008	1.75
12	MP-1	X	-.016	4.229
13	MP-1	X	-.013	8.266
14	MP-2	X	-.038	7.967
15	MP-4	X	-.045	8
16	MP-1	Z	-.009	1.771
17	MP-1	Z	-.007	5.734
18	MP-2	Z	-.022	2.033
19	MP-4	Z	-.026	2
20	MP-2	Z	-.01	5
21	MP-2	Z	-.006	5
22	MP-2	Z	-.009	1.75
23	MP-4	Z	-.012	5
24	MP-4	Z	-.005	1.5
25	MP-5	Z	-.009	5
26	MP-A	Z	-.005	1.75
27	MP-1	Z	-.009	4.229
28	MP-1	Z	-.007	8.266
29	MP-2	Z	-.022	7.967
30	MP-4	Z	-.026	8

Member Point Loads (BLC 21 : 45 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.011	1.771
2	MP-1	X	-.009	5.734
3	MP-2	X	-.026	2.033
4	MP-4	X	-.032	2
5	MP-2	X	-.016	5
6	MP-2	X	-.009	5
7	MP-2	X	-.012	1.75
8	MP-4	X	-.016	5
9	MP-4	X	-.007	1.5
10	MP-5	X	-.011	5
11	MP-A	X	-.007	1.75
12	MP-1	X	-.011	4.229
13	MP-1	X	-.009	8.266
14	MP-2	X	-.026	7.967
15	MP-4	X	-.032	8
16	MP-1	Z	-.011	1.771
17	MP-1	Z	-.009	5.734
18	MP-2	Z	-.026	2.033
19	MP-4	Z	-.032	2
20	MP-2	Z	-.016	5
21	MP-2	Z	-.009	5
22	MP-2	Z	-.012	1.75
23	MP-4	Z	-.016	5
24	MP-4	Z	-.007	1.5
25	MP-5	Z	-.011	5
26	MP-A	Z	-.007	1.75
27	MP-1	Z	-.011	4.229
28	MP-1	Z	-.009	8.266
29	MP-2	Z	-.026	7.967
30	MP-4	Z	-.032	8



Member Point Loads (BLC 22 : 60 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	X	-0.07	1.771
2	MP-1	X	-0.005	5.734
3	MP-2	X	-0.15	2.033
4	MP-4	X	-0.19	2
5	MP-2	X	-0.12	5
6	MP-2	X	-0.008	5
7	MP-2	X	-0.008	1.75
8	MP-4	X	-0.01	5
9	MP-4	X	-0.005	1.5
10	MP-5	X	-0.007	5
11	MP-A	X	-0.005	1.75
12	MP-1	X	-0.007	4.229
13	MP-1	X	-0.005	8.266
14	MP-2	X	-0.15	7.967
15	MP-4	X	-0.19	8
16	MP-1	Z	-0.12	1.771
17	MP-1	Z	-0.009	5.734
18	MP-2	Z	-0.26	2.033
19	MP-4	Z	-0.34	2
20	MP-2	Z	-0.22	5
21	MP-2	Z	-0.13	5
22	MP-2	Z	-0.14	1.75
23	MP-4	Z	-0.18	5
24	MP-4	Z	-0.008	1.5
25	MP-5	Z	-0.12	5
26	MP-A	Z	-0.008	1.75
27	MP-1	Z	-0.12	4.229
28	MP-1	Z	-0.009	8.266
29	MP-2	Z	-0.26	7.967
30	MP-4	Z	-0.34	8

Member Point Loads (BLC 23 : 90 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	Z	-0.12	1.771
2	MP-1	Z	-0.009	5.734
3	MP-2	Z	-0.22	2.033
4	MP-4	Z	-0.32	2
5	MP-2	Z	-0.18	5
6	MP-2	Z	-0.009	5
7	MP-2	Z	-0.15	1.75
8	MP-4	Z	-0.18	5
9	MP-4	Z	-0.009	1.5
10	MP-5	Z	-0.12	5
11	MP-A	Z	-0.009	1.75
12	MP-1	Z	-0.12	4.229
13	MP-1	Z	-0.009	8.266
14	MP-2	Z	-0.22	7.967
15	MP-4	Z	-0.32	8

Member Point Loads (BLC 24 : 120 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	X	.007	1.771
2	MP-1	X	.005	5.734
3	MP-2	X	.015	2.033
4	MP-4	X	.019	2
5	MP-2	X	.012	5



Member Point Loads (BLC 24 : 120 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
6	MP-2	X	.008	5
7	MP-2	X	.008	1.75
8	MP-4	X	.01	5
9	MP-4	X	.005	1.5
10	MP-5	X	.007	5
11	MP-A	X	.005	1.75
12	MP-1	X	.007	4.229
13	MP-1	X	.005	8.266
14	MP-2	X	.015	7.967
15	MP-4	X	.019	8
16	MP-1	Z	-0.12	1.771
17	MP-1	Z	-0.009	5.734
18	MP-2	Z	-0.26	2.033
19	MP-4	Z	-0.34	2
20	MP-2	Z	-0.22	5
21	MP-2	Z	-0.13	5
22	MP-2	Z	-0.14	1.75
23	MP-4	Z	-0.18	5
24	MP-4	Z	-0.008	1.5
25	MP-5	Z	-0.12	5
26	MP-A	Z	-0.008	1.75
27	MP-1	Z	-0.12	4.229
28	MP-1	Z	-0.009	8.266
29	MP-2	Z	-0.26	7.967
30	MP-4	Z	-0.34	8

Member Point Loads (BLC 25 : 135 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location(ft.%)
1	MP-1	X	.011	1.771
2	MP-1	X	.009	5.734
3	MP-2	X	.026	2.033
4	MP-4	X	.032	2
5	MP-2	X	.016	5
6	MP-2	X	.009	5
7	MP-2	X	.012	1.75
8	MP-4	X	.016	5
9	MP-4	X	.007	1.5
10	MP-5	X	.011	5
11	MP-A	X	.007	1.75
12	MP-1	X	.011	4.229
13	MP-1	X	.009	8.266
14	MP-2	X	.026	7.967
15	MP-4	X	.032	8
16	MP-1	Z	-0.11	1.771
17	MP-1	Z	-0.009	5.734
18	MP-2	Z	-0.26	2.033
19	MP-4	Z	-0.32	2
20	MP-2	Z	-0.16	5
21	MP-2	Z	-0.009	5
22	MP-2	Z	-0.12	1.75
23	MP-4	Z	-0.16	5
24	MP-4	Z	-0.007	1.5
25	MP-5	Z	-0.11	5
26	MP-A	Z	-0.007	1.75
27	MP-1	Z	-0.11	4.229
28	MP-1	Z	-0.009	8.266



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Member Point Loads (BLC 25 : 135 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
29	MP-2	Z	-0.26	7.967
30	MP-4	Z	-0.32	8

Member Point Loads (BLC 26 : 150 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.016	1.771
2	MP-1	X	.013	5.734
3	MP-2	X	.038	2.033
4	MP-4	X	.045	2
5	MP-2	X	.018	5
6	MP-2	X	.01	5
7	MP-2	X	.016	1.75
8	MP-4	X	.022	5
9	MP-4	X	.008	1.5
10	MP-5	X	.015	5
11	MP-A	X	.008	1.75
12	MP-1	X	.016	4.229
13	MP-1	X	.013	8.266
14	MP-2	X	.038	7.967
15	MP-4	X	.045	8
16	MP-1	Z	-.009	1.771
17	MP-1	Z	-.007	5.734
18	MP-2	Z	-.022	2.033
19	MP-4	Z	-.026	2
20	MP-2	Z	-.01	5
21	MP-2	Z	-.006	5
22	MP-2	Z	-.009	1.75
23	MP-4	Z	-.012	5
24	MP-4	Z	-.005	1.5
25	MP-5	Z	-.009	5
26	MP-A	Z	-.005	1.75
27	MP-1	Z	-.009	4.229
28	MP-1	Z	-.007	8.266
29	MP-2	Z	-.022	7.967
30	MP-4	Z	-.026	8

Member Point Loads (BLC 27 : 180 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.02	1.771
2	MP-1	X	.017	5.734
3	MP-2	X	.052	2.033
4	MP-4	X	.059	2
5	MP-2	X	.027	5
6	MP-2	X	.017	5
7	MP-2	X	.02	1.75
8	MP-4	X	.027	5
9	MP-4	X	.009	1.5
10	MP-5	X	.019	5
11	MP-A	X	.009	1.75
12	MP-1	X	.02	4.229
13	MP-1	X	.017	8.266
14	MP-2	X	.052	7.967
15	MP-4	X	.059	8

Member Point Loads (BLC 28 : 210 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
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Member Point Loads (BLC 28 : 210 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.016	1.771
2	MP-1	X	.013	5.734
3	MP-2	X	.038	2.033
4	MP-4	X	.045	2
5	MP-2	X	.018	5
6	MP-2	X	.01	5
7	MP-2	X	.016	1.75
8	MP-4	X	.022	5
9	MP-4	X	.008	1.5
10	MP-5	X	.015	5
11	MP-A	X	.008	1.75
12	MP-1	X	.016	4.229
13	MP-1	X	.013	8.266
14	MP-2	X	.038	7.967
15	MP-4	X	.045	8
16	MP-1	Z	.009	1.771
17	MP-1	Z	.007	5.734
18	MP-2	Z	.022	2.033
19	MP-4	Z	.026	2
20	MP-2	Z	.01	5
21	MP-2	Z	.006	5
22	MP-2	Z	.009	1.75
23	MP-4	Z	.012	5
24	MP-4	Z	.005	1.5
25	MP-5	Z	.009	5
26	MP-A	Z	.005	1.75
27	MP-1	Z	.009	4.229
28	MP-1	Z	.007	8.266
29	MP-2	Z	.022	7.967
30	MP-4	Z	.026	8

Member Point Loads (BLC 29 : 225 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.011	1.771
2	MP-1	X	.009	5.734
3	MP-2	X	.026	2.033
4	MP-4	X	.032	2
5	MP-2	X	.016	5
6	MP-2	X	.009	5
7	MP-2	X	.012	1.75
8	MP-4	X	.016	5
9	MP-4	X	.007	1.5
10	MP-5	X	.011	5
11	MP-A	X	.007	1.75
12	MP-1	X	.011	4.229
13	MP-1	X	.009	8.266
14	MP-2	X	.026	7.967
15	MP-4	X	.032	8
16	MP-1	Z	.011	1.771
17	MP-1	Z	.009	5.734
18	MP-2	Z	.026	2.033
19	MP-4	Z	.032	2
20	MP-2	Z	.016	5
21	MP-2	Z	.009	5
22	MP-2	Z	.012	1.75
23	MP-4	Z	.016	5



Company : Tower Engineering Professionals
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Member Point Loads (BLC 29 : 225 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
24	MP-4	Z	.007	1.5
25	MP-5	Z	.011	5
26	MP-A	Z	.007	1.75
27	MP-1	Z	.011	4.229
28	MP-1	Z	.009	8.266
29	MP-2	Z	.026	7.967
30	MP-4	Z	.032	8

Member Point Loads (BLC 30 : 240 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.007	1.771
2	MP-1	X	.005	5.734
3	MP-2	X	.015	2.033
4	MP-4	X	.019	2
5	MP-2	X	.012	5
6	MP-2	X	.008	5
7	MP-2	X	.008	1.75
8	MP-4	X	.01	5
9	MP-4	X	.005	1.5
10	MP-5	X	.007	5
11	MP-A	X	.005	1.75
12	MP-1	X	.007	4.229
13	MP-1	X	.005	8.266
14	MP-2	X	.015	7.967
15	MP-4	X	.019	8
16	MP-1	Z	.012	1.771
17	MP-1	Z	.009	5.734
18	MP-2	Z	.026	2.033
19	MP-4	Z	.034	2
20	MP-2	Z	.022	5
21	MP-2	Z	.013	5
22	MP-2	Z	.014	1.75
23	MP-4	Z	.018	5
24	MP-4	Z	.008	1.5
25	MP-5	Z	.012	5
26	MP-A	Z	.008	1.75
27	MP-1	Z	.012	4.229
28	MP-1	Z	.009	8.266
29	MP-2	Z	.026	7.967
30	MP-4	Z	.034	8

Member Point Loads (BLC 31 : 270 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Z	.012	1.771
2	MP-1	Z	.009	5.734
3	MP-2	Z	.022	2.033
4	MP-4	Z	.032	2
5	MP-2	Z	.018	5
6	MP-2	Z	.009	5
7	MP-2	Z	.015	1.75
8	MP-4	Z	.018	5
9	MP-4	Z	.009	1.5
10	MP-5	Z	.012	5
11	MP-A	Z	.009	1.75
12	MP-1	Z	.012	4.229
13	MP-1	Z	.009	8.266



Company : Tower Engineering Professionals
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Member Point Loads (BLC 31 : 270 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
14	MP-2	Z	.022	7.967
15	MP-4	Z	.032	8

Member Point Loads (BLC 32 : 300 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.007	1.771
2	MP-1	X	-.005	5.734
3	MP-2	X	-.015	2.033
4	MP-4	X	-.019	2
5	MP-2	X	-.012	5
6	MP-2	X	-.008	5
7	MP-2	X	-.008	1.75
8	MP-4	X	-.01	5
9	MP-4	X	-.005	1.5
10	MP-5	X	-.007	5
11	MP-A	X	-.005	1.75
12	MP-1	X	-.007	4.229
13	MP-1	X	-.005	8.266
14	MP-2	X	-.015	7.967
15	MP-4	X	-.019	8
16	MP-1	Z	.012	1.771
17	MP-1	Z	.009	5.734
18	MP-2	Z	.026	2.033
19	MP-4	Z	.034	2
20	MP-2	Z	.022	5
21	MP-2	Z	.013	5
22	MP-2	Z	.014	1.75
23	MP-4	Z	.018	5
24	MP-4	Z	.008	1.5
25	MP-5	Z	.012	5
26	MP-A	Z	.008	1.75
27	MP-1	Z	.012	4.229
28	MP-1	Z	.009	8.266
29	MP-2	Z	.026	7.967
30	MP-4	Z	.034	8

Member Point Loads (BLC 33 : 315 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.011	1.771
2	MP-1	X	-.009	5.734
3	MP-2	X	-.026	2.033
4	MP-4	X	-.032	2
5	MP-2	X	-.016	5
6	MP-2	X	-.009	5
7	MP-2	X	-.012	1.75
8	MP-4	X	-.016	5
9	MP-4	X	-.007	1.5
10	MP-5	X	-.011	5
11	MP-A	X	-.007	1.75
12	MP-1	X	-.011	4.229
13	MP-1	X	-.009	8.266
14	MP-2	X	-.026	7.967
15	MP-4	X	-.032	8
16	MP-1	Z	.011	1.771
17	MP-1	Z	.009	5.734
18	MP-2	Z	.026	2.033



Member Point Loads (BLC 33 : 315 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft. %]
19	MP-4	Z	.032	2
20	MP-2	Z	.016	5
21	MP-2	Z	.009	5
22	MP-2	Z	.012	1.75
23	MP-4	Z	.016	5
24	MP-4	Z	.007	1.5
25	MP-5	Z	.011	5
26	MP-A	Z	.007	1.75
27	MP-1	Z	.011	4.229
28	MP-1	Z	.009	8.266
29	MP-2	Z	.026	7.967
30	MP-4	Z	.032	8

Member Point Loads (BLC 34 : 330 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft. %]
1	MP-1	X	-.016	1.771
2	MP-1	X	-.013	5.734
3	MP-2	X	-.038	2.033
4	MP-4	X	-.045	2
5	MP-2	X	-.018	5
6	MP-2	X	-.01	5
7	MP-2	X	-.016	1.75
8	MP-4	X	-.022	5
9	MP-4	X	-.008	1.5
10	MP-5	X	-.015	5
11	MP-A	X	-.008	1.75
12	MP-1	X	-.016	4.229
13	MP-1	X	-.013	8.266
14	MP-2	X	-.038	7.967
15	MP-4	X	-.045	8
16	MP-1	Z	.009	1.771
17	MP-1	Z	.007	5.734
18	MP-2	Z	.022	2.033
19	MP-4	Z	.026	2
20	MP-2	Z	.01	5
21	MP-2	Z	.006	5
22	MP-2	Z	.009	1.75
23	MP-4	Z	.012	5
24	MP-4	Z	.005	1.5
25	MP-5	Z	.009	5
26	MP-A	Z	.005	1.75
27	MP-1	Z	.009	4.229
28	MP-1	Z	.007	8.266
29	MP-2	Z	.022	7.967
30	MP-4	Z	.026	8

Member Point Loads (BLC 37 : Seismic Load X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft. %]
1	MP-1	X	-.05	1.771
2	MP-1	X	-.041	5.734
3	MP-2	X	-.045	2.033
4	MP-4	X	-.065	2
5	MP-2	X	-.053	5
6	MP-2	X	-.048	5
7	MP-2	X	-.071	1.75
8	MP-4	X	-.053	5



Member Point Loads (BLC 37 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft. %]
9	MP-4	X	-.019	1.5
10	MP-5	X	-.06	5
11	MP-A	X	-.019	1.75
12	MP-1	X	-.05	4.229
13	MP-1	X	-.041	8.266
14	MP-2	X	-.045	7.967
15	MP-4	X	-.065	8

Member Point Loads (BLC 38 : Seismic Load Z)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft. %]
1	MP-1	Z	-.05	1.771
2	MP-1	Z	-.041	5.734
3	MP-2	Z	-.045	2.033
4	MP-4	Z	-.065	2
5	MP-2	Z	-.053	5
6	MP-2	Z	-.048	5
7	MP-2	Z	-.071	1.75
8	MP-4	Z	-.053	5
9	MP-4	Z	-.019	1.5
10	MP-5	Z	-.06	5
11	MP-A	Z	-.019	1.75
12	MP-1	Z	-.05	4.229
13	MP-1	Z	-.041	8.266
14	MP-2	Z	-.045	7.967
15	MP-4	Z	-.065	8

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

	Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft. %]	End Location[ft. %]
1	FF-BH1	X	-.01	-.01	0	%100
2	FF-BH2	X	-.01	-.01	0	%100
3	FF-BH3	X	-.01	-.01	0	%100
4	FF-TH1	X	-.01	-.01	0	%100
5	FF-TH2	X	-.01	-.01	0	%100
6	FF-TH3	X	-.01	-.01	0	%100
7	MP-1	X	-.01	-.01	0	%100
8	MP-2	X	-.01	-.01	0	%100
9	MP-3	X	-.01	-.01	0	%100
10	MP-4	X	-.01	-.01	0	%100
11	MP-5	X	-.01	-.01	0	%100
12	MP-A	X	-.009	-.009	0	%100
13	SA-1	X	-.002	-.002	0	%100
14	SF2-D1	X	-.003	-.003	0	%100
15	SF3-D1	X	-.003	-.003	0	%100
16	SF2-BH	X	-.007	-.007	0	%100
17	SF2-TH	X	-.007	-.007	0	%100
18	SF3-BH	X	-.007	-.007	0	%100
19	SF3-TH	X	-.007	-.007	0	%100
20	SF2-V1	X	-.003	-.003	0	%100
21	SF2-V2	X	-.003	-.003	0	%100
22	SF3-V1	X	-.003	-.003	0	%100
23	SF3-V2	X	-.003	-.003	0	%100

Member Distributed Loads (BLC 3 : 30 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft. %]	End Location[ft. %]
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Member Distributed Loads (BLC 3 : 30 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.08	-0.08	0	%100
2	FF-BH2	X	-0.08	-0.08	0	%100
3	FF-BH3	X	-0.08	-0.08	0	%100
4	FF-TH1	X	-0.08	-0.08	0	%100
5	FF-TH2	X	-0.08	-0.08	0	%100
6	FF-TH3	X	-0.08	-0.08	0	%100
7	MP-1	X	-0.09	-0.09	0	%100
8	MP-2	X	-0.09	-0.09	0	%100
9	MP-3	X	-0.09	-0.09	0	%100
10	MP-4	X	-0.09	-0.09	0	%100
11	MP-5	X	-0.09	-0.09	0	%100
12	MP-A	X	-0.08	-0.08	0	%100
13	SA-1	X	-0.05	-0.05	0	%100
14	SF2-D1	X	-0.03	-0.03	0	%100
15	SF3-D1	X	-0.03	-0.03	0	%100
16	SF2-BH	X	-0.07	-0.07	0	%100
17	SF2-TH	X	-0.07	-0.07	0	%100
18	SF3-BH	X	-0.03	-0.03	0	%100
19	SF3-TH	X	-0.03	-0.03	0	%100
20	SF2-V1	X	-0.03	-0.03	0	%100
21	SF2-V2	X	-0.03	-0.03	0	%100
22	SF3-V1	X	-0.03	-0.03	0	%100
23	SF3-V2	X	-0.03	-0.03	0	%100
24	FF-BH1	Z	-0.04	-0.04	0	%100
25	FF-BH2	Z	-0.04	-0.04	0	%100
26	FF-BH3	Z	-0.04	-0.04	0	%100
27	FF-TH1	Z	-0.04	-0.04	0	%100
28	FF-TH2	Z	-0.04	-0.04	0	%100
29	FF-TH3	Z	-0.04	-0.04	0	%100
30	MP-1	Z	-0.05	-0.05	0	%100
31	MP-2	Z	-0.05	-0.05	0	%100
32	MP-3	Z	-0.05	-0.05	0	%100
33	MP-4	Z	-0.05	-0.05	0	%100
34	MP-5	Z	-0.05	-0.05	0	%100
35	MP-A	Z	-0.04	-0.04	0	%100
36	SA-1	Z	-0.04	-0.04	0	%100
37	SF2-D1	Z	-0.02	-0.02	0	%100
38	SF3-D1	Z	-0.02	-0.02	0	%100
39	SF2-BH	Z	-0.04	-0.04	0	%100
40	SF2-TH	Z	-0.04	-0.04	0	%100
41	SF3-BH	Z	-0.01	-0.01	0	%100
42	SF3-TH	Z	-0.01	-0.01	0	%100
43	SF2-V1	Z	-0.02	-0.02	0	%100
44	SF2-V2	Z	-0.02	-0.02	0	%100
45	SF3-V1	Z	-0.02	-0.02	0	%100
46	SF3-V2	Z	-0.02	-0.02	0	%100

Member Distributed Loads (BLC 4 : 45 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.05	-0.05	0	%100
2	FF-BH2	X	-0.05	-0.05	0	%100
3	FF-BH3	X	-0.05	-0.05	0	%100
4	FF-TH1	X	-0.05	-0.05	0	%100
5	FF-TH2	X	-0.05	-0.05	0	%100
6	FF-TH3	X	-0.05	-0.05	0	%100
7	MP-1	X	-0.07	-0.07	0	%100



Company : Tower Engineering Professionals
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Member Distributed Loads (BLC 4 : 45 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
8	MP-2	X	-0.07	-0.07	0	%100
9	MP-3	X	-0.07	-0.07	0	%100
10	MP-4	X	-0.07	-0.07	0	%100
11	MP-5	X	-0.07	-0.07	0	%100
12	MP-A	X	-0.06	-0.06	0	%100
13	SA-1	X	-0.05	-0.05	0	%100
14	SF2-D1	X	-0.02	-0.02	0	%100
15	SF3-D1	X	-0.02	-0.02	0	%100
16	SF2-BH	X	-0.06	-0.06	0	%100
17	SF2-TH	X	-0.06	-0.06	0	%100
18	SF3-BH	X	-0.00474	-0.00474	0	%100
19	SF3-TH	X	-0.00474	-0.00474	0	%100
20	SF2-V1	X	-0.02	-0.02	0	%100
21	SF2-V2	X	-0.02	-0.02	0	%100
22	SF3-V1	X	-0.02	-0.02	0	%100
23	SF3-V2	X	-0.02	-0.02	0	%100
24	FF-BH1	Z	-0.05	-0.05	0	%100
25	FF-BH2	Z	-0.05	-0.05	0	%100
26	FF-BH3	Z	-0.05	-0.05	0	%100
27	FF-TH1	Z	-0.05	-0.05	0	%100
28	FF-TH2	Z	-0.05	-0.05	0	%100
29	FF-TH3	Z	-0.05	-0.05	0	%100
30	MP-1	Z	-0.07	-0.07	0	%100
31	MP-2	Z	-0.07	-0.07	0	%100
32	MP-3	Z	-0.07	-0.07	0	%100
33	MP-4	Z	-0.07	-0.07	0	%100
34	MP-5	Z	-0.07	-0.07	0	%100
35	MP-A	Z	-0.06	-0.06	0	%100
36	SA-1	Z	-0.06	-0.06	0	%100
37	SF2-D1	Z	-0.02	-0.02	0	%100
38	SF3-D1	Z	-0.02	-0.02	0	%100
39	SF2-BH	Z	-0.06	-0.06	0	%100
40	SF2-TH	Z	-0.06	-0.06	0	%100
41	SF3-BH	Z	-0.00448	-0.00448	0	%100
42	SF3-TH	Z	-0.00448	-0.00448	0	%100
43	SF2-V1	Z	-0.02	-0.02	0	%100
44	SF2-V2	Z	-0.02	-0.02	0	%100
45	SF3-V1	Z	-0.02	-0.02	0	%100
46	SF3-V2	Z	-0.02	-0.02	0	%100

Member Distributed Loads (BLC 5 : 60 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.03	-0.03	0	%100
2	FF-BH2	X	-0.03	-0.03	0	%100
3	FF-BH3	X	-0.03	-0.03	0	%100
4	FF-TH1	X	-0.03	-0.03	0	%100
5	FF-TH2	X	-0.03	-0.03	0	%100
6	FF-TH3	X	-0.03	-0.03	0	%100
7	MP-1	X	-0.05	-0.05	0	%100
8	MP-2	X	-0.05	-0.05	0	%100
9	MP-3	X	-0.05	-0.05	0	%100
10	MP-4	X	-0.05	-0.05	0	%100
11	MP-5	X	-0.05	-0.05	0	%100
12	MP-A	X	-0.04	-0.04	0	%100
13	SA-1	X	-0.04	-0.04	0	%100
14	SF2-D1	X	-0.02	-0.02	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
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Member Distributed Loads (BLC 5 : 60 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
15	SF3-D1	X	-0.02	-0.02	0	%100
16	SF2-BH	X	-0.04	-0.04	0	%100
17	SF2-TH	X	-0.04	-0.04	0	%100
18	SF3-BH	X	-0.00804	-0.00804	0	%100
19	SF3-TH	X	-0.00804	-0.00804	0	%100
20	SF2-V1	X	-0.02	-0.02	0	%100
21	SF2-V2	X	-0.02	-0.02	0	%100
22	SF3-V1	X	-0.02	-0.02	0	%100
23	SF3-V2	X	-0.02	-0.02	0	%100
24	FF-BH1	Z	-0.04	-0.04	0	%100
25	FF-BH2	Z	-0.04	-0.04	0	%100
26	FF-BH3	Z	-0.04	-0.04	0	%100
27	FF-TH1	Z	-0.04	-0.04	0	%100
28	FF-TH2	Z	-0.04	-0.04	0	%100
29	FF-TH3	Z	-0.04	-0.04	0	%100
30	MP-1	Z	-0.09	-0.09	0	%100
31	MP-2	Z	-0.09	-0.09	0	%100
32	MP-3	Z	-0.09	-0.09	0	%100
33	MP-4	Z	-0.09	-0.09	0	%100
34	MP-5	Z	-0.09	-0.09	0	%100
35	MP-A	Z	-0.08	-0.08	0	%100
36	SA-1	Z	-0.08	-0.08	0	%100
37	SF2-D1	Z	-0.03	-0.03	0	%100
38	SF3-D1	Z	-0.03	-0.03	0	%100
39	SF2-BH	Z	-0.07	-0.07	0	%100
40	SF2-TH	Z	-0.07	-0.07	0	%100
41	SF3-BH	Z	-0.01	-0.01	0	%100
42	SF3-TH	Z	-0.01	-0.01	0	%100
43	SF2-V1	Z	-0.03	-0.03	0	%100
44	SF2-V2	Z	-0.03	-0.03	0	%100
45	SF3-V1	Z	-0.03	-0.03	0	%100
46	SF3-V2	Z	-0.03	-0.03	0	%100

Member Distributed Loads (BLC 6 : 90 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	Z	0	0	0	%100
2	FF-BH2	Z	0	0	0	%100
3	FF-BH3	Z	0	0	0	%100
4	FF-TH1	Z	0	0	0	%100
5	FF-TH2	Z	0	0	0	%100
6	FF-TH3	Z	0	0	0	%100
7	MP-1	Z	-0.1	-0.1	0	%100
8	MP-2	Z	-0.1	-0.1	0	%100
9	MP-3	Z	-0.1	-0.1	0	%100
10	MP-4	Z	-0.1	-0.1	0	%100
11	MP-5	Z	-0.1	-0.1	0	%100
12	MP-A	Z	-0.09	-0.09	0	%100
13	SA-1	Z	-0.1	-0.1	0	%100
14	SF2-D1	Z	-0.03	-0.03	0	%100
15	SF3-D1	Z	-0.03	-0.03	0	%100
16	SF2-BH	Z	-0.05	-0.05	0	%100
17	SF2-TH	Z	-0.05	-0.05	0	%100
18	SF3-BH	Z	-0.05	-0.05	0	%100
19	SF3-TH	Z	-0.05	-0.05	0	%100
20	SF2-V1	Z	-0.03	-0.03	0	%100
21	SF2-V2	Z	-0.03	-0.03	0	%100



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Member Distributed Loads (BLC 6 : 90 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
22	SF3-V1	Z	-0.03	-0.03	0	%100
23	SF3-V2	Z	-0.03	-0.03	0	%100

Member Distributed Loads (BLC 7 : 120 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.003	.003	0	%100
2	FF-BH2	X	.003	.003	0	%100
3	FF-BH3	X	.003	.003	0	%100
4	FF-TH1	X	.003	.003	0	%100
5	FF-TH2	X	.003	.003	0	%100
6	FF-TH3	X	.003	.003	0	%100
7	MP-1	X	.005	.005	0	%100
8	MP-2	X	.005	.005	0	%100
9	MP-3	X	.005	.005	0	%100
10	MP-4	X	.005	.005	0	%100
11	MP-5	X	.005	.005	0	%100
12	MP-A	X	.004	.004	0	%100
13	SA-1	X	.003	.003	0	%100
14	SF2-D1	X	.002	.002	0	%100
15	SF3-D1	X	.002	.002	0	%100
16	SF2-BH	X	.000804	.000804	0	%100
17	SF2-TH	X	.000804	.000804	0	%100
18	SF3-BH	X	.004	.004	0	%100
19	SF3-TH	X	.004	.004	0	%100
20	SF2-V1	X	.002	.002	0	%100
21	SF2-V2	X	.002	.002	0	%100
22	SF3-V1	X	.002	.002	0	%100
23	SF3-V2	X	.002	.002	0	%100
24	FF-BH1	Z	-0.04	-0.04	0	%100
25	FF-BH2	Z	-0.04	-0.04	0	%100
26	FF-BH3	Z	-0.04	-0.04	0	%100
27	FF-TH1	Z	-0.04	-0.04	0	%100
28	FF-TH2	Z	-0.04	-0.04	0	%100
29	FF-TH3	Z	-0.04	-0.04	0	%100
30	MP-1	Z	-0.09	-0.09	0	%100
31	MP-2	Z	-0.09	-0.09	0	%100
32	MP-3	Z	-0.09	-0.09	0	%100
33	MP-4	Z	-0.09	-0.09	0	%100
34	MP-5	Z	-0.09	-0.09	0	%100
35	MP-A	Z	-0.08	-0.08	0	%100
36	SA-1	Z	-0.06	-0.06	0	%100
37	SF2-D1	Z	-0.03	-0.03	0	%100
38	SF3-D1	Z	-0.03	-0.03	0	%100
39	SF2-BH	Z	-0.01	-0.01	0	%100
40	SF2-TH	Z	-0.01	-0.01	0	%100
41	SF3-BH	Z	-0.07	-0.07	0	%100
42	SF3-TH	Z	-0.07	-0.07	0	%100
43	SF2-V1	Z	-0.03	-0.03	0	%100
44	SF2-V2	Z	-0.03	-0.03	0	%100
45	SF3-V1	Z	-0.03	-0.03	0	%100
46	SF3-V2	Z	-0.03	-0.03	0	%100

Member Distributed Loads (BLC 8 : 135 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.005	.005	0	%100
2	FF-BH2	X	.005	.005	0	%100



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Member Distributed Loads (BLC 8 : 135 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
3	FF-BH3	X	.005	.005	0	%100
4	FF-TH1	X	.005	.005	0	%100
5	FF-TH2	X	.005	.005	0	%100
6	FF-TH3	X	.005	.005	0	%100
7	MP-1	X	.007	.007	0	%100
8	MP-2	X	.007	.007	0	%100
9	MP-3	X	.007	.007	0	%100
10	MP-4	X	.007	.007	0	%100
11	MP-5	X	.007	.007	0	%100
12	MP-A	X	.006	.006	0	%100
13	SA-1	X	.003	.003	0	%100
14	SF2-D1	X	.002	.002	0	%100
15	SF3-D1	X	.002	.002	0	%100
16	SF2-BH	X	.000474	.000474	0	%100
17	SF2-TH	X	.000474	.000474	0	%100
18	SF3-BH	X	.006	.006	0	%100
19	SF3-TH	X	.006	.006	0	%100
20	SF2-V1	X	.002	.002	0	%100
21	SF2-V2	X	.002	.002	0	%100
22	SF3-V1	X	.002	.002	0	%100
23	SF3-V2	X	.002	.002	0	%100
24	FF-BH1	Z	-.005	-.005	0	%100
25	FF-BH2	Z	-.005	-.005	0	%100
26	FF-BH3	Z	-.005	-.005	0	%100
27	FF-TH1	Z	-.005	-.005	0	%100
28	FF-TH2	Z	-.005	-.005	0	%100
29	FF-TH3	Z	-.005	-.005	0	%100
30	MP-1	Z	-.007	-.007	0	%100
31	MP-2	Z	-.007	-.007	0	%100
32	MP-3	Z	-.007	-.007	0	%100
33	MP-4	Z	-.007	-.007	0	%100
34	MP-5	Z	-.007	-.007	0	%100
35	MP-A	Z	-.006	-.006	0	%100
36	SA-1	Z	-.004	-.004	0	%100
37	SF2-D1	Z	-.002	-.002	0	%100
38	SF3-D1	Z	-.002	-.002	0	%100
39	SF2-BH	Z	-.000448	-.000448	0	%100
40	SF2-TH	Z	-.000448	-.000448	0	%100
41	SF3-BH	Z	-.006	-.006	0	%100
42	SF3-TH	Z	-.006	-.006	0	%100
43	SF2-V1	Z	-.002	-.002	0	%100
44	SF2-V2	Z	-.002	-.002	0	%100
45	SF3-V1	Z	-.002	-.002	0	%100
46	SF3-V2	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 9 : 150 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.008	.008	0	%100
2	FF-BH2	X	.008	.008	0	%100
3	FF-BH3	X	.008	.008	0	%100
4	FF-TH1	X	.008	.008	0	%100
5	FF-TH2	X	.008	.008	0	%100
6	FF-TH3	X	.008	.008	0	%100
7	MP-1	X	.009	.009	0	%100
8	MP-2	X	.009	.009	0	%100
9	MP-3	X	.009	.009	0	%100



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Member Distributed Loads (BLC 9 : 150 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
10	MP-4	X	.009	.009	0	%100
11	MP-5	X	.009	.009	0	%100
12	MP-A	X	.008	.008	0	%100
13	SA-1	X	.002	.002	0	%100
14	SF2-D1	X	.003	.003	0	%100
15	SF3-D1	X	.003	.003	0	%100
16	SF2-BH	X	.003	.003	0	%100
17	SF2-TH	X	.003	.003	0	%100
18	SF3-BH	X	.007	.007	0	%100
19	SF3-TH	X	.007	.007	0	%100
20	SF2-V1	X	.003	.003	0	%100
21	SF2-V2	X	.003	.003	0	%100
22	SF3-V1	X	.003	.003	0	%100
23	SF3-V2	X	.003	.003	0	%100
24	FF-BH1	Z	-.004	-.004	0	%100
25	FF-BH2	Z	-.004	-.004	0	%100
26	FF-BH3	Z	-.004	-.004	0	%100
27	FF-TH1	Z	-.004	-.004	0	%100
28	FF-TH2	Z	-.004	-.004	0	%100
29	FF-TH3	Z	-.004	-.004	0	%100
30	MP-1	Z	-.005	-.005	0	%100
31	MP-2	Z	-.005	-.005	0	%100
32	MP-3	Z	-.005	-.005	0	%100
33	MP-4	Z	-.005	-.005	0	%100
34	MP-5	Z	-.005	-.005	0	%100
35	MP-A	Z	-.004	-.004	0	%100
36	SA-1	Z	-.001	-.001	0	%100
37	SF2-D1	Z	-.002	-.002	0	%100
38	SF3-D1	Z	-.002	-.002	0	%100
39	SF2-BH	Z	-.001	-.001	0	%100
40	SF2-TH	Z	-.001	-.001	0	%100
41	SF3-BH	Z	-.004	-.004	0	%100
42	SF3-TH	Z	-.004	-.004	0	%100
43	SF2-V1	Z	-.002	-.002	0	%100
44	SF2-V2	Z	-.002	-.002	0	%100
45	SF3-V1	Z	-.002	-.002	0	%100
46	SF3-V2	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 10 : 180 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.01	.01	0	%100
2	FF-BH2	X	.01	.01	0	%100
3	FF-BH3	X	.01	.01	0	%100
4	FF-TH1	X	.01	.01	0	%100
5	FF-TH2	X	.01	.01	0	%100
6	FF-TH3	X	.01	.01	0	%100
7	MP-1	X	.01	.01	0	%100
8	MP-2	X	.01	.01	0	%100
9	MP-3	X	.01	.01	0	%100
10	MP-4	X	.01	.01	0	%100
11	MP-5	X	.01	.01	0	%100
12	MP-A	X	.009	.009	0	%100
13	SA-1	X	.002	.002	0	%100
14	SF2-D1	X	.003	.003	0	%100
15	SF3-D1	X	.003	.003	0	%100
16	SF2-BH	X	.007	.007	0	%100



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Member Distributed Loads (BLC 10 : 180 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
17	SF2-TH	X	.007	.007	0	%100
18	SF3-BH	X	.007	.007	0	%100
19	SF3-TH	X	.007	.007	0	%100
20	SF2-V1	X	.003	.003	0	%100
21	SF2-V2	X	.003	.003	0	%100
22	SF3-V1	X	.003	.003	0	%100
23	SF3-V2	X	.003	.003	0	%100

Member Distributed Loads (BLC 11 : 210 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.008	.008	0	%100
2	FF-BH2	X	.008	.008	0	%100
3	FF-BH3	X	.008	.008	0	%100
4	FF-TH1	X	.008	.008	0	%100
5	FF-TH2	X	.008	.008	0	%100
6	FF-TH3	X	.008	.008	0	%100
7	MP-1	X	.009	.009	0	%100
8	MP-2	X	.009	.009	0	%100
9	MP-3	X	.009	.009	0	%100
10	MP-4	X	.009	.009	0	%100
11	MP-5	X	.009	.009	0	%100
12	MP-A	X	.008	.008	0	%100
13	SA-1	X	.005	.005	0	%100
14	SF2-D1	X	.003	.003	0	%100
15	SF3-D1	X	.003	.003	0	%100
16	SF2-BH	X	.007	.007	0	%100
17	SF2-TH	X	.007	.007	0	%100
18	SF3-BH	X	.003	.003	0	%100
19	SF3-TH	X	.003	.003	0	%100
20	SF2-V1	X	.003	.003	0	%100
21	SF2-V2	X	.003	.003	0	%100
22	SF3-V1	X	.003	.003	0	%100
23	SF3-V2	X	.003	.003	0	%100
24	FF-BH1	Z	.004	.004	0	%100
25	FF-BH2	Z	.004	.004	0	%100
26	FF-BH3	Z	.004	.004	0	%100
27	FF-TH1	Z	.004	.004	0	%100
28	FF-TH2	Z	.004	.004	0	%100
29	FF-TH3	Z	.004	.004	0	%100
30	MP-1	Z	.005	.005	0	%100
31	MP-2	Z	.005	.005	0	%100
32	MP-3	Z	.005	.005	0	%100
33	MP-4	Z	.005	.005	0	%100
34	MP-5	Z	.005	.005	0	%100
35	MP-A	Z	.004	.004	0	%100
36	SA-1	Z	.004	.004	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.004	.004	0	%100
40	SF2-TH	Z	.004	.004	0	%100
41	SF3-BH	Z	.001	.001	0	%100
42	SF3-TH	Z	.001	.001	0	%100
43	SF2-V1	Z	.002	.002	0	%100
44	SF2-V2	Z	.002	.002	0	%100
45	SF3-V1	Z	.002	.002	0	%100
46	SF3-V2	Z	.002	.002	0	%100



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Member Distributed Loads (BLC 12 : 225 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.005	.005	0	%100
2	FF-BH2	X	.005	.005	0	%100
3	FF-BH3	X	.005	.005	0	%100
4	FF-TH1	X	.005	.005	0	%100
5	FF-TH2	X	.005	.005	0	%100
6	FF-TH3	X	.005	.005	0	%100
7	MP-1	X	.007	.007	0	%100
8	MP-2	X	.007	.007	0	%100
9	MP-3	X	.007	.007	0	%100
10	MP-4	X	.007	.007	0	%100
11	MP-5	X	.007	.007	0	%100
12	MP-A	X	.006	.006	0	%100
13	SA-1	X	.005	.005	0	%100
14	SF2-D1	X	.002	.002	0	%100
15	SF3-D1	X	.002	.002	0	%100
16	SF2-BH	X	.006	.006	0	%100
17	SF2-TH	X	.006	.006	0	%100
18	SF3-BH	X	.000474	.000474	0	%100
19	SF3-TH	X	.000474	.000474	0	%100
20	SF2-V1	X	.002	.002	0	%100
21	SF2-V2	X	.002	.002	0	%100
22	SF3-V1	X	.002	.002	0	%100
23	SF3-V2	X	.002	.002	0	%100
24	FF-BH1	Z	.005	.005	0	%100
25	FF-BH2	Z	.005	.005	0	%100
26	FF-BH3	Z	.005	.005	0	%100
27	FF-TH1	Z	.005	.005	0	%100
28	FF-TH2	Z	.005	.005	0	%100
29	FF-TH3	Z	.005	.005	0	%100
30	MP-1	Z	.007	.007	0	%100
31	MP-2	Z	.007	.007	0	%100
32	MP-3	Z	.007	.007	0	%100
33	MP-4	Z	.007	.007	0	%100
34	MP-5	Z	.007	.007	0	%100
35	MP-A	Z	.006	.006	0	%100
36	SA-1	Z	.006	.006	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.006	.006	0	%100
40	SF2-TH	Z	.006	.006	0	%100
41	SF3-BH	Z	.000448	.000448	0	%100
42	SF3-TH	Z	.000448	.000448	0	%100
43	SF2-V1	Z	.002	.002	0	%100
44	SF2-V2	Z	.002	.002	0	%100
45	SF3-V1	Z	.002	.002	0	%100
46	SF3-V2	Z	.002	.002	0	%100

Member Distributed Loads (BLC 13 : 240 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.003	.003	0	%100
2	FF-BH2	X	.003	.003	0	%100
3	FF-BH3	X	.003	.003	0	%100
4	FF-TH1	X	.003	.003	0	%100
5	FF-TH2	X	.003	.003	0	%100
6	FF-TH3	X	.003	.003	0	%100
7	MP-1	X	.005	.005	0	%100



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Member Distributed Loads (BLC 13 : 240 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft....]	Start Location[ft.%]	End Location[ft.%]	
8	MP-2	X	.005	.005	0	%100
9	MP-3	X	.005	.005	0	%100
10	MP-4	X	.005	.005	0	%100
11	MP-5	X	.005	.005	0	%100
12	MP-A	X	.004	.004	0	%100
13	SA-1	X	.004	.004	0	%100
14	SF2-D1	X	.002	.002	0	%100
15	SF3-D1	X	.002	.002	0	%100
16	SF2-BH	X	.004	.004	0	%100
17	SF2-TH	X	.004	.004	0	%100
18	SF3-BH	X	.000804	.000804	0	%100
19	SF3-TH	X	.000804	.000804	0	%100
20	SF2-V1	X	.002	.002	0	%100
21	SF2-V2	X	.002	.002	0	%100
22	SF3-V1	X	.002	.002	0	%100
23	SF3-V2	X	.002	.002	0	%100
24	FF-BH1	Z	.004	.004	0	%100
25	FF-BH2	Z	.004	.004	0	%100
26	FF-BH3	Z	.004	.004	0	%100
27	FF-TH1	Z	.004	.004	0	%100
28	FF-TH2	Z	.004	.004	0	%100
29	FF-TH3	Z	.004	.004	0	%100
30	MP-1	Z	.009	.009	0	%100
31	MP-2	Z	.009	.009	0	%100
32	MP-3	Z	.009	.009	0	%100
33	MP-4	Z	.009	.009	0	%100
34	MP-5	Z	.009	.009	0	%100
35	MP-A	Z	.008	.008	0	%100
36	SA-1	Z	.008	.008	0	%100
37	SF2-D1	Z	.003	.003	0	%100
38	SF3-D1	Z	.003	.003	0	%100
39	SF2-BH	Z	.007	.007	0	%100
40	SF2-TH	Z	.007	.007	0	%100
41	SF3-BH	Z	.001	.001	0	%100
42	SF3-TH	Z	.001	.001	0	%100
43	SF2-V1	Z	.003	.003	0	%100
44	SF2-V2	Z	.003	.003	0	%100
45	SF3-V1	Z	.003	.003	0	%100
46	SF3-V2	Z	.003	.003	0	%100

Member Distributed Loads (BLC 14 : 270 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	Z	0	0	0	%100
2	FF-BH2	Z	0	0	0	%100
3	FF-BH3	Z	0	0	0	%100
4	FF-TH1	Z	0	0	0	%100
5	FF-TH2	Z	0	0	0	%100
6	FF-TH3	Z	0	0	0	%100
7	MP-1	Z	.01	.01	0	%100
8	MP-2	Z	.01	.01	0	%100
9	MP-3	Z	.01	.01	0	%100
10	MP-4	Z	.01	.01	0	%100
11	MP-5	Z	.01	.01	0	%100
12	MP-A	Z	.009	.009	0	%100
13	SA-1	Z	.01	.01	0	%100
14	SF2-D1	Z	.003	.003	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
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Member Distributed Loads (BLC 14 : 270 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft....]	Start Location[ft.%]	End Location[ft.%]	
15	SF3-D1	Z	.003	.003	0	%100
16	SF2-BH	Z	.005	.005	0	%100
17	SF2-TH	Z	.005	.005	0	%100
18	SF3-BH	Z	.005	.005	0	%100
19	SF3-TH	Z	.005	.005	0	%100
20	SF2-V1	Z	.003	.003	0	%100
21	SF2-V2	Z	.003	.003	0	%100
22	SF3-V1	Z	.003	.003	0	%100
23	SF3-V2	Z	.003	.003	0	%100

Member Distributed Loads (BLC 15 : 300 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-.003	-.003	0	%100
2	FF-BH2	X	-.003	-.003	0	%100
3	FF-BH3	X	-.003	-.003	0	%100
4	FF-TH1	X	-.003	-.003	0	%100
5	FF-TH2	X	-.003	-.003	0	%100
6	FF-TH3	X	-.003	-.003	0	%100
7	MP-1	X	-.005	-.005	0	%100
8	MP-2	X	-.005	-.005	0	%100
9	MP-3	X	-.005	-.005	0	%100
10	MP-4	X	-.005	-.005	0	%100
11	MP-5	X	-.005	-.005	0	%100
12	MP-A	X	-.004	-.004	0	%100
13	SA-1	X	-.003	-.003	0	%100
14	SF2-D1	X	-.002	-.002	0	%100
15	SF3-D1	X	-.002	-.002	0	%100
16	SF2-BH	X	-.000804	-.000804	0	%100
17	SF2-TH	X	-.000804	-.000804	0	%100
18	SF3-BH	X	-.004	-.004	0	%100
19	SF3-TH	X	-.004	-.004	0	%100
20	SF2-V1	X	-.002	-.002	0	%100
21	SF2-V2	X	-.002	-.002	0	%100
22	SF3-V1	X	-.002	-.002	0	%100
23	SF3-V2	X	-.002	-.002	0	%100
24	FF-BH1	Z	.004	.004	0	%100
25	FF-BH2	Z	.004	.004	0	%100
26	FF-BH3	Z	.004	.004	0	%100
27	FF-TH1	Z	.004	.004	0	%100
28	FF-TH2	Z	.004	.004	0	%100
29	FF-TH3	Z	.004	.004	0	%100
30	MP-1	Z	.009	.009	0	%100
31	MP-2	Z	.009	.009	0	%100
32	MP-3	Z	.009	.009	0	%100
33	MP-4	Z	.009	.009	0	%100
34	MP-5	Z	.009	.009	0	%100
35	MP-A	Z	.008	.008	0	%100
36	SA-1	Z	.006	.006	0	%100
37	SF2-D1	Z	.003	.003	0	%100
38	SF3-D1	Z	.003	.003	0	%100
39	SF2-BH	Z	.001	.001	0	%100
40	SF2-TH	Z	.001	.001	0	%100
41	SF3-BH	Z	.007	.007	0	%100
42	SF3-TH	Z	.007	.007	0	%100
43	SF2-V1	Z	.003	.003	0	%100
44	SF2-V2	Z	.003	.003	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
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 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 15 : 300 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
45	SF3-V1	Z	.003	.003	0	%100
46	SF3-V2	Z	.003	.003	0	%100

Member Distributed Loads (BLC 16 : 315 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-.005	-.005	0	%100
2	FF-BH2	X	-.005	-.005	0	%100
3	FF-BH3	X	-.005	-.005	0	%100
4	FF-TH1	X	-.005	-.005	0	%100
5	FF-TH2	X	-.005	-.005	0	%100
6	FF-TH3	X	-.005	-.005	0	%100
7	MP-1	X	-.007	-.007	0	%100
8	MP-2	X	-.007	-.007	0	%100
9	MP-3	X	-.007	-.007	0	%100
10	MP-4	X	-.007	-.007	0	%100
11	MP-5	X	-.007	-.007	0	%100
12	MP-A	X	-.006	-.006	0	%100
13	SA-1	X	-.003	-.003	0	%100
14	SF2-D1	X	-.002	-.002	0	%100
15	SF3-D1	X	-.002	-.002	0	%100
16	SF2-BH	X	-.000474	-.000474	0	%100
17	SF2-TH	X	-.000474	-.000474	0	%100
18	SF3-BH	X	-.006	-.006	0	%100
19	SF3-TH	X	-.006	-.006	0	%100
20	SF2-V1	X	-.002	-.002	0	%100
21	SF2-V2	X	-.002	-.002	0	%100
22	SF3-V1	X	-.002	-.002	0	%100
23	SF3-V2	X	-.002	-.002	0	%100
24	FF-BH1	Z	.005	.005	0	%100
25	FF-BH2	Z	.005	.005	0	%100
26	FF-BH3	Z	.005	.005	0	%100
27	FF-TH1	Z	.005	.005	0	%100
28	FF-TH2	Z	.005	.005	0	%100
29	FF-TH3	Z	.005	.005	0	%100
30	MP-1	Z	.007	.007	0	%100
31	MP-2	Z	.007	.007	0	%100
32	MP-3	Z	.007	.007	0	%100
33	MP-4	Z	.007	.007	0	%100
34	MP-5	Z	.007	.007	0	%100
35	MP-A	Z	.006	.006	0	%100
36	SA-1	Z	.004	.004	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.000448	.000448	0	%100
40	SF2-TH	Z	.000448	.000448	0	%100
41	SF3-BH	Z	.006	.006	0	%100
42	SF3-TH	Z	.006	.006	0	%100
43	SF2-V1	Z	.002	.002	0	%100
44	SF2-V2	Z	.002	.002	0	%100
45	SF3-V1	Z	.002	.002	0	%100
46	SF3-V2	Z	.002	.002	0	%100

Member Distributed Loads (BLC 17 : 330 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-.008	-.008	0	%100
2	FF-BH2	X	-.008	-.008	0	%100



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Member Distributed Loads (BLC 17 : 330 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
3	FF-BH3	X	-.008	-.008	0	%100
4	FF-TH1	X	-.008	-.008	0	%100
5	FF-TH2	X	-.008	-.008	0	%100
6	FF-TH3	X	-.008	-.008	0	%100
7	MP-1	X	-.009	-.009	0	%100
8	MP-2	X	-.009	-.009	0	%100
9	MP-3	X	-.009	-.009	0	%100
10	MP-4	X	-.009	-.009	0	%100
11	MP-5	X	-.009	-.009	0	%100
12	MP-A	X	-.008	-.008	0	%100
13	SA-1	X	-.002	-.002	0	%100
14	SF2-D1	X	-.003	-.003	0	%100
15	SF3-D1	X	-.003	-.003	0	%100
16	SF2-BH	X	-.003	-.003	0	%100
17	SF2-TH	X	-.003	-.003	0	%100
18	SF3-BH	X	-.007	-.007	0	%100
19	SF3-TH	X	-.007	-.007	0	%100
20	SF2-V1	X	-.003	-.003	0	%100
21	SF2-V2	X	-.003	-.003	0	%100
22	SF3-V1	X	-.003	-.003	0	%100
23	SF3-V2	X	-.003	-.003	0	%100
24	FF-BH1	Z	.004	.004	0	%100
25	FF-BH2	Z	.004	.004	0	%100
26	FF-BH3	Z	.004	.004	0	%100
27	FF-TH1	Z	.004	.004	0	%100
28	FF-TH2	Z	.004	.004	0	%100
29	FF-TH3	Z	.004	.004	0	%100
30	MP-1	Z	.005	.005	0	%100
31	MP-2	Z	.005	.005	0	%100
32	MP-3	Z	.005	.005	0	%100
33	MP-4	Z	.005	.005	0	%100
34	MP-5	Z	.005	.005	0	%100
35	MP-A	Z	.004	.004	0	%100
36	SA-1	Z	.001	.001	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.001	.001	0	%100
40	SF2-TH	Z	.001	.001	0	%100
41	SF3-BH	Z	.004	.004	0	%100
42	SF3-TH	Z	.004	.004	0	%100
43	SF2-V1	Z	.002	.002	0	%100
44	SF2-V2	Z	.002	.002	0	%100
45	SF3-V1	Z	.002	.002	0	%100
46	SF3-V2	Z	.002	.002	0	%100

Member Distributed Loads (BLC 18 : Ice Weight)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	Y	-.005	-.005	0	%100
2	FF-BH2	Y	-.005	-.005	0	%100
3	FF-BH3	Y	-.005	-.005	0	%100
4	FF-TH1	Y	-.005	-.005	0	%100
5	FF-TH2	Y	-.005	-.005	0	%100
6	FF-TH3	Y	-.005	-.005	0	%100
7	MP-1	Y	-.005	-.005	0	%100
8	MP-2	Y	-.005	-.005	0	%100
9	MP-3	Y	-.005	-.005	0	%100



Member Distributed Loads (BLC 18 : Ice Weight) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
10	MP-4	Y	-0.05	-0.05	0	%100
11	MP-5	Y	-0.05	-0.05	0	%100
12	MP-A	Y	-0.05	-0.05	0	%100
13	SA-1	Y	-0.05	-0.05	0	%100
14	SF2-D1	Y	-0.03	-0.03	0	%100
15	SF3-D1	Y	-0.03	-0.03	0	%100
16	SF2-BH	Y	-0.05	-0.05	0	%100
17	SF2-TH	Y	-0.05	-0.05	0	%100
18	SF3-BH	Y	-0.05	-0.05	0	%100
19	SF3-TH	Y	-0.05	-0.05	0	%100
20	SF2-V1	Y	-0.03	-0.03	0	%100
21	SF2-V2	Y	-0.03	-0.03	0	%100
22	SF3-V1	Y	-0.03	-0.03	0	%100
23	SF3-V2	Y	-0.03	-0.03	0	%100

Member Distributed Loads (BLC 19 : 0 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.04	-0.04	0	%100
2	FF-BH2	X	-0.04	-0.04	0	%100
3	FF-BH3	X	-0.04	-0.04	0	%100
4	FF-TH1	X	-0.04	-0.04	0	%100
5	FF-TH2	X	-0.04	-0.04	0	%100
6	FF-TH3	X	-0.04	-0.04	0	%100
7	MP-1	X	-0.03	-0.03	0	%100
8	MP-2	X	-0.03	-0.03	0	%100
9	MP-3	X	-0.03	-0.03	0	%100
10	MP-4	X	-0.03	-0.03	0	%100
11	MP-5	X	-0.03	-0.03	0	%100
12	MP-A	X	-0.02	-0.02	0	%100
13	SA-1	X	-0.02	-0.02	0	%100
14	SF2-D1	X	-0.02	-0.02	0	%100
15	SF3-D1	X	-0.02	-0.02	0	%100
16	SF2-BH	X	-0.03	-0.03	0	%100
17	SF2-TH	X	-0.03	-0.03	0	%100
18	SF3-BH	X	-0.03	-0.03	0	%100
19	SF3-TH	X	-0.03	-0.03	0	%100
20	SF2-V1	X	-0.02	-0.02	0	%100
21	SF2-V2	X	-0.02	-0.02	0	%100
22	SF3-V1	X	-0.02	-0.02	0	%100
23	SF3-V2	X	-0.02	-0.02	0	%100

Member Distributed Loads (BLC 20 : 30 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.03	-0.03	0	%100
2	FF-BH2	X	-0.03	-0.03	0	%100
3	FF-BH3	X	-0.03	-0.03	0	%100
4	FF-TH1	X	-0.03	-0.03	0	%100
5	FF-TH2	X	-0.03	-0.03	0	%100
6	FF-TH3	X	-0.03	-0.03	0	%100
7	MP-1	X	-0.03	-0.03	0	%100
8	MP-2	X	-0.03	-0.03	0	%100
9	MP-3	X	-0.03	-0.03	0	%100
10	MP-4	X	-0.03	-0.03	0	%100
11	MP-5	X	-0.03	-0.03	0	%100
12	MP-A	X	-0.02	-0.02	0	%100
13	SA-1	X	-0.02	-0.02	0	%100



Member Distributed Loads (BLC 20 : 30 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
14	SF2-D1	X	-0.02	-0.02	0	%100
15	SF3-D1	X	-0.02	-0.02	0	%100
16	SF2-BH	X	-0.02	-0.02	0	%100
17	SF2-TH	X	-0.02	-0.02	0	%100
18	SF3-BH	X	-0.00769	-0.00769	0	%100
19	SF3-TH	X	-0.00769	-0.00769	0	%100
20	SF2-V1	X	-0.02	-0.02	0	%100
21	SF2-V2	X	-0.02	-0.02	0	%100
22	SF3-V1	X	-0.02	-0.02	0	%100
23	SF3-V2	X	-0.02	-0.02	0	%100
24	FF-BH1	Z	-0.01	-0.01	0	%100
25	FF-BH2	Z	-0.01	-0.01	0	%100
26	FF-BH3	Z	-0.01	-0.01	0	%100
27	FF-TH1	Z	-0.01	-0.01	0	%100
28	FF-TH2	Z	-0.01	-0.01	0	%100
29	FF-TH3	Z	-0.01	-0.01	0	%100
30	MP-1	Z	-0.02	-0.02	0	%100
31	MP-2	Z	-0.02	-0.02	0	%100
32	MP-3	Z	-0.02	-0.02	0	%100
33	MP-4	Z	-0.02	-0.02	0	%100
34	MP-5	Z	-0.02	-0.02	0	%100
35	MP-A	Z	-0.01	-0.01	0	%100
36	SA-1	Z	-0.01	-0.01	0	%100
37	SF2-D1	Z	-0.01	-0.01	0	%100
38	SF3-D1	Z	-0.01	-0.01	0	%100
39	SF2-BH	Z	-0.01	-0.01	0	%100
40	SF2-TH	Z	-0.01	-0.01	0	%100
41	SF3-BH	Z	-0.00429	-0.00429	0	%100
42	SF3-TH	Z	-0.00429	-0.00429	0	%100
43	SF2-V1	Z	-0.00965	-0.00965	0	%100
44	SF2-V2	Z	-0.00965	-0.00965	0	%100
45	SF3-V1	Z	-0.00965	-0.00965	0	%100
46	SF3-V2	Z	-0.00965	-0.00965	0	%100

Member Distributed Loads (BLC 21 : 45 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.02	-0.02	0	%100
2	FF-BH2	X	-0.02	-0.02	0	%100
3	FF-BH3	X	-0.02	-0.02	0	%100
4	FF-TH1	X	-0.02	-0.02	0	%100
5	FF-TH2	X	-0.02	-0.02	0	%100
6	FF-TH3	X	-0.02	-0.02	0	%100
7	MP-1	X	-0.02	-0.02	0	%100
8	MP-2	X	-0.02	-0.02	0	%100
9	MP-3	X	-0.02	-0.02	0	%100
10	MP-4	X	-0.02	-0.02	0	%100
11	MP-5	X	-0.02	-0.02	0	%100
12	MP-A	X	-0.02	-0.02	0	%100
13	SA-1	X	-0.02	-0.02	0	%100
14	SF2-D1	X	-0.01	-0.01	0	%100
15	SF3-D1	X	-0.01	-0.01	0	%100
16	SF2-BH	X	-0.02	-0.02	0	%100
17	SF2-TH	X	-0.02	-0.02	0	%100
18	SF3-BH	X	-0.00145	-0.00145	0	%100
19	SF3-TH	X	-0.00145	-0.00145	0	%100
20	SF2-V1	X	-0.01	-0.01	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 21 : 45 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
21	SF2-V2	X	-0.001	-0.001	0	%100
22	SF3-V1	X	-0.001	-0.001	0	%100
23	SF3-V2	X	-0.001	-0.001	0	%100
24	FF-BH1	Z	-0.002	-0.002	0	%100
25	FF-BH2	Z	-0.002	-0.002	0	%100
26	FF-BH3	Z	-0.002	-0.002	0	%100
27	FF-TH1	Z	-0.002	-0.002	0	%100
28	FF-TH2	Z	-0.002	-0.002	0	%100
29	FF-TH3	Z	-0.002	-0.002	0	%100
30	MP-1	Z	-0.003	-0.003	0	%100
31	MP-2	Z	-0.003	-0.003	0	%100
32	MP-3	Z	-0.002	-0.002	0	%100
33	MP-4	Z	-0.003	-0.003	0	%100
34	MP-5	Z	-0.003	-0.003	0	%100
35	MP-A	Z	-0.002	-0.002	0	%100
36	SA-1	Z	-0.002	-0.002	0	%100
37	SF2-D1	Z	-0.002	-0.002	0	%100
38	SF3-D1	Z	-0.002	-0.002	0	%100
39	SF2-BH	Z	-0.002	-0.002	0	%100
40	SF2-TH	Z	-0.002	-0.002	0	%100
41	SF3-BH	Z	-0.00014	-0.00014	0	%100
42	SF3-TH	Z	-0.00014	-0.00014	0	%100
43	SF2-V1	Z	-0.001	-0.001	0	%100
44	SF2-V2	Z	-0.001	-0.001	0	%100
45	SF3-V1	Z	-0.001	-0.001	0	%100
46	SF3-V2	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 22 : 60 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.000915	-0.000915	0	%100
2	FF-BH2	X	-0.000915	-0.000915	0	%100
3	FF-BH3	X	-0.000915	-0.000915	0	%100
4	FF-TH1	X	-0.000915	-0.000915	0	%100
5	FF-TH2	X	-0.000915	-0.000915	0	%100
6	FF-TH3	X	-0.000915	-0.000915	0	%100
7	MP-1	X	-0.002	-0.002	0	%100
8	MP-2	X	-0.002	-0.002	0	%100
9	MP-3	X	-0.002	-0.002	0	%100
10	MP-4	X	-0.002	-0.002	0	%100
11	MP-5	X	-0.002	-0.002	0	%100
12	MP-A	X	-0.001	-0.001	0	%100
13	SA-1	X	-0.001	-0.001	0	%100
14	SF2-D1	X	-0.001	-0.001	0	%100
15	SF3-D1	X	-0.001	-0.001	0	%100
16	SF2-BH	X	-0.001	-0.001	0	%100
17	SF2-TH	X	-0.001	-0.001	0	%100
18	SF3-BH	X	-0.000246	-0.000246	0	%100
19	SF3-TH	X	-0.000246	-0.000246	0	%100
20	SF2-V1	X	-0.000869	-0.000869	0	%100
21	SF2-V2	X	-0.000869	-0.000869	0	%100
22	SF3-V1	X	-0.000869	-0.000869	0	%100
23	SF3-V2	X	-0.000869	-0.000869	0	%100
24	FF-BH1	Z	-0.001	-0.001	0	%100
25	FF-BH2	Z	-0.001	-0.001	0	%100
26	FF-BH3	Z	-0.001	-0.001	0	%100
27	FF-TH1	Z	-0.001	-0.001	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 22 : 60 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
28	FF-TH2	Z	-0.001	-0.001	0	%100
29	FF-TH3	Z	-0.001	-0.001	0	%100
30	MP-1	Z	-0.003	-0.003	0	%100
31	MP-2	Z	-0.003	-0.003	0	%100
32	MP-3	Z	-0.003	-0.003	0	%100
33	MP-4	Z	-0.003	-0.003	0	%100
34	MP-5	Z	-0.003	-0.003	0	%100
35	MP-A	Z	-0.002	-0.002	0	%100
36	SA-1	Z	-0.003	-0.003	0	%100
37	SF2-D1	Z	-0.002	-0.002	0	%100
38	SF3-D1	Z	-0.002	-0.002	0	%100
39	SF2-BH	Z	-0.002	-0.002	0	%100
40	SF2-TH	Z	-0.002	-0.002	0	%100
41	SF3-BH	Z	-0.000412	-0.000412	0	%100
42	SF3-TH	Z	-0.000412	-0.000412	0	%100
43	SF2-V1	Z	-0.002	-0.002	0	%100
44	SF2-V2	Z	-0.002	-0.002	0	%100
45	SF3-V1	Z	-0.002	-0.002	0	%100
46	SF3-V2	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 23 : 90 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	Z	0	0	0	%100
2	FF-BH2	Z	0	0	0	%100
3	FF-BH3	Z	0	0	0	%100
4	FF-TH1	Z	0	0	0	%100
5	FF-TH2	Z	0	0	0	%100
6	FF-TH3	Z	0	0	0	%100
7	MP-1	Z	-0.004	-0.004	0	%100
8	MP-2	Z	-0.004	-0.004	0	%100
9	MP-3	Z	-0.003	-0.003	0	%100
10	MP-4	Z	-0.004	-0.004	0	%100
11	MP-5	Z	-0.004	-0.004	0	%100
12	MP-A	Z	-0.003	-0.003	0	%100
13	SA-1	Z	-0.004	-0.004	0	%100
14	SF2-D1	Z	-0.002	-0.002	0	%100
15	SF3-D1	Z	-0.002	-0.002	0	%100
16	SF2-BH	Z	-0.002	-0.002	0	%100
17	SF2-TH	Z	-0.002	-0.002	0	%100
18	SF3-BH	Z	-0.002	-0.002	0	%100
19	SF3-TH	Z	-0.002	-0.002	0	%100
20	SF2-V1	Z	-0.002	-0.002	0	%100
21	SF2-V2	Z	-0.002	-0.002	0	%100
22	SF3-V1	Z	-0.002	-0.002	0	%100
23	SF3-V2	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 24 : 120 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	0.000915	0.000915	0	%100
2	FF-BH2	X	0.000915	0.000915	0	%100
3	FF-BH3	X	0.000915	0.000915	0	%100
4	FF-TH1	X	0.000915	0.000915	0	%100
5	FF-TH2	X	0.000915	0.000915	0	%100
6	FF-TH3	X	0.000915	0.000915	0	%100
7	MP-1	X	0.002	0.002	0	%100
8	MP-2	X	0.002	0.002	0	%100



Member Distributed Loads (BLC 24 : 120 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
9	MP-3	X	.002	.002	0	%100
10	MP-4	X	.002	.002	0	%100
11	MP-5	X	.002	.002	0	%100
12	MP-A	X	.001	.001	0	%100
13	SA-1	X	.000868	.000868	0	%100
14	SF2-D1	X	.001	.001	0	%100
15	SF3-D1	X	.001	.001	0	%100
16	SF2-BH	X	.000246	.000246	0	%100
17	SF2-TH	X	.000246	.000246	0	%100
18	SF3-BH	X	.001	.001	0	%100
19	SF3-TH	X	.001	.001	0	%100
20	SF2-V1	X	.000869	.000869	0	%100
21	SF2-V2	X	.000869	.000869	0	%100
22	SF3-V1	X	.000869	.000869	0	%100
23	SF3-V2	X	.000869	.000869	0	%100
24	FF-BH1	Z	-.001	-.001	0	%100
25	FF-BH2	Z	-.001	-.001	0	%100
26	FF-BH3	Z	-.001	-.001	0	%100
27	FF-TH1	Z	-.001	-.001	0	%100
28	FF-TH2	Z	-.001	-.001	0	%100
29	FF-TH3	Z	-.001	-.001	0	%100
30	MP-1	Z	-.003	-.003	0	%100
31	MP-2	Z	-.003	-.003	0	%100
32	MP-3	Z	-.003	-.003	0	%100
33	MP-4	Z	-.003	-.003	0	%100
34	MP-5	Z	-.003	-.003	0	%100
35	MP-A	Z	-.002	-.002	0	%100
36	SA-1	Z	-.002	-.002	0	%100
37	SF2-D1	Z	-.002	-.002	0	%100
38	SF3-D1	Z	-.002	-.002	0	%100
39	SF2-BH	Z	-.000412	-.000412	0	%100
40	SF2-TH	Z	-.000412	-.000412	0	%100
41	SF3-BH	Z	-.002	-.002	0	%100
42	SF3-TH	Z	-.002	-.002	0	%100
43	SF2-V1	Z	-.002	-.002	0	%100
44	SF2-V2	Z	-.002	-.002	0	%100
45	SF3-V1	Z	-.002	-.002	0	%100
46	SF3-V2	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 25 : 135 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.002	.002	0	%100
2	FF-BH2	X	.002	.002	0	%100
3	FF-BH3	X	.002	.002	0	%100
4	FF-TH1	X	.002	.002	0	%100
5	FF-TH2	X	.002	.002	0	%100
6	FF-TH3	X	.002	.002	0	%100
7	MP-1	X	.002	.002	0	%100
8	MP-2	X	.002	.002	0	%100
9	MP-3	X	.002	.002	0	%100
10	MP-4	X	.002	.002	0	%100
11	MP-5	X	.002	.002	0	%100
12	MP-A	X	.002	.002	0	%100
13	SA-1	X	.000869	.000869	0	%100
14	SF2-D1	X	.001	.001	0	%100
15	SF3-D1	X	.001	.001	0	%100



Member Distributed Loads (BLC 25 : 135 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
16	SF2-BH	X	.000145	.000145	0	%100
17	SF2-TH	X	.000145	.000145	0	%100
18	SF3-BH	X	.002	.002	0	%100
19	SF3-TH	X	.002	.002	0	%100
20	SF2-V1	X	.001	.001	0	%100
21	SF2-V2	X	.001	.001	0	%100
22	SF3-V1	X	.001	.001	0	%100
23	SF3-V2	X	.001	.001	0	%100
24	FF-BH1	Z	-.002	-.002	0	%100
25	FF-BH2	Z	-.002	-.002	0	%100
26	FF-BH3	Z	-.002	-.002	0	%100
27	FF-TH1	Z	-.002	-.002	0	%100
28	FF-TH2	Z	-.002	-.002	0	%100
29	FF-TH3	Z	-.002	-.002	0	%100
30	MP-1	Z	-.003	-.003	0	%100
31	MP-2	Z	-.003	-.003	0	%100
32	MP-3	Z	-.002	-.002	0	%100
33	MP-4	Z	-.003	-.003	0	%100
34	MP-5	Z	-.003	-.003	0	%100
35	MP-A	Z	-.002	-.002	0	%100
36	SA-1	Z	-.001	-.001	0	%100
37	SF2-D1	Z	-.002	-.002	0	%100
38	SF3-D1	Z	-.002	-.002	0	%100
39	SF2-BH	Z	-.00014	-.00014	0	%100
40	SF2-TH	Z	-.00014	-.00014	0	%100
41	SF3-BH	Z	-.002	-.002	0	%100
42	SF3-TH	Z	-.002	-.002	0	%100
43	SF2-V1	Z	-.001	-.001	0	%100
44	SF2-V2	Z	-.001	-.001	0	%100
45	SF3-V1	Z	-.001	-.001	0	%100
46	SF3-V2	Z	-.001	-.001	0	%100

Member Distributed Loads (BLC 26 : 150 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.003	.003	0	%100
2	FF-BH2	X	.003	.003	0	%100
3	FF-BH3	X	.003	.003	0	%100
4	FF-TH1	X	.003	.003	0	%100
5	FF-TH2	X	.003	.003	0	%100
6	FF-TH3	X	.003	.003	0	%100
7	MP-1	X	.003	.003	0	%100
8	MP-2	X	.003	.003	0	%100
9	MP-3	X	.003	.003	0	%100
10	MP-4	X	.003	.003	0	%100
11	MP-5	X	.003	.003	0	%100
12	MP-A	X	.002	.002	0	%100
13	SA-1	X	.000551	.000551	0	%100
14	SF2-D1	X	.002	.002	0	%100
15	SF3-D1	X	.002	.002	0	%100
16	SF2-BH	X	.000769	.000769	0	%100
17	SF2-TH	X	.000769	.000769	0	%100
18	SF3-BH	X	.002	.002	0	%100
19	SF3-TH	X	.002	.002	0	%100
20	SF2-V1	X	.002	.002	0	%100
21	SF2-V2	X	.002	.002	0	%100
22	SF3-V1	X	.002	.002	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
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 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 26 : 150 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
23	SF3-V2	X	.002	.002	0	%100
24	FF-BH1	Z	-.001	-.001	0	%100
25	FF-BH2	Z	-.001	-.001	0	%100
26	FF-BH3	Z	-.001	-.001	0	%100
27	FF-TH1	Z	-.001	-.001	0	%100
28	FF-TH2	Z	-.001	-.001	0	%100
29	FF-TH3	Z	-.001	-.001	0	%100
30	MP-1	Z	-.002	-.002	0	%100
31	MP-2	Z	-.002	-.002	0	%100
32	MP-3	Z	-.002	-.002	0	%100
33	MP-4	Z	-.002	-.002	0	%100
34	MP-5	Z	-.002	-.002	0	%100
35	MP-A	Z	-.001	-.001	0	%100
36	SA-1	Z	-.000476	-.000476	0	%100
37	SF2-D1	Z	-.001	-.001	0	%100
38	SF3-D1	Z	-.001	-.001	0	%100
39	SF2-BH	Z	-.000429	-.000429	0	%100
40	SF2-TH	Z	-.000429	-.000429	0	%100
41	SF3-BH	Z	-.001	-.001	0	%100
42	SF3-TH	Z	-.001	-.001	0	%100
43	SF2-V1	Z	-.000965	-.000965	0	%100
44	SF2-V2	Z	-.000965	-.000965	0	%100
45	SF3-V1	Z	-.000965	-.000965	0	%100
46	SF3-V2	Z	-.000965	-.000965	0	%100

Member Distributed Loads (BLC 27 : 180 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.004	.004	0	%100
2	FF-BH2	X	.004	.004	0	%100
3	FF-BH3	X	.004	.004	0	%100
4	FF-TH1	X	.004	.004	0	%100
5	FF-TH2	X	.004	.004	0	%100
6	FF-TH3	X	.004	.004	0	%100
7	MP-1	X	.003	.003	0	%100
8	MP-2	X	.003	.003	0	%100
9	MP-3	X	.003	.003	0	%100
10	MP-4	X	.003	.003	0	%100
11	MP-5	X	.003	.003	0	%100
12	MP-A	X	.002	.002	0	%100
13	SA-1	X	.002	.002	0	%100
14	SF2-D1	X	.002	.002	0	%100
15	SF3-D1	X	.002	.002	0	%100
16	SF2-BH	X	.003	.003	0	%100
17	SF2-TH	X	.003	.003	0	%100
18	SF3-BH	X	.003	.003	0	%100
19	SF3-TH	X	.003	.003	0	%100
20	SF2-V1	X	.002	.002	0	%100
21	SF2-V2	X	.002	.002	0	%100
22	SF3-V1	X	.002	.002	0	%100
23	SF3-V2	X	.002	.002	0	%100

Member Distributed Loads (BLC 28 : 210 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.003	.003	0	%100
2	FF-BH2	X	.003	.003	0	%100
3	FF-BH3	X	.003	.003	0	%100



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Member Distributed Loads (BLC 28 : 210 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
4	FF-TH1	X	.003	.003	0	%100
5	FF-TH2	X	.003	.003	0	%100
6	FF-TH3	X	.003	.003	0	%100
7	MP-1	X	.003	.003	0	%100
8	MP-2	X	.003	.003	0	%100
9	MP-3	X	.003	.003	0	%100
10	MP-4	X	.003	.003	0	%100
11	MP-5	X	.003	.003	0	%100
12	MP-A	X	.002	.002	0	%100
13	SA-1	X	.002	.002	0	%100
14	SF2-D1	X	.002	.002	0	%100
15	SF3-D1	X	.002	.002	0	%100
16	SF2-BH	X	.002	.002	0	%100
17	SF2-TH	X	.002	.002	0	%100
18	SF3-BH	X	.000769	.000769	0	%100
19	SF3-TH	X	.000769	.000769	0	%100
20	SF2-V1	X	.002	.002	0	%100
21	SF2-V2	X	.002	.002	0	%100
22	SF3-V1	X	.002	.002	0	%100
23	SF3-V2	X	.002	.002	0	%100
24	FF-BH1	Z	.001	.001	0	%100
25	FF-BH2	Z	.001	.001	0	%100
26	FF-BH3	Z	.001	.001	0	%100
27	FF-TH1	Z	.001	.001	0	%100
28	FF-TH2	Z	.001	.001	0	%100
29	FF-TH3	Z	.001	.001	0	%100
30	MP-1	Z	.002	.002	0	%100
31	MP-2	Z	.002	.002	0	%100
32	MP-3	Z	.002	.002	0	%100
33	MP-4	Z	.002	.002	0	%100
34	MP-5	Z	.002	.002	0	%100
35	MP-A	Z	.001	.001	0	%100
36	SA-1	Z	.001	.001	0	%100
37	SF2-D1	Z	.001	.001	0	%100
38	SF3-D1	Z	.001	.001	0	%100
39	SF2-BH	Z	.001	.001	0	%100
40	SF2-TH	Z	.001	.001	0	%100
41	SF3-BH	Z	.000429	.000429	0	%100
42	SF3-TH	Z	.000429	.000429	0	%100
43	SF2-V1	Z	.000965	.000965	0	%100
44	SF2-V2	Z	.000965	.000965	0	%100
45	SF3-V1	Z	.000965	.000965	0	%100
46	SF3-V2	Z	.000965	.000965	0	%100

Member Distributed Loads (BLC 29 : 225 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.002	.002	0	%100
2	FF-BH2	X	.002	.002	0	%100
3	FF-BH3	X	.002	.002	0	%100
4	FF-TH1	X	.002	.002	0	%100
5	FF-TH2	X	.002	.002	0	%100
6	FF-TH3	X	.002	.002	0	%100
7	MP-1	X	.002	.002	0	%100
8	MP-2	X	.002	.002	0	%100
9	MP-3	X	.002	.002	0	%100
10	MP-4	X	.002	.002	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 29 : 225 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
11	MP-5	X	.002	.002	0	%100
12	MP-A	X	.002	.002	0	%100
13	SA-1	X	.002	.002	0	%100
14	SF2-D1	X	.001	.001	0	%100
15	SF3-D1	X	.001	.001	0	%100
16	SF2-BH	X	.002	.002	0	%100
17	SF2-TH	X	.002	.002	0	%100
18	SF3-BH	X	.000145	.000145	0	%100
19	SF3-TH	X	.000145	.000145	0	%100
20	SF2-V1	X	.001	.001	0	%100
21	SF2-V2	X	.001	.001	0	%100
22	SF3-V1	X	.001	.001	0	%100
23	SF3-V2	X	.001	.001	0	%100
24	FF-BH1	Z	.002	.002	0	%100
25	FF-BH2	Z	.002	.002	0	%100
26	FF-BH3	Z	.002	.002	0	%100
27	FF-TH1	Z	.002	.002	0	%100
28	FF-TH2	Z	.002	.002	0	%100
29	FF-TH3	Z	.002	.002	0	%100
30	MP-1	Z	.003	.003	0	%100
31	MP-2	Z	.003	.003	0	%100
32	MP-3	Z	.002	.002	0	%100
33	MP-4	Z	.003	.003	0	%100
34	MP-5	Z	.003	.003	0	%100
35	MP-A	Z	.002	.002	0	%100
36	SA-1	Z	.002	.002	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.002	.002	0	%100
40	SF2-TH	Z	.002	.002	0	%100
41	SF3-BH	Z	.00014	.00014	0	%100
42	SF3-TH	Z	.00014	.00014	0	%100
43	SF2-V1	Z	.001	.001	0	%100
44	SF2-V2	Z	.001	.001	0	%100
45	SF3-V1	Z	.001	.001	0	%100
46	SF3-V2	Z	.001	.001	0	%100

Member Distributed Loads (BLC 30 : 240 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	.000915	.000915	0	%100
2	FF-BH2	X	.000915	.000915	0	%100
3	FF-BH3	X	.000915	.000915	0	%100
4	FF-TH1	X	.000915	.000915	0	%100
5	FF-TH2	X	.000915	.000915	0	%100
6	FF-TH3	X	.000915	.000915	0	%100
7	MP-1	X	.002	.002	0	%100
8	MP-2	X	.002	.002	0	%100
9	MP-3	X	.002	.002	0	%100
10	MP-4	X	.002	.002	0	%100
11	MP-5	X	.002	.002	0	%100
12	MP-A	X	.001	.001	0	%100
13	SA-1	X	.001	.001	0	%100
14	SF2-D1	X	.001	.001	0	%100
15	SF3-D1	X	.001	.001	0	%100
16	SF2-BH	X	.001	.001	0	%100
17	SF2-TH	X	.001	.001	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 30 : 240 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
18	SF3-BH	X	.000246	.000246	0	%100
19	SF3-TH	X	.000246	.000246	0	%100
20	SF2-V1	X	.000869	.000869	0	%100
21	SF2-V2	X	.000869	.000869	0	%100
22	SF3-V1	X	.000869	.000869	0	%100
23	SF3-V2	X	.000869	.000869	0	%100
24	FF-BH1	Z	.001	.001	0	%100
25	FF-BH2	Z	.001	.001	0	%100
26	FF-BH3	Z	.001	.001	0	%100
27	FF-TH1	Z	.001	.001	0	%100
28	FF-TH2	Z	.001	.001	0	%100
29	FF-TH3	Z	.001	.001	0	%100
30	MP-1	Z	.003	.003	0	%100
31	MP-2	Z	.003	.003	0	%100
32	MP-3	Z	.003	.003	0	%100
33	MP-4	Z	.003	.003	0	%100
34	MP-5	Z	.003	.003	0	%100
35	MP-A	Z	.002	.002	0	%100
36	SA-1	Z	.003	.003	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.002	.002	0	%100
40	SF2-TH	Z	.002	.002	0	%100
41	SF3-BH	Z	.000412	.000412	0	%100
42	SF3-TH	Z	.000412	.000412	0	%100
43	SF2-V1	Z	.002	.002	0	%100
44	SF2-V2	Z	.002	.002	0	%100
45	SF3-V1	Z	.002	.002	0	%100
46	SF3-V2	Z	.002	.002	0	%100

Member Distributed Loads (BLC 31 : 270 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	Z	0	0	0	%100
2	FF-BH2	Z	0	0	0	%100
3	FF-BH3	Z	0	0	0	%100
4	FF-TH1	Z	0	0	0	%100
5	FF-TH2	Z	0	0	0	%100
6	FF-TH3	Z	0	0	0	%100
7	MP-1	Z	.004	.004	0	%100
8	MP-2	Z	.004	.004	0	%100
9	MP-3	Z	.003	.003	0	%100
10	MP-4	Z	.004	.004	0	%100
11	MP-5	Z	.004	.004	0	%100
12	MP-A	Z	.003	.003	0	%100
13	SA-1	Z	.004	.004	0	%100
14	SF2-D1	Z	.002	.002	0	%100
15	SF3-D1	Z	.002	.002	0	%100
16	SF2-BH	Z	.002	.002	0	%100
17	SF2-TH	Z	.002	.002	0	%100
18	SF3-BH	Z	.002	.002	0	%100
19	SF3-TH	Z	.002	.002	0	%100
20	SF2-V1	Z	.002	.002	0	%100
21	SF2-V2	Z	.002	.002	0	%100
22	SF3-V1	Z	.002	.002	0	%100
23	SF3-V2	Z	.002	.002	0	%100



Company : Tower Engineering Professionals
 Designer : NAM
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Member Distributed Loads (BLC 32 : 300 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.00915	-0.00915	0	%100
2	FF-BH2	X	-0.00915	-0.00915	0	%100
3	FF-BH3	X	-0.00915	-0.00915	0	%100
4	FF-TH1	X	-0.00915	-0.00915	0	%100
5	FF-TH2	X	-0.00915	-0.00915	0	%100
6	FF-TH3	X	-0.00915	-0.00915	0	%100
7	MP-1	X	-0.002	-0.002	0	%100
8	MP-2	X	-0.002	-0.002	0	%100
9	MP-3	X	-0.002	-0.002	0	%100
10	MP-4	X	-0.002	-0.002	0	%100
11	MP-5	X	-0.002	-0.002	0	%100
12	MP-A	X	-0.001	-0.001	0	%100
13	SA-1	X	-0.000868	-0.000868	0	%100
14	SF2-D1	X	-0.001	-0.001	0	%100
15	SF3-D1	X	-0.001	-0.001	0	%100
16	SF2-BH	X	-0.000246	-0.000246	0	%100
17	SF2-TH	X	-0.000246	-0.000246	0	%100
18	SF3-BH	X	-0.001	-0.001	0	%100
19	SF3-TH	X	-0.001	-0.001	0	%100
20	SF2-V1	X	-0.000869	-0.000869	0	%100
21	SF2-V2	X	-0.000869	-0.000869	0	%100
22	SF3-V1	X	-0.000869	-0.000869	0	%100
23	SF3-V2	X	-0.000869	-0.000869	0	%100
24	FF-BH1	Z	.001	.001	0	%100
25	FF-BH2	Z	.001	.001	0	%100
26	FF-BH3	Z	.001	.001	0	%100
27	FF-TH1	Z	.001	.001	0	%100
28	FF-TH2	Z	.001	.001	0	%100
29	FF-TH3	Z	.001	.001	0	%100
30	MP-1	Z	.003	.003	0	%100
31	MP-2	Z	.003	.003	0	%100
32	MP-3	Z	.003	.003	0	%100
33	MP-4	Z	.003	.003	0	%100
34	MP-5	Z	.003	.003	0	%100
35	MP-A	Z	.002	.002	0	%100
36	SA-1	Z	.002	.002	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.000412	.000412	0	%100
40	SF2-TH	Z	.000412	.000412	0	%100
41	SF3-BH	Z	.002	.002	0	%100
42	SF3-TH	Z	.002	.002	0	%100
43	SF2-V1	Z	.002	.002	0	%100
44	SF2-V2	Z	.002	.002	0	%100
45	SF3-V1	Z	.002	.002	0	%100
46	SF3-V2	Z	.002	.002	0	%100

Member Distributed Loads (BLC 33 : 315 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.002	-0.002	0	%100
2	FF-BH2	X	-0.002	-0.002	0	%100
3	FF-BH3	X	-0.002	-0.002	0	%100
4	FF-TH1	X	-0.002	-0.002	0	%100
5	FF-TH2	X	-0.002	-0.002	0	%100
6	FF-TH3	X	-0.002	-0.002	0	%100
7	MP-1	X	-0.002	-0.002	0	%100



Company : Tower Engineering Professionals
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 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 33 : 315 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
8	MP-2	X	-0.002	-0.002	0	%100
9	MP-3	X	-0.002	-0.002	0	%100
10	MP-4	X	-0.002	-0.002	0	%100
11	MP-5	X	-0.002	-0.002	0	%100
12	MP-A	X	-0.002	-0.002	0	%100
13	SA-1	X	-0.000869	-0.000869	0	%100
14	SF2-D1	X	-0.001	-0.001	0	%100
15	SF3-D1	X	-0.001	-0.001	0	%100
16	SF2-BH	X	-0.000145	-0.000145	0	%100
17	SF2-TH	X	-0.000145	-0.000145	0	%100
18	SF3-BH	X	-0.002	-0.002	0	%100
19	SF3-TH	X	-0.002	-0.002	0	%100
20	SF2-V1	X	-0.001	-0.001	0	%100
21	SF2-V2	X	-0.001	-0.001	0	%100
22	SF3-V1	X	-0.001	-0.001	0	%100
23	SF3-V2	X	-0.001	-0.001	0	%100
24	FF-BH1	Z	.002	.002	0	%100
25	FF-BH2	Z	.002	.002	0	%100
26	FF-BH3	Z	.002	.002	0	%100
27	FF-TH1	Z	.002	.002	0	%100
28	FF-TH2	Z	.002	.002	0	%100
29	FF-TH3	Z	.002	.002	0	%100
30	MP-1	Z	.003	.003	0	%100
31	MP-2	Z	.003	.003	0	%100
32	MP-3	Z	.002	.002	0	%100
33	MP-4	Z	.003	.003	0	%100
34	MP-5	Z	.003	.003	0	%100
35	MP-A	Z	.002	.002	0	%100
36	SA-1	Z	.001	.001	0	%100
37	SF2-D1	Z	.002	.002	0	%100
38	SF3-D1	Z	.002	.002	0	%100
39	SF2-BH	Z	.00014	.00014	0	%100
40	SF2-TH	Z	.00014	.00014	0	%100
41	SF3-BH	Z	.002	.002	0	%100
42	SF3-TH	Z	.002	.002	0	%100
43	SF2-V1	Z	.001	.001	0	%100
44	SF2-V2	Z	.001	.001	0	%100
45	SF3-V1	Z	.001	.001	0	%100
46	SF3-V2	Z	.001	.001	0	%100

Member Distributed Loads (BLC 34 : 330 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
1	FF-BH1	X	-0.003	-0.003	0	%100
2	FF-BH2	X	-0.003	-0.003	0	%100
3	FF-BH3	X	-0.003	-0.003	0	%100
4	FF-TH1	X	-0.003	-0.003	0	%100
5	FF-TH2	X	-0.003	-0.003	0	%100
6	FF-TH3	X	-0.003	-0.003	0	%100
7	MP-1	X	-0.003	-0.003	0	%100
8	MP-2	X	-0.003	-0.003	0	%100
9	MP-3	X	-0.003	-0.003	0	%100
10	MP-4	X	-0.003	-0.003	0	%100
11	MP-5	X	-0.003	-0.003	0	%100
12	MP-A	X	-0.002	-0.002	0	%100
13	SA-1	X	-0.000551	-0.000551	0	%100
14	SF2-D1	X	-0.002	-0.002	0	%100



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 Model Name : BRG 134 943057 (BU 807133)

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Member Distributed Loads (BLC 34 : 330 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]	
15	SF3-D1	X	-.002	-.002	0	%100
16	SF2-BH	X	-.000769	-.000769	0	%100
17	SF2-TH	X	-.000769	-.000769	0	%100
18	SF3-BH	X	-.002	-.002	0	%100
19	SF3-TH	X	-.002	-.002	0	%100
20	SF2-V1	X	-.002	-.002	0	%100
21	SF2-V2	X	-.002	-.002	0	%100
22	SF3-V1	X	-.002	-.002	0	%100
23	SF3-V2	X	-.002	-.002	0	%100
24	FF-BH1	Z	.001	.001	0	%100
25	FF-BH2	Z	.001	.001	0	%100
26	FF-BH3	Z	.001	.001	0	%100
27	FF-TH1	Z	.001	.001	0	%100
28	FF-TH2	Z	.001	.001	0	%100
29	FF-TH3	Z	.001	.001	0	%100
30	MP-1	Z	.002	.002	0	%100
31	MP-2	Z	.002	.002	0	%100
32	MP-3	Z	.002	.002	0	%100
33	MP-4	Z	.002	.002	0	%100
34	MP-5	Z	.002	.002	0	%100
35	MP-A	Z	.001	.001	0	%100
36	SA-1	Z	.000476	.000476	0	%100
37	SF2-D1	Z	.001	.001	0	%100
38	SF3-D1	Z	.001	.001	0	%100
39	SF2-BH	Z	.000429	.000429	0	%100
40	SF2-TH	Z	.000429	.000429	0	%100
41	SF3-BH	Z	.001	.001	0	%100
42	SF3-TH	Z	.001	.001	0	%100
43	SF2-V1	Z	.000965	.000965	0	%100
44	SF2-V2	Z	.000965	.000965	0	%100
45	SF3-V1	Z	.000965	.000965	0	%100
46	SF3-V2	Z	.000965	.000965	0	%100

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

Member	Shape	Code Check	Loc...	LC	Shea. Loc...	Dir	LC	phi*Pn	phi*Pn	phi*M	phi*M	Eqn	
1	MP-2	PIPE 2.0 Nominal	.285	3.4...	26	.066	3.5...	28	17.801	33.848	1.997	1.997	1.H1-1b
2	MP-4	PIPE 2.0 Nominal	.280	3.4...	26	.056	3.5...	23	17.801	33.848	1.997	1.997	1.H1-1b
3	FF-TH2	PIPE 2.0X Nominal	.249	4	26	.070	0	26	21.275	66.477	3.816	3.816	1.H1-1b
4	FF-BH2	PIPE 2.0X Nominal	.215	5.8...	26	.055	2.1...	26	21.275	66.477	3.816	3.816	1.H1-1b
5	MP-1	PIPE 2.0 Nominal	.183	6.4...	50	.026	3.5...	54	21.11	33.848	1.997	1.997	4.H1-1b
6	SF2-TH	PIPE 2.0X Nominal	.157	.336	60	.064	0	47	45.424	66.477	3.816	3.816	2.H1-1b
7	SF2-BH	PIPE 2.0X Nominal	.146	.336	62	.066	4.3...	59	45.424	66.477	3.816	3.816	1.H1-1b
8	SF2-V1	.75 Dia.	.140	0	60	.011	0	54	6.408	19.88	.249	.249	2.H1-1b
9	SF2-V2	.75 Dia.	.138	3	62	.012	3	62	6.408	19.88	.249	.249	2.H1-1b
10	SF3-V1	.75 Dia.	.136	0	41	.012	0	54	6.408	19.88	.249	.249	2.H1-1b
11	SF2-D1	.75 Dia.	.129	4.9...	47	.005	4.9...	25	2.337	19.88	.249	.249	2.H1-1b
12	FF-TH1	PIPE 2.0X Nominal	.128	2.5	26	.042	2.5	60	40.565	66.477	3.816	3.816	2.H1-1b
13	FF-BH1	PIPE 2.0X Nominal	.124	2.5	61	.043	2.5	61	40.565	66.477	3.816	3.816	2.H1-1b
14	MP-3	PIPE 2.0 Nominal	.124	3.5	19	.036	3.5	29	17.801	33.848	1.997	1.997	1.H1-1b
15	SF3-D1	.75 Dia.	.119	4.9...	34	.006	0	27	2.337	19.88	.249	.249	2.H1-1b
16	FF-TH3	PIPE 2.0X Nominal	.117	0	19	.073	.313	23	40.565	66.477	3.816	3.816	1.H1-1b
17	SF3-V2	.75 Dia.	.112	0	40	.015	0	61	6.408	19.88	.249	.249	2.H1-1b
18	MP-5	PIPE 2.0 Nominal	.106	3.5...	24	.039	3.5...	23	21.11	33.848	1.997	1.997	2.H1-1b
19	FF-BH3	PIPE 2.0X Nominal	.098	0	37	.035	0	19	40.565	66.477	3.816	3.816	1.H1-1b
20	SF3-BH	PIPE 2.0X Nominal	.088	0	65	.040	0	40	45.424	66.477	3.816	3.816	1.H1-1b



Company : Tower Engineering Professionals
 Designer : NAM
 Job Number : TEP No. 144550.614286
 Model Name : BRG 134 943057 (BU 807133)

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

Member	Shape	Code Check	Loc...	LC	Shea. Loc...	Dir	LC	phi*Pn	phi*Pn	phi*M	phi*M	Eqn	
21	SF3-TH	PIPE 2.0X Nominal	.088	0	58	.058	0	35	45.424	66.477	3.816	3.816	2.H1-1b
22	MP-A	PIPE 2.0 Nominal	.069	3.2...	59	.038	3.2...	62	21.11	33.848	1.997	1.997	2.H1-1b
23	SA-1	PIPE 2.0 Nominal	.053	0	13	.002	6.7...	30	22.402	48.354	2.853	2.853	1.H1-1b

APPENDIX D
ADDITIONAL CALCULATIONS

Moment Bolt Group - Leg Connection

Code Revisions:	ANSI/TIA-222-H
Bolt Type:	Headed Bolts

Connection Inputs:

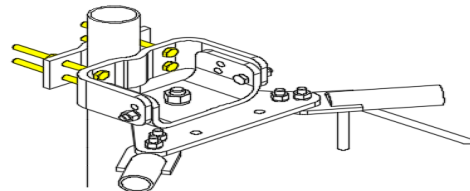
Bolt Size:	0.625	in
# Bolts:	4	
Plate Width:	N/A	in
Plate Height:	N/A	in
Bolt H Gap:	6.5	in
Bolt V Gap:	2.0	in
Plate T:	N/A	in
Slip Member Ø:	N/A	in
Bolt Grade:	A307	

Bolt Properties:

$F_{y_{bolt}}$:	36.0	ksi
$F_{u_{bolt}}$:	60.0	ksi
r:	3.4	in
J:	46.3	in ⁴ /in ²
A_{bolt} :	0.3	in ²
$A_{bolt, Net Tensile}$:	0.2	in ²
Pretension:	9.5	kips

Capacities:

Single Bolt Capacity =	11.3%	PASS
Bolt Capacity =	10.7%	PASS
Plate Capacity =	1.7%	PASS



Member Properties:

Member Shape:	Flat	
Plate F_y :	36	ksi
Plate Thickness:	0.750	in
Plate F_u :	58	in
A_{gross} :	6.42	in ²
$A_{Net Tensile}$:	5.58	in ²
T_n =	208.07	kips

Single Bolt Check

Bolt Size:	1.000	
Bolt F_u :	120	ksi
Bolt $A_{Net Tensile}$:	0.606	in ²

Max F_x : 3.595 kip

Max F_y : 1.718 kip

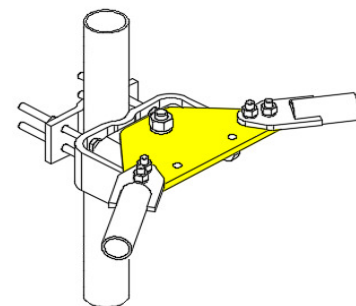
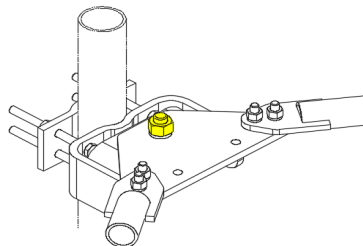
Max F_z : 1.744 kip

V_{max} = 3.996 kips

ϕR_{NV} = 35.343 kips

T_{max} = 1.718 kips

ϕR_{NT} = 54.54 kips



AT&T TARP Mount Program Spec Sheet



Site: Norwalk Rockland Road (CTL02122)

TARP Mount Specification

Basic Wind Speed (MPH)	Radial Ice (in.)	Height (ft.)	Exposure Category	Class	Topo Category	Number of Loaded Mount Pipes / Sector	Allowable¹ EPA / Pipe (ft²)	Allowable¹ Weight / Pipe (lbf)
118.0	1.0	161.0	C	II	1	3	15.7	268.4

Note:

- 1) This allowable value is an average of the loaded mount pipes per sector

Exhibit F

Power Density/RF Emissions Report

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

AT&T Existing Facility

Site ID: CTL02122 - 807133

Norwalk Rockland Road
50 Rockland Road
Norwalk, Connecticut 06854

January 27, 2022

EBI Project Number: 6222000338

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	34.73%

January 27, 2022

AT&T

Emissions Analysis for Site: CTL02122 - 807133 - Norwalk Rockland Road

EBI Consulting was directed to analyze the proposed AT&T facility located at **50 Rockland Road in Norwalk, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T 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 AT&T Wireless antenna facility located at 50 Rockland Road in Norwalk, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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) 4 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 2) 2 LTE DE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 4 LTE FN channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) 4 5G channels (850 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 4 LTE / 5G channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

- 6) 4 LTE / 5G 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) 4 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 25 Watts per Channel.
- 8) 2 C-Band Channels (3700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 144.58 Watts per Channel.
- 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 Quintel QD6616-7 for the 700 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 3700 MHz channel(s), the Ericsson AIR 6449 for the 3700 MHz channel(s), the CCI DMP65R-BU6DA for the 700 MHz / 850 MHz / 2300 MHz channel(s) in Sector A, the Quintel QD6616-7 for the 700 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 3700 MHz channel(s), the Ericsson AIR 6449 for the 3700 MHz channel(s), the CCI DMP65R-BU6DA for the 700 MHz / 850 MHz / 2300 MHz channel(s) in Sector B, the Quintel QD4616-7 for the 700 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 3700 MHz channel(s), the Ericsson AIR 6449 for the 3700 MHz channel(s), the CCI DMP65R-BU4DA for the 700 MHz / 850 MHz / 2300 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.

- 12) The antenna mounting height centerline of the proposed antennas is 161 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.

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Quintel QD6616-7	Make / Model:	Quintel QD6616-7	Make / Model:	Quintel QD4616-7
Frequency Bands:	700 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	700 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	700 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	11.97 dBd / 11.97 dBd / 15.11 dBd / 15.33 dBd	Gain:	11.97 dBd / 11.97 dBd / 15.11 dBd / 15.33 dBd	Gain:	10.8712 dBd / 10.8712 dBd / 14.3071 dBd / 14.3071 dBd
Height (AGL):	161 feet	Height (AGL):	161 feet	Height (AGL):	161 feet
Channel Count:	14	Channel Count:	14	Channel Count:	14
Total TX Power (W):	640 Watts	Total TX Power (W):	640 Watts	Total TX Power (W):	640 Watts
ERP (W):	17,155.62	ERP (W):	17,155.62	ERP (W):	13,716.88
Antenna A1 MPE %:	3.21%	Antenna B1 MPE %:	3.21%	Antenna C1 MPE %:	2.55%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz
Gain:	23.45 dBd	Gain:	23.45 dBd	Gain:	23.45 dBd
Height (AGL):	163 feet	Height (AGL):	163 feet	Height (AGL):	163 feet
Channel Count:	1	Channel Count:	1	Channel Count:	1
Total TX Power (W):	144.58000000000000 1 Watts	Total TX Power (W):	144.58000000000000 1 Watts	Total TX Power (W):	144.58000000000000 1 Watts
ERP (W):	31,996.92	ERP (W):	31,996.92	ERP (W):	31,996.92
Antenna A2 MPE %:	4.67%	Antenna B2 MPE %:	4.67%	Antenna C2 MPE %:	4.67%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz
Gain:	23.45 dBd	Gain:	23.45 dBd	Gain:	23.45 dBd
Height (AGL):	159 feet	Height (AGL):	159 feet	Height (AGL):	159 feet
Channel Count:	1	Channel Count:	1	Channel Count:	1
Total TX Power (W):	144.58000000000000 1 Watts	Total TX Power (W):	144.58000000000000 1 Watts	Total TX Power (W):	144.58000000000000 1 Watts
ERP (W):	31,996.92	ERP (W):	31,996.92	ERP (W):	31,996.92
Antenna A3 MPE %:	4.91%	Antenna B3 MPE %:	4.91%	Antenna C3 MPE %:	4.91%
Antenna #:	4	Antenna #:	4	Antenna #:	4
Make / Model:	CCI DMP65R-BU6DA	Make / Model:	CCI DMP65R-BU6DA	Make / Model:	CCI DMP65R-BU4DA
Frequency Bands:	700 MHz / 850 MHz / 2300 MHz	Frequency Bands:	700 MHz / 850 MHz / 2300 MHz	Frequency Bands:	700 MHz / 850 MHz / 2300 MHz
Gain:	11.85 dBd / 12.45 dBd / 16.25 dBd	Gain:	11.85 dBd / 12.45 dBd / 16.25 dBd	Gain:	9.95 dBd / 10.25 dBd / 14.65 dBd
Height (AGL):	161 feet	Height (AGL):	161 feet	Height (AGL):	161 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	420 Watts	Total TX Power (W):	420 Watts	Total TX Power (W):	420 Watts
ERP (W):	9,479.38	ERP (W):	9,479.38	ERP (W):	6,193.92

Antenna A4 MPE %:	2.16%	Antenna B4 MPE %:	2.16%	Antenna C4 MPE %:	1.39%
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- An adjusted power reduction factor of 0.32 was applied to the AIR 6449 antennas per guidance from AT&T.
- Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.

Site Composite MPE %	
Carrier	MPE %
AT&T (Max at Sector A):	14.95%
Metro PCS	1.56%
Verizon	5.01%
T-Mobile	10.58%
Sprint	2.63%
Site Total MPE % :	34.73%

AT&T MPE % Per Sector	
AT&T Sector A Total:	14.95%
AT&T Sector B Total:	14.95%
AT&T Sector C Total:	13.53%
Site Total MPE % :	34.73%

AT&T Maximum MPE Power Values (Sector A)

AT&T 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
AT&T 700 MHz LTE FN	4	629.59	161.0	3.77	700 MHz LTE FN	467	0.81%
AT&T 700 MHz LTE DE	2	629.59	161.0	1.88	700 MHz LTE DE	467	0.40%
AT&T 1900 MHz LTE/5G	4	1297.36	161.0	7.77	1900 MHz LTE/5G	1000	0.78%
AT&T 2100 MHz LTE/5G	4	2047.16	161.0	12.25	2100 MHz LTE/5G	1000	1.23%
AT&T 3700 MHz C-Band	1	31996.92	163.0	46.67	3700 MHz C-Band	1000	4.67%
AT&T 3700 MHz C-Band	1	31996.92	159.0	49.14	3700 MHz C-Band	1000	4.91%
AT&T 700 MHz LTE	4	612.43	161.0	3.67	700 MHz LTE	467	0.78%
AT&T 850 MHz 5G	4	703.17	161.0	4.21	850 MHz 5G	567	0.74%
AT&T 2300 MHz LTE	4	1054.24	161.0	6.31	2300 MHz LTE	1000	0.63%
						Total:	14.95%

• 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 AT&T 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:

AT&T Sector	Power Density Value (%)
Sector A:	14.95%
Sector B:	14.95%
Sector C:	13.53%
AT&T Maximum MPE % (Sector A):	14.95%
Site Total:	34.73%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **34.73%** 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.

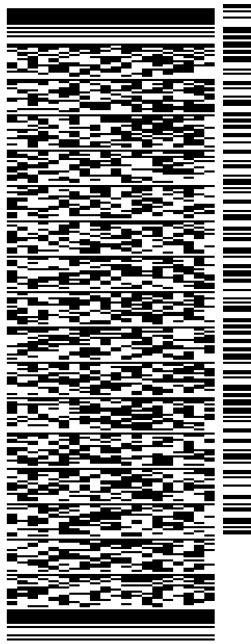
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