Crown Castle



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

August 19, 2019

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

RE: Notice of Exempt Modification for T-Mobile:

876380 - T-Mobile Site ID: CTNH350A

202 Great Hollow Road, Woodbury, CT 06798

Latitude: 41° 31′ 19.20″ / Longitude: -73° 13′ 14.65″

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 87-foot mount on the existing 139-foot Monopole Tower, located at 202 Great Hollow Road, Woodbury, CT. The tower is owned by Crown Castle and the property is owned by O&G Industries. T-Mobile now intends to replace six (6) existing antennas with three (3) new 600/700 MHz antennas. The new antennas will be installed at the 87-ft level of the tower.

Planned Modifications:

Tower:

Remove:

- (3) 1 5/8" Coax
- (3) APXV18-206516S-C-A20 Antenna

Remove and Replace:

(3) LNX 6515DS-A1M Antenna (**REMOVE**) - (3) RFS-APXVAARR24_43-U-NA20 Antenna 600/700 MHz (**REPLACE**)

Install New:

- (1) 1 5/8" Hybrid Fiber Line
- (3) Radio 4449 B71/B12

Existing to Remain:

- (9) 1 5/8" Coax
- (3) APXV18-206516S-C-A20 Antenna 1900 MHz
- (3) TMA

Ground:

Upgrade to existing ground cabinet. (Internally)

Page 2

The facility was approved by the Connecticut Siting Council in Docket No. 236 on June 19, 2003. This approval was given with conditions, which T-Mobile's proposed exempt modification complies with.

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 Barbara Perkinson, First Selectwoman for the Town of Woodbury, Maryellen Edwards, Town Planner, Crown Castle as the tower owner, and O&G Industries, the property owner.

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

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Anne Marie Zsamba.

Sincerely,

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

Attachments

cc:

Barbara Perkinson, First Selectwoman Town of Woodbury Town Hall – Selectwoman's Office

Melanie A. Bachman

Page 3

281 Main Street South Woodbury, CT 06798 203-263-2141

Maryellen Edwards, Town Planner Town of Woodbury Town Hall – Planning Department 281 Main Street South Woodbury, CT 06798 203.263.3467

O&G Industries Inc. 112 Wall Street Torrington, CT 06790

Crown Castle, Tower Owner



- 1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
- 2. Fold the printed page along the horizontal line.
- 3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



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Exhibit A

Original Facility Approval



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051 Phone: (860) 827-2935 Fax: (860) 827-2950 E-Mail: siting.council@po.state.ct.us Web Site: www.state.ct.us/csc/index.htm

June 24, 2003

TO:

Parties and Intervenors

FROM:

S. Derek Phelps, Executive Director

RE:

DOCKET NO. 236 - Sprint Spectrum L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility off Great Hollow Road or at 103 Great Hollow Road, South Woodbury, Connecticut.

By its Decision and Order dated June 19, 2003, the Connecticut Siting Council granted a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility located at Site A off of Great Hollow Road, Woodbury, Connecticut.

Enclosed are the Council's Findings of Fact, Opinion, and Decision and Order.

SDP/laf

Enclosures (4)

c: Albert Palko, State Documents Librarian Council Members



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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CERTIFICATE

OF

ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED DOCKET NO. 236

Pursuant to General Statutes § 16-50k, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need to Sprint Spectrum, L.P. d/b/a Sprint PCS for the construction, maintenance and operation of a wireless telecommunications facility located at Site A off of Great Hollow Road, Woodbury, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on June 19, 2003.

By order of the Council,

Pamela B. Katz, F., Chairman

June 19, 2003



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051 Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us Web Site: www.state.ct.us/csc/index.htr

June 24, 2003

Thomas J. Regan, Esq. Brown Rudnick Berlack Israels LLP 185 Asylum Street, CityPlace I Hartford, CT 06103-3402 JUL 2 5 2003

RE: **DOCKET NO. 236** - Sprint Spectrum L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility off Great Hollow Road or at 103 Great Hollow Road, South Woodbury, Connecticut.

Dear Attorney Regan:

By its Decision and Order dated June 19, 2003, the Connecticut Siting Council (Council) granted a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at Site A off of Great Hollow Road in Woodbury to Sprint Spectrum.

Enclosed are the Council's Certificate, Findings of Fact, Opinion, and Decision and Order.

Very truly yours,

Executive Director

SDP/CML

Enclosures (4)

Town of Woodbury Zoning Permit

Number

8156

Date: February 3, 2004

Permission granted to:

O & G Ind. (owner) / Peter Maxwell (agent)

To Construct:

Telecommunications facilities

Address:

Great Hollow Road

District

OS-80

Map 34 Lot 15

Set back distance from lot lines

Front::

N/A

Right Side:

N/A

Left Side:

N/A

Rear:

N/A

A-2 Requirements

Foundation N/A Final N/4

Both Required

Reviewed and approved: Judi

Building Heick



PROPERTY OWNER:

ROBERT CHASE, TRUSTEE C/O O&G INDUSTRIES WOODBURY, CT

PROPERTY LESSEE:

SPRINT SITES USA 535 EAST CRESCENT AVENUE RAMSEY, NEW JERSEY 07446

APPLICANT/SUBLESSEE:

AT&T WIRELESS PCS LLC 12 OMEGA DRIVE STAMFORD, CONNECTICUT 06902

LATITUDE:

41.52201° (NAD 83)

LONGITUDE:

73.22074* (NAD 83)

ELEVATION:

590' AMSL

JURISDICTION:

TOWN OF WOODBURY, CONNECTICUT

CURRENT USE:

PROPOSED USE:

TELECOMMUNICATIONS FACILITY

TELECOMMUNICATIONS FACILITY

SITE QUALIFICATION PARTICIPANTS

	NAME	COMPANY	MUMDED
A/E	IGNACIO C ARTAIZ	URS CORPORATION AES	<u>NUMBER</u> (860) 529-8882
SAC	HOLLIS REDDING	OPTASITE, INC.	(860) 657-1460
RF	KUMAR RUGHOOBUR	BECHTEL	(203) 630–9930
ÇON	ALI HEMMATI	BECHTEL	(201) 707-8161
LANDLORD	RUSS VAN OUDENAREN	11/1/SPRINT SITES LISA	
OTHER	- "10,1 K CO	NNEA COL	(201) 995-4023

0 10/01/03 ISSUED FOR CONSTRUCTION A 09/16/03 100% REVIEW

TITLE SHEET

Town of Woodbury

Date: 1/30/04	Zoning Permit Number 8/36
Address of property: Great Hallow R	021
Map No. 34 Lot No. 15 Subdivision	
Name of Owner: 0 & G Industries	
Address of Owner: 112 Wall Street	
DESCRIPTION OF WORK PROPOSED	
concrete pad & telecommunications equ	ipment cabinets within
existing fenced enclosure; entennas	on existing monopole
Size of structure: Height	of structure: 110
Square footage: Number	er of stories:
Type of construction: 100x100 SF lease area	
Zone: R-40 OS-60 OS-80 OS-100	GA MSD PI EE MQ
Width of lot: Depth of lot:Setback distances from property lines	Total Acreage:
Front yard: 223 Rear yard	
Right side yard: N A Left side y	ard:
Name of Agent: Peter 1, Maxwell Phone	Number: 840-207-0219
Address of Agent: URS (orp. 795 BrookSt, 1	31dg 5, Rocky MII, CF 06067
Please Note: An agent must provide an approval letter from the owner of the subject	
Check all applicable s this property in the Historic District? Does this application involve any grading or filling? Will there be construction in or within 100 feet of a wetland with this require approval from the Pomperaug Health Distriction of	Yes No Yes No Yes No Yes No Yes No Yes No
Signature of Owner/Agent:	
approved by: /// guh All ber	Date: 2-3-04

This issued permit is based upon the plot plan submitted. Falsification by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the Town of Woodbury Zoning Regulations.

Exhibit B

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2018.

Town of Woodbary





Information on the Property Records for the Municipality of Woodbury was last updated on 2/23/2019.

Parcel Information

Location:	202 GREAT HOLLOW RD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	45300	Map Block Lot:	034-015	Acres:	210.30
490 Acres:	208.46	Zone:	OS80	Volume / Page:	360/ 104
Developers Map / Lot:		Census:	3621		

Value Information

	Appraised Value	Assessed Value
Land	1,869,813	191,400
Buildings	0	0
Detached Outbuildings	332,302	232,610
Total	2,202,115	424,010

Owner's Information

Owner's Data

O & G INDUSTRIES INC 112 WALL STREET TORRINGTON CT 06790

Detached Outbuildings

Туре:	Year Built:	Length:	Width:	Area:
Building/Equipment Cell Towers	2010			300
Building/Equipment Cell Towers	2010			64
Building/Equipment Cell Towers	2010			160
Building/Equipment Cell Towers	2010			200
Fencing Cell Towers	2010			600
Mono Pole Cell Towers	2002			150
Pad Cell Towers	2010			160
Pad Cell Towers	2002	20	10	200

Owner History - Sales

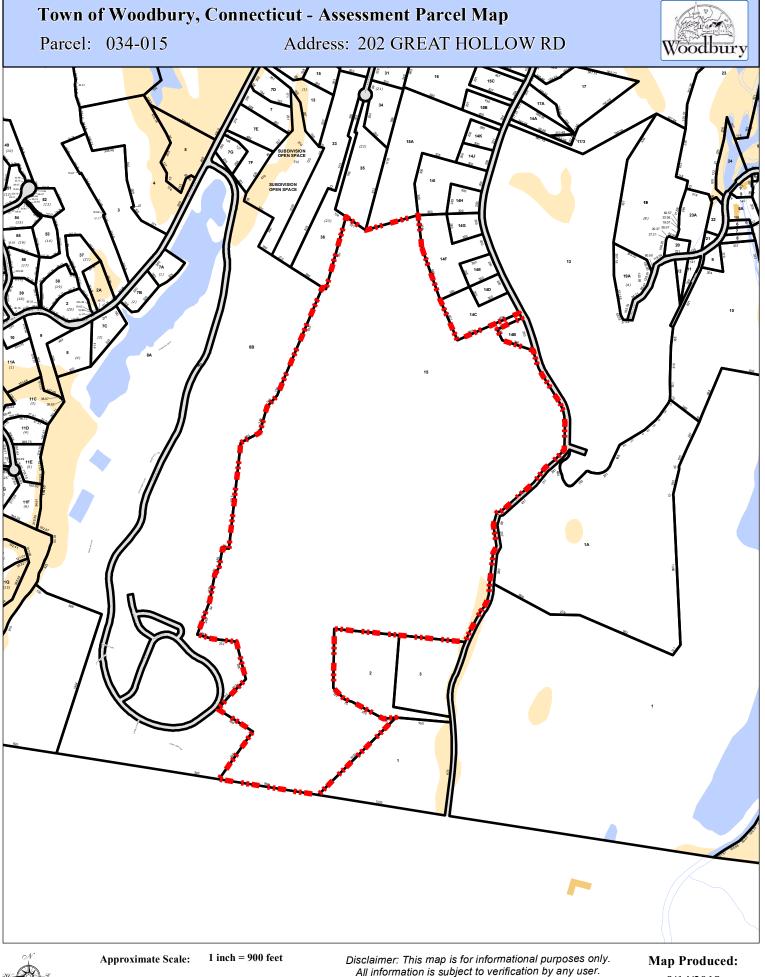
Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
O & G INDUSTRIES INC	360	104	03/20/2008		No	\$0
CHASE ROBERT L-TTEE	241	210	05/28/1999		No	\$0

Building Permits

nit us Reason

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
19-60	Electrical	01/31/2019		Closed	INSTALL CONDUIT AND WIRING TO INSTALL AND GENERATE DC GENERATOR INTO EXISTING DC SYSTEM
B181- 17	Other	09/14/2017		Closed	UPGRADE TELECOMMUNICATION ANTENNA - SPRINT - 3 NEW ANTENNA, 3 REMOTE RADIO HEAD AND A HYBRID FIBER
B053-	Other	04/20/2017		Closed	AT&T TO REMOVE AND REPLACE THREE ANTENNAS AND ADD THREE R R U'S (NON-ANTENNA) TO EXISTING EQUIPMENT
B036- 16	Other	03/17/2016		Closed	AT&T TO REMOVE AND REPLACE 3 ANTENNAS & ADD 3 RRU'S TO EXISTING EQUIPMENT
B067-15	Other	05/11/2015		Closed	REMOVING & REPLACING 3 ATTENNAS W/3 NEW + ADD I NEW CABINET ON THE EXISTING CONCRETE PAD
B004- 15	Other	01/15/2015		Closed	REPLACING ANTENNA PANELS ON EXISTING TOWER ADDING REMOTE RADIO HEADS
B226- 14	Other	12/11/2014		Closed	SPRINT TO ADD 3 ATENNA'S & 3 RRH &1 FIBER CABLES TO ANTENNA
B013- 14	Other	02/09/2014		Closed	ADD 50 K DIESEL GENERATORS ON 4'X 8' CONCRETE PAD, CONDUIT TO A T A MOUNTED ON EXISTING SHELTER. AL
B145-	Comm Renovations	08/19/2013		Closed	INSTALL 1 ANTENNA & RELOCATE GROUND EQUIPMENT & ELECTRICAL
B241- 12	Comm Renovations	12/19/2012		Closed	CELL TOWER-INSTALL 3 NEW ANTENNAS & ONE CABINET ON GROUND
B225- 12	Comm Renovations	12/12/2012		Closed	REPLACE R EXISTING ANTENNAS W/3 NEW SPRINT ANTENNAS ON EXISTING TOWER ADDING 6 REMOTE RADIO HEADS T
8555		07/29/2003		Closed	CELL TOWER(140');OPEN SPACE-1990(69.46 AC);FOREST LAND-1991(123.0 AC); FOREST LAND REVISED-1996(CER

Information Published With Permission From The Assessor





Disclaimer: This map is for informational purposes only.

All information is subject to verification by any user.

The Town of Woodbury and its mapping contractors assume no legal responsibility for the information contained herein.

Exhibit C

Construction Drawings

SCOPE OF WORK

ITEMS TO BE INSTALLED ON & REMOVED FROM EXISTING TOWER & ON GROUND:

- REMOVE T-MOBILE ANTENNA (LNX-8515DS-A1M) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- REMOVE T-MOBILE ANTENNA (APXV18-206516S-C-A20) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- REMOVE T-MOBILE COAX CABLE (TOTAL OF 3).
- INSTALL T-MOBILE ANTENNA (APXVAARR24_43-U-NA20) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
 INSTALL T-MOBILE RADIO (4449 B71+B12) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL T-MOBILE 6x12 HCS HYBRID CABLE (TOTAL OF 1).

ITEMS TO BE INSTALLED ON EXISTING EQUIPMENT PAD:

- REMOVE (1) DUS41
- INSTALL (2) ERICSSON BASEBAND 6630 UNITS

ITEMS TO REMAIN:

(3) ANTENNAS, (3) TMAS, (9) COAX CABLES.

SITE ADDRESS:

202 GREAT HOLLOW ROAD

WOODBURY, CT 06798

LATITUDE (NAD 83):

LONGITUDE (NAD 83):

W -73° 13' 14.65' LITCHEIELD

JURISDICTION LANDLORD:

COUNTY:

CROWN CASTLE INTERNATIONAL 500 W. CUMMINGS PARK, STE 3600

WOBURN, MA 01801

139'-0"

MONOPOLE/ OUTDOOR

STRUCTURE TYPE: STRUCTURE HEIGHT:

RAD CENTER 87'-0"

CURRENT USE:

TELECOMMUNICATIONS FACILITY

PROPOSED USE:

TELECOMMUNICATIONS FACILITY

	DRAWING INDEX
SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	SITE PLAN
S-1	PROPOSED TOWER ELEVATION & ANTENNA LAYOUT PLAN
S-2	EQUIPMENT DETAILS
RF-1	ANTENNA INFORMATION CHART
RF-2	RF EQUIPMENT SCHEMATIC
E-1	ONE LINE DIAGRAM
G-1	GROUNDING RISER DIAGRAM

CROWN CASTLE SITE ID #: 876380 CROWN CASTLE SITE NAME: O&G WOODBURY

ENGINEERING

2018 CONNECTICUT STATE BUILDING CODE 2018 AMENDMENT WITH 2015 INTERNATIONAL BUILDING CODE 2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES 2015 INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL ENERGY CONSERVATION CODE 2017 NATIONAL ELECTRICAL CODE (NFPA 70 2017)

ALL CONSTRUCTION ACTIVITIES ARE TO BE COMPLETED DIRECTLY THROUGH CROWN. CONTRACTOR MUST HAVE CONSTRUCTION PO AND NTP FROM CROWN DIRECT IN ORDER TO BEGIN. PRE-APPROVAL TO ENTER THE PROPERTY MUST BE OBTAINED, FOR ACCESS AUTHORIZATION, PLEASE CONTACT CROWN

T · Mobile

T-MOBILE NORTHEAST LLC



3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065



120 ST. JAMES AVENUE, 5TH FLOOR

SITE NAME: NH350/GLOBAL-WOODBURY

L600 PROJECT

SITE NUMBER: CTNH350A

- Mobile

CROWN SITE NAME: O&G WOODBURY

BU#: 876380

T-MOBILE RAN TEMPLATE: 67D04G

THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS

GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- HANDICAP REQUIREMENTS ARE NOT REQUIRED
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE, EQUIPMENT, ANTENNAS/RADIOS AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- NO COMMERCIAL SIGNAGE IS PROPOSED.



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



PROJECT NO **EBCCOOM** FLP

DRAWN BY

SUBMITTALS 08/08/19 ISSUED FOR CONSTRUCTION 07/19/19 ISSUED FOR PERMITTING

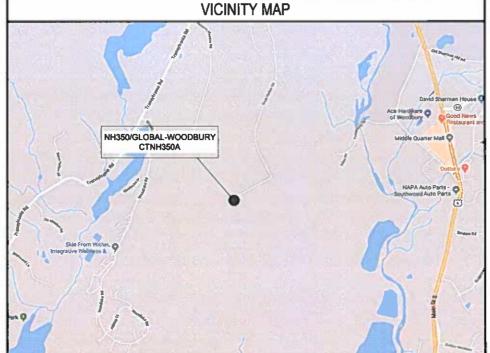
THIS OCCUMENT IS THE CREATION, DESIGN ANY DUPLICATION OR USE WITHOUT EXPRESS NY DUPLICATION OR USE WITHOUT EXPRESS WHETTEN CONSIST IT IS STRICTLY PROHIBITED. JUPLICATION AND USE BY GOVERNMENT GENCIES FOR THE PURPOSES OF CONDUCTING INSER LAWRELLY AUTHORIZED REGULATORY AN USBANISTRATIVE FUNCTIONS IS SPECIFICALLY JUBBANISTRATIVE FUNCTIONS IN SPECIFICALLY

NH350/GLOBAL-WOODBURY CTNH350A **O&G WOODBURY** 876380

202 GREAT HOLLOW ROAD WOODBURY, CT 06798

TITLE SHEET

T-1



HEAD WEST ON ST. JAMES AVE TOWARD TRINITY PLACE (0.1 MILE), MERGE ONTO I-90 W VIA THE RAMP TO NEW YORK (0.2 MILE), MERGE ONTO I-90 W (10.2 MILES), KEEP LEFT TO STAY ON I-90 W (44.1 MILES), USE THE RIGHT 2 LANES TO TAKE EXIT 9 FOR I-84 TOWARD US-20/HARTFORD/NEW YORK CITY (0.7 MILE), CONTINUE ONTO I-84 FOR (42.1 MILES), KEEP LEFT TO STAY ON I-84 (30.7 MILES), TAKE EXIT 17 FOR CT-84 TOWARD CT-63/ MIDDLEBURY/ WATERTOWN (0.2 MILE), CONTINUE ON CT-64 W/CHASE PKWY (3.4 MILES), TURN RIGHT TO STAY ON CT-84 W (4.2 MILES), TURN RIGHT ONTO US-6 E/MAIN ST S (0.6 MILE), TURN LEFT ONTO HOLLOW RD (0.3 MILE), SLIGHT LEFT ONTO CT-317 W/SYCAMORE AVE (0.4 MILE), TURN LEFT ONTO BEAR HILL RD (0.3 MILE), TURN LEFT ONTO GREAT HOLLOW RD. (1,1 MILES), SITE WILL BE LOCATED TO THE AT END OF ROAD.

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. 3 OOK UP - CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
- 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 IMPEDEDICK ITS
 INTENDED USE, ANY COMPROMISED SAFETY CLIMB, INCLUDING EVISTING 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
 COMPRISEDOR MOTHER 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, EMPRONMENTAL, AND ZONNG, AFTER ONSITE ACTUTITES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
- 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 HERBIN, AND SHALL MEET ANSWASSE 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 ANSWASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USB INC. STANDARD GED-STO-10253, INCLUDING THE REQUIRED INVOLVEMENT OF AUGULAFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSWTIA-322 (LATEST
- EDITION).
 ALL SITE WORK TO COMPLY WITH QAS-STD-10068 INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN
 CASTLE USA INC. TOWER SITE" AND LATEST VERSION OF ANSUTTA-1018-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
- 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 MEDICAL 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 UNILESS SPECIFICALLY STATED OTHERWISE.

 THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE STATE OF CONSTRUCTION.

 ALL EXISTING ACTIVE SEMERY WATERS GAS ELECTIVE AND OTHER LITERIES WARDE ENVOLVED THE WORK SHALL BE

- 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 UNITED TO A JEAL 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
- 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, SMALL 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 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
- 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 COXUAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION, TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A
- 22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS. SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMEN

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING. THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR:
 GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
 TAMOBLE
 TOWER OWNER:
 CROWN CASTLE USA INC.
- 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 ANDOR WOOK/PEOPLE 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 OF 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 THE BITEMS AND IS FOR STRUCTURAL DESERVATION OF THE FINISHED STRUCTURE. AND TYPICAL DETAILS, MHEREN DO BETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS, MHERE NO BETAILS SHOWN, CONSTRUCTION PARKINGS OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GRAFTER MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

- NOTES, AND SPECIFICATIONS. THE GREATER MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARSFIGATION 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 SOUR RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE OIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES HOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CULTING 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 EUSTING 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 OWN ORDINANCES. ON TRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, UNLESS REGULATIONS AND LAWFUL GROBERS OF NY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK, ALL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REQULATIONS.

 UNLESS NOTEO OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLY WITH ALL LAWS COMPLY WITH ALL LAWS ORDINANCES. THE WORK SHALL INSTALLATIONS AS INDICABLE PURISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLY BE ALL LALL ELECUIPMENT, AND DIFFICIONAL CODES.

- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE PROFITED 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
- 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 ESISTING 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
- ITEMS REMOVED FROM THE EXISTING PACIFITY, ANTENDOS DESCRIPTION.

 LOCATION.

 CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODESIORDINANCES.
 CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT

- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

 WRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
 ALL CIRCUITS SHALL BE SEGREATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
 ALL COUPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABBLE 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. 20,000 AIC MINIMUM VERYIFY AVAILABLE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED. 20,000 AIC MINIMUM VERYIFY AVAILABLE SHORT CIRCUIT CURRENT TO WHICH THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

 BEACH 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 HEC AND OSH.

 ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WHITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, MIRE CONFIGURATION, POWER OR AMPACITY RAYING AND BRANCH CIRCUIT ID NUMBERS (1.6.)

 PANALE BOARD AND CIRCUIT ID'S). 4.2

- 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 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 THEM, THWN. THWN-2, XHMW, XHMW-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 THHM, THWN, THWN-2, XHMW, XHMW-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 OTHERWISSE SPECIFIED.
 POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER),
 WITH TYPE THHW, THAIN, THAIN, THAIN, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE
- WHICH THE AND THE AND
 - . AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL,
- ANSIECE 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 EXCEPTION CONTRACT OF METAL-CLAD CABLE (MC) SHALL BE USED FOR EXCEPTION LOCATIONS.
 SCHEDULE 40 PVC UNDERGROUND OR STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELECWISMOS 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/IEEE

- SET SCREW FITTINGS ARE NOT ACCEPTABLE
 CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, U., ANSIJEEE
 AND THE NEC
 WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN
 DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
 SLOTTED WIRING DUCT SHALL BE EYE 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 STRICTURE 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 DICKNIT ON OUTSIDE AND INSIDE.
 EQUIPMENT CABINETS. TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE AND ALVANIZED OR EPOXY-COATED
 SMET 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 BEE 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 (WPO OR BETTER) FOR EXTERIOR LOCATIONS AND WEATHER
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 PROTECTED
- 25

- MAILD NEMA TION BETTERLY WITH THE ACCOMMENTATION FROM THE CARRIER AND/OR CROWN CASTLE 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 COODS AND STANDARDS TO SAFEGUARD UFFE AND PROPERTY.

 INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW: "CTNH350A"

 ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



CONDUC	TOR COLOR	CODE
SYSTEM	CONDUCTOR	COLOR
	A PHASE	BLACK
120/240V. 1Ø	B PHASE	RED
120/240V_19	NEUTRAL	WHITE
	GROUND	GREEN
	A PHASE	BLACK
	B PHASE	RED
120/208V, 3Ø	C PHASE	BLUÉ
	NEUTRAL	WHITE
	GROUND	GREEN
	A PHASE	BROWN
	B PHASE	ORANGE OF
277/480V, 3Ø	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
001017105	POS (+)	RED**
DC VOLTAGE	NEG (-)	BLACK**

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

T · · Mobile

T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088



3 CORPORATE PARK DRIVE CLIFTON PARK, NY 12065



BOSTON, MA 02116

PROJECT NO ERCC0004

FLP DRAWN BY:

CHECKED BY:

SUBMITTALS.

AS

08/08/19 ISSUED FOR CONSTRUCTION 07/19/19 ISSUED FOR PERMITTING

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NH350/GLOBAL-WOODBURY CTNH350A O&G WOODBURY 876380 202 GREAT HOLLOW ROAD

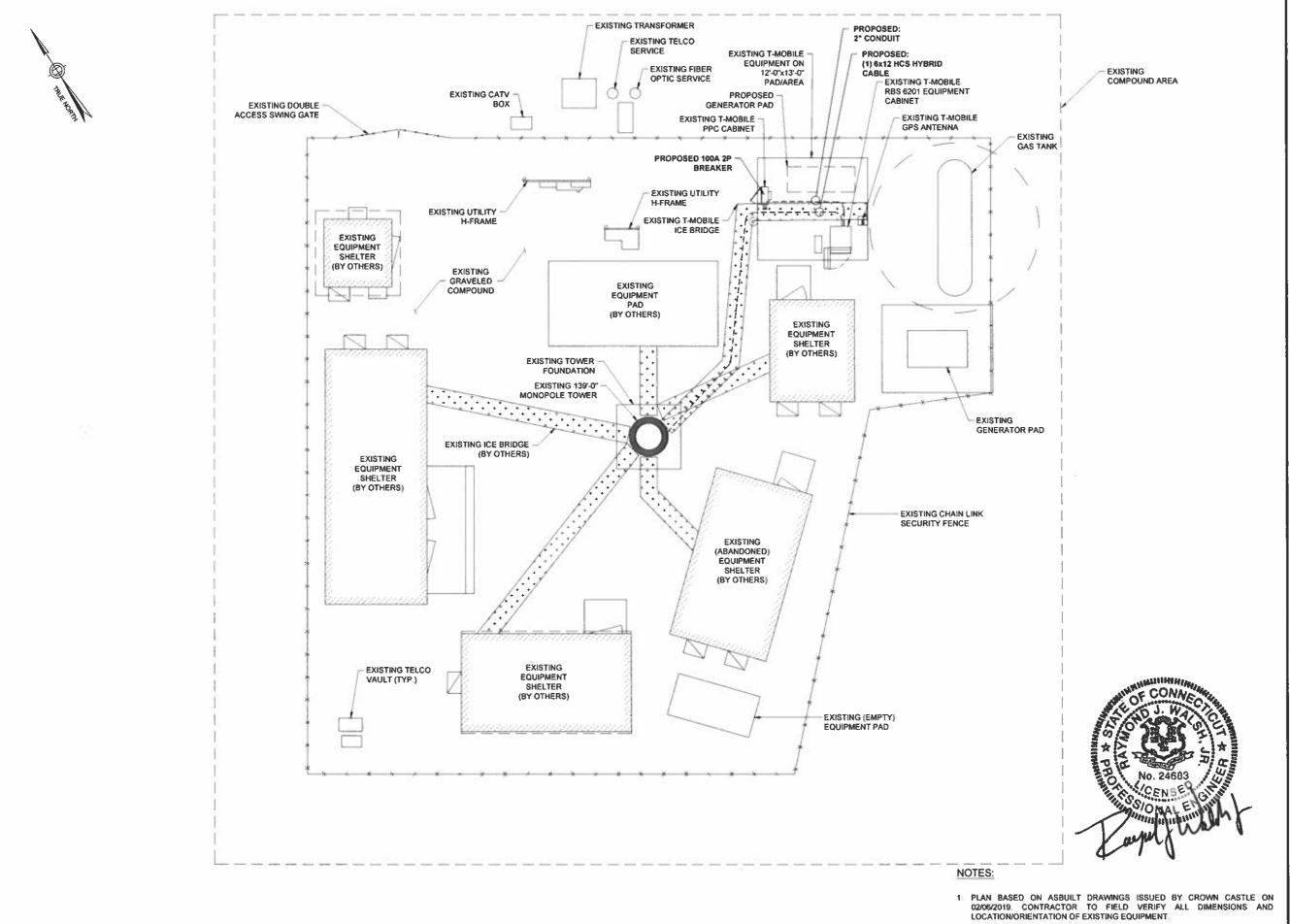
GENERAL NOTES

GN-1

GROUNDING NOTES:

- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GESS) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED 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
- 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 BITS 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

- CIRCUITS TO BITS EQUIPMENT:
 EACH CASH BITS EQUIPMENT FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #8 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 SOUD TINNED COPPER UNLESS OTHERWISE INDICATED.
 ALL WINNUM CONDUCTOR OR COPPER CLOD STEEL CONDUCTOR SHALL HOT BE USED FOR GROUNDING CONNECTIONS.
 USE OF 90° BENDS IN THE PROTECTION GROUNDING CONNECTIONS SHALL BE EXOTIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
 EXOTIFIERING 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 AND THE EXOTIFIERING WELD CONNECTIONS AND THE TOWN OF THE GROUND BAR APPROVED ANTIQUIDATE TO ATTICIPATE AND THE SITE OF THE GROUND CONNECTIONS AND BE EXOTIFIED TO THE GROUND CONNECTIONS SHALL BE EXOTIFIED TO THE SITE OF THE GROUND CONNECTIONS.
 ALL EXTERIOR GROUND CONNECTIONS SHALL BE CONTECTIVE SHALL BE USED ON ALL CONNECTIONS AND BOLTED GROUND CONNECTIONS.
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 ALL EXTERIOR GROUND CONNECTIONS SHALL BE CONTECTIVE SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
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T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088

CCCROWN

3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065

JACOBS*

JACOBS ENGINEERING GROUP, INC.

120 ST JAMES AVENUE, 5TH FLOOR BOSTON, MA 02116

PROJECT NO:

DRAWN 8Y:

CHECKED BY:

SUBMITTALS

ERCC0004

FLP

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08/08/19 ISSUED FOR CONSTRUCTION

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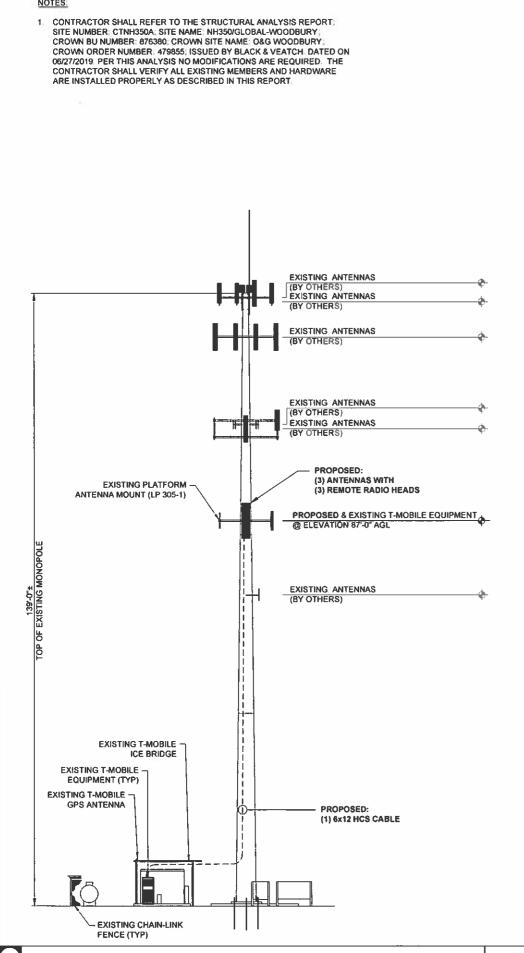
NH350/GLOBAL-WOODBURY CTNH350A O&G WOODBURY 876380 202 GREAT HOLLOW ROAD WOODBURY, CT 06798

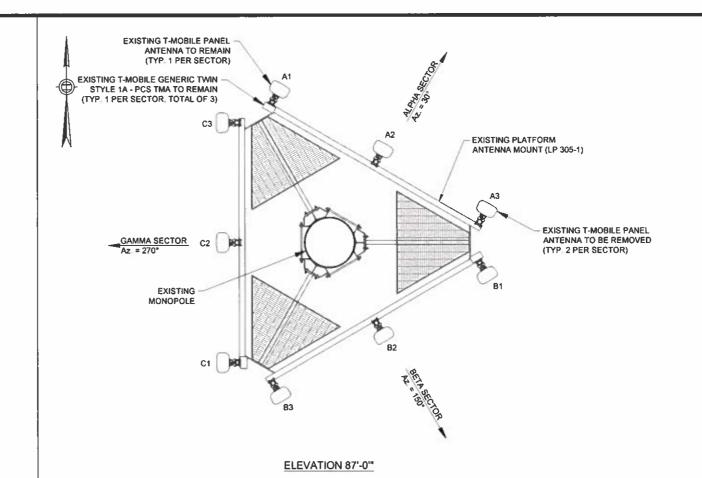
SITE PLAN

C-1

SITE PLAN

SCALE: 3/16" = 1'-0"





EXISTING ANTENNA LAYOUT

1. CONTRACTOR SHALL REFER TO THE MOUNT ANALYSIS REPORT; SITE NUMBER: CTNH350A; SITE NAME: NH350/GLOBAL-WOODBURY; CROWN BU NUMBER: 876380; CROWN SITE NAME: O&G WOODBURY: CROWN ORDER NUMBER: 479855; ISSUED BY MASTEC NETWORK SOLUTIONS. DATED ON 05/16/2019. PER THIS ANALYSIS NO MODIFICATIONS ARE REQUIRED FOR THE PROPOSED EQUIPMENT, CONTRACTOR SHALL PROPOSED T-MOBILE
APXVAARR24_43-U-NA20 ANTENNA CONFIRM ALL T-MOBILE EXISTING AND PROPOSED EQUIPMENT ARE INSTALLED IN (TYP OF 1 PER SECTOR) ACCORDANCE WITH THIS REPORT. PROPOSED T-MOBILE 4449 B71/B12 RRH 2. CONTRACTOR TO VERIFY FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEER W/ ANY DISCREPANCIES PRIOR TO (TYP OF 1 PER SECTOR) THE INSTALLATION. 3. CONTRACTOR SHALL NOT EXCEED MOUNTING MORE THAN (2) RRHS PER ANTENNA MOUNTING GAMMA SECTOR C2 PIPE - RELOCATE TO AN ADJACENT ANTENNA MOUNTING PIPE AS NEEDED. EXISTING PLATFORM ANTENNA MOUNT (LP 305-1)

ELEVATION 87'-0™

T · · Mobile

T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088



SUITE 101 CLIFTON PARK, NY 12065



120 ST JAMES AVENUE, 5TH FLOOR BOSTON, MA 02116

PROJECT NO: ERCC0004

FLP

SUBMITTALS

08/06/19 ISSUED FOR CONSTRUCTION 07/19/19 ISSUED FOR PERMITTING

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NH350/GLOBAL-WOODBURY CTNH350A **O&G WOODBURY** 876380 202 GREAT HOLLOW ROAD WOODBURY, CT 06798

> PROPOSED TOWER **ELEVATION &** ANTENNA LAYOUT PLAN

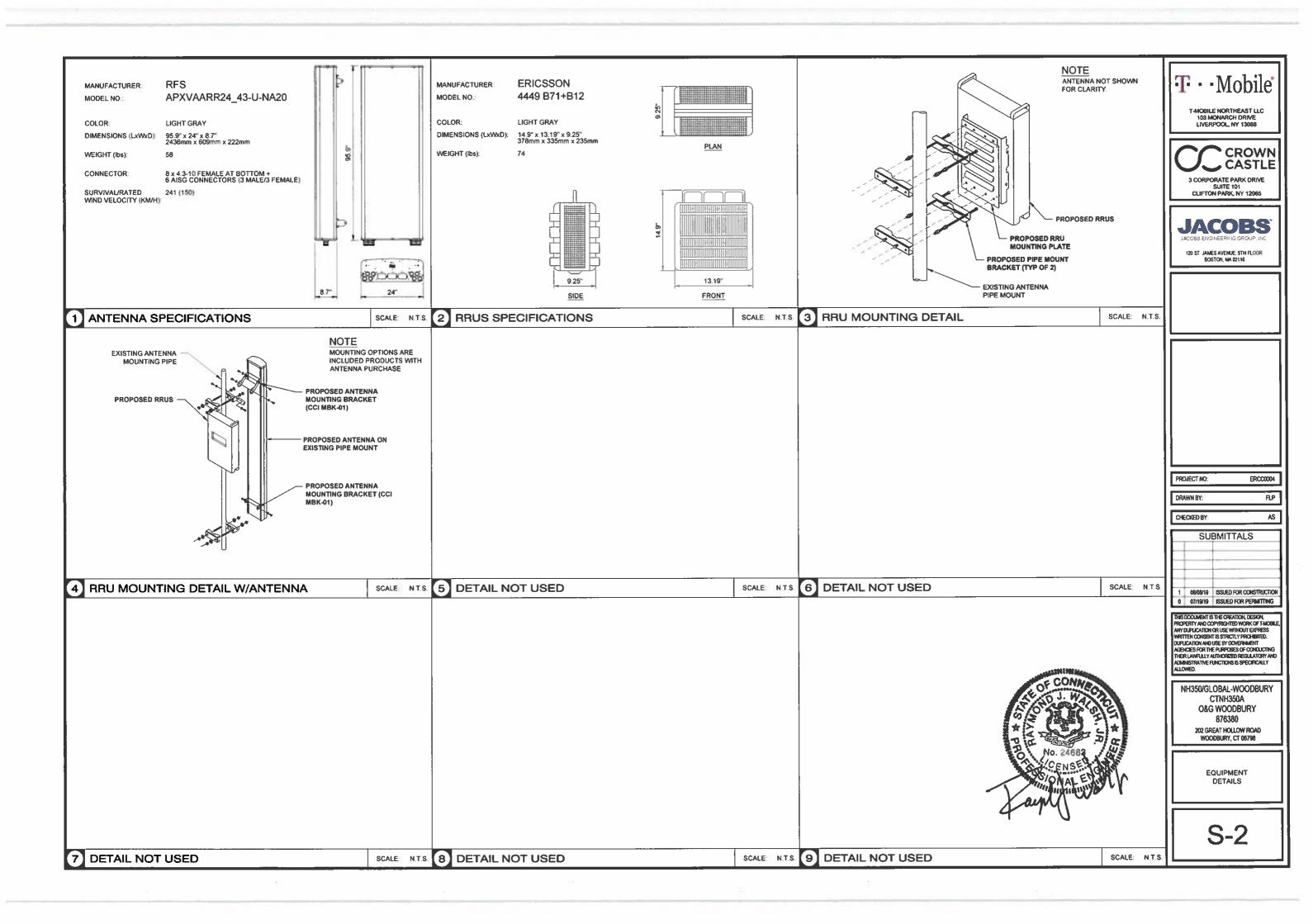
(3) PROPOSED ANTENNA LAYOUT

SCALE: 3/32" = 1'-0"

TOWER ELEVATION

SCALE: N.T.S.

SCALE: N.T.S.



ANTENNA NUMBER	ANTENNA	ANTENNA		ELEÇ.		IMAKRUS IMAKR		TMA/RRUS		AX/HYBRID CABLE		JUMPERS		
(FROM L TO R)	MODEL	AZIMUTH	TILT	TILT	FROM GROUND	MODEL	QUANTITY	SIZE/TYPE	QUANTITY	LENGTH	TYPE	QTY	LENGTH	
A1	APXV18-206516\$-C-A20	30°	0°	2°	87'-0'"	TWIN STYLE 1A-PCS TMA	1	1-1/4" COAX	3	130"	53	*	==	
A2	APXVAARR24_43-U-NA20	30°	0*	2*	87"-0""	RADIO 4449 B71+B12	1	6x12 HCS	1	130'				
B1	APXV18-206516S-C-A20	150°	0°	2°	87'-0"	TWIN STYLE 1A-PCS TMA	1	1-1/4" COAX	3	130'	27			
B2	APXVAARR24_43-U-NA20	150*	0.	2*	87'-0"'	RADIO 4449 B71+B12	1		·	-	·			
C1	APXV18-206516S-C-A20	270°	0*	2*	87'-0"	TWIN STYLE 1A-PCS TMA	1	1-1/4" COAX	3	130'	8	-	-	
C2	APXVAARR24_43-U-NA20	270*	0.	2*	87'-0"'	RADIO 4449 B71+B12	1							



- 1. EQUIPMENT LISTED IN BOLD, DELINEATES THAT THE EQUIPMENT IS
- 2 * DENOTES THAT EQUIPMENT IS TO BE GROUND MOUNTED

EQUIPMENT INFORMATION CHART

KEY
EXISTING
PROPOSED
KEY
ANTENNA POSITION AS VIEW FROM BEHIND

EQUIPMENT NOTES:

- THE HYBRID CABLE LENGTH SHOW IS ONLY AN ESTIMATE AND SHOULD NOT BE USED FOR ORDERING MATERIALS. CONFIRM THE REQUIRED HYBRID CABLE LENGTH WITH T-MOBILE PRIOR TO ORDERING OR INSTALLATION.
- 2. THE CONTRACTOR SHALL TEST THE OPTICAL FIBER AFTER INSTALLATION IN ACCORDANCE WITH T-MOBILE STANDARDS AND SUPPLY THE RESULTS TO T-MOBILE.
- THE CONTRACTOR SHALL CONFIRM THE TOWER TOP EQUIPMENT LIST ABOVE WITH THE FINAL T-MOBILE RFDS PRIOR TO INSTALLATION.
- 4. ALL EXISTING AND PROPOSED ANTENNA CABLES SHALL BE COLOR CODED PER T-MOBILE STANDARDS.
- ${\bf 5.} \quad {\bf REFER\ TO\ EQUIPMENT\ INSTALLATION\ STANDARDS\ FOR\ ADDITIONAL\ INFORMATION,}$
- 6. REFER TO EQUIPMENT MANUFACTURER'S SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION NOT LISTED ABOVE.

EQUIPMENT TYPE	EXISTING QUANTITY	QUANTITY REMOVED	QUANTITY ADDED	TOTAL QUANTITY
PANEL ANTENNA	9	6	3	6
COAX CABLE	12	3	0	9
HYBRID CABLE	0	0	1	1
FIBER JUMPER	0	0	0	0
COAX JUMPER	0	0	0	0
TMA	3	0	0	3
RADIO	0	0	3	3

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T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088



3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065



SCALE: NONE

PROJECT NO: ERCC0004

ORAWN BY: FLP

CHECKED BY:

П		SU	BMITTALS
П			
Н			
П			
Ц			
H			N. 170
Н	1	08/08/19	ISSUED FOR CONSTRUCTION
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ANTENNA INFORMATION CHART

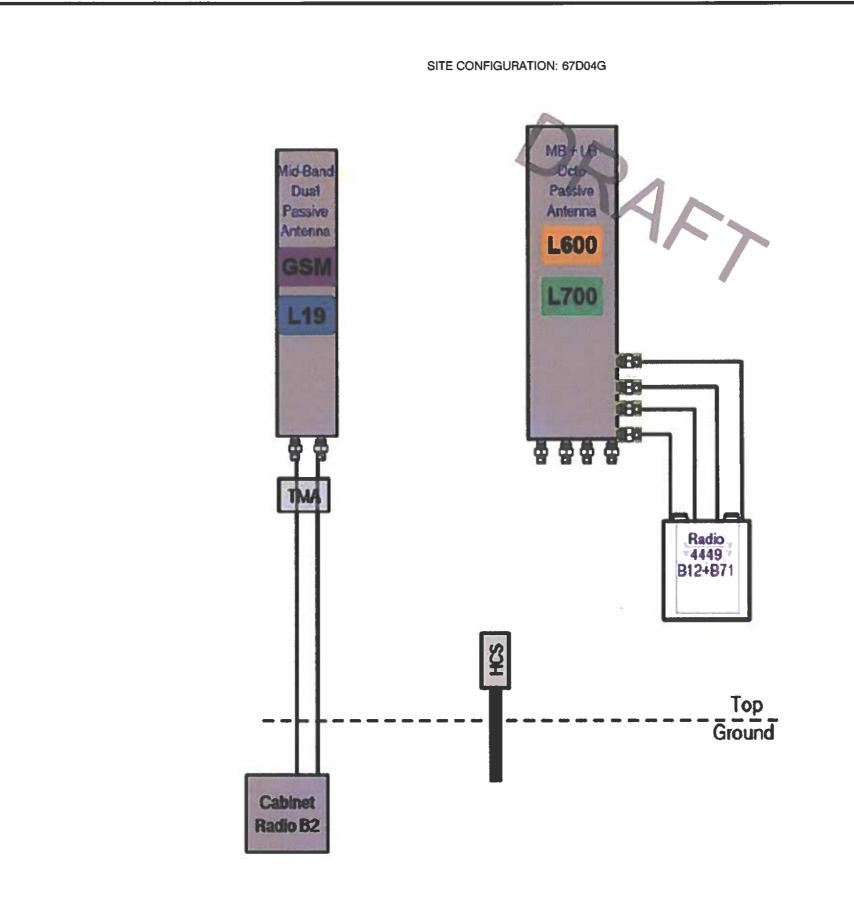
RF-1

ANTENNA KEY

SCALE: NONE

3 ANTENNA & CABLE SCHEDULE

SCALE: NONE



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T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088

CCROWN

3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065

JACOBS*

O ST. JAMES AVENUE, 5TH FLOOR

PROJECT NO: ERCC0004

FLP

AS

DRAWN BY:

CHECKED BY:

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> RF EQUIPMENT SCHEMATIC

RF-2

RF EQUIPMENT SCHEMATIC

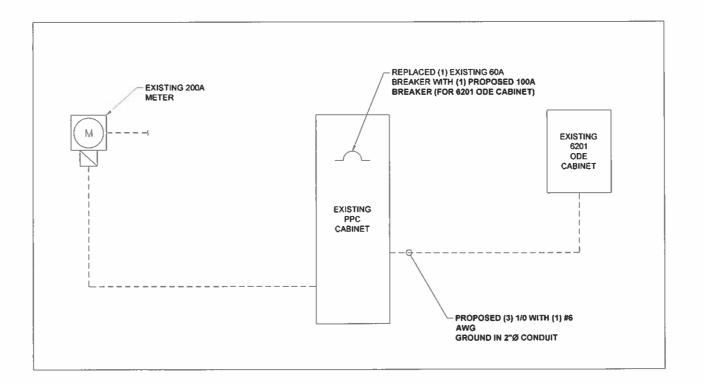
SCALE: NONE

ONE LINE DIAGRAM NOTES:

- 1. ELECTRICAL SERVICE SHALL BE 200A, 240/120V, 1Ø, 3W
- 2. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY EQUIPMENT MANUFACTURER.

NOTES

- CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH POWER COMPANY AND ENSURE ALL ELECTRICAL EQUIPMENT IS SUITABLE FOR AVAILABLE FAULT CURRENT.
- 2. CONTRACTOR SHALL COORDINATE UTILITY SERVICES WITH LOCAL UTILITY COMPANIES. VERIFY ALL REQUIREMENTS WITH UTILITY COMPANY STANDARDS.
- 3. ONE-LINE DIAGRAM IS SCHEMATIC ONLY AND NOT INDICATIVE OF ACTUAL EQUIPMENT LAYOUT.
- 4. CONTRACTOR SHALL LABEL METER SOCKET WITH SERVICE OWNER NAMEPLATE W/1/2" MINIMUM LETTERS.





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3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065



120 ST JAMES AVENUE 5TH FLOOR BOSTON, MA 02116

PROJECT NO: ERCC0004

RAWN BY: FLP

DRAWN BY:

CHECKED BY:

SUBMITTALS

1 08:00/19 ISSUED FOR CONSTRUCTION
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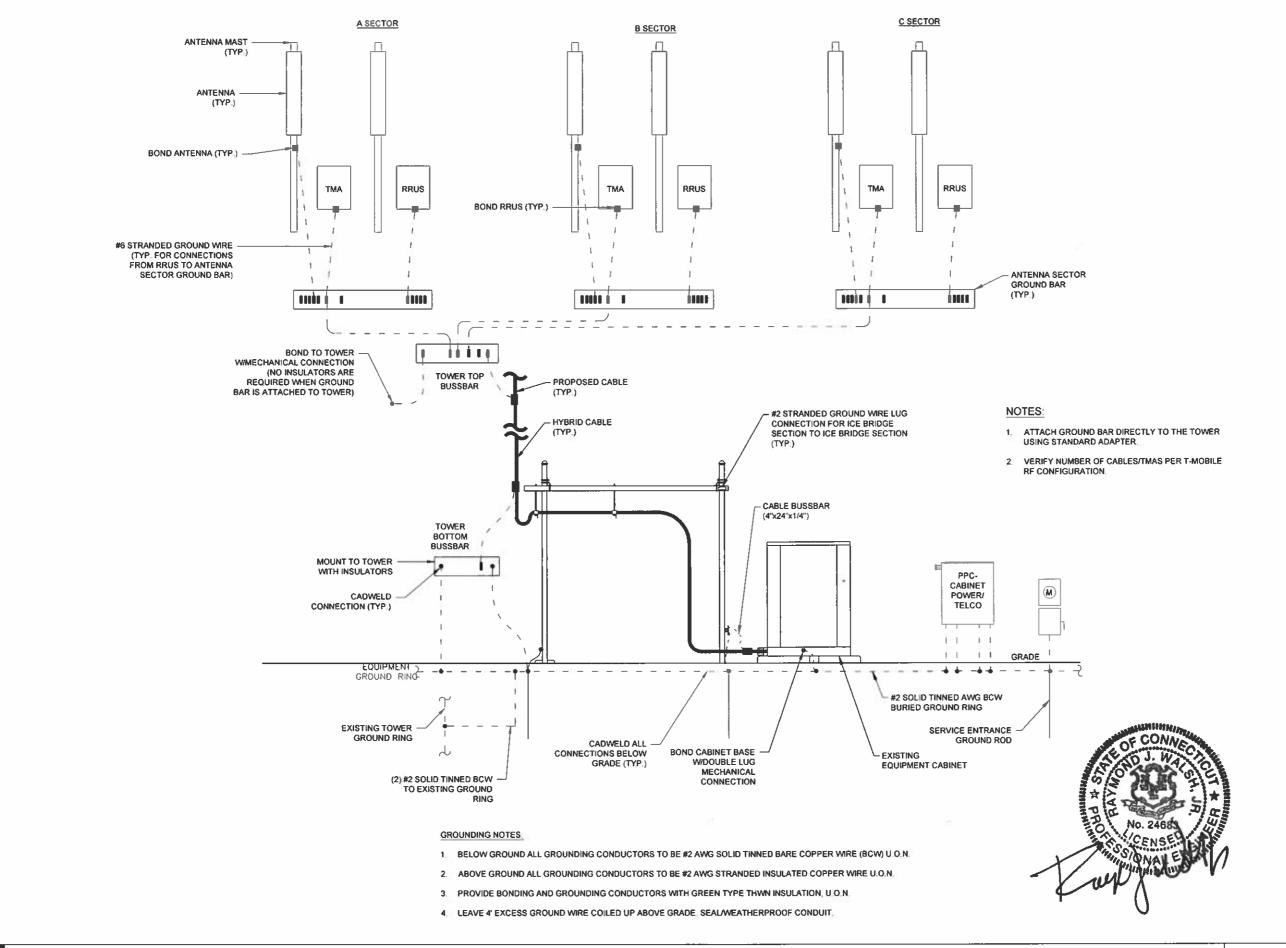
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> ONE LINE DIAGRAM

F-′



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T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088



3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065

JACOBS ENGINEERING GROUP INC

120 ST. JAMES AVENUE, 5TH FLOOR BOSTON, MA 02116

PROJECT NO: ERCC0004

FLP

AS

DRAWN BY:

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GROUNDING RISER DIAGRAM

G-1

Exhibit D

Structural Analysis Report

Date: June 27, 2019

Steve Tuttle Crown Castle 3 Corporate Dr Clifton Park, NY 12065



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

Subject: Structural Analysis Report

Carrier Designation: T-Mobile Co-Locate

Carrier Site Number: CTNH350A
Carrier Site Name: NH350/GlobalWoodbury

Crown Castle Designation: Crown Castle BU Number: 876380

Crown Castle Site Name: O&G WOODBURY

Crown Castle JDE Job Number: 559334
Crown Castle Work Order Number: 1760939
Crown Castle Order Number: 479855 Rev. 0

Engineering Firm Designation: Black & Veatch Corp. Project Number: 400087

Site Data: Great Hollow Road, Woodbury, Litchfield County, CT

Latitude 41° 31′ 19.2″, Longitude -73° 13′ 14.65″

138.375 Foot - Monopole Tower

Dear Steve Tuttle,

Black & Veatch Corp. is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower.

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

LC4.7: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Anup Chitale

Respectfully submitted by:

Joshua J. Riley, P.E.

Professional Engineer



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Table 2 - Other Considered Equipment

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided 3.1) Analysis Method 3.2) Assumptions

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)
Table 5 - Tower Component Stresses vs. Capacity - LC4.7
4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This Tower Is A 138.375 Ft Monopole Tower Designed by Engineered Endeavors, Inc.

The tower has been modified two times in the past to accommodate additional loading.

The tower has been modified per reinforcement drawings prepared by Semaan Engineering Solutions, Inc. in November of 2005. Reinforcement consists of addition of base plate stiffeners. Refer to Legacy Modification Inspection Report prepared by Tower Engineering Professionals in March of 2019. This modification is considered ineffective in this analysis.

The tower has been modified per reinforcement drawings prepared by GPD Group, Inc. in December of 2011. Reinforcement consists of addition of new anchor bolts to existing base plate. Refer to Post Modification Inspection Report prepared by GPD Group, Inc. in January of 2013. This modification is considered effective in this analysis.

The tower has been proposed to modify as per the Modification design by Black & Veatch Corp. in April of 2019. Reinforcement consists of (16) base plate stiffener at elevation 0'. All mentioned modifications are considered as effective and are considered in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H

Risk Category:

Wind Speed: 120 mph

Exposure Category:BTopographic Factor:1Ice Thickness:1.5 inWind Speed with Ice:50 mphService Wind Speed:60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	cci tower mounts	Platform Mount [LP 305-1]		
		3	ericsson	KRY 112 489/2		
		3	ericsson	RADIO 4449 B12/B71		
87.0 87.0	3	rfs celwave	APXV18-206516S-C-A20 w/ Mount Pipe	10	1 5/8	
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	
	148.0	1	dbspectra	DS9A09F36D-N			
		6	cci antennas	TPX-070821			
		3	commscope	ATSBT-TOP-FF-4G			
		3	ericsson	RRUS 32			
		3	ericsson	RRUS 4449 B5/B12	•		
		3	ericsson	RRUS 4478 B14			
		3	ericsson	RRUS 8843 B2/B66A	14	1 1/4	
		4	kathrein	80010964 w/ Mount Pipe	2	3/8	
138.0	139.0	2	kathrein	80010965 w/ Mount Pipe	4	7/16	
		3	powerwave technologies	7770.00 w/ Mount Pipe	2 1	3/4 1/2	
		3	powerwave technologies	TT19-08BP111-001			
		2	quintel technology	QS46512-2 w/ Mount Pipe			
			1	quintel technology	QS66512-2 w/ Mount Pipe		
		3	raycap DC6-48-60-18-8F				
	138.0 1 cci tower mounts P		Platform Mount [LP 303-1]				
137.0	140.0	3	ericsson	TME-RRUS-11			
137.0	137.0	1	cci tower mounts	Pipe Mount [PM 601-3]	_		
136.0	148.0	1	telewave	ANT150F6	1	1 1/4	
130.0	140.5	1	cci tower mounts	Pipe Mount [PM 601-1]	'	1 1/4	
	129.0		1	cci tower mounts	Platform Mount [16' LP 304-1]		
		3	alcatel lucent	RRH2x60-AWS			
		6	andrew	HBXX-6517DS-A2M w/ Mount Pipe			
129.0		129.0	3	andrew	LNX-8513DS-A1M w/ Mount Pipe	19	1 5/8
		3	antel	antel BXA-70063/6CF-2 w/ Mount Pipe			
		1	rfs celwave	DB-B1-6C-12AB-0Z			
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		3	alcatel lucent	RRH2X50-800			
109.0	109.0	3	alcatel lucent	TD-RRH8x20-25	_	-	
		1 cci tower mounts Pipe Mount [PM 601-3]		Pipe Mount [PM 601-3]			
		1	cci tower mounts	Side Arm Mount [SO 102-3]			
		9	rfs celwave	ACU-A20-N			
	110.0	3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe			
108.0		1	cci tower mounts	Platform Mount [14' LP 714-1]	4	1 1/4	
100.0	108.0	1	cci tower mounts	Miscellaneous [NA 510-1]	4	1 1/4	
	100.0	3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			

Mounting Level (ft)	Flevation	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
70.0	70.0 71.0 1 lucent KS24019-L112A		KS24019-L112A	1	1/2	
70.0	70.0	1	cci tower mounts	Side Arm Mount [SO 701-1]	1	1/2

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr.Clarence Welti, P.E.	1531967	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors, Inc.	2122534	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	1533002	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Semaan Engineering Solutions	2055776	CCISITES
4-POST-MODIFICATION INSPECTION	Tower Engineering Professionals	8290781	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Group, Inc.	3030835	CCISITES
4-POST-MODIFICATION INSPECTION	GPD Group, Inc.	3420974	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Black & Veatch Corp.	8337308	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower and structures were built and have been maintained in accordance with the manufacturer's specifications.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 3) The wind loading EPA of the panel antennas has been analyzed and determined by the tower owner. Verification of its accuracy is outside the scope of this structural analysis/design. Black & Veatch does not assume any responsibility for its accuracy.
- 4) This analysis was performed under the assumption that all information provided to Black & Veatch is current and correct. This is to include site data, appurtenance loading, tower/foundation details, and geotechnical data. The loading on the structure is based on CAD level drawings and carrier orders provided by the owner. If any of this information is not current and correct, this report should be considered obsolete and further analysis will be required.

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

4) ANALYSIS RESULTS

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

Section No.	Elevation (ft)	Component Type	Size	Critical Element	PIKI	SF*P_allow (K)	% Capacity	Pass / Fail
L1	138.375 - 108.375	Pole	TP24.5x17.375x0.1875	1	-10.01	888.76	59.3	Pass
L2	108.375 - 83.6328	Pole	TP31.88x24.5x0.25	2	-15.47	1476.51	57.6	Pass
L3	83.6328 - 42.9089	Pole	TP43.42x30.0432x0.3125	3	-26.55	2519.51	57.3	Pass
L4	42.9089 - 0	Pole	TP55.5x41.0411x0.3125	4	-40.14	3362.35	65.7	Pass
							Summary	
						Pole (L4)	65.7	Pass
						Rating =	65.7	Pass

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) - LC4.7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	108.377	36.5	Pass
1	Flange Plates	100.377	22.6	Pass
1	Anchor Rods		46.6	Pass
1	Additional Anchor Rods	0	33.3	Pass
1	Base Plate		60.1	Pass
1	Base Foundation	0	42.1	Pass
1	Base Foundation Soil Interaction	U	49.7	Pass

Structure Rating (max from all components) =	65.7%
--	-------

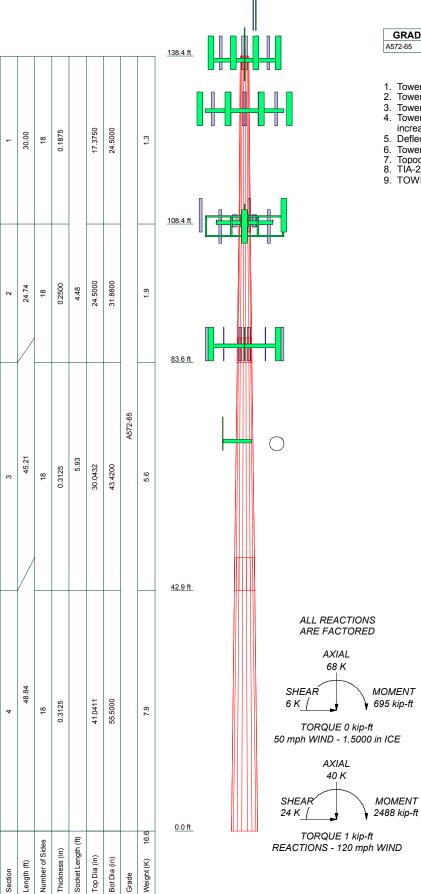
Note:

4.1) Recommendations

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

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

APPENDIX A TNXTOWER OUTPUT



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

- 1. Tower is located in Litchfield County, Connecticut.
- 2. Tower designed for Exposure B to the TIA-222-H Standard.
- 3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
- Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
- 5. Deflections are based upon a 60 mph wind.
- 6. Tower Risk Category II.
- Topographic Category 1 with Crest Height of 0.00 ft
 TIA-222-H Annex S.
- 9. TOWER RATING: 65.7%



FAX: (913) 458-8136

ob: O&G WOODBUR	Y (BU# 876380)	
Project: 400087 (876380.17	(60939)	
Client: Crown Castle	Drawn by: Anup Chitale	App'd:
Code: TIA-222-H	Date: 06/27/19	Scale: NTS
Doth:		Dura No -

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- 1. Tower is located in Litchfield County, Connecticut.
- 2. Tower base elevation above sea level: 590.00 ft.
- 3. Basic wind speed of 120 mph.
- 4. Risk Category II.
- Exposure Category B.
- 6. Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 7. Topographic Category: 1.
- 8. Crest Height: 0.00 ft.
- 9. Nominal ice thickness of 1.5000 in.
- 10. Ice thickness is considered to increase with height.
- 11. Ice density of 56 pcf.
- 12. A wind speed of 50 mph is used in combination with ice.
- 13. Temperature drop of 50 °F.
- 14. Deflections calculated using a wind speed of 60 mph.
- 15. A non-linear (P-delta) analysis was used.
- 16. Pressures are calculated at each section.
- 17. Stress ratio used in pole design is 1.05.
- 18. Tower analysis based on target reliabilities in accordance with Annex S.
- 19. Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- 20. Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification Use Code Stress Ratios Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile

Include Bolts In Member Capacity

Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric Distribute Leg Loads As Uniform Assume Legs Pinned

- √ Assume Rigid Index Plate
- ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension
- √ Bypass Mast Stability Checks
- √ Use Azimuth Dish Coefficients
- √ Project Wind Area of Appurt.

Autocalc Torque Arm Areas

Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation

√ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption

Poles

✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known

	Tapered Pole Section Geometry											
Section	Elevation	Section Length	Splice Length	Number of	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade			
	ft	ft	ft	Sides	in	in	in	in				
L1	138.38-108.38	30.00	0.00	18	17.3750	24.5000	0.1875	0.7500	A572-65 (65 ksi)			
L2	108.38-83.63	24.74	4.48	18	24.5000	31.8800	0.2500	1.0000	A572-65 (65 ksi)			
L3	83.63-42.91	45.21	5.93	18	30.0432	43.4200	0.3125	1.2500	À572-65 (65 ksi)			
L4	42.91-0.00	48.84		18	41.0411	55.5000	0.3125	1.2500	À572-65 (65 ksi)			

				Taper	ed Pol	e Prop	erties			
Section	Tip Dia.	Area	1	r	С	I/C	J	It/Q	W	w/t
	in	in ²	in⁴	in	in	in ³	in ⁴	in ²	in	
L1	17.6141	10.2287	381.7542	6.1016	8.8265	43.2509	764.0106	5.1153	2.7280	14.549
	24.8490	14.4690	1080.5242	8.6309	12.4460	86.8170	2162.4702	7.2359	3.9820	21.237
L2	24.8394	19.2424	1429.6167	8.6088	12.4460	114.8656	2861.1145	9.6230	3.8720	15.488
	32.3332	25.0984	3172.3563	11.2287	16.1950	195.8844	6348.8868	12.5516	5.1709	20.684
L3	31.8051	29.4891	3293.1328	10.5544	15.2619	215.7742	6590.5988	14.7474	4.7376	15.16
	44.0416	42.7573	10038.132 1	15.3032	22.0574	455.0922	20089.472 6	21.3827	7.0919	22.694
L4	43.4079	40.3977	8466.2920	14.4587	20.8489	406.0789	16943.724 2	20.2027	6.6732	21.354
	56.3080	54.7391	21062.822 0	19.5916	28.1940	747.0675	42153.359 0	27.3748	9.2180	29.498

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in				in	in	in
L1 138.38-			1	1	1			
108.38								
L2 108.38-			1	1	1			
83.63								
L3 83.63-			1	1	1			
42.91								
L4 42.91-0.00			1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From	Componen t	Placement	Total Number	Number Per Row	Start/En d	Width or Diamete	Perimete r	Weight
		Torque	Type	ft			Position	r		plf
		Calculation						in	in	
Safety Line 3/8	В	No	Surface Ar	138.38 -	1	1	0.490	0.3750		0.22
			(CaAa)	9.00			0.500			
LDF7-50A(1-5/8)	Α	No	Surface Ar	129.00 -	8	7	0.000	1.9800		0.82
***			(CaAa)	8.00			0.361			
LDF4-50A(1/2)	Α	No	Surface Ar	70.00 -	1	1	-0.400	0.6250		0.15
LDI 4-30A(1/2)		140	(CaAa)	8.00	'	ı	-0.387	0.0200		0.10
***			(Garta)	0.00			0.007			

Feed Line/Linear Appurtenances - Entered As Area

Description		Allow	Exclude	Componen	Placement	Total		$C_A A_A$	Weight
	or Leg	Shield	From Torque Calculation	t Type	ft	Number		ft²/ft	plf
***			Calculation						
FB-L98B-002- 75000(3/8)	С	No	No	Inside Pole	138.00 - 0.00	2	No Ice 1/2" Ice	0.00 0.00	0.06 0.06
							1" Ice 2" Ice	0.00 0.00	0.06 0.06
WR-VG122ST- BRDA(7/16)	С	No	No	Inside Pole	138.00 - 0.00	4	No Ice 1/2" Ice	0.00 0.00	0.14 0.14
BRDA(1/10)							1" Ice	0.00	0.14
WR-VG86ST-	С	No	No	Inside Pole	138.00 - 0.00	2	2" Ice No Ice	0.00 0.00	0.14 0.58
BRD(3/4)							1/2" Ice 1" Ice	0.00 0.00	0.58 0.58
LCF114-50J(1-1/4)	С	No	No	Inside Pole	138.00 - 0.00	12	2" Ice No Ice	0.00 0.00	0.58 0.70
,							1/2" Ice	0.00	0.70
							1" Ice	0.00	0.70
***							2" Ice	0.00	0.70
LCF114-50J(1-1/4)	С	No	No	Inside Pole	138.00 - 0.00	2	No Ice	0.00	0.70
							1/2" Ice 1" Ice	0.00 0.00	0.70 0.70
							2" Ice	0.00	0.70
LDF4-50A(1/2)	С	No	No	Inside Pole	138.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
***							2" Ice	0.00	0.15
AVA6-50(1-1/4)	С	No	No	Inside Pole	136.00 - 0.00	1	No Ice	0.00	0.46
711710 00(1 11.1)	·					•	1/2" Ice	0.00	0.46
							1" Ice	0.00	0.46
***							2" Ice	0.00	0.46
LDF7-50A(1-5/8)	Α	No	No	Inside Pole	129.00 - 0.00	11	No Ice	0.00	0.82
,							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
***							2" Ice	0.00	0.82

HB114-1-0813U4-	С	No	No	Inside Pole	108.00 - 0.00	3	No Ice	0.00	1.20
M5J(1-1/4)							1/2" Ice	0.00	1.20
							1" Ice	0.00	1.20
LID444 O4LIOM4O	_	No	No	Incido Dolo	100.00 0.00	4	2" Ice	0.00	1.20
HB114-21U3M12-	С	No	No	inside Pole	108.00 - 0.00	1	No Ice 1/2" Ice	0.00 0.00	1.22 1.22
XXXF(1-1/4)							1" Ice	0.00	1.22
							2" Ice	0.00	1.22

LDF7-50A(1-5/8)	С	No	No	Inside Pole	87.00 - 0.00	9	No Ice	0.00	0.82
	-		0		3 0.00	•	1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
HCS 6X12	С	No	No	Inside Pole	87.00 - 0.00	1	No Ice	0.00	2.40
4AWG(1-5/8)							1/2" Ice	0.00	2.40
							1" Ice	0.00	2.40
***							2" Ice	0.00	2.40

Feed Line/Linear Appurtenances Section Areas

Tower Sectio	Tower Elevation	Face	A_R	A_F	C _A A _A In Face	C _A A _A Out Face	Weight
n	ft		ft²	ft²	ft²	ft²	K
L1	138.38-108.38	Α	0.000	0.000	28.586	0.000	0.32
		В	0.000	0.000	1.125	0.000	0.01
		С	0.000	0.000	0.000	0.000	0.36
L2	108.38-83.63	Α	0.000	0.000	34.293	0.000	0.39
		В	0.000	0.000	0.928	0.000	0.01
		С	0.000	0.000	0.000	0.000	0.45
L3	83.63-42.91	Α	0.000	0.000	58.137	0.000	0.64
		В	0.000	0.000	1.527	0.000	0.01
		С	0.000	0.000	0.000	0.000	1.09
L4	42.91-0.00	Α	0.000	0.000	50.566	0.000	0.62
		В	0.000	0.000	1.272	0.000	0.01
		С	0.000	0.000	0.000	0.000	1.15

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Sectio	Tower Elevation	Face or	Ice Thickness	A_R	A_F	C _A A _A In Face	C _A A _A Out Face	Weight
n	ft	Leg	in	ft²	ft ²	ft ²	ft²	K
L1	138.38-108.38	Α	1.454	0.000	0.000	43.229	0.000	0.81
		В		0.000	0.000	9.847	0.000	0.10
		С		0.000	0.000	0.000	0.000	0.36
L2	108.38-83.63	Α	1.418	0.000	0.000	51.636	0.000	0.95
		В		0.000	0.000	7.944	0.000	0.08
		С		0.000	0.000	0.000	0.000	0.45
L3	83.63-42.91	Α	1.359	0.000	0.000	94.365	0.000	1.67
		В		0.000	0.000	13.076	0.000	0.14
		С		0.000	0.000	0.000	0.000	1.09
L4	42.91-0.00	Α	1.216	0.000	0.000	84.016	0.000	1.51
		В		0.000	0.000	10.491	0.000	0.11
		С		0.000	0.000	0.000	0.000	1.15

Feed Line Center of Pressure

Section	Elevation	CP _X	CPz	CP _X Ice	CP _z Ice
	ft	in	in	in	in
L1	138.38-108.38	-3.2144	-4.1749	-1.8621	-2.8212
L2	108.38-83.63	-4.2204	-5.4444	-2.7315	-3.9125
L3	83.63-42.91	-4.7577	-5.8036	-3.5366	-4.0345
L4	42.91-0.00	-4.4111	-5.2469	-3.5674	-3.7156

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	1	Safety Line 3/8	_	1.0000	1.0000
L1	14	LDF7-50A(1-5/8)		1.0000	1.0000

Tower	Feed Line	Description	Feed Line	Ka	Ka
Section	Record No.		Segment	No Ice	Ice
			Elev.		
L2	1	Safety Line 3/8	83.63 -	1.0000	1.0000
			108.38		
L2	14	LDF7-50A(1-5/8)	83.63 -	1.0000	1.0000
			108.38		
L2	26	LDF4-50A(1/2)	83.63 -	1.0000	1.0000
			70.00		
L3	1	Safety Line 3/8	42.91 -	1.0000	1.0000
			83.63		
L3	14	LDF7-50A(1-5/8)	42.91 -	1.0000	1.0000
			83.63		
L3	26	LDF4-50A(1/2)	42.91 -	1.0000	1.0000
			70.00		

Discrete Tower Loads												
Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustmen t	Placement		C _A A _A Front	C _A A _A Side	Weight			
			ft ft ft	0	ft		ft²	ft²	К			
138												
Platform Mount [LP 303-1]	С	None		0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.66 18.87 23.08 31.50	14.66 18.87 23.08 31.50	1.25 1.48 1.71 2.18			
5'x2" Mount Pipe	С	From Face	1.00 0.00 2.50	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.19 1.50 1.81 2.46	1.19 1.50 1.81 2.46	0.02 0.03 0.04 0.08			
7770.00 w/ Mount Pipe	Α	From Face	3.00 -6.00 1.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29			
7770.00 w/ Mount Pipe	В	From Face	3.00 -2.00 1.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29			
7770.00 w/ Mount Pipe	С	From Face	3.00 -6.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29			
80010965 w/ Mount Pipe	Α	From Face	3.00 -2.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	14.05 14.69 15.30 16.53	7.63 8.90 9.96 11.92	0.13 0.22 0.33 0.57			
80010965 w/ Mount Pipe	Α	From Face	3.00 2.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	14.05 14.69 15.30 16.53	7.63 8.90 9.96 11.92	0.13 0.22 0.33 0.57			
QS66512-2 w/ Mount Pipe	Α	From Face	3.00 6.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	8.64 9.29 9.91 11.18	6.66 9.66 10.62 12.61	0.14 0.21 0.30 0.49			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustmen t	Placement		C _A A _A Front	C _A A _A Side	Weight
			ft ft ft	۰	ft		ft²	ft²	K
QS46512-2 w/ Mount Pipe	В	From Face	3.00	0.0000	138.00	2" Ice No Ice	5.79	6.35	0.12
			6.00 1.00			1/2" Ice 1" Ice 2" Ice	6.21 6.62 7.48	7.06 7.74 9.14	0.18 0.25 0.40
QS46512-2 w/ Mount Pipe	С	From Face	3.00 6.00 1.00	0.0000	138.00	No Ice 1/2" Ice	5.79 6.21 6.62	6.35 7.06 7.74	0.12 0.18 0.25
			1.00			1" Ice 2" Ice	7.48	9.14	0.40
80010964 w/ Mount Pipe	В	From Face	3.00 -6.00 1.00	0.0000	138.00	No Ice 1/2" Ice	10.23 10.74 11.24	5.51 6.37 7.12	0.11 0.18 0.26
00040004/ Massat Dia	Б	F F	0.00	0.0000	400.00	1" Ice 2" Ice	12.25	8.64	0.45
80010964 w/ Mount Pipe	В	From Face	3.00 2.00 1.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	10.23 10.74 11.24 12.25	5.51 6.37 7.12 8.64	0.11 0.18 0.26 0.45
80010964 w/ Mount Pipe	С	From Face	3.00	0.0000	138.00	2" Ice No Ice	10.23	5.51	0.11
			-2.00 1.00			1/2" Ice 1" Ice 2" Ice	10.74 11.24 12.25	6.37 7.12 8.64	0.18 0.26 0.45
80010964 w/ Mount Pipe	С	From Face	3.00 2.00 1.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	10.23 10.74 11.24 12.25	5.51 6.37 7.12 8.64	0.11 0.18 0.26 0.45
TT19-08BP111-001	Α	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.55 0.65 0.75 0.98	0.45 0.53 0.63 0.84	0.02 0.02 0.03 0.05
TT19-08BP111-001	В	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.55 0.65 0.75 0.98	0.45 0.53 0.63 0.84	0.02 0.02 0.03 0.05
TT19-08BP111-001	С	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.55 0.65 0.75 0.98	0.45 0.53 0.63 0.84	0.02 0.02 0.03 0.05
RRUS 4478 B14	Α	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 4478 B14	В	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 4478 B14	С	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 32	Α	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	2.86 3.08 3.32 3.81	1.78 1.97 2.17 2.58	0.06 0.08 0.10 0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustmen t	Placement		C _A A _A Front	C _A A _A Side	Weight
			ft ft ft	۰	ft		ft²	ft²	K
RRUS 32	В	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	2.86 3.08 3.32 3.81	1.78 1.97 2.17 2.58	0.06 0.08 0.10 0.16
RRUS 32	С	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	2.86 3.08 3.32 3.81	1.78 1.97 2.17 2.58	0.06 0.08 0.10 0.16
ATSBT-TOP-FF-4G	А	From Face	3.00 0.00 1.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice	0.17 0.23 0.29 0.44	0.09 0.14 0.19 0.32	0.00 0.00 0.01 0.01
ATSBT-TOP-FF-4G	В	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.17 0.23 0.29 0.44	0.09 0.14 0.19 0.32	0.00 0.00 0.01 0.01
ATSBT-TOP-FF-4G	С	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.17 0.23 0.29 0.44	0.09 0.14 0.19 0.32	0.00 0.00 0.01 0.01
(2) TPX-070821	А	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66 0.87	0.10 0.15 0.20 0.33	0.01 0.01 0.02 0.03
(2) TPX-070821	В	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66 0.87	0.10 0.15 0.20 0.33	0.01 0.01 0.02 0.03
(2) TPX-070821	С	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66 0.87	0.10 0.15 0.20 0.33	0.01 0.01 0.02 0.03
RRUS 4449 B5/B12	Α	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	В	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	С	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	Α	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	В	From Face	3.00 0.00 1.00	0.0000	138.00	2" Ice No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral	Azimuth Adjustmen t	Placement		C _A A _A Front	$C_A A_A$ Side	Weight
			Vert ft ft ft	٥	ft		ft²	ft²	K
	_					2" Ice			
RRUS 8843 B2/B66A	С	From Face	3.00	0.0000	138.00	No Ice 1/2"	1.64 1.80	1.35	0.07
			0.00 1.00			Ice	1.00	1.50 1.65	0.09 0.11
			1.00			1" Ice	2.32	1.99	0.16
						2" Ice			
DC6-48-60-18-8F	Α	From Face	1.00	0.0000	138.00	No Ice	0.92	0.92	0.02
			0.00 1.00			1/2" Ice	1.46 1.64	1.46 1.64	0.04 0.06
			1.00			1" Ice	2.04	2.04	0.00
						2" Ice	2.07	2.04	0.11
DC6-48-60-18-8F	В	From Face	1.00	0.0000	138.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			1.00			Ice 1" Ice	1.64 2.04	1.64 2.04	0.06 0.11
						2" Ice	2.04	2.04	0.11
DC6-48-60-18-8F	С	From Face	1.00	0.0000	138.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			1.00			Ice	1.64	1.64	0.06
						1" Ice 2" Ice	2.04	2.04	0.11
DS9A09F36D-N	С	From Face	1.00	0.0000	138.00	No Ice	6.33	6.33	0.08
			-2.00			1/2"	8.47	8.47	0.12
			10.00			Ice	10.63	10.63	0.18
						1" Ice 2" Ice	14.99	14.99	0.34
137						2 ice			
Pipe Mount [PM 601-3]	С	None		0.0000	137.00	No Ice	4.39	4.39	0.20
						1/2"	5.48	5.48	0.24
						Ice 1" Ice	6.57	6.57	0.28
						2" Ice	8.75	8.75	0.36
TME-RRUS-11	Α	From Face	1.00	0.0000	137.00	No Ice	2.78	1.19	0.05
			0.00			1/2"	2.99	1.33	0.07
			3.00			Ice	3.21	1.49	0.09
						1" Ice 2" Ice	3.66	1.83	0.15
TME-RRUS-11	В	From Face	1.00	0.0000	137.00	No Ice	2.78	1.19	0.05
			0.00			1/2"	2.99	1.33	0.07
			3.00			Ice	3.21	1.49	0.09
						1" Ice 2" Ice	3.66	1.83	0.15
TME-RRUS-11	С	From Face	1.00	0.0000	137.00	No Ice	2.78	1.19	0.05
	•		0.00	0.000		1/2"	2.99	1.33	0.07
			3.00			Ice	3.21	1.49	0.09
						1" Ice	3.66	1.83	0.15
136						2" Ice			
Pipe Mount [PM 601-1]	В	From Face	0.50	0.0000	136.00	No Ice	3.00	0.90	0.07
			0.00			1/2"	3.74	1.12	0.08
			4.50			Ice	4.48	1.34	0.09
						1" Ice 2" Ice	5.96	1.78	0.12
ANT150F6	В	From Face	1.00	0.0000	136.00	No Ice	4.80	4.80	0.03
			0.00			1/2"	6.83	6.83	0.07
			12.00			Ice	8.87	8.87	0.11
						1" Ice 2" Ice	13.01	13.01	0.25
129						2 100			
Platform Mount [16' LP	С	None		0.0000	129.00	No Ice	19.27	19.27	1.49
304-1]						1/2"	24.76	24.76	1.79
						Ice 1" Ice	30.26 41.25	30.26 41.25	2.10 2.70
						2" Ice	71.23	71.23	2.10
HBXX-6517DS-A2M w/	Α	From Face	4.00	0.0000	129.00	No Ice	7.97	5.99	0.08

Description	Face or	Offset Type	Offsets: Horz	Azimuth Adjustmen	Placement		C _A A _A Front	C _A A _A Side	Weight
	Leg		Lateral Vert	t					
			ft ft ft	•	ft		ft²	ft²	K
Mount Pipe			-8.00			1/2"	8.73	6.72	0.14
·			0.00			Ice 1" Ice 2" Ice	9.51 11.11	7.47 9.02	0.21 0.40
HBXX-6517DS-A2M w/	В	From Face	4.00	0.0000	129.00	No Ice	7.97	5.99	0.08
Mount Pipe			-8.00 0.00			1/2" Ice	8.73 9.51	6.72 7.47	0.14 0.21
			0.00			1" Ice 2" Ice	11.11	9.02	0.40
HBXX-6517DS-A2M w/	С	From Face	4.00	0.0000	129.00	No Ice	7.97	5.99	0.08
Mount Pipe			-8.00 0.00			1/2" Ice	8.73 9.51	6.72 7.47	0.14 0.21
			0.00			1" Ice	11.11	9.02	0.40
DV4 =0000/00= 0 /					400.00	2" Ice			
BXA-70063/6CF-2 w/ Mount Pipe	Α	From Face	4.00 -3.00	0.0000	129.00	No Ice 1/2"	7.81 8.36	5.40 6.55	0.04 0.10
Mount Fipe			0.00			Ice	8.87	7.41	0.10
						1" Ice	9.93	9.18	0.33
BXA-70063/6CF-2 w/	В	From Face	4.00	0.0000	129.00	2" Ice No Ice	7.81	5.40	0.04
Mount Pipe	Ь	FIOIII Face	-3.00	0.0000	129.00	1/2"	8.36	6.55	0.04
			0.00			Ice	8.87	7.41	0.17
	_					1" Ice 2" Ice	9.93	9.18	0.33
BXA-70063/6CF-2 w/ Mount Pipe	С	From Face	4.00 -3.00	0.0000	129.00	No Ice 1/2"	7.81 8.36	5.40 6.55	0.04 0.10
Wount ripe			0.00			Ice	8.87	7.41	0.10
						1" Ice 2" Ice	9.93	9.18	0.33
LNX-8513DS-A1M w/	Α	From Face	4.00	0.0000	129.00	No Ice	8.41	7.08	0.06
Mount Pipe			3.00 0.00			1/2" Ice	8.97 9.50	8.27 9.18	0.13 0.21
			0.00			1" Ice 2" Ice	10.59	11.02	0.39
LNX-8513DS-A1M w/	В	From Face	4.00	0.0000	129.00	No Ice	8.41	7.08	0.06
Mount Pipe			3.00			1/2"	8.97	8.27	0.13
			0.00			Ice 1" Ice	9.50 10.59	9.18 11.02	0.21 0.39
						2" Ice	10.00	11.02	0.00
LNX-8513DS-A1M w/	С	From Face	4.00	0.0000	129.00	No Ice	8.41	7.08	0.06
Mount Pipe			3.00 0.00			1/2" Ice	8.97 9.50	8.27 9.18	0.13 0.21
			0.00			1" Ice 2" Ice	10.59	11.02	0.39
HBXX-6517DS-A2M w/	Α	From Face	4.00	0.0000	129.00	No Ice	7.97	5.99	0.08
Mount Pipe			8.00			1/2"	8.73	6.72	0.14
			0.00			Ice 1" Ice 2" Ice	9.51 11.11	7.47 9.02	0.21 0.40
HBXX-6517DS-A2M w/	В	From Face	4.00	0.0000	129.00	No Ice	7.97	5.99	0.08
Mount Pipe			8.00			1/2"	8.73	6.72	0.14
			0.00			Ice 1" Ice	9.51 11.11	7.47 9.02	0.21 0.40
						2" Ice	11.11	9.02	0.40
HBXX-6517DS-A2M w/	С	From Face	4.00	0.0000	129.00	No Ice	7.97	5.99	0.08
Mount Pipe			8.00 0.00			1/2"	8.73 9.51	6.72 7.47	0.14 0.21
			0.00			Ice 1" Ice 2" Ice	11.11	9.02	0.40
RRH2x60-AWS	Α	From Face	4.00	0.0000	129.00	No Ice	3.50	2.10	0.06
	-		0.00			1/2"	3.76	2.34	0.08
			0.00			Ice	4.03	2.58	0.11
						1" Ice 2" Ice	4.58	3.09	0.18
RRH2x60-AWS	В	From Face	4.00	0.0000	129.00	No Ice	3.50	2.10	0.06

Description	Face	Offset	Offsets:	Azimuth	Placement		$C_A A_A$	$C_A A_A$	Weight
Безсприоп	or Leg	Type	Horz Lateral Vert	Adjustmen t	r lacement		Front	Side	weight
			ft ft ft	۰	ft		ft²	ft²	K
			0.00			1/2"	3.76	2.34	0.08
			0.00			Ice 1" Ice 2" Ice	4.03 4.58	2.58 3.09	0.11 0.18
RRH2x60-AWS	С	From Face	4.00	0.0000	129.00	No Ice	3.50	2.10	0.06
			0.00			1/2"	3.76	2.34	0.08
			0.00			Ice 1" Ice 2" Ice	4.03 4.58	2.58 3.09	0.11 0.18
DB-B1-6C-12AB-0Z	Α	From Face	1.00	0.0000	129.00	No Ice	3.36	2.19	0.02
			0.00			1/2"	3.60	2.39	0.05
			0.00			Ice 1" Ice 2" Ice	3.84 4.34	2.61 3.05	0.08 0.16
*** *** ***109***									
Side Arm Mount [SO 102-	С	None		0.0000	109.00	No Ice	3.00	3.00	0.08
3]						1/2"	3.48	3.48	0.11
<u>-</u>						Ice	3.96	3.96	0.14
Dina Mount IDM 601 21	C	From Food	0.50	0.0000	100.00	1" Ice 2" Ice	4.92	4.92	0.20
Pipe Mount [PM 601-3]	С	From Face	0.50 0.00	0.0000	109.00	No Ice 1/2"	4.39 5.48	4.39 5.48	0.20 0.24
			0.00			Ice	6.57	6.57	0.28
						1" Ice 2" Ice	8.75	8.75	0.36
TD-RRH8x20-25	Α	From Face	1.00	0.0000	109.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice 1" Ice 2" Ice	4.56 5.10	1.90 2.30	0.13 0.20
TD-RRH8x20-25	В	From Face	1.00	0.0000	109.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
TD-RRH8x20-25	С	From Face	1.00	0.0000	109.00	1" Ice 2" Ice No Ice	5.10 4.05	2.30 1.53	0.20 0.07
10-111110020-25	C	i ioiii i ace	0.00	0.0000	109.00	1/2"	4.30	1.71	0.07
			0.00			Ice	4.56	1.90	0.13
B00 4000 W. 4 45W					400.00	1" Ice 2" Ice	5.10	2.30	0.20
PCS 1900MHz 4x45W-	Α	From Face	1.00	0.0000	109.00	No Ice 1/2"	2.32	2.24 2.44	0.06 0.08
65MHz			0.00 0.00			lce	2.53 2.74	2.44	0.06
			0.00			1" Ice 2" Ice	3.19	3.09	0.17
PCS 1900MHz 4x45W-	В	From Face	1.00	0.0000	109.00	No Ice	2.32	2.24	0.06
65MHz			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice 1" Ice 2" Ice	2.74 3.19	2.65 3.09	0.11 0.17
PCS 1900MHz 4x45W-	С	From Face	1.00	0.0000	109.00	No Ice	2.32	2.24	0.06
65MHz			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
DDI IOVEO 000	٨		4.00	0.0000	100.00	1" Ice 2" Ice	3.19	3.09	0.17
RRH2X50-800	Α	From Face	1.00 0.00	0.0000	109.00	No Ice 1/2"	1.70 1.86	1.28 1.43	0.05 0.07
			0.00			lce	2.03	1.43	0.07
			3.00			1" Ice	2.40	1.91	0.03
						2" Ice			
RRH2X50-800	В	From Face	1.00	0.0000	109.00	No Ice	1.70	1.28	0.05
			0.00			1/2"	1.86	1.43	0.07
			0.00			Ice	2.03	1.58	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustmen t	Placement		C₄A₄ Front	C _A A _A Side	Weight
			ft ft ft	۰	ft		ft²	ft²	К
						1" Ice 2" Ice	2.40	1.91	0.14
RRH2X50-800	С	From Face	1.00	0.0000	109.00	No Ice	1.70	1.28	0.05
			0.00			1/2"	1.86	1.43	0.07
			0.00			Ice	2.03	1.58	0.09
(0) 1011 100 11			4.00		400.00	1" Ice 2" Ice	2.40	1.91	0.14
(3) ACU-A20-N	Α	From Face	1.00	0.0000	109.00	No Ice 1/2"	0.07	0.12 0.16	0.00
			0.00 0.00			lce	0.10 0.15	0.16	0.00 0.00
			0.00			1" Ice 2" Ice	0.15	0.34	0.01
(3) ACU-A20-N	В	From Face	1.00	0.0000	109.00	No Ice	0.07	0.12	0.00
(6) / 188 / 128 11	_		0.00	0.000		1/2"	0.10	0.16	0.00
			0.00			Ice	0.15	0.21	0.00
						1" Ice	0.26	0.34	0.01
	_					2" Ice			
(3) ACU-A20-N	С	From Face	1.00	0.0000	109.00	No Ice	0.07	0.12	0.00
			0.00			1/2"	0.10	0.16	0.00
			0.00			Ice 1" Ice	0.15 0.26	0.21 0.34	0.00 0.01
108						2" Ice	0.20	0.34	0.01
Platform Mount [14' LP	С	None		0.0000	108.00	No Ice	34.97	34.97	1.49
714-1]	•			0.000		1/2"	41.28	41.28	1.90
•						Ice	47.59	47.59	2.31
						1" Ice	60.21	60.21	3.14
	_					2" Ice			
Miscellaneous [NA 510-1]	С	None		0.0000	108.00	No Ice	6.00	6.00	0.26
						1/2"	8.50 11.00	8.50 11.00	0.34 0.42
						Ice 1" Ice	16.00	16.00	0.42
						2" Ice	10.00	10.00	0.59
6'x2" Mount Pipe	Α	From Face	4.00	0.0000	108.00	No Ice	1.43	1.43	0.02
•			7.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
Chroll Marriat Dina	_	Г Г	4.00	0.0000	400.00	2" Ice	4.40	4.40	0.00
6'x2" Mount Pipe	В	From Face	4.00 7.00	0.0000	108.00	No Ice 1/2"	1.43 1.92	1.43 1.92	0.02 0.03
			0.00			Ice	2.29	2.29	0.05
			0.00			1" Ice	3.06	3.06	0.09
						2" Ice			
6'x2" Mount Pipe	С	From Face	4.00	0.0000	108.00	No Ice	1.43	1.43	0.02
			7.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice 2" Ice	3.06	3.06	0.09
APXVTM14-ALU-I20 w/	Α	From Face	4.00	0.0000	108.00	No Ice	4.09	2.86	0.08
Mount Pipe		1 10111 1 400	-7.00	0.0000	100.00	1/2"	4.48	3.23	0.13
ou ipo			2.00			Ice	4.88	3.61	0.19
						1" Ice	5.71	4.40	0.33
						2" Ice			
APXVTM14-ALU-I20 w/	В	From Face	4.00	0.0000	108.00	No Ice	4.09	2.86	0.08
Mount Pipe			-7.00			1/2"	4.48	3.23	0.13
			2.00			Ice 1" Ice	4.88 5.71	3.61 4.40	0.19 0.33
APXVTM14-ALU-I20 w/	С	From Face	4.00	0.0000	108.00	2" Ice No Ice	4.09	2.86	0.08
Mount Pipe	C	i ioiii race	-7.00	0.0000	100.00	1/2"	4.09 4.48	3.23	0.08
Modifi i ipc			2.00			Ice	4.88	3.61	0.13
						1" Ice	5.71	4.40	0.33
						2" Ice		-	
APXVSPP18-C-A20 w/	Α	From Face	4.00	0.0000	108.00	No Ice	4.60	4.01	0.10
Mount Pipe			0.00			1/2"	5.05	4.45	0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustmen t	Placement		C _A A _A Front	C _A A _A Side	Weight
			ft ft ft	۰	ft		ft²	ft²	K
			0.00			Ice 1" Ice 2" Ice	5.50 6.44	4.89 5.82	0.23 0.42
APXVSPP18-C-A20 w/ Mount Pipe	В	From Face	4.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice	4.60 5.05 5.50 6.44	4.01 4.45 4.89 5.82	0.10 0.16 0.23 0.42
APXVSPP18-C-A20 w/ Mount Pipe	С	From Face	4.00 0.00 0.00	0.0000	108.00	2" Ice No Ice 1/2" Ice 1" Ice	4.60 5.05 5.50 6.44	4.01 4.45 4.89 5.82	0.10 0.16 0.23 0.42
*** ***87***						2" Ice			
Platform Mount [LP 305-1]	С	None		0.0000	87.00	No Ice 1/2" Ice 1" Ice 2" Ice	18.01 23.33 28.65 39.29	18.01 23.33 28.65 39.29	1.12 1.35 1.58 2.05
6' x 2" Mount Pipe	Α	From Face	3.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6' x 2" Mount Pipe	В	From Face	3.00 0.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6' x 2" Mount Pipe	С	From Face	3.00 0.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
APXVAARR24_43-U-NA20 w/ Mount Pipe	Α	From Face	3.00 -6.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	В	From Face	3.00 -6.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	С	From Face	3.00 -6.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXV18-206516S-C-A20 w/ Mount Pipe	Α	From Face	3.00 6.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice	2.55 2.96 3.38 4.26	2.15 2.55 2.96 3.83	0.04 0.07 0.11 0.21
APXV18-206516S-C-A20 w/ Mount Pipe	В	From Face	3.00 6.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice	2.55 2.96 3.38 4.26	2.15 2.55 2.96 3.83	0.04 0.07 0.11 0.21
APXV18-206516S-C-A20 w/ Mount Pipe	С	From Face	3.00 6.00 0.00	0.0000	87.00	2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	2.55 2.96 3.38 4.26	2.15 2.55 2.96 3.83	0.04 0.07 0.11 0.21

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustmen t	Placement		$C_A A_A$ Front	C _A A _A Side	Weight
			ft ft ft	0	ft		ft²	ft²	K
RADIO 4449 B12/B71	Α	From Face	3.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.30 1.44 1.60 1.92	0.08 0.09 0.11 0.16
RADIO 4449 B12/B71	В	From Face	3.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.30 1.44 1.60 1.92	0.08 0.09 0.11 0.16
RADIO 4449 B12/B71	С	From Face	3.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.30 1.44 1.60 1.92	0.08 0.09 0.11 0.16
KRY 112 489/2	Α	From Face	3.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.56 0.66 0.76 1.00	0.37 0.45 0.54 0.75	0.02 0.02 0.03 0.05
KRY 112 489/2	В	From Face	3.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.56 0.66 0.76 1.00	0.37 0.45 0.54 0.75	0.02 0.02 0.03 0.05
KRY 112 489/2	С	From Face	3.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.56 0.66 0.76 1.00	0.37 0.45 0.54 0.75	0.02 0.02 0.03 0.05
70 Side Arm Mount [SO 701- 1]	С	From Leg	0.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	0.07 0.08 0.09 0.12
KS24019-L112A	С	From Leg	3.00 0.00 1.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.14 0.20 0.26 0.41	0.14 0.20 0.26 0.41	0.01 0.01 0.01 0.02

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice

Comb.	Description
No.	·
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 lce+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41 42	Dead+Wind 60 deg - Service
	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44 45	Dead+Wind 150 deg - Service
45 46	Dead+Wind 180 deg - Service Dead+Wind 210 deg - Service
46 47	Dead+Wind 240 deg - Service Dead+Wind 240 deg - Service
47 48	Dead+Wind 270 deg - Service Dead+Wind 270 deg - Service
46 49	Dead+Wind 300 deg - Service
49 50	Dead+Wind 330 deg - Service Dead+Wind 330 deg - Service
	Deau-ryillu 300 deg - Selvice

Maximum Member Forces

Sectio n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	138.375 - 108.375	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.93	0.81	1.14
			Max. Mx	20	-10.02	296.41	3.61
			Max. My	2	-10.04	3.74	292.23
			Max. Vy	20	-12.57	296.41	3.61
			Max. Vx	2	-12.43	3.74	292.23
			Max. Torque	9			1.21
L2	108.375 - 83.6328	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.66	1.58	1.70
			Max. Mx	20	-15.47	612.52	6.27
			Max. My	2	-15.49	6.45	605.14
			Max. Vv	20	-16.19	612.52	6.27
			Max. Vx	2	-16.02	6.45	605.14
			Max. Torque	20			-0.98
L3	83.6328 - 42.9089	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.86	3.70	2.94
			Max. Mx	20	-26.56	1378.49	11.60
			Max. My	2	-26.58	12.13	1364.26
			Max. Vy	20	-20.77	1378.49	11.60

Sectio	Elevation	Component	Condition	Gov.	Axial	Major Axis	Minor Axis
n	ft	Type		Load		Moment	Moment
No.				Comb.	K	kip-ft	kip-ft
			Max. Vx	2	-20.62	12.13	1364.26
			Max. Torque	20			-0.98
L4	42.9089 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.03	5.95	4.48
			Max. Mx	20	-40.14	2464.63	18.32
			Max. My	2	-40.14	19.09	2442.66
			Max. Vy	20	-23.69	2464.63	18.32
			Max. Vx	2	-23.54	19.09	2442.66
			Max. Torque	20			-0.92

Maximum Reactions

Location	Condition	Gov.	Vertical	Horizontal, X	Horizontal, 2
		Load	K	K	K
		Comb.			
Pole	Max. Vert	36	68.03	6.46	0.01
	Max. H _x	20	40.15	23.66	0.13
	Max. H _z	3	30.12	0.13	23.51
	Max. M _x	2	2442.66	0.13	23.51
	$Max. M_z$	8	2461.59	-23.66	-0.13
	Max. Torsion	8	0.92	-23.66	-0.13
	Min. Vert	25	30.12	11.93	20.43
	Min. H _x	9	30.12	-23.66	-0.13
	Min. H _z	15	30.12	-0.13	-23.51
	Min. M _x	14	-2441.12	-0.13	-23.51
	Min. M _z	20	-2464.63	23.66	0.13
	Min. Torsion	20	-0.92	23.66	0.13

Tower Mast Reaction Summary

Load Combination	Vertical	Shear _x	Shearz	Overturning Moment, M _x	Overturning Moment, M _z	Torque
Combination	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	33.46	0.00	0.00	-0.61	1.21	0.00
1.2 Dead+1.0 Wind 0 deg -	40.15	-0.13	-23.51	-2442.66	19.09	-0.00
No Ice						
0.9 Dead+1.0 Wind 0 deg -	30.12	-0.13	-23.51	-2413.39	18.45	0.00
No Ice						
1.2 Dead+1.0 Wind 30 deg -	40.15	11.99	-20.78	-2155.84	-1241.76	-0.46
No Ice						
0.9 Dead+1.0 Wind 30 deg -	30.12	11.99	-20.78	-2130.07	-1227.40	-0.46
No Ice						
1.2 Dead+1.0 Wind 60 deg -	40.15	20.69	-11.81	-1224.22	-2151.05	-0.80
No Ice						
0.9 Dead+1.0 Wind 60 deg -	30.12	20.69	-11.81	-1209.51	-2125.84	-0.80
No Ice						
1.2 Dead+1.0 Wind 90 deg -	40.15	23.66	0.13	16.80	-2461.59	-0.92
No Ice						
0.9 Dead+1.0 Wind 90 deg -	30.12	23.66	0.13	16.75	-2432.63	-0.92
No Ice						
1.2 Dead+1.0 Wind 120 deg	40.15	20.53	11.87	1235.34	-2137.83	-0.80
- No Ice						
0.9 Dead+1.0 Wind 120 deg	30.12	20.53	11.87	1220.80	-2112.71	-0.80
- No Ice						
1.2 Dead+1.0 Wind 150 deg	40.15	11.93	20.43	2122.69	-1243.79	-0.46
- No Ice						
0.9 Dead+1.0 Wind 150 deg	30.12	11.93	20.43	2097.60	-1229.31	-0.46
- No Ice						
1.2 Dead+1.0 Wind 180 deg	40.15	0.13	23.51	2441.12	-16.04	0.00
- No Ice						
0.9 Dead+1.0 Wind 180 deg	30.12	0.13	23.51	2412.25	-16.19	-0.00

Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	K	K	К	kip-ft	kip-ft	kip-ft
- No Ice 1.2 Dead+1.0 Wind 210 deg - No Ice	40.15	-11.99	20.78	2154.29	1244.80	0.46
0.9 Dead+1.0 Wind 210 deg - No Ice	30.12	-11.99	20.78	2128.93	1229.66	0.46
1.2 Dead+1.0 Wind 240 deg - No Ice	40.15	-20.69	11.81	1222.68	2154.09	0.80
0.9 Dead+1.0 Wind 240 deg - No Ice	30.12	-20.69	11.81	1208.37	2128.09	0.80
1.2 Dead+1.0 Wind 270 deg - No Ice	40.15	-23.66	-0.13	-18.32	2464.63	0.92
0.9 Dead+1.0 Wind 270 deg - No Ice	30.12	-23.66	-0.13	-17.88	2434.89	0.92
1.2 Dead+1.0 Wind 300 deg - No Ice	40.15	-20.53	-11.87	-1236.86	2140.88	0.80
0.9 Dead+1.0 Wind 300 deg - No Ice	30.12	-20.53	-11.87	-1221.93	2114.97	0.80
1.2 Dead+1.0 Wind 330 deg - No Ice	40.15	-11.93	-20.43	-2124.23	1246.85	0.46
0.9 Dead+1.0 Wind 330 deg - No Ice	30.12	-11.93	-20.43	-2098.74	1231.58	0.46
1.2 Dead+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 0	68.03 68.03	-0.00 -0.01	-0.00 -6.45	-4.48 -689.09	5.95 7.97	-0.00 0.03
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	68.03	3.22	-5.58	-596.44	-335.27	-0.05
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	68.03	5.59	-3.21	-345.18	-587.05	-0.12
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	68.03	6.46	0.01	-2.66	-679.89	-0.16
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	68.03	5.60	3.24	339.35	-588.96	-0.15
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	68.03	3.24	5.60	589.21	-338.57	-0.11
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	68.03	0.01	6.45	679.95	4.16	-0.03
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	68.03	-3.22	5.58	587.30	347.40	0.05
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	68.03	-5.59	3.21	336.05	599.18	0.12
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	68.03	-6.46	-0.01	-6.48	692.02	0.16
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	68.03	-5.60	-3.24	-348.49	601.09	0.15
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	68.03	-3.24	-5.60	-598.34	350.70	0.11
Dead+Wind 0 deg - Service	33.46	-0.03	-5.54	-571.75	5.37	0.00
Dead+Wind 30 deg - Service	33.46	2.82	-4.89	-504.70	-289.53	-0.11
Dead+Wind 60 deg - Service	33.46	4.87	-2.78	-286.80	-502.20	-0.19
Dead+Wind 90 deg - Service Dead+Wind 120 deg -	33.46 33.46	5.57 4.83	0.03 2.79	3.46 288.47	-574.82 -499.10	-0.22 -0.19
Service Dead+Wind 150 deg -	33.46	2.81	4.81	496.00	-289.99	-0.13
Service						
Dead+Wind 180 deg - Service	33.46	0.03	5.54	570.47	-2.84	-0.00
Dead+Wind 210 deg - Service	33.46	-2.82	4.89	503.41	292.06	0.11
Dead+Wind 240 deg - Service	33.46	-4.87	2.78	285.51	504.72	0.19
Dead+Wind 270 deg - Service	33.46	-5.57	-0.03	-4.75	577.35	0.22
Dead+Wind 300 deg - Service	33.46	-4.83	-2.79	-289.75	501.63	0.19
Dead+Wind 330 deg - Service	33.46	-2.81	-4.81	-497.29	292.52	0.11

Solution Summary

	C	a of Amelia d Faus			Compatible		
1 1		n of Applied Force		DV	Sum of Reactio		0/ 5
Load	PX	PY	PZ	PX	PY	PZ	% Error
Comb.	K	K	K	K	K	K	
1	0.00	-33.46	0.00	0.00	33.46	0.00	0.000%
2	-0.13	-40.15	-23.51	0.13	40.15	23.51	0.000%
3	-0.13	-30.12	-23.51	0.13	30.12	23.51	0.000%
4	11.99	-40.15	-20.78	-11.99	40.15	20.78	0.000%
5	11.99	-30.12	-20.78	-11.99	30.12	20.78	0.000%
6	20.69	-40.15	-11.81	-20.69	40.15	11.81	0.000%
7	20.69	-30.12	-11.81	-20.69	30.12	11.81	0.000%
8	23.66	-40.15	0.13	-23.66	40.15	-0.13	0.000%
9	23.66	-30.12	0.13	-23.66	30.12	-0.13	0.000%
10	20.53	-40.15	11.87	-20.53	40.15	-11.87	0.000%
11	20.53	-30.12	11.87	-20.53	30.12	-11.87	0.000%
12	11.93	-40.15	20.43	-11.93	40.15	-20.43	0.000%
13	11.93	-30.12	20.43	-11.93	30.12	-20.43	0.000%
14	0.13	-40.15	23.51	-0.13	40.15	-23.51	0.000%
15	0.13	-30.12	23.51	-0.13	30.12	-23.51	0.000%
16	-11.99	-40.15	20.78	11.99	40.15	-20.78	0.000%
17	-11.99	-30.12	20.78	11.99	30.12	-20.78	0.000%
18	-20.69	-40.15	11.81	20.69	40.15	-11.81	0.000%
19	-20.69	-30.12	11.81	20.69	30.12	-11.81	0.000%
20	-23.66	-40.15	-0.13	23.66	40.15	0.13	0.000%
21	-23.66	-30.12	-0.13	23.66	30.12	0.13	0.000%
22	-20.53	-40.15	-11.87	20.53	40.15	11.87	0.000%
23	-20.53	-30.12	-11.87	20.53	30.12	11.87	0.000%
24	-11.93	-40.15	-20.43	11.93	40.15	20.43	0.000%
25	-11.93	-30.12	-20.43	11.93	30.12	20.43	0.000%
26	0.00	-68.03	0.00	0.00	68.03	0.00	0.000%
27	-0.01	-68.03	-6.45	0.01	68.03	6.45	0.000%
28	3.22	-68.03	-5.58	-3.22	68.03	5.58	0.000%
29	5.59	-68.03	-3.21	-5.59	68.03	3.21	0.000%
30	6.46	-68.03	0.01	-6.46	68.03	-0.01	0.000%
31	5.60	-68.03	3.24	-5.60	68.03	-3.24	0.000%
32	3.24	-68.03	5.60	-3.24	68.03	-5.24 -5.60	0.000%
33	0.01	-68.03		-3.2 4 -0.01	68.03	-5.60 -6.45	0.000%
33 34			6.45			-6.45 -5.58	0.000%
	-3.22	-68.03	5.58	3.22	68.03	-0.00	
35	-5.59	-68.03	3.21	5.59	68.03	-3.21	0.000%
36	-6.46	-68.03	-0.01	6.46	68.03	0.01	0.000%
37	-5.60	-68.03	-3.24	5.60	68.03	3.24	0.000%
38	-3.24	-68.03	-5.60	3.24	68.03	5.60	0.000%
39	-0.03	-33.46	-5.54	0.03	33.46	5.54	0.000%
40	2.82	-33.46	-4.89	-2.82	33.46	4.89	0.000%
41	4.87	-33.46	-2.78	-4.87	33.46	2.78	0.000%
42	5.57	-33.46	0.03	-5.57	33.46	-0.03	0.000%
43	4.83	-33.46	2.79	-4.83	33.46	-2.79	0.000%
44	2.81	-33.46	4.81	-2.81	33.46	-4.81	0.000%
45	0.03	-33.46	5.54	-0.03	33.46	-5.54	0.000%
46	-2.82	-33.46	4.89	2.82	33.46	-4.89	0.000%
47	-4.87	-33.46	2.78	4.87	33.46	-2.78	0.000%
48	-5.57	-33.46	-0.03	5.57	33.46	0.03	0.000%
49	-4.83	-33.46	-2.79	4.83	33.46	2.79	0.000%
50	-2.81	-33.46	-4.81	2.81	33.46	4.81	0.000%

Non-Linear Convergence Results

Load	Converged?	Number	Displacement	Force
Combination		of Cycles	Tolerance	Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	5	0.0000001	0.00005689
3	Yes	4	0.0000001	0.00059216
4	Yes	6	0.0000001	0.00015342
5	Yes	6	0.0000001	0.00004947
6	Yes	6	0.0000001	0.00015727
7	Yes	6	0.00000001	0.00005104

8	Yes	5	0.0000001	0.00007656
9	Yes	4	0.0000001	0.00086445
10	Yes	6	0.0000001	0.00015174
11	Yes	6	0.0000001	0.00004885
12	Yes	6	0.0000001	0.00015690
13	Yes	6	0.0000001	0.00005081
14	Yes	5	0.0000001	0.00006114
15	Yes	4	0.0000001	0.00066920
16	Yes	6	0.0000001	0.00015727
17	Yes	6	0.0000001	0.00005085
18	Yes	6	0.0000001	0.00015049
19	Yes	6	0.0000001	0.00004855
20	Yes	5	0.0000001	0.00018048
21	Yes	5	0.0000001	0.00008456
22	Yes	6	0.0000001	0.00015935
23	Yes	6	0.0000001	0.00005157
24	Yes	6	0.0000001	0.00015315
25	Yes	6	0.0000001	0.00004935
26	Yes	4	0.0000001	0.00007652
27	Yes	5	0.0000001	0.00073567
28	Yes	6	0.0000001	0.00013365
29	Yes	6	0.0000001	0.00013503
30	Yes	5	0.0000001	0.00072512
31	Yes	6	0.0000001	0.00013201
32	Yes	6	0.0000001	0.00013315
33	Yes	5	0.0000001	0.00072190
34	Yes	6	0.0000001	0.00013463
35	Yes	6	0.0000001	0.00013354
36	Yes	5	0.0000001	0.00073927
37	Yes	6	0.0000001	0.00013960
38	Yes	6	0.0000001	0.00013808
39	Yes	4	0.0000001	0.00009466
40	Yes	4	0.0000001	0.00076527
41	Yes	4	0.0000001	0.00083576
42	Yes	4	0.0000001	0.00015317
43	Yes	4	0.0000001	0.00074392
44	Yes	4	0.0000001	0.00081777
45	Yes	4	0.0000001	0.00009515
46	Yes	4	0.0000001	0.00082205
47	Yes	4	0.0000001	0.00073731
48	Yes	4	0.0000001	0.00017510
49	Yes	4	0.0000001	0.00085876
50	Yes	4	0.0000001	0.00076850

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load	Tilt	Twist
	ft	in	Comb.		
L1	138.375 - 108.375	20.224	49	1.4948	0.0063
L2	108.375 - 83.6328	11.656	46	1.1456	0.0017
L3	88.1146 - 42.9089	7.430	46	0.8486	0.0008
L4	48.836 - 0	2.172	46	0.4207	0.0003

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature
ft		Comb.	in	۰	۰	ft
138.00	Platform Mount [LP 303-1]	49	20.109	1.4908	0.0063	17487
137.00	Pipe Mount [PM 601-3]	49	19.802	1.4803	0.0061	17487

Elevation	Appurtenance	Gov.	Deflection	Tilt	Twist	Radius of
	.,	Load				Curvature
ft		Comb.	in	۰	۰	ft
136.00	Pipe Mount [PM 601-1]	49	19.496	1.4698	0.0060	17487
129.00	Platform Mount [16' LP 304-1]	49	17.371	1.3951	0.0047	9326
109.00	Side Arm Mount [SO 102-3]	46	11.809	1.1542	0.0018	3073
108.00	Platform Mount [14' LP 714-1]	46	11.565	1.1403	0.0017	3051
87.00	Platform Mount [LP 305-1]	46	7.231	0.8331	0.0008	5209
70.00	Side Arm Mount ISO 701-11	46	4.547	0.6276	0.0005	5026

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load	Tilt	Twist
	ft	in	Comb.	۰	۰
L1	138.375 - 108.375	86.318	22	6.3883	0.0260
L2	108.375 - 83.6328	49.872	16	4.9003	0.0069
L3	88.1146 - 42.9089	31.794	16	3.6335	0.0034
L4	48.836 - 0	9.294	16	1.8009	0.0011

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature
ft		Comb.	in	۰	۰	ft
138.00	Platform Mount [LP 303-1]	22	85.828	6.3715	0.0274	4191
137.00	Pipe Mount [PM 601-3]	22	84.523	6.3267	0.0266	4191
136.00	Pipe Mount [PM 601-1]	22	83.218	6.2820	0.0258	4191
129.00	Platform Mount [16' LP 304-1]	22	74.158	5.9644	0.0202	2234
109.00	Side Arm Mount [SO 102-3]	16	50.525	4.9372	0.0077	732
108.00	Platform Mount [14' LP 714-1]	16	49.483	4.8780	0.0074	727
87.00	Platform Mount [LP 305-1]	16	30.942	3.5680	0.0035	1226
70.00	Side Arm Mount [SO 701-1]	16	19.457	2.6876	0.0022	1180

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	Lu	KI/r	Α	P_u	ϕP_n	Ratio Pu
	ft		ft	ft		in²	K	K	ϕP_n
L1	138.375 - 108.375 (1)	TP24.5x17.375x0.1875	30.00	0.00	0.0	14.469 0	-10.01	846.43	0.012
L2	108.375 - 83.6328 (2)	TP31.88x24.5x0.25	24.74	0.00	0.0	24.037 6	-15.47	1406.20	0.011
L3	83.6328`-´ 42.9089 (3)	TP43.42x30.0432x0.3125	45.21	0.00	0.0	41.017 6	-26.55	2399.53	0.011
L4	42.9089 - 0 (4)	TP55.5x41.0411x0.3125	48.84	0.00	0.0	54.739 1	-40.14	3202.24	0.013

Section No.	Elevation	Size	M _{ux}	φ M _{nx}	Ratio M _{ux}	M_{uy}	ф М _{пу}	Ratio M _{uy}
	ft		kip-ft	kip-ft	ϕM_{nx}	kip-ft	kip-ft	ϕM_{nv}
L1	138.375 - 108.375 (1)	TP24.5x17.375x0.1875	298.47	490.86	0.608	0.00	490.86	0.000
L2	108.375 - 83.6328 (2)	TP31.88x24.5x0.25	615.81	1039.22	0.593	0.00	1039.22	0.000
L3	83.6328 - 42.9089 (3)	TP43.42x30.0432x0.3125	1386.34	2349.93	0.590	0.00	2349.93	0.000
L4	42.9089 - Ó (4)	TP55.5x41.0411x0.3125	2488.07	3679.57	0.676	0.00	3679.57	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V _u	ϕV_n	Ratio V _u	Actual T _u	ϕT_n	Ratio T _u
	ft		K	K	ϕV_n	kip-ft	kip-ft	ϕT_n
L1	138.375 - 108.375 (1)	TP24.5x17.375x0.1875	12.64	253.93	0.050	1.09	540.66	0.002
L2	108.375 - 83.6328 (2)	TP31.88x24.5x0.25	16.23	421.86	0.038	0.89	1119.17	0.001
L3	83.6328 - 42.9089 (3)	TP43.42x30.0432x0.3125	21.09	719.86	0.029	0.46	2607.00	0.000
L4	42.9089 - 0 (4)	TP55.5x41.0411x0.3125	24.02	960.67	0.025	0.46	4642.97	0.000

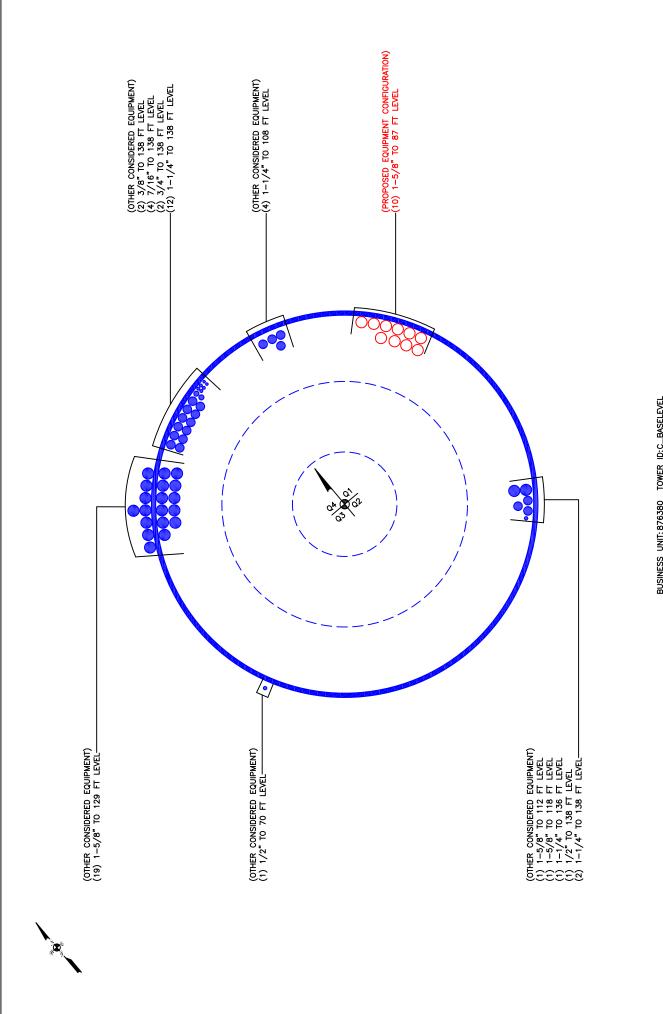
Pole Interaction Design Data

Section No.	Elevation	Ratio P _u	Ratio M _{ux}	Ratio M _{uy}	Ratio V _u	Ratio T _u	Comb. Stress	Allow. Stress	Criteria
	ft	φ P _n	φ <i>M</i> _{nx}	ϕM_{ny}	ϕV_n	<u></u> φ <i>T</i> _n	Ratio	Ratio	
L1	138.375 - 108.375 (1)	0.012	0.608	0.000	0.050	0.002	0.623	1.050	4.8.2
L2	108.375 - 83.6328 (2)	0.011	0.593	0.000	0.038	0.001	0.605	1.050	4.8.2
L3	83.6328 - 42.9089 (3)	0.011	0.590	0.000	0.029	0.000	0.602	1.050	4.8.2
L4	42.9089 - Ó (4)	0.013	0.676	0.000	0.025	0.000	0.689	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP _{allow} K	% Capacity	Pass Fail
L1	138.375 - 108.375	Pole	TP24.5x17.375x0.1875	1	-10.01	888.76	59.3	Pass
L2	108.375 - 83.6328	Pole	TP31.88x24.5x0.25	2	-15.47	1476.51	57.6	Pass
L3	83.6328 - 42.9089	Pole	TP43.42x30.0432x0.3125	3	-26.55	2519.51	57.3	Pass
L4	42.9089 - 0	Pole	TP55.5x41.0411x0.3125	4	-40.14	3362.35	65.7 Summary	Pass
						Pole (L4) RATING =	65.7 65.7	Pass Pass

APPENDIX B BASE LEVEL DRAWING



BUSINESS UNIT: 876380 TOWER ID: C_BASELEVEL

APPENDIX C ADDITIONAL CALCULATIONS

Monopole Flange Plate Connection

BU#	876380
Site Name	O&G WOODBURY
Order #	479855 Rev. 0

TIA-222 Revision	Н

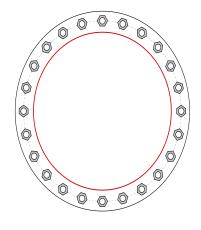
Elevation = 108.375 ft.

Applied Loads				
Moment (kip-ft)	298.47			
Axial Force (kips)	10.01			
Shear Force (kips)	12.64			

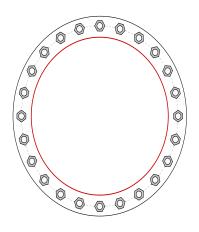
^{*}TIA-222-H Section 15.5 Applied

Bottom Plate - External

CROWN CASTLE



Top Plate - External



Connection Properties

Bolt Data

(24) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 28" BC

Top Plate Data

31" OD x 1.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Top Pole Data

24.5" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Plate Dat

31" OD x 1.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

24.5" x 0.25" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analy	sis Results			
Bolt Capacity				
Max Load (kips)	20.89			
Allowable (kips)	54.53			
Stress Rating:	36.5%	Pass		

Top Plate Capacity

Max Stress (ksi):	12.82	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	22.6%	Pass
Tension Side Stress Rating:	12.2%	Pass

Bottom Plate Capacity

Max Stress (ksi):	12.82	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	22.6%	Pass
Tension Side Stress Rating:	12.2%	Pass

CCIplate - version 3.6.0 Analysis Date: 6/27/2019

Monopole Base Plate Connection

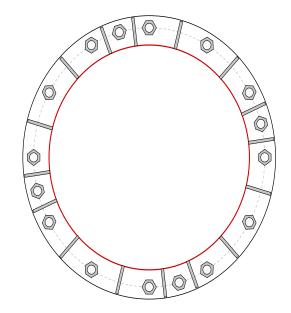


Site Info	
BU #	876380
Site Name	O&G WOODBURY
Order#	479855 Rev. 0

Analysis Considerations						
TIA-222 Revision	Н					
Grout Considered:	No					
l _{ar} (in)	1.125					

Applied Loads					
Moment (kip-ft)	2488.07				
Axial Force (kips)	40.14				
Shear Force (kips)	24.02				

^{*}TIA-222-H Section 15.5 Applied



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 64" BC GROUP 2: (4) 2-1/4" ø bolts (F1554-105 N; Fy=105 ksi, Fu=125 ksi) on 64" BC

Base Plate Data

70" OD x 1.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

(16) 15"H x 7"W x 0.75"T, Notch: 0.75" plate: Fy= 65 ksi ; weld: Fy= 80 ksi

horiz. weld: 0.375" groove, 45° dbl bevel, 0.25" fillet

vert. weld: 0.25" fillet

Pole Data

55.5" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary		(units of kips, kip-in)
GROUP 1:		
Pu_c = 119.08	φPn_c = 243.75	Stress Rating
Vu = 1.5	φVn = 73.13	46.6%
Mu = n/a	φMn = n/a	Pass
GROUP 2:		
Pu_c = 119.08	φPn_c = 341.25	Stress Rating
Vu = 1.5	φVn = 102.38	33.3%
Mu = n/a	φMn = n/a	Pass
Base Plate Summary		
Max Stress (ksi):	34.06	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	60.1%	Pass
Stiffener Summary		
Horizontal Weld:	29.7%	Pass
Vertical Weld:	50.1%	Pass
Plate Flexure+Shear:	11.9%	Pass
Plate Tension+Shear:	29.2%	Pass
Plate Compression:	38.8%	Pass
Pole Summary		
Punching Shear:	15.5%	Pass

CCIplate - version 3.6.0 Analysis Date: 6/27/2019

Pier and Pad Foundation

BU # : 876380 Site Name: O&G WOODBURY App. Number: 479855 Rev. 0



TIA-222 Revision: H
Tower Type: Monopole

Top & Bot. Pad Rein. Different?:	>
Block Foundation?:	

Superstructure Analysis Reactions						
Compression, P _{comp} :	40	kips				
Base Shear, Vu_comp:	24	kips				
Moment, M _u :	2488	ft-kips				
Tower Height, H :	138.377	ft				
BP Dist. Above Fdn, bp _{dist} :	3.375	in				

Foundation Analysis Checks					
	Capacity	Demand	Rating*	Check	
Lateral (Sliding) (kips)	273.32	24.00	8.4%	Pass	
Bearing Pressure (ksf)	9.00	2.16	24.0%	Pass	
Overturning (kip*ft)	5382.81	2674.75	49.7%	Pass	
Pier Flexure (Comp.) (kip*ft)	5871.75	2596.00	42.1%	Pass	
Pier Compression (kip)	31187.52	79.69	0.2%	Pass	
Pad Flexure (kip*ft)	4020.44	856.12	20.3%	Pass	
Pad Shear - 1-way (kips)	824.79	143.46	16.6%	Pass	
Pad Shear - 2-way (Comp) (ksi)	0.190	0.027	13.4%	Pass	
Flexural 2-way (Comp) (kip*ft)	4364.46	1557.60	34.0%	Pass	

Pier Properties					
Pier Shape:	Square				
Pier Diameter, dpier :	7	ft			
Ext. Above Grade, E :	1	ft			
Pier Rebar Size, Sc :	8				
Pier Rebar Quantity, mc :	46				
Pier Tie/Spiral Size, St :	4				
Pier Tie/Spiral Quantity, mt:	5				
Pier Reinforcement Type:	Tie				
Pier Clear Cover, cc _{pier} :	3	in			

*Rating per TIA-222-H Section 15.5

49.7%

Soil Rating*:

Pier Tie/Spiral Quantity, mt :	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc _{pier} :	3	in

Pad Properties					
Depth, D :	6.5	ft			
Pad Width, W :	23	ft			
Pad Thickness, T :	3	ft			
Pad Rebar Size (Top), Sp top:	8				
Pad Top Rebar Quantity (Top), mp top:	21				
Pad Rebar Size (Bottom), Sp :	8				
Pad Rebar Quantity (Bottom), mp:	37				
Pad Clear Cover, cc_{pad}:	3	in			

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

Soil Properties						
Total Soil Unit Weight, γ :	135	pcf				
Ultimate Gross Bearing, Qult:	12.000	ksf				
Cohesion, Cu :	0.000	ksf				
Friction Angle, $oldsymbol{arphi}$:	34	degrees				
SPT Blow Count, N_{blows} :						
Base Friction, μ :						
Neglected Depth, N:	3.50	ft				
Foundation Bearing on Rock?	No					
Groundwater Depth, gw :	n/a	ft				

<--Toggle between Gross and Net



Address:

No Address at This Location

ASCE 7 Hazards Report

Standard: ASCE/SEI 7-10 Elevation: 589.96 ft (NAVD 88)

Risk Category: || Latitude: 41.522

Soil Class: D - Stiff Soil Longitude: -73.220736





Wind

Results:

Wind Speed: 118 Vmph 10-year MRI 76 Vmph 25-year MRI 85 Vmph 50-year MRI 90 Vmph 100-year MRI 97 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of

March 12, 2014

Date Accessed: Thu Jun 27 2019

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

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

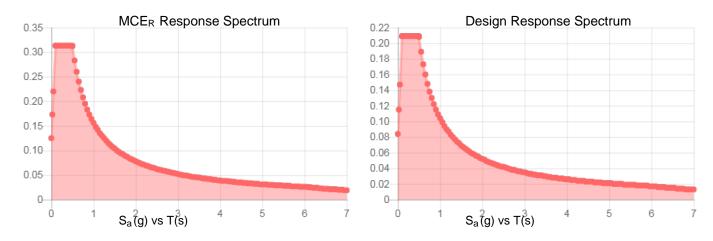
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.



Seismic

Site Soil Class: Results:	D - Stiff Soil			
S _s :	0.196	S _{DS} :	0.209	
S_1 :	0.065	S _{D1} :	0.104	
F _a :	1.6	T _L :	6	
F_{ν} :	2.4	PGA:	0.103	
S _{MS} :	0.313	PGA _M :	0.164	
S _{M1} :	0.156	F _{PGA} :	1.594	
		l _o :	1	

Seismic Design Category B



Data Accessed: Thu Jun 27 2019

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating

Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with

ASCE/SEI 7-10 Ch. 21 are available from USGS.



Ice

Results:

Ice Thickness: 0.75 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

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

Date Accessed: Thu Jun 27 2019

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

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

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

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

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

Exhibit E

Mount Analysis

Date: May 16, 2019

Charles McGuirt Crown Castle 3530 Toringdon Way Suite 300 Charlotte, NC 28277



MasTec Network Solutions 507 Airport Blvd, Suite 111 Morrisville, NC 27560 (919) 244-5207

Subject: Mount Analysis

Carrier Designation: T-Mobile Equipment Change-Out

Carrier Site Number: CTNH350A

Carrier Site Name: NH350/Global-Woodbury

Crown Castle Designation: Crown Castle BU Number: 876380

Crown Castle Site Name: O&G WOODBURY

Crown Castle JDE Number: 559334

Crown Castle Order Number: 479855 Revision 0

Engineering Firm Designation: MasTec Network Solutions Project Number: 18756-MNT1

Site Data: Great Hollow Road, Woodbury, Litchfield County, CT 06798

Latitude: 41° 31' 19.20" Longitude: -73° 13' 14.65"

Structure Information Tower Height & Type: 139 ft Monopole

Mount Elevation: 87 ft

Mount Width & Type: 12.5 ft Platform Mount

Dear Charles McGuirt.

MasTec Network Solutions is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of T-Mobile'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:

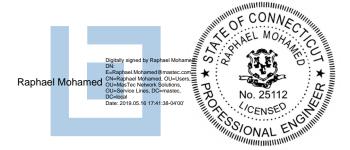
Platform Mount Sufficient

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Elisa Mathon

Respectfully Submitted by:

Raphael Mohamed, PE, PEng Senior Director of Engineering CT PE License No. 25112



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5) APPENDIX A

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7) APPENDIX C

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8) APPENDIX D

Additional Calculations

1) INTRODUCTION

This is a 12.5 ft Platform Mount mapped by P-SEC.

2) ANALYSIS CRITERIA

TIA-222-H **TIA-222 Revision:**

Risk Category Ш

Ultimate Wind Speed: 120 mph

Exposure Category: Topographic Category: 1 Ice Thickness: 1.5 in Wind Speed with Ice: 50 mph Seismic Ss: 0.196 Seismic S1: 0.065 **Live Loading Wind Speed:** 30 mph **Live Loading at Mid/End-Points:** 250 lb **Man Live Loading at Mount Pipes** 500 lb

Table 1 - Proposed Loading Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details	
87.0	87.0	3	rfs/celwave	APXV18-206516S-C-A20		
		3	rfs/celwave	APXVAARR24_43-U-NA20	(1) 12.5ft Platform	
		3	ericsson	KRY 112 489/2	(1) 12.511 Flatioiiii	
		3	ericsson	RADIO 4449 B12/B71		

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
4-ORDER INFORMATION	CROWN CASTLE	Order No. 479855, Rev. 0	CCIsites
4-MOUNT MAPPING	P-SEC	Project No. 19651-07	On File

3.1) Analysis Method

RISA-3D (Version No. 17.0.2), 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.

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

3.2) Assumptions

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

Channel, Solid Round, Angle, Plate

HSS (Rectangular)

Pipe

ASTM A36 (GR 36)

ASTM 500 (GR B-46)

ASTM A53 (GR B-35)

Connection Bolts ASTM A325

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

4) ANALYSIS RESULTS

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

Notes	Component	Beam No.	Centerline (ft)	% Capacity	Pass / Fail
1	Mount Pipe		87	50.4	Pass
1	Mount Pipe Large		87	2.3	Pass
1	Horizontal		87	42.0	Pass
1	Standoff		87	27.3	Pass
1	Plate		87	55.9	Pass
1	Grating Angles		87	18.5	Pass
1	Bolt Connection		87	19.0	Pass
1	Plate Connection		87	28.3	Pass

Structure Rating (max from all components) =	55.9%
--	-------

Notes:

4.1) Recommendations

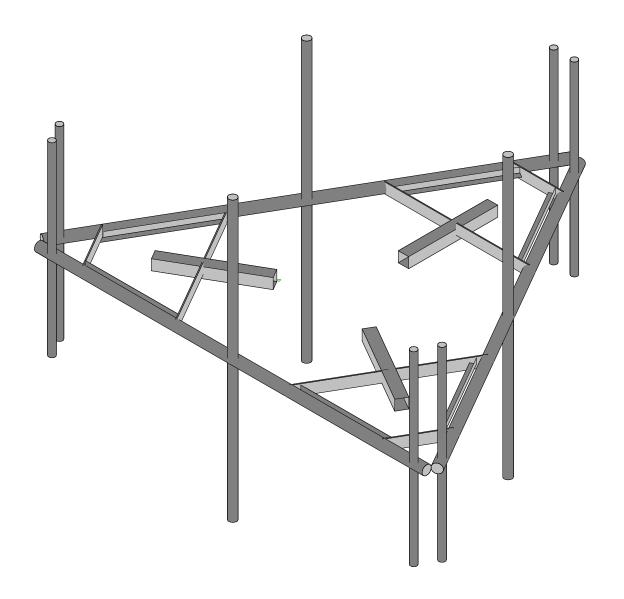
The mount has sufficient capacity to carry the proposed configuration. No modifications are required at this time.

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

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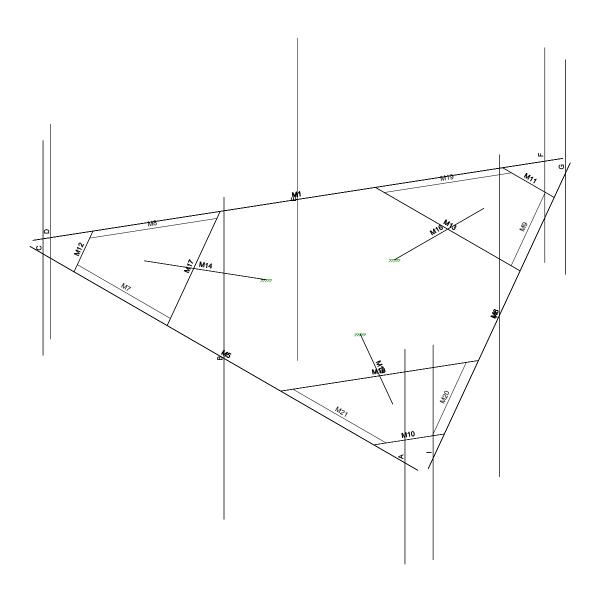
APPENDIX A WIRE FRAME AND RENDERED MODELS





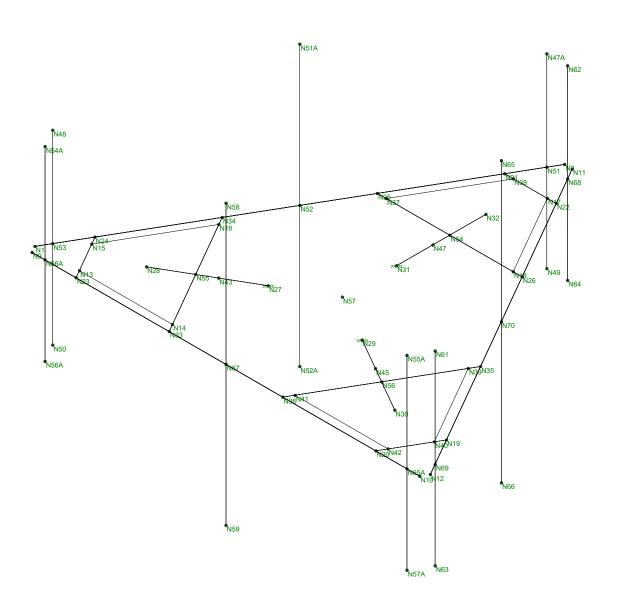
MasTec		Rendered View
EJM	876380-O&G WOODBURY	May 15, 2019 at 4:41 PM
18756-MNT1		18756.R3D





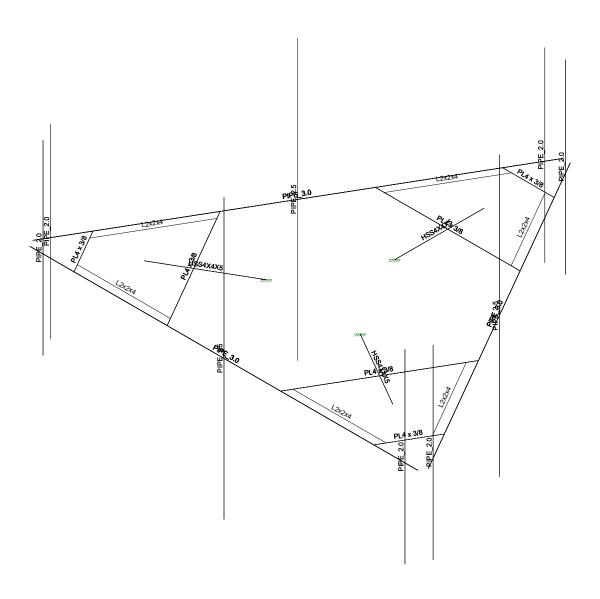
MasTec		Member Labels
EJM	876380-O&G WOODBURY	May 15, 2019 at 4:42 PM
18756-MNT1		18756.R3D





MasTec		Node Labels
EJM	876380-O&G WOODBURY	May 15, 2019 at 4:42 PM
18756-MNT1		18756.R3D

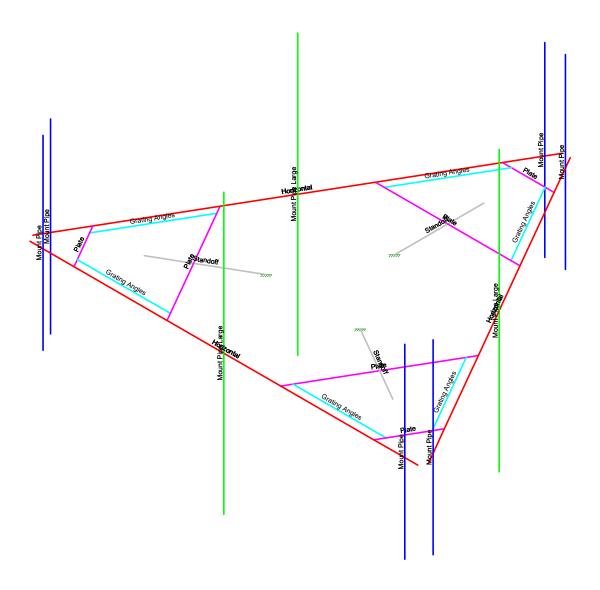




MasTec		Member Shapes	ı
EJM	876380-O&G WOODBURY	May 15, 2019 at 4:42 PM	
18756-MNT1		18756.R3D	l



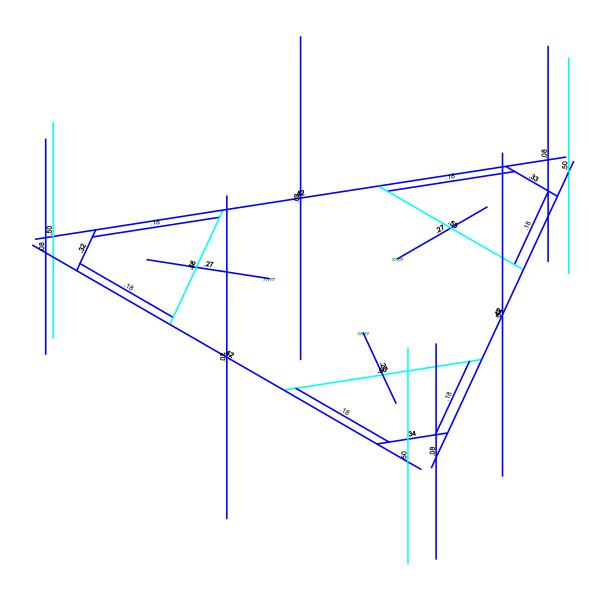




MasTec		Section Sets
EJM	876380-O&G WOODBURY	May 15, 2019 at 4:42 PM
18756-MNT1		18756.R3D





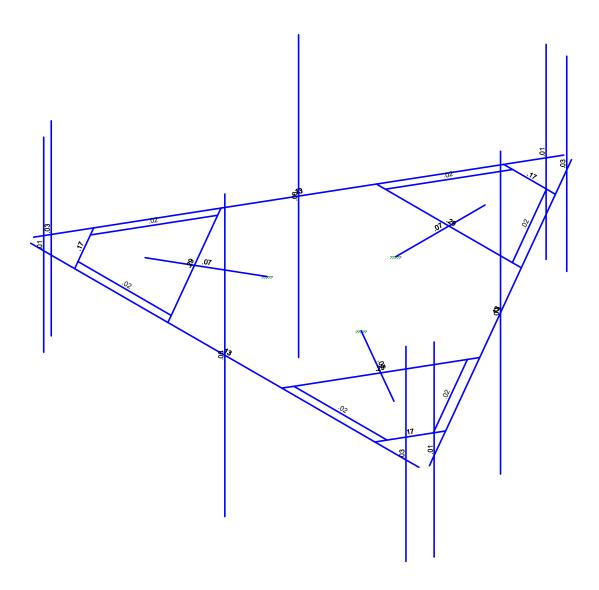


Member Code Checks Displayed (Enveloped) Envelope Only Solution

MasTec		Unity Check
EJM	876380-O&G WOODBURY	May 16, 2019 at 9:33 AM
18756-MNT1		18756.R3D







Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Liivelop	0	ny O	Jiulion	

Masiec	
EJM	
18756-MNT1	

876380-O&G WOODBURY

Shear Check
May 16, 2019 at 9:33 AM
18756.R3D

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APPENDIX B SOFTWARE INPUT CALCULATIONS



Analysis	Parameters		
Mount Height	87	ft	
Exposure Category	В	(B,C, or D)	
Ultimate Wind Speed	120	mph	
Ice Wind Speed	50	mph	
Design Ice Thickness, t _i	1.5	in	
Maintenance Wind Speed	30	mph	
Run Earthquake Analysis?	Yes		
Ground Elevation	589.96	ft, Google	Earth
S ₁	0.065	USGS	
S _{DS}	0.209	2.7.5	
Vertical Seismic Loads, E _v	0.042	2.7.6	
Seismic Response Coefficient, C _s	0.105	2.7.7.1.1	
C _s Min	0.030	2.7.7.1.1	

Pipe Mounts	(Orientation Drawn	Top-Down)	
Risa 3D Label	Elevation (ft)	Length (in)	Diameter (in)
A	87	72	2.375
В	87	108	2.875
С	87	72	2.375
D	87	72	2.375
E	87	108	2.875
F	87	72	2.375
G	87	72	2.375
Н	87	108	2.875
I	87	72	2.375

Mount Analysis Tool

Legend
Input
Calculated
Notes
Notes

Maximum Capacity								
Controlling Capacity	55.9%	PASS						

		Wind Parameters			
Gust Effect Factor, G _h	1.000	2.6.9	K _s	1.000	2.6.7
K _z	0.950	2.6.5.2	K _e	0.979	2.6.8
K _{Zt}	1.000	2.6.6	K _a	0.900	16.6
K _d	0.950	Table 2-2	*Note for	Rooftop Struc	tures greater
			,		or 90 deg and
q _z	29.392	psf, 2.6.11.6		ng 50' above s s Ks must be	•
C/D	116.942	Table 2-9	Dullullig	s ks illust be	calculateu.
t _{iz}	1.653	in, 2.6.10			
q _{iz}	5.103	psf, 2.6.9.6	I, Ice	1.000	Table 2-3
C/D iz	48.726	Table 2-9	I, EQ	1.000	Table 2-3
q _{Maintenance}	1.871	psf, 2.6.9.6	K _{es (Wind)}	1.000	Table S-1
C/D _{Maintenance}	29.235	Table 2-9	K _{es (ice)}	1.000	Table S-1
Ice Dead, Grating	0.015425121	ksf			

		Appurtenances			
Model	Туре	Height (in)	Width (in)	Depth (in)	Weight (lbs)
RFS APXV18-206516S-C-A20	Antenna	53.1	6.9	3.15	18.7
RFS APXVAARR24_43-U-NA20	Antenna	95.9	24	8.7	128
Ericsson KRY 112 489/2	RRU, TMA, Etc.	11	6.1	3.94	15.4
Ericsson RADIO 4449 B12/B71	RRU, TMA, Etc.	14.95	13.19	9.25	75



Dino Mount	Antonna	Elevation /ft)	Quantitu	Orientation (des)	Front Evnocod (9/)	Side Evpered (94)	Tune	Hoight /im)	Midth (in)	Donth (in)	Moight (lbs)	F	Side Ce A = 452	Front F (king)	Sido E (king)	Ton %	Pottom %
Pipe Mount A	Antenna RFS APXVAARR24_43-U-NA20	Elevation (ft) 87	Quantity 1	Orientation (deg)	Front Exposed (%) 100.0%	100.0%	Type Antenna	Height (in) 95.900	Width (in) 24.000	Depth (in) 8.700	Weight (lbs) 128.000	Front CaAa (ft²) 20.243	Side CaAa (ft*) 8.889	Front F _A (kips) 0.595	Side F _A (kips)	0.0%	Bottom % 100.0%
A	Ericsson KRY 112 489/2	87	1	0	0.0%	100.0%	RRU, TMA, Etc.	11.000	6.100	3.940	15.400	0.559	0.365	0.000	0.201	42.4%	57.6%
A	E11033011 KK1 112 403/2	0,		Ů	0.070	100.070	into, rivia, etc.	11.000	0.100	0.010	10.100	0.000	0.000	0.000	0.011	12.170	07.070
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С	RFS APXV18-206516S-C-A20	87	1	0	100.0%	100.0%	Antenna	53.100	6.900	3.150	18.700	3.621	2.008	0.106	0.059	13.1%	86.9%
С	Ericsson RADIO 4449 B12/B71	87	1	0	100.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	75.000	1.643	1.152	0.048	0.034	39.6%	60.4%
С																	
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С																	
С																	
D	RFS APXVAARR24_43-U-NA20	87	1	120	100.0%	100.0%	Antenna	95.900	24.000	8.700	128.000	20.243	8.889	0.345	0.512	0.0%	100.0%
D	Ericsson KRY 112 489/2	87	1	120	0.0%	100.0%	RRU, TMA, Etc.	11.000	6.100	3.940	15.400	0.559	0.365	0.000	0.015	42.4%	57.6%
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F	RFS APXV18-206516S-C-A20	87	1	120	100.0%	100.0%	Antenna	53.100	6.900	3.150	18.700	3.621	2.008	0.071	0.095	13.1%	86.9%
F	Ericsson RADIO 4449 B12/B71	87	1	120	100.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	75.000	1.643	1.152	0.037	0.045	39.6%	60.4%
F																	
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F																	
F			<u> </u>					0.000	01000		100.000	00.040		2215	0.510	0.00/	100.00/
G	RFS APXVAARR24_43-U-NA20	87	1	240	100.0%	100.0%	Antenna	95.900	24.000	8.700	128.000	20.243	8.889	0.345	0.512	0.0%	100.0%
G	Ericsson KRY 112 489/2	87	1	240	0.0%	100.0%	RRU, TMA, Etc.	11.000	6.100	3.940	15.400	0.559	0.365	0.000	0.015	42.4%	57.6%
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n i	RFS APXV18-206516S-C-A20	87	1	240	100.0%	100.0%	Antenna	53.100	6.900	3.150	18.700	3.621	2.008	0.071	0.095	13.1%	86.9%
<u> </u>	Ericsson RADIO 4449 B12/B71	87	1	240	100.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	75.000	1.643	1.152	0.071	0.095	39.6%	60.4%
1	L1103011 NADIO 4443 B12/B/1	0/	1 1	240	100.070	100.070	MNO, HVIA, ECC.	14.550	10.130	0.200	70.000	1.043	1.102	0.007	0.040	00.070	00.470
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Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Туре	Height (in)	Width (in)	Depth (in)	Ice Weight (Ib)	Front CaAa (ft ²)	Side CaAa (ft²)	Front F _A (kips)	Side F _A (kips) Top %	Bottom %
A	RFS APXVAARR24_43-U-NA20	87	1	0	100.0%	100.0%	Antenna	95.900	24.000	8.700	438.600	23.521	11.927	0.120	0.061	0.0%	100.0%
Α	Ericsson KRY 112 489/2	87	1	0	0.0%	100.0%	RRU, TMA, Etc.	11.000	6.100	3.940	16.500	1.121	0.864	0.000	0.004	42.4%	57.6%
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Α																	
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В																	
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С	RFS APXV18-206516S-C-A20	87	1	0	100.0%	100.0%	Antenna	53.100	6.900	3.150	82.536	5.335	3.687	0.027	0.019	13.1%	86.9%
С	Ericsson RADIO 4449 B12/B71	87	1	0	100.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	44.683	2.509	1.910	0.013	0.010	39.6%	60.4%
С																	
С																	
С																	
C D	RFS APXVAARR24_43-U-NA20	87	1	120	100.0%	100.0%	Antenna	95.900	24.000	8.700	438.600	23.521	11.927	0.076	0.105	0.0%	100.0%
D	Ericsson KRY 112 489/2	87	1	120	0.0%	100.0%	RRU, TMA, Etc.	11.000	6.100	3.940	16.500	1.121	0.864	0.076	0.105	42.4%	57.6%
D	L11033011 KK1 112 403/2	67	1	120	0.078	100.070	INIO, HVIA, ELC.	11.000	0.100	0.040	10.000	1.121	0.004	0.000	0.000	72.770	37.070
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F	RFS APXV18-206516S-C-A20	87	1	120	100.0%	100.0%	Antenna	53.100	6.900	3.150	82.536	5.335	3.687	0.021	0.025	13.1%	86.9%
F	Ericsson RADIO 4449 B12/B71	87	1	120	100.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	44.683	2.509	1.910	0.021	0.025	39.6%	60.4%
F	E11C33011 RADIO 4443 B12/B71	87	1	120	100.076	100.070	INIO, HVIA, Etc.	14.500	10.100	3.200	44.000	2.505	1.510	0.011	0.012	00.070	00.470
F																	
F																	
F																	
G	RFS APXVAARR24_43-U-NA20	87	1	240	100.0%	100.0%	Antenna	95.900	24.000	8.700	438.600	23.521	11.927	0.076	0.105	0.0%	100.0%
G	Ericsson KRY 112 489/2	87	1	240	0.0%	100.0%	RRU, TMA, Etc.	11.000	6.100	3.940	16.500	1.121	0.864	0.000	0.005	42.4%	57.6%
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- 1	RFS APXV18-206516S-C-A20	87	1	240	100.0%	100.0%	Antenna	53.100	6.900	3.150	82.536	5.335	3.687	0.021	0.025	13.1%	86.9%
1	Ericsson RADIO 4449 B12/B71	87	1	240	100.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	44.683	2.509	1.910	0.011	0.012	39.6%	60.4%
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			m1 . /m 1		2 (1)	- 4-25			61 1 10 1 110		0.1 1 10.1			Side Maint Wind (klf)
Member	Section Set	Member Length (ft)		Wind Projection (in)	D _c (in)	A _{iz} (in ²)	C _F	Front Wind (klf)	Side Wind (klf)	Front Ice Wind (klf)		Ice Dead (klf)	Front Maint Wind (klf)	
M1 M5	Horizontal Horizontal	12.50000039 12.5	Round Round	3.500 3.500	3.500 3.500	26.753 26.753	1.200 1.200	0.003 0.010	0.008	0.001 0.004	0.002	0.010 0.010	0.000 0.001	0.000
M6	Horizontal	12.50000039	Round	3.500	3.500	26.753	1.200	0.003	0.008	0.004	0.002	0.010	0.000	0.000
M7	Grating Angles	3	Flat	2.000	2.828	23.266	2.000	0.010	0.000	0.001	0.002	0.009	0.001	0.000
M8	Grating Angles	2.999999817	Flat	2.000	2.828	23.266	2.000	0.002	0.007	0.001	0.002	0.009	0.000	0.000
M9	Grating Angles	2.999999817	Flat	2.000	2.828	23.266	2.000	0.002	0.007	0.001	0.002	0.009	0.000	0.000
M10	Plate	1.666666783	Flat	4.000	4.018	29.440	2.000	0.005	0.015	0.001	0.003	0.011	0.000	0.001
M11	Plate	1.666667	Flat	4.000	4.018	29.440	2.000	0.020	0.000	0.006	0.002	0.011	0.001	0.000
M12	Plate	1.666666783	Flat	4.000	4.018	29.440	2.000	0.005	0.015	0.001	0.003	0.011	0.000	0.001
M13	Plate	4.666667	Flat	4.000	4.018	29.440	2.000	0.020	0.000	0.005	0.002	0.011	0.001	0.000
M14	Standoff	2.874999969	Flat	4.000	5.657	37.952	2.000	0.015	0.005	0.004	0.002	0.015	0.001	0.000
M15	Standoff	2.874999969	Flat	4.000	5.657	37.952	2.000	0.015	0.005	0.004	0.002	0.015	0.001	0.000
M16	Standoff	2.875	Flat	4.000	5.657	37.952	2.000	0.000	0.020	0.000	0.003	0.015	0.000	0.001
M17	Plate	4.6666666	Flat	4.000	4.018	29.440	2.000	0.005	0.015	0.001	0.003	0.011	0.000	0.001
M18	Plate	4.6666666	Flat	4.000	4.018	29.440	2.000	0.005	0.015	0.001	0.003	0.011	0.000	0.001
M19	Grating Angles	2.999999817	Flat	2.000	2.828	23.266	2.000	0.002	0.007	0.001	0.002	0.009	0.000	0.000
M20	Grating Angles	2.999999817	Flat	2.000	2.828	23.266	2.000	0.002	0.007	0.001	0.002	0.009	0.000	0.000
M21	Grating Angles	3	Flat	2.000	2.828	23.266	2.000	0.010	0.000	0.004	0.002	0.009	0.001	0.000
D	Mount Pipe	6	Round	2.380	2.380	20.938	1.200	0.007	0.007	0.003	0.003	0.008	0.000	0.000
F	Mount Pipe	6	Round	2.380	2.380	20.938	1.200	0.007	0.007	0.003	0.003	0.008	0.000	0.000
E	Mount Pipe Large	9	Round	2.880	2.880	23.534	1.200	0.008	0.008	0.003	0.003	0.009	0.001	0.001
A C	Mount Pipe Mount Pipe	6	Round Round	2.380 2.380	2.380 2.380	20.938 20.938	1.200 1.200	0.007 0.007	0.007 0.007	0.003 0.003	0.003	0.008	0.000	0.000
В	Mount Pipe Mount Pipe Large	9	Round	2.380	2.380	20.938	1.200	0.007	0.007	0.003	0.003	0.008	0.000	0.000
G	Mount Pipe Large	6	Round	2.380	2.380	20.938	1.200	0.008	0.008	0.003	0.003	0.009	0.001	0.001
- 6	Mount Pipe	6	Round	2.380	2.380	20.938	1.200	0.007	0.007	0.003	0.003	0.008	0.000	0.000
H	Mount Pipe Large	9	Round	2.880	2.880	23.534	1.200	0.007	0.007	0.003	0.003	0.009	0.001	0.001
	Would ripe Earge	,	Round	2.000	2.000	25.554	1.200	0.000	0.000	0.003	0.003	0.003	0.001	0.001

May 16, 2019 CCI BU No: 876380 Page 7

APPENDIX C SOFTWARE ANALYSIS OUTPUT

Company : MasTec
Designer : EJM
Job Number : 18756-MNT1
Model Name : 876380-O&G WOODBURY

May 16, 2019 9:34 AM Checked By:_

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E	.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

Hot Rolled Steel Section Sets

	Label	Shape	Туре	Design List	Material	Design	A [in2]	lyy [in4]	Izz [in4]	J [in4]_
1	Mount Pipe	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Mount Pipe Large	PIPE 2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	Horizontal	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Standoff	HSS4X4X5	Beam	SquareTube	A36 Gr.36	Typical	4.1	9.14	9.14	15.3
5	Plate	PL4 x 3/8	Beam	RECT	A36 Gr.36	Typical	1.5	.018	2	.066
6	Grating Angles	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap
1	N1	0.787805	0	3.815862	0	
2	N2	7.037805	0	-7.009456	0	
3	N9	0.912805	0	4.032368	0	
4	N10	13.412805	0	4.032368	0	
5	N11	7.287805	0	-7.009456	0	
6	N12	13.537805	0	3.815862	0	
7	N13	2.185135	0	3.782368	0	
8	N14	5.185135	0	3.782368	0	
9	N15	1.640476	0	2.838992	0	
10	N16	3.140476	0	0.240916	0	
11	N17	7.707464	0	-5.782587	0	
12	N18	9.207464	0	-3.184511	0	
13	N19	12.829472	0	2.588992	0	
14	N20	11.996139	0	4.032368	0	
15	N21	6.329472	0	-5.782587	0	
16	N22	7.996139	0	-5.782587	0	
17	N23	2.329472	0	4.032368	0	
18	N24	1.496139	0	2.588992	0	
19	N25	4.829472	0	-3.184511	0	
20	N26	9.496139	0	-3.184511	0	
21	N27	5.647261	0	1.154591	0	
22	N28	3.157438	0	2.592091	0	
23	N29	8.67835	0	1.154591	0	
24	N30	11.168173	0	2.592091	0	
25	N31	7.162805	0	-1.470409	0	
26	N32	7.162805	0	-4.345409	0	
27	N33	5.329472	0	4.032368	0	
28	N34	2.996139	0	-0.009084	0	
29	N35	11.329472	0	-0.009084	0	
30	N36	8.996139	0	4.032368	0	
31	N37	5.118147	0	-3.184511	0	
32	N38	6.618147	0	-5.782587	0	
33	N39	11.185135	0	0.240916	0	
34	N40	12.685135	0	2.838992	0	



Company : MasTec
Designer : EJM
Job Number : 18756-MNT1
Model Name : 876380-O&G

: 876380-O&G WOODBURY

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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap
35	N41	9.140476	0	3.782368	0	·
36	N42	12.140476	0	3.782368	0	
37	N43	4.634493	0	1.739313	0	
38	N45	9.691118	0	1.739313	0	
39	N47	7.162805	0	-2.639852	0	
40	N51	6.829472	0	-6.648612	0	
41	N52	3.912805	0	-1.596797	0	
42	N53	0.996139	0	3.455018	0	
43	N54	7.162805	0	-3.184511	0	
44	N55	4.162805	0	2.011642	0	
45	N56	10.162805	0	2.011642	0	
46	N57	7.162805	0	0.279591	0	
47	N47A	6.829472	3.166667	-6.648612	0	
48	N48	0.996139	3.166667	3.455018	0	
49	N49	6.829472	-2.833333	-6.648612	0	
50	N50	0.996139	-2.833333	3.455018	0	
51	N51A	3.912805	4.5	-1.596797	0	
52	N52A	3.912805	-4.5	-1.596797	0	
53	N54A	1.329472	3.166667	4.032368	0	
54	N55A	12.996139	3.166667	4.032368	0	
55	N56A	1.329472	-2.833333	4.032368	0	
56	N57A	12.996139	-2.833333	4.032368	0	
57	N58	7.162805	4.5	4.032368	0	
58	N59	7.162805	-4.5	4.032368	0	
59	N61	13.329472	3.166667	3.455018	0	
60	N62	7.496139	3.166667	-6.648612	0	
61	N63	13.329472	-2.833333	3.455018	0	
62	N64	7.496139	-2.833333	-6.648612	0	
63	N65	10.412805	4.5	-1.596797	0	
64	N66	10.412805	-4.5	-1.596797	0	
65	N65A	12.996139	0	4.032368	0	
66	N66A	1.329472	0	4.032368	0	
67	N67	7.162805	0	4.032368	0	
68	N68	7.496139	0	-6.648612	0	
69	N69	13.329472	0	3.455018	0	
70	N70	10.412805	0	-1.596797	0	

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d	Section/Shape	Type	Design List	Material	Design Ru
1	M1	N1	N2		,	Horizontal	Beam	Pipe	A53 Gr.B	Typical
2	M5	N9	N10			Horizontal	Beam	Pipe	A53 Gr.B	Typical
3	M6	N11	N12			Horizontal	Beam	Pipe	A53 Gr.B	Typical
4	M7	N13	N14		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
5	M8	N15	N16			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
6	M9	N17	N18			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
7	M10	N19	N20			Plate	Beam	RECT	A36 Gr.36	Typical
8	M11	N21	N22			Plate	Beam	RECT	A36 Gr.36	Typical
9	M12	N23	N24			Plate	Beam		A36 Gr.36	Typical
10	M13	N25	N26			Plate	Beam	RECT	A36 Gr.36	Typical
11	M14	N27	N28			Standoff	Beam	SquareTube	A36 Gr.36	Typical
12	M15	N29	N30			Standoff	Beam	SquareTube	A36 Gr.36	Typical
13	M16	N31	N32			Standoff	Beam	SquareTube	A36 Gr.36	Typical
14	M17	N33	N34			Plate	Beam	RECT	A36 Gr.36	Typical
15	M18	N35	N36			Plate	Beam		A36 Gr.36	Typical
16	M19	N37	N38			Grating Angles		Single Angle	A36 Gr.36	Typical



: MasTec : EJM : 18756-MNT1

: 876380-O&G WOODBURY

May 16, 2019 9:34 AM Checked By:____

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d	. Section/Shape	Type	Design List		Design Ru
17	M20	N39	N40		,	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
18	M21	N41	N42		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
19	D	N48	N50			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
20	F	N47A	N49			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
21	E	N51A	N52A			Mount Pipe Large	Beam	Pipe	A53 Gr.B	Typical
22	Α	N55A	N57A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
23	С	N54A	N56A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
24	В	N58	N59			Mount Pipe Large	Beam	Pipe	A53 Gr.B	Typical
25	G	N62	N64			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
26	I	N61	N63			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
27	Н	N65	N66			Mount Pipe Large	Beam	Pipe	A53 Gr.B	Typical

Joint Loads and Enforced Displacements (BLC 42 : Man 1 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	N65A	L	Υ	5

Joint Loads and Enforced Displacements (BLC 43: Man 2 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	N53	L	Υ	5

Joint Loads and Enforced Displacements (BLC 44 : Man 3 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	N68	L	Υ	5

Joint Loads and Enforced Displacements (BLC 45 : Man 4 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	N10	L	Υ	25

Joint Loads and Enforced Displacements (BLC 46 : Man 5 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	N1		Υ	- 25

Joint Loads and Enforced Displacements (BLC 47 : Man 6 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]	
1	N11	L	Υ	25	7

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Υ	128	%50
2	A	Υ	015	%50
3	С	Υ	019	%50
4	С	Υ	075	%50
5	D	Υ	128	%50
6	D	Υ	015	%50
7	F	Υ	019	%50
8	F	Υ	075	%50
9	G	Υ	128	%50
10	G	Υ	015	%50
11	I	Υ	019	%50
12		Υ	075	%50

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Member Point Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Υ	439	%50 ·
2	A	Υ	017	%50
3	С	Υ	083	%50
4	С	Υ	045	%50
5	D	Υ	439	%50
6	D	Υ	017	%50
7	F	Υ	083	%50
8	F	Υ	045	%50
9	G	Υ	439	%50
10	G	Υ	017	%50
11		Υ	083	%50
12		Υ	045	%50

Member Point Loads (BLC 3 : Full Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	297	0
2	С	Z	053	%13.1
3	С	Z	048	%50
4	D	Z	172	0
5	F	Z	035	%13.1
6	F	Z	037	%50
7	G	Z	172	0
8		Z	035	%13.1
9		Z	037	%50
10	Α	Z	297	%100
11	С	Z	053	%86.9
12	D	Z	172	%100
13	F	Z	035	%86.9
14	G	Z	172	%100
15		Z	035	%86.9

Member Point Loads (BLC 4 : Full Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	222	0
2	С	Z	041	%13.1
3	С	Z	039	%50
4	D	Ζ	113	0
5	F	Ζ	026	%13.1
6	F	Z	029	%50
7	G	Z	222	0
8		Ζ	041	%13.1
9	1	Z	039	%50
10	Α	Z	222	%100
11	С	Z	041	%86.9
12	D	Z	113	%100
13	F	Z	026	%86.9
14	G	Z	222	%100
15	1	Z	041	%86.9
16	Α	X	.128	0
17	Α	X	.001	%50
18	С	X	.024	%13.1
19	С	X	.022	%50
20	D	X	.065	0
21	D	X	.005	%50
22	F	X	.015	%13.1
23	F	X	.017	%50

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Member Point Loads (BLC 4: Full Wind Antenna (30 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
24	G	X	.128	0
25	G	X	.001	%50
26		X	.024	%13.1
27	I	X	.022	%50
28	A	X	.128	%100
29	С	X	.024	%86.9
30	D	X	.065	%100
31	F	X	.015	%86.9
32	Ġ	X	.128	%100
33		X	.024	%86.9

Member Point Loads (BLC 5 : Full Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	086	0
2	С	Z	018	%13.1
3	С	Z	019	%50
4	D	Z	086	0
5	F	Z	018	%13.1
6	F	Z	019	%50
7	G	Z	149	0
8	I	Z	027	%13.1
9	I	Z	024	%50
10	A	Z	086	%100
11	С	Z	018	%86.9
12	D	Z	086	%100
13	F	Z	018	%86.9
14	G	Z	149	%100
15	I	Z	027	%86.9
16	A	Χ	.149	0
17	A	Χ	.007	%50
18	С	Χ	.031	%13.1
19	С	X	.032	%50
20	D	Χ	.149	0
21	D	Χ	.007	%50
22	F	Χ	.031	%13.1
23	F	Χ	.032	%50
24	G	Χ	.258	0
25	G	Χ	0	%50
26	I	Χ	.046	%13.1
27	I	Χ	.042	%50
28	A	Χ	.149	%100
29	С	Χ	.031	%86.9
30	D	Χ	.149	%100
31	F	Χ	.031	%86.9
32	G	Χ	.258	%100
33	I	Χ	.046	%86.9

Member Point Loads (BLC 6: Full Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	0	0
2	С	Z	0	%13.1
3	С	Z	0	%50
4	D	Z	0	0
5	F	Z	0	%13.1
6	F	Z	0	%50
7	G	Z	0	0

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Member Point Loads (BLC 6: Full Wind Antenna (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
8		Z	0	%13.1
9	<u> </u>	Z	0	%50
10	Α	Z	0	%100
11	С	Z	0	%86.9
12	D	Z	0	%100
13	F	Z	0	%86.9
14	G	Ζ	0	%100
15		Ζ	0	%86.9
16	A	Χ	.131	0
17	Α	Χ	.011	%50
18	С	Χ	.03	%13.1
19	С	Χ	.034	%50
20	D	Χ	.256	0
21	D	Χ	.003	%50
22	F	Χ	.047	%13.1
23	F	Χ	.045	%50
24	G	Χ	.256	0
25	G	Χ	.003	%50
26		Χ	.047	%13.1
27	I	Χ	.045	%50
28	Α	Χ	.131	%100
29	С	Χ	.03	%86.9
30	D	Χ	.256	%100
31	F	Χ	.047	%86.9
32	G	Χ	.256	%100
33		X	.047	%86.9

Member Point Loads (BLC 7 : Full Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	.086	0
2	С	Z	.018	%13.1
3	С	Z	.019	%50
4	D	Z	.149	0
5	F	Z	.027	%13.1
6	F	Z	.024	%50
7	G	Z	.086	0
8		Z	.018	%13.1
9		Z	.019	%50
10	A	Z	.086	%100
11	С	Z	.018	%86.9
12	D	Z	.149	%100
13	F	Z	.027	%86.9
14	G	Z	.086	%100
15	1	Z	.018	%86.9
16	Α	X	.149	0
17	Α	X	.007	%50
18	С	X	.031	%13.1
19	С	X	.032	%50
20	D	X	.258	0
21	F	X	.046	%13.1
22	F	X	.042	%50
23	G	X	.149	0
24	G	X	.007	%50
25		X	.031	%13.1
26		X	.032	%50
27	Α	X	.149	%100

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Member Point Loads (BLC 7: Full Wind Antenna (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
28	С	X	.031	%86.9
29	D	X	.258	%100
30	F	X	.046	%86.9
31	G	X	.149	%100
32		X	.031	%86.9

Member Point Loads (BLC 8 : Full Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	.222	0
2	С	Z	.041	%13.1
3	С	Z	.039	%50
4	D	Z	.222	0
5	F	Z	.041	%13.1
6	F	Z	.039	%50
7	G	Z	.113	0
8		Z	.026	%13.1
9		Z	.029	%50
10	Α	Z	.222	%100
11	С	Z	.041	%86.9
12	D	Z	.222	%100
13	F	Z	.041	%86.9
14	G	Z	.113	%100
15		Z	.026	%86.9
16	A	X	.128	0
17	Α	X	.001	%50
18	С	X	.024	%13.1
19	С	X	.022	%50
20	D	Χ	.128	0
21	D	X	.001	%50
22	F	X	.024	%13.1
23	F	X	.022	%50
24	G	X	.065	0
25	G	Χ	.005	%50
26		X	.015	%13.1
27	I	X	.017	%50
28	Α	X	.128	%100
29	С	X	.024	%86.9
30	D	X	.128	%100
31	F	X	.024	%86.9
32	G	X	.065	%100
33	<u> </u>	X	.015	%86.9

Member Point Loads (BLC 15 : Ice Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	06	0
2	С	Z	014	%13.1
3	С	Z	013	%50
4	D	Z	038	0
5	F	Z	01	%13.1
6	F	Z	011	%50
7	G	Z	038	0
8		Z	01	%13.1
9	1	Z	011	%50
10	A	Z	06	%100
11	C	Z	014	%86.9
12	D	Z	038	%100

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Member Point Loads (BLC 15: Ice Wind Antenna (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
13	F	Z	01	%86.9
14	G	Z	038	%100
15		Z	01	%86.9

Member Point Loads (BLC 16 : Ice Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	046	0
2	С	Z	011	%13.1
3	С	Z	01	%50
4	D	Z	026	0
5	F	Z	008	%13.1
6	F	Z	008	%50
7	G	Z	046	0
8	1	Z	011	%13.1
9	1	Z	01	%50
10	Α	Z	046	%100
11	С	Z	011	%86.9
12	D	Z	026	%100
13	F	Z	008	%86.9
14	G	Z	046	%100
15	1	Z	011	%86.9
16	Α	X	.026	0
17	A	Χ	.001	%50
18	С	Χ	.006	%13.1
19	С	X	.006	%50
20	D	X	.015	0
21	D	X	.002	%50
22	F	X	.005	%13.1
23	F	X	.005	%50
24	G	X	.026	0
25	G	Χ	.001	%50
26	I	X	.006	%13.1
27	I	Χ	.006	%50
28	Α	X	.026	%100
29	С	X	.006	%86.9
30	D	X	.015	%100
31	F	Χ	.005	%86.9
32	G	Χ	.026	%100
33	I	X	.006	%86.9

Member Point Loads (BLC 17 : Ice Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	019	0
2	С	Z	005	%13.1
3	С	Z	005	%50
4	D	Z	019	0
5	F	Z	005	%13.1
6	F	Z	005	%50
7	G	Z	03	0
8		Z	007	%13.1
9	1	Z	006	%50
10	Α	Z	019	%100
11	С	Z	005	%86.9
12	D	Z	019	%100
13	F	Z	005	%86.9
14	G	Z	03	%100

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Member Point Loads (BLC 17 : Ice Wind Antenna (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
15		Z	007	%86.9
16	A	X	.033	0
17	Α	X	.003	%50
18	С	X	.009	%13.1
19	С	X	.009	%50
20	D	X	.033	0
21	D	X	.003	%50
22	F	X	.009	%13.1
23	F	X	.009	%50
24	G	X	.052	0
25	G	X	0	%50
26		X	.012	%13.1
27	I	X	.011	%50
28	A	X	.033	%100
29	С	X	.009	%86.9
30	D	X	.033	%100
31	F	X	.009	%86.9
32	G	X	.052	%100
33		X	.012	%86.9

Member Point Loads (BLC 18: Ice Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	0	0
2	С	Z	0	%13.1
3	С	Z	0	%50
4	D	Z	0	0
5	F	Z	0	%13.1
6	F	Z	0	%50
7	G	Z	0	0
8		Z	0	%13.1
9		Z	0	%50
10	Α	Z	0	%100
11	С	Z	0	%86.9
12	D	Z	0	%100
13	F	Z	0	%86.9
14	G	Z	0	%100
15		Z	0	%86.9
16	Α	X	.03	0
17	Α	X	.004	%50
18	С	X	.009	%13.1
19	С	X	.01	%50
20	D	X	.053	0
21	D	X	.001	%50
22	F	X	.013	%13.1
23	F	X	.012	%50
24	G	X	.053	0
25	G	X	.001	%50
26		X	.013	%13.1
27		X	.012	%50
28	A	X	.03	%100
29	<u>C</u>	X	.009	%86.9
30	D	X	.053	%100
31	F	X	.013	%86.9
32	G	X	.053	%100
33		X	.013	%86.9

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Member Point Loads (BLC 19: Ice Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	.019	0
2	С	Z	.005	%13.1
3	С	Z	.005	%50
4	D	Z	.03	0
5	F	Z	.007	%13.1
6	F	Z	.006	%50
7	G	Z	.019	0
8	I	Z	.005	%13.1
9		Z	.005	%50
10	Α	Z	.019	%100
11	С	Z	.005	%86.9
12	D	Z	.03	%100
13	F	Z	.007	%86.9
14	G	Z	.019	%100
15	I	Z	.005	%86.9
16	A	X	.033	0
17	Α	X	.003	%50
18	С	X	.009	%13.1
19	С	X	.009	%50
20	D	X	.052	0
21	F	X	.012	%13.1
22	F	X	.011	%50
23	G	X	.033	0
24	G	X	.003	%50
25	I	X	.009	%13.1
26		X	.009	%50
27	A	X	.033	%100
28	С	X	.009	%86.9
29	D	X	.052	%100
30	F	X	.012	%86.9
31	G	X	.033	%100
32		X	.009	%86.9

Member Point Loads (BLC 20 : Ice Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	.046	0
2	С	Z	.005	%13.1
3	С	Z	.005	%50
4	D	Z	.03	0
5	F	Z	.007	%13.1
6	F	Z	.006	%50
7	G	Z	.019	0
8	I	Z	.005	%13.1
9	I	Z	.005	%50
10	Α	Z	.046	%100
11	С	Z	.005	%86.9
12	D	Z	.03	%100
13	F	Z	.007	%86.9
14	G	Z	.019	%100
15	I	Z	.005	%86.9
16	Α	X	.026	0
17	Α	Χ	.003	%50
18	С	X	.009	%13.1
19	С	X	.009	%50
20	D	X	.052	0
21	F	X	.012	%13.1

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Member Point Loads (BLC 20 : Ice Wind Antenna (150 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
22	F	X	.011	%50
23	G	X	.033	0
24	G	X	.003	%50
25		X	.009	%13.1
26		X	.009	%50
27	A	X	.026	%100
28	С	X	.009	%86.9
29	D	X	.052	%100
30	F	X	.012	%86.9
31	G	X	.033	%100
32		X	.009	%86.9

Member Point Loads (BLC 27 : Seismic Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Z	013	%50
2	Α	Z	002	%50
3	С	Z	002	%50
4	С	Z	008	%50
5	D	Z	013	%50
6	D	Z	002	%50
7	F	Z	002	%50
8	F	Z	008	%50
9	G	Z	013	%50
10	G	Z	002	%50
11		Z	002	%50
12		Z	008	%50

Member Point Loads (BLC 28 : Seismic Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	X	.013	%50 ⁻
2	A	X	.002	%50
3	С	X	.002	%50
4	С	X	.008	%50
5	D	X	.013	%50
6	D	X	.002	%50
7	F	X	.002	%50
8	F	X	.008	%50
9	G	X	.013	%50
10	G	X	.002	%50
11		X	.002	%50
12		X	.008	%50

Member Point Loads (BLC 41 : Seismic Vertical Antennas)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	Α	Υ	026	%50
2	Α	Υ	003	%50
3	С	Υ	004	%50
4	С	Υ	015	%50
5	D	Υ	026	%50
6	D	Υ	003	%50
7	F	Υ	004	%50
8	F	Υ	015	%50
9	G	Υ	026	%50
10	G	Υ	003	%50
11		Υ	004	%50



Model Name

Company : MasTec Designer : EJM Job Number : 18756-MNT1

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Member Point Loads (BLC 41 : Seismic Vertical Antennas) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
12		Υ	015	%50

Member Distributed Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
1	M1	Υ	01	01	0	%100
2	M5	Υ	01	01	0	%100
3	M6	Υ	01	01	0	%100
4	M7	Υ	009	009	0	%100
5	M8	Υ	009	009	0	%100
6	M9	Υ	009	009	0	%100
7	M10	Υ	011	011	0	%100
8	M11	Υ	011	011	0	%100
9	M12	Υ	011	011	0	%100
10	M13	Υ	011	011	0	%100
11	M14	Υ	015	015	0	%100
12	M15	Υ	015	015	0	%100
13	M16	Υ	015	015	0	%100
14	M17	Υ	011	011	0	%100
15	M18	Υ	011	011	0	%100
16	M19	Υ	009	009	0	%100
17	M20	Υ	009	009	0	%100
18	M21	Υ	009	009	0	%100
19	D	Υ	008	008	0	%100
20	F	Υ	008	008	0	%100
21	E	Υ	009	009	0	%100
22	Α	Υ	008	008	0	%100
23	С	Υ	008	008	0	%100
24	В	Υ	009	009	0	%100
25	G	Υ	008	008	0	%100
26	I	Υ	008	008	0	%100
27	Н	Υ	009	009	0	%100

Member Distributed Loads (BLC 9: Full Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
1	M1	Ζ	003	003	0	%100
2	M5	Ζ	01	01	0	%100
3	M6	Ζ	003	003	0	%100
4	M7	Z	01	01	0	%100
5	M8	Z	002	002	0	%100
6	M9	Z	002	002	0	%100
7	M10	Ζ	005	005	0	%100
8	M11	Ζ	02	02	0	%100
9	M12	Ζ	005	005	0	%100
10	M13	Z	02	02	0	%100
11	M14	Ζ	015	015	0	%100
12	M15	Z	015	015	0	%100
13	M16	Ζ	0	0	0	%100
14	M17	Ζ	005	005	0	%100
15	M18	Ζ	005	005	0	%100
16	M19	Ζ	002	002	0	%100
17	M20	Ζ	002	002	0	%100
18	M21	Ζ	01	01	0	%100
19	F	Z	007	007	0	%13.1
20	С	Z	007	007	0	%13.1
21		Z	007	007	0	%13.1

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Member Distributed Loads (BLC 9: Full Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
22	F	Z	007	007	%86.9	%100
23	E	Ζ	008	008	0	%100
24	С	Z	007	007	%86.9	%100
25	В	Z	008	008	0	%100
26	I	Z	007	007	%86.9	%100
27	Н	Ζ	008	008	0	%100
28	M1	Х	0	0	0	%100
29	M5	Χ	0	0	0	%100
30	M6	X	0	0	0	%100
31	M7	Х	0	0	0	%100
32	M8	Х	0	0	0	%100
33	M9	Х	0	0	0	%100
34	M10	Χ	0	0	0	%100
35	M11	Х	0	0	0	%100
36	M12	Х	0	0	0	%100
37	M13	Х	0	0	0	%100
38	M14	Х	0	0	0	%100
39	M15	Х	0	0	0	%100
40	M16	Х	0	0	0	%100
41	M17	Х	0	0	0	%100
42	M18	Х	0	0	0	%100
43	M19	Х	0	0	0	%100
44	M20	Χ	0	0	0	%100
45	M21	X	0	0	0	%100
46	F	Χ	0	0	0	%13.1
47	A	Χ	0	0	0	%100
48	С	Х	0	0	0	%100
49	I	Х	0	0	0	%13.1
50	F	X	0	0	%86.9	%100
51	Е	Х	0	0	0	%100
52	В	X	0	0	0	%100
53	I	Х	0	0	%86.9	%100
54	Н	Х	0	0	0	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Ζ	0	0	0	%100
2	M5	Z	007	007	0	%100
3	M6	Ζ	007	007	0	%100
4	M7	Z	006	006	0	%100
5	M8	Ζ	0	0	0	%100
6	M9	Z	006	006	0	%100
7	M10	Z	0	0	0	%100
8	M11	Z	013	013	0	%100
9	M12	Z	013	013	0	%100
10	M13	Z	013	013	0	%100
11	M14	Z	004	004	0	%100
12	M15	Z	017	017	0	%100
13	M16	Z	004	004	0	%100
14	M17	Z	013	013	0	%100
15	M18	Z	0	0	0	%100
16	M19	Z	0	0	0	%100
17	M20	Z	006	006	0	%100
18	M21	Z	006	006	0	%100
19	F	Z	006	006	0	%13.1
20	С	Z	006	006	0	%13.1



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Member Distributed Loads (BLC 10: Full Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
21	I	Ζ	006	006	0	%13.1
22	F	Ζ	006	006	%86.9	%100
23	E	Ζ	007	007	0	%100
24	С	Z	006	006	%86.9	%100
25	В	Z	007	007	0	%100
26	I	Ζ	006	006	%86.9	%100
27	Н	Ζ	007	007	0	%100
28	M1	X	0	0	0	%100
29	M5	X	.004	.004	0	%100
30	M6	X	.004	.004	0	%100
31	M7	X	.004	.004	0	%100
32	M8	X	0	0	0	%100
33	M9	X	.004	.004	0	%100
34	M10	X	0	0	0	%100
35	M11	X	.007	.007	0	%100
36	M12	Χ	.007	.007	0	%100
37	M13	X	.007	.007	0	%100
38	M14	Χ	.002	.002	0	%100
39	M15	X	.01	.01	0	%100
40	M16	X	.002	.002	0	%100
41	M17	X	.007	.007	0	%100
42	M18	Χ	0	0	0	%100
43	M19	X	0	0	0	%100
44	M20	X	.004	.004	0	%100
45	M21	Χ	.004	.004	0	%100
46	F	X	.003	.003	0	%13.1
47	Α	Χ	.003	.003	0	%100
48	С	Χ	.003	.003	0	%100
49	1	Χ	.003	.003	0	%13.1
50	F	Χ	.003	.003	%86.9	%100
51	Е	X	.004	.004	0	%100
52	В	Χ	.004	.004	0	%100
53		Χ	.003	.003	%86.9	%100
54	Н	Χ	.004	.004	0	%100

Member Distributed Loads (BLC 11 : Full Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Z	001	001	0	%100
2	M5	Z	001	001	0	%100
3	M6	Ζ	005	005	0	%100
4	M7	Ζ	001	001	0	%100
5	M8	Ζ	001	001	0	%100
6	M9	Ζ	005	005	0	%100
7	M10	Z	002	002	0	%100
8	M11	Ζ	002	002	0	%100
9	M12	Ζ	01	01	0	%100
10	M13	Ζ	002	002	0	%100
11	M14	Ζ	0	0	0	%100
12	M15	Ζ	007	007	0	%100
13	M16	Z	007	007	0	%100
14	M17	Ζ	01	01	0	%100
15	M18	Ζ	002	002	0	%100
16	M19	Z	001	001	0	%100
17	M20	Ζ	005	005	0	%100
18	M21	Ζ	001	001	0	%100
19	F	Z	003	003	0	%13.1

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Member Distributed Loads (BLC 11: Full Wind Members (60 Deg)) (Continued)

	Member Label	Direction		End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
20	С	Z	003	003	0	%13.1
21	1	Z	003	003	0	%13.1
22	F	Z	003	003	%86.9	%100
23	E	Z	004	004	0	%100
24	С	Z	003	003	%86.9	%100
25	В	Z	004	004	0	%100
26		Z	003	003	%86.9	%100
27	Н	Z	004	004	0	%100
28	M1	Χ	.002	.002	0	%100
29	M5	Χ	.002	.002	0	%100
30	M6	Х	.009	.009	0	%100
31	M7	X	.002	.002	0	%100
32	M8	Χ	.002	.002	0	%100
33	M9	X	.008	.008	0	%100
34	M10	Х	.004	.004	0	%100
35	M11	Χ	.004	.004	0	%100
36	M12	X	.017	.017	0	%100
37	M13	Χ	.004	.004	0	%100
38	M14	Х	0	0	0	%100
39	M15	Х	.013	.013	0	%100
40	M16	Х	.013	.013	0	%100
41	M17	Х	.017	.017	0	%100
42	M18	Х	.004	.004	0	%100
43	M19	Χ	.002	.002	0	%100
44	M20	Х	.008	.008	0	%100
45	M21	Х	.002	.002	0	%100
46	F	Χ	.006	.006	0	%13.1
47	Α	Χ	.006	.006	0	%100
48	С	X	.006	.006	0	%100
49	1	Х	.006	.006	0	%13.1
50	F	X	.006	.006	%86.9	%100
51	Е	Х	.007	.007	0	%100
52	В	Х	.007	.007	0	%100
53	1	Χ	.006	.006	%86.9	%100
54	Н	Χ	.007	.007	0	%100

Member Distributed Loads (BLC 12: Full Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M5	Z	0	0	0	%100
3	M6	Ζ	0	0	0	%100
4	M7	Z	0	0	0	%100
5	M8	Z	0	0	0	%100
6	M9	Z	0	0	0	%100
7	M10	Ζ	0	0	0	%100
8	M11	Ζ	0	0	0	%100
9	M12	Z	0	0	0	%100
10	M13	Z	0	0	0	%100
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100
13	M16	Z	0	0	0	%100
14	M17	Z	0	0	0	%100
15	M18	Z	0	0	0	%100
16	M19	Z	0	0	0	%100
17	M20	Z	0	0	0	%100
18	M21	Z	0	0	0	%100



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Member Distributed Loads (BLC 12: Full Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
19	F	Z	0	0	0	%13.1
20	С	Z	0	0	0	%13.1
21	1	Z	0	0	0	%13.1
22	F	Z	0	0	%86.9	%100
23	Е	Ζ	0	0	0	%100
24	С	Z	0	0	%86.9	%100
25	В	Z	0	0	0	%100
26		Z	0	0	%86.9	%100
27	Н	Z	0	0	0	%100
28	M1	Χ	.008	.008	0	%100
29	M5	X	0	0	0	%100
30	M6	Χ	.008	.008	0	%100
31	M7	X	0	0	0	%100
32	M8	X	.007	.007	0	%100
33	M9	X	.007	.007	0	%100
34	M10	Χ	.015	.015	0	%100
35	M11	Х	0	0	0	%100
36	M12	Х	.015	.015	0	%100
37	M13	Х	0	0	0	%100
38	M14	Х	.005	.005	0	%100
39	M15	Х	.005	.005	0	%100
40	M16	Х	.02	.02	0	%100
41	M17	Х	.015	.015	0	%100
42	M18	Х	.015	.015	0	%100
43	M19	Х	.007	.007	0	%100
44	M20	Х	.007	.007	0	%100
45	M21	X	0	0	0	%100
46	F	X	.007	.007	0	%13.1
47	A	X	.007	.007	0	%100
48	С	Х	.007	.007	0	%100
49	I	Х	.007	.007	0	%13.1
50	F	X	.007	.007	%86.9	%100
51	E	X	.008	.008	0	%100
52	В	X	.008	.008	0	%100
53	I	Х	.007	.007	%86.9	%100
54	Н	Х	.008	.008	0	%100

Member Distributed Loads (BLC 13: Full Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.005	.005	0	%100 ·
2	M5	Z	.001	.001	0	%100
3	M6	Z	.001	.001	0	%100
4	M7	Z	.001	.001	0	%100
5	M8	Ζ	.005	.005	0	%100
6	M9	Ζ	.001	.001	0	%100
7	M10	Ζ	.01	.01	0	%100
8	M11	Z	.002	.002	0	%100
9	M12	Z	.002	.002	0	%100
10	M13	Ζ	.002	.002	0	%100
11	M14	Ζ	.007	.007	0	%100
12	M15	Z	0	0	0	%100
13	M16	Z	.007	.007	0	%100
14	M17	Z	.002	.002	0	%100
15	M18	Z	.01	.01	0	%100
16	M19	Z	.005	.005	0	%100
17	M20	Z	.001	.001	0	%100

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Member Distributed Loads (BLC 13: Full Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
18	M21	Z	.001	.001	0	%100
19	F	Z	.003	.003	0	%13.1
20	C	Z	.003	.003	0	%13.1
21	1	Z	.003	.003	0	%13.1
22	F	Z	.003	.003	%86.9	%100
23	E	Z	.004	.004	0	%100
24	С	Z	.003	.003	%86.9	%100
25	В	Z	.004	.004	0	%100
26	1	Z	.003	.003	%86.9	%100
27	Н	Z	.004	.004	0	%100
28	M1	X	.009	.009	0	%100
29	M5	Х	.002	.002	0	%100
30	M6	X	.002	.002	0	%100
31	M7	X	.002	.002	0	%100
32	M8	X	.008	.008	0	%100
33	M9	Χ	.002	.002	0	%100
34	M10	X	.017	.017	0	%100
35	M11	X	.004	.004	0	%100
36	M12	X	.004	.004	0	%100
37	M13	Χ	.004	.004	0	%100
38	M14	X	.013	.013	0	%100
39	M15	Χ	0	0	0	%100
40	M16	X	.013	.013	0	%100
41	M17	X	.004	.004	0	%100
42	M18	X	.017	.017	0	%100
43	M19	Х	.008	.008	0	%100
44	M20	X	.002	.002	0	%100
45	M21	X	.002	.002	0	%100
46	F	X	.006	.006	0	%13.1
47	A	Х	.006	.006	0	%100
48	С	X	.006	.006	0	%100
49	I	Х	.006	.006	0	%13.1
50	F	X	.006	.006	%86.9	%100
51	E	X	.007	.007	0	%100
52	В	X	.007	.007	0	%100
53	I	X	.006	.006	%86.9	%100
54	Н	X	.007	.007	0	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.007	.007	0	%100
2	M5	Z	.007	.007	0	%100
3	M6	Z	0	0	0	%100
4	M7	Z	.006	.006	0	%100
5	M8	Ζ	.006	.006	0	%100
6	M9	Ζ	0	0	0	%100
7	M10	Z	.013	.013	0	%100
8	M11	Z	.013	.013	0	%100
9	M12	Z	0	0	0	%100
10	M13	Z	.013	.013	0	%100
11	M14	Ζ	.017	.017	0	%100
12	M15	Z	.004	.004	0	%100
13	M16	Z	.004	.004	0	%100
14	M17	Z	0	0	0	%100
15	M18	Z	.013	.013	0	%100
16	M19	Z	.006	.006	0	%100

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Member Distributed Loads (BLC 14: Full Wind Members (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
17	M20	Z	0	0	0	%100
18	M21	Z	.006	.006	0	%100
19	F	Z	.006	.006	0	%13.1
20	С	Z	.006	.006	0	%13.1
21	I	Z	.006	.006	0	%13.1
22	F	Z	.006	.006	%86.9	%100
23	E	Z	.007	.007	0	%100
24	С	Z	.006	.006	%86.9	%100
25	В	Z	.007	.007	0	%100
26	I	Z	.006	.006	%86.9	%100
27	Н	Z	.007	.007	0	%100
28	M1	X	.004	.004	0	%100
29	M5	Х	.004	.004	0	%100
30	M6	X	0	0	0	%100
31	M7	Χ	.004	.004	0	%100
32	M8	X	.004	.004	0	%100
33	M9	Х	0	0	0	%100
34	M10	X	.007	.007	0	%100
35	M11	Х	.007	.007	0	%100
36	M12	X	0	0	0	%100
37	M13	X	.007	.007	0	%100
38	M14	X	.01	.01	0	%100
39	M15	X	.002	.002	0	%100
40	M16	X	.002	.002	0	%100
41	M17	Χ	0	0	0	%100
42	M18	X	.007	.007	0	%100
43	M19	Х	.004	.004	0	%100
44	M20	X	0	0	0	%100
45	M21	X	.004	.004	0	%100
46	F	X	.003	.003	0	%13.1
47	A	X	.003	.003	0	%100
48	C	X	.003	.003	0	%100
49	I	X	.003	.003	0	%13.1
50	F	X	.003	.003	%86.9	%100
51	Е	Х	.004	.004	0	%100
52	В	X	.004	.004	0	%100
53	I	X	.003	.003	%86.9	%100
54	H	X	.004	.004	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
1	M1	Ζ	001	001	0	%100
2	M5	Z	004	004	0	%100
3	M6	Ζ	001	001	0	%100
4	M7	Ζ	004	004	0	%100
5	M8	Ζ	001	001	0	%100
6	M9	Ζ	001	001	0	%100
7	M10	Z	001	001	0	%100
8	M11	Ζ	006	006	0	%100
9	M12	Ζ	001	001	0	%100
10	M13	Ζ	005	005	0	%100
11	M14	Ζ	004	004	0	%100
12	M15	Ζ	004	004	0	%100
13	M16	Ζ	0	0	0	%100
14	M17	Z	001	001	0	%100
15	M18	Z	001	001	0	%100



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Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
16	M19	Z	001	001	0	%100
17	M20	Z	001	001	0	%100
18	M21	Z	004	004	0	%100
19	F	Z	003	003	0	%13.1
20	С	Z	003	003	0	%13.1
21	I	Z	003	003	0	%13.1
22	F	Ζ	003	003	%86.9	%100
23	Е	Ζ	003	003	0	%100
24	С	Ζ	003	003	%86.9	%100
25	В	Ζ	003	003	0	%100
26		Z	003	003	%86.9	%100
27	H	Ζ	003	003	0	%100
28	M1	Χ	0	0	0	%100
29	M5	X	0	0	0	%100
30	M6	X	0	0	0	%100
31	M7	X	0	0	0	%100
32	M8	Χ	0	0	0	%100
33	M9	X	0	0	0	%100
34	M10	Х	0	0	0	%100
35	M11	Х	0	0	0	%100
36	M12	Х	0	0	0	%100
37	M13	X	0	0	0	%100
38	M14	Χ	0	0	0	%100
39	M15	Χ	0	0	0	%100
40	M16	Х	0	0	0	%100
41	M17	X	0	0	0	%100
42	M18	Х	0	0	0	%100
43	M19	Х	0	0	0	%100
44	M20	Х	0	0	0	%100
45	M21	Х	0	0	0	%100
46	F	Х	0	0	0	%13.1
47	Α	Х	0	0	0	%100
48	C	X	0	0	0	%100
49	I	X	0	0	0	%13.1
50	F	Х	0	0	%86.9	%100
51	E	X	0	0	0	%100
52	В	X	0	0	0	%100
53		X	0	0	%86.9	%100
54	Ĥ	X	0	0	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M5	Z	003	003	0	%100
3	M6	Ζ	002	002	0	%100
4	M7	Z	003	003	0	%100
5	M8	Z	0	0	0	%100
6	M9	Z	002	002	0	%100
7	M10	Ζ	0	0	0	%100
8	M11	Z	004	004	0	%100
9	M12	Ζ	003	003	0	%100
10	M13	Z	004	004	0	%100
11	M14	Ζ	002	002	0	%100
12	M15	Z	004	004	0	%100
13	M16	Z	001	001	0	%100
14	M17	Z	003	003	0	%100

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Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
15	M18	Z	0	0	0	%100
16	M19	Ζ	0	0	0	%100
17	M20	Z	002	002	0	%100
18	M21	Z	003	003	0	%100
19	F	Ζ	003	003	0	%13.1
20	C	Ζ	003	003	0	%13.1
21	I	Ζ	003	003	0	%13.1
22	F	Z	003	003	%86.9	%100
23	E	Z	003	003	0	%100
24	С	Z	003	003	%86.9	%100
25	В	Z	003	003	0	%100
26	1	Z	003	003	%86.9	%100
27	Н	Z	003	003	0	%100
28	M1	Х	0	0	0	%100
29	M5	Х	.002	.002	0	%100
30	M6	Х	.001	.001	0	%100
31	M7	Х	.002	.002	0	%100
32	M8	Х	0	0	0	%100
33	M9	Х	.001	.001	0	%100
34	M10	Х	0	0	0	%100
35	M11	Х	.002	.002	0	%100
36	M12	Х	.002	.002	0	%100
37	M13	X	.002	.002	0	%100
38	M14	Χ	.001	.001	0	%100
39	M15	Х	.002	.002	0	%100
40	M16	Х	0	0	0	%100
41	M17	X	.002	.002	0	%100
42	M18	Х	0	0	0	%100
43	M19	X	0	0	0	%100
44	M20	Χ	.001	.001	0	%100
45	M21	Х	.002	.002	0	%100
46	F	Χ	.002	.002	0	%13.1
47	A	X	.002	.002	0	%100
48	C	X	.002	.002	0	%100
49	I	Χ	.002	.002	0	%13.1
50	F	X	.002	.002	%86.9	%100
51	E	X	.002	.002	0	%100
52	В	X	.002	.002	0	%100
53	Ī	X	.002	.002	%86.9	%100
54	Ĥ	X	.002	.002	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Ζ	0	0	0	%100
2	M5	Ζ	001	001	0	%100
3	M6	Ζ	001	001	0	%100
4	M7	Ζ	001	001	0	%100
5	M8	Z	0	0	0	%100
6	M9	Ζ	001	001	0	%100
7	M10	Ζ	001	001	0	%100
8	M11	Ζ	002	002	0	%100
9	M12	Ζ	002	002	0	%100
10	M13	Ζ	001	001	0	%100
11	M14	Z	001	001	0	%100
12	M15	Z	002	002	0	%100
13	M16	Ζ	001	001	0	%100



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Member Distributed Loads (BLC 23: Ice Wind Members (60 Deg)) (Continued)

	Member Label	Direction		End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
14	M17	Z	002	002	0	%100
15	M18	Z	001	001	0	%100
16	M19	Z	0	0	0	%100
17	M20	Z	001	001	0	%100
18	M21	Z	001	001	0	%100
19	F	Ζ	002	002	0	%13.1
20	С	Z	002	002	0	%13.1
21	1	Z	002	002	0	%13.1
22	F	Z	002	002	%86.9	%100
23	E	Ζ	002	002	0	%100
24	С	Z	002	002	%86.9	%100
25	В	Z	002	002	0	%100
26	I	Z	002	002	%86.9	%100
27	Н	Z	002	002	0	%100
28	M1	X	.001	.001	0	%100
29	M5	Х	.002	.002	0	%100
30	M6	X	.002	.002	0	%100
31	M7	X	.002	.002	0	%100
32	M8	Х	.001	.001	0	%100
33	M9	Χ	.002	.002	0	%100
34	M10	Х	.001	.001	0	%100
35	M11	X	.003	.003	0	%100
36	M12	Χ	.003	.003	0	%100
37	M13	Χ	.002	.002	0	%100
38	M14	Х	.001	.001	0	%100
39	M15	Х	.004	.004	0	%100
40	M16	Х	.002	.002	0	%100
41	M17	Х	.003	.003	0	%100
42	M18	X	.001	.001	0	%100
43	M19	Х	.001	.001	0	%100
44	M20	Χ	.002	.002	0	%100
45	M21	Х	.002	.002	0	%100
46	F	Χ	.003	.003	0	%13.1
47	Α	Χ	.003	.003	0	%100
48	С	Х	.003	.003	0	%100
49		Χ	.003	.003	0	%13.1
50	F	Χ	.003	.003	%86.9	%100
51	Е	Χ	.003	.003	0	%100
52	В	X	.003	.003	0	%100
53	I	Х	.003	.003	%86.9	%100
54	H	X	003	003	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Ζ	0	0	0	%100
2	M5	Ζ	0	0	0	%100
3	M6	Ζ	0	0	0	%100
4	M7	Ζ	0	0	0	%100
5	M8	Ζ	0	0	0	%100
6	M9	Z	0	0	0	%100
7	M10	Ζ	0	0	0	%100
8	M11	Ζ	0	0	0	%100
9	M12	Ζ	0	0	0	%100
10	M13	Z	0	0	0	%100
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100

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Member Distributed Loads (BLC 24: Ice Wind Members (90 Deg)) (Continued)

	Member Label		Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
13	M16	Z	0	0	0	%100
14	M17	Z	0	0	0	%100
15	M18	Z	0	0	0	%100
16	M19	Z	0	0	0	%100
17	M20	Z	0	0	0	%100
18	M21	Z	0	0	0	%100
19	F	Z	0	0	0	%13.1
20	С	Z	0	0	0	%13.1
21	1	Z	0	0	0	%13.1
22	F	Z	0	0	%86.9	%100
23	E	Ζ	0	0	0	%100
24	C	Z	0	0	%86.9	%100
25	В	Ζ	0	0	0	%100
26		Z	0	0	%86.9	%100
27	Н	Z	0	0	0	%100
28	M1	X	.002	.002	0	%100
29	M5	Х	.002	.002	0	%100
30	M6	X	.002	.002	0	%100
31	M7	X	.002	.002	0	%100
32	M8	X	.002	.002	0	%100
33	M9	X	.002	.002	0	%100
34	M10	Х	.003	.003	0	%100
35	M11	Х	.002	.002	0	%100
36	M12	X	.003	.003	0	%100
37	M13	Х	.002	.002	0	%100
38	M14	Х	.002	.002	0	%100
39	M15	Х	.002	.002	0	%100
40	M16	Х	.003	.003	0	%100
41	M17	Х	.003	.003	0	%100
42	M18	Х	.003	.003	0	%100
43	M19	X	.002	.002	0	%100
44	M20	Х	.002	.002	0	%100
45	M21	X	.002	.002	0	%100
46	F	X	.003	.003	0	%13.1
47	Α	Х	.003	.003	0	%100
48	C	X	.003	.003	0	%100
49	Ī	X	.003	.003	0	%13.1
50	F	X	.003	.003	%86.9	%100
51	Ë	X	.003	.003	0	%100
52	В	X	.003	.003	0	%100
53	1	X	.003	.003	%86.9	%100
54	Ĥ	X	.003	.003	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Ζ	.001	.001	0	%100
2	M5	Ζ	.001	.001	0	%100
3	M6	Ζ	0	0	0	%100
4	M7	Z	.001	.001	0	%100
5	M8	Z	.001	.001	0	%100
6	M9	Ζ	0	0	0	%100
7	M10	Ζ	.002	.002	0	%100
8	M11	Z	.002	.002	0	%100
9	M12	Ζ	.001	.001	0	%100
10	M13	Z	.001	.001	0	%100
11	M14	Z	.002	.002	0	%100

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Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	_End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
12	M15	Z	.001	.001	0	%100
13	M16	Z	.001	.001	0	%100
14	M17	Z	.001	.001	0	%100
15	M18	Z	.002	.002	0	%100
16	M19	Z	.001	.001	0	%100
17	M20	Z	0	0	0	%100
18	M21	Z	.001	.001	0	%100
19	F	Z	.002	.002	0	%13.1
20	С	Z	.002	.002	0	%13.1
21		Z	.002	.002	0	%13.1
22	F	Z	.002	.002	%86.9	%100
23	E	Z	.002	.002	0	%100
24	С	Z	.002	.002	%86.9	%100
25	В	Z	.002	.002	0	%100
26	1	Z	.002	.002	%86.9	%100
27	H	Z	.002	.002	0	%100
28	M1	X	.002	.002	0	%100
29	M5	X	.002	.002	0	%100
30	M6	X	.001	.001	0	%100
31	M7	X	.002	.002	0	%100
32	M8	X	.002	.002	0	%100
33	M9	X	.001	.001	0	%100
34	M10	X	.003	.003	0	%100
35	M11	X	.003	.003	0	%100
36	M12	X	.001	.001	0	%100
37	M13	X	.002	.002	0	%100
38	M14	X	.004	.004	0	%100
39	M15	X	.001	.001	0	%100
40	M16	X	.002	.002	0	%100
41	M17	X	.001	.001	0	%100
42	M18	X	.003	.003	0	%100
43	M19	X	.002	.002	0	%100
44	M20	X	.001	.001	0	%100
45	M21	X	.002	.002	0	%100
46	F	X	.003	.003	0	%13.1
47	 A	X	.003	.003	0	%100
48	C	X	.003	.003	0	%100
49	l l	X	.003	.003	0	%13.1
50	F	X	.003	.003	%86.9	%100
51	E	X	.003	.003	0	%100
52	В	X	.003	.003	0	%100 %100
53	i i	X	.003	.003	%86.9	%100
54	H	X	.003	.003	0	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M1	Ζ	.002	.002	0	%100 ⁻
2	M5	Ζ	.003	.003	0	%100
3	M6	Ζ	0	0	0	%100
4	M7	Ζ	.003	.003	0	%100
5	M8	Ζ	.002	.002	0	%100
6	M9	Ζ	0	0	0	%100
7	M10	Ζ	.003	.003	0	%100
8	M11	Ζ	.004	.004	0	%100
9	M12	Ζ	0	0	0	%100
10	M13	Z	.004	.004	0	%100

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

11 M14 Z .004 .004 0 12 M15 Z .002 .002 0 13 M16 Z .001 .001 0 14 M17 Z 0 0 0 15 M18 Z .003 .003 0 16 M19 Z .002 .002 0 17 M20 Z 0 0 0 18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 .003 23 E Z .003 .003 .003 .003	%100 %100 %100 %100 %100 %100 %100 %13.1 %13.1 %13.1 %100 %100
13 M16 Z .001 .001 0 14 M17 Z 0 0 0 15 M18 Z .003 .003 0 16 M19 Z .002 .002 0 17 M20 Z 0 0 0 18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 0 23 E Z .003 .003 0	%100 %100 %100 %100 %100 %100 %13.1 %13.1 %13.1 %100 %100
14 M17 Z 0 0 0 15 M18 Z .003 .003 0 16 M19 Z .002 .002 0 17 M20 Z 0 0 0 18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 .003 %86.9 23 E Z .003 .003 0	%100 %100 %100 %100 %100 %13.1 %13.1 %13.1 %100 %100
14 M17 Z 0 0 0 15 M18 Z .003 .003 0 16 M19 Z .002 .002 0 17 M20 Z 0 0 0 18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 .003 %86.9 23 E Z .003 .003 0	%100 %100 %100 %100 %100 %13.1 %13.1 %13.1 %100 %100
16 M19 Z .002 .002 0 17 M20 Z 0 0 0 18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 0 23 E Z .003 .003 0	%100 %100 %100 %100 %13.1 %13.1 %13.1 %100 %100
16 M19 Z .002 .002 0 17 M20 Z 0 0 0 18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 0 23 E Z .003 .003 0	%100 %100 %100 %13.1 %13.1 %13.1 %100 %100
17 M20 Z 0 0 0 18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 %86.9 23 E Z .003 .003 0	%100 %100 %13.1 %13.1 %13.1 %100 %100
18 M21 Z .003 .003 0 19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 %86.9 23 E Z .003 .003 0	%100 %13.1 %13.1 %13.1 %100 %100
19 F Z .003 .003 0 20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 %86.9 23 E Z .003 .003 0	%13.1 %13.1 %13.1 %100 %100
20 C Z .003 .003 0 21 I Z .003 .003 0 22 F Z .003 .003 %86.9 23 E Z .003 .003 0	%13.1 %13.1 %100 %100
21 I Z .003 .003 0 22 F Z .003 .003 %86.9 23 E Z .003 .003 0	%13.1 %100 %100
22 F Z .003 .003 %86.9 23 E Z .003 .003 0	%100 %100
23 E Z .003 .003 0	%100
24 C Z .003 .003 %86.9	
25 B Z .003 .003 0	%100
26 I Z .003 .003 %86.9	%100
27 H Z .003 .003 0	%100
28 M1 X .001 .001 0	%100
29 M5 X .002 .002 0	%100
30 M6 X 0 0 0	%100
31 M7 X .002 .002 0	%100
32 M8 X .001 .001 0	%100 %100
33 M9 X 0 0 0	%100
34 M10 X .002 .002 0	%100
35 M11 X .002 .002 0	%100 %100
36 M12 X 0 0 0	%100
37 M13 X .002 .002 0	%100
38 M14 X .002 .002 0	%100 %100
39 M15 X .001 .001 0	%100 %100
40 M16 X 0 0	%100
41 M17 X 0 0	%100 %100
42 M18 X .002 .002 0	%100 %100
43 M19 X .001 .001 0	%100 %100
44 M20 X 0 0 0	%100 %100
45 M21 X .002 .002 0	%100 %100
46 F X .002 .002 0	%13.1
47 A X .002 .002 0	%100
48 C X .002 .002 0	%100 %100
49 I X .002 .002 0	%13.1
50 F X .002 .002 %86.9	%100
51 E X .002 .002 0	%100 %100
52 B X .002 .002 0	%100 %100
53 I X .002 .002 %86.9	%100 %100
54 H X .002 .002 0	%100 %100

Member Distributed Loads (BLC 48 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	Start Location[ft,%]	End Location[ft,%]
1	M7	Υ	006	006	0	2.1
2	M8	Υ	009	006	0	2.1
3	M12	Υ	005	005	.216	1.216
4	M14	Υ	055	055	2.536	2.875
5	M17	Υ	008	008	.467	2.333
6	M17	Υ	008	008	2.333	4.2
7	M10	Υ	005	005	.451	1.451
8	M15	Υ	053	053	2.524	2.875
9	M18	Υ	008	008	.467	2.333

Company Designer Job Number Model Name

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Member Distributed Loads (BLC 48: BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
10	M18	Υ	008	008	2.333	4.2
11	M20	Υ	006	008	.9	3
12	M21	Υ	003	008	.9	3
13	M9	Υ	006	008	0	2.1
14	M11	Υ	005	005	.216	1.216
15	M13	Υ	008	008	.467	2.333
16	M13	Υ	008	008	2.333	4.2
17	M16	Υ	055	055	2.536	2.875
18	M19	Υ	006	006	.9	3

Member Distributed Loads (BLC 49 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,	End Magnitude[k/ft,F,	. Start Location[ft,%]	End Location[ft,%]
1	M7	Υ	007	007	0	2.1
2	M8	Υ	011	007	0	2.1
3	M12	Υ	006	006	.216	1.216
4	M14	Υ	07	07	2.536	2.875
5	M17	Υ	01	01	.467	2.333
6	M17	Υ	01	01	2.333	4.2
7	M10	Υ	006	006	.451	1.451
8	M15	Υ	068	068	2.524	2.875
9	M18	Υ	01	01	.467	2.333
10	M18	Υ	01	01	2.333	4.2
11	M20	Υ	008	01	.9	3
12	M21	Υ	004	01	.9	3
13	M9	Υ	008	01	0	2.1
14	M11	Υ	006	006	.216	1.216
15	M13	Υ	01	01	.467	2.333
16	M13	Υ	01	01	2.333	4.2
17	M16	Υ	07	07	2.536	2.875
18	M19	Υ	007	007	.9	3

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me	.Surface(
1	Dead	None	-	-1	•		12		3	,
2	Ice Dead	None					12	27	3	
3	Full Wind Antenna (0 Deg)	None					15			
4	Full Wind Antenna (30 Deg)	None					33			
5	Full Wind Antenna (60 Deg)	None					33			
6	Full Wind Antenna (90 Deg)	None					33			
7	Full Wind Antenna (120 Deg)	None					32			
8	Full Wind Antenna (150 Deg)	None					33			
9	Full Wind Members (0 Deg)	None						54		
10	Full Wind Members (30 Deg)	None						54		
11	Full Wind Members (60 Deg)	None						54		
12	Full Wind Members (90 Deg)	None						54		
13	Full Wind Members (120 Deg)	None						54		
14	Full Wind Members (150 Deg)	None						54		
15	Ice Wind Antenna (0 Deg)	None					15			
16	Ice Wind Antenna (30 Deg)	None					33			
17	Ice Wind Antenna (60 Deg)	None					33			
18	Ice Wind Antenna (90 Deg)	None					33			
19	Ice Wind Antenna (120 Deg)	None					32			
20	Ice Wind Antenna (150 Deg)	None					32			
21	Ice Wind Members (0 Deg)	None						54		
22	Ice Wind Members (30 Deg)	None						54		



Company : MasTec
Designer : EJM
Job Number : 18756-MNT1
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Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed/	Area(Me	.Surface(
23	Ice Wind Members (60 Deg)	None		•				54	,	,
24	Ice Wind Members (90 Deg)	None						54		
25	Ice Wind Members (120 Deg)	None						54		
26	Ice Wind Members (150 Deg)	None						54		
27	Seismic Antenna (0 Deg)	None					12			
28	Seismic Antenna (90 Deg)	None					12			
29	Seismic Members (0 Deg)	None		042	104					
30	Seismic Members (30 Deg)	None	.052	042	09					
31	Seismic Members (60 Deg)	None	.09	042	052					
32	Seismic Members (90 Deg)	None	.104	042	-6.401e					
33	Seismic Members (120 Deg)	None	.09	042	.052					
34	Seismic Members (150 Deg)	None	.052	042	.09					
35	Seismic Members (180 Deg)	None	1.28e-17	042	.104					
36	Seismic Members (210 Deg)	None	052	042	.09					
37	Seismic Members (240 Deg)	None	09	042	.052					
38	Seismic Members (270 Deg)	None	104	042	1.92e-17					
39	Seismic Members (300 Deg)	None	09	042	052					
40	Seismic Members (330 Deg)	None	052	042	09					
41	Seismic Vertical Antennas	None					12			
42	Man 1 (500 lbs)	None				1				
43	Man 2 (500 lbs)	None				1				
44	Man 3 (500 lbs)	None				1				
45	Man 4 (250 lbs)	None				1	•		•	
46	Man 5 (250 lbs)	None				1				
47	Man 6 (250 lbs)	None		·		1				
48	BLC 1 Transient Area Loads	None						18		
49	BLC 2 Transient Area Loads	None		•		•	•	18	•	

Load Combinations

	Description	S	PDelta	S	В	Fa	В	Fa	. B	Fa	В	Fa	В	Fa	В	Fa	В	Fa	В	Fa	В	Fa	. B	Fa
1	1.4D	Yes	Υ		1	1.4																		
2	1.2D + 1.0W 0°	Yes	Υ		1	1.2	3	1	9	1														
3	1.2D + 1.0W 30°	Yes	Υ		1	1.2	4	1	10	1														
4	1.2D + 1.0W 60°	Yes	Υ		1	1.2	5	1	11	1														
5	1.2D + 1.0W 90°	Yes	Υ		1	1.2	6	1	12	1														
6	1.2D + 1.0W 120°	Yes	Υ		1	1.2	7	1	13	1														
7	1.2D + 1.0W 150°	Yes	Υ		1	1.2	8	1	14	1														
8	1.2D + 1.0W 180°	Yes	Υ		1	1.2	3	-1	9	-1														
9	1.2D + 1.0W 210°	Yes	Υ		1	1.2	4	-1	10	-1														
10	1.2D + 1.0W 240°	Yes	Υ		1	1.2	5	-1	11	-1														
11	1.2D + 1.0W 270°	Yes	Υ		1	1.2	6	-1	12	-1														
12	1.2D + 1.0W 300°	Yes	Υ		1	1.2	7	-1	13	-1														
13	1.2D + 1.0W 330°	Yes	Υ		1	1.2	8	-1	14	-1														
14	1.2D + 1.0Di + 1.0Wi 0°	Yes	Υ		1	1.2	2	1	15	1	21	1												
15	1.2D + 1.0Di + 1.0Wi 30°	Yes	Υ		1	1.2	2	1	16	1	22	1												
16	1.2D + 1.0Di + 1.0Wi 60°	Yes	Υ		1	1.2	2	1	17	1	23	1												
17	1.2D + 1.0Di + 1.0Wi 90°	Yes	Υ		1	1.2	2	1	18	1	24	1												
18	1.2D + 1.0Di + 1.0Wi 120°	Yes	Υ		1	1.2	2	1	19	1	25	1												
19	1.2D + 1.0Di + 1.0Wi 150°	Yes	Υ		1	1.2	2	1	20	1	26	1												
20	1.2D + 1.0Di + 1.0Wi 180°	Yes	Υ		1	1.2	2	1	15	-1	21	-1												
21	1.2D + 1.0Di + 1.0Wi 210°	Yes	Υ		1	1.2	2	1	16	-1	22	-1												
22	1.2D + 1.0Di + 1.0Wi 240°	Yes	Υ		1	1.2	2	1	17	-1	23	-1												
23	1.2D + 1.0Di + 1.0Wi 270°	Yes	Υ		1	1.2	2	1	18	-1	24	-1												
24	1.2D + 1.0Di + 1.0Wi 300°	Yes	Υ		1	1.2	2	1	19		25													
25	1.2D + 1.0Di + 1.0Wi 330°	Yes	Υ		1	1.2	2	1	20	-1	26													



Company Designer Job Number Model Name

: MasTec : EJM : 18756-MNT1

: 876380-O&G WOODBURY

May 16, 2019 9:34 AM Checked By:___

Load Combinations (Continued)

26 1.29+1.5Lm 1+1.0W Yes Y 1 1.2 3 .066 9 .066 42 1.5 27 1.29+1.5Lm 1+1.0W Yes Y 1 1.2 5 .068 11 .066 42 1.5 28 1.29+1.5Lm 1+1.0W Yes Y 1 1.2 6 .066 12 .066 42 1.5 30 1.29+1.5Lm 1+1.0W Yes Y 1 1.2 7 .066 13 .066 42 1.5 31 1.29+1.5Lm 1+1.0W Yes Y 1 1.2 8 .066 14 .066 42 1.5 31 1.29+1.5Lm 1+1.0W Yes Y 1 1.2 8 .066 14 .066 42 1.5 32 1.29+1.5Lm 1+1.0W Yes Y 1 1.2 8 .066 14 .066 42 1.5 33 1.20+1.5Lm 1+1.0W Yes Y 1 1.2 8 .066 14 .066 42 1.5 33 1.20+1.5Lm 1+1.0W Yes Y 1 1.2 5 .0 11 .0 42 1.5 34 1.20+1.5Lm 1+1.0W Yes Y 1 1.2 6 .061 12 .0 42 1.5 35 1.20+1.5Lm 1+1.0W Yes Y 1 1.2 6 .0 11 .0 42 1.5 36 1.20+1.5Lm 1+1.0W Yes Y 1 1.2 6 .0 11 .0 42 1.5 37 1.20+1.5Lm 1+1.0W Yes Y 1 1.2 7 .0 13 .0 42 1.5 38 1.20+1.5Lm 1+1.0W Yes Y 1 1.2 8 .0 14 .0 42 1.5 39 1.20+1.5Lm 1.0W Yes Y 1 1.2 5 .0 11 .0 42 1.5 39 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 5 .0 11 .0 42 1.5 40 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 5 .0 14 .0 42 1.5 41 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 5 .0 14 .0 42 1.5 42 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 5 .0 14 .0 42 1.5 43 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 5 .0 14 .0 42 1.5 44 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 5 .0 14 .0 42 1.5 45 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 5 .0 14 .0 42 1.5 46 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 6 .0 606 12 .0 643 1.5 47 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 8 .0 61 4.0 643 1.5 48 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 8 .0 14 .0 42 1.5 49 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 8 .0 14 .0 42 1.5 40 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 8 .0 14 .0 42 1.5 41 1.20+1.5Lm 2+1.0W Yes Y 1 1.2 8 .0 14 .0 42 1.5 42 1.20+1.5Lm 3+1.0W Yes Y 1 1.2 8 .0 14 .0 42 1.5 43 1.20+1.5Lm 3+1.0W Yes Y 1 1.2 8 .0 14 .0 14 .0 14 .0 15 44 1.20+1.5Lm 3+1.0W Yes Y 1 1.2 8 .0 14 .0 14 .0 14 .0 15 45 1.20+1.5Lm 3+1.0W Yes Y 1 1.2 8 .0 14 .	Description	S	PDelta	S	R	Fa	B	Fa	R	Fa	R	Fa	R	Fa	R	Fa	R	Fa	В	Fa	R	Fa	B	Fa
27 12D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 4 066 10 066 42 1.5 29 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 5 066 11 066 42 1.5 30 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 6 066 12 066 42 1.5 30 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 7 066 13 066 42 1.5 31 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 066 14 066 42 1.5 32 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 066 14 066 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 0.06 14 0.66 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 5 -0 11 -0 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 6 -0 12 -0 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 6 -0 12 -0 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 -0 14 -0 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 -0 14 -0 42 1.5 33 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 -0 14 -0 42 1.5 33 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 -0 14 -0 42 1.5 33 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 -0 14 -0 42 1.5 33 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 4 -0.66 10 066 43 1.5 40 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 5 -0.66 10 066 43 1.5 41 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 5 -0 11 -0 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 7 -0 40 1.06 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 7 -0 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 7 -0 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 7 -0 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 7 -0 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 7 -0 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 6 -0 1.2 -0 44		Yes		Τ										1 a	<u> </u>	1 a	<u>التا</u>	1 a	J	T 4	J	1 a	D	1 a
28 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 5 066 11 066 42 1.5 29 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 7 066 13 066 42 1.5 30 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 7 066 13 066 42 1.5 31 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 0.66 14 066 42 1.5 32 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 0.66 14 066 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 0.66 14 066 42 1.5 33 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 8 0.66 14 066 42 1.5 34 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 6 0.0 10 - 0 42 1.5 35 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 6 0.0 12 0 42 1.5 36 1.2D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 7 0.0 13 0 42 1.5 37 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0 14 0 42 1.5 38 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0 14 0 42 1.5 38 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0 14 0 42 1.5 39 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0 14 0 42 1.5 39 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 5 0.66 11 0.66 43 1.5 41 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 5 0.66 11 0.66 43 1.5 41 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 6 0.66 12 0.66 43 1.5 42 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.06 14 0.66 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.06 14 0.66 43 1.5 44 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.06 14 0.66 43 1.5 45 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.06 14 0.66 43 1.5 46 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.06 14 0.66 43 1.5 47 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.06 14 0.66 43 1.5 49 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 49 1.2D + 1.5Lm 2 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 50 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0 14 0 43 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 0.0		_			T :																			
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32 12D + 1.5Lm 1 + 1.0W Yes Y 1 1.2 4 -0 10 -0 42 1.5		_			-																			
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50 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 3 .066 9 .066 44 1.5 51 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 4 .066 10 .066 44 1.5 52 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 5 .066 11 .066 44 1.5 53 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 6 .066 12 .066 44 1.5 54 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 .066 14 .066 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 .066 14 .066 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 .066 14 .066 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 3 -0 9 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 4 -0 10 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm 1 30° Yes Y 1 1.2 45 1.5 55 1.2D + 1.5Lm					1	_																		
51 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 4 .066 10 .066 44 1.5 52 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 .066 11 .066 44 1.5 53 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 .066 12 .066 44 1.5 54 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 .066 13 .066 44 1.5 55 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 .066 14 .066 44 1.5 56 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 4 -0 10 -0 44 1.5 58 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 60 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 13 <t< td=""><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>					1																			
52 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 .066 11 .066 44 1.5 53 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 .066 12 .066 44 1.5 54 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 .066 13 .066 44 1.5 55 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 .066 14 .066 44 1.5 56 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 3 0 9 0 44 1.5 57 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 0 11 0 44 1.5 59 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 0 14 1.5 60 1.2D + 1.5Lw_3 + 1.0W Yes Y 1 1.2 8 0 14 0 44					1	1.2																		
53 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 0.06 12 0.06 44 1.5 54 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 0.06 13 0.06 44 1.5 55 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 0.06 14 0.06 44 1.5 56 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 4 -0 44 1.5 58 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 59 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 12 -0 44 1.5 60 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 61 1.2D + 1.5Lv_1 1 0° Yes Y 1 1.2 45 1.5 63		_	<u>Y</u>		1																			
54 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 .066 13 .066 44 1.5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 .066 14 .066 44 1.5 5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 3 -0 9 -0 44 1.5 5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 -0 13 -0 44 1.5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 5 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 5 1.2D + 1.5Lv 1 0° Yes Y 1 1.2 45 1.5 5 1.2D + 1.5Lv 1 0° Yes Y 1 1.2 45 1.5 5 1.2D + 1.5Lv 1 60° Yes Y 1 1.2 45 1.5 5 1.2D + 1.5Lv 1 60° Yes Y 1 1.2 45 1.5 5 1.2D + 1.5Lv 1 90° Yes Y 1 1.2 45 1.5 5 1.2D + 1.5Lv 1 90° Yes Y 1 1.2 45 1.5 5 1.2D + 1.5Lv 1 120° Yes Y 1 1.2 45 1.5 5 1.2D + 1.	<u> </u>	_			1																			
55 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 .066 14 .066 44 1.5 56 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 3 -0 9 -0 44 1.5 57 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 58 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 59 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 60 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 -0 13 -0 44 1.5 61 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 62 1.2D + 1.5Lv_1 0° Yes Y 1 1.2 45 1.5 64 1.2D + 1.5Lv_1 0° Yes Y 1 1.2 45 1.5 65 1.2D + 1.5Lv_1 0° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 10° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 10° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 10° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 10° Yes Y 1 1.2 45 1.5					1																			
56 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 3 -0 9 -0 44 1.5 1.5 57 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 4 -0 10 -0 44 1.5 1.5 58 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 1.5 60 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 -0 13 -0 44 1.5 1.5 61 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 1.5 62 1.2D + 1.5Lv 1 0° Yes Y 1 1.2 45 1.5 1.2 1.	-	_			1	_																		
57 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 4 -0 10 -0 44 1.5 58 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 59 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 60 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 -0 13 -0 44 1.5 61 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 62 1.2D + 1.5Lv_1 0° Yes Y 1 1.2 45 1.5 63 1.2D + 1.5Lv 1 30° Yes Y 1 1.2 45 1.5 64 1.2D + 1.5Lv 1 60° Yes Y 1 1.2 45 1.5 65 1.2D + 1.5Lv 1 90° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5		-			_																			
58 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 5 -0 11 -0 44 1.5 59 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 60 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 -0 13 -0 44 1.5 61 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 62 1.2D + 1.5Lv_1 0° Yes Y 1 1.2 45 1.5 63 1.2D + 1.5Lv_1 30° Yes Y 1 1.2 45 1.5 64 1.2D + 1.5Lv_1 60° Yes Y 1 1.2 45 1.5 65 1.2D + 1.5Lv_1 90° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5	_	_			1																			
59 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 6 -0 12 -0 44 1.5 Image: 1.2 mode of the content	_	-			1																			
60 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 7 -0 13 -0 44 1.5 61 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 62 1.2D + 1.5Lv_1 0° Yes Y 1 1.2 45 1.5 63 1.2D + 1.5Lv_1 60° Yes Y 1 1.2 45 1.5 64 1.2D + 1.5Lv_1 60° Yes Y 1 1.2 45 1.5 65 1.2D + 1.5Lv_1 90° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5		_			1																			
61 1.2D + 1.5Lm_3 + 1.0W Yes Y 1 1.2 8 -0 14 -0 44 1.5 62 1.2D + 1.5Lv_1 0° Yes Y 1 1.2 45 1.5 63 1.2D + 1.5Lv_1 30° Yes Y 1 1.2 45 1.5 64 1.2D + 1.5Lv_1 60° Yes Y 1 1.2 45 1.5 65 1.2D + 1.5Lv_1 90° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5		_			1																			
62 1.2D + 1.5Lv 1 0° Yes Y 1 1.2 45 1.5		_			1	_																		
63 1.2D + 1.5Lv 1 30° Yes Y 1 1.2 45 1.5 64 1.2D + 1.5Lv 1 60° Yes Y 1 1.2 45 1.5 65 1.2D + 1.5Lv 1 90° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv 1 120° Yes Y 1 1.2 45 1.5	61 1.2D + 1.5Lm_3 + 1.0W	Yes	Υ		1					0	44	1.5												
64 1.2D + 1.5Lv_1 60° Yes Y 1 1.2 45 1.5 65 1.2D + 1.5Lv_1 190° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5	62 1.2D + 1.5Lv_1 0°	Yes			1	1.2	45	1.5																
65 1.2D + 1.5Lv 1 90° Yes Y 1 1.2 45 1.5 66 1.2D + 1.5Lv 1 120° Yes Y 1 1.2 45 1.5	63 1.2D + 1.5Lv 1 30°	Yes			1																			
66 1.2D + 1.5Lv_1 120° Yes Y 1 1.2 45 1.5	64 1.2D + 1.5Lv_1 60°	Yes			1																			
			Υ		1	1.2	45	1.5																
07 4 0D + 4 EL + 4 4E00 Maa N					1																			
	67 1.2D + 1.5Lv 1 150°		Y		1																		<u></u>	
68 1.2D + 1.5Lv_1 180° Yes Y 1 1.2 45 1.5					1																			
69 1.2D + 1.5Lv 1 210° Yes Y 1 1.2 45 1.5	69 1.2D + 1.5Lv 1 210°	Yes				1.2	45	1.5																
70 1.2D + 1.5Lv 1 240° Yes Y 1 1.2 45 1.5	70 1.2D + 1.5Lv 1 240°	Yes			1	1.2	45	1.5																
71 1.2D + 1.5Lv 1 270° Yes Y 1 1.2 45 1.5					1																			
72 1.2D + 1.5Lv_1 300° Yes Y 1 1.2 45 1.5					1																			
73 1.2D + 1.5Lv 1 330° Yes Y 1 1.2 45 1.5					1																			
74 1.2D + 1.5Lv_2 0° Yes Y 1 1.2 46 1.5					1																			
75 1.2D + 1.5Lv 2 30° Yes Y 1 1.2 46 1.5					1																			
76 1.2D + 1.5Lv_2 60° Yes Y 1 1.2 46 1.5					1																			
77 1.2D + 1.5Lv 2 90° Yes Y 1 1.2 46 1.5					1																			
78 1.2D + 1.5Lv_2 120° Yes Y 1 1.2 46 1.5					1																			
79 1.2D + 1.5Lv 2 150° Yes Y 1 1.2 46 1.5	79 1.2D + 1.5Lv 2 150°	Yes			1																			
80 1.2D + 1.5Lv_2 180° Yes Y 1 1.2 46 1.5					_																			
81 1.2D + 1.5Lv 2 210° Yes Y 1 1.2 46 1.5					1																			
82 1.2D + 1.5Lv_2 240° Yes Y 1 1.2 46 1.5	82 1.2D + 1.5Lv_2 240°	Yes	Υ		1	1.2	46	1.5																



Company : MasTec
Designer : EJM
Job Number : 18756-MNT1

Model Name : 876380-O&G WOODBURY

May 16, 2019 9:34 AM Checked By:__

Load Combinations (Continued)

	Description	S	PDelta	S	В	Fa	В	Fa	В	Fa	В	Fa	В	Fa	В	Fa	В	Fa	В	Fa	В	Fa	B	Fa
83	1.2D + 1.5Lv 2 270°	Yes	Υ		1	1.2	46	1.5																
84	1.2D + 1.5Lv 2 300°	Yes	Υ		1	1.2	46	1.5																
85	1.2D + 1.5Lv 2 330°	Yes	Υ		1	1.2	46	1.5																
86	1.2D + 1.5Lv 3 0°	Yes	Υ		1	1.2	47	1.5																
87	1.2D + 1.5Lv 3 30°				1	1.2	47	1.5																
88	1.2D + 1.5Lv 3 60°	Yes			1	1.2	47	1.5																
89	1.2D + 1.5Lv 3 90°	Yes	Υ		1	1.2	47	1.5															Ĺ	
90	1.2D + 1.5Lv 3 120°	Yes	Υ		1			1.5																
91	1.2D + 1.5Lv 3 150°	Yes			1	1.2	47	1.5																
92	1.2D + 1.5Lv 3 180°	Yes			1	1.2	47	1.5																
93	1.2D + 1.5Lv 3 210°	Yes	Υ		1	1.2	47	1.5															Ĺ	
94	1.2D + 1.5Lv 3 240°	Yes	Υ		1	1.2	47	1.5																
95	1.2D + 1.5Lv 3 270°	Yes			1	1.2	47	1.5																
96	1.2D + 1.5Lv 3 300°	Yes	Υ		1	1.2	47	1.5																
97	1.2D + 1.5Lv 3 330°	Yes	Υ		1	1.2	47	1.5																
98	1.2D + 1.0EV +1.0 EH 0°	Yes			1	1.2	27	1	28		29	1	40	1										
99	1.2D + 1.0EV +1.0 EH 30°	Yes	Υ		1			.866				1	40	1										
100	1.2D + 1.0EV +1.0 EH 60°	Yes			1	1.2	27	.5	28	.866	31	1	40	1										
	1.2D + 1.0EV +1.0 EH 90°				1	1.2			28		32	1	40	1										
	1.2D + 1.0EV +1.0 EH 12				1	1.2	27	5	28	.866	33	1	40	1										
	1.2D + 1.0EV +1.0 EH 15				1	1.2	27	8	28	.5	34	1	40	1									Ĺ	
	1.2D + 1.0EV +1.0 EH 18				1	1.2	27	-1	28		35	1	40	1										
105	1.2D + 1.0EV +1.0 EH 21	Yes	Υ		1	1.2	27	8	28	5	36	1	40	1										
	1.2D + 1.0EV +1.0 EH 24				1	1.2	27	5	28	8	37	1	40	1										
	1.2D + 1.0EV +1.0 EH 27				1	1.2	27		28	-1	38	1	40	1										
	1.2D + 1.0EV +1.0 EH 30				1	1.2	27	.5	28	8	39	1	40	1										
109	1.2D + 1.0EV +1.0 EH 33	Yes	Υ		1	1.2	27	.866	28	5	40	1	40	1										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N27	max	.848	13	1.985	46	1.452	13	355	37	2.867	13	595	54
2		min	861	7	.429	52	-1.448	7	-1.64	20	-2.871	7	-3.083	47
3	N31	max	1.686	11	1.985	50	.101	2	3.48	50	2.87	5	.141	53
4		min	-1.684	5	.429	32	124	8	.774	32	-2.874	11	151	35
5	N29	max	.839	9	1.986	30	1.47	3	254	38	2.873	9	2.95	29
6		min	829	3	.43	48	-1.462	0	-1.858	32	-2.876	3	.68	58
7	Totals:	max	2.557	11	5.588	25	2.459	2						
8		min	-2.557	5	2.118	2	-2.459	8						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code	Loc[ft]	LC	Shear	Loc[ft]	Dir LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y	phi*Mn zC	b Eqn
1	M1	PIPE 3.0	.418	4.427	21	.132	4.427	48	28.251	65.205	5.749	5.749 1	H1-1b
2	M5	PIPE 3.0	.420	8.073	16	.132	8.073	32	28.251	65.205	5.749	5.749 1	H1-1b
3	M6	PIPE 3.0	.419	4.427	25	.132	4.427	52	28.251	65.205	5.749	5.749 1	H1-1b
4	M7	L2x2x4	.180	3	20	.022	3	z 15	19.394	30.586	.691	1.577 1	H2-1
5	M8	L2x2x4	.184	3	24	.016	3	y 18	19.394	30.586	.691	1.577 1	H2-1
6	M9	L2x2x4	.185	3	16	.016	3	y 22	19.394	30.586	.691	1.577 1	H2-1
7	M10	PL4 x 3/8	.344	.295	13	.170	1.389	y 32	9.928	48.6	.38	4.05 1	H1-1b
8	M11	PL4 x 3/8	.333	.295	9	.172	1.389	y 52	9.928	48.6	.38	4.05 1	H1-1b
9	M12	PL4 x 3/8	.319	.295	5	.171	1.389	y 48	9.928	48.6	.38	4.05 1	H1-1b
10	M13	PL4 x 3/8	.553	2.333	15	.291	.243	y 20	5.065	48.6	.38	3.559 1	H1-1b
11	M14	HSS4X4X5	.273	0	13	.067	0	y 49	129.158	132.84	15.093	15.093	H1-1b
12	M15	HSS4X4X5	.273	0	3	.067	0	y 33	129.158	132.84	15.093	15.093 2	H1-1b
13	M16	HSS4X4X5	.273	0	11	.067	0	y 53	129.158	132.84	15.093	15.093 2	H1-1b



Company Designer Job Number Model Name

: MasTec : EJM : 18756-MNT1

: 876380-O&G WOODBURY

May 16, 2019 9:34 AM Checked By:___

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code	Loc[ft]	LC	Shear	Loc[ft]	Dir LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y	phi*Mn z Cb Eqn
14	M17	PL4 x 3/8	.557	2.333	23	.292	.243	y 16	5.065	48.6	.38	3.56 1 H1-1b
15	M18	PL4 x 3/8	.559	2.333	19	.293	.243	y 24	5.065	48.6	.38	3.555 1 H1-1b
16	M19	L2x2x4	.180	0	23	.023	0	y 16	19.394	30.586	.691	1.577 1 H2-1
17	M20	L2x2x4	.181	0	15	.023	0	y 20	19.394	30.586	.691	1.577 1 H2-1
18	M21	L2x2x4	.183	0	20	.015	0	z 14	19.394	30.586	.691	1.577 1 H2-1
19	D	PIPE 2.0	.504	3.125	12	.031	0	12	20.867	32.13	1.872	1.872 1 H1-1b
20	F	PIPE 2.0	.081	3.125	12	.011	3.063	12	20.867	32.13	1.872	1.872 1 H1-1b
21	E	PIPE 2.5	.023	4.5	12	.002	4.5	12	26.137	50.715	3.596	3.596 1 H1-1b
22	Α	PIPE 2.0	.503	3.125	8	.031	0	8	20.867	32.13	1.872	1.872 1 H1-1b
23	С	PIPE 2.0	.081	3.125	8	.011	3.063	8	20.867	32.13	1.872	1.872 1 H1-1b
24	В	PIPE 2.5	.023	4.5	7	.002	4.5	7	26.137	50.715	3.596	3.596 1 H1-1b
25	G	PIPE 2.0	.504	3.125	4	.031	0	4	20.867	32.13	1.872	1.872 1 H1-1b
26	ĺ	PIPE 2.0	.081	3.125	4	.011	3.063	4	20.867	32.13	1.872	1.872 1 H1-1b
27	Н	PIPE 2.5	.023	4.5	4	.002	4.5	4	26.137	50.715	3.596	3.596 1 H1-1b

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APPENDIX D ADDITIONAL CALCUATIONS

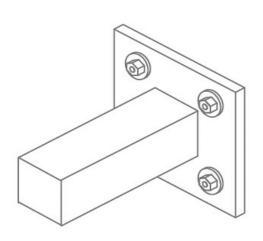


Bolt Calcuations:

Bolt Size:	5/8	in
# Bolts:	4	
Plate Width:	10	in
Plate Height:	10	in
Bolt H Gap:	7	in
Bolt V Gap:	7	in
Plate T:	0.625	in
Bolt Grade:	A325N	
Fu _{bolt}	120	ksi
r:	4.950	in
J:	98.000	in ⁴ /in ²
Bolt Area, _{Normal} :	0.307	
Bolt Area, Net Tensile:	0.226	in ²

Allowable Shear:	12.4	kip
Allowable Tension:	20.3	kip

Tension Capacity:	17.5%
Shear Capacity:	19.0%
Combined Capacity:	4.3%



Bolt Capacity: 19.0%

Plate Calculations:

Horizontal Member Height:	4	in
Horizontal Member Width:	4	in
Plate Grade:	A36	
Plate Fy:	36	ksi

Mx =	8.916	k*in
Mz =	8.955	k*in

Zx =	0.977	in ³
Zz =	0.977	in ³

ØMpy (X) =	31.641	k - in
ØMpx (X) =	31.641	k - in

Plate Capacity: 28.3%



Address:

No Address at This Location

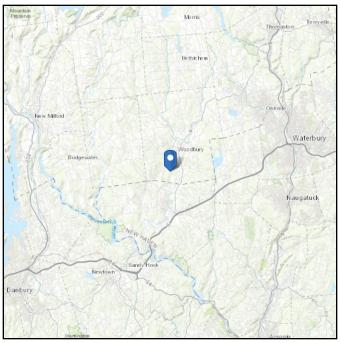
ASCE 7 Hazards Report

ASCE/SEI 7-10 **Elevation:** 589.96 ft (NAVD 88) Standard:

Risk Category: || Latitude: 41.522

Soil Class: D - Stiff Soil Longitude: -73.220736





Wind

Results:

Wind Speed: 118 Vmph

10-year MRI 76 Vmph 25-year MRI 85 Vmph 50-year MRI 90 Vmph 100-year MRI 97 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1-CC-4, incorporating errata of

120mph per CT design criteria

March 12, 2014

Date Accessed: Wed May 15 2019

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

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

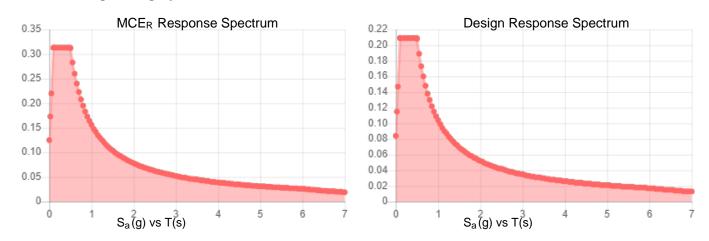
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.



Seismic

Site Soil Class: Results:	D - Stiff Soil			
S _s :	0.196	S _{DS} :	0.209	
S_1 :	0.065	S_{D1} :	0.104	
F _a :	1.6	T _L :	6	
F_{v} :	2.4	PGA:	0.103	
S _{MS} :	0.313	PGA _M :	0.164	
S _{M1} :	0.156	F _{PGA} :	1.594	
		1. •	1	

Seismic Design Category B



Data Accessed: Wed May 15 2019

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating

Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with

ASCE/SEI 7-10 Ch. 21 are available from USGS.



Ice

Results:

Ice Thickness: 0.75 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

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

Date Accessed: Wed May 15 2019

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

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

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

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Exhibit F

Power Density/RF Emissions Report

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CTNH350A

NH350/Global-Woodbury 202 Great Hollow Road Woodbury, CT 06798

May 20, 2019

Transcom Engineering Project Number: 737001-0025

Site Compliance Summary		
Compliance Status:	COMPLIANT	
Site total MPE% of FCC general population allowable limit:	29.67 %	

Wireless Network Design and Deployment

May 20, 2019

T-MOBILE Attn: Jason Overbey, RF Manager 35 Griffin Road South Bloomfield, CT 6009

Emissions Analysis for Site: **CTNH350A – NH350/Global-Woodbury**

Transcom Engineering, Inc ("Transcom") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **202 Great Hollow Road, Woodbury, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general 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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μ W/cm²). The general population exposure limits for the 600 & 700 MHz bands are approximately 400 μ W/cm² and 467 μ W/cm² respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) is 1000 μ W/cm². Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Wireless Network Design and Deployment

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.

Wireless Network Design and Deployment

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **202 Great Hollow Road, Woodbury, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20

Table 1: Channel Data Table

Wireless Network Design and Deployment

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

			Antenna
	Antenna		Centerline
Sector	Number	Antenna Make / Model	(ft)
A	1	RFS APXV18-206516S-C-A20	87
A	2	RFS APXVAARR24_43-U-NA20	87
В	1	RFS APXV18-206516S-C-A20	87
В	2	RFS APXVAARR24_43-U-NA20	87
C	1	RFS APXV18-206516S-C-A20	87
C	2	RFS APXVAARR24_43-U-NA20	87

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

Wireless Network Design and Deployment

RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

					Total TX		
Antenna			Antenna Gain	Channel	Power		
ID	Antenna Make / Model	Frequency Bands	(dBd)	Count	(W)	ERP (W)	MPE %
Antenna	RFS						
A1	APXV18-206516S-C-A20	1900 MHz (PCS)	16.3	5	175	7,465.14	4.09
Antenna	RFS						
A2	APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	3.18
				Sect	or A Compo	site MPE%	7.27
Antenna	RFS						
B1	APXV18-206516S-C-A20	1900 MHz (PCS)	16.3	5	175	7,465.14	4.09
Antenna	RFS						
B2	APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	3.18
				Sect	or B Compo	site MPE%	7.27
Antenna	RFS						
C1	APXV18-206516S-C-A20	1900 MHz (PCS)	16.3	5	175	7,465.14	4.09
Antenna	RFS						
C2	APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	3.18
				Sect	or C Compo	site MPE%	7.27

Table 3: T-MOBILE Emissions Levels

Wireless Network Design and Deployment

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite MPE value for the site.

Site Composite MPE%				
Carrier	MPE%			
T-MOBILE – Max Per Sector Value	7.27 %			
Sprint	5.10 %			
AT&T	13.07 %			
Verizon Wireless	3.50 %			
Nextel	0.59 %			
CL&P	0.14 %			
Site Total MPE %:	29.67 %			

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	7.27 %		
T-MOBILE Sector B Total: 7.27 %			
T-MOBILE Sector C Total:	7.27 %		
Site Total:	29.67 %		

Table 5: Site MPE Summary

Wireless Network Design and Deployment

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table* 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (µW/cm²)	Frequency (MHz)	Allowable MPE (µW/cm²)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	4	1,706.32	87	37.40	1900 MHz (PCS)	1000	3.74%
T-Mobile 1900 MHz (PCS) GSM	1	639.87	87	3.51	1900 MHz (PCS)	1000	0.35%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	87	8.65	600 MHz	400	2.16%
T-Mobile 700 MHz LTE	2	432.54	87	4.74	700 MHz	467	1.02%
						Total:	7.27%

Table 6: T-MOBILE Maximum Sector MPE Power Values

Wireless Network Design and Deployment

Summary

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

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

T-MOBILE Sector	Power Density Value (%)	
Sector A:	7.27 %	
Sector B:	7.27 %	
Sector C:	7.27 %	
T-MOBILE Maximum	7.27 %	
Total (per sector):	1.21 %	
Site Total:	29.67 %	
Site Compliance Status:	COMPLIANT	

The anticipated composite MPE value for this site assuming all carriers present is **29.67** % 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.

Scott Heffernan

RF Engineering Director

Transcom Engineering, Inc

PO Box 1048

Sterling, MA 01564