CROWN CASTLE

1 Cityplace Dr, Suite 490

Creve Coeur, MO 63141

Phone: (314) 513-0147

www.crowncastle.com

June 30, 2021

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

RE: **Notice of Exempt Modification for T-Mobile**
Crown Site ID# 806359; T-Mobile Site ID# CTNH009B
423 Oronoque Rd Milford, CT 06460
Latitude: 41° 14' 16.23" N / Longitude: 73° 5' 10.00" W

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 81-foot mount on the existing 100-foot Monopole Tower located at 423 Oronoque Rd in Milford, CT. The property is owned by David Guernsey and the Tower by Crown Castle. T-Mobile now intends to replace nine (9) existing antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:
Tower:

Remove and Replace:
(3) Ericsson - AIR21 KRC118023-1_B2A_B4P Antennas **(REMOVE) –** Ericsson-AIR6449 B41 Antennas **(REPLACE)**

(3) Andrew - LNX-6515DS-A1M Antennas **(REMOVE)** - (3) RFS APXVAALL24_43-UNA20 Antennas **(REPLACE)**

(3) Ericson-AIR21 KRC1180461_B2P_B4A Antennas **(REMOVE) –** (3) Ericsson AIR32 KRD9011461_B66A_B2 Antennas **(REPLACE)**

(1) HCS Hybrid Cable (1 5/8") **(REMOVE) –** (1) HCS Hybrid Cable **(REPLACE)**

Install New:
(3) Ericsson 4415 B66A Radio
(3) Ericsson 4449 B71+B85 Radios
(2) HCS 6x24 Hybrid Cables (1 5/8")

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Remove:
(6) TWIN STYLE 1B-AWS TMA
(12) COAX cables (1-5/8")

Ground:

Install New:
(1) 6160 Cabinet
(1) B160 Battery Cabinet
4-Pole 150A Breaker

The facility was approved by the Connecticut Siting Council by way of an Application for Certificate of Environmental Compatibility on April 14, 1986.

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 Benjamin G. Blake, Mayor of the City of Milford and Joseph D. Griffith, Building Official for the City of Milford. A copy will also be sent to the property owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

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

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

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

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

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

Sincerely,

Colin Robinson

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

cc:

Benjamin G. Blake, Mayor *(via email only to mayor@milfordct.gov)*
City of Milford, CT
110 River St
Milford, CT 06460
203-783-3201

Joseph D. Griffith, Building Official *(via email only to jgriffith@milfordct.gov)*
City of Milford, CT
110 River St
Milford, CT 06460
203-783-3374

David Guernsey *(via email only to pvguernsey@aol.com)*
4017 Washington Rd. PMB 353
McMurray PA 15317

Colin Robinson

From: Colin Robinson
Sent: Wednesday, June 30, 2021 3:44 PM
To: 'mayor@milfordct.gov'
Cc: Colin Robinson
Subject: CSC Application Milford CT 806359
Attachments: CSC Application Milford CT 806359 063021.pdf

Good Afternoon Mayor Blake,

Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 423 Oronoque Rd Milford, CT.

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

Thank you,

Colin

Colin Robinson
Project Manager
NETWORK BUILDING + CONSULTING
100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824
M 360.561.3311

Colin Robinson

From: Colin Robinson
Sent: Wednesday, June 30, 2021 3:44 PM
To: jgriffith@milfordct.gov
Cc: Colin Robinson
Subject: CSC Application Milford CT 806359
Attachments: CSC Application Milford CT 806359 063021.pdf

Good Afternoon Building Official Griffith,

Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 423 Oronoque Rd Milford, CT.

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

Thank you,

Colin

Colin Robinson
Project Manager
NETWORK BUILDING + CONSULTING
100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824
M 360.561.3311

Colin Robinson

From: Colin Robinson
Sent: Wednesday, June 30, 2021 3:44 PM
To: pvguernsey@aol.com
Cc: Colin Robinson
Subject: CSC Application Milford CT 806359
Attachments: CSC Application Milford CT 806359 063021.pdf

Good Afternoon Mr. Guernsey,

Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 423 Oronoque Rd Milford, CT. You are being notified as the property owner.

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

Thank you,

Colin

Colin Robinson
Project Manager
NETWORK BUILDING + CONSULTING
100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824
M 360.561.3311

Exhibit A

Original Facility Approval

DOCKET NO. 56

AN APPLICATION OF METRO MOBILE CTS OF NEW HAVEN, INC., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN NEW HAVEN COUNTY.	:	CONNECTICUT SITING COUNCIL April 14, 1986

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

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut (CGS) be issued to Metro Mobile CTS of New Haven, Inc., for the construction, maintenance, and operation of cellular mobile phone telecommunication towers and associated equipment in the towns of Wolcott, Naugatuck, West Haven (existing tower), Milford, Hamden (existing tower), Guilford, and North Branford subject to the conditions below.

1. The proposed and alternate Beacon Falls sites are rejected without prejudice.
2. The Wolcott tower shall be constructed to meet Zone C wind loading with 1" of radial ice and shall not exceed 180' in height excluding antennas.
3. The Naugatuck tower shall not exceed 160' in height, excluding antennas. The certificate holder shall offer to remove the existing privately owned, unused tower now on the site.
4. Any future actions requiring the removal of the existing West Haven or Hamden towers to be shared by the certificate holder shall also apply to the equipment mounted on those towers by the certificate holder, regardless of that equipment's status under Chapter 277a of the CGS.

5. The Milford tower shall be a monopole structure not to exceed 100' in height, excluding antennas.
6. The Guilford tower shall be a monopole structure not to exceed 150' in height, excluding antennas.
7. The North Branford Route 17 site is rejected. The North Branford East Reeds Gap Road tower shall not exceed 160' in height, excluding antennas.
8. The certificate holder shall submit a development and management plan for the Wolcott, Naugatuck, Milford, Hamden, Guilford, and North Branford sites pursuant to sections 16-50j-75 through 16-50j-77 of the RSA, except that irrelevant items in section 16-50j-76 need only be identified as such. In addition to the requirements of section 16-50j-76, the D&M plan shall provide plans for evergreen screening around the fenced perimeter at the Wolcott, Milford, Hamden, Guilford, and North Branford sites. The D&M plan shall include a proposal for painting the approved monopole structures to blend with the sky. Any changes to specifications in the D&M plan must be approved by the Council prior to facility operation.
9. All certified facilities shall be constructed, operated, and maintained as specified in the Council's record and in the site development and management plan required by order 8.
10. The certificate holder shall permit public or private entities to share space on the towers approved herein, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. In addition to complying with 16-50j-73, the

certificate holder shall notify the Council of the addition of any equipment to any approved tower.

11. A fence not lower than 8' shall surround each tower and associated equipment.

12. Unless necessary to comply with order 13, below, no lights shall be installed on any of these towers.

13. The facilities' construction and any future tower sharing shall be in accordance with all applicable federal, state, and municipal laws and regulations. Shared uses by entities not subject to jurisdiction pursuant to sections 16-50i and 16-50k of the CGS shall be subject to all applicable federal, state, and municipal laws and regulations.

14. Construction activities shall take place during daylight working hours.

15. This decision and order shall be void and the towers and associated equipment shall be dismantled and removed, or reapplication for any new use shall be made to the CSC before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction.

16. This decision and order shall be void if all construction authorized herein is not completed within three years of the issuance of this decision, or within three years of the completion of any appeal if appeal of this decision is taken, unless otherwise approved by the Council.

Pursuant to CGS section 16-50p, we hereby direct that a copy of the decision and order shall be served on each person listed below. A notice

of the issuance shall be published in The Record-Journal, The New Haven Register, The Branford Review, The Evening Sentinel, The Waterbury American, and The Waterbury Republican.

The parties to this proceeding are:

Metro Mobile CTS of New Haven, Inc. (Applicant)
5 Eversley Avenue
Norwalk, Connecticut 06855

ATTN: Armand Mascioli
General Manager

Mr. Kevin B. Sullivan, Esq. (its attorneys)
Byrne, Slater, Sandler, Shulman & Rouse, P.C.
111 Pearl Street
P.O. Box 3216
Hartford, Connecticut 06103

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

Guilford Conservation Commission represented by:

Mr. David B. Damer
Chairman
Guilford Conservation Commission
440 Great Hill Road
Guilford, Connecticut 06437

Mr. Robert W. Griswold, Jr.
100 Rimmon Hill Road
Beacon Falls, Connecticut 06403

Town of Hamden
Memorial Town Hall
2372 Whitney Avenue
Hamden, Connecticut 06518

ATTN: Shirley Gonzales
Town Planner

Guilford Planning and Zoning Commission — represented by:

Mr. David W. Fisher
Chairman
Town Hall
31 Park Street
Guilford, Connecticut 06437

Town of Hamden — represented by:

John DeNicola, Jr.
Mayor
Town of Hamden
Memorial Town Hall
2372 Whitney Avenue
New Haven, Connecticut 06518

Citizens Park Council of New Haven — represented by:

Mr. John J. Ciarleglio
President
Citizens Park Council
of New Haven
36 Elmwood Road
New Haven, Connecticut 06515

Mr. Thomas V. Keating
343 Rimmon Hill Road
Beacon Falls, Connecticut 06403

Ms. Evelyn M. Sirowich
245 Rimmon Hill Road
Beacon Falls, Connecticut 06403

Mr. Jack B. Levine
11 White Birch Lane
Beacon Falls, Connecticut 06403

Southern New England Telephone Company — represented by:

Mr. Peter J. Tyrrell, Esq.
227 Church Street
New Haven, Connecticut 06506

Mr. Dennis Bialecki
96 West Road
Beacon Falls, Connecticut 06403

Brittany Woods Homeowner's Association

represented by:

Mr. Stephen P. Del Sole, Esq.
Del Sole & Del Sole
152 Temple Street
P.O. Box 405
New Haven, Connecticut 06502-0405

Ms. Barbara G. Schlein
Box 2993 Westville Station
New Haven, Connecticut 06515

Mr. & Mrs. Joseph T. Farrell, Jr.
334 Rimmon Hill Road
Beacon Falls, Connecticut 06403

Town of Beacon Falls

represented by:

The Honorable Leonard F. D'Amico
First Selectman
10 Maple Avenue
Beacon Falls, Connecticut 06403

West Rock Ridge Park Association

represented by:

Mr. William L. Doheny Jr., D.D.S.
President
220 Mountain Road
Hamden, Connecticut 06514

Department of Parks,
Recreation & Trees

represented by:

Mr. Robert G. Sheeley
Director
Parks, Recreation & Trees
P.O. Box 1416
New Haven, Connecticut 06506

Town of Wallingford

represented by:

William W. Dickinson, Jr.
Mayor
Municipal Building
350 Center Street
P.O. Box 427
Wallingford, Connecticut 06492

New Haven Sierra Club

represented by:

Ms. Laurie Klein
270 Edgewood Avenue
New Haven, Connecticut 06511

Peter M. Lerner
State Representative
8 Merritt Avenue
Woodbridge, Connecticut 06525

Carleton J. Benson
State Representative
161 Scott Road
Prospect, Connecticut 06712

Dr. Stephen Collins (service waived)
Vice Chairman
West Rock State Park
Advisory Council
Bethany, Connecticut

Mr. Louis Melillo (service wavied)
985 Wintergreen Avenue
Hamden, Connecticut

Mr. John McGeever (service waived)
339 Rimmon Hill
Beacon Falls, Connecticut 06403

Senator John Consoli (service waived)
51 Luke Hill Road
Bethany, Connecticut 06525

Representative George P. Bassing (service waived)
14 Oakwood Drive
Seymour, Connecticut 06483

Dr. George D. Whitney (service waived)
858 Oakwood Road
Orange, Connecticut

Mr. Steve Molnar (service waived)
205 West Road
Beacon Falls, Connecticut

Mr. James W. Grandy (service waived)
President
Hamden Land Conservation Trust
Hamden, Connecticut

Senator Richard S. Eaton (service waived)
269 Mulberry Point Road
Guilford, Connecticut 06437

Representative Robert M. Ward
719 Totoket Road
Northford, Connecticut 06472

Town of North Branford — represented by:

John Gesmonde, Esquire
3127 Whitney Avenue
Hamden, Connecticut 06518

Regina Smith
1887 Middletown Avenue
Northford, Connecticut 06472 — (service waived)

Richard A. Nizolek
The Restland Farm Corporation
Route 17
Northford, Connecticut 06472

Mary Liska
83 Reeds Gap Road
Northford, Connecticut 06472

Ben Bullard
50 Christmas Hill Road
Guilford, Connecticut 06437 — (service waived)

Roland Robichaud
31 Berncliff Drive
North Branford, Connecticut 06471 — (service waived)

Irene Flynn
1926 Middletown Avenue
Northford, Connecticut 06472 — (service waived)

Charles Pope
199 Donalds Road
Guilford, Connecticut 06437

Richard Abate
131 Manor Road
Guilford, Connecticut 06437 — (service waived)

City of Milford — represented by:

Mayor Alberta Jagoe
Alderman Maurice Condon
Alderman Frederick Lisman
City Hall
River Street
Milford, Connecticut 06460

Thomas Scelfo
81 Berncliff Drive
North Branford, Connecticut 06471 — (service waived)

Senator Thomas Scott (service waived)
22 Meyers Court
Milford, Connecticut 06460

Helen Moore (service waived)
385 Oronoque Road
Milford, Connecticut 06460

William Barberi (service waived)
298 Oronoque Road
Milford, Connecticut 06460

C E R T I F I C A T I O N

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

Dated at New Britain, Connecticut, this 14th day of April, 1986.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
Commissioner Stanley Pac Designee: Christopher Cooper	No
Owen L. Clark	Yes
Mortimer A. Gelston	Yes
James G. Horsfall	Yes
Pamela B. Katz	Yes
William H. Smith	No
Colin C. Tait	No

STATE OF CONNECTICUT)
: ss. New Britain, April 14, 1986
COUNTY OF HARTFORD)

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

ATTEST:

Christopher S. Wood

Christopher S. Wood, Executive Director
Connecticut Siting Council

Exhibit B

Property Card

423 ORONOQUE RD

Location	423 ORONOQUE RD	**Mblu**	74/ 925/ 3/A /
Acct#	008119	**Owner**	GUERNSEY DAVID
Assessment	$256,100	**Appraisal**	$365,860
PID	17142	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$356,170	$9,690	$365,860
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$249,320	$6,780	$256,100

Owner of Record

Owner	GUERNSEY DAVID	**Sale Price**	$0
Other	C/O CROWN ATLANTIC CO LLC	**Certificate**	
Address	4017 WASHINGTON RD PMB 353 MCMURRAY, PA 15317	**Book & Page**	03011/0131
		Sale Date	08/08/2005

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
GUERNSEY DAVID	$0		03011/0131	08/08/2005
GUERNSEY DAVID & ET AL* & SURV	$0		02370/0420	09/09/1999
GUERNSEY DAVID & VIRGINIA S & SUR	$0		02222/0543	06/02/1997
GUERNSEY DAVID	$0		02222/0542	06/02/1997
GUERNSEY ADDIE E EST	$0		02107/0247	03/07/1995

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0

Replacement Cost: $0
Building Percent Good:
Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Description:	
Kitchen Descrip:	
Num Kitchens	
Cndtn	
Usrfld 103	
Int Condition:	
Solar Panels	
House Generator	
Usrfld 107	
Num Park	
Fireplaces	
Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	

Building Photo

(http://images.vgsi.com/photos/MilfordCTPhotos//default.jpg)

Building Layout


Building Layout (ParcelSketch.ashx?pid=17142&bid=17400)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Usrfld 300	
Usrfld 301	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	434V
Description	CELL TOWER MDL-00
Zone	R30
Neighborhood	F
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.26
Frontage	0
Depth	0
Assessed Value	$6,780
Appraised Value	$9,690

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD2	W/LIGHTS ETC			300.00 S.F.	$6,170	1
CEL1	CEL TWR SITE			1.00 UNITS	$350,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$356,170	$9,690	$365,860
2018	$356,170	$9,690	$365,860
2017	$356,170	$9,690	$365,860
2016	$356,170	$9,690	$365,860

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$249,320	$6,780	$256,100
2018	$249,320	$6,780	$256,100
2017	$249,320	$6,780	$256,100
2016	$249,320	$6,780	$256,100

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Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CTNH009B
T-MOBILE SITE NAME: NH009/CROWNORONOQUE_ET
SITE TYPE: MONOPOLE
TOWER HEIGHT: 100'-0"

BUSINESS UNIT #: 806359
SITE ADDRESS: 423 ORONOQUE ROAD MILFORD, CT 06460
COUNTY: NEW HAVEN
JURISDICTION: CITY OF MILFORD

T-MOBILE ANCHOR SITE CONFIGURATION: 67D5A997DB HYBRID

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	NHV 104 943122
SITE ADDRESS:	423 ORONOQUE ROAD MILFORD, CT 06460
COUNTY:	NEW HAVEN
MAP/PARCEL #:	074-925-3-A
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 14' 16.23" N
LONGITUDE:	73° 5' 10.00" W
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	XXX.XX FT
CURRENT ZONING:	R30
ZONING JURISDICTION: JURISDICTION:	CITY OF MILFORD CITY OF MILFORD
OCCUPANCY CLASSIFICATION:	----
TYPE OF CONSTRUCTION:	----
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	DAVID GUERNSEY 4017 WASHINGTON RD, PMB 353 MCMURRAY PA, 15317
TOWER OWNER:	CROWN CASTLE MU LLC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	UNITED ILLUMINATING CO (800) 722-5584
TELCO PROVIDER:	CROWN CASTLE FIBER (866) 371-2136

PROJECT TEAM

A&E FIRM:	TECTONIC ENGINEERING AND SURVEYING CONSULTANTS P.C. 1279 ROUTE 300 NEWBURGH, NY 12550 PHONE: (845) 567-6656
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065
	---- - PROJECT MANAGER ----
	---- - CONSTRUCTION MANAGER ----

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	DETAILS
C-7	ANTENNA MOUNT SPECIFICATIONS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT DESCRIPTION

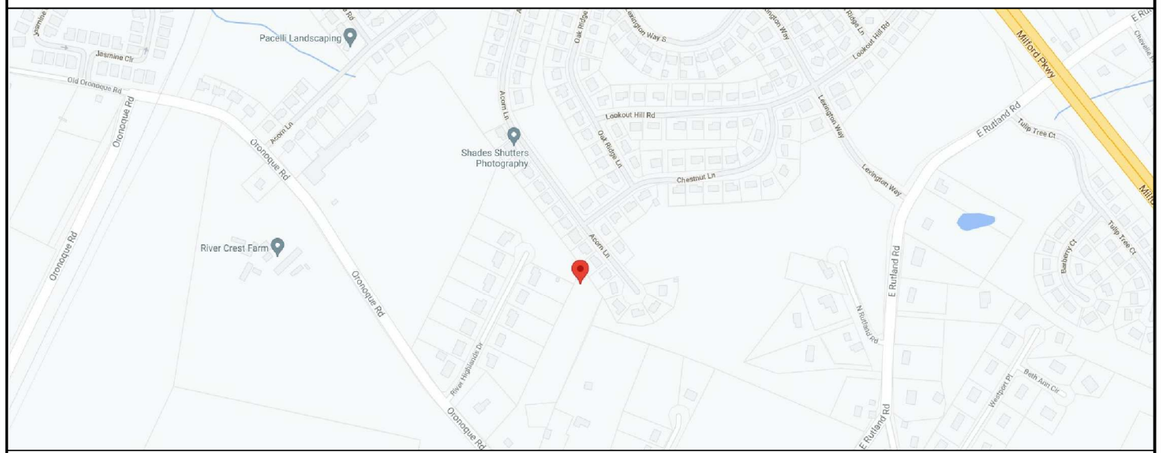
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (9) ANTENNAS
- REMOVE (3) TMAs
- REMOVE (3) RRHs
- REMOVE (12) COAX CABLES
- REMOVE (1) HYBRID CABLE
- REMOVE (3) EXISTING MOUNTS
- INSTALL (9) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (3) HYBRID CABLE
- INSTALL (3) NEW MOUNTS AND RELOCATE EXISTING REMAINING EQUIPMENT TO NEW MOUNTS

GROUND SCOPE OF WORK:
- INSTALL (1) ENCLOSURE 6160 CABINET
- INSTALL (1) B160 BATTERY CABINET
- INSTALL 4-POLE 150A BREAKER

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

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2015 IBC W/AMENDMENTS
MECHANICAL	2015 IMC W/AMENDMENTS
ELECTRICAL	2017 NEC W/AMEDMENTS

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: DATED:	BY OTHERS
MOUNT ANALYSIS: DATED:	B+T GROUP (REPLACEMENT) 05/08/2021
RFDS REVISION: DATED:	4 02/05/2021
ORDER ID: REVISION:	548365 0

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

APPROVALS

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

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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering & Surveying Consultants P.C.
70 Pleasant Hill Road — Phone: (845) 534-5959
P.O. Box 37 — (800) 522-5531
Mountainville, NY 10953 — www.tectonicengineering.com
Project Contact Info
1279 Route 300
Newburgh, NY 12550 — Phone: (845) 567-6656
WORK ORDER #: 10545.CTNH009B

T-MOBILE SITE NUMBER:
CTNH009B

BU #: **806359**
NHV 104 943122

423 ORONOQUE ROAD
MILFORD, CT 06460

EXISTING 100'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/21	IJ	FOR CONSTRUCTION	----

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED
PROFESSIONAL ENGINEER

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

SHEET NUMBER: T-1
REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

GREENFIELD GROUNDING NOTES:

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

ELECTRICAL INSTALLATION NOTES:

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

CONDUCTOR COLOR CODE

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

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

APWA UNIFORM COLOR CODE:

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

ABBREVIATIONS:

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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

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P.O. Box 37 (800) 829–6531
Mountainville, NY 10953 www.tectonicengineering.com
Project Contact Info
1279 Route 300
Newburgh, NY 12550 Phone: (845) 567–6656
WORK ORDER #: 10545.CTNH009B

T-MOBILE SITE NUMBER:
CTNH009B

BU #: **806359**
NHV 104 943122

423 ORONOQUE ROAD
MILFORD, CT 06460

EXISTING 100'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/21	IJ	FOR CONSTRUCTION	----

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED PROFESSIONAL ENGINEER

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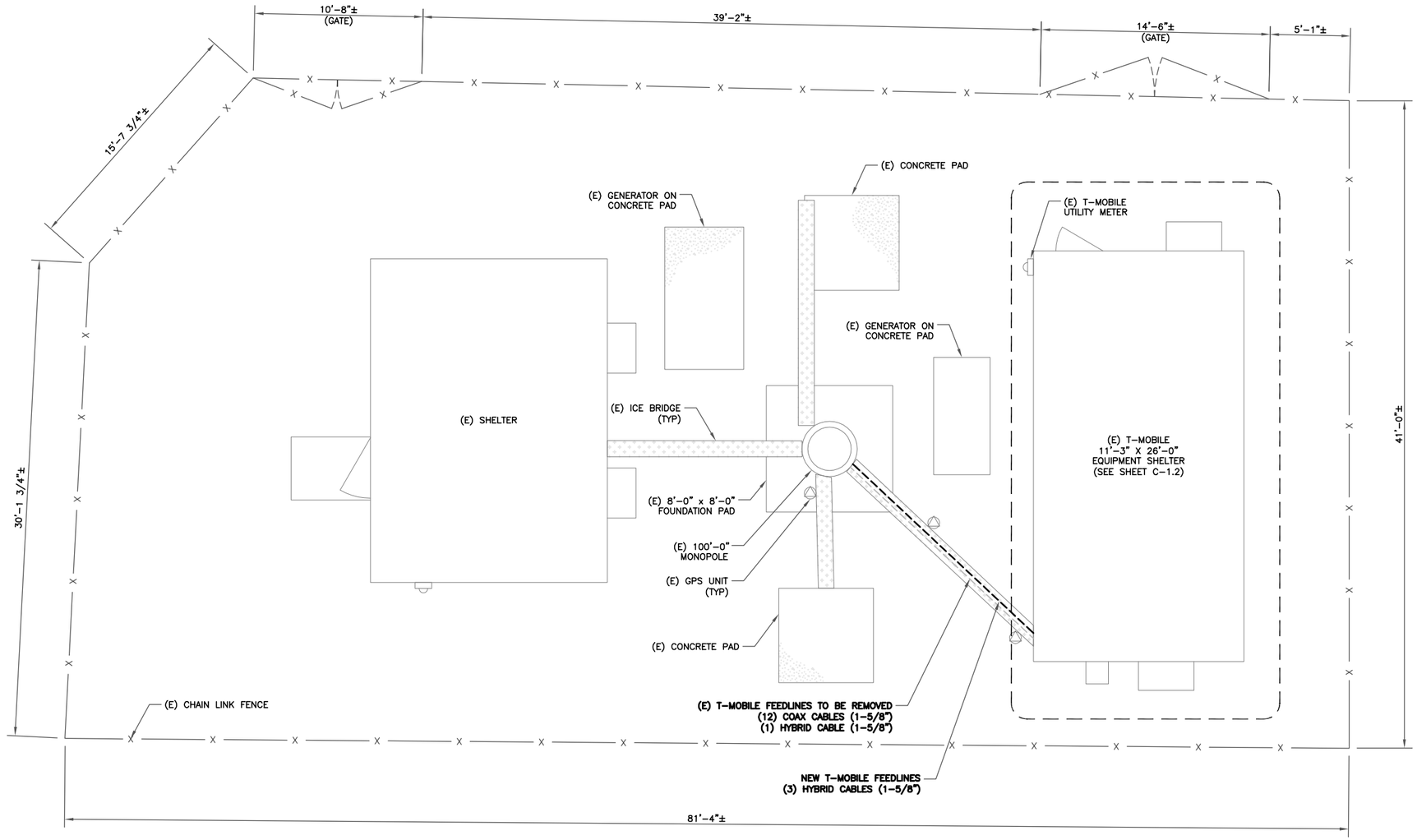
SHEET NUMBER: T-2

REVISION: 0

SITE PLAN DISCLAIMER:

PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS OR FROM ASSESSORS MAPS. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET



1 OVERALL SITE PLAN

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

N

T-Mobile

35 GRIFFIN ROAD
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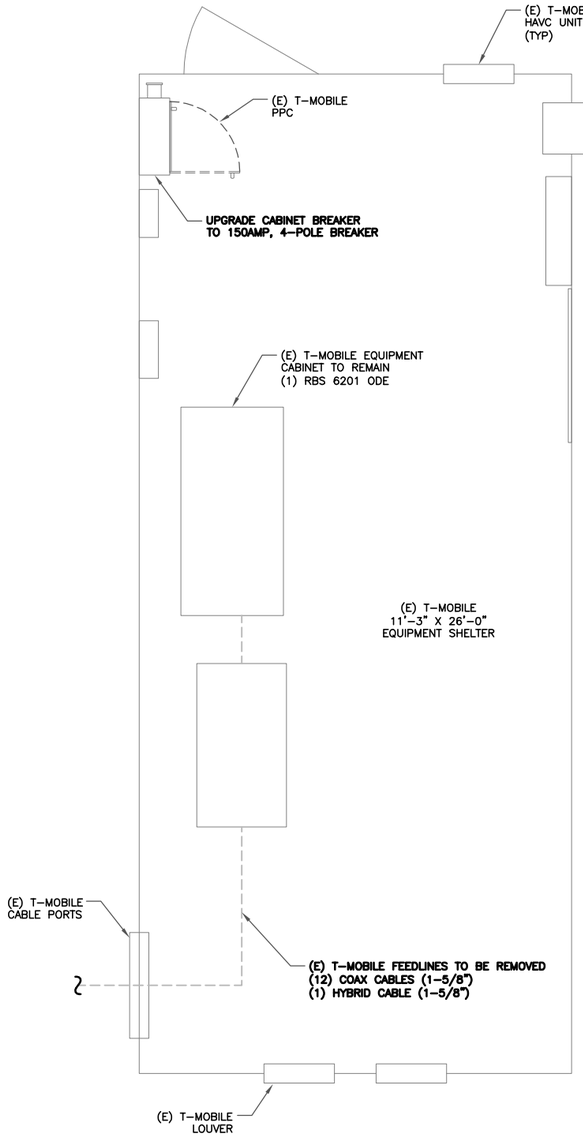
SHEET NUMBER: C-1.1

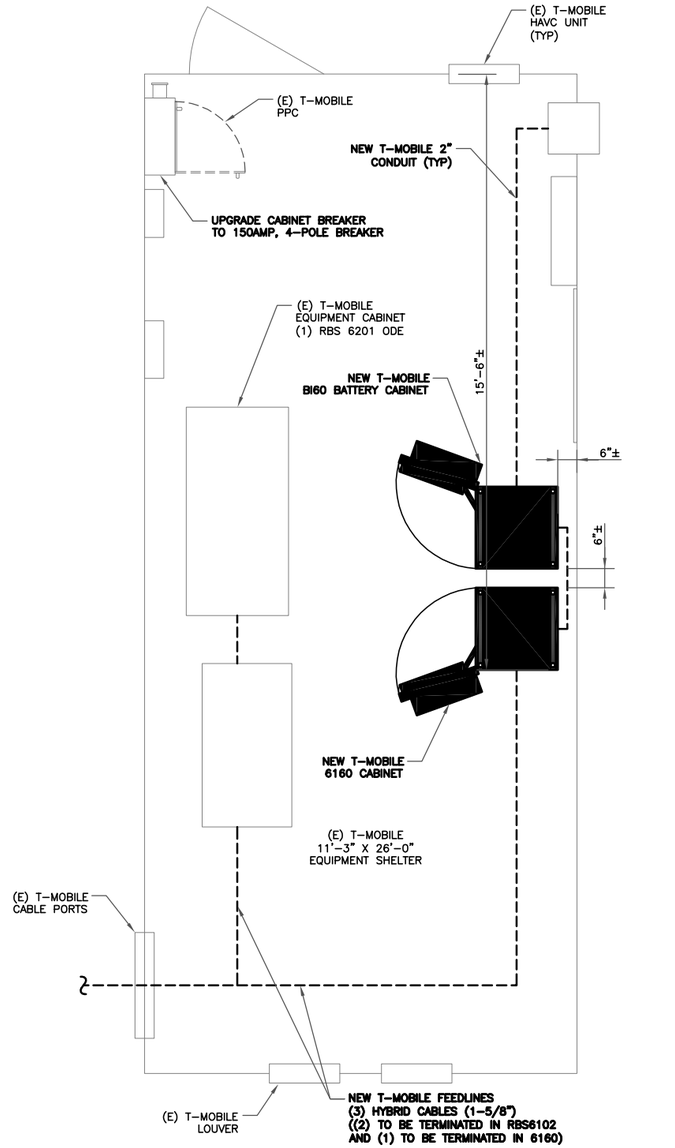
REVISION: 0



1 EXISTING EQUIPMENT PLAN

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

N



2 FINAL EQUIPMENT PLAN

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

N

T-Mobile

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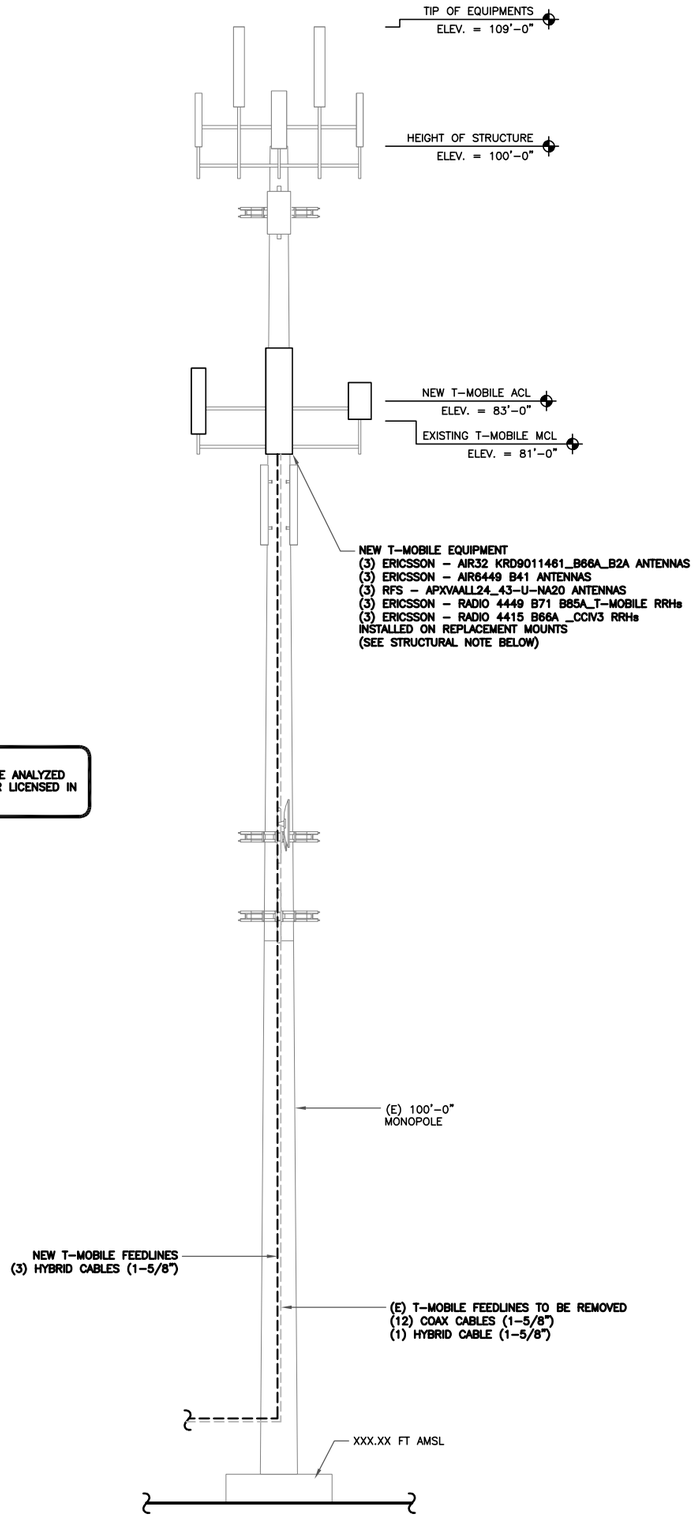
SHEET NUMBER: C-1.2

REVISION: 0



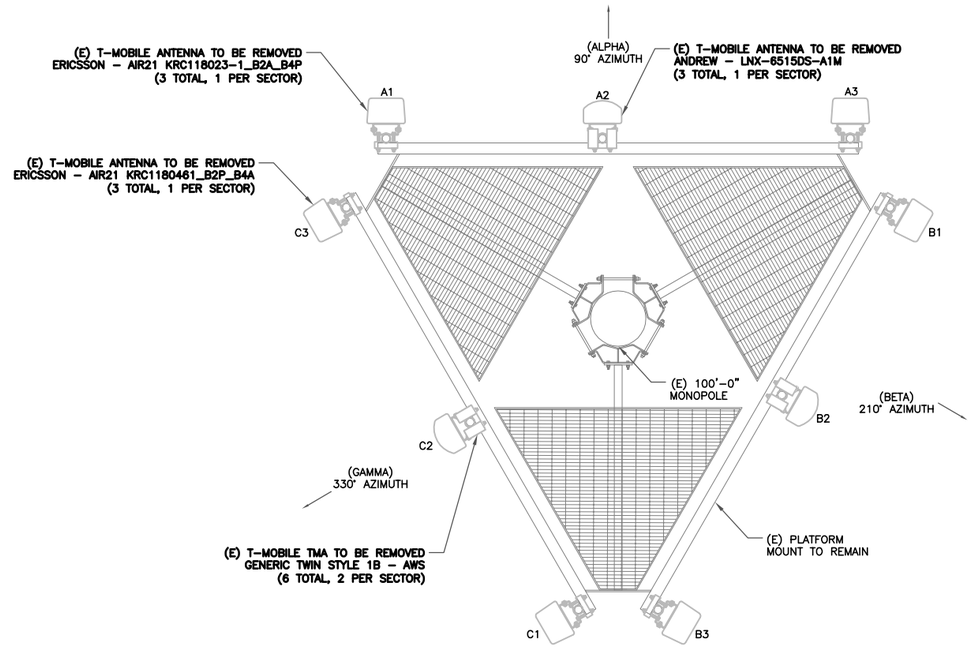
T-MOBILE EQUIPMENT

ANTENNA CL: 83'-0"
MOUNT CL: 81'-0"

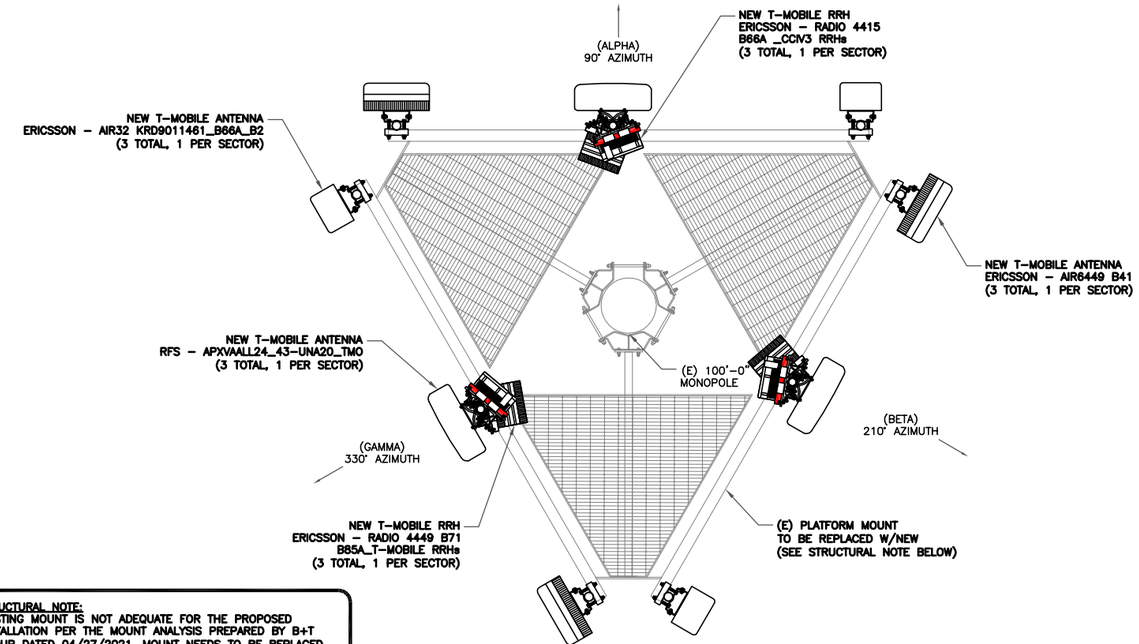
ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB

TOWER NOTE:
EXISTING STRUCTURE SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT.

1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



STRUCTURAL NOTE:
EXISTING MOUNT IS NOT ADEQUATE FOR THE PROPOSED INSTALLATION PER THE MOUNT ANALYSIS PREPARED BY B+T GROUP DATED 04/27/2021. MOUNT NEEDS TO BE REPLACED W/NEW. REFER TO THE MOUNT REPLACEMENT ANALYSIS REPORT PREPARED BY B+T GROUP DATED 05/08/2021 FOR DETAILS.

3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

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T-MOBILE SITE NUMBER:
CTNH009B

BU #: **806359**
NHV 104 943122

423 ORONOQUE ROAD
MILFORD, CT 06460

EXISTING 100'-0"
MONOPOLE

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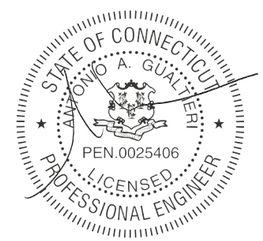

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SHEET NUMBER: C-2

REVISION: 0

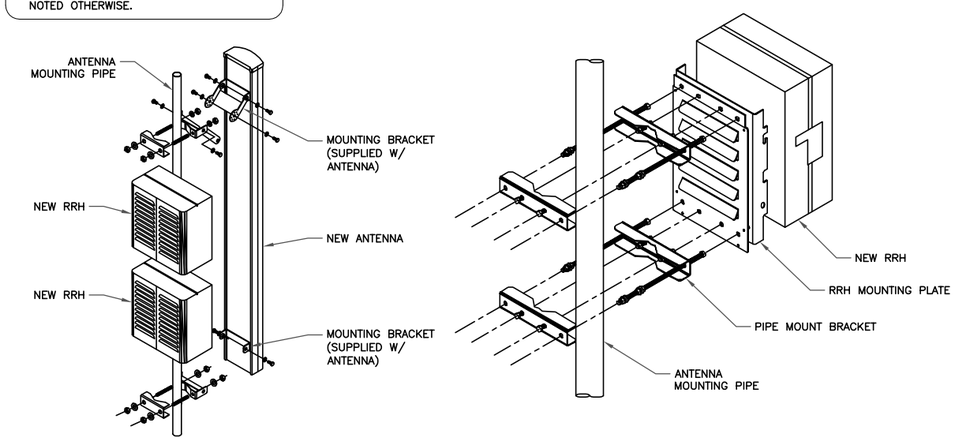
ANTENNA SCHEDULE

SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2500/N2500	83'-0"	90°	ERICSSON	AIR6449 B41	0°	–		(1) 1-5/8" HYBRID
ALPHA	A2	L700/L600/N600/ L1900	83'-0"	90°	RFS	APXVAALL24_43-U-NA20	0°	–	(1) ERICSSON – RRUS 4415 B66A (1) ERICSSON – RRUS 4449 B71 B85A	
ALPHA	A3	L2100/L1900/G1900	83'-0"	90°	ERICSSON	AIR32 KRD9011461_B66A_B2A	0°	–		
BETA	B1	L2500/N2500	83'-0"	210°	ERICSSON	AIR6449 B41	0°	–		(1) 1-5/8" HYBRID
BETA	B2	L700/L600/N600/ L1900	83'-0"	210°	RFS	APXVAALL24_43-U-NA20	0°	–	(1) ERICSSON – RRUS 4415 B66A (1) ERICSSON – RRUS 4449 B71 B85A	
BETA	B3	L2100/L1900/G1900	83'-0"	210°	ERICSSON	AIR32 KRD9011461_B66A_B2A	0°	–		
GAMMA	C1	L2500/N2500	83'-0"	330°	ERICSSON	AIR6449 B41	0°	–		(1) 1-5/8" HYBRID
GAMMA	C2	L700/L600/N600/ L1900	83'-0"	330°	RFS	APXVAALL24_43-U-NA20	0°	–	(1) ERICSSON – RRUS 4415 B66A (1) ERICSSON – RRUS 4449 B71 B85A	
GAMMA	C3	L2100/L1900/G1900	83'-0"	330°	ERICSSON	AIR32 KRD9011461_B66A_B2A	0°	–		

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

T-Mobile
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Project Contact Info
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Newburgh, NY 12550 — Phone: (845) 567-4656
WORK ORDER #: 10545.CTNH009B

T-MOBILE SITE NUMBER:
CTNH009B

BU #: **806359**
NHV 104 943122

423 ORONOQUE ROAD
MILFORD, CT 06460

EXISTING 100'-0"
MONOPOLE

ISSUED FOR:

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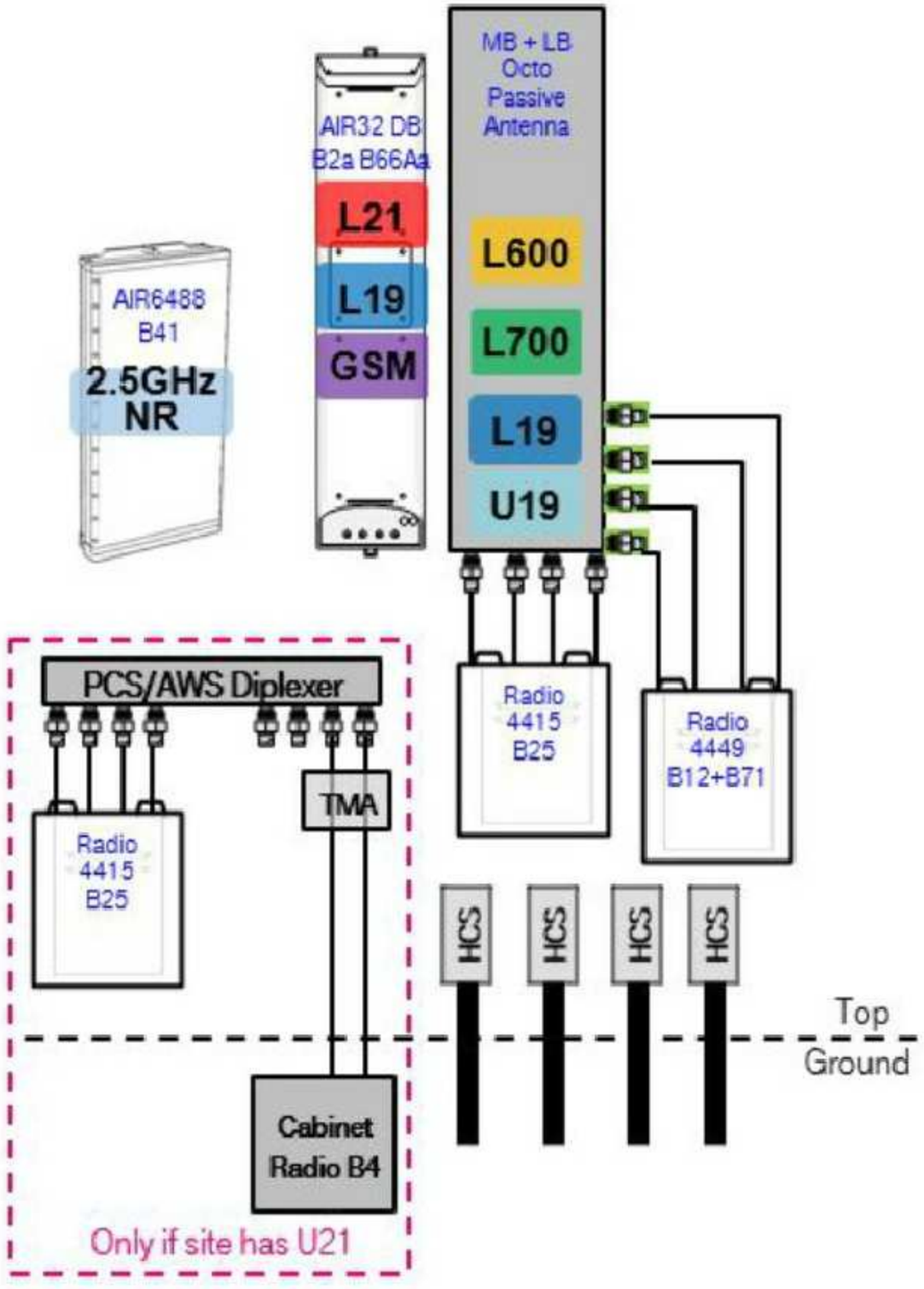
SHEET NUMBER: C-3

REVISION: 0



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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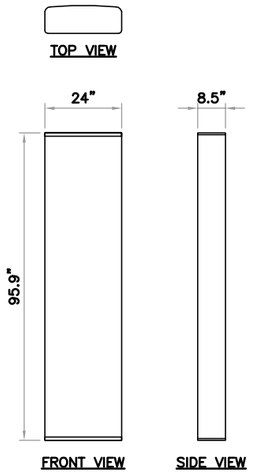
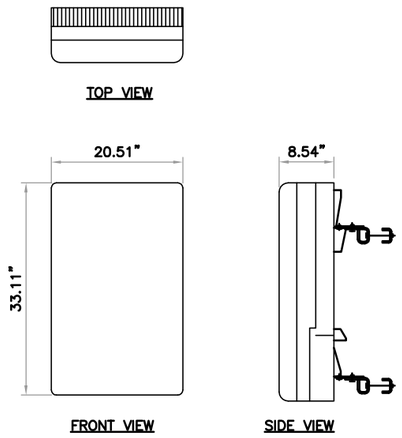
SHEET NUMBER: C-4

REVISION: 0



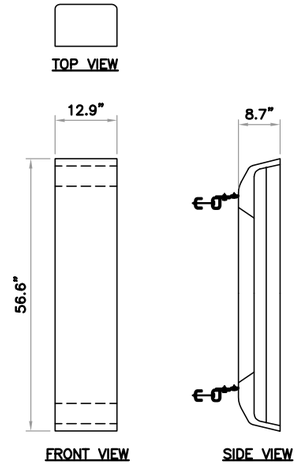
MANUFACTURER:		RFS
MODEL NO.:		APXVAALL24_43_U_NA20
DIMENSIONS		TOTAL WEIGHT:
A	95.9"	
B	24"	150 LBS
C	8.5"	

1 APXVAARR24_43_U_NA20
SCALE: NOT TO SCALE



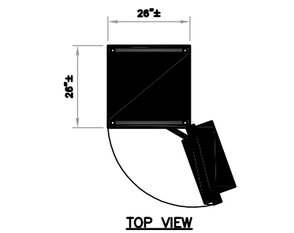
MANUFACTURER:		ERICSSON
MODEL NO.:		AIR6449 B41
DIMENSIONS		TOTAL WEIGHT:
A	33.11"	
B	20.51"	115 LBS
C	8.54"	

2 AIR6449 B41
SCALE: NOT TO SCALE



MANUFACTURER:		ERICSSON
MODEL NO.:		AIR32 B66A_B2A
DIMENSIONS		TOTAL WEIGHT:
A	59.3"	
B	12.9"	172 LBS
C	8.7"	

3 AIR32 B66A_B2A
SCALE: NOT TO SCALE

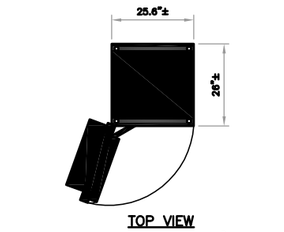


WEIGHT: 1883 LBS (W/3 BATTERY STRINGS)

ERICSSON ENCLOSURE B160

BATTERY CABINET B160

4 BATTERY CABINET B160
SCALE: NOT TO SCALE

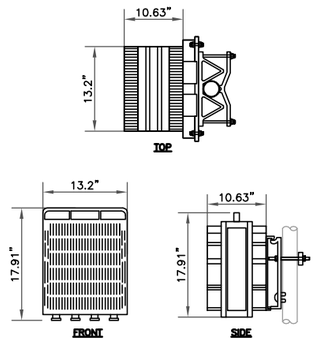


WEIGHT: 605 LB (FULLY LOADED)

ERICSSON ENCLOSURE 6160 AC

ENCLOSURE 6160 (OUTDOOR)

5 ENCLOSURE 6160 (OUTDOOR)
SCALE: NOT TO SCALE



MANUFACTURER:		ERICSSON
MODEL NO.:		RADIO-4449 B71+B85
DIMENSIONS		TOTAL WEIGHT:
A	17.91"	
B	13.20"	74 LBS
C	10.63"	

6 ERICSSON – RADIO-4449
SCALE: NOT TO SCALE

T-Mobile
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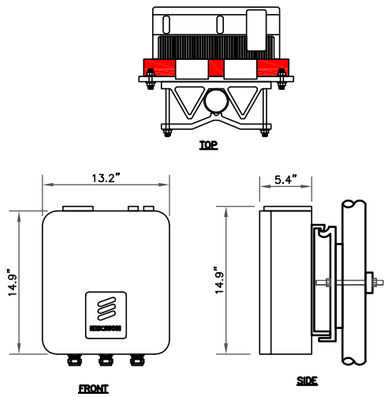
SHEET NUMBER: C-5

REVISION: 0



MANUFACTURER:		ERICSSON
MODEL NO.:		RADIO-4415 B66A
DIMENSIONS		TOTAL WEIGHT:
A	14.90"	
B	13.20"	47 LBS
C	5.40"	

1 ERICSSON – RADIO-4415
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

4 NOT USED
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

T-Mobile
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MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/21	TJ	FOR CONSTRUCTION	-----

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED
PROFESSIONAL ENGINEER

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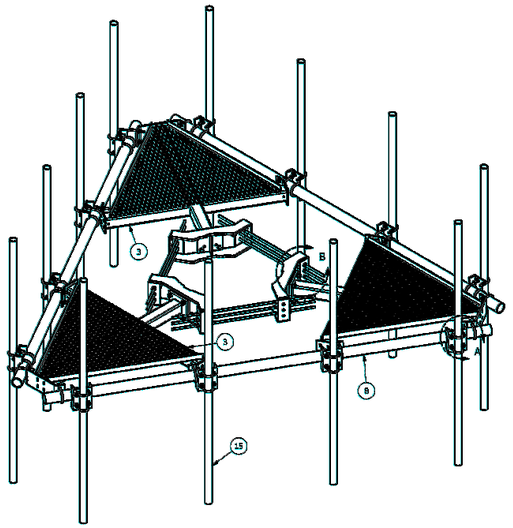
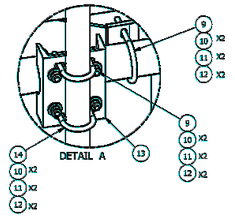
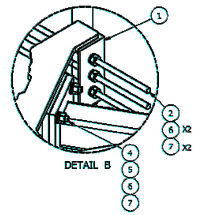
SHEET NUMBER: C-6
REVISION: 0



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	9	GSSR-48	5/8" x 48" THREADED ROD (HDG.)		0.40	3.59
2	9	GSSR-24	5/8" x 24" THREADED ROD (HDG.)		0.40	3.59
3	3	X-SV196	LOW PROFILE FLATPLATE CORNER		212.10	636.31
4	12	ASS234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
5	12	ASSFW	5/8" HDG A325 FLATWASHER		0.03	0.41
6	30	GSSLW	5/8" HDG LOCKWASHER		0.03	0.78
7	30	ASSNUT	5/8" HDG A325 HEX NUT		0.13	3.90
8	3	P3150	3-1/2" X 150" SCH 40 GALVANIZED PIPE	150.000 in	94.80	284.40
9	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.26	9.25
10	120	G12FW	1/2" HDG USS FLATWASHER		0.03	4.09
11	120	G12LW	1/2" HDG LOCKWASHER		0.01	1.67
12	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
13	12	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	103.33
14	24	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.26	6.17
15	12	B	ANTENNA MOUNTING PIPE	C	D	E





2-3/8" O.D. VERTICAL MOUNTING PIPES					
ASSEMBLY NO. "A"	PART NO. "B"	LENGTH, "C"	UNIT WEIGHT, "D"	NET WEIGHT, "E"	TOTAL WEIGHT
RMQP-483	P283	63"	20.18	242.16	1591.11
RMQP-672	P272	72"	23.07	276.84	1815.79
RMQP-864	P284	84"	26.91	322.92	1671.67
RMQP-486	P296	96"	30.76	369.12	1718.07
RMQP-4126	P2126	126"	40.75	489.00	1837.95

TOLERANCE NOTE

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE - ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

PROPRIETARY NOTE

THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND SHALL NOT BE DISCLOSED TO OTHERS, USED ON REPRODUCED WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

REV	DESCRIPTION OF REVISIONS	CHD	BY	DATE
A	ADDED 10'-6" ANTENNA MOUNTING PIPES		CEK	7/9/2015

REVISION HISTORY

DESCRIPTION: LOW PROFILE CO-LOCATION PLATFORM FOR 12 ANTENNAS WITH 12' 6" FACE WIDTH FOR 12" - 36" DIAMETER POLES

SITE PRO 1 — Engineering Support Team: 1-888-768-7448 — Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Dalton, GA; Dallas, TX

A valmont COMPANY

DRAWN BY	CPD NO.	DRAWING USAGE
CEK 1/20/2012	semb	CUSTOMER

PROJ. APPROVAL

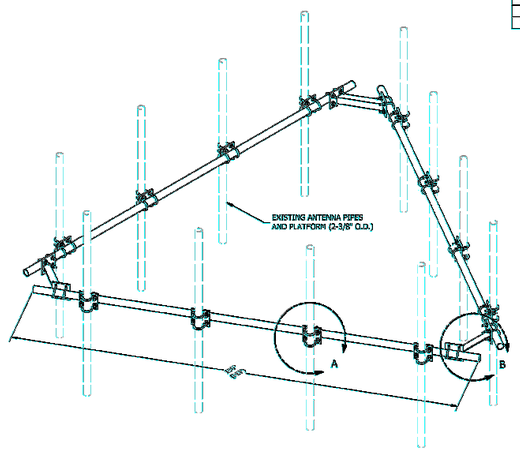
ENGINEERED BY: BMC 7/9/2015

PART NO.: SEE ASSEMBLY NO. "A"

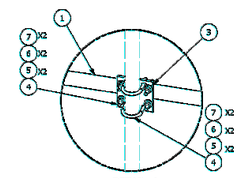
DWG. NO.: RMQP-4XX

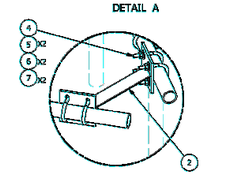
SHEET 1 OF 1

1 ANTENNA MOUNT PLATFORM SPECIFICATION
SCALE: NOT TO SCALE



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	12	SCXL	CROSSOVER PLATE 2-3/8" X 2-3/8"	6 in	3.71	44.50
4	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	37.51
5	120	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.09
6	120	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	1.67
7	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
					TOTAL WT. #	272.43





TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

PROPRIETARY NOTE

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REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP		CEK	7/10/2014

REVISION HISTORY

DESCRIPTION: HANDRAIL KIT FOR 12'-6" FACE

SITE PRO 1 — Engineering Support Team: 1-888-768-7448 — Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Dalton, GA; Dallas, TX

A valmont COMPANY

CPD NO.	DRAWN BY	ENG. APPROVAL
KCB 5/30/2012		

CLASS	SUB	RAILMAN USAGE
81	01	CUSTOMER

ENGINEERED BY: BMC 7/13/2014

PART NO.: HRK12

DWG. NO.: HRK12

SHEET 1 OF 1

2 HANDRAIL KIT SPECIFICATION
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

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70 Pleasant Hill Road — Phone: (845) 534-5959
P.O. Box 37 — (800) 520-8531
Mountainville, NY 10953 — www.tectonicengineering.com
Project Contact Info
1279 Route 300
Newburgh, NY 12550 — Phone: (845) 567-4656
WORK ORDER #: 10545.CTNH009B

T-MOBILE SITE NUMBER:
CTNH009B

BU #: **806359**
NHV 104 943122

423 ORONOQUE ROAD
MILFORD, CT 06460

EXISTING 100'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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PEN.0025406
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SHEET NUMBER: C-7

REVISION: 0

T-MOBILE PANEL SCHEDULE

MAIN: 200 AMP MAIN BREAKER | **VOLTAGE/PHASE**: 120/240V, 1-PHASE, 3-WIRE | **SHORT CIRCUIT CURRENT RATING**: ----

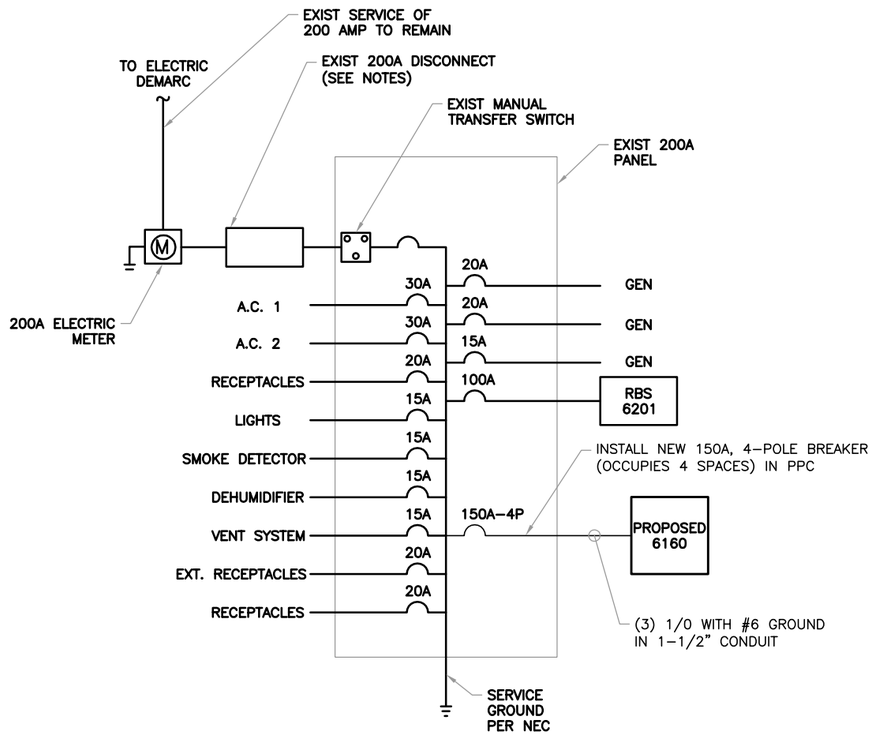
MOUNTING: INSIDE PPC ENCLOSURE | **ENCLOSURE**: NEMA 3R | **SURGE PROTECTION DEVICE**: YES

DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	LOAD (VA) A-PHASE	LOAD (VA) B-PHASE	CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
SURGE PROTECTION DEVICE	0	NC	60	1	180		2	20	NC	180	RECEPTACLE
	0	NC		3		200	4	20	NC	200	LIGHT
BTS CABINET **	**3600**	**C**	**150**	5	3600		6				
	3600	**C**		7		3600	8				
	3600	**C**		9	3600		10				
	3600	**C**		11		3600	12				
BLANK				13	0		14				BLANK
				15		0	16				
				17	0		18				
				19		0	20				
				21	0		22				
				23		0	24				
BASE LOAD (VA) =					7380	7400					
25% OF CONTINUOUS LOAD (VA) =					1800	1800					
TOTAL LOAD (VA) =					9180	9200					
TOTAL LOAD (A) =					77	77					

C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD

** INDICATES NEW LOAD. ALL OTHER LOADS ARE EXISTING.
NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING.
CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED VALUES.

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE



NOTES:
1. **THE ABOVE DIAGRAM IS GENERIC AND ANY ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH NEC STANDARDS.**
2. **ELECTRICAL CONSULT SHALL BE PERFORMED TO CONSTRUCTION TO CONFIRM THE POWER REQUIREMENTS AND FEASIBILITY.**

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

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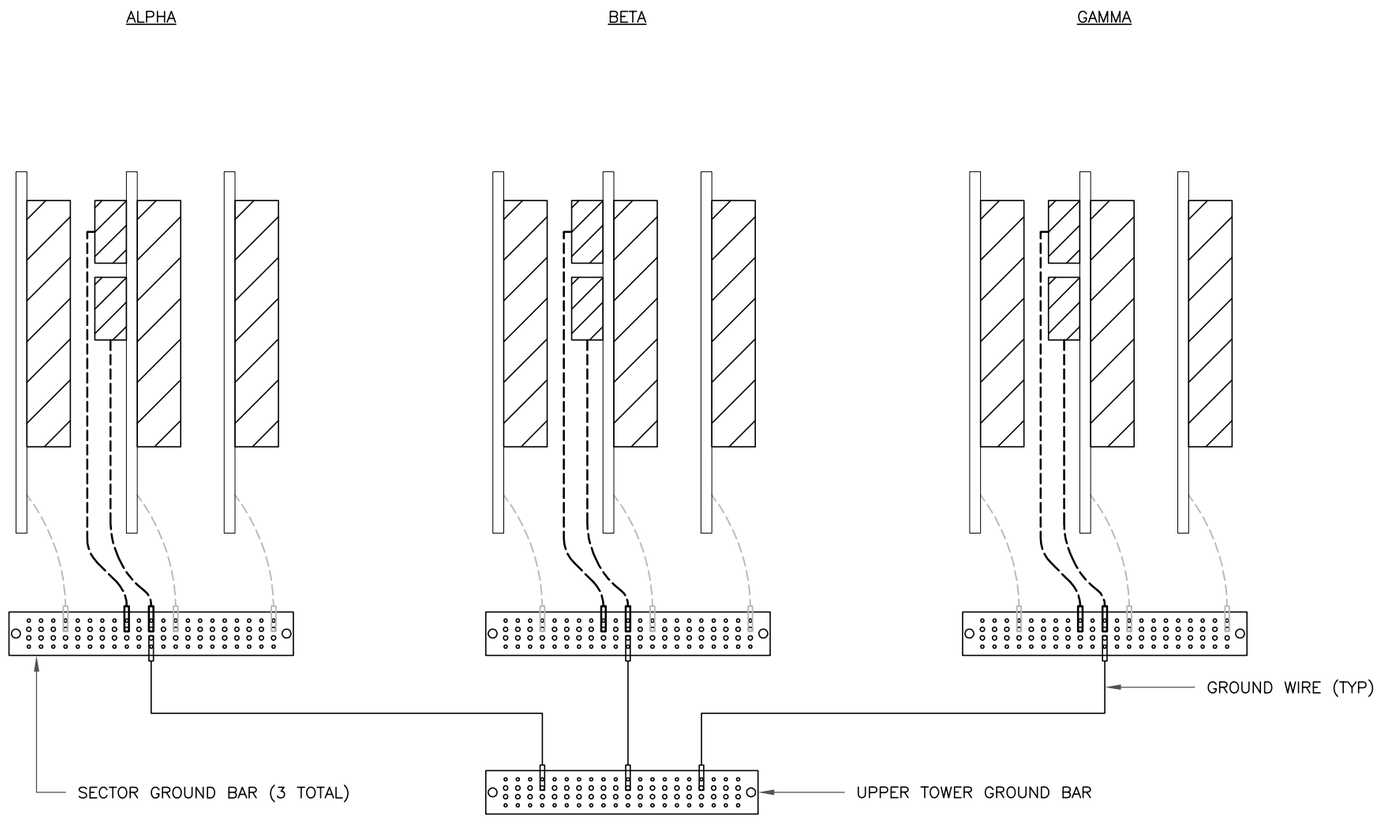
SHEET NUMBER: E-1
REVISION: 0



NOTE:

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

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

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

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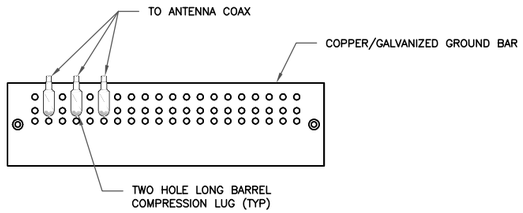
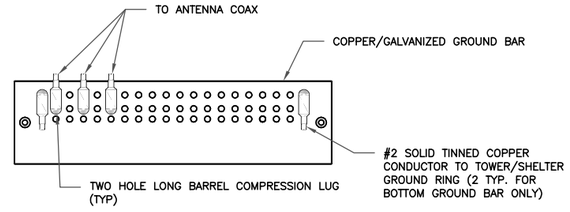


NOTES:

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

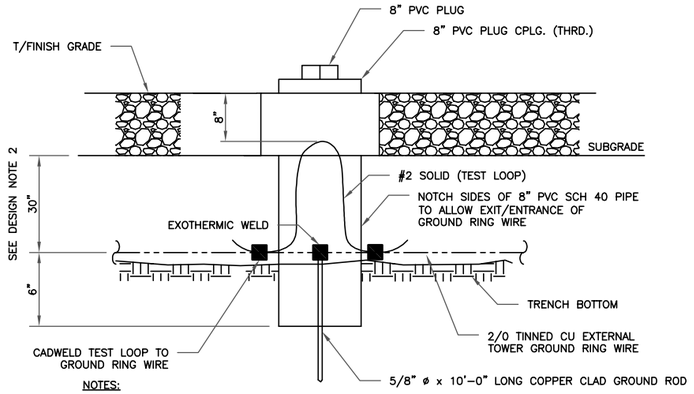
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

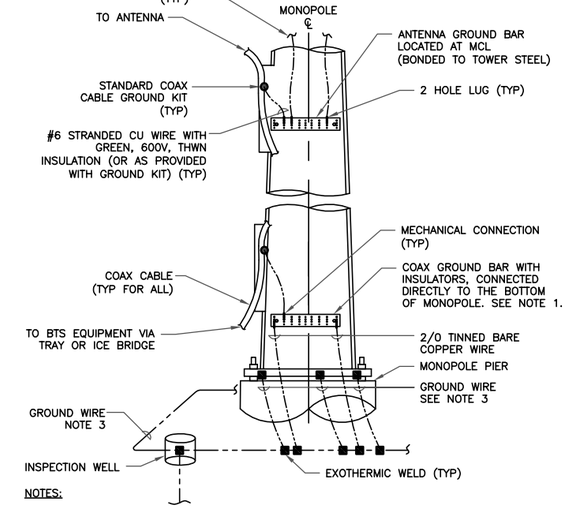
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

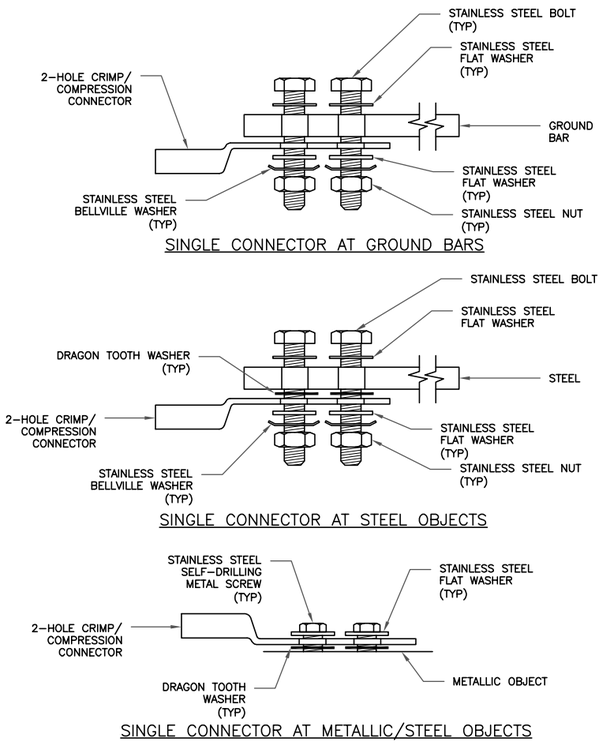
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE

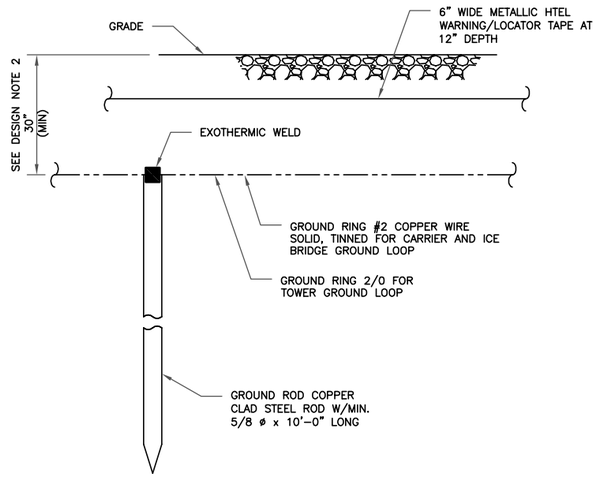


SINGLE CONNECTOR AT GROUND BARS

SINGLE CONNECTOR AT STEEL OBJECTS

SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
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BLOOMFIELD, CT 06002

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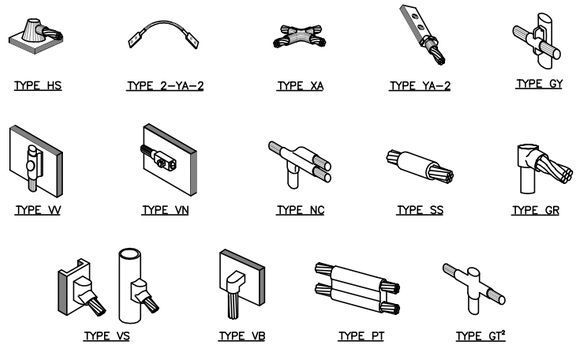
REVISION: 0

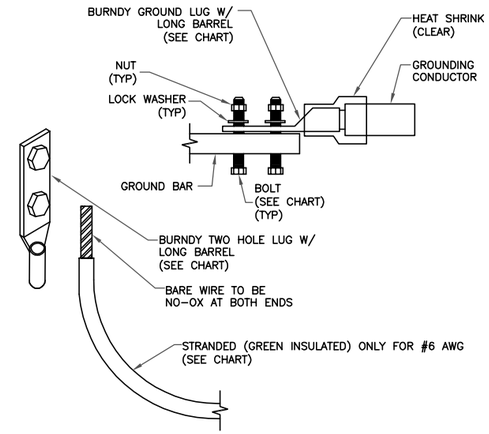


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

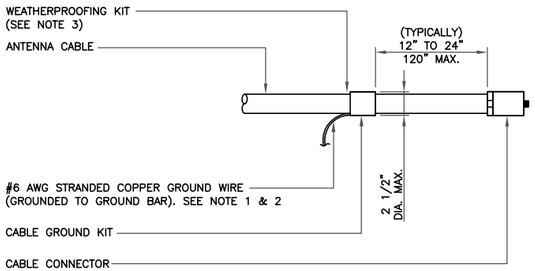
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

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

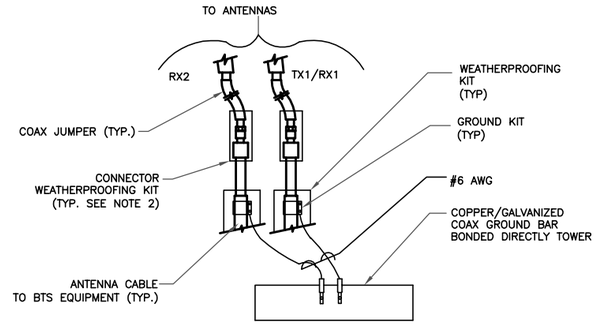
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



NOTES:

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

3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE

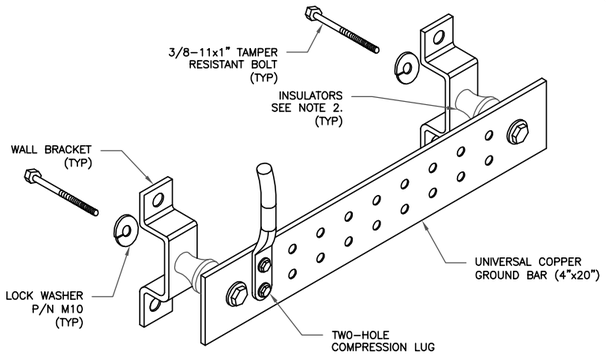


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE

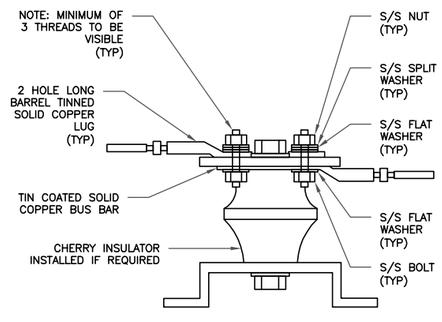
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



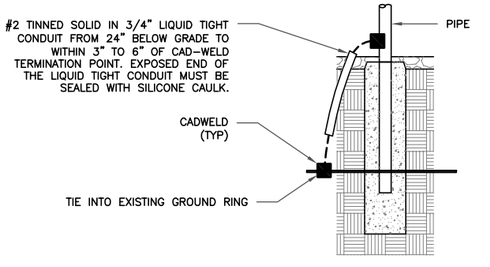
NOTES:

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

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering & Surveying Consultants P.C.
70 Pleasant Hill Road — Phone: (845) 534-5959
P.O. Box 37 — (800) 520-8531
Mountainville, NY 10953 — www.tectonicengineering.com
Project Contact Info
1279 Route 300
Newburgh, NY 12550 — Phone: (845) 567-0656
WORK ORDER #: 10545.CTNH009B

T-MOBILE SITE NUMBER:
CTNH009B

BU #: **806359**
NHV 104 943122

423 ORONOQUE ROAD
MILFORD, CT 06460

EXISTING 100'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/21	TJ	FOR CONSTRUCTION	----

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED
PROFESSIONAL ENGINEER

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

SHEET NUMBER: G-3
REVISION: 0

Exhibit D

Structural Analysis Report

Date: **May 24, 2021**

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

Subject: Structural Analysis Report

Carrier Designation:	***T-Mobile* Co-Locate**	
	Site Number:	CTNH009B
	Site Name:	NH009/CrownOronoque_ET
Crown Castle Designation:	**BU Number:**	806359
	Site Name:	NHV 104 943122
	JDE Job Number:	639019
	Work Order Number:	1933460
	Order Number:	548365 Rev. 0
Engineering Firm Designation:	**TEP Project Number:**	217723.549087
Site Data:	**423 Oronoque Road, Milford, New Haven County, CT 06460** **Latitude *41° 14' 16.23"*, Longitude *-73° 5' 10.00"*** **100 Foot - Monopole Tower**	

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

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

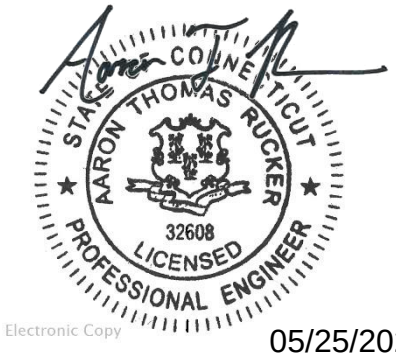
LC7: Proposed Equipment Configuration **Sufficient Capacity - 70.4%**

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

Structural analysis prepared by: Velvizhi Kumaravel / RAL

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

05/25/2021

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 100-ft monopole tower designed by Valmont. The tower has been modified per reinforcement drawings prepared by Paul J Ford and Company in July of 2008.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
81.0	83.0	3	Ericsson	AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	3	1-5/8
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	Ericsson	RADIO 4415 B25_TMO		
	81.0	1	SitePro1	RMQP-4XX Platform Mount		
		1	SitePro1	HRK-12 Support Rail		

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)
100.0	105.0	1	GPS	GPS_A	1 6 2	1/2 7/8 1-5/8
		6	Decibel	DB846F65ZAXY w/ Mount Pipe		
		3	VZW	Sub6 Antenna - VZS01 w/ Mount Pipe		
		6	JMA Wireless	MX06FRO660-03 w/ Mount Pipe		
		1	Raycap	RRFDC-3315-PF-48		
		3	Samsung Telecom.	RFV01U-D1A		
		3	Samsung Telecom.	RFV01U-D2A		
	100.0	1	Tower Mounts	Platform Mount [LP 713-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
95.0	95.0	1	Til-Tek	TA-2335-DAB-L-095	1	7/8
		1	Tower Mounts	Pipe Mount [PM 601-1]		
73.0	73.0	3	RFS Celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8
48.0	48.0	1	Til-Tek	TA-2324-LHCP	1	1/2
		1	Tower Mounts	Side Arm Mount [SO 102-3]		
42.0	50.0	1	Trimble	57860-30	2	19/64
	49.0	1	Prodelin	1111		
	42.0	1	Tower Mounts	Side Arm Mount [SO 104-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	1256016	CCISites
Foundation Mapping Report	1256012	CCISites
Tower Manufacturer Drawings	1245431	CCISites
Tower Reinforcement Drawings	2280914	CCISites
Post-Modification Inspection	2419763	CCISites

3.1) Analysis Method

tnxTower (version 8.0.9.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

3.2) Assumptions

1) The tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
3) The following material grades were assumed:
   a) Concrete compressive strength: f'c = 3 ksi
   b) Foundation reinforcement (ties): fy = 40 ksi
   c) Foundation flexural reinforcement: fy = 60 ksi

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
L1	100 - 46.833	Pole	TP33.26x23.43x0.313	1	-13.86	1977.40	42.5	Pass
L2	46.833 - 0	Pole	TP41.3x31.68x0.375	2	-26.08	3035.43	59.4	Pass
							Summary	
						Pole (L2)	59.4	Pass
						RATING =	**59.4**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	62.0	Pass
1,2	Base Plate	-	61.4	Pass
1,2	Base Foundation Soil Interaction	-	25.2	Pass
1,2	Base Foundation Structural	-	70.4	Pass

Structure Rating (max from all components) =	**70.4%**

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

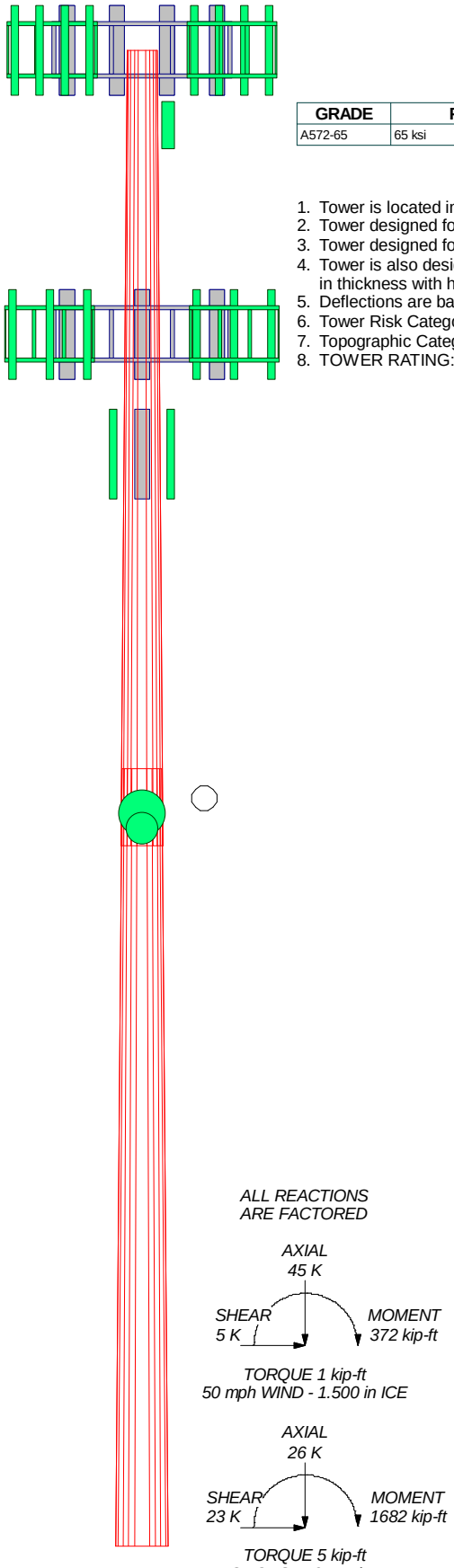
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	53.167	12	0.313	5.167	23.430	33.260	A572-65	5.1
2	52.000	12	0.375		31.680	41.300		7.7



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 59.4%

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
Phone: (919) 661-6351
FAX: (919) 661-6350
Tower Engineering Professionals

Job:	***NHV 104 943122 (BU 806359)***
Project:	***TEP No. 217723.549087***
Client: Crown Castle	Drawn by: Julie C. Ryland — App'd:
Code: TIA-222-H	Date: 05/24/21 — Scale: NTS
Path:	Dwg No. E-1

Tower Input Data

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

Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 162.000 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	100.000-46.833	53.167	5.167	12	23.430	33.260	0.313	1.250	A572-65 (65 ksi)
L2	46.833-0.000	52.000		12	31.680	41.300	0.375	1.500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.146	23.262	1586.772	8.276	12.137	130.741	3215.230	11.449	5.442	17.414
	34.323	33.153	4593.664	11.795	17.229	266.629	9308.009	16.317	8.076	25.844
L2	33.655	37.800	4728.254	11.207	16.410	288.131	9580.725	18.604	7.485	19.96
	42.625	49.417	10564.262	14.651	21.393	493.809	21406.058	24.322	10.063	26.836

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 100.000-46.833				1	1	1			
L2 46.833-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
**										
CR 50 1873(1-5/8)	A	No	Surface Ar (CaAa)	73.000 - 0.000	6	6	-0.250 -0.250	1.980		0.001
**										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF4-50A(1/2)	A	No	No	Inside Pole	100.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF5-50A(7/8)	A	No	No	Inside Pole	100.000 - 0.000	6	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
HB158-1-08U8-S8J 18(1-5/8)	A	No	No	Inside Pole	100.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
**									
HB158-21U6S24-xx M_TMO(1-5/8)	C	No	No	Inside Pole	81.000 - 0.000	3	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
							2" Ice	0.000	0.003
**									
7916A(19/64)	B	No	No	Inside Pole	42.000 - 0.000	2	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
LDF4-50A(1/2)	B	No	No	Inside Pole	48.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
AVA5-50(7/8)	B	No	No	Inside Pole	95.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
**									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	100.000-46.833	A	0.000	0.000	31.086	0.000	0.38
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.26
L2	46.833-0.000	A	0.000	0.000	55.638	0.000	0.45
		B	0.000	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.35

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	100.000-46.833	A	1.379	0.000	0.000	47.880	0.000	0.85
		B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.26
L2	46.833-0.000	A	1.233	0.000	0.000	85.695	0.000	1.29
		B		0.000	0.000	0.000	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.35

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	100.000-46.833	-3.310	0.000	-3.365	0.000
L2	46.833-0.000	-5.499	0.000	-5.497	0.000

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	11	CR 50 1873(1-5/8)	46.83 - 73.00	1.0000	1.0000
L2	11	CR 50 1873(1-5/8)	0.00 - 46.83	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
GPS_A	A	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.111 0.208 0.276 0.443	0.111 0.208 0.276 0.443	0.00 0.00 0.01 0.02
(3) DB846F65ZAXY w/ Mount Pipe	B	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.100 6.800 7.510 8.980	6.810 7.520 8.240 9.730	0.06 0.12 0.19 0.37
(3) DB846F65ZAXY w/ Mount Pipe	C	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.100 6.800 7.510 8.980	6.810 7.520 8.240 9.730	0.06 0.12 0.19 0.37
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.915 5.264 5.623 6.371	2.687 3.151 3.631 4.639	0.10 0.14 0.19 0.29
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	4.915 5.264 5.623	2.687 3.151 3.631	0.10 0.14 0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	6.371	4.639	0.29
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.915 5.264 5.623 6.371	2.687 3.151 3.631 4.639	0.10 0.14 0.19 0.29
(2) MX06FRO660-03 w/ Mount Pipe	A	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.540 7.060 7.600 8.700	5.550 6.050 6.570 7.650	0.10 0.18 0.28 0.50
(2) MX06FRO660-03 w/ Mount Pipe	B	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.540 7.060 7.600 8.700	5.550 6.050 6.570 7.650	0.10 0.18 0.28 0.50
(2) MX06FRO660-03 w/ Mount Pipe	C	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.540 7.060 7.600 8.700	5.550 6.050 6.570 7.650	0.10 0.18 0.28 0.50
RRFDC-3315-PF-48	B	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.364 3.597 3.838 4.343	2.192 2.395 2.606 3.049	0.02 0.05 0.08 0.16
(2) RFV01U-D1A	A	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.875 2.045 2.223 2.601	1.250 1.393 1.543 1.865	0.08 0.10 0.12 0.18
RFV01U-D1A	B	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.875 2.045 2.223 2.601	1.250 1.393 1.543 1.865	0.08 0.10 0.12 0.18
(3) RFV01U-D2A	B	From Centroid-Face	4.000 0.000 5.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.875 2.045 2.223 2.601	1.013 1.145 1.284 1.585	0.07 0.09 0.11 0.15
(3) 2.4" Dia x 6-ft Pipe	A	From Centroid-Face	4.000 0.000 1.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.428 1.927 2.296 3.061	1.428 1.927 2.296 3.061	0.02 0.03 0.05 0.09
2.4" Dia x 4-ft Mount Pipe	A	From Centroid-Face	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.871 1.116 1.370 1.907	0.871 1.116 1.370 1.907	0.01 0.02 0.03 0.06
2.4" Dia x 4-ft Mount Pipe	B	From Centroid-Face	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.871 1.116 1.370 1.907	0.871 1.116 1.370 1.907	0.01 0.02 0.03 0.06
2.4" Dia x 4-ft Mount Pipe	C	From Centroid-Face	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.871 1.116 1.370 1.907	0.871 1.116 1.370 1.907	0.01 0.02 0.03 0.06
Platform Mount [LP 713-1]	C	None		0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	32.890 35.760 38.760 45.260	32.890 35.760 38.760 45.260	1.51 2.23 3.03 4.86
**									
TA-2335-DAB-L-095	B	From Leg	1.000 0.000 0.000	0.000	95.000	No Ice 1/2" Ice 1" Ice	6.650 6.981 7.320	2.744 2.995 3.253	0.03 0.08 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	8.020	3.791	0.23
Pipe Mount [PM 601-1]	B	From Leg	0.500 0.000 0.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.320 1.580 1.840 2.400	1.320 1.580 1.840 2.400	0.07 0.08 0.09 0.13
**									
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	A	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.760 4.120 4.480 5.240	3.150 3.490 3.840 4.580	0.19 0.25 0.32 0.48
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	B	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.760 4.120 4.480 5.240	3.150 3.490 3.840 4.580	0.19 0.25 0.32 0.48
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	C	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.760 4.120 4.480 5.240	3.150 3.490 3.840 4.580	0.19 0.25 0.32 0.48
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.690 15.460 16.230 17.820	6.870 7.550 8.250 9.670	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.690 15.460 16.230 17.820	6.870 7.550 8.250 9.670	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.690 15.460 16.230 17.820	6.870 7.550 8.250 9.670	0.18 0.31 0.45 0.78
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.190 5.590 6.020 6.900	2.710 3.040 3.380 4.120	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.190 5.590 6.020 6.900	2.710 3.040 3.380 4.120	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.190 5.590 6.020 6.900	2.710 3.040 3.380 4.120	0.13 0.17 0.23 0.35
RADIO 4449 B71 B85A_T-MOBILE	A	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	B	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	C	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.07 0.09 0.12 0.17
RADIO 4415 B25_TMO	A	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice	1.856 2.027 2.204	0.870 0.997 1.134	0.05 0.06 0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	2.582	1.432	0.12
RADIO 4415 B25_TMO	B	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.856 2.027 2.204 2.582	0.870 0.997 1.134 1.432	0.05 0.06 0.08 0.12
RADIO 4415 B25_TMO	C	From Centroid-Face	4.000 0.000 2.000	0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.856 2.027 2.204 2.582	0.870 0.997 1.134 1.432	0.05 0.06 0.08 0.12
SitePro1 RMQP-4XX Platform Mount with Safety Rail Kit	C	None		0.000	81.000	No Ice 1/2" Ice 1" Ice 2" Ice	17.090 21.470 25.720 33.960	17.090 21.470 25.720 33.960	1.50 1.88 2.35 3.52
**									
APXV18-206517S-C w/ Mount Pipe	A	From Leg	1.000 0.000 0.000	0.000	73.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.790 4.380 4.990 6.250	3.160 3.750 4.350 5.590	0.05 0.09 0.15 0.28
APXV18-206517S-C w/ Mount Pipe	B	From Leg	1.000 0.000 0.000	0.000	73.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.790 4.380 4.990 6.250	3.160 3.750 4.350 5.590	0.05 0.09 0.15 0.28
APXV18-206517S-C w/ Mount Pipe	C	From Leg	1.000 0.000 0.000	0.000	73.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.790 4.380 4.990 6.250	3.160 3.750 4.350 5.590	0.05 0.09 0.15 0.28
**									
2.4" Dia x 6-ft Pipe	C	From Face	1.000 0.000 0.000	0.000	48.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.428 1.927 2.296 3.061	1.428 1.927 2.296 3.061	0.02 0.03 0.05 0.09
Side Arm Mount [SO 102-3]	C	None		0.000	48.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.600 4.180 4.750 5.900	3.600 4.180 4.750 5.900	0.07 0.11 0.14 0.20
**									
57860-30	A	From Leg	1.000 0.000 8.000	0.000	42.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.066 0.101 0.144 0.251	0.066 0.101 0.144 0.251	0.00 0.00 0.00 0.01
2.4" Dia x 6-ft Pipe	A	From Leg	1.000 0.000 0.000	0.000	42.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.428 1.927 2.296 3.061	1.428 1.927 2.296 3.061	0.02 0.03 0.05 0.09
2.4" Dia x 6-ft Pipe	C	From Face	1.000 0.000 0.000	0.000	42.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.428 1.927 2.296 3.061	1.428 1.927 2.296 3.061	0.02 0.03 0.05 0.09
Side Arm Mount [SO 104-3]	C	None		0.000	42.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.620 3.300 3.980 5.350	2.620 3.300 3.980 5.350	0.29 0.41 0.53 0.77
**									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
1111	C	Paraboloid w/o Radome	From Face	1.000 0.000 7.000	36.000		42.000	3.330	No Ice 1/2" Ice 1" Ice 2" Ice	8.709 9.151 9.592 10.475	0.04 0.09 0.13 0.23
*											
TA-2324-LHCP	C	Paraboloid w/Radome	From Face	1.000 0.000 0.000	18.000		48.000	2.167	No Ice 1/2" Ice 1" Ice 2" Ice	3.687 3.976 4.265 4.843	0.03 0.05 0.07 0.11
*											

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service

Comb. No.	Description
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 46.833	9.092	42	0.741	0.008
L2	52 - 0	2.703	42	0.465	0.003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.000	GPS_A	42	9.092	0.741	0.008	47356
95.000	TA-2335-DAB-L-095	42	8.330	0.716	0.008	47356
81.000	AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	42	6.251	0.644	0.006	12462
73.000	APXV18-206517S-C w/ Mount Pipe	42	5.139	0.599	0.005	8769
49.000	1111	42	2.431	0.442	0.002	5246
48.000	TA-2324-LHCP	42	2.346	0.435	0.002	5345
42.000	57860-30	42	1.875	0.387	0.002	6106

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 46.833	41.912	8	3.405	0.038
L2	52 - 0	12.484	8	2.145	0.012

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.000	GPS_A	8	41.912	3.405	0.038	10347
95.000	TA-2335-DAB-L-095	8	38.404	3.292	0.035	10347
81.000	AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	8	28.829	2.964	0.027	2721
73.000	APXV18-206517S-C w/ Mount Pipe	8	23.706	2.763	0.022	1914
49.000	1111	8	11.231	2.042	0.011	1142
48.000	TA-2324-LHCP	8	10.835	2.007	0.011	1164
42.000	57860-30	8	8.667	1.789	0.009	1329

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	100 - 46.833 (1)	TP33.26x23.43x0.313	53.167	0.000	0.0	32.192	-13.86	1883.24	0.007
L2	46.833 - 0 (2)	TP41.3x31.68x0.375	52.000	0.000	0.0	49.417	-26.08	2890.89	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	100 - 46.833 (1)	TP33.26x23.43x0.313	627.12	1431.78	0.438	0.00	1431.78	0.000
L2	46.833 - 0 (2)	TP41.3x31.68x0.375	1682.34	2740.08	0.614	0.00	2740.08	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	100 - 46.833 (1)	TP33.26x23.43x0.313	16.70	564.97	0.030	0.85	1589.90	0.001
L2	46.833 - 0 (2)	TP41.3x31.68x0.375	22.91	867.27	0.026	2.08	3122.06	0.001

Pole Interaction Design Data

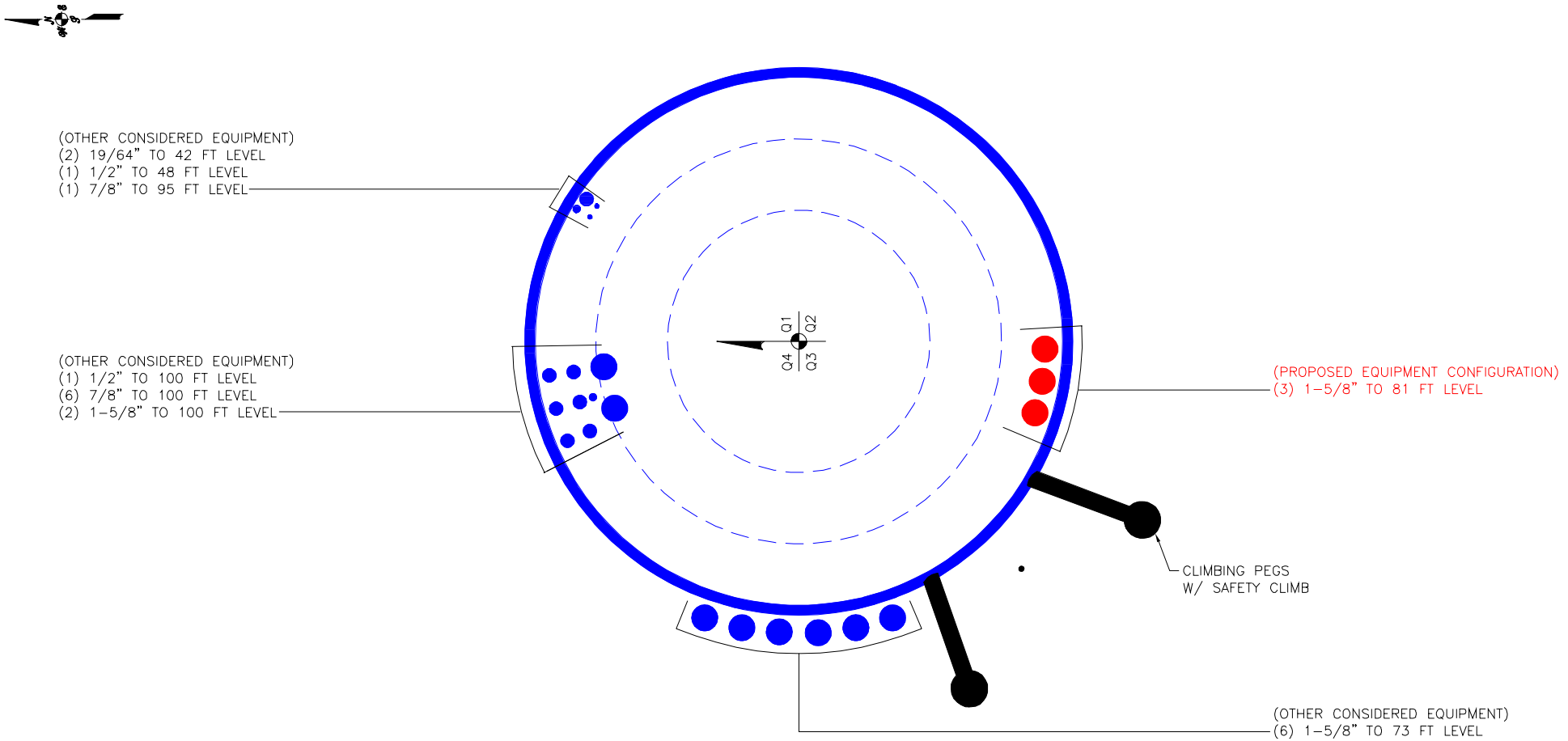
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	100 - 46.833 (1)	0.007	0.438	0.000	0.030	0.001	0.446	1.050	4.8.2
L2	46.833 - 0 (2)	0.009	0.614	0.000	0.026	0.001	0.624	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	100 - 46.833	Pole	TP33.26x23.43x0.313	1	-13.86	1977.40	42.5	Pass
L2	46.833 - 0	Pole	TP41.3x31.68x0.375	2	-26.08	3035.43	59.4	Pass
						Summary		
						Pole (L2)	59.4	Pass
						RATING =	**59.4**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(2) 19/64" TO 42 FT LEVEL
(1) 1/2" TO 48 FT LEVEL
(1) 7/8" TO 95 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 100 FT LEVEL
(6) 7/8" TO 100 FT LEVEL
(2) 1-5/8" TO 100 FT LEVEL
Q1
Q2
Q4
Q3
(PROPOSED EQUIPMENT CONFIGURATION)
(3) 1-5/8" TO 81 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 73 FT LEVEL

APPENDIX C

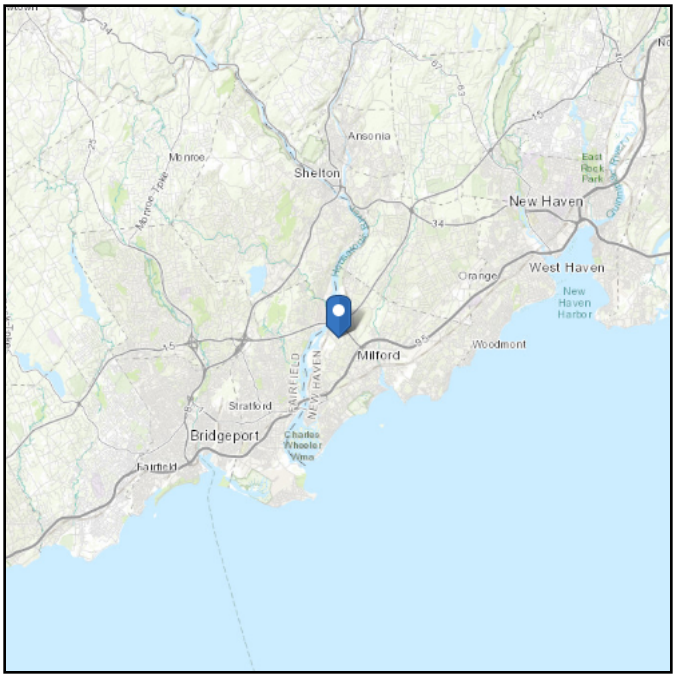
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 161.91 ft (NAVD 88)
Latitude: 41.237842
Longitude: -73.086111



Wind

Results:

Wind Speed:	124 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	93 Vmph
100-year MRI	100 Vmph

Wind Speed Updated to 125 mph per the Local Jurisdiction Requirements.

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

Date Accessed: Tue May 18 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 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.

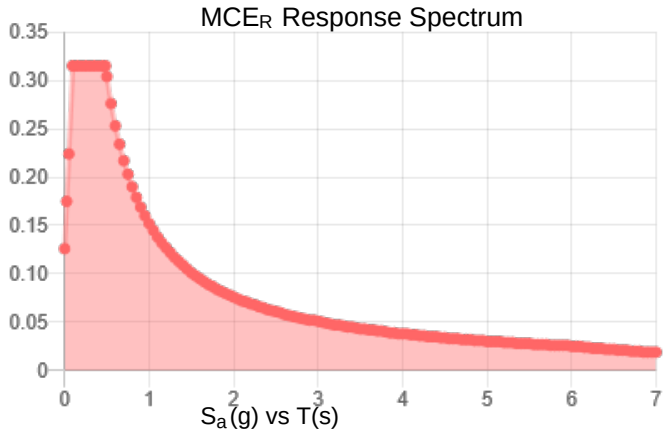
Seismic

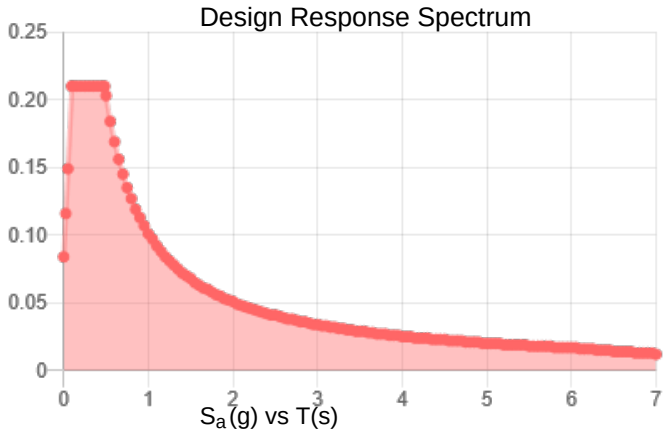
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.197	S_{DS} :	0.21
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.105
S_{MS} :	0.315	PGA_M :	0.167
S_{M1} :	0.152	F_{PGA} :	1.59
		I_e :	1

Seismic Design Category B





Data Accessed: Tue May 18 2021

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

Ice

Results:

Ice Thickness:	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:	Tue May 18 2021

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

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

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

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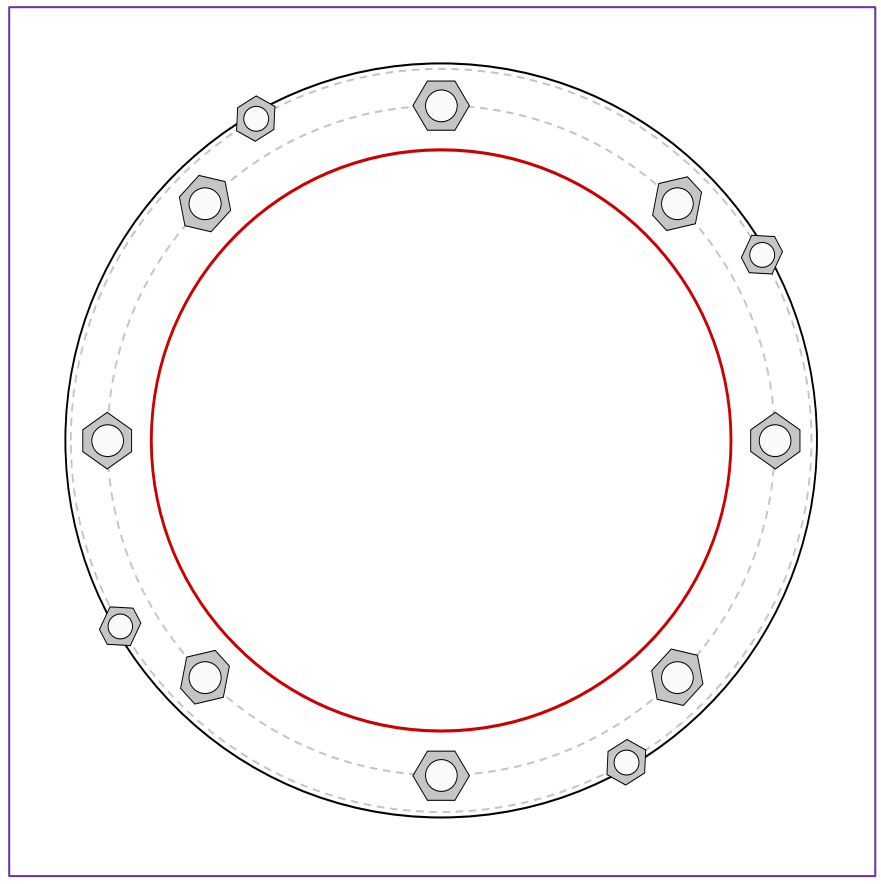
Monopole Base Plate Connection

Site Info	
BU #	806359
Site Name	NHV 104 943122
Order #	548365 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	1682.34
Axial Force (kips)	26.08
Shear Force (kips)	22.91

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (8) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 47.58" BC

GROUP 2: (4) 2-1/4"ø Dywidag bolts (Dywidag A722 N; Fy=120 ksi, Fu=125 ksi) on 52.8'

Base Plate Data

53.58" OD x 2.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

41.3" x 0.375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

GROUP 1:

Pu_t = 117.54	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.76	ϕVn = 149.1	**45.9%**
Mu = n/a	ϕMn = n/a	**Pass**

GROUP 2:

Pu_c = 169.06	ϕPn_c = 259.77	**Stress Rating**
Vu = 2.21	ϕVn = 116.9	**62.0%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	34.79	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**61.4%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

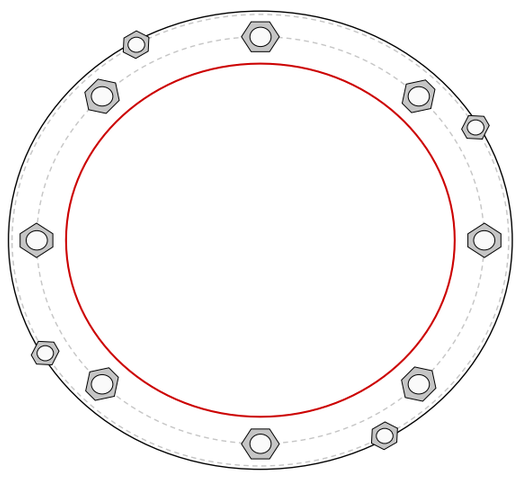
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	Yes	No	
2	Yes	Yes	Yes	Yes	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2.25	A615-75	47.58	0.5	1.75	N-Included		No
2	1	45	2.25	A615-75	47.58	0.5	1.75	N-Included		No
3	1	90	2.25	A615-75	47.58	0.5	1.75	N-Included		No
4	1	135	2.25	A615-75	47.58	0.5	1.75	N-Included		No
5	1	180	2.25	A615-75	47.58	0.5	1.75	N-Included		No
6	1	225	2.25	A615-75	47.58	0.5	1.75	N-Included		No
7	1	270	2.25	A615-75	47.58	0.5	1.75	N-Included		No
8	1	315	2.25	A615-75	47.58	0.5	1.75	N-Included		No
9	2	30	1.75	Dywidag A722	52.8	0.5	1.75	N-Included		No
10	2	120	1.75	Dywidag A722	52.8	0.5	1.75	N-Included		No
11	2	210	1.75	Dywidag A722	52.8	0.5	1.75	N-Included		No
12	2	300	1.75	Dywidag A722	52.8	0.5	1.75	N-Included		No

Plot Graphic



Drilled Pier Foundation

BU # :	806359
Site Name:	NHV 104 943122
Order Number:	548365 Rev. 0

Report File:

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	**Comp.**	**Uplift**
Moment (kip-ft)	1682	
Axial Force (kips)	36	
Shear Force (kips)	23	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	13.7	ft
Ext. Above Grade	1.3	ft
Pier Section 1		
From 1.3' above grade to 13.7' below grade		
Pier Diameter	7.8	ft
Rebar Quantity	22	
Rebar Size	11	
Clear Cover to Ties	3	in
Tie Size	6	
Tie Spacing		in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{V=0}$ (ft from TOC)	7.92	-
Soil Safety Factor	5.02	-
Max Moment (kip-ft)	1914.33	-
Rating*	*25.2%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	727.30	-
End Bearing (kips)	1502.05	-
Weight of Concrete (kips)	129.02	-
Total Capacity (kips)	2229.35	-
Axial (kips)	165.02	-
Rating*	*7.0%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	7.76	-
Critical Moment (kip-ft)	1914.15	-
Critical Moment Capacity	6283.83	-
Rating*	*29.0%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	11.99	-
Critical Shear (kip)	624.10	-
Critical Shear Capacity	844.54	-
Rating*	*70.4%*	-

Soil Interaction Rating*	**25.2%**
Structural Foundation Rating*	**70.4%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Soil Profile

Groundwater Depth	N/A	# of Layers	4

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	105	150	0		0.000	0.000	0.00	0.00			Cohesionless
2	4	6	2	105	150		29	0.000	0.000	0.62	0.62			Cohesionless
3	6	8.3	2.3	135	150		40	0.000	0.000	2.58	2.58			Cohesionless
4	8.3	13.7	5.4	180	150	20		9.000	9.000	6.00	6.00	40		Cohesive

Exhibit E

Mount Analysis

Date: May 8, 2021

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

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CTNH009B
	Carrier Site Name:	NH009/CrownOronoque_ET
Crown Castle Designation:	**BU Number:**	806359
	Site Name:	NHV 104 943122
	JDE Job Number:	639019
	Order Number:	548365, Rev. 0
Engineering Firm Designation:	**B+T Group Report Designation:**	148268.004.01
Site Data:	**423 Oronoque Road, Milford, CT, New Haven County, 06460** **Latitude 41° 14' 16.23" Longitude -73° 5' 10.00"**	
Structure Information:	**Tower Height & Type:**	**100 ft. Monopole**
	Mount Elevation:	**81 ft.**
	Mount Type:	**12.5 ft. Platform Mount**

B+T Group is pleased to submit this **"Mount Replacement 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's stress level. Based on our analysis we have determined the stress level to be:

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

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code(2015 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Anne Delice

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

Chad E. Tuttle, P.E.

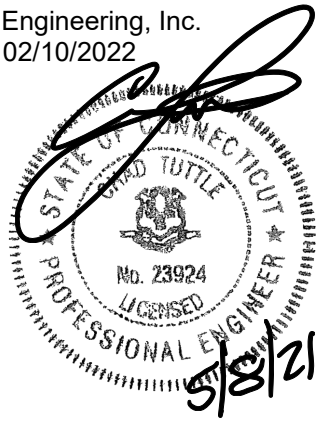


TABLE OF CONTENTS

1) INTRODUCTION

This is a proposed 3 - sector 12.5' Platform Mount, designed by SitePro1 (Part# RMQP-4xx with HRK - 12).

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.197
Seismic S_1:	0.063
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Qty.	Manufacturer	Model / Type	Mount / Modification Details
81	83	3	Ericsson	AIR 32 B2A B66AA_T-Mobile	12.5' Platform Mount
		3	Ericsson	AIR6449 B41_T-Mobile	
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	Radio 4415 B25_TMO	
		3	Ericsson	Radio 4449 B71 B85A_T-Mobile	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 02/26/2021	Crown Castle
RFDS		Date: 02/18/2021	
Previous MA	B+T Group	Date: 04/27/2021	On File

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

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

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

Manufacturers drawing were used to create the model.

3.2) Assumptions

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

Component	Section	Length	Note
Proposed Mount Pipes	2" Std. Pipe	8'-0"	In All Positions

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1	Main Horizontals	83	80	22.2	Pass
	Support Rails	83	30	78.4	Pass
	Supporting Tubes	83	7	71.4	Pass
	Mount Pipes	83	68	74.5	Pass
	Connection Plates	83	16	50.8	Pass
	Support Angles	83	14	24.0	Pass
	Connection Angles	83	31	77.9	Pass
2	Connection Bolts	83	-	56.6	Pass

Structure Rating (max from all components) =	78.4%

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

4.1) Recommendations

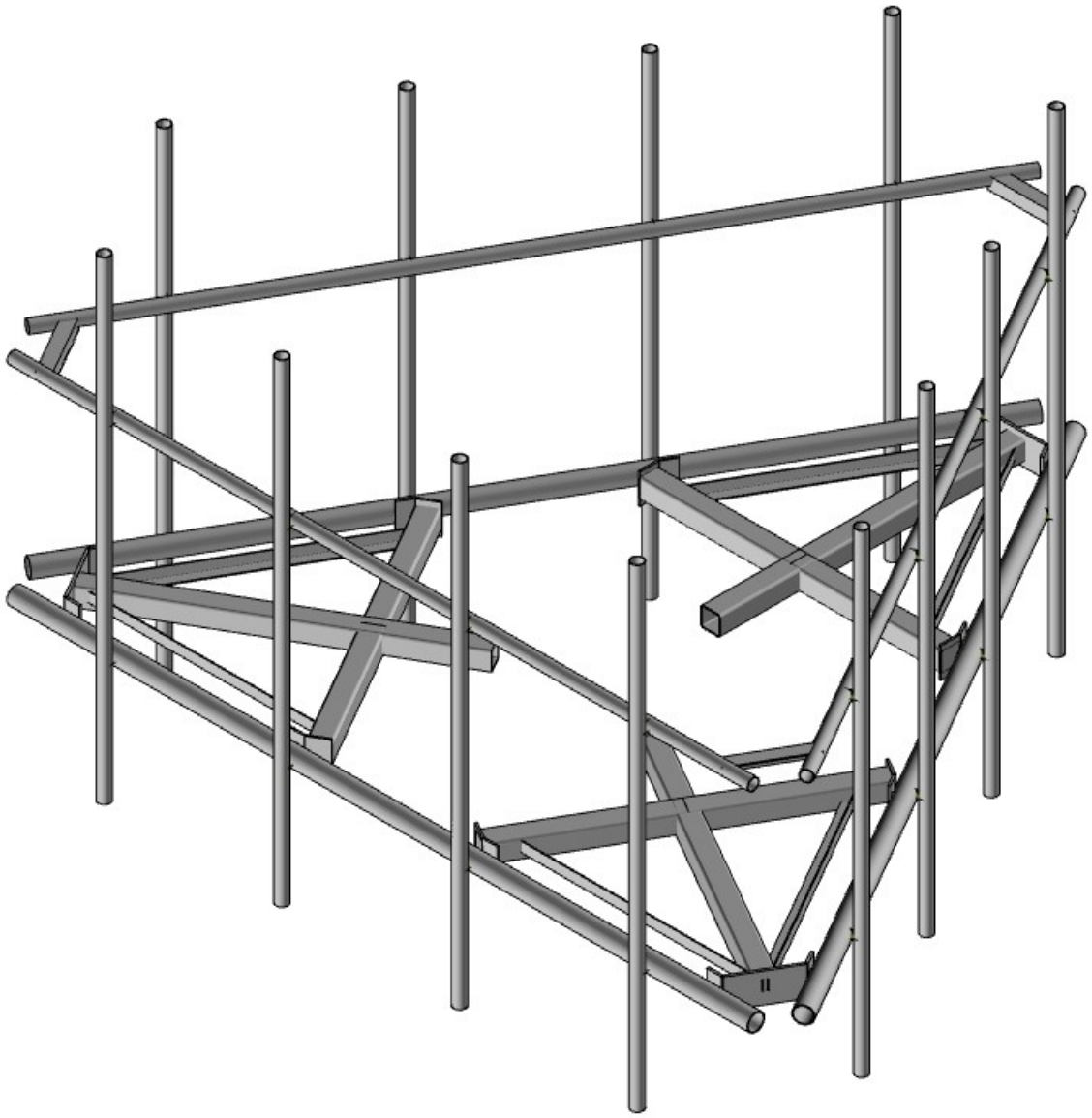
The proposed mount has sufficient capacity to support the proposed loading configuration. In order for the results of this analysis to be considered valid, the mount listed below shall be installed.

1. Mount replacement, SitePro1 RMQP-4XX With HRK-12.

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



B+T Group	806359 - NHV 104 943122	MP1
MP		May 07, 2021
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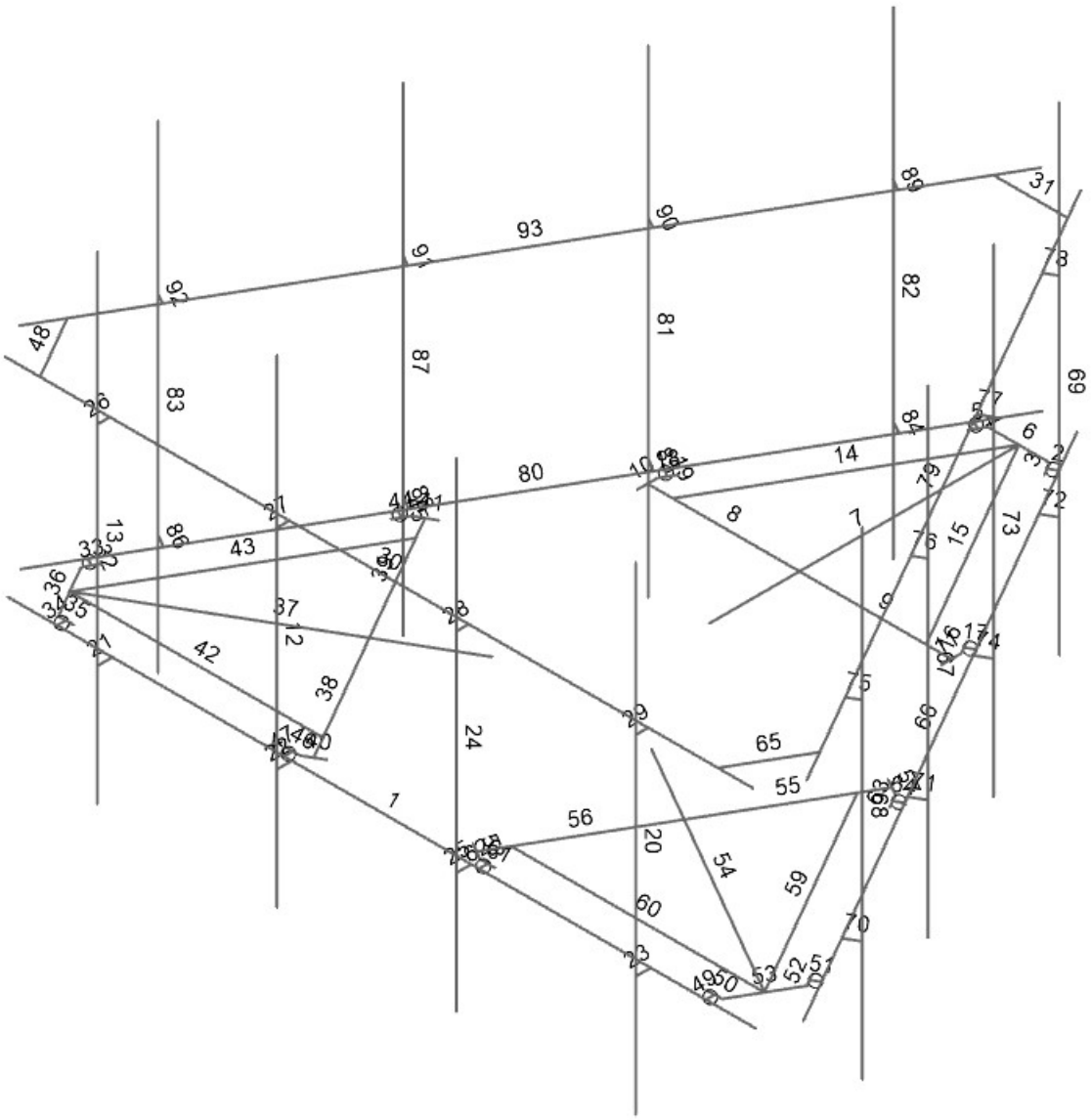

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MP		May 07, 2021
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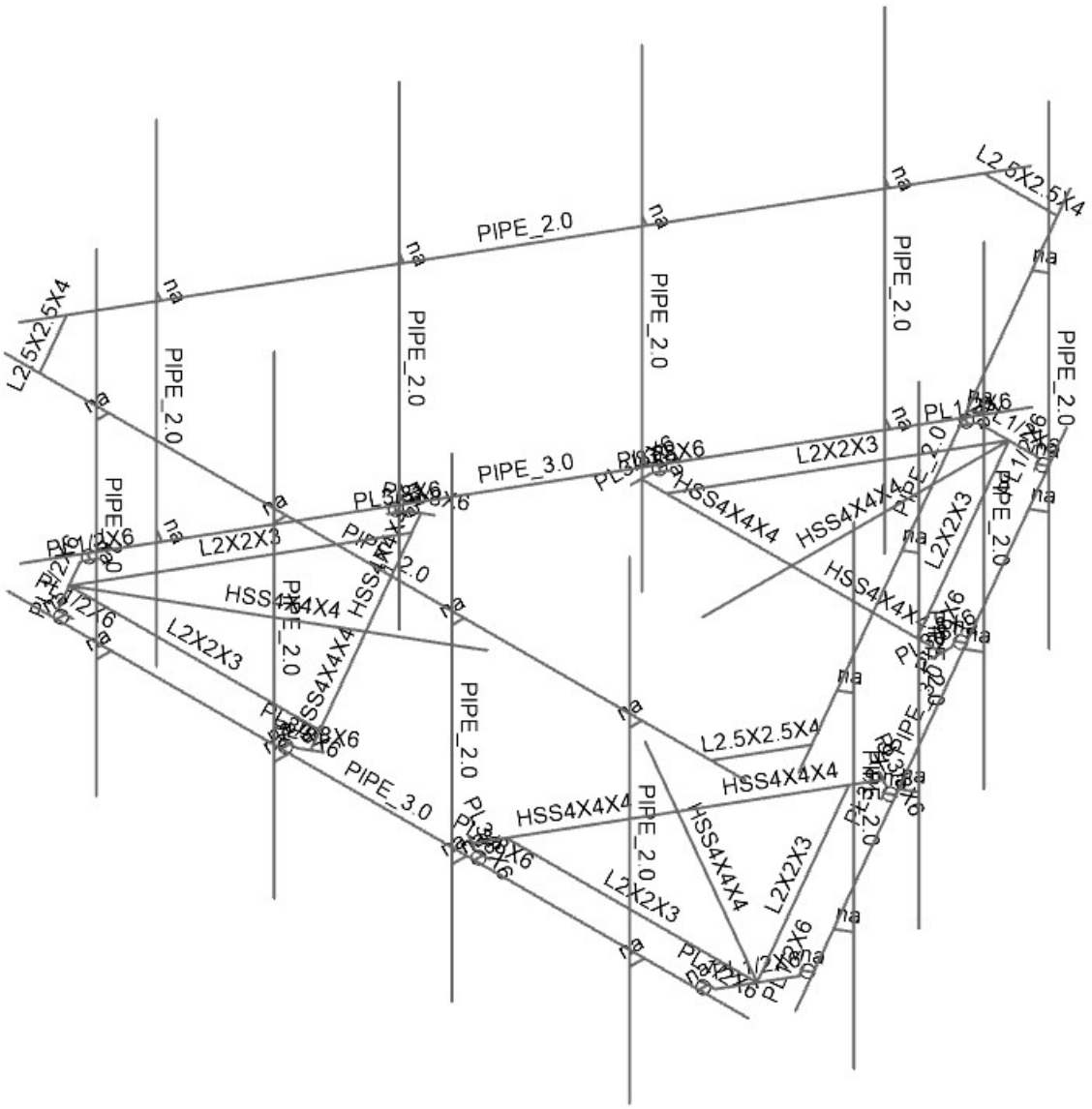

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MP		May 07, 2021
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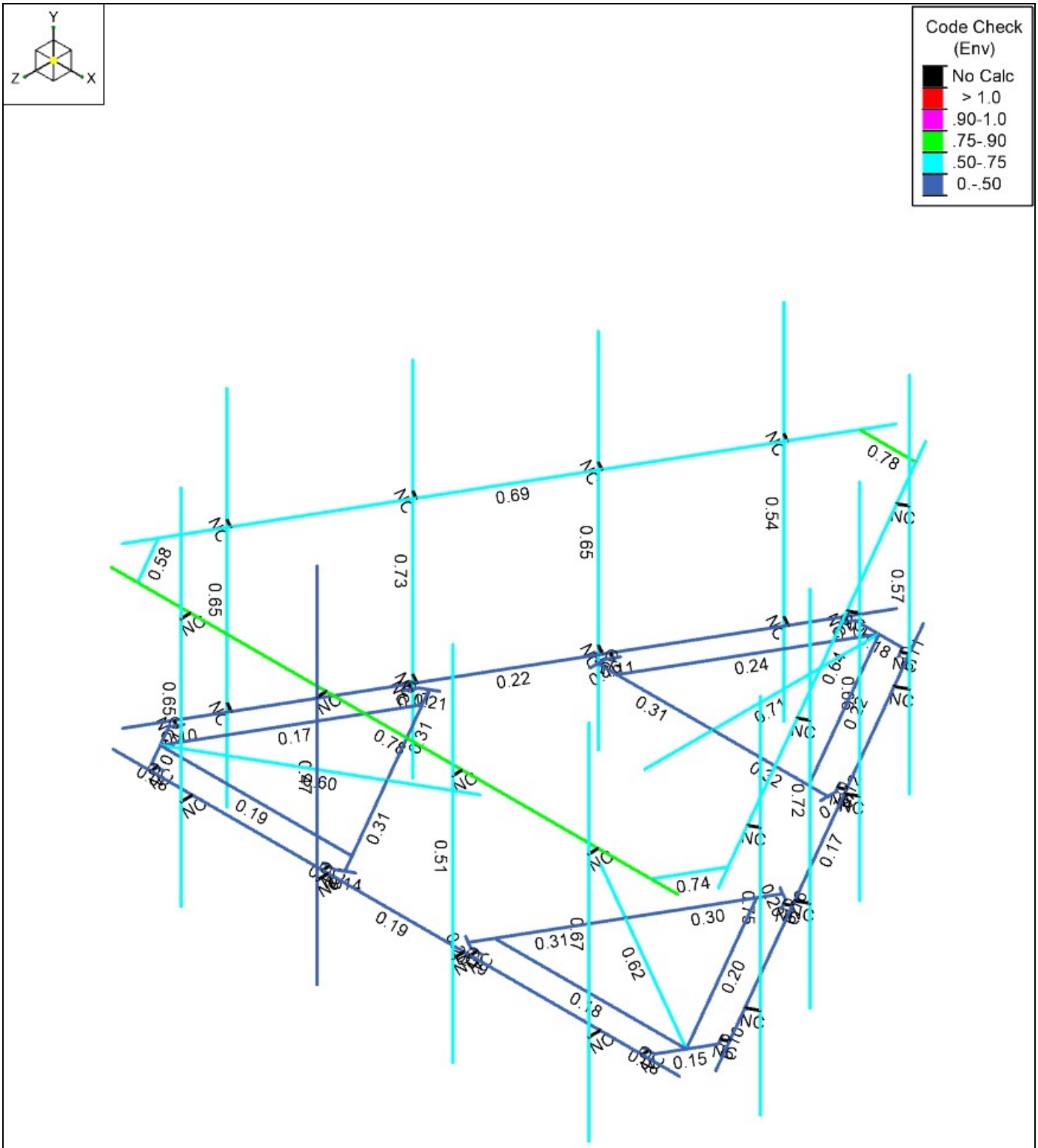

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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MP		May 07, 2021
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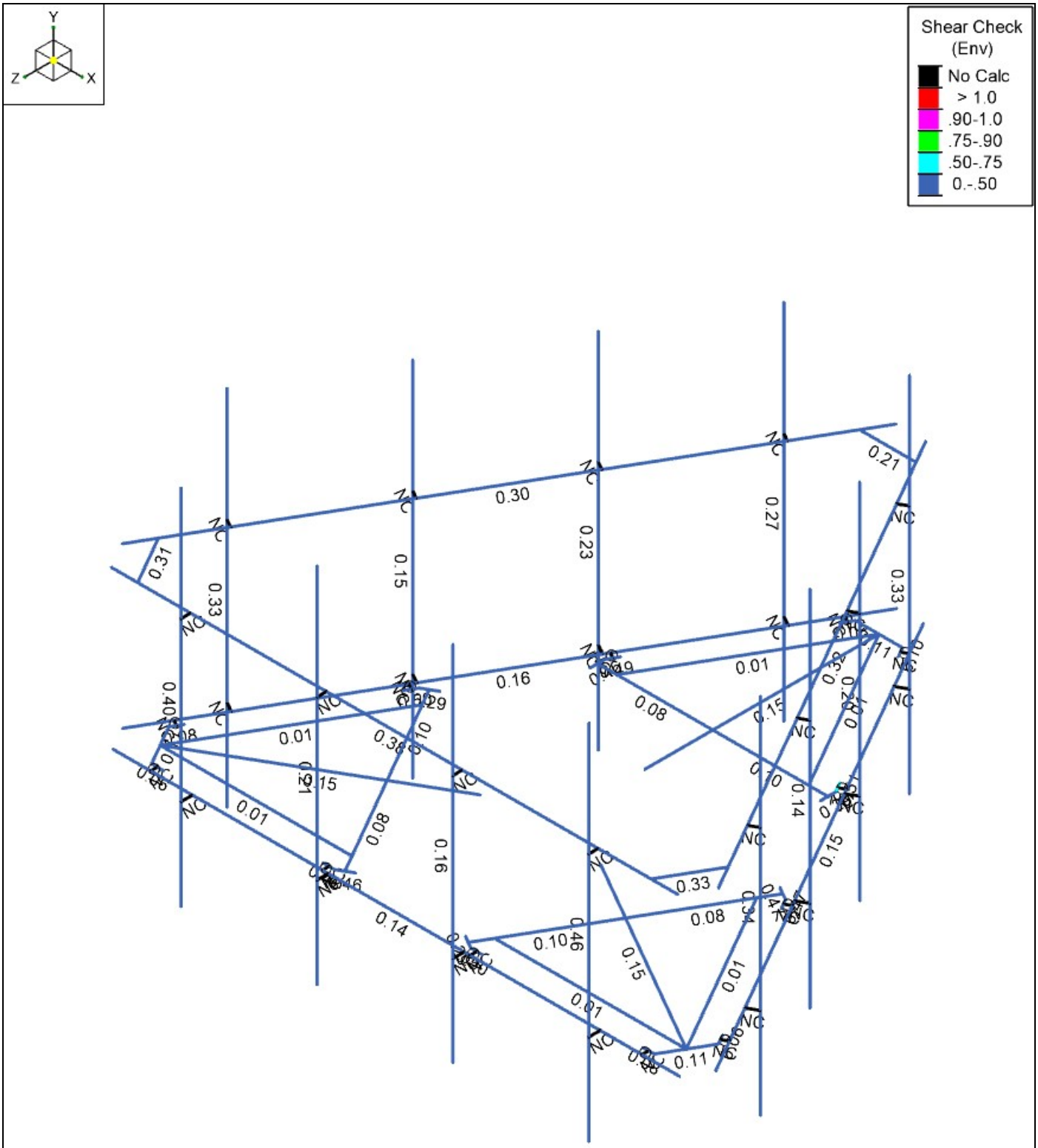


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	806359 - NHV 104 943122	MP5
MP		May 07, 2021
149269.004.01		149269_004_01_NHV 104 94312…

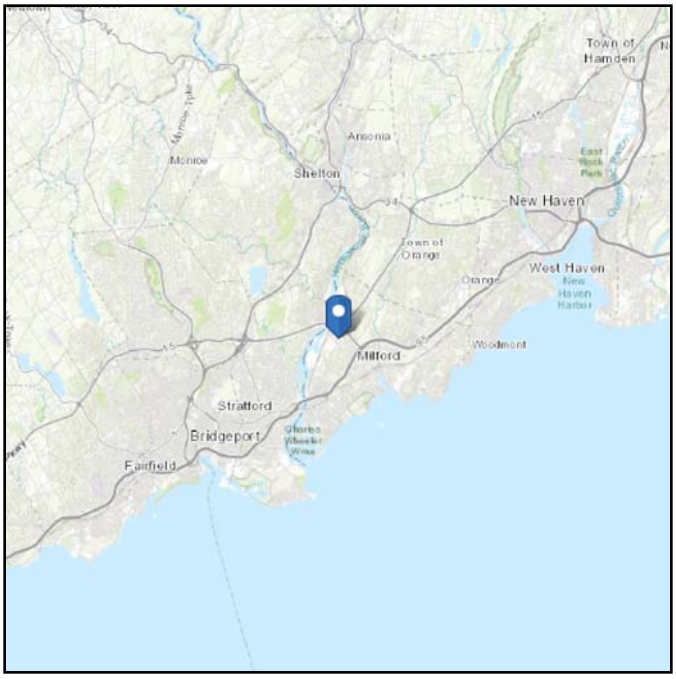
APPENDIX B

SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	161.91 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.237842
Soil Class:	D - Stiff Soil	**Longitude:**	-73.086111



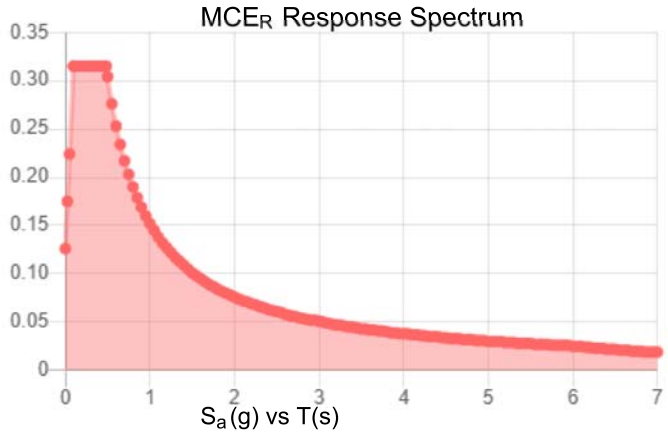
Seismic

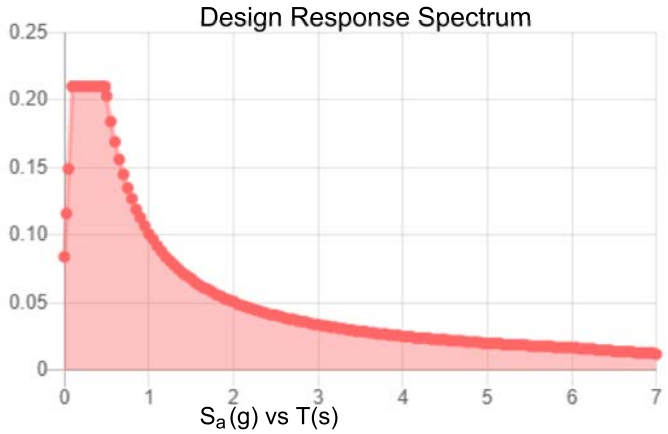
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.197	S_{DS} :	0.21
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.105
S_{MS} :	0.315	PGA_M :	0.167
S_{M1} :	0.152	F_{PGA} :	1.59
		I_e :	1

Seismic Design Category B





Data Accessed: Tue May 04 2021

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

Ice

Results:

Ice Thickness:	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:	Tue May 04 2021

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

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

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

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PROJECT	**149269.004.01 - NHV 104 94**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**05/07/21**	PAGE	OF

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

Tower Type		:	Monopole		
Ground Elevation	z_s	:	162	ft	[ASCE7 Hazard Tool]
Tower Height		:	100.00	ft	
Mount Elevation		:	81.00	ft	
Antenna Elevation		:	83.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	C		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	125	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	1.50	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.20		
	S_1	:	0.06		
	S_{DS}	:	0.21		
	S_{D1}	:	0.10		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.22		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.99		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	1.64	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.105		[Sec. 2.7.7.1]
Amplification	A_s	:	2.24		[Sec. 16.7]

	q_z	:	45.74	psf

PROJECT	149269.004.01 - NHV 104 94		KSC
SUBJECT	Platform Mount Analysis		
DATE	05/07/21	PAGE	OF

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.12	0.05	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.12	0.05	0.02	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.34	0.12	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.34	0.12	0.06	0.03
ERICSSON	RADIO 4415 B25_TMO	1	1.22	1.20	1.55	0.72	2.31	1.32	0.08	0.04	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBI	1	1.36	1.20	1.64	1.32	2.43	2.05	0.08	0.07	0.01	0.01
ERICSSON	AIR 32 B2A B66AA_TMOBILE	0.5	4.60	1.29	2.65	1.79	3.51	2.60	0.14	0.10	0.02	0.02
ERICSSON	AIR 32 B2A B66AA_TMOBILE	0.5	4.60	1.29	2.65	1.79	3.51	2.60	0.14	0.10	0.02	0.02
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.12	0.05	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.12	0.05	0.02	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.34	0.12	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.34	0.12	0.06	0.03
ERICSSON	RADIO 4415 B25_TMO	1	1.22	1.20	1.55	0.72	2.31	1.32	0.08	0.04	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBI	1	1.36	1.20	1.64	1.32	2.43	2.05	0.08	0.07	0.01	0.01
ERICSSON	AIR 32 B2A B66AA_TMOBILE	0.5	4.60	1.29	2.65	1.79	3.51	2.60	0.14	0.10	0.02	0.02
ERICSSON	AIR 32 B2A B66AA_TMOBILE	0.5	4.60	1.29	2.65	1.79	3.51	2.60	0.14	0.10	0.02	0.02

PROJECT	**149269.004.01 - NHV 104 94**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**05/07/21**	PAGE 3	OF

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.12	0.05	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.12	0.05	0.02	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.34	0.12	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.34	0.12	0.06	0.03
ERICSSON	RADIO 4415 B25_TMO	1	1.22	1.20	1.55	0.72	2.31	1.32	0.08	0.04	0.01	0.01
ERICSSON	ADIO 4449 B71 B85A_T-MOBI	1	1.36	1.20	1.64	1.32	2.43	2.05	0.08	0.07	0.01	0.01
ERICSSON	AIR 32 B2A B66AA_TMOBILE	0.5	4.60	1.29	2.65	1.79	3.51	2.60	0.14	0.10	0.02	0.02
ERICSSON	AIR 32 B2A B66AA_TMOBILE	0.5	4.60	1.29	2.65	1.79	3.51	2.60	0.14	0.10	0.02	0.02

PROJECT	**149269.004.01 - NHV 104 94**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**05/07/21**	PAGE 4	OF

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	MF-H1	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	MF-H2	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	SF-H1	HSS4X4X4	Beam	Tube	A53 Gr.B	Typical	3.37	7.8	7.8	12.8
4	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
5	MF-CP1	PL3/8x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
6	MF-CP2	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	0.063	9	0.237
7	SF-H2	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
8	SF-H3	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	2	1		MF-H1	Beam	Pipe	A53 Gr.B	Typical
2	2	3	4		RIGID	None	None	RIGID	Typical
3	3	5	6		MF-CP2	Beam	RECT	A36 Gr.36	Typical
4	4	7	8		RIGID	None	None	RIGID	Typical
5	5	9	10		MF-CP2	Beam	RECT	A36 Gr.36	Typical
6	6	10	6		MF-CP2	Beam	RECT	A36 Gr.36	Typical
7	7	12	11		SF-H1	Beam	Tube	A53 Gr.B	Typical
8	8	14	13		SF-H1	Beam	Tube	A53 Gr.B	Typical
9	9	13	15		SF-H1	Beam	Tube	A53 Gr.B	Typical
10	10	18	27		MF-CP1	Beam	RECT	A36 Gr.36	Typical
11	11	19	26		MF-CP1	Beam	RECT	A36 Gr.36	Typical
12	12	21	23		MF-P1	Column	Pipe	A53 Gr.B	Typical
13	13	20	22		MF-P1	Column	Pipe	A53 Gr.B	Typical
14	14	24	11		SF-H2	Beam	Single Angle	A36 Gr.36	Typical
15	15	11	25		SF-H2	Beam	Single Angle	A36 Gr.36	Typical
16	16	26	28		MF-CP1	Beam	RECT	A36 Gr.36	Typical
17	17	29	30		RIGID	None	None	RIGID	Typical
18	18	27	31		MF-CP1	Beam	RECT	A36 Gr.36	Typical
19	19	32	33		RIGID	None	None	RIGID	Typical
20	20	35	36		MF-P1	Column	Pipe	A53 Gr.B	Typical
21	21	16	37		RIGID	None	None	RIGID	Typical
22	22	17	38		RIGID	None	None	RIGID	Typical
23	23	34	39		RIGID	None	None	RIGID	Typical
24	24	41	42		MF-P1	Column	Pipe	A53 Gr.B	Typical
25	25	40	43		RIGID	None	None	RIGID	Typical
26	26	44	50		RIGID	None	None	RIGID	Typical
27	27	45	51		RIGID	None	None	RIGID	Typical
28	28	47	53		RIGID	None	None	RIGID	Typical
29	29	46	52		RIGID	None	None	RIGID	Typical
30	30	49	48		MF-H2	Beam	Pipe	A53 Gr.B	Typical
31	31	55	54	180	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
32	32	57	58		RIGID	None	None	RIGID	Typical
33	33	59	60		MF-CP2	Beam	RECT	A36 Gr.36	Typical
34	34	61	62		RIGID	None	None	RIGID	Typical
35	35	63	64		MF-CP2	Beam	RECT	A36 Gr.36	Typical
36	36	64	60		MF-CP2	Beam	RECT	A36 Gr.36	Typical
37	37	66	65		SF-H1	Beam	Tube	A53 Gr.B	Typical
38	38	68	67		SF-H1	Beam	Tube	A53 Gr.B	Typical
39	39	67	69		SF-H1	Beam	Tube	A53 Gr.B	Typical
40	40	70	75		MF-CP1	Beam	RECT	A36 Gr.36	Typical
41	41	71	74		MF-CP1	Beam	RECT	A36 Gr.36	Typical
42	42	72	65		SF-H2	Beam	Single Angle	A36 Gr.36	Typical
43	43	65	73		SF-H2	Beam	Single Angle	A36 Gr.36	Typical
44	44	74	76		MF-CP1	Beam	RECT	A36 Gr.36	Typical
45	45	77	78		RIGID	None	None	RIGID	Typical
46	46	75	79		MF-CP1	Beam	RECT	A36 Gr.36	Typical
47	47	80	81		RIGID	None	None	RIGID	Typical
48	48	83	82	180	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
49	49	84	85		RIGID	None	None	RIGID	Typical
50	50	86	87		MF-CP2	Beam	RECT	A36 Gr.36	Typical
51	51	88	89		RIGID	None	None	RIGID	Typical
52	52	90	91		MF-CP2	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
53	53	91	87		MF-CP2	Beam	RECT	A36 Gr.36	Typical
54	54	93	92		SF-H1	Beam	Tube	A53 Gr.B	Typical
55	55	95	94		SF-H1	Beam	Tube	A53 Gr.B	Typical
56	56	94	96		SF-H1	Beam	Tube	A53 Gr.B	Typical
57	57	97	102		MF-CP1	Beam	RECT	A36 Gr.36	Typical
58	58	98	101		MF-CP1	Beam	RECT	A36 Gr.36	Typical
59	59	99	92		SF-H2	Beam	Single Angle	A36 Gr.36	Typical
60	60	92	100		SF-H2	Beam	Single Angle	A36 Gr.36	Typical
61	61	101	103		MF-CP1	Beam	RECT	A36 Gr.36	Typical
62	62	104	105		RIGID	None	None	RIGID	Typical
63	63	102	106		MF-CP1	Beam	RECT	A36 Gr.36	Typical
64	64	107	108		RIGID	None	None	RIGID	Typical
65	65	110	109	180	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
66	66	112	111		MF-H1	Beam	Pipe	A53 Gr.B	Typical
67	67	116	118		MF-P1	Column	Pipe	A53 Gr.B	Typical
68	68	115	117		MF-P1	Column	Pipe	A53 Gr.B	Typical
69	69	120	121		MF-P1	Column	Pipe	A53 Gr.B	Typical
70	70	113	122		RIGID	None	None	RIGID	Typical
71	71	114	123		RIGID	None	None	RIGID	Typical
72	72	119	124		RIGID	None	None	RIGID	Typical
73	73	126	127		MF-P1	Column	Pipe	A53 Gr.B	Typical
74	74	125	128		RIGID	None	None	RIGID	Typical
75	75	129	135		RIGID	None	None	RIGID	Typical
76	76	130	136		RIGID	None	None	RIGID	Typical
77	77	132	138		RIGID	None	None	RIGID	Typical
78	78	131	137		RIGID	None	None	RIGID	Typical
79	79	134	133		MF-H2	Beam	Pipe	A53 Gr.B	Typical
80	80	140	139		MF-H1	Beam	Pipe	A53 Gr.B	Typical
81	81	144	146		MF-P1	Column	Pipe	A53 Gr.B	Typical
82	82	143	145		MF-P1	Column	Pipe	A53 Gr.B	Typical
83	83	148	149		MF-P1	Column	Pipe	A53 Gr.B	Typical
84	84	141	150		RIGID	None	None	RIGID	Typical
85	85	142	151		RIGID	None	None	RIGID	Typical
86	86	147	152		RIGID	None	None	RIGID	Typical
87	87	154	155		MF-P1	Column	Pipe	A53 Gr.B	Typical
88	88	153	156		RIGID	None	None	RIGID	Typical
89	89	157	163		RIGID	None	None	RIGID	Typical
90	90	158	164		RIGID	None	None	RIGID	Typical
91	91	160	166		RIGID	None	None	RIGID	Typical
92	92	159	165		RIGID	None	None	RIGID	Typical
93	93	162	161		MF-H2	Beam	Pipe	A53 Gr.B	Typical

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		45		3
2	0 Wind - No Ice	WLZ			45	57	
3	90 Wind - No Ice	WLX			45	57	
4	0 Wind - Ice	WLZ			45	57	
5	90 Wind - Ice	WLX			45	57	
6	0 Wind - Service	WLZ			45	57	
7	90 Wind - Service	WLX			45	57	
8	Ice	OL1			45	57	3
9	0 Seismic	ELZ			45	57	
10	90 Seismic	ELX			45	57	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL		3			
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				21	
31	BLC 8 Transient Area Loads	None				21	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.057	%5
2	20	Y	-0.057	%45
3	20	Y	0	0
4	20	Y	0	0
5	20	Y	0	0
6	24	Y	-0.075	%5
7	24	Y	-0.075	%95
8	24	Y	-0.047	%20

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
9	24	Y	-0.073	%50
10	24	Y	0	0
11	12	Y	-0.086	%5
12	12	Y	-0.086	%65
13	12	Y	0	0
14	12	Y	0	0
15	12	Y	0	0
16	83	Y	-0.057	%5
17	83	Y	-0.057	%45
18	83	Y	0	0
19	83	Y	0	0
20	83	Y	0	0
21	87	Y	-0.075	%5
22	87	Y	-0.075	%95
23	87	Y	-0.047	%20
24	87	Y	-0.073	%50
25	87	Y	0	0
26	81	Y	-0.086	%5
27	81	Y	-0.086	%65
28	81	Y	0	0
29	81	Y	0	0
30	81	Y	0	0
31	69	Y	-0.057	%5
32	69	Y	-0.057	%45
33	69	Y	0	0
34	69	Y	0	0
35	69	Y	0	0
36	73	Y	-0.075	%5
37	73	Y	-0.075	%95
38	73	Y	-0.047	%20
39	73	Y	-0.073	%50
40	73	Y	0	0
41	67	Y	-0.086	%5
42	67	Y	-0.086	%60
43	67	Y	0	0
44	67	Y	0	0
45	67	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.121	%5
2	20	Z	-0.121	%45
3	20	Z	0	0
4	20	Z	0	0
5	20	Z	0	0
6	24	Z	-0.337	%5
7	24	Z	-0.337	%95
8	24	Z	-0.077	%20
9	24	Z	-0.082	%50
10	24	Z	0	0
11	12	Z	-0.142	%5
12	12	Z	-0.142	%65
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	83	Z	-0.121	%5
17	83	Z	-0.121	%45
18	83	Z	0	0
19	83	Z	0	0
20	83	Z	0	0
21	87	Z	-0.337	%5
22	87	Z	-0.337	%95
23	87	Z	-0.077	%20

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
24	87	Z	-0.082	%50
25	87	Z	0	0
26	81	Z	-0.142	%5
27	81	Z	-0.142	%65
28	81	Z	0	0
29	81	Z	0	0
30	81	Z	0	0
31	69	Z	-0.121	%5
32	69	Z	-0.121	%45
33	69	Z	0	0
34	69	Z	0	0
35	69	Z	0	0
36	73	Z	-0.337	%5
37	73	Z	-0.337	%95
38	73	Z	-0.077	%20
39	73	Z	-0.082	%50
40	73	Z	0	0
41	67	Z	-0.142	%5
42	67	Z	-0.142	%60
43	67	Z	0	0
44	67	Z	0	0
45	67	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.047	%5
2	20	X	-0.047	%45
3	20	X	0	0
4	20	X	0	0
5	20	X	0	0
6	24	X	-0.122	%5
7	24	X	-0.122	%95
8	24	X	-0.036	%20
9	24	X	-0.066	%50
10	24	X	0	0
11	12	X	-0.096	%5
12	12	X	-0.096	%65
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0
16	83	X	-0.047	%5
17	83	X	-0.047	%45
18	83	X	0	0
19	83	X	0	0
20	83	X	0	0
21	87	X	-0.122	%5
22	87	X	-0.122	%95
23	87	X	-0.036	%20
24	87	X	-0.066	%50
25	87	X	0	0
26	81	X	-0.096	%5
27	81	X	-0.096	%65
28	81	X	0	0
29	81	X	0	0
30	81	X	0	0
31	69	X	-0.047	%5
32	69	X	-0.047	%45
33	69	X	0	0
34	69	X	0	0
35	69	X	0	0
36	73	X	-0.122	%5
37	73	X	-0.122	%95
38	73	X	-0.036	%20

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
39	73	X	-0.066	%50
40	73	X	0	0
41	67	X	-0.096	%5
42	67	X	-0.096	%60
43	67	X	0	0
44	67	X	0	0
45	67	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.024	%5
2	20	Z	-0.024	%45
3	20	Z	0	0
4	20	Z	0	0
5	20	Z	0	0
6	24	Z	-0.063	%5
7	24	Z	-0.063	%95
8	24	Z	-0.012	%20
9	24	Z	-0.013	%50
10	24	Z	0	0
11	12	Z	-0.023	%5
12	12	Z	-0.023	%65
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	83	Z	-0.024	%5
17	83	Z	-0.024	%45
18	83	Z	0	0
19	83	Z	0	0
20	83	Z	0	0
21	87	Z	-0.063	%5
22	87	Z	-0.063	%95
23	87	Z	-0.012	%20
24	87	Z	-0.013	%50
25	87	Z	0	0
26	81	Z	-0.023	%5
27	81	Z	-0.023	%65
28	81	Z	0	0
29	81	Z	0	0
30	81	Z	0	0
31	69	Z	-0.024	%5
32	69	Z	-0.024	%45
33	69	Z	0	0
34	69	Z	0	0
35	69	Z	0	0
36	73	Z	-0.063	%5
37	73	Z	-0.063	%95
38	73	Z	-0.012	%20
39	73	Z	-0.013	%50
40	73	Z	0	0
41	67	Z	-0.023	%5
42	67	Z	-0.023	%60
43	67	Z	0	0
44	67	Z	0	0
45	67	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.011	%5
2	20	X	-0.011	%45
3	20	X	0	0
4	20	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
5	20	X	0	0
6	24	X	-0.027	%5
7	24	X	-0.027	%95
8	24	X	-0.006	%20
9	24	X	-0.011	%50
10	24	X	0	0
11	12	X	-0.015	%5
12	12	X	-0.015	%65
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0
16	83	X	-0.011	%5
17	83	X	-0.011	%45
18	83	X	0	0
19	83	X	0	0
20	83	X	0	0
21	87	X	-0.027	%5
22	87	X	-0.027	%95
23	87	X	-0.006	%20
24	87	X	-0.011	%50
25	87	X	0	0
26	81	X	-0.015	%5
27	81	X	-0.015	%65
28	81	X	0	0
29	81	X	0	0
30	81	X	0	0
31	69	X	-0.011	%5
32	69	X	-0.011	%45
33	69	X	0	0
34	69	X	0	0
35	69	X	0	0
36	73	X	-0.027	%5
37	73	X	-0.027	%95
38	73	X	-0.006	%20
39	73	X	-0.011	%50
40	73	X	0	0
41	67	X	-0.015	%5
42	67	X	-0.015	%60
43	67	X	0	0
44	67	X	0	0
45	67	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.007	%5
2	20	Z	-0.007	%45
3	20	Z	0	0
4	20	Z	0	0
5	20	Z	0	0
6	24	Z	-0.019	%5
7	24	Z	-0.019	%95
8	24	Z	-0.004	%20
9	24	Z	-0.005	%50
10	24	Z	0	0
11	12	Z	-0.008	%5
12	12	Z	-0.008	%65
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	83	Z	-0.007	%5
17	83	Z	-0.007	%45
18	83	Z	0	0
19	83	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
20	83	Z	0	0
21	87	Z	-0.019	%5
22	87	Z	-0.019	%95
23	87	Z	-0.004	%20
24	87	Z	-0.005	%50
25	87	Z	0	0
26	81	Z	-0.008	%5
27	81	Z	-0.008	%65
28	81	Z	0	0
29	81	Z	0	0
30	81	Z	0	0
31	69	Z	-0.007	%5
32	69	Z	-0.007	%45
33	69	Z	0	0
34	69	Z	0	0
35	69	Z	0	0
36	73	Z	-0.019	%5
37	73	Z	-0.019	%95
38	73	Z	-0.004	%20
39	73	Z	-0.005	%50
40	73	Z	0	0
41	67	Z	-0.008	%5
42	67	Z	-0.008	%60
43	67	Z	0	0
44	67	Z	0	0
45	67	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.003	%5
2	20	X	-0.003	%45
3	20	X	0	0
4	20	X	0	0
5	20	X	0	0
6	24	X	-0.007	%5
7	24	X	-0.007	%95
8	24	X	-0.002	%20
9	24	X	-0.004	%50
10	24	X	0	0
11	12	X	-0.006	%5
12	12	X	-0.006	%65
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0
16	83	X	-0.003	%5
17	83	X	-0.003	%45
18	83	X	0	0
19	83	X	0	0
20	83	X	0	0
21	87	X	-0.007	%5
22	87	X	-0.007	%95
23	87	X	-0.002	%20
24	87	X	-0.004	%50
25	87	X	0	0
26	81	X	-0.006	%5
27	81	X	-0.006	%65
28	81	X	0	0
29	81	X	0	0
30	81	X	0	0
31	69	X	-0.003	%5
32	69	X	-0.003	%45
33	69	X	0	0
34	69	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
35	69	X	0	0
36	73	X	-0.007	%5
37	73	X	-0.007	%95
38	73	X	-0.002	%20
39	73	X	-0.004	%50
40	73	X	0	0
41	67	X	-0.006	%5
42	67	X	-0.006	%60
43	67	X	0	0
44	67	X	0	0
45	67	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.123	%5
2	20	Y	-0.123	%45
3	20	Y	0	0
4	20	Y	0	0
5	20	Y	0	0
6	24	Y	-0.258	%5
7	24	Y	-0.258	%95
8	24	Y	-0.046	%20
9	24	Y	-0.056	%50
10	24	Y	0	0
11	12	Y	-0.085	%5
12	12	Y	-0.085	%65
13	12	Y	0	0
14	12	Y	0	0
15	12	Y	0	0
16	83	Y	-0.123	%5
17	83	Y	-0.123	%45
18	83	Y	0	0
19	83	Y	0	0
20	83	Y	0	0
21	87	Y	-0.258	%5
22	87	Y	-0.258	%95
23	87	Y	-0.046	%20
24	87	Y	-0.056	%50
25	87	Y	0	0
26	81	Y	-0.085	%5
27	81	Y	-0.085	%65
28	81	Y	0	0
29	81	Y	0	0
30	81	Y	0	0
31	69	Y	-0.123	%5
32	69	Y	-0.123	%45
33	69	Y	0	0
34	69	Y	0	0
35	69	Y	0	0
36	73	Y	-0.258	%5
37	73	Y	-0.258	%95
38	73	Y	-0.046	%20
39	73	Y	-0.056	%50
40	73	Y	0	0
41	67	Y	-0.085	%5
42	67	Y	-0.085	%60
43	67	Y	0	0
44	67	Y	0	0
45	67	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.027	%5
2	20	Z	-0.027	%45
3	20	Z	0	0
4	20	Z	0	0
5	20	Z	0	0
6	24	Z	-0.035	%5
7	24	Z	-0.035	%95
8	24	Z	-0.011	%20
9	24	Z	-0.017	%50
10	24	Z	0	0
11	12	Z	-0.04	%5
12	12	Z	-0.04	%65
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	83	Z	-0.027	%5
17	83	Z	-0.027	%45
18	83	Z	0	0
19	83	Z	0	0
20	83	Z	0	0
21	87	Z	-0.035	%5
22	87	Z	-0.035	%95
23	87	Z	-0.011	%20
24	87	Z	-0.017	%50
25	87	Z	0	0
26	81	Z	-0.04	%5
27	81	Z	-0.04	%65
28	81	Z	0	0
29	81	Z	0	0
30	81	Z	0	0
31	69	Z	-0.027	%5
32	69	Z	-0.027	%45
33	69	Z	0	0
34	69	Z	0	0
35	69	Z	0	0
36	73	Z	-0.035	%5
37	73	Z	-0.035	%95
38	73	Z	-0.011	%20
39	73	Z	-0.017	%50
40	73	Z	0	0
41	67	Z	-0.04	%5
42	67	Z	-0.04	%60
43	67	Z	0	0
44	67	Z	0	0
45	67	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.027	%5
2	20	X	-0.027	%45
3	20	X	0	0
4	20	X	0	0
5	20	X	0	0
6	24	X	-0.035	%5
7	24	X	-0.035	%95
8	24	X	-0.011	%20
9	24	X	-0.017	%50
10	24	X	0	0
11	12	X	-0.04	%5
12	12	X	-0.04	%65
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
16	83	X	-0.027	%5
17	83	X	-0.027	%45
18	83	X	0	0
19	83	X	0	0
20	83	X	0	0
21	87	X	-0.035	%5
22	87	X	-0.035	%95
23	87	X	-0.011	%20
24	87	X	-0.017	%50
25	87	X	0	0
26	81	X	-0.04	%5
27	81	X	-0.04	%65
28	81	X	0	0
29	81	X	0	0
30	81	X	0	0
31	69	X	-0.027	%5
32	69	X	-0.027	%45
33	69	X	0	0
34	69	X	0	0
35	69	X	0	0
36	73	X	-0.035	%5
37	73	X	-0.035	%95
38	73	X	-0.011	%20
39	73	X	-0.017	%50
40	73	X	0	0
41	67	X	-0.04	%5
42	67	X	-0.04	%60
43	67	X	0	0
44	67	X	0	0
45	67	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

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

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	79	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

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

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

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

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	79	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	37	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	7	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	54	Y	-0.25	%95

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.014	-0.014	0	%100
2	3	Z	-0.025	-0.025	0	%100
3	5	Z	-0.025	-0.025	0	%100
4	6	Z	-0.025	-0.025	0	%100
5	7	Z	-0.023	-0.023	0	%100
6	8	Z	-0.019	-0.019	0	%100
7	9	Z	-0.019	-0.019	0	%100
8	10	Z	-0.025	-0.025	0	%100
9	11	Z	-0.025	-0.025	0	%100
10	12	Z	-0.01	-0.01	0	%100
11	13	Z	-0.01	-0.01	0	%100
12	14	Z	-0.014	-0.014	0	%100
13	15	Z	-0.014	-0.014	0	%100
14	16	Z	-0.025	-0.025	0	%100
15	18	Z	-0.025	-0.025	0	%100
16	20	Z	-0.01	-0.01	0	%100
17	24	Z	-0.01	-0.01	0	%100
18	30	Z	-0.01	-0.01	0	%100
19	31	Z	-0.011	-0.011	0	%100
20	33	Z	-0.025	-0.025	0	%100
21	35	Z	-0.025	-0.025	0	%100
22	36	Z	-0.025	-0.025	0	%100
23	37	Z	-0.023	-0.023	0	%100
24	38	Z	-0.019	-0.019	0	%100
25	39	Z	-0.019	-0.019	0	%100
26	40	Z	-0.025	-0.025	0	%100
27	41	Z	-0.025	-0.025	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
28	42	Z	-0.014	-0.014	0	%100
29	43	Z	-0.014	-0.014	0	%100
30	44	Z	-0.025	-0.025	0	%100
31	46	Z	-0.025	-0.025	0	%100
32	48	Z	-0.011	-0.011	0	%100
33	50	Z	-0.025	-0.025	0	%100
34	52	Z	-0.025	-0.025	0	%100
35	53	Z	-0.025	-0.025	0	%100
36	54	Z	-0.023	-0.023	0	%100
37	55	Z	-0.019	-0.019	0	%100
38	56	Z	-0.019	-0.019	0	%100
39	57	Z	-0.025	-0.025	0	%100
40	58	Z	-0.025	-0.025	0	%100
41	59	Z	-0.014	-0.014	0	%100
42	60	Z	-0.014	-0.014	0	%100
43	61	Z	-0.025	-0.025	0	%100
44	63	Z	-0.025	-0.025	0	%100
45	65	Z	-0.011	-0.011	0	%100
46	66	Z	-0.014	-0.014	0	%100
47	67	Z	-0.01	-0.01	0	%100
48	68	Z	-0.01	-0.01	0	%100
49	69	Z	-0.01	-0.01	0	%100
50	73	Z	-0.01	-0.01	0	%100
51	79	Z	-0.01	-0.01	0	%100
52	80	Z	-0.014	-0.014	0	%100
53	81	Z	-0.01	-0.01	0	%100
54	82	Z	-0.01	-0.01	0	%100
55	83	Z	-0.01	-0.01	0	%100
56	87	Z	-0.01	-0.01	0	%100
57	93	Z	-0.01	-0.01	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.014	-0.014	0	%100
2	3	X	-0.025	-0.025	0	%100
3	5	X	-0.025	-0.025	0	%100
4	6	X	-0.025	-0.025	0	%100
5	7	X	-0.023	-0.023	0	%100
6	8	X	-0.019	-0.019	0	%100
7	9	X	-0.019	-0.019	0	%100
8	10	X	-0.025	-0.025	0	%100
9	11	X	-0.025	-0.025	0	%100
10	12	X	-0.01	-0.01	0	%100
11	13	X	-0.01	-0.01	0	%100
12	14	X	-0.014	-0.014	0	%100
13	15	X	-0.014	-0.014	0	%100
14	16	X	-0.025	-0.025	0	%100
15	18	X	-0.025	-0.025	0	%100
16	20	X	-0.01	-0.01	0	%100
17	24	X	-0.01	-0.01	0	%100
18	30	X	-0.01	-0.01	0	%100
19	31	X	-0.011	-0.011	0	%100
20	33	X	-0.025	-0.025	0	%100
21	35	X	-0.025	-0.025	0	%100
22	36	X	-0.025	-0.025	0	%100
23	37	X	-0.023	-0.023	0	%100
24	38	X	-0.019	-0.019	0	%100
25	39	X	-0.019	-0.019	0	%100
26	40	X	-0.025	-0.025	0	%100
27	41	X	-0.025	-0.025	0	%100
28	42	X	-0.014	-0.014	0	%100
29	43	X	-0.014	-0.014	0	%100
30	44	X	-0.025	-0.025	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
31	46	X	-0.025	-0.025	0	%100
32	48	X	-0.011	-0.011	0	%100
33	50	X	-0.025	-0.025	0	%100
34	52	X	-0.025	-0.025	0	%100
35	53	X	-0.025	-0.025	0	%100
36	54	X	-0.023	-0.023	0	%100
37	55	X	-0.019	-0.019	0	%100
38	56	X	-0.019	-0.019	0	%100
39	57	X	-0.025	-0.025	0	%100
40	58	X	-0.025	-0.025	0	%100
41	59	X	-0.014	-0.014	0	%100
42	60	X	-0.014	-0.014	0	%100
43	61	X	-0.025	-0.025	0	%100
44	63	X	-0.025	-0.025	0	%100
45	65	X	-0.011	-0.011	0	%100
46	66	X	-0.014	-0.014	0	%100
47	67	X	-0.01	-0.01	0	%100
48	68	X	-0.01	-0.01	0	%100
49	69	X	-0.01	-0.01	0	%100
50	73	X	-0.01	-0.01	0	%100
51	79	X	-0.01	-0.01	0	%100
52	80	X	-0.014	-0.014	0	%100
53	81	X	-0.01	-0.01	0	%100
54	82	X	-0.01	-0.01	0	%100
55	83	X	-0.01	-0.01	0	%100
56	87	X	-0.01	-0.01	0	%100
57	93	X	-0.01	-0.01	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	3	Z	-0.013	-0.013	0	%100
3	5	Z	-0.013	-0.013	0	%100
4	6	Z	-0.008	-0.008	0	%100
5	7	Z	-0.007	-0.007	0	%100
6	8	Z	-0.006	-0.006	0	%100
7	9	Z	-0.006	-0.006	0	%100
8	10	Z	-0.011	-0.011	0	%100
9	11	Z	-0.011	-0.011	0	%100
10	12	Z	-0.002	-0.002	0	%100
11	13	Z	-0.002	-0.002	0	%100
12	14	Z	-0.006	-0.006	0	%100
13	15	Z	-0.006	-0.006	0	%100
14	16	Z	-0.013	-0.013	0	%100
15	18	Z	-0.013	-0.013	0	%100
16	20	Z	-0.002	-0.002	0	%100
17	24	Z	-0.002	-0.002	0	%100
18	30	Z	-0.002	-0.002	0	%100
19	31	Z	-0.005	-0.005	0	%100
20	33	Z	-0.013	-0.013	0	%100
21	35	Z	-0.013	-0.013	0	%100
22	36	Z	-0.008	-0.008	0	%100
23	37	Z	-0.007	-0.007	0	%100
24	38	Z	-0.006	-0.006	0	%100
25	39	Z	-0.006	-0.006	0	%100
26	40	Z	-0.011	-0.011	0	%100
27	41	Z	-0.011	-0.011	0	%100
28	42	Z	-0.006	-0.006	0	%100
29	43	Z	-0.006	-0.006	0	%100
30	44	Z	-0.013	-0.013	0	%100
31	46	Z	-0.013	-0.013	0	%100
32	48	Z	-0.005	-0.005	0	%100
33	50	Z	-0.013	-0.013	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
34	52	Z	-0.013	-0.013	0	%100
35	53	Z	-0.008	-0.008	0	%100
36	54	Z	-0.007	-0.007	0	%100
37	55	Z	-0.006	-0.006	0	%100
38	56	Z	-0.006	-0.006	0	%100
39	57	Z	-0.011	-0.011	0	%100
40	58	Z	-0.011	-0.011	0	%100
41	59	Z	-0.006	-0.006	0	%100
42	60	Z	-0.006	-0.006	0	%100
43	61	Z	-0.013	-0.013	0	%100
44	63	Z	-0.013	-0.013	0	%100
45	65	Z	-0.005	-0.005	0	%100
46	66	Z	-0.002	-0.002	0	%100
47	67	Z	-0.002	-0.002	0	%100
48	68	Z	-0.002	-0.002	0	%100
49	69	Z	-0.002	-0.002	0	%100
50	73	Z	-0.002	-0.002	0	%100
51	79	Z	-0.002	-0.002	0	%100
52	80	Z	-0.002	-0.002	0	%100
53	81	Z	-0.002	-0.002	0	%100
54	82	Z	-0.002	-0.002	0	%100
55	83	Z	-0.002	-0.002	0	%100
56	87	Z	-0.002	-0.002	0	%100
57	93	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	3	X	-0.013	-0.013	0	%100
3	5	X	-0.013	-0.013	0	%100
4	6	X	-0.008	-0.008	0	%100
5	7	X	-0.007	-0.007	0	%100
6	8	X	-0.006	-0.006	0	%100
7	9	X	-0.006	-0.006	0	%100
8	10	X	-0.011	-0.011	0	%100
9	11	X	-0.011	-0.011	0	%100
10	12	X	-0.002	-0.002	0	%100
11	13	X	-0.002	-0.002	0	%100
12	14	X	-0.006	-0.006	0	%100
13	15	X	-0.006	-0.006	0	%100
14	16	X	-0.013	-0.013	0	%100
15	18	X	-0.013	-0.013	0	%100
16	20	X	-0.002	-0.002	0	%100
17	24	X	-0.002	-0.002	0	%100
18	30	X	-0.002	-0.002	0	%100
19	31	X	-0.005	-0.005	0	%100
20	33	X	-0.013	-0.013	0	%100
21	35	X	-0.013	-0.013	0	%100
22	36	X	-0.008	-0.008	0	%100
23	37	X	-0.007	-0.007	0	%100
24	38	X	-0.006	-0.006	0	%100
25	39	X	-0.006	-0.006	0	%100
26	40	X	-0.011	-0.011	0	%100
27	41	X	-0.011	-0.011	0	%100
28	42	X	-0.006	-0.006	0	%100
29	43	X	-0.006	-0.006	0	%100
30	44	X	-0.013	-0.013	0	%100
31	46	X	-0.013	-0.013	0	%100
32	48	X	-0.005	-0.005	0	%100
33	50	X	-0.013	-0.013	0	%100
34	52	X	-0.013	-0.013	0	%100
35	53	X	-0.008	-0.008	0	%100
36	54	X	-0.007	-0.007	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
37	55	X	-0.006	-0.006	0	%100
38	56	X	-0.006	-0.006	0	%100
39	57	X	-0.011	-0.011	0	%100
40	58	X	-0.011	-0.011	0	%100
41	59	X	-0.006	-0.006	0	%100
42	60	X	-0.006	-0.006	0	%100
43	61	X	-0.013	-0.013	0	%100
44	63	X	-0.013	-0.013	0	%100
45	65	X	-0.005	-0.005	0	%100
46	66	X	-0.002	-0.002	0	%100
47	67	X	-0.002	-0.002	0	%100
48	68	X	-0.002	-0.002	0	%100
49	69	X	-0.002	-0.002	0	%100
50	73	X	-0.002	-0.002	0	%100
51	79	X	-0.002	-0.002	0	%100
52	80	X	-0.002	-0.002	0	%100
53	81	X	-0.002	-0.002	0	%100
54	82	X	-0.002	-0.002	0	%100
55	83	X	-0.002	-0.002	0	%100
56	87	X	-0.002	-0.002	0	%100
57	93	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0004	-0.0004	0	%100
2	3	Z	-0.001	-0.001	0	%100
3	5	Z	-0.001	-0.001	0	%100
4	6	Z	-0.001	-0.001	0	%100
5	7	Z	-0.001	-0.001	0	%100
6	8	Z	-0.001	-0.001	0	%100
7	9	Z	-0.001	-0.001	0	%100
8	10	Z	-0.001	-0.001	0	%100
9	11	Z	-0.001	-0.001	0	%100
10	12	Z	-0.0003	-0.0003	0	%100
11	13	Z	-0.0003	-0.0003	0	%100
12	14	Z	-0.0008	-0.0008	0	%100
13	15	Z	-0.0008	-0.0008	0	%100
14	16	Z	-0.001	-0.001	0	%100
15	18	Z	-0.001	-0.001	0	%100
16	20	Z	-0.0003	-0.0003	0	%100
17	24	Z	-0.0003	-0.0003	0	%100
18	30	Z	-0.0003	-0.0003	0	%100
19	31	Z	-0.0007	-0.0007	0	%100
20	33	Z	-0.001	-0.001	0	%100
21	35	Z	-0.001	-0.001	0	%100
22	36	Z	-0.001	-0.001	0	%100
23	37	Z	-0.001	-0.001	0	%100
24	38	Z	-0.001	-0.001	0	%100
25	39	Z	-0.001	-0.001	0	%100
26	40	Z	-0.001	-0.001	0	%100
27	41	Z	-0.001	-0.001	0	%100
28	42	Z	-0.0008	-0.0008	0	%100
29	43	Z	-0.0008	-0.0008	0	%100
30	44	Z	-0.001	-0.001	0	%100
31	46	Z	-0.001	-0.001	0	%100
32	48	Z	-0.0007	-0.0007	0	%100
33	50	Z	-0.001	-0.001	0	%100
34	52	Z	-0.001	-0.001	0	%100
35	53	Z	-0.001	-0.001	0	%100
36	54	Z	-0.001	-0.001	0	%100
37	55	Z	-0.001	-0.001	0	%100
38	56	Z	-0.001	-0.001	0	%100
39	57	Z	-0.001	-0.001	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
40	58	Z	-0.001	-0.001	0	%100
41	59	Z	-0.0008	-0.0008	0	%100
42	60	Z	-0.0008	-0.0008	0	%100
43	61	Z	-0.001	-0.001	0	%100
44	63	Z	-0.001	-0.001	0	%100
45	65	Z	-0.0007	-0.0007	0	%100
46	66	Z	-0.0004	-0.0004	0	%100
47	67	Z	-0.0003	-0.0003	0	%100
48	68	Z	-0.0003	-0.0003	0	%100
49	69	Z	-0.0003	-0.0003	0	%100
50	73	Z	-0.0003	-0.0003	0	%100
51	79	Z	-0.0003	-0.0003	0	%100
52	80	Z	-0.0004	-0.0004	0	%100
53	81	Z	-0.0003	-0.0003	0	%100
54	82	Z	-0.0003	-0.0003	0	%100
55	83	Z	-0.0003	-0.0003	0	%100
56	87	Z	-0.0003	-0.0003	0	%100
57	93	Z	-0.0003	-0.0003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0004	-0.0004	0	%100
2	3	X	-0.001	-0.001	0	%100
3	5	X	-0.001	-0.001	0	%100
4	6	X	-0.001	-0.001	0	%100
5	7	X	-0.001	-0.001	0	%100
6	8	X	-0.001	-0.001	0	%100
7	9	X	-0.001	-0.001	0	%100
8	10	X	-0.001	-0.001	0	%100
9	11	X	-0.001	-0.001	0	%100
10	12	X	-0.0003	-0.0003	0	%100
11	13	X	-0.0003	-0.0003	0	%100
12	14	X	-0.0008	-0.0008	0	%100
13	15	X	-0.0008	-0.0008	0	%100
14	16	X	-0.001	-0.001	0	%100
15	18	X	-0.001	-0.001	0	%100
16	20	X	-0.0003	-0.0003	0	%100
17	24	X	-0.0003	-0.0003	0	%100
18	30	X	-0.0003	-0.0003	0	%100
19	31	X	-0.0007	-0.0007	0	%100
20	33	X	-0.001	-0.001	0	%100
21	35	X	-0.001	-0.001	0	%100
22	36	X	-0.001	-0.001	0	%100
23	37	X	-0.001	-0.001	0	%100
24	38	X	-0.001	-0.001	0	%100
25	39	X	-0.001	-0.001	0	%100
26	40	X	-0.001	-0.001	0	%100
27	41	X	-0.001	-0.001	0	%100
28	42	X	-0.0008	-0.0008	0	%100
29	43	X	-0.0008	-0.0008	0	%100
30	44	X	-0.001	-0.001	0	%100
31	46	X	-0.001	-0.001	0	%100
32	48	X	-0.0007	-0.0007	0	%100
33	50	X	-0.001	-0.001	0	%100
34	52	X	-0.001	-0.001	0	%100
35	53	X	-0.001	-0.001	0	%100
36	54	X	-0.001	-0.001	0	%100
37	55	X	-0.001	-0.001	0	%100
38	56	X	-0.001	-0.001	0	%100
39	57	X	-0.001	-0.001	0	%100
40	58	X	-0.001	-0.001	0	%100
41	59	X	-0.0008	-0.0008	0	%100
42	60	X	-0.0008	-0.0008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
43	61	X	-0.001	-0.001	0	%100
44	63	X	-0.001	-0.001	0	%100
45	65	X	-0.0007	-0.0007	0	%100
46	66	X	-0.0004	-0.0004	0	%100
47	67	X	-0.0003	-0.0003	0	%100
48	68	X	-0.0003	-0.0003	0	%100
49	69	X	-0.0003	-0.0003	0	%100
50	73	X	-0.0003	-0.0003	0	%100
51	79	X	-0.0003	-0.0003	0	%100
52	80	X	-0.0004	-0.0004	0	%100
53	81	X	-0.0003	-0.0003	0	%100
54	82	X	-0.0003	-0.0003	0	%100
55	83	X	-0.0003	-0.0003	0	%100
56	87	X	-0.0003	-0.0003	0	%100
57	93	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.01	-0.01	0	%100
2	3	Y	-0.016	-0.016	0	%100
3	5	Y	-0.016	-0.016	0	%100
4	6	Y	-0.016	-0.016	0	%100
5	7	Y	-0.015	-0.015	0	%100
6	8	Y	-0.015	-0.015	0	%100
7	9	Y	-0.015	-0.015	0	%100
8	10	Y	-0.015	-0.015	0	%100
9	11	Y	-0.015	-0.015	0	%100
10	12	Y	-0.008	-0.008	0	%100
11	13	Y	-0.008	-0.008	0	%100
12	14	Y	-0.009	-0.009	0	%100
13	15	Y	-0.009	-0.009	0	%100
14	16	Y	-0.015	-0.015	0	%100
15	18	Y	-0.015	-0.015	0	%100
16	20	Y	-0.008	-0.008	0	%100
17	24	Y	-0.008	-0.008	0	%100
18	30	Y	-0.008	-0.008	0	%100
19	31	Y	-0.01	-0.01	0	%100
20	33	Y	-0.016	-0.016	0	%100
21	35	Y	-0.016	-0.016	0	%100
22	36	Y	-0.016	-0.016	0	%100
23	37	Y	-0.015	-0.015	0	%100
24	38	Y	-0.015	-0.015	0	%100
25	39	Y	-0.015	-0.015	0	%100
26	40	Y	-0.015	-0.015	0	%100
27	41	Y	-0.015	-0.015	0	%100
28	42	Y	-0.009	-0.009	0	%100
29	43	Y	-0.009	-0.009	0	%100
30	44	Y	-0.015	-0.015	0	%100
31	46	Y	-0.015	-0.015	0	%100
32	48	Y	-0.01	-0.01	0	%100
33	50	Y	-0.016	-0.016	0	%100
34	52	Y	-0.016	-0.016	0	%100
35	53	Y	-0.016	-0.016	0	%100
36	54	Y	-0.015	-0.015	0	%100
37	55	Y	-0.015	-0.015	0	%100
38	56	Y	-0.015	-0.015	0	%100
39	57	Y	-0.015	-0.015	0	%100
40	58	Y	-0.015	-0.015	0	%100
41	59	Y	-0.009	-0.009	0	%100
42	60	Y	-0.009	-0.009	0	%100
43	61	Y	-0.015	-0.015	0	%100
44	63	Y	-0.015	-0.015	0	%100
45	65	Y	-0.01	-0.01	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
46	66	Y	-0.01	-0.01	0	%100
47	67	Y	-0.008	-0.008	0	%100
48	68	Y	-0.008	-0.008	0	%100
49	69	Y	-0.008	-0.008	0	%100
50	73	Y	-0.008	-0.008	0	%100
51	79	Y	-0.008	-0.008	0	%100
52	80	Y	-0.01	-0.01	0	%100
53	81	Y	-0.008	-0.008	0	%100
54	82	Y	-0.008	-0.008	0	%100
55	83	Y	-0.008	-0.008	0	%100
56	87	Y	-0.008	-0.008	0	%100
57	93	Y	-0.008	-0.008	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	3	Z	-0.002	-0.002	0	%100
3	5	Z	-0.002	-0.002	0	%100
4	6	Z	-0.002	-0.002	0	%100
5	7	Z	-0.003	-0.003	0	%100
6	8	Z	-0.003	-0.003	0	%100
7	9	Z	-0.003	-0.003	0	%100
8	10	Z	-0.002	-0.002	0	%100
9	11	Z	-0.002	-0.002	0	%100
10	12	Z	-0.0009	-0.0009	0	%100
11	13	Z	-0.0009	-0.0009	0	%100
12	14	Z	-0.0006	-0.0006	0	%100
13	15	Z	-0.0006	-0.0006	0	%100
14	16	Z	-0.002	-0.002	0	%100
15	18	Z	-0.002	-0.002	0	%100
16	20	Z	-0.0009	-0.0009	0	%100
17	24	Z	-0.0009	-0.0009	0	%100
18	30	Z	-0.0009	-0.0009	0	%100
19	31	Z	-0.001	-0.001	0	%100
20	33	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.003	-0.003	0	%100
24	38	Z	-0.003	-0.003	0	%100
25	39	Z	-0.003	-0.003	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	41	Z	-0.002	-0.002	0	%100
28	42	Z	-0.0006	-0.0006	0	%100
29	43	Z	-0.0006	-0.0006	0	%100
30	44	Z	-0.002	-0.002	0	%100
31	46	Z	-0.002	-0.002	0	%100
32	48	Z	-0.001	-0.001	0	%100
33	50	Z	-0.002	-0.002	0	%100
34	52	Z	-0.002	-0.002	0	%100
35	53	Z	-0.002	-0.002	0	%100
36	54	Z	-0.003	-0.003	0	%100
37	55	Z	-0.003	-0.003	0	%100
38	56	Z	-0.003	-0.003	0	%100
39	57	Z	-0.002	-0.002	0	%100
40	58	Z	-0.002	-0.002	0	%100
41	59	Z	-0.0006	-0.0006	0	%100
42	60	Z	-0.0006	-0.0006	0	%100
43	61	Z	-0.002	-0.002	0	%100
44	63	Z	-0.002	-0.002	0	%100
45	65	Z	-0.001	-0.001	0	%100
46	66	Z	-0.002	-0.002	0	%100
47	67	Z	-0.0009	-0.0009	0	%100
48	68	Z	-0.0009	-0.0009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
49	69	Z	-0.0009	-0.0009	0	%100
50	73	Z	-0.0009	-0.0009	0	%100
51	79	Z	-0.0009	-0.0009	0	%100
52	80	Z	-0.002	-0.002	0	%100
53	81	Z	-0.0009	-0.0009	0	%100
54	82	Z	-0.0009	-0.0009	0	%100
55	83	Z	-0.0009	-0.0009	0	%100
56	87	Z	-0.0009	-0.0009	0	%100
57	93	Z	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	3	X	-0.002	-0.002	0	%100
3	5	X	-0.002	-0.002	0	%100
4	6	X	-0.002	-0.002	0	%100
5	7	X	-0.003	-0.003	0	%100
6	8	X	-0.003	-0.003	0	%100
7	9	X	-0.003	-0.003	0	%100
8	10	X	-0.002	-0.002	0	%100
9	11	X	-0.002	-0.002	0	%100
10	12	X	-0.0009	-0.0009	0	%100
11	13	X	-0.0009	-0.0009	0	%100
12	14	X	-0.0006	-0.0006	0	%100
13	15	X	-0.0006	-0.0006	0	%100
14	16	X	-0.002	-0.002	0	%100
15	18	X	-0.002	-0.002	0	%100
16	20	X	-0.0009	-0.0009	0	%100
17	24	X	-0.0009	-0.0009	0	%100
18	30	X	-0.0009	-0.0009	0	%100
19	31	X	-0.001	-0.001	0	%100
20	33	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.003	-0.003	0	%100
24	38	X	-0.003	-0.003	0	%100
25	39	X	-0.003	-0.003	0	%100
26	40	X	-0.002	-0.002	0	%100
27	41	X	-0.002	-0.002	0	%100
28	42	X	-0.0006	-0.0006	0	%100
29	43	X	-0.0006	-0.0006	0	%100
30	44	X	-0.002	-0.002	0	%100
31	46	X	-0.002	-0.002	0	%100
32	48	X	-0.001	-0.001	0	%100
33	50	X	-0.002	-0.002	0	%100
34	52	X	-0.002	-0.002	0	%100
35	53	X	-0.002	-0.002	0	%100
36	54	X	-0.003	-0.003	0	%100
37	55	X	-0.003	-0.003	0	%100
38	56	X	-0.003	-0.003	0	%100
39	57	X	-0.002	-0.002	0	%100
40	58	X	-0.002	-0.002	0	%100
41	59	X	-0.0006	-0.0006	0	%100
42	60	X	-0.0006	-0.0006	0	%100
43	61	X	-0.002	-0.002	0	%100
44	63	X	-0.002	-0.002	0	%100
45	65	X	-0.001	-0.001	0	%100
46	66	X	-0.002	-0.002	0	%100
47	67	X	-0.0009	-0.0009	0	%100
48	68	X	-0.0009	-0.0009	0	%100
49	69	X	-0.0009	-0.0009	0	%100
50	73	X	-0.0009	-0.0009	0	%100
51	79	X	-0.0009	-0.0009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
52	80	X	-0.002	-0.002	0	%100
53	81	X	-0.0009	-0.0009	0	%100
54	82	X	-0.0009	-0.0009	0	%100
55	83	X	-0.0009	-0.0009	0	%100
56	87	X	-0.0009	-0.0009	0	%100
57	93	X	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	37	Y	-0.011	-0.011	2.424	4.115
2	38	Y	-0.009	-0.009	1.573	2.541
3	39	Y	-0.009	-0.009	0	0.969
4	42	Y	-0.009	-0.005	0	2.117
5	42	Y	-0.005	-0.001	2.117	4.234
6	43	Y	-0.001	-0.005	0	2.117
7	43	Y	-0.005	-0.008	2.117	4.234
8	7	Y	-0.011	-0.011	2.426	4.111
9	8	Y	-0.009	-0.009	1.573	2.541
10	9	Y	-0.009	-0.009	0	0.969
11	14	Y	-0.008	-0.005	0	2.117
12	14	Y	-0.005	-0.001	2.117	4.234
13	15	Y	-0.001	-0.005	0	2.117
14	15	Y	-0.005	-0.008	2.117	4.234
15	54	Y	-0.011	-0.011	2.426	4.111
16	55	Y	-0.009	-0.009	1.573	2.541
17	56	Y	-0.009	-0.009	0	0.969
18	59	Y	-0.008	-0.005	0	2.117
19	59	Y	-0.005	-0.001	2.117	4.234
20	60	Y	-0.001	-0.005	0	2.117
21	60	Y	-0.005	-0.008	2.117	4.234

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	37	Y	-0.009	-0.009	2.426	4.111
2	38	Y	-0.007	-0.007	1.573	2.541
3	39	Y	-0.007	-0.007	0	0.969
4	42	Y	-0.007	-0.004	0	2.117
5	42	Y	-0.004	-0.001	2.117	4.234
6	43	Y	-0.001	-0.004	0	2.117
7	43	Y	-0.004	-0.007	2.117	4.234
8	7	Y	-0.009	-0.009	2.424	4.115
9	8	Y	-0.007	-0.007	1.573	2.541
10	9	Y	-0.007	-0.007	0	0.969
11	14	Y	-0.007	-0.004	0	2.117
12	14	Y	-0.004	-0.001	2.117	4.234
13	15	Y	-0.001	-0.004	0	2.117
14	15	Y	-0.004	-0.007	2.117	4.234
15	54	Y	-0.009	-0.009	2.424	4.115
16	55	Y	-0.007	-0.007	1.573	2.541
17	56	Y	-0.007	-0.007	0	0.969
18	59	Y	-0.007	-0.004	0	2.117
19	59	Y	-0.004	-0.001	2.117	4.234
20	60	Y	-0.001	-0.004	0	2.117
21	60	Y	-0.004	-0.007	2.117	4.234

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	65	73	72	65	Y	Two Way	-0.01
2	24	11	25	24	Y	Two Way	-0.01
3	99	92	100	99	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [ksf]
1	65	73	72	Y	Two Way	-0.008
2	24	11	25	Y	Two Way	-0.008
3	99	92	100	Y	Two Way	-0.008

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	37	L	Y	-0.5
2	122	L	Y	-0.5
3	150	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	38	L	Y	-0.5
2	123	L	Y	-0.5
3	151	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	43	L	Y	-0.5
2	128	L	Y	-0.5
3	156	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	39	L	Y	-0.5
2	124	L	Y	-0.5
3	152	L	Y	-0.5

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	12	max	1.049	5	3.482	14	3.215	2	8.463	2	0.942	11	0.465	11
2		min	-1.048	11	-0.685	8	-3.255	8	-3.829	8	-0.937	5	-0.314	5
3	66	max	2.053	6	3.38	18	1.819	13	1.343	13	1.223	3	1.591	12
4		min	-2.081	12	-0.094	12	-1.795	7	-3.556	7	-1.209	9	-5.994	18
5	93	max	2.08	4	3.383	22	2.123	2	1.284	3	1.298	7	5.71	22
6		min	-2.051	10	-0.099	4	-2.104	8	-3.763	9	-1.292	13	-1.65	4
7	Totals:	max	4.967	5	9.346	20	7.148	2						
8		min	-4.967	11	3.763	2	-7.148	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	PIPE_3.0	0.185	7.813	8	0.144	7.813		7	28.251	65.205	5.749	5.749	2.111	H1-1b
2	3	PL1/2x6	0.111	0.25	2	0.099	0.25	y	2	95.032	97.2	1.012	12.15	1.935	H1-1b
3	5	PL1/2x6	0.12	0.25	2	0.08	0.125	y	8	95.032	97.2	1.012	12.15	1.628	H1-1b
4	6	PL1/2x6	0.18	0.519	2	0.11	0.519	y	15	65.844	97.2	1.012	12.15	1.274	H1-1b
5	7	HSS4X4X4	0.714	0	2	0.15	0	y	25	97.504	106.155	12.311	12.311	2.401	H1-1b
6	8	HSS4X4X4	0.308	2.541	15	0.085	2.541	y	2	103.994	106.155	12.311	12.311	1.639	H1-1b
7	9	HSS4X4X4	0.316	0	25	0.1	0	y	14	103.994	106.155	12.311	12.311	1.662	H1-1b
8	10	PL3/8x6	0.164	0.169	13	0.461	0.169	y	19	67.903	72.9	0.57	9.113	2.538	H1-1b
9	11	PL3/8x6	0.139	0.169	4	0.29	0.169	y	59	67.903	72.9	0.57	9.113	2.554	H1-1b
10	12	PIPE_2.0	0.474	6	10	0.21	6		8	14.916	32.13	1.872	1.872	1.972	H1-1b
11	13	PIPE_2.0	0.645	6	9	0.405	2.5		8	14.917	32.13	1.872	1.872	2.096	H3-6
12	14	L2x2x3	0.24	4.234	2	0.014	4.234	y	16	9.529	23.393	0.558	1.125	1.425	H2-1
13	15	L2x2x3	0.222	4.234	2	0.012	0	y	21	9.529	23.393	0.558	1.088	1.221	H2-1
14	16	PL3/8x6	0.117	0.125	6	0.508	0	y	14	70.011	72.9	0.57	9.113	1.373	H1-1b
15	18	PL3/8x6	0.11	0.125	6	0.487	0	y	14	70.011	72.9	0.57	9.113	1.352	H1-1b
16	20	PIPE_2.0	0.674	2.5	7	0.458	2.5		8	14.917	32.13	1.872	1.872	2.038	H3-6
17	24	PIPE_2.0	0.512	6	6	0.165	2.5		9	14.916	32.13	1.872	1.872	1.926	H1-1b
18	30	PIPE_2.0	0.784	1.693	7	0.377	1.823		8	6.295	32.13	1.872	1.872	3	H3-6
19	31	L2.5x2.5x4	0.779	0	2	0.208	1.245	z	5	36.654	38.556	1.114	2.537	1.095	H2-1
20	33	PL1/2x6	0.097	0.25	7	0.081	0.25	y	79	95.032	97.2	1.012	12.15	2.301	H1-1b
21	35	PL1/2x6	0.084	0.25	6	0.062	0.125	y	12	95.032	97.2	1.012	12.15	1.558	H1-1b
22	36	PL1/2x6	0.144	0.519	7	0.11	0.519	y	19	65.844	97.2	1.012	12.15	1.276	H1-1b
23	37	HSS4X4X4	0.601	0	7	0.146	0	y	16	97.504	106.155	12.311	12.311	2.48	H1-1b
24	38	HSS4X4X4	0.306	2.541	19	0.08	2.541	y	19	103.994	106.155	12.311	12.311	1.638	H1-1b
25	39	HSS4X4X4	0.308	0	17	0.097	0	y	18	103.994	106.155	12.311	12.311	1.661	H1-1b
26	40	PL3/8x6	0.137	0.169	4	0.46	0.169	y	22	67.903	72.9	0.57	9.113	2.6	H1-1b
27	41	PL3/8x6	0.212	0.169	8	0.29	0.169	y	50	67.903	72.9	0.57	9.113	2.556	H1-1b
28	42	L2x2x3	0.186	4.234	7	0.014	4.234	y	21	9.529	23.393	0.558	1.112	1.35	H2-1
29	43	L2x2x3	0.172	0	6	0.012	0	y	14	9.529	23.393	0.558	1.108	1.326	H2-1
30	44	PL3/8x6	0.165	0.125	3	0.496	0	y	18	70.011	72.9	0.57	9.113	1.618	H1-1b
31	46	PL3/8x6	0.132	0.125	3	0.48	0	y	19	70.011	72.9	0.57	9.113	1.491	H1-1b
32	48	L2.5x2.5x4	0.581	1.245	7	0.309	0.83	z	9	36.654	38.556	1.114	2.537	1.5	H2-1
33	50	PL1/2x6	0.077	0.25	10	0.08	0.25	y	82	95.032	97.2	1.012	12.15	1.768	H1-1b
34	52	PL1/2x6	0.097	0.25	9	0.063	0.125	y	3	95.032	97.2	1.012	12.15	1.747	H1-1b
35	53	PL1/2x6	0.15	0.519	9	0.106	0.519	y	23	65.844	97.2	1.012	12.15	1.278	H1-1b
36	54	HSS4X4X4	0.619	0	9	0.152	0	y	20	97.504	106.155	12.311	12.311	2.49	H1-1b
37	55	HSS4X4X4	0.3	2.541	23	0.08	2.541	y	22	103.994	106.155	12.311	12.311	1.637	H1-1b
38	56	HSS4X4X4	0.315	0	21	0.098	0	y	21	103.994	106.155	12.311	12.311	1.661	H1-1b
39	57	PL3/8x6	0.199	0.169	8	0.465	0.169	y	14	67.903	72.9	0.57	9.113	2.536	H1-1b
40	58	PL3/8x6	0.197	0.169	7	0.29	0.169	y	54	67.903	72.9	0.57	9.113	2.643	H1-1b
41	59	L2x2x3	0.198	4.234	10	0.014	4.234	y	25	9.529	23.393	0.558	1.136	1.5	H2-1
42	60	L2x2x3	0.184	0	9	0.011	0	y	18	9.529	23.393	0.558	1.098	1.272	H2-1
43	61	PL3/8x6	0.188	0.125	2	0.502	0	y	21	70.011	72.9	0.57	9.113	1.347	H1-1b
44	63	PL3/8x6	0.158	0.125	2	0.474	0	y	22	70.011	72.9	0.57	9.113	1.354	H1-1b
45	65	L2.5x2.5x4	0.737	0	9	0.333	1.245	z	13	36.654	38.556	1.114	2.537	1.5	H2-1
46	66	PIPE_3.0	0.173	7.812	13	0.146	4.687		2	28.251	65.205	5.749	5.749	2.39	H1-1b
47	67	PIPE_2.0	0.719	6	2	0.142	6		10	14.916	32.13	1.872	1.872	2.21	H1-1b
48	68	PIPE_2.0	0.745	2.5	2	0.342	6		13	14.917	32.13	1.872	1.872	2.255	H3-6
49	69	PIPE_2.0	0.566	6	2	0.33	2.5		13	14.917	32.13	1.872	1.872	2.178	H3-6
50	73	PIPE_2.0	0.663	6	9	0.203	6		8	14.916	32.13	1.872	1.872	1.793	H1-1b
51	79	PIPE_2.0	0.643	10.807	2	0.324	1.823		7	6.295	32.13	1.872	1.872	3	H1-1b
52	80	PIPE_3.0	0.222	7.682	2	0.164	7.812		2	28.251	65.205	5.749	5.749	2.155	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
53	81	PIPE_2.0	0.647	6	7	0.228	6		2	14.916	32.13	1.872	1.872	1.958	H1-1b
54	82	PIPE_2.0	0.545	6	7	0.271	2.5		4	14.917	32.13	1.872	1.872	2.186	H1-1b
55	83	PIPE_2.0	0.651	6	3	0.325	6		3	14.917	32.13	1.872	1.872	2.056	H3-6
56	87	PIPE_2.0	0.728	6	2	0.145	6		12	14.916	32.13	1.872	1.872	2.255	H1-1b
57	93	PIPE_2.0	0.688	1.693	9	0.296	0.651		9	6.295	32.13	1.872	1.872	3	H3-6

APPENDIX D

ADDITIONAL CALCUATIONS

PROJECT	**149269.004.01 - NHV 104 943122, CT**				**AD**
SUBJECT	**Platform Mount Analysis**				
DATE	**05/08/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	3.215	k
Vertical Shear	:	3.482	k
Horizontal Shear	:	1.049	k
Torsion	:	0.465	k.ft
Moment from Horizontal Forces	:	0.942	k.ft
Moment from Vertical Forces	:	8.463	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1	in
Bolt edge distance, plate width	:	1	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	3.64	k
Force from Horz. Moment	:	1.71	k
Force from Vert. Moment	:	15.33	k
Shear Load / Bolt	:	0.91	k
Tension Load / Bolt	:	0.80	k
Resultant from Moments / Bolt	:	7.71	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**41.09%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**15.50%**		**OKAY**
Unity Check, Combined	:	**56.59%**		**OKAY**
Available Bearing Strength, ΦR_n	:	27.53	k/bolt	
Unity Check, Bolt Bearing	:	**3.30%**		**OKAY**

PROJECT	**149269.004.01 - NHV 104 943122, CT**				**AD**
SUBJECT	**Platform Mount Analysis**				
DATE	**05/08/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Connecting Member Parameters

Plate Yield Strength, F_y	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	8.00	in	
Plate Width	:	8.00	in	
Plate Thickness	:	0.75	in	
Edge Distance	:	0.56	in	
Gross Tension Area, A_{gt}	:	6.00	in^2	
Gross Shear Area, A_{gv}	:	0.75	in^2	
Net Area for tension, A_{nv}	:	5.48	in^2	
Net Area for shear, A_{nt}	:	4.50	in^2	

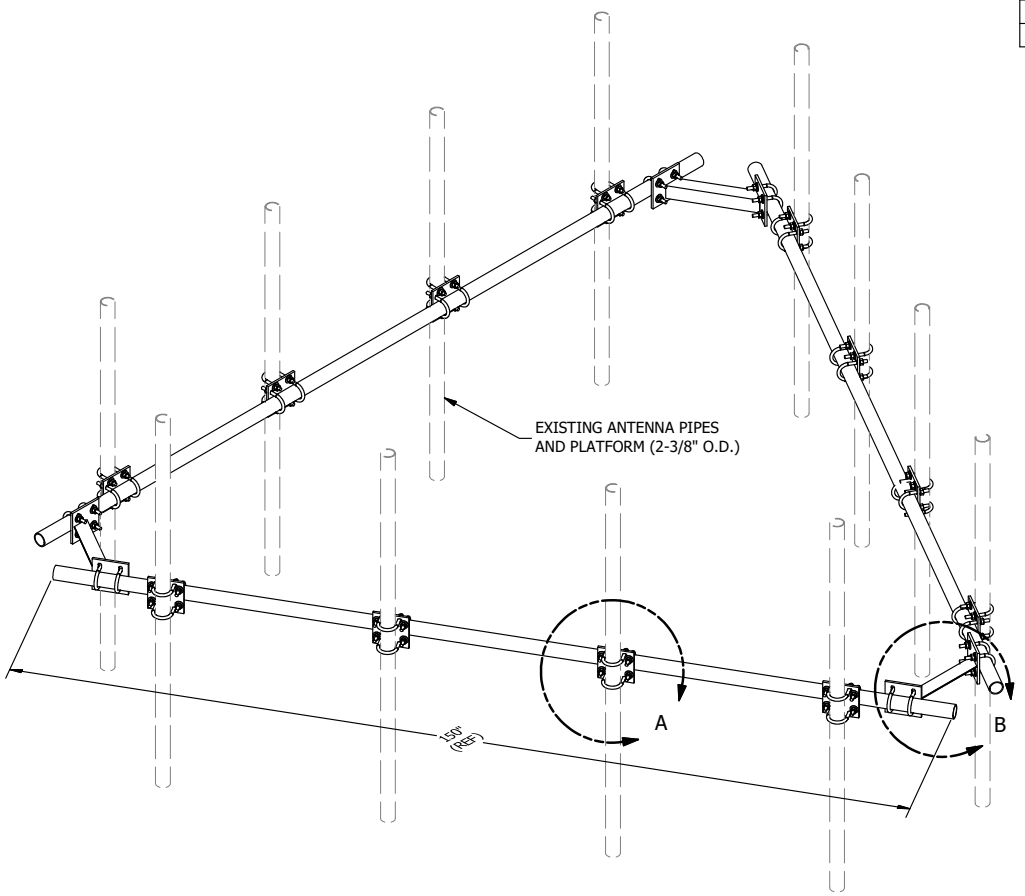
Plate Check

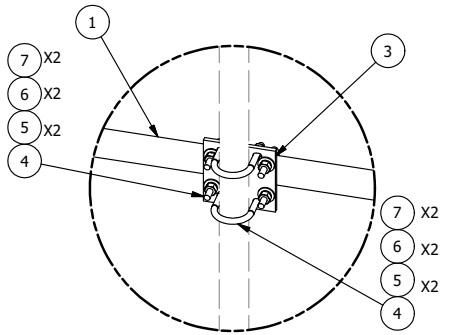
Available Tensile Yield	:	194.40	k	[Eq. J4-1]
Available Tensile Rupture	:	238.57	k	[Eq. J4-2]
Unity Check, Plate Tension	:	**4.38%**		**OKAY**
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	156.60	k	[Eq. J4-4]
Unity Check, Plate Shear	:	**22.45%**		**OKAY**
Available Block Shear, ΦRn	:	110.03	k	[Eq. J4-5]
Unity Check, Block Shear	:	**3.31%**		**OKAY**

APPENDIX E

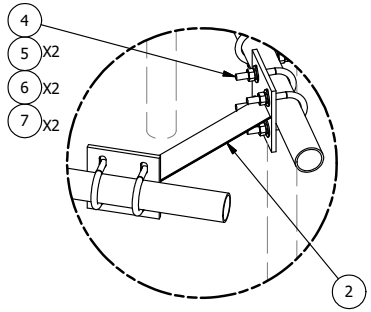
SUPPLEMENTAL DRAWINGS

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	12	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6 in	3.71	44.50
4	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	37.51
5	120	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.09
6	120	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	1.67
7	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
					TOTAL WT. #	272.43





DETAIL A



DETAIL B

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP		CEK	7/10/2014

REVISION HISTORY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

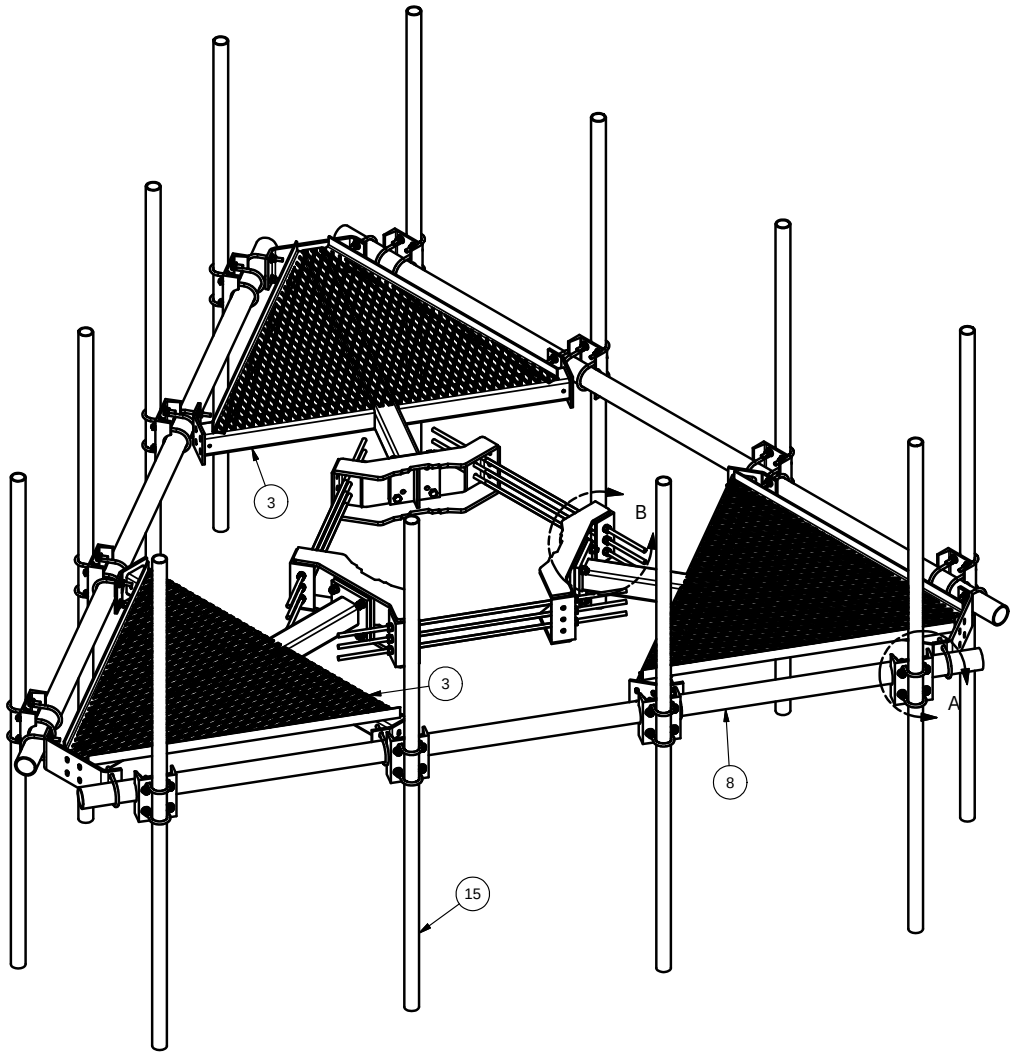
PROPRIETARY NOTE:
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION: **HANDRAIL KIT FOR 12'-6" FACE**

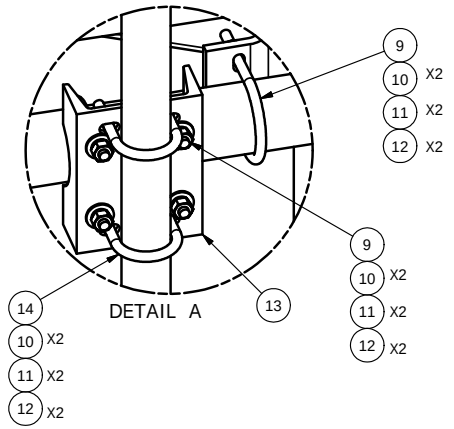
SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

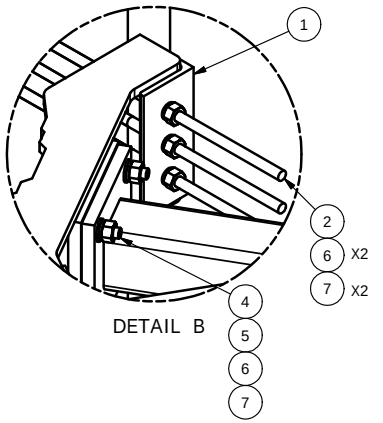
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	KC8 5/30/2012		HRK12

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 7/13/2014	HRK12



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.40	3.59
2	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.40	3.59
3	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
4	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
5	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
6	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
7	30	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.90
8	3	P3150	3-1/2" X 150" SCH 40 GALVANIZED PIPE	150.000 in	94.80	284.40
9	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.26	9.25
10	120	G12FW	1/2" HDG USS FLATWASHER		0.03	4.09
11	120	G12LW	1/2" HDG LOCKWASHER		0.01	1.67
12	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
13	12	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	103.33
14	24	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.26	6.17
15	12	B	ANTENNA MOUNTING PIPE	C	D	E





2-3/8" O.D. VERTICAL MOUNTING PIPES					
ASSEMBLY NO. "A"	PART NO. "B"	LENGTH, "C"	UNIT WEIGHT, "D"	NET WEIGHT, "E"	TOTAL WEIGHT
RMQP-463	P263	63"	20.18	242.16	1591.11
RMQP-472	P272	72"	23.07	276.84	1625.79
RMQP-484	P284	84"	26.91	322.92	1671.87
RMQP-496	P296	96"	30.76	369.12	1718.07
RMQP-4126	P2126	126"	40.75	489.00	1837.95

REVISION HISTORY				
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED 10' 6" ANTENNA MOUNTING PIPES		CEK	7/9/2015

TOLERANCE NOTE

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE - ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

PROPRIETARY NOTE

THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

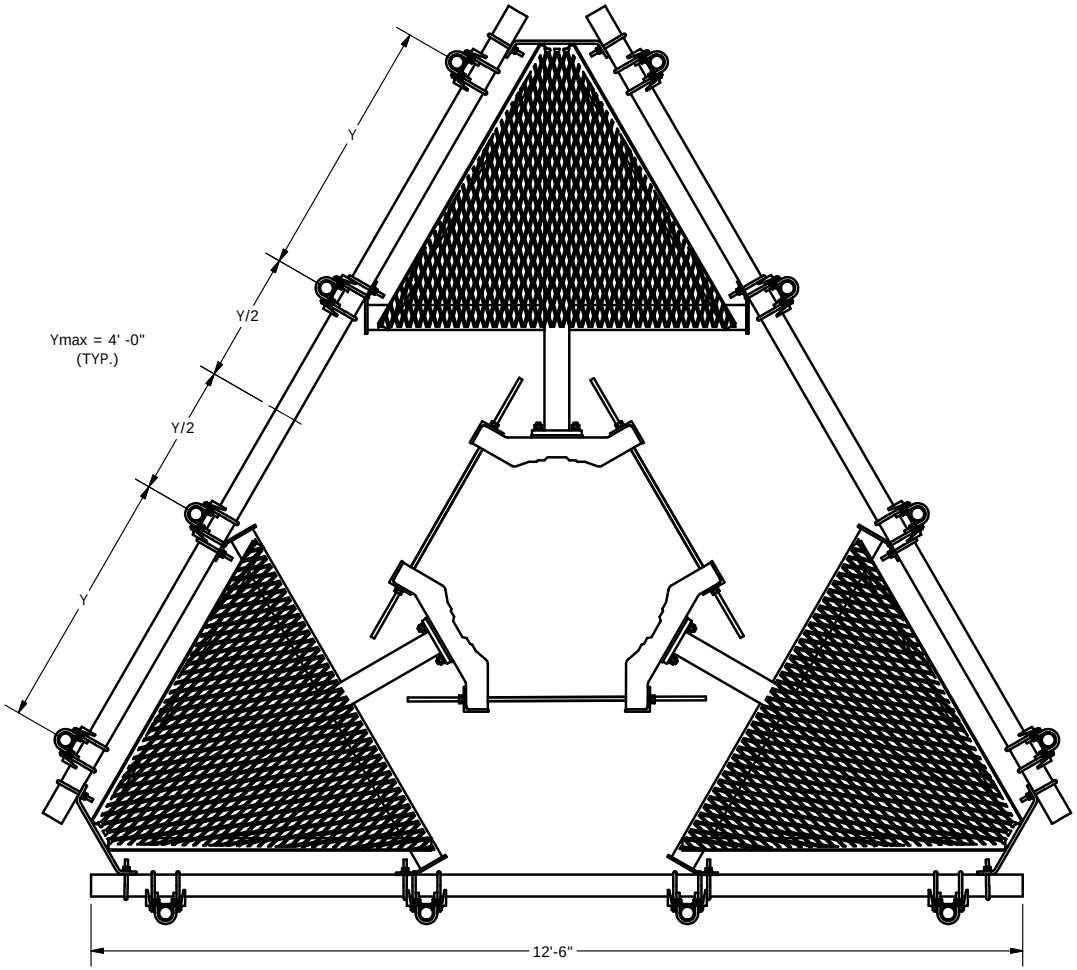
DESCRIPTION
LOW PROFILE CO-LOCATION PLATFORM FOR 12 ANTENNAS WITH 12' 6" FACE WIDTH FOR 12" - 38" DIAMETER POLES

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

DRAWN BY	CPD NO.	DRAWING USAGE	PART NO.	PAGE
CEK 1/20/2012	semb	CUSTOMER	SEE ASSEMBLY NO. "A"	1 OF 2
ENG. APPROVAL	CHECKED BY		DWG. NO.	
	BMC 7/9/2015		RMQP-4XX	



TOLERANCE NOTE

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE - ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

PROPRIETARY NOTE

THE DATA AND TECHNIQUEB CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED 10' 6" ANTENNA MOUNTING PIPES		CEK	7/9/2015

REVISION HISTORY

DESCRIPTION
LOW PROFILE CO-LOCATION PLATFORM
FOR 12 ANTENNAS WITH 12' 6" FACE WIDTH
FOR 12" - 38" DIAMETER POLES

DRAWN BY	CPD NO.	DRAWING USAGE
CEK 1/20/2012	semb	CUSTOMER

ENG. APPROVAL	CHECKED BY
	BMC 7/9/2015

SITE PRO 1
A valmont COMPANY

Engineering
Support Team:
1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

PART NO. **SEE ASSEMBLY NO. "A"**

DWG. NO. **RMQP-4XX**

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH009B

NH009/CrownOronoque_ET
423 Oronoque Road
Milford, Connecticut 06461

June 8, 2021

EBI Project Number: 6221002893

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**47.86%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

June 8, 2021

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTNH009B - NH009/CrownOronoque_ET

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **423 Oronoque Road** in **Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 423 Oronoque Road in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power

levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 83 feet above ground level (AGL).

15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	83 feet	Height (AGL):	83 feet	Height (AGL):	83 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	**22.05%**	Antenna B1 MPE %:	**22.05%**	Antenna C1 MPE %:	**22.05%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd
Height (AGL):	83 feet	Height (AGL):	83 feet	Height (AGL):	83 feet
Channel Count:	7	Channel Count:	7	Channel Count:	7
Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts
ERP (W):	8,360.85	ERP (W):	8,360.85	ERP (W):	8,360.85
Antenna A2 MPE %:	**8.54%**	Antenna B2 MPE %:	**8.54%**	Antenna C2 MPE %:	**8.54%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	83 feet	Height (AGL):	83 feet	Height (AGL):	83 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A3 MPE %:	**7.79%**	Antenna B3 MPE %:	**7.79%**	Antenna C3 MPE %:	**7.79%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	38.38%
Metro PCS	1.52%
Verizon	4.22%
Sirius XM Radio	3.74%
Site Total MPE % :	47.86%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	38.38%
T-Mobile Sector B Total:	38.38%
T-Mobile Sector C Total:	38.38%
Site Total MPE % :	47.86%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	83.0	66.97	2500 MHz LTE 1C & 2C Traffic	1000	6.70%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	83.0	6.51	2500 MHz LTE 1C & 2C Broadcast	1000	0.65%
T-Mobile 2500 MHz NR Traffic	1	22089.26	83.0	133.94	2500 MHz NR Traffic	1000	13.39%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	83.0	13.03	2500 MHz NR Broadcast	1000	1.30%
T-Mobile 600 MHz LTE	2	591.73	83.0	7.18	600 MHz LTE	400	1.79%
T-Mobile 600 MHz NR	1	1577.94	83.0	9.57	600 MHz NR	400	2.39%
T-Mobile 700 MHz LTE	2	695.22	83.0	8.43	700 MHz LTE	467	1.81%
T-Mobile 1900 MHz LTE	2	2104.51	83.0	25.52	1900 MHz LTE	1000	2.55%
T-Mobile 1900 MHz GSM	4	1028.30	83.0	24.94	1900 MHz GSM	1000	2.49%
T-Mobile 1900 MHz LTE	2	2056.61	83.0	24.94	1900 MHz LTE	1000	2.49%
T-Mobile 2100 MHz LTE	2	2307.55	83.0	27.98	2100 MHz LTE	1000	2.80%
						Total:	**38.38%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	38.38%
Sector B:	38.38%
Sector C:	38.38%
T-Mobile Maximum MPE % (Sector A):	38.38%
Site Total:	47.86%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **47.86%** 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.