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

November 7, 2022

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

RE: **Notice of Exempt Modification for ATT**
Crown #806362; ATT Site ID CTL01060
347 East Street, Wolcott, CT 06716
Latitude: 41° 33′ 34.41″ / Longitude: -72° 56′ 49.10″

Dear Ms. Bachman:

AT&T currently maintains twelve (12) antennas at the 158-foot level of the existing 185-foot monopole tower at 347 East Street, Wolcott, CT. The tower is owned by Crown Castle USA Inc. and the property is owned by Agostinho & Joanne Rodrigues. AT&T now intends to replace nine (9) antennas with nine (9) new antennas and ancillary equipment at the 158-foot level. This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:

(3) AIR6449 B77D Antennas
(3) AIR6419 B77G Antennas
(2) QD6616-7 Antennas
(1) QD8616-7 Antenna
(6) APTDC-BDFDM-DB Surge Arrestors to ports of existing RRUS E2 B29S
(1) DC9-48-60-24-8C-EV
(1) PWRT-606-S (6AWG)
(1) FB-L98B-235 (24-pair)
(3) Y CABLES to existing Dual-Band RRUS

Remove:

(3) 7770 Antennas
(2) QS66512-2 Antennas
(1) TPA-65R-LCUUUU-H8 Antenna
(2) OPA65R-BU6DA-K Antennas
(1) OPA65R-BU8DA-K Antennas
(1) DC6-48-60-18-8F
(3) DTMABP7819VG12A TMAs
(6) CM1007-DBPXBC-003 Diplexers
(6) DBC0061F1V51-2 Diplexers
(6) LDF6-50A COAX CABLES

Ground:

Install New:

(4) Rectifiers in Emerson shelf
Install 6648 (+XCEDE)
Install GPS Splitter for BBU Configuration

Remove:

N/A

The facility was approved by the Connecticut Siting Council in Docket No. 56 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 Mayor Thomas G. Dunn for the municipality, Zoning Inspector David Kalinowski, Agostinho & Joanne Rodrigues as the property owners and Crown Castle is the tower 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, ATT respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Domenica Tatasciore.

Sincerely,

Domenica Tatasciore
Site Acquisition Specialist
1800 W. Park Drive
Westborough, MA 01581
(508) 621-9161/ Domenica.Tatasciore@crowncastle.com

Attachments
cc:

Mayor Thomas G. Dunn
Town of Wolcott
10 Kenea Avenue
Wolcott, CT 06716
203-879-8100

David Kalinowski, Zoning Inspector
Town of Wolcott
10 Kenea Avenue
Wolcott, CT 06716
203-879-8100

Agostinho & Joanne Rodrigues
347 East Street
Wolcott, CT 06716
203-879-0187

Crown Castle, Tower Owner

From: TrackingUpdates@fedex.com
To: Tatasciore, Domenica
Subject: FedEx Shipment 770352884381: Your package has been delivered
Date: Tuesday, November 8, 2022 10:22:27 AM

Hi. Your package was delivered Tue, 11/08/2022 at 10:15am.

Delivered to 10 KENEA AVE, WOLCOTT, CT 06716
Received by K.MOWAD

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 770352884381

FROM Domenica Tatasciore
1800 West Park Drive

	Suite 200 WESTBOROUGH, MA, US, 01581
TO	Town of Wolcott Mayor Thomas G. Dunn 10 Kenea Avenue WOLCOTT, CT, US, 06716
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 11/07/2022 08:35 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	WOLCOTT, CT, US, 06716
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

From: TrackingUpdates@fedex.com
To: Tatasciore, Domenica
Subject: FedEx Shipment 770352904148: Your package has been delivered
Date: Tuesday, November 8, 2022 10:23:21 AM

FedEx

Hi. Your package was delivered Tue, 11/08/2022 at 10:15am.

Delivered to 10 KENEA AVE, WOLCOTT, CT 06716
Received by K.MOWAD

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 770352904148

FROM Domenica Tatasciore
1800 West Park Drive

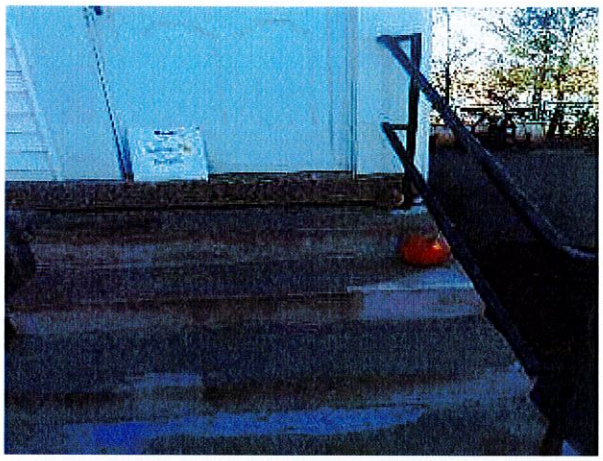
	Suite 200 WESTBOROUGH, MA, US, 01581
TO	Town of Wolcott David Kalinowski, Zoning Inspector 10 Kenea Avenue WOLCOTT, CT, US, 06716
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 11/07/2022 08:35 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	WOLCOTT, CT, US, 06716
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

From: TrackingUpdates@fedex.com
To: Tatasciore, Domenica
Subject: FedEx Shipment 770352922949: Your package has been delivered
Date: Tuesday, November 8, 2022 10:02:15 AM

Hi. Your package was delivered Tue, 11/08/2022 at 9:55am.

Delivered to 347 EAST ST, WOLCOTT, CT 06716

OBTAIN PROOF OF DELIVERY



Delivery picture not showing? View in browser.

TRACKING NUMBER	770352922949
FROM	Domenica Tatasciore 1800 West Park Drive Suite 200 WESTBOROUGH, MA, US, 01581
TO	Agostinho & Joanne Rodrigues 347 East Street WOLCOTT, CT, US, 06716
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 11/07/2022 08:35 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	WOLCOTT, CT, US, 06716
SPECIAL HANDLING	Deliver Weekday Residential Delivery
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

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

CERTIFICATION

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

Petition No. 673
Omnipoint Communications, Inc. (T-Mobile)
347 East Street
Wolcott, CT
Staff Report
June 9, 2004

On May 28, 2004, Connecticut Siting Council (Council) member Edward S. Wilensky and Christina Lepage of the Council staff met with Omnipoint Communications, Inc., a subsidiary of T-Mobile USA, Inc. (T-Mobile) representative Stephen Humes at 347 East Street, Wolcott, Connecticut for the inspection of an existing lattice tower. The structure is owned by Crown Castle. T-Mobile proposes to modify the existing tower by installing antennas and associated equipment for telecommunications use and is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the modification.

T-Mobile proposes to install six flush mounted antennas, which would be mounted to pipe supports attached to the existing 180-foot tower. The pipe mast would extend approximately ten feet above the top of the existing tower. The antennas would be mounted with a centerline at 188 feet above ground level (AGL) bringing the top of the tower to 190 feet three inches AGL. T-Mobile would install GPS and GSM antennas on the ice bridge at 30 feet AGL.

The proposed equipment would be installed on a 17-foot by five-foot concrete slab to be located within the existing fenced area at the base of the tower. Access to the tower is via an existing access drive extending from East Street. Utilities would originate from existing sources.

The tower is located in an industrial zone on property owned by Agostino Rodrigues. The proposed antennas are intended to provide coverage to a portion of Interstate 84, Route 322 and the surrounding area.

The calculated cumulative worst-case radio frequency power density would not exceed the applicable standard.

T-Mobile contends that the proposed project would reduce the need for another telecommunications tower to provide coverage to the area, and that the proposed project would not have a substantial environmental effect.

347 EAST ST

Location	347 EAST ST	**Mblu**	131/ 1/ 19/ /
Acct#	R0478100	**Owner**	RODRIGUES AGOSTINHO V &
Assessment	$506,990	**Appraisal**	$724,280
PID	5352	**Building Count**	3

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$474,310	$249,970	$724,280
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$332,010	$174,980	$506,990

Owner of Record

Owner	RODRIGUES AGOSTINHO V &
Co-Owner	JOANNE
Address	347 EAST ST WOLCOTT, CT 06716

Sale Price	$0
Certificate	
Book & Page	0131/0023
Sale Date	06/27/1980
Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
RODRIGUES AGOSTINHO V &	$0		0131/0023	25	06/27/1980

Building Information

Building 1 : Section 1

Year Built:	1930
Living Area:	3,139
Replacement Cost:	$380,909
Building Percent Good:	62
Replacement Cost Less Depreciation:	$236,160

Building Attributes

Field	Description
Style	Colonial
Model	Residential
Grade:	B
Stories	1.9
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gambrel
Roof Cover	Arch Shingles
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Carpet
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Percent	35% CAC
Total Bedrooms:	5 Bedrooms
Full Bthrms:	3
Half Baths:	0
Extra Fixtures	0
Total Rooms:	9
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	1
Fireplace(s)	0
% Attic Fin	0
LF Dormer	12
Foundation	Poured Conc
Bsmt Gar(s)	0
Bsmt %	100
SF FBM	0.00
SF Rec Rm	182
Fin Bsmt Qual	LQ
Bsmt Access	Int & Ext
Fndtn Cndtn	
Basement	

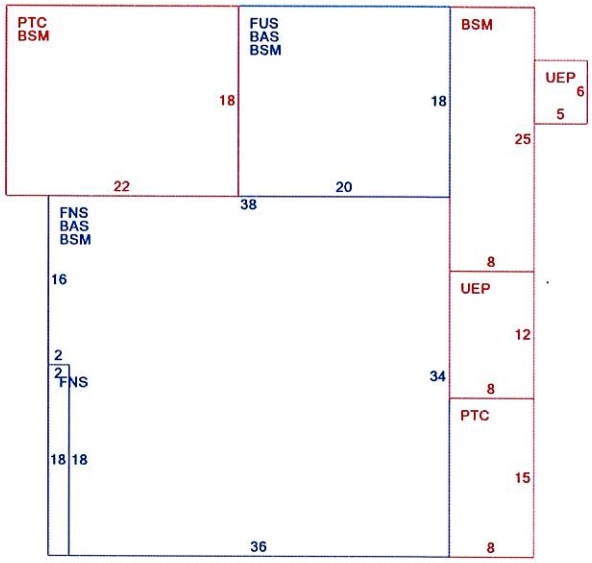
Building 2 : Section 1

Year Built: 1910
Living Area: 1,308

Building Photo

(https://images.vgsi.com/photos/WolcottCTPhotos/\00\01\17\56.jpg)

Building Layout



(ParcelSketch.ashx?pid=5352&bid=5352)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,616	1,616
FNS	Finished 90% Story	1,292	1,163
FUS	Finished Upper Story	360	360
BSM	Basement	2,212	0
PTC	Concrete Patio	516	0
UEP	Unfin. Enclosed Porch	126	0
		6,122	3,139

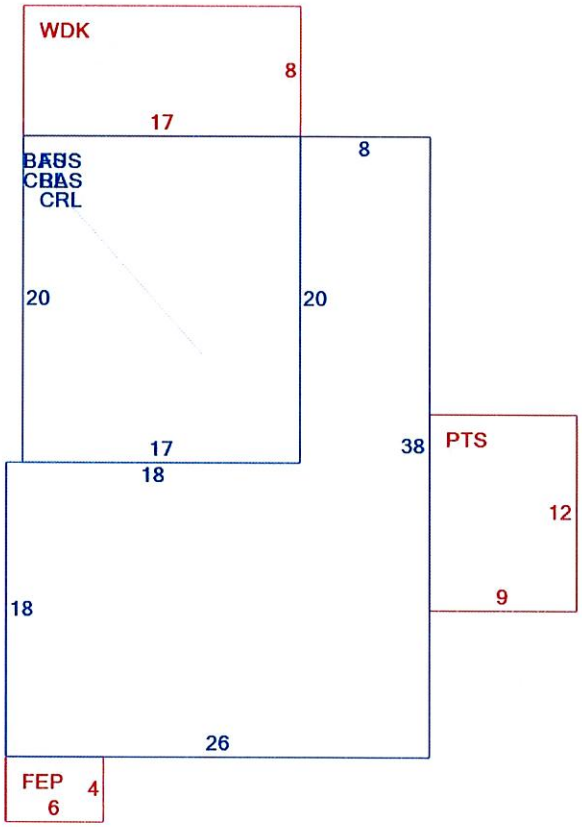
Replacement Cost: $172,881
Building Percent Good: 60
Replacement Cost Less Depreciation: $103,730

Building Attributes : Bldg 2 of 3	
Field	**Description**
Style	Conventional
Model	Residential
Grade:	D
Stories	1
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Arch Shingles
Interior Wall 1	Plaster
Interior Wall 2	
Interior Flr 1	Carpet
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Percent	None
Total Bedrooms:	2 Bedrooms
Full Bthrms:	1
Half Baths:	0
Extra Fixtures	0
Total Rooms:	5
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	1
Fireplace(s)	0
% Attic Fin	0
LF Dormer	0
Foundation	Poured Conc
Bsmt Gar(s)	0
Bsmt %	0
SF FBM	0.00
SF Rec Rm	0
Fin Bsmt Qual	
Bsmt Access	None
Fndtn Cndtn	
Basement	

Building Photo

(https://images.vgsi.com/photos/WolcottCTPhotos/\00\01\17\57.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	968	968
FUS	Finished Upper Story	340	340
CRL	Crawl Space	968	0
FEP	Finished Enclosed Porch	24	0
PTS	Stone Patio	108	0
WDK	Deck	136	0

		2,544	1,308

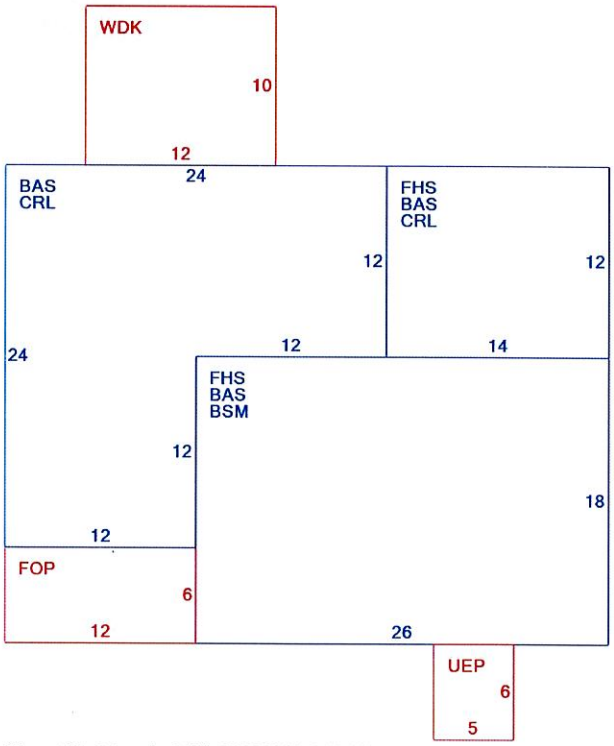
Building 3 : Section 1

Year Built: 1912
Living Area: 1,481
Replacement Cost: $199,759
Building Percent Good: 60
Replacement Cost Less Depreciation: $119,860

Building Photo

(https://images.vgsi.com/photos/WolcottCTPhotos/\00\01\17\58.jpg)

Building Layout



(ParcelSketch.ashx?pid=5352&bid=20143)

Building Attributes : Bldg 3 of 3	
Field	**Description**
Style	Conventional
Model	Residential
Grade:	D
Stories	1.65
Occupancy	2
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Arch Shingles
Interior Wall 1	Plaster
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	Carpet
Heat Fuel	Oil
Heat Type:	Hot Water
AC Percent	None
Total Bedrooms:	3 Bedrooms
Full Bthrms:	2
Half Baths:	0
Extra Fixtures	0
Total Rooms:	7
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	2
Fireplace(s)	0
% Attic Fin	0
LF Dormer	0
Foundation	Poured Conc
Bsmt Gar(s)	0
Bsmt %	100
SF FBM	0.00

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,068	1,068
FHS	Finished Half Story	636	413
BSM	Basement	468	0
CRL	Crawl Space	600	0
FOP	Open Porch	72	0

SF Rec Rm	0
Fin Bsmt Qual	
Bsmt Access	Int & Ext
Fndtn Cndtn	
Basement	

UEP	Unfin. Enclosed Porch	30	0
WDK	Deck	120	0
		2,994	1,481

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
SOL	Solar Array	39.00 UNITS	$0	1
GEN	Generator	0.00 UNITS	$0	1

Land

Land Use

Use Code 112
Description Multiple Houses
Zone R-30
Neighborhood 6C
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 2.20
Frontage
Depth
Assessed Value $174,980
Appraised Value $249,970

Outbuildings

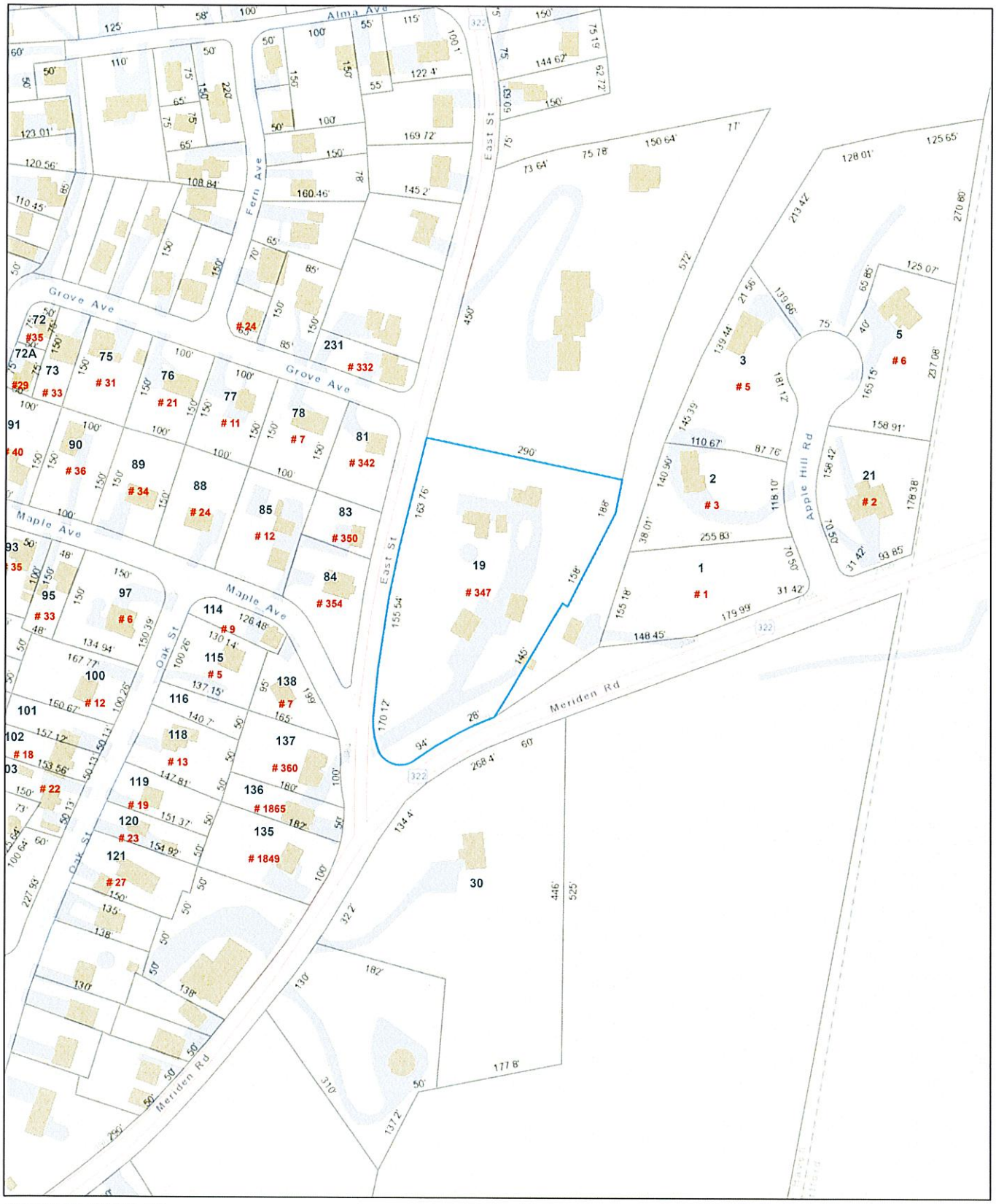
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FGR1	Garage	FR	Frame	672.00 S.F.	$5,880	1
FGR1	Garage	FR	Frame	560.00 S.F.	$4,900	1
FOP	Porch			480.00 S.F.	$2,760	1
PTO	Patio	CN	Concrete	408.00 S.F.	$1,020	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$401,720	$246,370	$648,090
2019	$401,720	$246,370	$648,090
2018	$401,720	$246,370	$648,090

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$281,210	$172,460	$453,670
2019	$281,210	$172,460	$453,670
2018	$281,210	$172,460	$453,670

347 East Street



10/19/2022, 8:05:42 AM

Parcels

Other Impervious

Buildings

1:2,257

0 0.02 0.04 0.07 mi

0 0.03 0.06 0.12 km

UConn/CTDEEP, Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

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

Site Name:	WOLCOTT-EAST ST
Crown Castle Site#	806362
Site ID:	CTL01060
Project Name:	5G NR 1SR C-BAND
Address:	347 EAST STREET, WOLCOTT, CT 06716
County:	NEW HAVEN
Latitude:	41.5595481
Longitude:	-72.9469711
Structure Type:	SELF SUPPORT
Property Owner:	RODRIGUES AGOSTINHO V & JOANNE
Property Contact:	PAUL PEDICONE

AT&T Existing Facility

Report Information

Report Writer: Sushil Dogra **Report Generated Date:** 11-03-2022

Site Compliance Statement

Compliance Status	Compliant
Cumulative General Population % MPE (Ground Level)	27.33%

November 03, 2022

Emissions Analysis for Site: **CTL01060– WOLCOTT-EAST ST**

MobileComm Professionals, Inc was directed to analyze the proposed AT&T facility located at **347 EAST STREET, WOLCOTT, CT 06716**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of milliwatts per square centimeter (mW/cm^2). The number of mW/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 public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the 700 and 850 MHz Bands are approximately 0.467 mW/cm^2 and 0.567 mW/cm^2 respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 2300 MHz (WCS), 3450 MHz (DoD Band) and 3840 MHz (C Band) bands is 1 mW/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.

1. Theoretical Calculations

Calculations were done for the proposed AT&T Wireless antenna facility located at **347 EAST STREET, WOLCOTT, CT 06716** using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 4 LTE channels (700 MHz Band 14) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
2) 2 LTE channels (700 MHz Band 29) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
3) 4 LTE/5G channels (1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
4) 4 LTE/5G channels (2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
5) 1 NR channel (DoD Band - 3450 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 108.44 Watts per Channel.
6) 1 NR channel (C Band - 3840 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 108.44 Watts per Channel.
7) 4 LTE channels (700 MHz Band 12) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
8) 4 5G channels (850 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
9) 4 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 25 Watts per Channel.

10) 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.
11) 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.
12) The antennas used in this modeling are the Quintel QD6616-7 for the 700 MHz(Band 14) / 700 MHz(Band 29) / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR6419 for the DoD Band (3450 MHz) channel(s), the Ericsson AIR6449 for the C Band (3840 MHz) channel(s), the CCI OPA65R-BU6D for the 700 MHz(Band 12) / 850 MHz / WCS Band (2300 MHz) channel(s) in Sector A, Quintel QD8616-7 for the 700 MHz(Band 14) / 700 MHz(Band 29) / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR6419 for the DoD Band (3450 MHz) channel(s), the Ericsson AIR6449 for the C Band (3840 MHz) channel(s), the CCI DMP65R-BU8D for the 700 MHz(Band 12) / 850 MHz / WCS Band (2300 MHz) channel(s) in Sector B, Quintel QD6616-7 for the 700 MHz(Band 14) / 700 MHz(Band 29) / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR6419 for the DoD Band (3450 MHz) channel(s), the Ericsson AIR6449 for the C Band (3840 MHz) channel(s), the CCI OPA65R-BU6D for the 700 MHz(Band 12) / 850 MHz / WCS Band (2300 MHz) channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
13) The antenna mounting height centerline of the proposed antennas is 160 feet above ground level (AGL).
14) 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.
15) All calculations were done with respect to uncontrolled / general population threshold limits.

2. Antenna Inventory & Power Data

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (^{0})	HBW (^{0})	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Total Ant Transmitter Power (Watts)	Total Ant ERP(Watts)	Ant MPE%
A	1	AT&T	Quintel	QD6616-7	Panel	700	LTE(B14)	24	71	12.05	6	4	160.00	2566.12	4208.43	560	14714.06	2.69%
A	1	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	24	71	12.05	6	2	80.00	1283.06	2104.21			
A	1	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	24	67	15.05	6	4	160.00	5120.07	8396.92			
A	1	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	24	62	15.55	6	4	160.00	5744.82	9421.50			
A	2-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	24	11	23.5	2.55	1	108.44	24277.05	39828.68	108.44	24277.05	3.33%
A	2-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	24	11	23.5	2.55	1	108.44	24277.05	39828.68	108.44	24277.05	3.50%
A	3	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	24	73	12.15	6	4	160.00	2625.89	4306.46	420	9885.05	2.16%
A	3	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	24	64	13.05	6	4	160.00	3230.55	5298.10			
A	3	AT&T	CCI	OPA65R-BU6D	Panel	2300	LTE	24	55	16.05	6	4	100.00	4028.62	6606.93			
B	4	AT&T	Quintel	QD8616-7	Panel	700	LTE(B14)	140	72	12.75	8	4	160.00	3014.92	4944.47	560	15128.71	2.85%
B	4	AT&T	Quintel	QD8616-7	Panel	700	LTE(B29)	140	72	12.75	8	2	80.00	1507.46	2472.24			
B	4	AT&T	Quintel	QD8616-7	Panel	1900	LTE/5G	140	62	15.05	8	4	160.00	5120.07	8396.92			
B	4	AT&T	Quintel	QD8616-7	Panel	2100	LTE/5G	140	62	15.35	8	4	160.00	5486.26	8997.46			
B	5-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	140	11	23.5	2.55	1	108.44	24277.05	39828.68	108.44	24277.05	3.33%
B	5-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	140	11	23.5	2.55	1	108.44	24277.05	39828.68	108.44	24277.05	3.50%
B	6	AT&T	CCI	DMP65R-BU8D	Panel	700	LTE(B12)	140	75	12.95	8	4	160.00	3157.01	5177.50	420	10977.90	2.47%
B	6	AT&T	CCI	DMP65R-BU8D	Panel	850	5G	140	64	13.85	8	4	160.00	3883.97	6369.71			
B	6	AT&T	CCI	DMP65R-BU8D	Panel	2300	LTE	140	64	15.95	8	4	100.00	3936.92	6456.54			
C	7	AT&T	Quintel	QD6616-7	Panel	700	LTE(B14)	261	71	12.05	6	4	160.00	2566.12	4208.43	560	14714.06	2.69%
C	7	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	261	71	12.05	6	2	80.00	1283.06	2104.21			
C	7	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	261	67	15.05	6	4	160.00	5120.07	8396.92			
C	7	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	261	62	15.55	6	4	160.00	5744.82	9421.50			
C	8-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	261	11	23.5	2.55	1	108.44	24277.05	39828.68	108.44	24277.05	3.33%
C	8-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	261	11	23.5	2.55	1	108.44	24277.05	39828.68	108.44	24277.05	3.50%
C	9	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	261	73	12.15	6	4	160.00	2625.89	4306.46	420	9885.05	2.16%
C	9	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	261	64	13.05	6	4	160.00	3230.55	5298.10			
C	9	AT&T	CCI	OPA65R-BU6D	Panel	2300	LTE	261	55	16.05	6	4	100.00	4028.62	6606.93			

Table 2.1: Antenna Inventory & Power Data

**NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6419 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.*

Cumulative Site MPE%	
Carrier	**MPE%**
AT&T (Max MPE% at Sector B)	12.15%
T-Mobile	6.37%
Verizon	6.13%
Clearwire	2.68%
Site Total MPE%	**27.33%**

Table 2.2: Cumulative Site MPE%

AT&T Max MPE% Per Sector	
AT&T Sector A Total	11.67%
AT&T Sector B Total	12.15%
AT&T Sector C Total	11.67%
Site Total MPE%	**27.33%**

Table 2.3: AT&T MPE% Per Sector

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	FREQ. (MHz)	TECH.	#of Channels	Transmitter Power (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Total Power Density (mW/cm^2)	Allowable MPE (mW/cm^2)	Calculated MPE%
B	4	AT&T	Quintel	QD8616-7	700	LTE(B14)	4	160.00	3014.92	4944.47	160.00	0.004237	0.467	0.91%
B	4	AT&T	Quintel	QD8616-7	700	LTE(B29)	2	80.00	1507.46	2472.24	160.00	0.002118	0.467	0.45%
B	4	AT&T	Quintel	QD8616-7	1900	LTE/5G	4	160.00	5120.07	8396.92	160.00	0.007195	1.000	0.72%
B	4	AT&T	Quintel	QD8616-7	2100	LTE/5G	4	160.00	5486.26	8997.46	160.00	0.007710	1.000	0.77%
B	5-1	AT&T	Ericsson	AIR 6419 B77G	3450	5G	1	108.44	24277.05	39828.68	162.00	0.033291	1.000	3.33%
B	5-2	AT&T	Ericsson	AIR 6449 B77D	3840	5G	1	108.44	24277.05	39828.68	158.00	0.034998	1.000	3.50%
B	6	AT&T	CCI	DMP65R-BU8D	700	LTE(B12)	4	160.00	3157.01	5177.50	160.00	0.004437	0.467	0.95%
B	6	AT&T	CCI	DMP65R-BU8D	850	5G	4	160.00	3883.97	6369.71	160.00	0.005458	0.567	0.96%
B	6	AT&T	CCI	DMP65R-BU8D	2300	LTE	4	100.00	3936.92	6456.54	160.00	0.005533	1.000	0.55%
													Total	**12.15%**

Table 2.4: Detailed MPE% at AT&T Sector B

3. Compliance Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A	11.67%
Sector B	12.15%
Sector C	11.67%
AT&T Maximum Total (per sector)	12.15%
Site Total MPE%	**27.33%**
Site Compliance Status	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is 27.33% of the allowable FCC established general public 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 within the allowable 100% threshold standard per the federal government.

Date: September 22, 2022

MTS Engineering, P.L.L.C.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**AT&T Mobility Equipment Change-Out**	
	Carrier Site Number:	CTL01060
	Carrier Site Name:	Wolcott-East ST
	Carrier Site FA:	10035040
Crown Castle Designation:	**BU Number:**	806362
	Site Name:	NHV 108 943133
	JDE Job Number:	730983
	Order Number:	632627, Rev.0
Engineering Firm Designation:	**Report Designation:**	104053.013.01.0001
Site Data:	**Intersection of RTE 322/ Meridian Rd Wolcott Site, Wolcott, CT, New Haven County, 06716** **Latitude 41° 33' 34.41" Longitude -72° 56' 49.10"**	
Structure Information:	**Tower Height & Type:**	**185 ft. Self-Supported Tower**
	Mount Elevation:	**158 ft.**
	Mount Type:	**13 ft. Sector Mount**

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

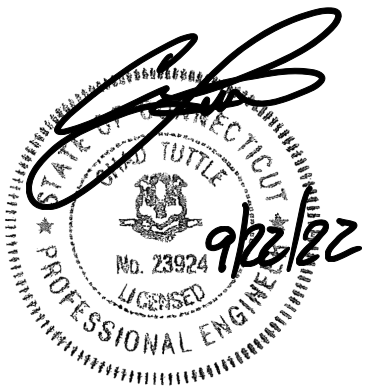
The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level to be:

Sector Mount (typical) **Sufficient**

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

Mount structural analysis prepared by: Isaac Fulton

Respectfully submitted by: MTS Engineering, P.L.L.C.
COA: BER: 2386985 Expires: 03/31/2023



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3 - sector 13 ft. Sector Mount, designed by Sabre (Part# C10857001C).

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.195
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Number of Antennas	Manufacturer	Model / Type	Mount / Modification Details
158	162	3	Ericsson	AIR 6419 B77G_CCIV3	13 ft. Sector Mount
	160	1	CCI Antennas	DMP65R-BU8D	
		1	Quintel Technology	QD6616-7	
		1	Quintel Technology	QD8616-7	
		2	CCI Antennas	OPA65R-BU6D	
		1	Quintel Technology	QD6616-7	
		3	Ericsson	RRUS 32 B2	
		3	Ericsson	RRUS 32 B30	
		3	Ericsson	RRUS 32 B66A	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4478 B14_CCIV2	
		1	Raycap	DC6-48-60-18-8F	
		1	Raycap	DC9-48-60-24-8C-EV	
		1	Raycap	DC6-48-60-18-8F_CCIV2	
	158	3	Ericsson	AIR 6449 B77D_CCIV3	
		1	Raycap	DC6-48-60-18-8F	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 09/16/2022	Crown Castle
RFDS		Date: 08/11/2022	
Previous MA	MTS Engineering, P.L.L.C.	Date: 12/09/2021	On File
Mount Manufacturer Drawing	Sabre (Part# C10857001C)	Date: 12/22/2015	Sabre

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 20.0.3), 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 MTS Engineering, P.L.L.C., 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.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Mount Analysis* (Revision E). In addition, this analysis is in accordance with *AT&T's Mount Technical Directive – R22.0*.

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
Antenna Mount Pipes	2" Std. Pipe	10'-6"	All Positions, All Sectors
Raycap Pipe	2" Std. Pipe	5'-0"	Attached to V-Boom, Alpha Sector
RRU Pipe	2" Std. Pipe	7'-0"	Attached to V-Boom, All Sectors
	2" Std. Pipe	5'-0"	

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. Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
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. MTS Engineering, P.L.L.C. should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1,2	Face Horizontals	158	65	32.8	Pass
	Support Arms		76	10.5	Pass
	Verticals		83	37.4	Pass
	Diagonals		63	12.6	Pass
	Connection Plates		24	21.5	Pass
	Mount Pipes		138	77.6	Pass
	Tiebacks		80	26.9	Pass
3	Tieback to Tower Connection		-	38.1	Pass
	Mount to Tower Connection		-	17.2	Pass

Structure Rating (max from all components) =	77.6%

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

Table 4 - Tieback Connection Data Table

Tower Connection Node No.	Existing / Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity[3] (lb)	Notes
43	Existing	1193.55	Leg	ROHN 3 X-STR	4717	1
129	Existing	1714.19	Leg	ROHN 3 X-STR	4717	1
87	Existing	1798.71	Leg	ROHN 3 X-STR	4717	1

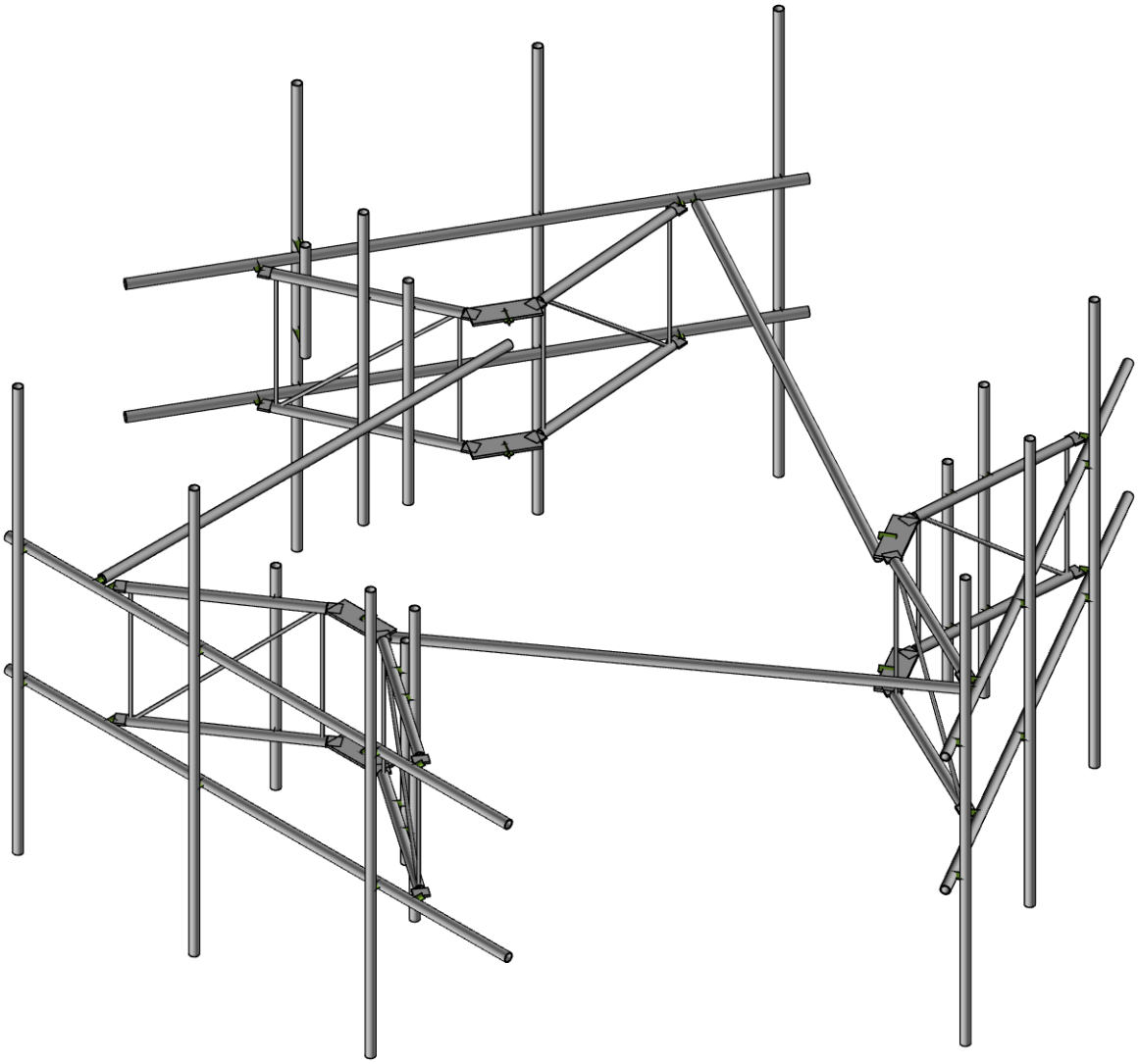
Notes:
1) Tieback connection point is within 25% of either end of the connected tower member
2) Tieback connection point is NOT within 25% of either end of the connected tower member
3) Reduced member compressive capacity according to CED-STD-10294 *Standard for Installation of Mounts and Appurtenances*

4.1) Recommendations

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

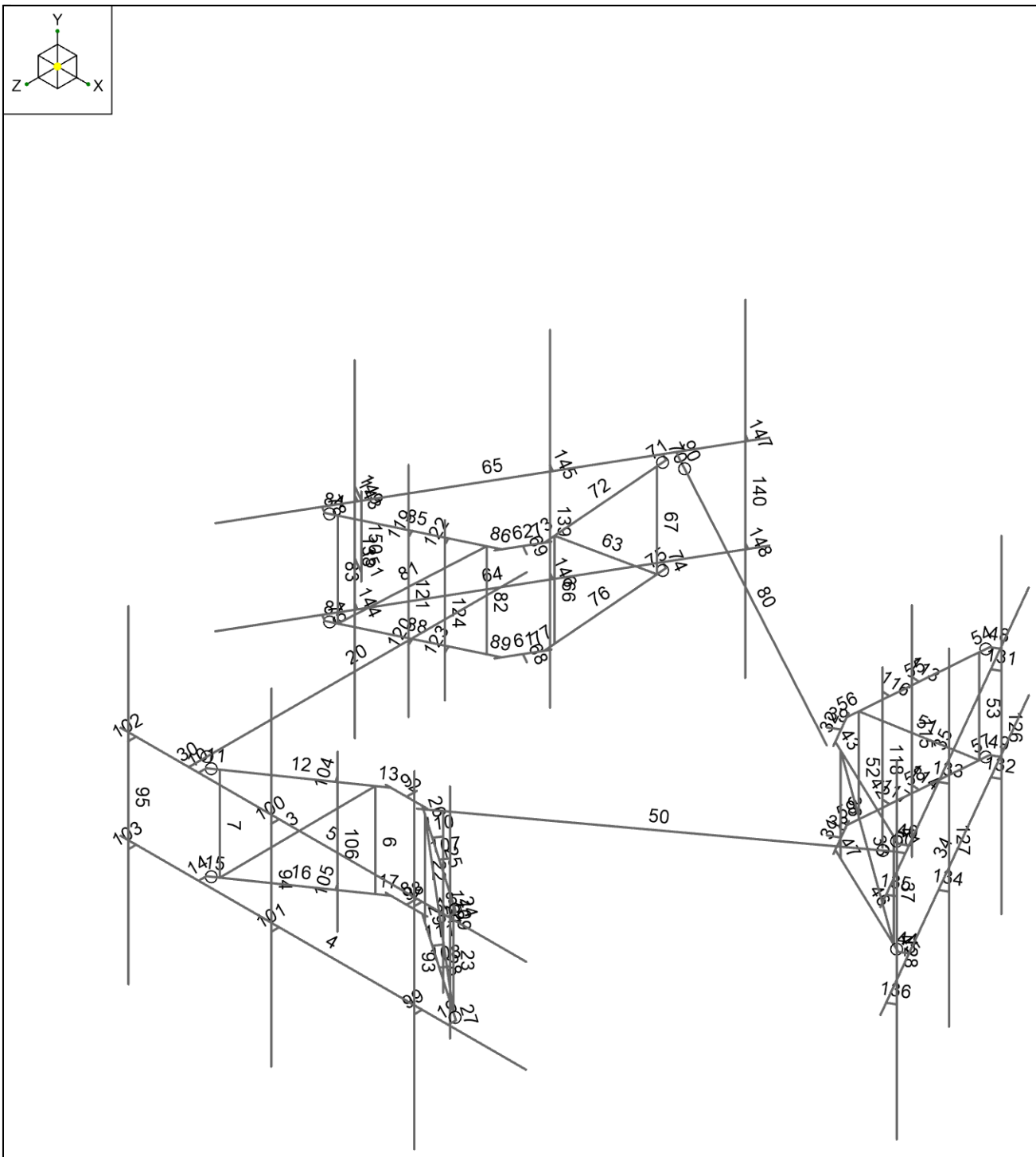
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

MTS Engineering, P.L.L.C.	806362 - NHV 108 943133	SK-1
KP		Sep 22, 2022
104053.013.01.0001		104053_013_01_0001_NHV 108 …



Envelope Only Solution

MTS Engineering, P.L.L.C.	806362 - NHV 108 943133	SK-2
KP		Sep 22, 2022
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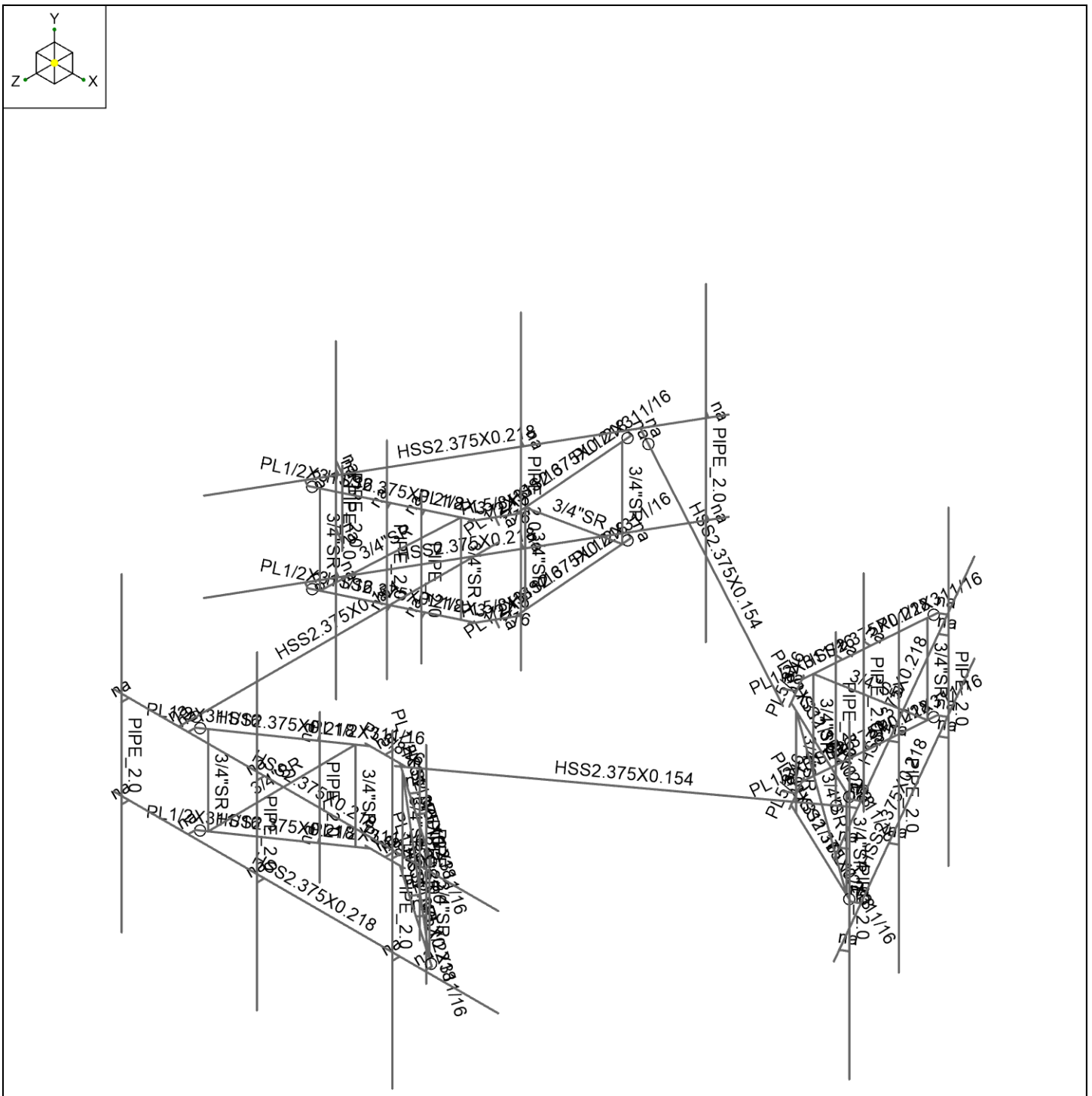

Envelope Only Solution

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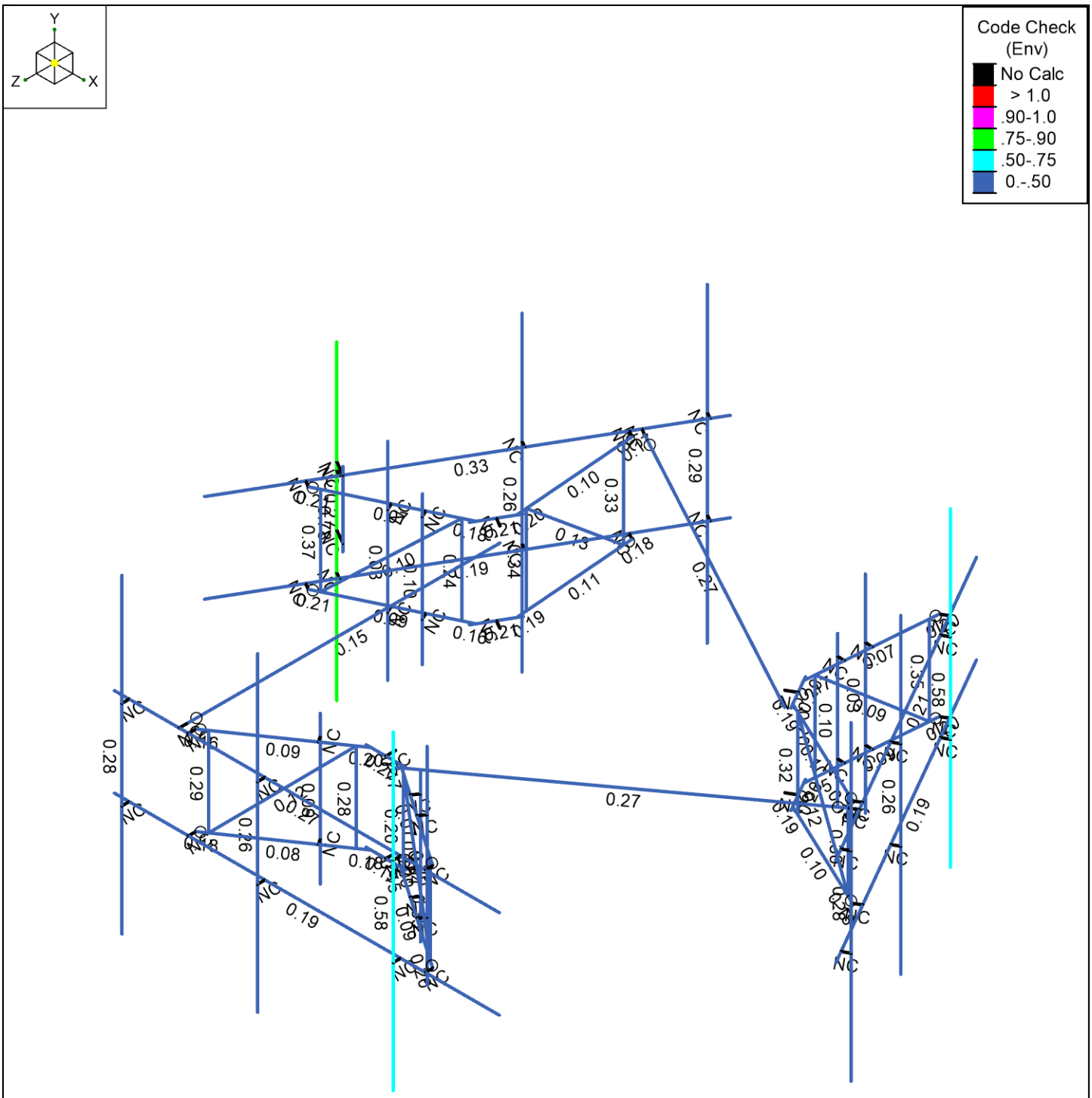

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

MTS Engineering, P.L.L.C.	806362 - NHV 108 943133	SK-4
KP		Sep 22, 2022
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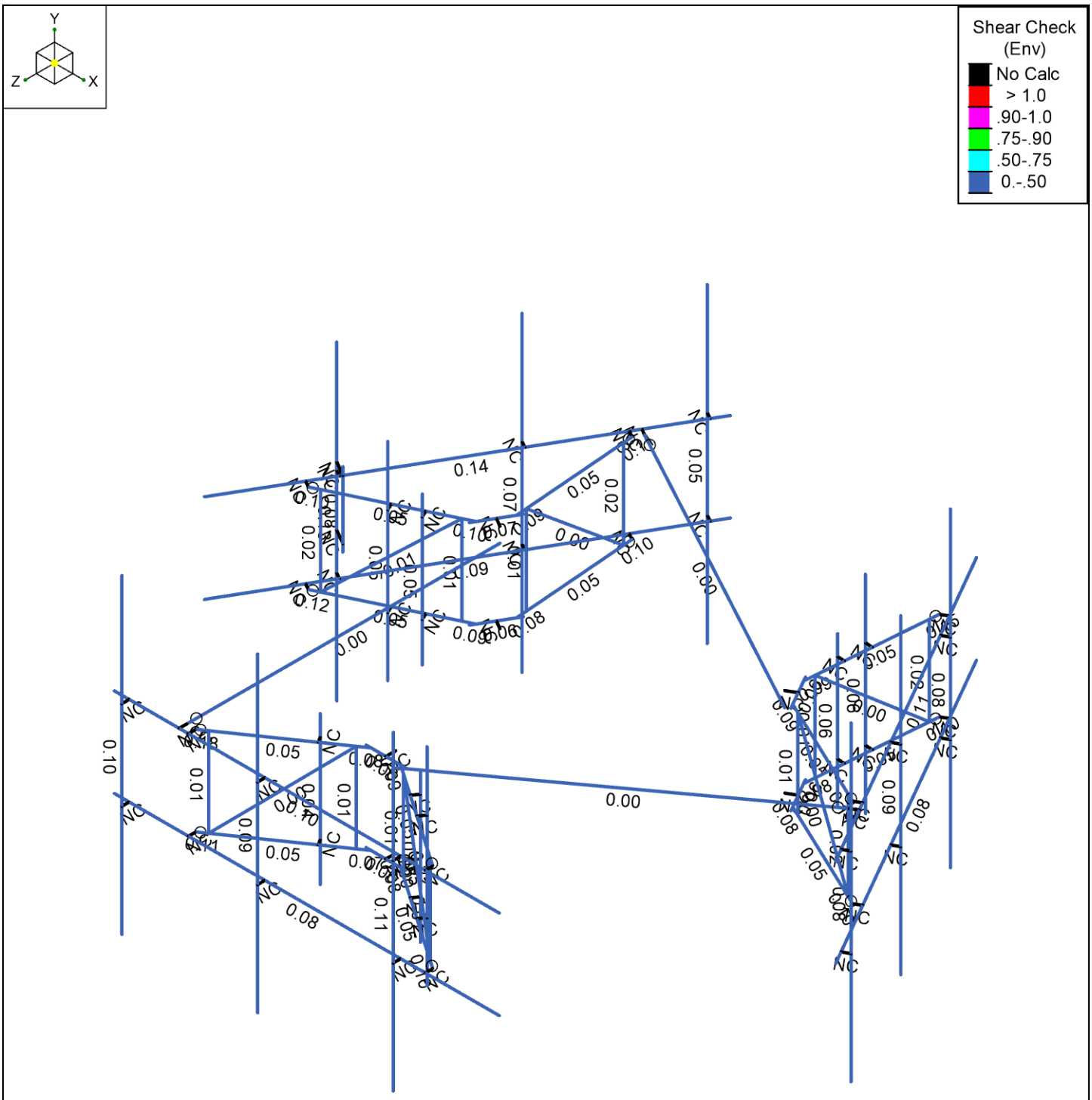


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

MTS Engineering, P.L.L.C.	806362 - NHV 108 943133	SK-5
KP		Sep 22, 2022
104053.013.01.0001		104053_013_01_0001_NHV 108 …

APPENDIX B

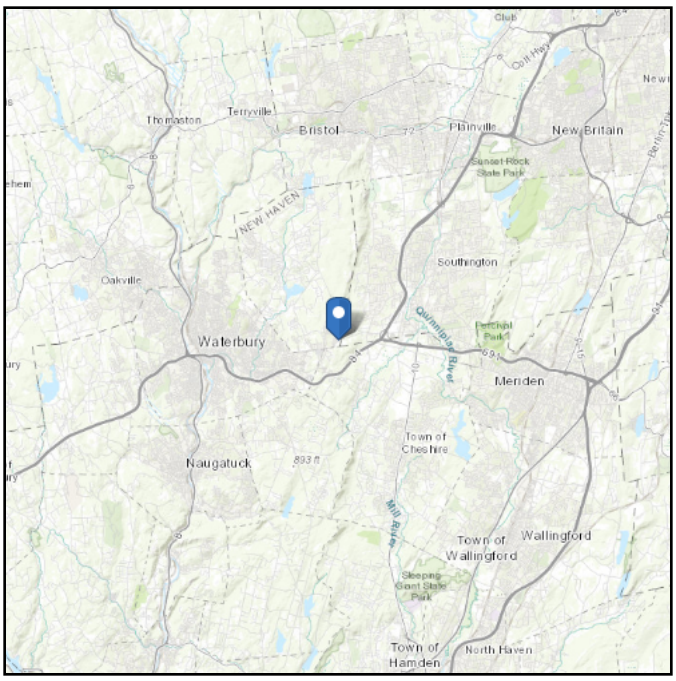
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 745.17 ft (NAVD 88)
Latitude: 41.559558
Longitude: -72.946972



Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Wed Dec 01 2021

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

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

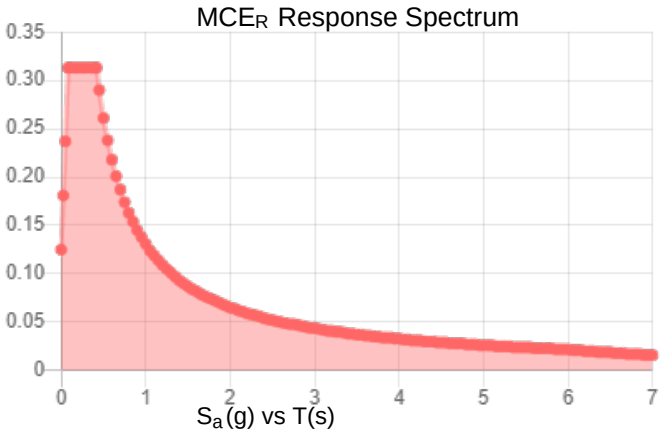
Seismic

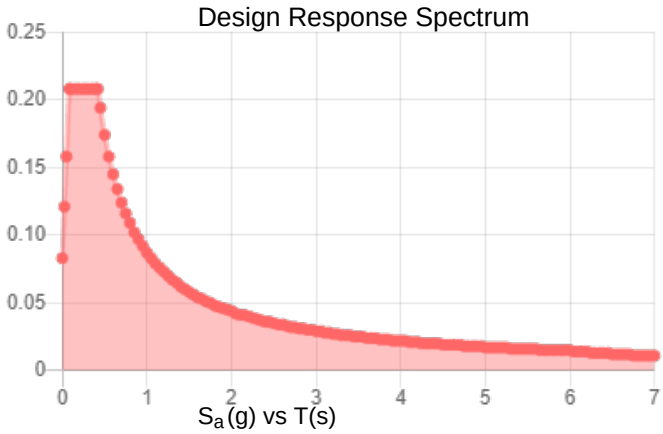
Site Soil Class: D - Default (see Section 11.4.3)

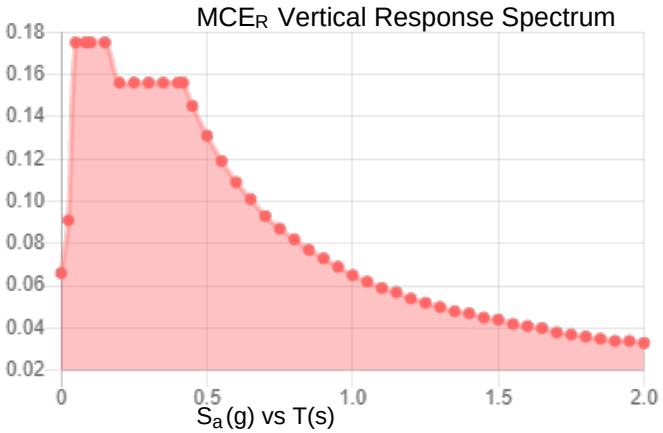
Results:

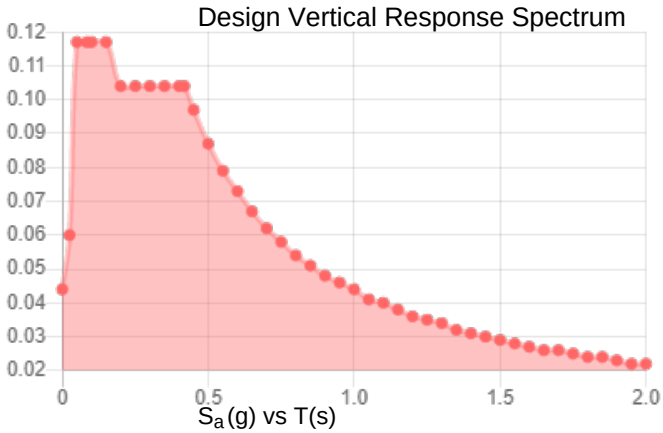
S_S :	0.195	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.108
F_v :	2.4	PGA_M :	0.171
S_{MS} :	0.313	F_{PGA} :	1.585
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.208	C_v :	0.7

Seismic Design Category B









Data Accessed: **Wed Dec 01 2021**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Dec 01 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

PROJECT	**104053.013.01.0001 - NHV 108 94313 KSC**
SUBJECT	**Sector Mount Analysis**
DATE	**09/22/22**

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

Tower Type		:	SST		
Ground Elevation	z_s	:	745	ft	[ASCE7 Hazard Tool]
Tower Height		:	185.00	ft	
Mount Elevation		:	158.00	ft	
Antenna Elevation		:	162.00	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	:	118	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	1.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.20		
	S_1	:	0.05		
	S_{DS}	:	0.21		
	S_{D1}	:	0.09		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.40		[Sec. 2.6.5.2]
Topography Facto	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.97		[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}	:	1.17	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.104		[Sec. 2.7.7.1]
Amplification	A_s	:	2.416216		[Sec. 16.7]

	q_z	:	45.93	psf

PROJECT	**104053.013.01.0001 - NHV 108 94313 KSC**
SUBJECT	**Sector Mount Analysis**
DATE	**09/22/22**

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

Manufacturer	Model	Qty	Height (in^2)	Width (in^2)	Depth (in^2)	Weight (lbs)	C_aA_a (N) (ft^2)	C_aA_a (T) (ft^2)	C_aA_a (N) Ice (ft^2)	C_aA_a (T) Ice (ft^2)	$F_{A\,(N)}$ (k)	$F_{A\,(T)}$ (k)	$F_{A\,(N)}$ Ice (k)	$F_{A\,(T)}$ Ice (k)
INTEL TECHNOLC	QD6616-7	0.5	72.0	22.0	9.6	130.0	6.80	2.96	7.62	3.68	0.31	0.14	0.06	0.03
INTEL TECHNOLC	QD6616-7	0.5					6.80	2.96	7.62	3.68	0.31	0.14	0.06	0.03
ERICSSON	AIR 6419 B77G_CCIV3	0.5	31.1	16.1	7.3	44.0	2.09	1.01	2.57	1.43	0.09	0.04	0.02	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5					2.09	1.01	2.57	1.43	0.09	0.04	0.02	0.01
ERICSSON	AIR 6449 B77D_CCIV3	0.5	30.6	15.9	10.6	83.8	2.03	1.37	2.50	1.80	0.08	0.06	0.02	0.01
ERICSSON	AIR 6449 B77D_CCIV3	0.5	30.6	15.9	10.6	83.8	2.03	1.37	2.50	1.80	0.08	0.06	0.02	0.01
CCI ANTENNAS	OPA65R-BU6D	0.5	71.2	21.0	7.8	63.5	6.11	2.27	6.88	2.93	0.28	0.10	0.06	0.02
CCI ANTENNAS	OPA65R-BU6D	0.5					6.11	2.27	6.88	2.93	0.28	0.10	0.06	0.02
ERICSSON	RRUS 32 B2	1	27.2	12.1	7.0	52.9	2.73	1.67	3.54	2.42	0.11	0.07	0.02	0.01
ERICSSON	RRUS 32 B66A	1	27.6	12.5	7.4	55.1	2.86	1.78	3.69	2.54	0.12	0.07	0.02	0.01
INTEL TECHNOLC	QD8616-7	0.5	96.0	22.0	9.6	150.0	9.18	4.00	10.22	4.93	0.42	0.18	0.08	0.04
INTEL TECHNOLC	QD8616-7	0.5					9.18	4.00	10.22	4.93	0.42	0.18	0.08	0.04
ERICSSON	AIR 6419 B77G_CCIV3	0.5	31.1	16.1	7.3	44.0	2.09	1.01	2.57	1.43	0.09	0.04	0.02	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5					2.09	1.01	2.57	1.43	0.09	0.04	0.02	0.01
ERICSSON	AIR 6449 B77D_CCIV3	0.5	30.6	15.9	10.6	83.8	2.03	1.37	2.50	1.80	0.08	0.06	0.02	0.01
ERICSSON	AIR 6449 B77D_CCIV3	0.5	30.6	15.9	10.6	83.8	2.03	1.37	2.50	1.80	0.08	0.06	0.02	0.01
CCI ANTENNAS	DMP65R-BU8D	0.5	96.0	20.7	7.7	105.6	7.93	2.98	8.88	3.82	0.37	0.14	0.07	0.03
CCI ANTENNAS	DMP65R-BU8D	0.5					7.93	2.98	8.88	3.82	0.37	0.14	0.07	0.03

PROJECT	**104053.013.01.0001 - NHV 108 94313 KSC**
SUBJECT	**Sector Mount Analysis**
DATE	**09/22/22**

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

Manufacturer	Model	Qty	Height (in^2)	Width (in^2)	Depth (in^2)	Weight (lbs)	C_aA_a (N) (ft^2)	C_aA_a (T) (ft^2)	C_aA_a (N) Ice (ft^2)	C_aA_a (T) Ice (ft^2)	$F_{A\,(N)}$ (k)	$F_{A\,(T)}$ (k)	$F_{A\,(N)}$ Ice (k)	$F_{A\,(T)}$ Ice (k)
ERICSSON	RRUS 32 B2	1	27.2	12.1	7.0	52.9	2.73	1.67	3.54	2.42	0.11	0.07	0.02	0.01
ERICSSON	RRUS 32 B66A	1	27.6	12.5	7.4	55.1	2.86	1.78	3.69	2.54	0.12	0.07	0.02	0.01
INTEL TECHNOLC	QD6616-7	0.5	72.0	22.0	9.6	130.0	6.80	2.96	7.62	3.68	0.31	0.14	0.06	0.03
INTEL TECHNOLC	QD6616-7	0.5					6.80	2.96	7.62	3.68	0.31	0.14	0.06	0.03
ERICSSON	AIR 6419 B77G_CCIV3	0.5	31.1	16.1	7.3	44.0	2.09	1.01	2.57	1.43	0.09	0.04	0.02	0.01
ERICSSON	AIR 6419 B77G_CCIV3	0.5					2.09	1.01	2.57	1.43	0.09	0.04	0.02	0.01
ERICSSON	AIR 6449 B77D_CCIV3	0.5	30.6	15.9	10.6	83.8	2.03	1.37	2.50	1.80	0.08	0.06	0.02	0.01
ERICSSON	AIR 6449 B77D_CCIV3	0.5	30.6	15.9	10.6	83.8	2.03	1.37	2.50	1.80	0.08	0.06	0.02	0.01
CCI ANTENNAS	OPA65R-BU6D	0.5	71.2	21.0	7.8	63.5	6.11	2.27	6.88	2.93	0.28	0.10	0.06	0.02
CCI ANTENNAS	OPA65R-BU6D	0.5					6.11	2.27	6.88	2.93	0.28	0.10	0.06	0.02
ERICSSON	RRUS 32 B2	1		12.1	7.0	52.9	2.73	1.67	3.54	2.42	0.11	0.07	0.02	0.01
ERICSSON	RRUS 32 B66A	1	27.6	12.5	7.4	55.1	2.86	1.78	3.69	2.54	0.12	0.07	0.02	0.01
RAYCAP	DC9-48-60-24-8C-EV	1	31.4	10.2	10.2	26.2	1.14	1.14	1.51	1.51	0.05	0.05	0.01	0.01

PROJECT	**104053.013.01.0001 - NHV 108 94313 KSC**
SUBJECT	**Sector Mount Analysis**
DATE	**09/22/22**

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

Manufacturer	Model	Qty	Height (in^2)	Width (in^2)	Depth (in^2)	Weight (lbs)	C_aA_a (N) (ft^2)	C_aA_a (T) (ft^2)	C_aA_a (N) Ice (ft^2)	C_aA_a (T) Ice (ft^2)	$F_{A\,(N)}$ (k)	$F_{A\,(T)}$ (k)	$F_{A\,(N)}$ Ice (k)	$F_{A\,(T)}$ Ice (k)
RAYCAP	DC6-48-60-18-8F_CCIV2	1	31.3	11.0	18.5	32.8	2.90	4.82	3.78	5.83	0.12	0.20	0.02	0.04
RAYCAP	DC6-48-60-18-8F	1	22.3	11.0	11.0	18.9	0.85	0.85	1.14	1.14	0.04	0.04	0.01	0.01

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	-6.5	-3	8.551818	
2	2	6.5	-3	8.551818	
3	3	-6.5	0	8.551818	
4	4	6.5	0	8.551818	
5	5	-0.666667	0	5.885148	
6	6	-0.5	0	5.885148	
7	7	0.666667	-3	5.885148	
8	8	-0.666667	-3	5.885148	
9	9	-0.5	-3	5.885148	
10	10	0.666667	0	5.885148	
11	11	0	0	5.885148	
12	12	0	-3	5.885148	
13	13	0	0	5.551815	
14	14	0	-3	5.551815	
15	15	-4	0	8.301818	
16	16	-4	0	8.551818	
17	17	-4	-3	8.301818	
18	18	-4	-3	8.551818	
19	19	4	0	8.301818	
20	20	4	0	8.551818	
21	21	4	-3	8.301818	
22	22	4	-3	8.551818	
23	23	-3.812998	0	8.172696	
24	24	-3.812998	-3	8.172696	
25	25	-3.744423	0	8.125346	
26	26	-3.744423	-3	8.125346	
27	27	-0.79571	0	6.089329	
28	28	-0.79571	-3	6.089329	
29	29	-0.727135	0	6.04198	
30	30	-0.727135	-3	6.04198	
31	31	0.5	0	5.885148	
32	32	0.5	-3	5.885148	
33	33	3.812998	0	8.172696	
34	34	3.812998	-3	8.172696	
35	35	3.744423	0	8.125346	
36	36	3.744423	-3	8.125346	
37	37	0.79571	0	6.089329	
38	38	0.79571	-3	6.089329	
39	39	0.727135	0	6.04198	
40	40	0.727135	-3	6.04198	
41	41	-4.3125	0	8.301818	
42	42	-4.3125	0	8.551818	
43	43	-4.808013	-0.5	-2.775907	
44	44	4.808012	0	-2.775907	
45	45	-4.808012	0	-2.775907	
46	46	10.656092	-3	1.353256	
47	47	4.156092	-3	-9.905074	
48	48	10.656092	0	1.353256	
49	49	4.156092	0	-9.905074	
50	50	5.430021	0	-2.365223	
51	51	5.346688	0	-2.509561	
52	52	4.763354	-3	-3.519924	
53	53	5.430021	-3	-2.365223	
54	54	5.346688	-3	-2.509561	
55	55	4.763354	0	-3.519924	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	5.096688	0	-2.942574	
57	57	5.096688	-3	-2.942574	
58	58	4.808012	-3	-2.775907	
59	59	9.189585	0	-0.686807	
60	60	9.406092	0	-0.811807	
61	61	9.189585	-3	-0.686807	
62	62	9.406092	-3	-0.811807	
63	63	5.189585	0	-7.61501	
64	64	5.406092	0	-7.74001	
65	65	5.189585	-3	-7.61501	
66	66	5.406092	-3	-7.74001	
67	67	8.984261	0	-0.784195	
68	68	8.984261	-3	-0.784195	
69	69	8.908968	0	-0.819907	
70	70	8.908968	-3	-0.819907	
71	71	5.671368	0	-2.355559	
72	72	5.671368	-3	-2.355559	
73	73	5.596075	0	-2.391272	
74	74	5.596075	-3	-2.391272	
75	75	4.846688	0	-3.375586	
76	76	4.846688	-3	-3.375586	
77	77	5.171263	0	-7.3885	
78	78	5.171263	-3	-7.3885	
79	79	5.164545	0	-7.305438	
80	80	5.164545	-3	-7.305438	
81	81	4.875658	0	-3.733769	
82	82	4.875658	-3	-3.733769	
83	83	4.86894	0	-3.650707	
84	84	4.86894	-3	-3.650707	
85	85	9.345835	0	-0.416174	
86	86	9.562342	0	-0.541174	
87	87	0	-0.5	5.551815	
88	88	-4.156092	-3	-9.905074	
89	89	-10.656092	-3	1.353256	
90	90	-4.156092	0	-9.905074	
91	91	-10.656092	0	1.353256	
92	92	-4.763354	0	-3.519924	
93	93	-4.846688	0	-3.375586	
94	94	-5.430021	-3	-2.365223	
95	95	-4.763354	-3	-3.519924	
96	96	-4.846688	-3	-3.375586	
97	97	-5.430021	0	-2.365223	
98	98	-5.096688	0	-2.942574	
99	99	-5.096688	-3	-2.942574	
100	100	-4.808012	-3	-2.775907	
101	101	-5.189585	0	-7.61501	
102	102	-5.406092	0	-7.74001	
103	103	-5.189585	-3	-7.61501	
104	104	-5.406092	-3	-7.74001	
105	105	-9.189585	0	-0.686807	
106	106	-9.406092	0	-0.811807	
107	107	-9.189585	-3	-0.686807	
108	108	-9.406092	-3	-0.811807	
109	109	-5.171263	0	-7.3885	
110	110	-5.171263	-3	-7.3885	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	-5.164545	0	-7.305438	
112	112	-5.164545	-3	-7.305438	
113	113	-4.875658	0	-3.733769	
114	114	-4.875658	-3	-3.733769	
115	115	-4.86894	0	-3.650707	
116	116	-4.86894	-3	-3.650707	
117	117	-5.346688	0	-2.509561	
118	118	-5.346688	-3	-2.509561	
119	119	-8.984261	0	-0.784195	
120	120	-8.984261	-3	-0.784195	
121	121	-8.908968	0	-0.819907	
122	122	-8.908968	-3	-0.819907	
123	123	-5.671368	0	-2.355559	
124	124	-5.671368	-3	-2.355559	
125	125	-5.596075	0	-2.391272	
126	126	-5.596075	-3	-2.391272	
127	127	-5.033335	0	-7.885643	
128	128	-5.249842	0	-8.010643	
129	129	4.808013	-0.5	-2.775907	
130	130	0	0	5.051815	
131	131	4.375	0	-2.525907	
132	132	-4.375	0	-2.525907	
133	133	0	0	0	
134	136	3.166	3.75	8.80182	
135	137	3.166	-6.75	8.80182	
136	138	-1.417	3.75	8.80182	
137	139	-1.417	-6.75	8.80182	
138	140	-6	3.75	8.80182	
139	141	-6	-6.75	8.80182	
140	146	3.166	0	8.551818	
141	147	3.166	0	8.80182	
142	148	3.166	-3	8.551818	
143	149	3.166	-3	8.80182	
144	150	-1.417	0	8.551818	
145	151	-1.417	0	8.80182	
146	152	-1.417	-3	8.551818	
147	153	-1.417	-3	8.80182	
148	154	-6	0	8.551818	
149	155	-6	0	8.80182	
150	156	-6	-3	8.551818	
151	157	-6	-3	8.80182	
152	158	-1.550032	0	6.610171	
153	159	-1.692082	0	6.404443	
154	160	-1.550032	-3	6.610171	
155	161	-1.692082	-3	6.404443	
156	162	-1.692082	0.666667	6.404443	
157	163	-1.692082	-4.333333	6.404443	
158	164	2.270068	0	7.107339	
159	165	2.412115	0	6.901616	
160	166	2.270068	-3	7.107339	
161	167	2.412115	-3	6.901616	
162	168	2.412115	2	6.901616	
163	169	2.412115	-5	6.901616	
164	170	1.550032	0	6.610171	
165	171	1.692082	0	6.404443	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
166	172	1.550032	-3	6.610171	
167	173	1.692082	-3	6.404443	
168	174	1.692082	0.666667	6.404443	
169	175	1.692082	-4.333333	6.404443	
170	176	5.020102	0	-5.519606	
171	177	4.770917	0	-5.539761	
172	178	5.020102	-3	-5.519606	
173	179	4.770917	-3	-5.539761	
174	180	4.770917	2	-5.539761	
175	181	4.770917	-5	-5.539761	
176	182	4.94956	0	-4.647452	
177	183	4.70037	0	-4.667608	
178	184	4.94956	-3	-4.647452	
179	185	4.70037	-3	-4.667608	
180	186	4.70037	0.666667	-4.667608	
181	187	4.70037	-4.333333	-4.667608	
182	188	-7.29017	0	-1.587732	
183	189	-7.183032	0	-1.361855	
184	190	-7.29017	-3	-1.587732	
185	191	-7.183032	-3	-1.361855	
186	192	-7.183032	2	-1.361855	
187	193	-7.183032	-5	-1.361855	
188	194	-6.499592	0	-1.962718	
189	195	-6.392452	0	-1.736836	
190	196	-6.499592	-3	-1.962718	
191	197	-6.392452	-3	-1.736836	
192	198	-6.392452	0.666667	-1.736836	
193	199	-6.392452	-4.333333	-1.736836	
194	202	6.0396	3.75	-7.142746	
195	203	6.0396	-6.75	-7.142746	
196	204	8.3311	3.75	-3.173752	
197	205	8.3311	-6.75	-3.173752	
198	206	10.6226	3.75	0.795242	
199	207	10.6226	-6.75	0.795242	
200	212	5.823091	0	-7.017745	
201	213	6.0396	0	-7.142746	
202	214	5.823091	-3	-7.017745	
203	215	6.0396	-3	-7.142746	
204	216	8.114591	0	-3.048751	
205	217	8.3311	0	-3.173752	
206	218	8.114591	-3	-3.048751	
207	219	8.3311	-3	-3.173752	
208	220	10.406091	0	0.920244	
209	221	10.6226	0	0.795242	
210	222	10.406091	-3	0.920244	
211	223	10.6226	-3	0.795242	
212	226	-9.2056	3.75	-1.659074	
213	227	-9.2056	-6.75	-1.659074	
214	228	-6.9141	3.75	-5.628068	
215	229	-6.9141	-6.75	-5.628068	
216	230	-4.6226	3.75	-9.597062	
217	231	-4.6226	-6.75	-9.597062	
218	236	-8.989091	0	-1.534072	
219	237	-9.2056	0	-1.659074	
220	238	-8.989091	-3	-1.534072	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
221	239	-9.2056	-3	-1.659074	
222	240	-6.697591	0	-5.503067	
223	241	-6.9141	0	-5.628068	
224	242	-6.697591	-3	-5.503067	
225	243	-6.9141	-3	-5.628068	
226	244	-4.406091	0	-9.472061	
227	245	-4.6226	0	-9.597062	
228	246	-4.406091	-3	-9.472061	
229	247	-4.6226	-3	-9.597062	
230	248	-9.2056	0.25	-1.659074	
231	249	-8.700418	0.25	-1.367407	
232	250	-8.700418	0.5	-1.367407	
233	251	-8.700418	-2	-1.367407	
234	252	-9.2056	-1.75	-1.659074	
235	253	-8.700418	-1.75	-1.367407	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	11					
2	12					
3	13	Reaction	Reaction	Reaction	Reaction	Reaction
4	14	Reaction	Reaction	Reaction	Reaction	Reaction
5	43	Reaction	Reaction	Reaction		
6	44	Reaction	Reaction	Reaction	Reaction	Reaction
7	45	Reaction	Reaction	Reaction	Reaction	Reaction
8	56					
9	57					
10	58	Reaction	Reaction	Reaction	Reaction	Reaction
11	87	Reaction	Reaction	Reaction		
12	98					
13	99					
14	100	Reaction	Reaction	Reaction	Reaction	Reaction
15	129	Reaction	Reaction	Reaction		
16	130					

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A53 Gr.B 50	29000	11154	0.3	0.65	0.49	50	1.5	58	1.2
9	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
10	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
11	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Main Horizontals	HSS2.375X0.218	Beam	Pipe	A53 Gr.B 50	Typical	1.39	0.824	0.824	1.65
2	Supporting Horizontals	HSS2.375X0.218	Beam	Pipe	A53 Gr.B 50	Typical	1.39	0.824	0.824	1.65
3	Verticals	3/4"SR	Column	BAR	A572 Gr.50	Typical	0.442	0.016	0.016	0.031
4	Diagonals	3/4"SR	HBrace	BAR	A572 Gr.50	Typical	0.442	0.016	0.016	0.031
5	Connection Plate	PL5/8X6	Beam	RECT	A572 Gr.50	Typical	3.75	0.122	11.25	0.456
6	Plates	PL1/2X311/16	Beam	RECT	A572 Gr.50	Typical	1.844	0.038	2.089	0.141
7	Mount-Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	Tieback	HSS2.375X0.154	Beam	Pipe	A53 Gr.B 50	Typical	1	0.627	0.627	1.25

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	8	7	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
2	2	5	10	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
3	3	26	27		Diagonals	HBrace	BAR	A572 Gr.50	Typical
4	4	1	2		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
5	5	3	4		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
6	6	27	28		Verticals	Column	BAR	A572 Gr.50	Typical
7	7	25	26		Verticals	Column	BAR	A572 Gr.50	Typical
8	8	14	12		RIGID	None	None	RIGID	Typical
9	9	13	11		RIGID	None	None	RIGID	Typical
10	10	15	16		RIGID	None	None	RIGID	Typical
11	11	15	23	90	Plates	Beam	RECT	A572 Gr.50	Typical
12	12	23	29		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
13	13	29	6	90	Plates	Beam	RECT	A572 Gr.50	Typical
14	14	17	18		RIGID	None	None	RIGID	Typical
15	15	17	24	90	Plates	Beam	RECT	A572 Gr.50	Typical
16	16	24	30		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
17	17	30	9	90	Plates	Beam	RECT	A572 Gr.50	Typical
18	18	19	20		RIGID	None	None	RIGID	Typical
19	19	21	22		RIGID	None	None	RIGID	Typical
20	20	41	43		Tieback	Beam	Pipe	A53 Gr.B 50	Typical
21	21	36	37		Diagonals	HBrace	BAR	A572 Gr.50	Typical
22	22	37	38		Verticals	Column	BAR	A572 Gr.50	Typical
23	23	35	36		Verticals	Column	BAR	A572 Gr.50	Typical
24	24	19	33	90	Plates	Beam	RECT	A572 Gr.50	Typical
25	25	33	39		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
26	26	39	31	90	Plates	Beam	RECT	A572 Gr.50	Typical
27	27	21	34	90	Plates	Beam	RECT	A572 Gr.50	Typical
28	28	34	40		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
29	29	40	32	90	Plates	Beam	RECT	A572 Gr.50	Typical
30	30	41	42		RIGID	None	None	RIGID	Typical
31	31	53	52	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
32	32	50	55	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
33	33	70	71		Diagonals	HBrace	BAR	A572 Gr.50	Typical
34	34	46	47		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
35	35	48	49		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
36	36	71	72		Verticals	Column	BAR	A572 Gr.50	Typical
37	37	69	70		Verticals	Column	BAR	A572 Gr.50	Typical
38	38	58	57		RIGID	None	None	RIGID	Typical
39	39	44	56		RIGID	None	None	RIGID	Typical
40	40	59	60		RIGID	None	None	RIGID	Typical
41	41	59	67	90	Plates	Beam	RECT	A572 Gr.50	Typical
42	42	67	73		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
43	43	73	51	90	Plates	Beam	RECT	A572 Gr.50	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
44	44	61	62		RIGID	None	None	RIGID	Typical
45	45	61	68	90	Plates	Beam	RECT	A572 Gr.50	Typical
46	46	68	74		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
47	47	74	54	90	Plates	Beam	RECT	A572 Gr.50	Typical
48	48	63	64		RIGID	None	None	RIGID	Typical
49	49	65	66		RIGID	None	None	RIGID	Typical
50	50	85	87		Tieback	Beam	Pipe	A53 Gr.B 50	Typical
51	51	80	81		Diagonals	HBrace	BAR	A572 Gr.50	Typical
52	52	81	82		Verticals	Column	BAR	A572 Gr.50	Typical
53	53	79	80		Verticals	Column	BAR	A572 Gr.50	Typical
54	54	63	77	90	Plates	Beam	RECT	A572 Gr.50	Typical
55	55	77	83		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
56	56	83	75	90	Plates	Beam	RECT	A572 Gr.50	Typical
57	57	65	78	90	Plates	Beam	RECT	A572 Gr.50	Typical
58	58	78	84		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
59	59	84	76	90	Plates	Beam	RECT	A572 Gr.50	Typical
60	60	85	86		RIGID	None	None	RIGID	Typical
61	61	95	94	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
62	62	92	97	90	Connection Plate	Beam	RECT	A572 Gr.50	Typical
63	63	112	113		Diagonals	HBrace	BAR	A572 Gr.50	Typical
64	64	88	89		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
65	65	90	91		Main Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
66	66	113	114		Verticals	Column	BAR	A572 Gr.50	Typical
67	67	111	112		Verticals	Column	BAR	A572 Gr.50	Typical
68	68	100	99		RIGID	None	None	RIGID	Typical
69	69	45	98		RIGID	None	None	RIGID	Typical
70	70	101	102		RIGID	None	None	RIGID	Typical
71	71	101	109	90	Plates	Beam	RECT	A572 Gr.50	Typical
72	72	109	115		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
73	73	115	93	90	Plates	Beam	RECT	A572 Gr.50	Typical
74	74	103	104		RIGID	None	None	RIGID	Typical
75	75	103	110	90	Plates	Beam	RECT	A572 Gr.50	Typical
76	76	110	116		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
77	77	116	96	90	Plates	Beam	RECT	A572 Gr.50	Typical
78	78	105	106		RIGID	None	None	RIGID	Typical
79	79	107	108		RIGID	None	None	RIGID	Typical
80	80	127	129		Tieback	Beam	Pipe	A53 Gr.B 50	Typical
81	81	122	123		Diagonals	HBrace	BAR	A572 Gr.50	Typical
82	82	123	124		Verticals	Column	BAR	A572 Gr.50	Typical
83	83	121	122		Verticals	Column	BAR	A572 Gr.50	Typical
84	84	105	119	90	Plates	Beam	RECT	A572 Gr.50	Typical
85	85	119	125		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
86	86	125	117	90	Plates	Beam	RECT	A572 Gr.50	Typical
87	87	107	120	90	Plates	Beam	RECT	A572 Gr.50	Typical
88	88	120	126		Supporting Horizontals	Beam	Pipe	A53 Gr.B 50	Typical
89	89	126	118	90	Plates	Beam	RECT	A572 Gr.50	Typical
90	90	127	128		RIGID	None	None	RIGID	Typical
91	93	136	137		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
92	94	138	139		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
93	95	140	141		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
94	98	146	147		RIGID	None	None	RIGID	Typical
95	99	148	149		RIGID	None	None	RIGID	Typical
96	100	150	151		RIGID	None	None	RIGID	Typical
97	101	152	153		RIGID	None	None	RIGID	Typical
98	102	154	155		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
99	103	156	157		RIGID	None	None	RIGID	Typical
100	104	158	159		RIGID	None	None	RIGID	Typical
101	105	160	161		RIGID	None	None	RIGID	Typical
102	106	162	163		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
103	107	164	165		RIGID	None	None	RIGID	Typical
104	108	166	167		RIGID	None	None	RIGID	Typical
105	109	168	169		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
106	110	170	171		RIGID	None	None	RIGID	Typical
107	111	172	173		RIGID	None	None	RIGID	Typical
108	112	174	175		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
109	113	176	177		RIGID	None	None	RIGID	Typical
110	114	178	179		RIGID	None	None	RIGID	Typical
111	115	180	181		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
112	116	182	183		RIGID	None	None	RIGID	Typical
113	117	184	185		RIGID	None	None	RIGID	Typical
114	118	186	187		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
115	119	188	189		RIGID	None	None	RIGID	Typical
116	120	190	191		RIGID	None	None	RIGID	Typical
117	121	192	193		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
118	122	194	195		RIGID	None	None	RIGID	Typical
119	123	196	197		RIGID	None	None	RIGID	Typical
120	124	198	199		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
121	126	202	203		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
122	127	204	205		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
123	128	206	207		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
124	131	212	213		RIGID	None	None	RIGID	Typical
125	132	214	215		RIGID	None	None	RIGID	Typical
126	133	216	217		RIGID	None	None	RIGID	Typical
127	134	218	219		RIGID	None	None	RIGID	Typical
128	135	220	221		RIGID	None	None	RIGID	Typical
129	136	222	223		RIGID	None	None	RIGID	Typical
130	138	226	227		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
131	139	228	229		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
132	140	230	231		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
133	143	236	237		RIGID	None	None	RIGID	Typical
134	144	238	239		RIGID	None	None	RIGID	Typical
135	145	240	241		RIGID	None	None	RIGID	Typical
136	146	242	243		RIGID	None	None	RIGID	Typical
137	147	244	245		RIGID	None	None	RIGID	Typical
138	148	246	247		RIGID	None	None	RIGID	Typical
139	149	248	249		RIGID	None	None	RIGID	Typical
140	150	250	251		Mount-Pipe	Column	Pipe	A53 Gr.B	Typical
141	151	252	253		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	Physical	Deflection Ratio Options	Seismic DR
1	1		Yes	N/A	None
2	2		Yes	N/A	None
3	3		Yes	** NA **	None
4	4		Yes	N/A	None
5	5		Yes	N/A	None
6	6		Yes	** NA **	None
7	7		Yes	** NA **	None
8	8		Yes	** NA **	None
9	9		Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	Physical	Deflection Ratio Options	Seismic DR
10	10		Yes	** NA **	None
11	11	BenPIN	Yes	N/A	None
12	12		Yes	N/A	None
13	13		Yes	N/A	None
14	14		Yes	** NA **	None
15	15	BenPIN	Yes	N/A	None
16	16		Yes	N/A	None
17	17		Yes	N/A	None
18	18		Yes	** NA **	None
19	19		Yes	** NA **	None
20	20	BenPIN	Yes	N/A	None
21	21		Yes	** NA **	None
22	22		Yes	** NA **	None
23	23		Yes	** NA **	None
24	24	BenPIN	Yes	N/A	None
25	25		Yes	N/A	None
26	26		Yes	N/A	None
27	27	BenPIN	Yes	N/A	None
28	28		Yes	N/A	None
29	29		Yes	N/A	None
30	30		Yes	** NA **	None
31	31		Yes	N/A	None
32	32		Yes	N/A	None
33	33		Yes	** NA **	None
34	34		Yes	N/A	None
35	35		Yes	N/A	None
36	36		Yes	** NA **	None
37	37		Yes	** NA **	None
38	38		Yes	** NA **	None
39	39		Yes	** NA **	None
40	40		Yes	** NA **	None
41	41	BenPIN	Yes	N/A	None
42	42		Yes	N/A	None
43	43		Yes	N/A	None
44	44		Yes	** NA **	None
45	45	BenPIN	Yes	N/A	None
46	46		Yes	N/A	None
47	47		Yes	N/A	None
48	48		Yes	** NA **	None
49	49		Yes	** NA **	None
50	50	BenPIN	Yes	N/A	None
51	51		Yes	** NA **	None
52	52		Yes	** NA **	None
53	53		Yes	** NA **	None
54	54	BenPIN	Yes	N/A	None
55	55		Yes	N/A	None
56	56		Yes	N/A	None
57	57	BenPIN	Yes	N/A	None
58	58		Yes	N/A	None
59	59		Yes	N/A	None
60	60		Yes	** NA **	None
61	61		Yes	N/A	None
62	62		Yes	N/A	None
63	63		Yes	** NA **	None
64	64		Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	Physical	Deflection Ratio Options	Seismic DR
65	65		Yes	N/A	None
66	66		Yes	** NA **	None
67	67		Yes	** NA **	None
68	68		Yes	** NA **	None
69	69		Yes	** NA **	None
70	70		Yes	** NA **	None
71	71	BenPIN	Yes	N/A	None
72	72		Yes	N/A	None
73	73		Yes	N/A	None
74	74		Yes	** NA **	None
75	75	BenPIN	Yes	N/A	None
76	76		Yes	N/A	None
77	77		Yes	N/A	None
78	78		Yes	** NA **	None
79	79		Yes	** NA **	None
80	80	BenPIN	Yes	N/A	None
81	81		Yes	** NA **	None
82	82		Yes	** NA **	None
83	83		Yes	** NA **	None
84	84	BenPIN	Yes	N/A	None
85	85		Yes	N/A	None
86	86		Yes	N/A	None
87	87	BenPIN	Yes	N/A	None
88	88		Yes	N/A	None
89	89		Yes	N/A	None
90	90		Yes	** NA **	None
91	93		Yes	** NA **	None
92	94		Yes	** NA **	None
93	95		Yes	** NA **	None
94	98		Yes	** NA **	None
95	99		Yes	** NA **	None
96	100		Yes	** NA **	None
97	101		Yes	** NA **	None
98	102		Yes	** NA **	None
99	103		Yes	** NA **	None
100	104		Yes	** NA **	None
101	105		Yes	** NA **	None
102	106		Yes	** NA **	None
103	107		Yes	** NA **	None
104	108		Yes	** NA **	None
105	109		Yes	** NA **	None
106	110		Yes	** NA **	None
107	111		Yes	** NA **	None
108	112		Yes	** NA **	None
109	113		Yes	** NA **	None
110	114		Yes	** NA **	None
111	115		Yes	** NA **	None
112	116		Yes	** NA **	None
113	117		Yes	** NA **	None
114	118		Yes	** NA **	None
115	119		Yes	** NA **	None
116	120		Yes	** NA **	None
117	121		Yes	** NA **	None
118	122		Yes	** NA **	None
119	123		Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	Physical	Deflection Ratio Options	Seismic DR
120	124		Yes	** NA **	None
121	126		Yes	** NA **	None
122	127		Yes	** NA **	None
123	128		Yes	** NA **	None
124	131		Yes	** NA **	None
125	132		Yes	** NA **	None
126	133		Yes	** NA **	None
127	134		Yes	** NA **	None
128	135		Yes	** NA **	None
129	136		Yes	** NA **	None
130	138		Yes	** NA **	None
131	139		Yes	** NA **	None
132	140		Yes	** NA **	None
133	143		Yes	** NA **	None
134	144		Yes	** NA **	None
135	145		Yes	** NA **	None
136	146		Yes	** NA **	None
137	147		Yes	** NA **	None
138	148		Yes	** NA **	None
139	149		Yes	** NA **	None
140	150		Yes	** NA **	None
141	151		Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	1	Connection Plate	1.333	Lbyy	N/A	N/A	Lateral
2	2	Connection Plate	1.333	Lbyy	N/A	N/A	Lateral
3	3	Diagonals	4.673	Lbyy	N/A	N/A	Lateral
4	4	Main Horizontals	13	Lbyy	N/A	N/A	Lateral
5	5	Main Horizontals	13	Lbyy	N/A	N/A	Lateral
6	6	Verticals	3	Lbyy	N/A	N/A	Lateral
7	7	Verticals	3	Lbyy	N/A	N/A	Lateral
8	11	Plates	0.227	Lbyy	N/A	N/A	Lateral
9	12	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
10	13	Plates	0.276	Lbyy	N/A	N/A	Lateral
11	15	Plates	0.227	Lbyy	N/A	N/A	Lateral
12	16	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
13	17	Plates	0.276	Lbyy	N/A	N/A	Lateral
14	20	Tieback	11.1	Lbyy	N/A	N/A	Lateral
15	21	Diagonals	4.673	Lbyy	N/A	N/A	Lateral
16	22	Verticals	3	Lbyy	N/A	N/A	Lateral
17	23	Verticals	3	Lbyy	N/A	N/A	Lateral
18	24	Plates	0.227	Lbyy	N/A	N/A	Lateral
19	25	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
20	26	Plates	0.276	Lbyy	N/A	N/A	Lateral
21	27	Plates	0.227	Lbyy	N/A	N/A	Lateral
22	28	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
23	29	Plates	0.276	Lbyy	N/A	N/A	Lateral
24	31	Connection Plate	1.333	Lbyy	N/A	N/A	Lateral
25	32	Connection Plate	1.333	Lbyy	N/A	N/A	Lateral
26	33	Diagonals	4.673	Lbyy	N/A	N/A	Lateral
27	34	Main Horizontals	13	Lbyy	N/A	N/A	Lateral
28	35	Main Horizontals	13	Lbyy	N/A	N/A	Lateral
29	36	Verticals	3	Lbyy	N/A	N/A	Lateral
30	37	Verticals	3	Lbyy	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
31	41	Plates	0.227	Lbyy	N/A	N/A	Lateral
32	42	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
33	43	Plates	0.276	Lbyy	N/A	N/A	Lateral
34	45	Plates	0.227	Lbyy	N/A	N/A	Lateral
35	46	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
36	47	Plates	0.276	Lbyy	N/A	N/A	Lateral
37	50	Tieback	11.1	Lbyy	N/A	N/A	Lateral
38	51	Diagonals	4.673	Lbyy	N/A	N/A	Lateral
39	52	Verticals	3	Lbyy	N/A	N/A	Lateral
40	53	Verticals	3	Lbyy	N/A	N/A	Lateral
41	54	Plates	0.227	Lbyy	N/A	N/A	Lateral
42	55	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
43	56	Plates	0.276	Lbyy	N/A	N/A	Lateral
44	57	Plates	0.227	Lbyy	N/A	N/A	Lateral
45	58	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
46	59	Plates	0.276	Lbyy	N/A	N/A	Lateral
47	61	Connection Plate	1.333	Lbyy	N/A	N/A	Lateral
48	62	Connection Plate	1.333	Lbyy	N/A	N/A	Lateral
49	63	Diagonals	4.673	Lbyy	N/A	N/A	Lateral
50	64	Main Horizontals	13	Lbyy	N/A	N/A	Lateral
51	65	Main Horizontals	13	Lbyy	N/A	N/A	Lateral
52	66	Verticals	3	Lbyy	N/A	N/A	Lateral
53	67	Verticals	3	Lbyy	N/A	N/A	Lateral
54	71	Plates	0.227	Lbyy	N/A	N/A	Lateral
55	72	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
56	73	Plates	0.276	Lbyy	N/A	N/A	Lateral
57	75	Plates	0.227	Lbyy	N/A	N/A	Lateral
58	76	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
59	77	Plates	0.276	Lbyy	N/A	N/A	Lateral
60	80	Tieback	11.1	Lbyy	N/A	N/A	Lateral
61	81	Diagonals	4.673	Lbyy	N/A	N/A	Lateral
62	82	Verticals	3	Lbyy	N/A	N/A	Lateral
63	83	Verticals	3	Lbyy	N/A	N/A	Lateral
64	84	Plates	0.227	Lbyy	N/A	N/A	Lateral
65	85	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
66	86	Plates	0.276	Lbyy	N/A	N/A	Lateral
67	87	Plates	0.227	Lbyy	N/A	N/A	Lateral
68	88	Supporting Horizontals	3.75	Lbyy	N/A	N/A	Lateral
69	89	Plates	0.276	Lbyy	N/A	N/A	Lateral
70	93	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
71	94	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
72	95	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
73	106	Mount-Pipe	5	Lbyy	N/A	N/A	Lateral
74	109	Mount-Pipe	7	Lbyy	N/A	N/A	Lateral
75	112	Mount-Pipe	5	Lbyy	N/A	N/A	Lateral
76	115	Mount-Pipe	7	Lbyy	N/A	N/A	Lateral
77	118	Mount-Pipe	5	Lbyy	N/A	N/A	Lateral
78	121	Mount-Pipe	7	Lbyy	N/A	N/A	Lateral
79	124	Mount-Pipe	5	Lbyy	N/A	N/A	Lateral
80	126	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
81	127	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
82	128	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
83	138	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
84	139	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral
85	140	Mount-Pipe	10.5	Lbyy	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
86	150	Mount-Pipe	2.5	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Y	-0.065	%5
2	93	Y	-0.065	%60
3	93	Y	0	0
4	93	Y	0	0
5	93	Y	0	0
6	94	Y	-0.022	%5
7	94	Y	-0.022	%25
8	94	Y	-0.042	%75
9	94	Y	-0.042	%95
10	94	Y	0	0
11	95	Y	-0.032	%20
12	95	Y	-0.032	%55
13	95	Y	0	0
14	95	Y	0	0
15	95	Y	0	0
16	109	Y	-0.053	%35
17	109	Y	0	0
18	109	Y	0	0
19	109	Y	0	0
20	109	Y	0	0
21	112	Y	-0.055	%20
22	112	Y	0	0
23	112	Y	0	0
24	112	Y	0	0
25	112	Y	0	0
26	138	Y	-0.075	%5
27	138	Y	-0.075	%80
28	138	Y	0	0
29	138	Y	0	0
30	138	Y	0	0
31	139	Y	-0.022	%5
32	139	Y	-0.022	%25
33	139	Y	-0.042	%75
34	139	Y	-0.042	%95
35	139	Y	0	0
36	140	Y	-0.053	%25
37	140	Y	-0.053	%60
38	140	Y	0	0
39	140	Y	0	0
40	140	Y	0	0
41	121	Y	-0.053	%35
42	121	Y	0	0
43	121	Y	0	0
44	121	Y	0	0
45	121	Y	0	0
46	124	Y	-0.055	%20
47	124	Y	0	0
48	124	Y	0	0
49	124	Y	0	0
50	124	Y	0	0
51	126	Y	-0.065	%5

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
52	126	Y	-0.065	%60
53	126	Y	0	0
54	126	Y	0	0
55	126	Y	0	0
56	127	Y	-0.022	%5
57	127	Y	-0.022	%25
58	127	Y	-0.042	%75
59	127	Y	-0.042	%95
60	127	Y	0	0
61	128	Y	-0.032	%20
62	128	Y	-0.032	%55
63	128	Y	0	0
64	128	Y	0	0
65	128	Y	0	0
66	115	Y	-0.053	%35
67	115	Y	0	0
68	115	Y	0	0
69	115	Y	0	0
70	115	Y	0	0
71	118	Y	-0.055	%20
72	118	Y	0	0
73	118	Y	0	0
74	118	Y	0	0
75	118	Y	0	0
76	72	Y	-0.026	%50
77	72	Y	0	0
78	72	Y	0	0
79	72	Y	0	0
80	72	Y	0	0
81	42	Y	-0.033	%50
82	42	Y	0	0
83	42	Y	0	0
84	42	Y	0	0
85	42	Y	0	0
86	106	Y	-0.019	%50
87	106	Y	0	0
88	106	Y	0	0
89	106	Y	0	0
90	106	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Z	-0.314	%5
2	93	Z	-0.314	%60
3	93	Z	0	0
4	93	Z	0	0
5	93	Z	0	0
6	94	Z	-0.087	%5
7	94	Z	-0.087	%25
8	94	Z	-0.084	%75
9	94	Z	-0.084	%95
10	94	Z	0	0
11	95	Z	-0.282	%20
12	95	Z	-0.282	%55
13	95	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	95	Z	0	0
15	95	Z	0	0
16	109	Z	-0.114	%35
17	109	Z	0	0
18	109	Z	0	0
19	109	Z	0	0
20	109	Z	0	0
21	112	Z	-0.119	%20
22	112	Z	0	0
23	112	Z	0	0
24	112	Z	0	0
25	112	Z	0	0
26	138	Z	-0.424	%5
27	138	Z	-0.424	%80
28	138	Z	0	0
29	138	Z	0	0
30	138	Z	0	0
31	139	Z	-0.087	%5
32	139	Z	-0.087	%25
33	139	Z	-0.084	%75
34	139	Z	-0.084	%95
35	139	Z	0	0
36	140	Z	-0.366	%25
37	140	Z	-0.366	%60
38	140	Z	0	0
39	140	Z	0	0
40	140	Z	0	0
41	121	Z	-0.114	%35
42	121	Z	0	0
43	121	Z	0	0
44	121	Z	0	0
45	121	Z	0	0
46	124	Z	-0.119	%20
47	124	Z	0	0
48	124	Z	0	0
49	124	Z	0	0
50	124	Z	0	0
51	126	Z	-0.314	%5
52	126	Z	-0.314	%60
53	126	Z	0	0
54	126	Z	0	0
55	126	Z	0	0
56	127	Z	-0.087	%5
57	127	Z	-0.087	%25
58	127	Z	-0.084	%75
59	127	Z	-0.084	%95
60	127	Z	0	0
61	128	Z	-0.282	%20
62	128	Z	-0.282	%55
63	128	Z	0	0
64	128	Z	0	0
65	128	Z	0	0
66	115	Z	-0.114	%35
67	115	Z	0	0
68	115	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
69	115	Z	0	0
70	115	Z	0	0
71	118	Z	-0.119	%20
72	118	Z	0	0
73	118	Z	0	0
74	118	Z	0	0
75	118	Z	0	0
76	72	Z	-0.048	%50
77	72	Z	0	0
78	72	Z	0	0
79	72	Z	0	0
80	72	Z	0	0
81	42	Z	-0.121	%50
82	42	Z	0	0
83	42	Z	0	0
84	42	Z	0	0
85	42	Z	0	0
86	106	Z	-0.035	%50
87	106	Z	0	0
88	106	Z	0	0
89	106	Z	0	0
90	106	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	X	-0.137	%5
2	93	X	-0.137	%60
3	93	X	0	0
4	93	X	0	0
5	93	X	0	0
6	94	X	-0.039	%5
7	94	X	-0.039	%25
8	94	X	-0.056	%75
9	94	X	-0.056	%95
10	94	X	0	0
11	95	X	-0.105	%20
12	95	X	-0.105	%55
13	95	X	0	0
14	95	X	0	0
15	95	X	0	0
16	109	X	-0.066	%35
17	109	X	0	0
18	109	X	0	0
19	109	X	0	0
20	109	X	0	0
21	112	X	-0.071	%20
22	112	X	0	0
23	112	X	0	0
24	112	X	0	0
25	112	X	0	0
26	138	X	-0.184	%5
27	138	X	-0.184	%80
28	138	X	0	0
29	138	X	0	0
30	138	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
31	139	X	-0.039	%5
32	139	X	-0.039	%25
33	139	X	-0.056	%75
34	139	X	-0.056	%95
35	139	X	0	0
36	140	X	-0.137	%25
37	140	X	-0.137	%60
38	140	X	0	0
39	140	X	0	0
40	140	X	0	0
41	121	X	-0.066	%35
42	121	X	0	0
43	121	X	0	0
44	121	X	0	0
45	121	X	0	0
46	124	X	-0.071	%20
47	124	X	0	0
48	124	X	0	0
49	124	X	0	0
50	124	X	0	0
51	126	X	-0.137	%5
52	126	X	-0.137	%60
53	126	X	0	0
54	126	X	0	0
55	126	X	0	0
56	127	X	-0.039	%5
57	127	X	-0.039	%25
58	127	X	-0.056	%75
59	127	X	-0.056	%95
60	127	X	0	0
61	128	X	-0.105	%20
62	128	X	-0.105	%55
63	128	X	0	0
64	128	X	0	0
65	128	X	0	0
66	115	X	-0.066	%35
67	115	X	0	0
68	115	X	0	0
69	115	X	0	0
70	115	X	0	0
71	118	X	-0.071	%20
72	118	X	0	0
73	118	X	0	0
74	118	X	0	0
75	118	X	0	0
76	72	X	-0.048	%50
77	72	X	0	0
78	72	X	0	0
79	72	X	0	0
80	72	X	0	0
81	42	X	-0.203	%50
82	42	X	0	0
83	42	X	0	0
84	42	X	0	0
85	42	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
86	106	X	-0.035	%50
87	106	X	0	0
88	106	X	0	0
89	106	X	0	0
90	106	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Z	-0.063	%5
2	93	Z	-0.063	%60
3	93	Z	0	0
4	93	Z	0	0
5	93	Z	0	0
6	94	Z	-0.016	%5
7	94	Z	-0.016	%25
8	94	Z	-0.015	%75
9	94	Z	-0.015	%95
10	94	Z	0	0
11	95	Z	-0.057	%20
12	95	Z	-0.057	%55
13	95	Z	0	0
14	95	Z	0	0
15	95	Z	0	0
16	109	Z	-0.02	%35
17	109	Z	0	0
18	109	Z	0	0
19	109	Z	0	0
20	109	Z	0	0
21	112	Z	-0.021	%20
22	112	Z	0	0
23	112	Z	0	0
24	112	Z	0	0
25	112	Z	0	0
26	138	Z	-0.085	%5
27	138	Z	-0.085	%80
28	138	Z	0	0
29	138	Z	0	0
30	138	Z	0	0
31	139	Z	-0.016	%5
32	139	Z	-0.016	%25
33	139	Z	-0.015	%75
34	139	Z	-0.015	%95
35	139	Z	0	0
36	140	Z	-0.074	%25
37	140	Z	-0.074	%60
38	140	Z	0	0
39	140	Z	0	0
40	140	Z	0	0
41	121	Z	-0.02	%35
42	121	Z	0	0
43	121	Z	0	0
44	121	Z	0	0
45	121	Z	0	0
46	124	Z	-0.021	%20
47	124	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
48	124	Z	0	0
49	124	Z	0	0
50	124	Z	0	0
51	126	Z	-0.063	%5
52	126	Z	-0.063	%60
53	126	Z	0	0
54	126	Z	0	0
55	126	Z	0	0
56	127	Z	-0.016	%5
57	127	Z	-0.016	%25
58	127	Z	-0.015	%75
59	127	Z	-0.015	%95
60	127	Z	0	0
61	128	Z	-0.057	%20
62	128	Z	-0.057	%55
63	128	Z	0	0
64	128	Z	0	0
65	128	Z	0	0
66	115	Z	-0.02	%35
67	115	Z	0	0
68	115	Z	0	0
69	115	Z	0	0
70	115	Z	0	0
71	118	Z	-0.021	%20
72	118	Z	0	0
73	118	Z	0	0
74	118	Z	0	0
75	118	Z	0	0
76	72	Z	-0.009	%50
77	72	Z	0	0
78	72	Z	0	0
79	72	Z	0	0
80	72	Z	0	0
81	42	Z	-0.022	%50
82	42	Z	0	0
83	42	Z	0	0
84	42	Z	0	0
85	42	Z	0	0
86	106	Z	-0.006	%50
87	106	Z	0	0
88	106	Z	0	0
89	106	Z	0	0
90	106	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	X	-0.03	%5
2	93	X	-0.03	%60
3	93	X	0	0
4	93	X	0	0
5	93	X	0	0
6	94	X	-0.007	%5
7	94	X	-0.007	%25
8	94	X	-0.01	%75
9	94	X	-0.01	%95

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	94	X	0	0
11	95	X	-0.024	%20
12	95	X	-0.024	%55
13	95	X	0	0
14	95	X	0	0
15	95	X	0	0
16	109	X	-0.012	%35
17	109	X	0	0
18	109	X	0	0
19	109	X	0	0
20	109	X	0	0
21	112	X	-0.013	%20
22	112	X	0	0
23	112	X	0	0
24	112	X	0	0
25	112	X	0	0
26	138	X	-0.041	%5
27	138	X	-0.041	%80
28	138	X	0	0
29	138	X	0	0
30	138	X	0	0
31	139	X	-0.007	%5
32	139	X	-0.007	%25
33	139	X	-0.01	%75
34	139	X	-0.01	%95
35	139	X	0	0
36	140	X	-0.032	%25
37	140	X	-0.032	%60
38	140	X	0	0
39	140	X	0	0
40	140	X	0	0
41	121	X	-0.012	%35
42	121	X	0	0
43	121	X	0	0
44	121	X	0	0
45	121	X	0	0
46	124	X	-0.013	%20
47	124	X	0	0
48	124	X	0	0
49	124	X	0	0
50	124	X	0	0
51	126	X	-0.03	%5
52	126	X	-0.03	%60
53	126	X	0	0
54	126	X	0	0
55	126	X	0	0
56	127	X	-0.007	%5
57	127	X	-0.007	%25
58	127	X	-0.01	%75
59	127	X	-0.01	%95
60	127	X	0	0
61	128	X	-0.024	%20
62	128	X	-0.024	%55
63	128	X	0	0
64	128	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
65	128	X	0	0
66	115	X	-0.012	%35
67	115	X	0	0
68	115	X	0	0
69	115	X	0	0
70	115	X	0	0
71	118	X	-0.013	%20
72	118	X	0	0
73	118	X	0	0
74	118	X	0	0
75	118	X	0	0
76	72	X	-0.009	%50
77	72	X	0	0
78	72	X	0	0
79	72	X	0	0
80	72	X	0	0
81	42	X	-0.036	%50
82	42	X	0	0
83	42	X	0	0
84	42	X	0	0
85	42	X	0	0
86	106	X	-0.006	%50
87	106	X	0	0
88	106	X	0	0
89	106	X	0	0
90	106	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Z	-0.02	%5
2	93	Z	-0.02	%60
3	93	Z	0	0
4	93	Z	0	0
5	93	Z	0	0
6	94	Z	-0.006	%5
7	94	Z	-0.006	%25
8	94	Z	-0.005	%75
9	94	Z	-0.005	%95
10	94	Z	0	0
11	95	Z	-0.018	%20
12	95	Z	-0.018	%55
13	95	Z	0	0
14	95	Z	0	0
15	95	Z	0	0
16	109	Z	-0.007	%35
17	109	Z	0	0
18	109	Z	0	0
19	109	Z	0	0
20	109	Z	0	0
21	112	Z	-0.008	%20
22	112	Z	0	0
23	112	Z	0	0
24	112	Z	0	0
25	112	Z	0	0
26	138	Z	-0.027	%5

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
27	138	Z	-0.027	%80
28	138	Z	0	0
29	138	Z	0	0
30	138	Z	0	0
31	139	Z	-0.006	%5
32	139	Z	-0.006	%25
33	139	Z	-0.005	%75
34	139	Z	-0.005	%95
35	139	Z	0	0
36	140	Z	-0.024	%25
37	140	Z	-0.024	%60
38	140	Z	0	0
39	140	Z	0	0
40	140	Z	0	0
41	121	Z	-0.007	%35
42	121	Z	0	0
43	121	Z	0	0
44	121	Z	0	0
45	121	Z	0	0
46	124	Z	-0.008	%20
47	124	Z	0	0
48	124	Z	0	0
49	124	Z	0	0
50	124	Z	0	0
51	126	Z	-0.02	%5
52	126	Z	-0.02	%60
53	126	Z	0	0
54	126	Z	0	0
55	126	Z	0	0
56	127	Z	-0.006	%5
57	127	Z	-0.006	%25
58	127	Z	-0.005	%75
59	127	Z	-0.005	%95
60	127	Z	0	0
61	128	Z	-0.018	%20
62	128	Z	-0.018	%55
63	128	Z	0	0
64	128	Z	0	0
65	128	Z	0	0
66	115	Z	-0.007	%35
67	115	Z	0	0
68	115	Z	0	0
69	115	Z	0	0
70	115	Z	0	0
71	118	Z	-0.008	%20
72	118	Z	0	0
73	118	Z	0	0
74	118	Z	0	0
75	118	Z	0	0
76	72	Z	-0.003	%50
77	72	Z	0	0
78	72	Z	0	0
79	72	Z	0	0
80	72	Z	0	0
81	42	Z	-0.008	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
82	42	Z	0	0
83	42	Z	0	0
84	42	Z	0	0
85	42	Z	0	0
86	106	Z	-0.002	%50
87	106	Z	0	0
88	106	Z	0	0
89	106	Z	0	0
90	106	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	X	-0.009	%5
2	93	X	-0.009	%60
3	93	X	0	0
4	93	X	0	0
5	93	X	0	0
6	94	X	-0.003	%5
7	94	X	-0.003	%25
8	94	X	-0.004	%75
9	94	X	-0.004	%95
10	94	X	0	0
11	95	X	-0.007	%20
12	95	X	-0.007	%55
13	95	X	0	0
14	95	X	0	0
15	95	X	0	0
16	109	X	-0.004	%35
17	109	X	0	0
18	109	X	0	0
19	109	X	0	0
20	109	X	0	0
21	112	X	-0.005	%20
22	112	X	0	0
23	112	X	0	0
24	112	X	0	0
25	112	X	0	0
26	138	X	-0.012	%5
27	138	X	-0.012	%80
28	138	X	0	0
29	138	X	0	0
30	138	X	0	0
31	139	X	-0.003	%5
32	139	X	-0.003	%25
33	139	X	-0.004	%75
34	139	X	-0.004	%95
35	139	X	0	0
36	140	X	-0.009	%25
37	140	X	-0.009	%60
38	140	X	0	0
39	140	X	0	0
40	140	X	0	0
41	121	X	-0.004	%35
42	121	X	0	0
43	121	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
44	121	X	0	0
45	121	X	0	0
46	124	X	-0.005	%20
47	124	X	0	0
48	124	X	0	0
49	124	X	0	0
50	124	X	0	0
51	126	X	-0.009	%5
52	126	X	-0.009	%60
53	126	X	0	0
54	126	X	0	0
55	126	X	0	0
56	127	X	-0.003	%5
57	127	X	-0.003	%25
58	127	X	-0.004	%75
59	127	X	-0.004	%95
60	127	X	0	0
61	128	X	-0.007	%20
62	128	X	-0.007	%55
63	128	X	0	0
64	128	X	0	0
65	128	X	0	0
66	115	X	-0.004	%35
67	115	X	0	0
68	115	X	0	0
69	115	X	0	0
70	115	X	0	0
71	118	X	-0.005	%20
72	118	X	0	0
73	118	X	0	0
74	118	X	0	0
75	118	X	0	0
76	72	X	-0.003	%50
77	72	X	0	0
78	72	X	0	0
79	72	X	0	0
80	72	X	0	0
81	42	X	-0.013	%50
82	42	X	0	0
83	42	X	0	0
84	42	X	0	0
85	42	X	0	0
86	106	X	-0.002	%50
87	106	X	0	0
88	106	X	0	0
89	106	X	0	0
90	106	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Y	-0.152	%5
2	93	Y	-0.152	%60
3	93	Y	0	0
4	93	Y	0	0
5	93	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
6	94	Y	-0.035	%5
7	94	Y	-0.035	%25
8	94	Y	-0.037	%75
9	94	Y	-0.037	%95
10	94	Y	0	0
11	95	Y	-0.11	%20
12	95	Y	-0.11	%55
13	95	Y	0	0
14	95	Y	0	0
15	95	Y	0	0
16	109	Y	-0.049	%35
17	109	Y	0	0
18	109	Y	0	0
19	109	Y	0	0
20	109	Y	0	0
21	112	Y	-0.052	%20
22	112	Y	0	0
23	112	Y	0	0
24	112	Y	0	0
25	112	Y	0	0
26	138	Y	-0.189	%5
27	138	Y	-0.189	%80
28	138	Y	0	0
29	138	Y	0	0
30	138	Y	0	0
31	139	Y	-0.035	%5
32	139	Y	-0.035	%25
33	139	Y	-0.037	%75
34	139	Y	-0.037	%95
35	139	Y	0	0
36	140	Y	-0.154	%25
37	140	Y	-0.154	%60
38	140	Y	0	0
39	140	Y	0	0
40	140	Y	0	0
41	121	Y	-0.049	%35
42	121	Y	0	0
43	121	Y	0	0
44	121	Y	0	0
45	121	Y	0	0
46	124	Y	-0.052	%20
47	124	Y	0	0
48	124	Y	0	0
49	124	Y	0	0
50	124	Y	0	0
51	126	Y	-0.152	%5
52	126	Y	-0.152	%60
53	126	Y	0	0
54	126	Y	0	0
55	126	Y	0	0
56	127	Y	-0.035	%5
57	127	Y	-0.035	%25
58	127	Y	-0.037	%75
59	127	Y	-0.037	%95
60	127	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
61	128	Y	-0.11	%20
62	128	Y	-0.11	%55
63	128	Y	0	0
64	128	Y	0	0
65	128	Y	0	0
66	115	Y	-0.049	%35
67	115	Y	0	0
68	115	Y	0	0
69	115	Y	0	0
70	115	Y	0	0
71	118	Y	-0.052	%20
72	118	Y	0	0
73	118	Y	0	0
74	118	Y	0	0
75	118	Y	0	0
76	72	Y	-0.043	%50
77	72	Y	0	0
78	72	Y	0	0
79	72	Y	0	0
80	72	Y	0	0
81	42	Y	-0.085	%50
82	42	Y	0	0
83	42	Y	0	0
84	42	Y	0	0
85	42	Y	0	0
86	106	Y	-0.032	%50
87	106	Y	0	0
88	106	Y	0	0
89	106	Y	0	0
90	106	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	Z	-0.033	%5
2	93	Z	-0.033	%60
3	93	Z	0	0
4	93	Z	0	0
5	93	Z	0	0
6	94	Z	-0.011	%5
7	94	Z	-0.011	%25
8	94	Z	-0.021	%75
9	94	Z	-0.021	%95
10	94	Z	0	0
11	95	Z	-0.016	%20
12	95	Z	-0.016	%55
13	95	Z	0	0
14	95	Z	0	0
15	95	Z	0	0
16	109	Z	-0.013	%35
17	109	Z	0	0
18	109	Z	0	0
19	109	Z	0	0
20	109	Z	0	0
21	112	Z	-0.014	%20
22	112	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
23	112	Z	0	0
24	112	Z	0	0
25	112	Z	0	0
26	138	Z	-0.038	%5
27	138	Z	-0.038	%80
28	138	Z	0	0
29	138	Z	0	0
30	138	Z	0	0
31	139	Z	-0.011	%5
32	139	Z	-0.011	%25
33	139	Z	-0.021	%75
34	139	Z	-0.021	%95
35	139	Z	0	0
36	140	Z	-0.026	%25
37	140	Z	-0.026	%60
38	140	Z	0	0
39	140	Z	0	0
40	140	Z	0	0
41	121	Z	-0.013	%35
42	121	Z	0	0
43	121	Z	0	0
44	121	Z	0	0
45	121	Z	0	0
46	124	Z	-0.014	%20
47	124	Z	0	0
48	124	Z	0	0
49	124	Z	0	0
50	124	Z	0	0
51	126	Z	-0.033	%5
52	126	Z	-0.033	%60
53	126	Z	0	0
54	126	Z	0	0
55	126	Z	0	0
56	127	Z	-0.011	%5
57	127	Z	-0.011	%25
58	127	Z	-0.021	%75
59	127	Z	-0.021	%95
60	127	Z	0	0
61	128	Z	-0.016	%20
62	128	Z	-0.016	%55
63	128	Z	0	0
64	128	Z	0	0
65	128	Z	0	0
66	115	Z	-0.013	%35
67	115	Z	0	0
68	115	Z	0	0
69	115	Z	0	0
70	115	Z	0	0
71	118	Z	-0.014	%20
72	118	Z	0	0
73	118	Z	0	0
74	118	Z	0	0
75	118	Z	0	0
76	72	Z	-0.007	%50
77	72	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
78	72	Z	0	0
79	72	Z	0	0
80	72	Z	0	0
81	42	Z	-0.008	%50
82	42	Z	0	0
83	42	Z	0	0
84	42	Z	0	0
85	42	Z	0	0
86	106	Z	-0.005	%50
87	106	Z	0	0
88	106	Z	0	0
89	106	Z	0	0
90	106	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	93	X	-0.033	%5
2	93	X	-0.033	%60
3	93	X	0	0
4	93	X	0	0
5	93	X	0	0
6	94	X	-0.011	%5
7	94	X	-0.011	%25
8	94	X	-0.021	%75
9	94	X	-0.021	%95
10	94	X	0	0
11	95	X	-0.016	%20
12	95	X	-0.016	%55
13	95	X	0	0
14	95	X	0	0
15	95	X	0	0
16	109	X	-0.013	%35
17	109	X	0	0
18	109	X	0	0
19	109	X	0	0
20	109	X	0	0
21	112	X	-0.014	%20
22	112	X	0	0
23	112	X	0	0
24	112	X	0	0
25	112	X	0	0
26	138	X	-0.038	%5
27	138	X	-0.038	%80
28	138	X	0	0
29	138	X	0	0
30	138	X	0	0
31	139	X	-0.011	%5
32	139	X	-0.011	%25
33	139	X	-0.021	%75
34	139	X	-0.021	%95
35	139	X	0	0
36	140	X	-0.026	%25
37	140	X	-0.026	%60
38	140	X	0	0
39	140	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
40	140	X	0	0
41	121	X	-0.013	%35
42	121	X	0	0
43	121	X	0	0
44	121	X	0	0
45	121	X	0	0
46	124	X	-0.014	%20
47	124	X	0	0
48	124	X	0	0
49	124	X	0	0
50	124	X	0	0
51	126	X	-0.033	%5
52	126	X	-0.033	%60
53	126	X	0	0
54	126	X	0	0
55	126	X	0	0
56	127	X	-0.011	%5
57	127	X	-0.011	%25
58	127	X	-0.021	%75
59	127	X	-0.021	%95
60	127	X	0	0
61	128	X	-0.016	%20
62	128	X	-0.016	%55
63	128	X	0	0
64	128	X	0	0
65	128	X	0	0
66	115	X	-0.013	%35
67	115	X	0	0
68	115	X	0	0
69	115	X	0	0
70	115	X	0	0
71	118	X	-0.014	%20
72	118	X	0	0
73	118	X	0	0
74	118	X	0	0
75	118	X	0	0
76	72	X	-0.007	%50
77	72	X	0	0
78	72	X	0	0
79	72	X	0	0
80	72	X	0	0
81	42	X	-0.008	%50
82	42	X	0	0
83	42	X	0	0
84	42	X	0	0
85	42	X	0	0
86	106	X	-0.005	%50
87	106	X	0	0
88	106	X	0	0
89	106	X	0	0
90	106	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

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

Member Point Loads (BLC 16 : Maint LL 2)

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

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	34	Y	-0.25	%95

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	35	Y	-0.25	%95

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	64	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	65	Y	-0.25	%95

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	16	Y	-0.25	%50

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	12	Y	-0.25	%50

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.25	%50

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	25	Y	-0.25	%50

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	46	Y	-0.25	%50

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	42	Y	-0.25	%50

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	58	Y	-0.25	%50

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Y	-0.25	%50

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%50

Member Point Loads (BLC 30 : Maint LL 16)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	72	Y	-0.25	%50

Member Point Loads (BLC 31 : Maint LL 17)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	88	Y	-0.25	%50

Member Point Loads (BLC 32 : Maint LL 18)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%50

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.003	-0.003	0	%100
4	4	Z	-0.01	-0.01	0	%100
5	5	Z	-0.01	-0.01	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.003	-0.003	0	%100
8	11	Z	-0.002	-0.002	0	%100
9	12	Z	-0.009	-0.009	0	%100
10	13	Z	-0.002	-0.002	0	%100
11	15	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	16	Z	-0.009	-0.009	0	%100
13	17	Z	-0.002	-0.002	0	%100
14	20	Z	-0.01	-0.01	0	%100
15	21	Z	-0.003	-0.003	0	%100
16	22	Z	-0.003	-0.003	0	%100
17	23	Z	-0.003	-0.003	0	%100
18	24	Z	-0.002	-0.002	0	%100
19	25	Z	-0.009	-0.009	0	%100
20	26	Z	-0.002	-0.002	0	%100
21	27	Z	-0.002	-0.002	0	%100
22	28	Z	-0.009	-0.009	0	%100
23	29	Z	-0.002	-0.002	0	%100
24	31	Z	-0.004	-0.004	0	%100
25	32	Z	-0.004	-0.004	0	%100
26	33	Z	-0.003	-0.003	0	%100
27	34	Z	-0.01	-0.01	0	%100
28	35	Z	-0.01	-0.01	0	%100
29	36	Z	-0.003	-0.003	0	%100
30	37	Z	-0.003	-0.003	0	%100
31	41	Z	-0.002	-0.002	0	%100
32	42	Z	-0.009	-0.009	0	%100
33	43	Z	-0.002	-0.002	0	%100
34	45	Z	-0.002	-0.002	0	%100
35	46	Z	-0.009	-0.009	0	%100
36	47	Z	-0.002	-0.002	0	%100
37	50	Z	-0.01	-0.01	0	%100
38	51	Z	-0.003	-0.003	0	%100
39	52	Z	-0.003	-0.003	0	%100
40	53	Z	-0.003	-0.003	0	%100
41	54	Z	-0.002	-0.002	0	%100
42	55	Z	-0.009	-0.009	0	%100
43	56	Z	-0.002	-0.002	0	%100
44	57	Z	-0.002	-0.002	0	%100
45	58	Z	-0.009	-0.009	0	%100
46	59	Z	-0.002	-0.002	0	%100
47	61	Z	-0.004	-0.004	0	%100
48	62	Z	-0.004	-0.004	0	%100
49	63	Z	-0.003	-0.003	0	%100
50	64	Z	-0.01	-0.01	0	%100
51	65	Z	-0.01	-0.01	0	%100
52	66	Z	-0.003	-0.003	0	%100
53	67	Z	-0.003	-0.003	0	%100
54	71	Z	-0.002	-0.002	0	%100
55	72	Z	-0.009	-0.009	0	%100
56	73	Z	-0.002	-0.002	0	%100
57	75	Z	-0.002	-0.002	0	%100
58	76	Z	-0.009	-0.009	0	%100
59	77	Z	-0.002	-0.002	0	%100
60	80	Z	-0.01	-0.01	0	%100
61	81	Z	-0.003	-0.003	0	%100
62	82	Z	-0.003	-0.003	0	%100
63	83	Z	-0.003	-0.003	0	%100
64	84	Z	-0.002	-0.002	0	%100
65	85	Z	-0.009	-0.009	0	%100
66	86	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
67	87	Z	-0.002	-0.002	0	%100
68	88	Z	-0.009	-0.009	0	%100
69	89	Z	-0.002	-0.002	0	%100
70	93	Z	-0.01	-0.01	0	%100
71	94	Z	-0.01	-0.01	0	%100
72	95	Z	-0.01	-0.01	0	%100
73	106	Z	-0.01	-0.01	0	%100
74	109	Z	-0.01	-0.01	0	%100
75	112	Z	-0.01	-0.01	0	%100
76	115	Z	-0.01	-0.01	0	%100
77	118	Z	-0.01	-0.01	0	%100
78	121	Z	-0.01	-0.01	0	%100
79	124	Z	-0.01	-0.01	0	%100
80	126	Z	-0.01	-0.01	0	%100
81	127	Z	-0.01	-0.01	0	%100
82	128	Z	-0.01	-0.01	0	%100
83	138	Z	-0.01	-0.01	0	%100
84	139	Z	-0.01	-0.01	0	%100
85	140	Z	-0.01	-0.01	0	%100
86	150	Z	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.004	-0.004	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.003	-0.003	0	%100
4	4	X	-0.01	-0.01	0	%100
5	5	X	-0.01	-0.01	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.003	-0.003	0	%100
8	11	X	-0.002	-0.002	0	%100
9	12	X	-0.009	-0.009	0	%100
10	13	X	-0.002	-0.002	0	%100
11	15	X	-0.002	-0.002	0	%100
12	16	X	-0.009	-0.009	0	%100
13	17	X	-0.002	-0.002	0	%100
14	20	X	-0.01	-0.01	0	%100
15	21	X	-0.003	-0.003	0	%100
16	22	X	-0.003	-0.003	0	%100
17	23	X	-0.003	-0.003	0	%100
18	24	X	-0.002	-0.002	0	%100
19	25	X	-0.009	-0.009	0	%100
20	26	X	-0.002	-0.002	0	%100
21	27	X	-0.002	-0.002	0	%100
22	28	X	-0.009	-0.009	0	%100
23	29	X	-0.002	-0.002	0	%100
24	31	X	-0.004	-0.004	0	%100
25	32	X	-0.004	-0.004	0	%100
26	33	X	-0.003	-0.003	0	%100
27	34	X	-0.01	-0.01	0	%100
28	35	X	-0.01	-0.01	0	%100
29	36	X	-0.003	-0.003	0	%100
30	37	X	-0.003	-0.003	0	%100
31	41	X	-0.002	-0.002	0	%100
32	42	X	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
33	43	X	-0.002	-0.002	0	%100
34	45	X	-0.002	-0.002	0	%100
35	46	X	-0.009	-0.009	0	%100
36	47	X	-0.002	-0.002	0	%100
37	50	X	-0.01	-0.01	0	%100
38	51	X	-0.003	-0.003	0	%100
39	52	X	-0.003	-0.003	0	%100
40	53	X	-0.003	-0.003	0	%100
41	54	X	-0.002	-0.002	0	%100
42	55	X	-0.009	-0.009	0	%100
43	56	X	-0.002	-0.002	0	%100
44	57	X	-0.002	-0.002	0	%100
45	58	X	-0.009	-0.009	0	%100
46	59	X	-0.002	-0.002	0	%100
47	61	X	-0.004	-0.004	0	%100
48	62	X	-0.004	-0.004	0	%100
49	63	X	-0.003	-0.003	0	%100
50	64	X	-0.01	-0.01	0	%100
51	65	X	-0.01	-0.01	0	%100
52	66	X	-0.003	-0.003	0	%100
53	67	X	-0.003	-0.003	0	%100
54	71	X	-0.002	-0.002	0	%100
55	72	X	-0.009	-0.009	0	%100
56	73	X	-0.002	-0.002	0	%100
57	75	X	-0.002	-0.002	0	%100
58	76	X	-0.009	-0.009	0	%100
59	77	X	-0.002	-0.002	0	%100
60	80	X	-0.01	-0.01	0	%100
61	81	X	-0.003	-0.003	0	%100
62	82	X	-0.003	-0.003	0	%100
63	83	X	-0.003	-0.003	0	%100
64	84	X	-0.002	-0.002	0	%100
65	85	X	-0.009	-0.009	0	%100
66	86	X	-0.002	-0.002	0	%100
67	87	X	-0.002	-0.002	0	%100
68	88	X	-0.009	-0.009	0	%100
69	89	X	-0.002	-0.002	0	%100
70	93	X	-0.01	-0.01	0	%100
71	94	X	-0.01	-0.01	0	%100
72	95	X	-0.01	-0.01	0	%100
73	106	X	-0.01	-0.01	0	%100
74	109	X	-0.01	-0.01	0	%100
75	112	X	-0.01	-0.01	0	%100
76	115	X	-0.01	-0.01	0	%100
77	118	X	-0.01	-0.01	0	%100
78	121	X	-0.01	-0.01	0	%100
79	124	X	-0.01	-0.01	0	%100
80	126	X	-0.01	-0.01	0	%100
81	127	X	-0.01	-0.01	0	%100
82	128	X	-0.01	-0.01	0	%100
83	138	X	-0.01	-0.01	0	%100
84	139	X	-0.01	-0.01	0	%100
85	140	X	-0.01	-0.01	0	%100
86	150	X	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.002	-0.002	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	11	Z	-0.004	-0.004	0	%100
9	12	Z	-0.002	-0.002	0	%100
10	13	Z	-0.004	-0.004	0	%100
11	15	Z	-0.004	-0.004	0	%100
12	16	Z	-0.002	-0.002	0	%100
13	17	Z	-0.004	-0.004	0	%100
14	20	Z	-0.002	-0.002	0	%100
15	21	Z	-0.002	-0.002	0	%100
16	22	Z	-0.002	-0.002	0	%100
17	23	Z	-0.002	-0.002	0	%100
18	24	Z	-0.004	-0.004	0	%100
19	25	Z	-0.002	-0.002	0	%100
20	26	Z	-0.004	-0.004	0	%100
21	27	Z	-0.004	-0.004	0	%100
22	28	Z	-0.002	-0.002	0	%100
23	29	Z	-0.004	-0.004	0	%100
24	31	Z	-0.004	-0.004	0	%100
25	32	Z	-0.004	-0.004	0	%100
26	33	Z	-0.002	-0.002	0	%100
27	34	Z	-0.002	-0.002	0	%100
28	35	Z	-0.002	-0.002	0	%100
29	36	Z	-0.002	-0.002	0	%100
30	37	Z	-0.002	-0.002	0	%100
31	41	Z	-0.004	-0.004	0	%100
32	42	Z	-0.002	-0.002	0	%100
33	43	Z	-0.004	-0.004	0	%100
34	45	Z	-0.004	-0.004	0	%100
35	46	Z	-0.002	-0.002	0	%100
36	47	Z	-0.004	-0.004	0	%100
37	50	Z	-0.002	-0.002	0	%100
38	51	Z	-0.002	-0.002	0	%100
39	52	Z	-0.002	-0.002	0	%100
40	53	Z	-0.002	-0.002	0	%100
41	54	Z	-0.004	-0.004	0	%100
42	55	Z	-0.002	-0.002	0	%100
43	56	Z	-0.004	-0.004	0	%100
44	57	Z	-0.004	-0.004	0	%100
45	58	Z	-0.002	-0.002	0	%100
46	59	Z	-0.004	-0.004	0	%100
47	61	Z	-0.004	-0.004	0	%100
48	62	Z	-0.004	-0.004	0	%100
49	63	Z	-0.002	-0.002	0	%100
50	64	Z	-0.002	-0.002	0	%100
51	65	Z	-0.002	-0.002	0	%100
52	66	Z	-0.002	-0.002	0	%100
53	67	Z	-0.002	-0.002	0	%100
54	71	Z	-0.004	-0.004	0	%100
55	72	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
56	73	Z	-0.004	-0.004	0	%100
57	75	Z	-0.004	-0.004	0	%100
58	76	Z	-0.002	-0.002	0	%100
59	77	Z	-0.004	-0.004	0	%100
60	80	Z	-0.002	-0.002	0	%100
61	81	Z	-0.002	-0.002	0	%100
62	82	Z	-0.002	-0.002	0	%100
63	83	Z	-0.002	-0.002	0	%100
64	84	Z	-0.004	-0.004	0	%100
65	85	Z	-0.002	-0.002	0	%100
66	86	Z	-0.004	-0.004	0	%100
67	87	Z	-0.004	-0.004	0	%100
68	88	Z	-0.002	-0.002	0	%100
69	89	Z	-0.004	-0.004	0	%100
70	93	Z	-0.002	-0.002	0	%100
71	94	Z	-0.002	-0.002	0	%100
72	95	Z	-0.002	-0.002	0	%100
73	106	Z	-0.002	-0.002	0	%100
74	109	Z	-0.002	-0.002	0	%100
75	112	Z	-0.002	-0.002	0	%100
76	115	Z	-0.002	-0.002	0	%100
77	118	Z	-0.002	-0.002	0	%100
78	121	Z	-0.002	-0.002	0	%100
79	124	Z	-0.002	-0.002	0	%100
80	126	Z	-0.002	-0.002	0	%100
81	127	Z	-0.002	-0.002	0	%100
82	128	Z	-0.002	-0.002	0	%100
83	138	Z	-0.002	-0.002	0	%100
84	139	Z	-0.002	-0.002	0	%100
85	140	Z	-0.002	-0.002	0	%100
86	150	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.004	-0.004	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.002	-0.002	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.002	-0.002	0	%100
8	11	X	-0.004	-0.004	0	%100
9	12	X	-0.002	-0.002	0	%100
10	13	X	-0.004	-0.004	0	%100
11	15	X	-0.004	-0.004	0	%100
12	16	X	-0.002	-0.002	0	%100
13	17	X	-0.004	-0.004	0	%100
14	20	X	-0.002	-0.002	0	%100
15	21	X	-0.002	-0.002	0	%100
16	22	X	-0.002	-0.002	0	%100
17	23	X	-0.002	-0.002	0	%100
18	24	X	-0.004	-0.004	0	%100
19	25	X	-0.002	-0.002	0	%100
20	26	X	-0.004	-0.004	0	%100
21	27	X	-0.004	-0.004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
22	28	X	-0.002	-0.002	0	%100
23	29	X	-0.004	-0.004	0	%100
24	31	X	-0.004	-0.004	0	%100
25	32	X	-0.004	-0.004	0	%100
26	33	X	-0.002	-0.002	0	%100
27	34	X	-0.002	-0.002	0	%100
28	35	X	-0.002	-0.002	0	%100
29	36	X	-0.002	-0.002	0	%100
30	37	X	-0.002	-0.002	0	%100
31	41	X	-0.004	-0.004	0	%100
32	42	X	-0.002	-0.002	0	%100
33	43	X	-0.004	-0.004	0	%100
34	45	X	-0.004	-0.004	0	%100
35	46	X	-0.002	-0.002	0	%100
36	47	X	-0.004	-0.004	0	%100
37	50	X	-0.002	-0.002	0	%100
38	51	X	-0.002	-0.002	0	%100
39	52	X	-0.002	-0.002	0	%100
40	53	X	-0.002	-0.002	0	%100
41	54	X	-0.004	-0.004	0	%100
42	55	X	-0.002	-0.002	0	%100
43	56	X	-0.004	-0.004	0	%100
44	57	X	-0.004	-0.004	0	%100
45	58	X	-0.002	-0.002	0	%100
46	59	X	-0.004	-0.004	0	%100
47	61	X	-0.004	-0.004	0	%100
48	62	X	-0.004	-0.004	0	%100
49	63	X	-0.002	-0.002	0	%100
50	64	X	-0.002	-0.002	0	%100
51	65	X	-0.002	-0.002	0	%100
52	66	X	-0.002	-0.002	0	%100
53	67	X	-0.002	-0.002	0	%100
54	71	X	-0.004	-0.004	0	%100
55	72	X	-0.002	-0.002	0	%100
56	73	X	-0.004	-0.004	0	%100
57	75	X	-0.004	-0.004	0	%100
58	76	X	-0.002	-0.002	0	%100
59	77	X	-0.004	-0.004	0	%100
60	80	X	-0.002	-0.002	0	%100
61	81	X	-0.002	-0.002	0	%100
62	82	X	-0.002	-0.002	0	%100
63	83	X	-0.002	-0.002	0	%100
64	84	X	-0.004	-0.004	0	%100
65	85	X	-0.002	-0.002	0	%100
66	86	X	-0.004	-0.004	0	%100
67	87	X	-0.004	-0.004	0	%100
68	88	X	-0.002	-0.002	0	%100
69	89	X	-0.004	-0.004	0	%100
70	93	X	-0.002	-0.002	0	%100
71	94	X	-0.002	-0.002	0	%100
72	95	X	-0.002	-0.002	0	%100
73	106	X	-0.002	-0.002	0	%100
74	109	X	-0.002	-0.002	0	%100
75	112	X	-0.002	-0.002	0	%100
76	115	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
77	118	X	-0.002	-0.002	0	%100
78	121	X	-0.002	-0.002	0	%100
79	124	X	-0.002	-0.002	0	%100
80	126	X	-0.002	-0.002	0	%100
81	127	X	-0.002	-0.002	0	%100
82	128	X	-0.002	-0.002	0	%100
83	138	X	-0.002	-0.002	0	%100
84	139	X	-0.002	-0.002	0	%100
85	140	X	-0.002	-0.002	0	%100
86	150	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0003	-0.0003	0	%100
2	2	Z	-0.0003	-0.0003	0	%100
3	3	Z	-0.0002	-0.0002	0	%100
4	4	Z	-0.0003	-0.0003	0	%100
5	5	Z	-0.0003	-0.0003	0	%100
6	6	Z	-0.0002	-0.0002	0	%100
7	7	Z	-0.0002	-0.0002	0	%100
8	11	Z	-0.0001	-0.0001	0	%100
9	12	Z	-0.0003	-0.0003	0	%100
10	13	Z	-0.0002	-0.0002	0	%100
11	15	Z	-0.0001	-0.0001	0	%100
12	16	Z	-0.0003	-0.0003	0	%100
13	17	Z	-0.0002	-0.0002	0	%100
14	20	Z	-0.0003	-0.0003	0	%100
15	21	Z	-0.0002	-0.0002	0	%100
16	22	Z	-0.0002	-0.0002	0	%100
17	23	Z	-0.0002	-0.0002	0	%100
18	24	Z	-0.0001	-0.0001	0	%100
19	25	Z	-0.0003	-0.0003	0	%100
20	26	Z	-0.0002	-0.0002	0	%100
21	27	Z	-0.0001	-0.0001	0	%100
22	28	Z	-0.0003	-0.0003	0	%100
23	29	Z	-0.0002	-0.0002	0	%100
24	31	Z	-0.0003	-0.0003	0	%100
25	32	Z	-0.0003	-0.0003	0	%100
26	33	Z	-0.0002	-0.0002	0	%100
27	34	Z	-0.0003	-0.0003	0	%100
28	35	Z	-0.0003	-0.0003	0	%100
29	36	Z	-0.0002	-0.0002	0	%100
30	37	Z	-0.0002	-0.0002	0	%100
31	41	Z	-0.0001	-0.0001	0	%100
32	42	Z	-0.0003	-0.0003	0	%100
33	43	Z	-0.0002	-0.0002	0	%100
34	45	Z	-0.0001	-0.0001	0	%100
35	46	Z	-0.0003	-0.0003	0	%100
36	47	Z	-0.0002	-0.0002	0	%100
37	50	Z	-0.0003	-0.0003	0	%100
38	51	Z	-0.0002	-0.0002	0	%100
39	52	Z	-0.0002	-0.0002	0	%100
40	53	Z	-0.0002	-0.0002	0	%100
41	54	Z	-0.0001	-0.0001	0	%100
42	55	Z	-0.0003	-0.0003	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, %)]
43	56	Z	-0.0002	-0.0002	0	%100
44	57	Z	-0.0001	-0.0001	0	%100
45	58	Z	-0.0003	-0.0003	0	%100
46	59	Z	-0.0002	-0.0002	0	%100
47	61	Z	-0.0003	-0.0003	0	%100
48	62	Z	-0.0003	-0.0003	0	%100
49	63	Z	-0.0002	-0.0002	0	%100
50	64	Z	-0.0003	-0.0003	0	%100
51	65	Z	-0.0003	-0.0003	0	%100
52	66	Z	-0.0002	-0.0002	0	%100
53	67	Z	-0.0002	-0.0002	0	%100
54	71	Z	-0.0001	-0.0001	0	%100
55	72	Z	-0.0003	-0.0003	0	%100
56	73	Z	-0.0002	-0.0002	0	%100
57	75	Z	-0.0001	-0.0001	0	%100
58	76	Z	-0.0003	-0.0003	0	%100
59	77	Z	-0.0002	-0.0002	0	%100
60	80	Z	-0.0003	-0.0003	0	%100
61	81	Z	-0.0002	-0.0002	0	%100
62	82	Z	-0.0002	-0.0002	0	%100
63	83	Z	-0.0002	-0.0002	0	%100
64	84	Z	-0.0001	-0.0001	0	%100
65	85	Z	-0.0003	-0.0003	0	%100
66	86	Z	-0.0002	-0.0002	0	%100
67	87	Z	-0.0001	-0.0001	0	%100
68	88	Z	-0.0003	-0.0003	0	%100
69	89	Z	-0.0002	-0.0002	0	%100
70	93	Z	-0.0003	-0.0003	0	%100
71	94	Z	-0.0003	-0.0003	0	%100
72	95	Z	-0.0003	-0.0003	0	%100
73	106	Z	-0.0003	-0.0003	0	%100
74	109	Z	-0.0003	-0.0003	0	%100
75	112	Z	-0.0003	-0.0003	0	%100
76	115	Z	-0.0003	-0.0003	0	%100
77	118	Z	-0.0003	-0.0003	0	%100
78	121	Z	-0.0003	-0.0003	0	%100
79	124	Z	-0.0003	-0.0003	0	%100
80	126	Z	-0.0003	-0.0003	0	%100
81	127	Z	-0.0003	-0.0003	0	%100
82	128	Z	-0.0003	-0.0003	0	%100
83	138	Z	-0.0003	-0.0003	0	%100
84	139	Z	-0.0003	-0.0003	0	%100
85	140	Z	-0.0003	-0.0003	0	%100
86	150	Z	-0.0003	-0.0003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0003	-0.0003	0	%100
2	2	X	-0.0003	-0.0003	0	%100
3	3	X	-0.0002	-0.0002	0	%100
4	4	X	-0.0003	-0.0003	0	%100
5	5	X	-0.0003	-0.0003	0	%100
6	6	X	-0.0002	-0.0002	0	%100
7	7	X	-0.0002	-0.0002	0	%100
8	11	X	-0.0001	-0.0001	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, %)]
9	12	X	-0.0003	-0.0003	0	%100
10	13	X	-0.0002	-0.0002	0	%100
11	15	X	-0.0001	-0.0001	0	%100
12	16	X	-0.0003	-0.0003	0	%100
13	17	X	-0.0002	-0.0002	0	%100
14	20	X	-0.0003	-0.0003	0	%100
15	21	X	-0.0002	-0.0002	0	%100
16	22	X	-0.0002	-0.0002	0	%100
17	23	X	-0.0002	-0.0002	0	%100
18	24	X	-0.0001	-0.0001	0	%100
19	25	X	-0.0003	-0.0003	0	%100
20	26	X	-0.0002	-0.0002	0	%100
21	27	X	-0.0001	-0.0001	0	%100
22	28	X	-0.0003	-0.0003	0	%100
23	29	X	-0.0002	-0.0002	0	%100
24	31	X	-0.0003	-0.0003	0	%100
25	32	X	-0.0003	-0.0003	0	%100
26	33	X	-0.0002	-0.0002	0	%100
27	34	X	-0.0003	-0.0003	0	%100
28	35	X	-0.0003	-0.0003	0	%100
29	36	X	-0.0002	-0.0002	0	%100
30	37	X	-0.0002	-0.0002	0	%100
31	41	X	-0.0001	-0.0001	0	%100
32	42	X	-0.0003	-0.0003	0	%100
33	43	X	-0.0002	-0.0002	0	%100
34	45	X	-0.0001	-0.0001	0	%100
35	46	X	-0.0003	-0.0003	0	%100
36	47	X	-0.0002	-0.0002	0	%100
37	50	X	-0.0003	-0.0003	0	%100
38	51	X	-0.0002	-0.0002	0	%100
39	52	X	-0.0002	-0.0002	0	%100
40	53	X	-0.0002	-0.0002	0	%100
41	54	X	-0.0001	-0.0001	0	%100
42	55	X	-0.0003	-0.0003	0	%100
43	56	X	-0.0002	-0.0002	0	%100
44	57	X	-0.0001	-0.0001	0	%100
45	58	X	-0.0003	-0.0003	0	%100
46	59	X	-0.0002	-0.0002	0	%100
47	61	X	-0.0003	-0.0003	0	%100
48	62	X	-0.0003	-0.0003	0	%100
49	63	X	-0.0002	-0.0002	0	%100
50	64	X	-0.0003	-0.0003	0	%100
51	65	X	-0.0003	-0.0003	0	%100
52	66	X	-0.0002	-0.0002	0	%100
53	67	X	-0.0002	-0.0002	0	%100
54	71	X	-0.0001	-0.0001	0	%100
55	72	X	-0.0003	-0.0003	0	%100
56	73	X	-0.0002	-0.0002	0	%100
57	75	X	-0.0001	-0.0001	0	%100
58	76	X	-0.0003	-0.0003	0	%100
59	77	X	-0.0002	-0.0002	0	%100
60	80	X	-0.0003	-0.0003	0	%100
61	81	X	-0.0002	-0.0002	0	%100
62	82	X	-0.0002	-0.0002	0	%100
63	83	X	-0.0002	-0.0002	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, %)]
64	84	X	-0.0001	-0.0001	0	%100
65	85	X	-0.0003	-0.0003	0	%100
66	86	X	-0.0002	-0.0002	0	%100
67	87	X	-0.0001	-0.0001	0	%100
68	88	X	-0.0003	-0.0003	0	%100
69	89	X	-0.0002	-0.0002	0	%100
70	93	X	-0.0003	-0.0003	0	%100
71	94	X	-0.0003	-0.0003	0	%100
72	95	X	-0.0003	-0.0003	0	%100
73	106	X	-0.0003	-0.0003	0	%100
74	109	X	-0.0003	-0.0003	0	%100
75	112	X	-0.0003	-0.0003	0	%100
76	115	X	-0.0003	-0.0003	0	%100
77	118	X	-0.0003	-0.0003	0	%100
78	121	X	-0.0003	-0.0003	0	%100
79	124	X	-0.0003	-0.0003	0	%100
80	126	X	-0.0003	-0.0003	0	%100
81	127	X	-0.0003	-0.0003	0	%100
82	128	X	-0.0003	-0.0003	0	%100
83	138	X	-0.0003	-0.0003	0	%100
84	139	X	-0.0003	-0.0003	0	%100
85	140	X	-0.0003	-0.0003	0	%100
86	150	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.01	-0.01	0	%100
2	2	Y	-0.01	-0.01	0	%100
3	3	Y	-0.003	-0.003	0	%100
4	4	Y	-0.005	-0.005	0	%100
5	5	Y	-0.005	-0.005	0	%100
6	6	Y	-0.003	-0.003	0	%100
7	7	Y	-0.003	-0.003	0	%100
8	11	Y	-0.007	-0.007	0	%100
9	12	Y	-0.005	-0.005	0	%100
10	13	Y	-0.007	-0.007	0	%100
11	15	Y	-0.007	-0.007	0	%100
12	16	Y	-0.005	-0.005	0	%100
13	17	Y	-0.007	-0.007	0	%100
14	20	Y	-0.005	-0.005	0	%100
15	21	Y	-0.003	-0.003	0	%100
16	22	Y	-0.003	-0.003	0	%100
17	23	Y	-0.003	-0.003	0	%100
18	24	Y	-0.007	-0.007	0	%100
19	25	Y	-0.005	-0.005	0	%100
20	26	Y	-0.007	-0.007	0	%100
21	27	Y	-0.007	-0.007	0	%100
22	28	Y	-0.005	-0.005	0	%100
23	29	Y	-0.007	-0.007	0	%100
24	31	Y	-0.01	-0.01	0	%100
25	32	Y	-0.01	-0.01	0	%100
26	33	Y	-0.003	-0.003	0	%100
27	34	Y	-0.005	-0.005	0	%100
28	35	Y	-0.005	-0.005	0	%100
29	36	Y	-0.003	-0.003	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, %)]
30	37	Y	-0.003	-0.003	0	%100
31	41	Y	-0.007	-0.007	0	%100
32	42	Y	-0.005	-0.005	0	%100
33	43	Y	-0.007	-0.007	0	%100
34	45	Y	-0.007	-0.007	0	%100
35	46	Y	-0.005	-0.005	0	%100
36	47	Y	-0.007	-0.007	0	%100
37	50	Y	-0.005	-0.005	0	%100
38	51	Y	-0.003	-0.003	0	%100
39	52	Y	-0.003	-0.003	0	%100
40	53	Y	-0.003	-0.003	0	%100
41	54	Y	-0.007	-0.007	0	%100
42	55	Y	-0.005	-0.005	0	%100
43	56	Y	-0.007	-0.007	0	%100
44	57	Y	-0.007	-0.007	0	%100
45	58	Y	-0.005	-0.005	0	%100
46	59	Y	-0.007	-0.007	0	%100
47	61	Y	-0.01	-0.01	0	%100
48	62	Y	-0.01	-0.01	0	%100
49	63	Y	-0.003	-0.003	0	%100
50	64	Y	-0.005	-0.005	0	%100
51	65	Y	-0.005	-0.005	0	%100
52	66	Y	-0.003	-0.003	0	%100
53	67	Y	-0.003	-0.003	0	%100
54	71	Y	-0.007	-0.007	0	%100
55	72	Y	-0.005	-0.005	0	%100
56	73	Y	-0.007	-0.007	0	%100
57	75	Y	-0.007	-0.007	0	%100
58	76	Y	-0.005	-0.005	0	%100
59	77	Y	-0.007	-0.007	0	%100
60	80	Y	-0.005	-0.005	0	%100
61	81	Y	-0.003	-0.003	0	%100
62	82	Y	-0.003	-0.003	0	%100
63	83	Y	-0.003	-0.003	0	%100
64	84	Y	-0.007	-0.007	0	%100
65	85	Y	-0.005	-0.005	0	%100
66	86	Y	-0.007	-0.007	0	%100
67	87	Y	-0.007	-0.007	0	%100
68	88	Y	-0.005	-0.005	0	%100
69	89	Y	-0.007	-0.007	0	%100
70	93	Y	-0.005	-0.005	0	%100
71	94	Y	-0.005	-0.005	0	%100
72	95	Y	-0.005	-0.005	0	%100
73	106	Y	-0.005	-0.005	0	%100
74	109	Y	-0.005	-0.005	0	%100
75	112	Y	-0.005	-0.005	0	%100
76	115	Y	-0.005	-0.005	0	%100
77	118	Y	-0.005	-0.005	0	%100
78	121	Y	-0.005	-0.005	0	%100
79	124	Y	-0.005	-0.005	0	%100
80	126	Y	-0.005	-0.005	0	%100
81	127	Y	-0.005	-0.005	0	%100
82	128	Y	-0.005	-0.005	0	%100
83	138	Y	-0.005	-0.005	0	%100
84	139	Y	-0.005	-0.005	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
85	140	Y	-0.005	-0.005	0	%100
86	150	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.003	-0.003	0	%100
2	2	Z	-0.003	-0.003	0	%100
3	3	Z	-0.0006	-0.0006	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.0006	-0.0006	0	%100
7	7	Z	-0.0006	-0.0006	0	%100
8	11	Z	-0.001	-0.001	0	%100
9	12	Z	-0.001	-0.001	0	%100
10	13	Z	-0.001	-0.001	0	%100
11	15	Z	-0.001	-0.001	0	%100
12	16	Z	-0.001	-0.001	0	%100
13	17	Z	-0.001	-0.001	0	%100
14	20	Z	-0.0009	-0.0009	0	%100
15	21	Z	-0.0006	-0.0006	0	%100
16	22	Z	-0.0006	-0.0006	0	%100
17	23	Z	-0.0006	-0.0006	0	%100
18	24	Z	-0.001	-0.001	0	%100
19	25	Z	-0.001	-0.001	0	%100
20	26	Z	-0.001	-0.001	0	%100
21	27	Z	-0.001	-0.001	0	%100
22	28	Z	-0.001	-0.001	0	%100
23	29	Z	-0.001	-0.001	0	%100
24	31	Z	-0.003	-0.003	0	%100
25	32	Z	-0.003	-0.003	0	%100
26	33	Z	-0.0006	-0.0006	0	%100
27	34	Z	-0.001	-0.001	0	%100
28	35	Z	-0.001	-0.001	0	%100
29	36	Z	-0.0006	-0.0006	0	%100
30	37	Z	-0.0006	-0.0006	0	%100
31	41	Z	-0.001	-0.001	0	%100
32	42	Z	-0.001	-0.001	0	%100
33	43	Z	-0.001	-0.001	0	%100
34	45	Z	-0.001	-0.001	0	%100
35	46	Z	-0.001	-0.001	0	%100
36	47	Z	-0.001	-0.001	0	%100
37	50	Z	-0.0009	-0.0009	0	%100
38	51	Z	-0.0006	-0.0006	0	%100
39	52	Z	-0.0006	-0.0006	0	%100
40	53	Z	-0.0006	-0.0006	0	%100
41	54	Z	-0.001	-0.001	0	%100
42	55	Z	-0.001	-0.001	0	%100
43	56	Z	-0.001	-0.001	0	%100
44	57	Z	-0.001	-0.001	0	%100
45	58	Z	-0.001	-0.001	0	%100
46	59	Z	-0.001	-0.001	0	%100
47	61	Z	-0.003	-0.003	0	%100
48	62	Z	-0.003	-0.003	0	%100
49	63	Z	-0.0006	-0.0006	0	%100
50	64	Z	-0.001	-0.001	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
51	65	Z	-0.001	-0.001	0	%100
52	66	Z	-0.0006	-0.0006	0	%100
53	67	Z	-0.0006	-0.0006	0	%100
54	71	Z	-0.001	-0.001	0	%100
55	72	Z	-0.001	-0.001	0	%100
56	73	Z	-0.001	-0.001	0	%100
57	75	Z	-0.001	-0.001	0	%100
58	76	Z	-0.001	-0.001	0	%100
59	77	Z	-0.001	-0.001	0	%100
60	80	Z	-0.0009	-0.0009	0	%100
61	81	Z	-0.0006	-0.0006	0	%100
62	82	Z	-0.0006	-0.0006	0	%100
63	83	Z	-0.0006	-0.0006	0	%100
64	84	Z	-0.001	-0.001	0	%100
65	85	Z	-0.001	-0.001	0	%100
66	86	Z	-0.001	-0.001	0	%100
67	87	Z	-0.001	-0.001	0	%100
68	88	Z	-0.001	-0.001	0	%100
69	89	Z	-0.001	-0.001	0	%100
70	93	Z	-0.0009	-0.0009	0	%100
71	94	Z	-0.0009	-0.0009	0	%100
72	95	Z	-0.0009	-0.0009	0	%100
73	106	Z	-0.0009	-0.0009	0	%100
74	109	Z	-0.0009	-0.0009	0	%100
75	112	Z	-0.0009	-0.0009	0	%100
76	115	Z	-0.0009	-0.0009	0	%100
77	118	Z	-0.0009	-0.0009	0	%100
78	121	Z	-0.0009	-0.0009	0	%100
79	124	Z	-0.0009	-0.0009	0	%100
80	126	Z	-0.0009	-0.0009	0	%100
81	127	Z	-0.0009	-0.0009	0	%100
82	128	Z	-0.0009	-0.0009	0	%100
83	138	Z	-0.0009	-0.0009	0	%100
84	139	Z	-0.0009	-0.0009	0	%100
85	140	Z	-0.0009	-0.0009	0	%100
86	150	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	-0.003	-0.003	0	%100
2	2	X	-0.003	-0.003	0	%100
3	3	X	-0.0006	-0.0006	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.0006	-0.0006	0	%100
7	7	X	-0.0006	-0.0006	0	%100
8	11	X	-0.001	-0.001	0	%100
9	12	X	-0.001	-0.001	0	%100
10	13	X	-0.001	-0.001	0	%100
11	15	X	-0.001	-0.001	0	%100
12	16	X	-0.001	-0.001	0	%100
13	17	X	-0.001	-0.001	0	%100
14	20	X	-0.0009	-0.0009	0	%100
15	21	X	-0.0006	-0.0006	0	%100
16	22	X	-0.0006	-0.0006	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, %)]
17	23	X	-0.0006	-0.0006	0	%100
18	24	X	-0.001	-0.001	0	%100
19	25	X	-0.001	-0.001	0	%100
20	26	X	-0.001	-0.001	0	%100
21	27	X	-0.001	-0.001	0	%100
22	28	X	-0.001	-0.001	0	%100
23	29	X	-0.001	-0.001	0	%100
24	31	X	-0.003	-0.003	0	%100
25	32	X	-0.003	-0.003	0	%100
26	33	X	-0.0006	-0.0006	0	%100
27	34	X	-0.001	-0.001	0	%100
28	35	X	-0.001	-0.001	0	%100
29	36	X	-0.0006	-0.0006	0	%100
30	37	X	-0.0006	-0.0006	0	%100
31	41	X	-0.001	-0.001	0	%100
32	42	X	-0.001	-0.001	0	%100
33	43	X	-0.001	-0.001	0	%100
34	45	X	-0.001	-0.001	0	%100
35	46	X	-0.001	-0.001	0	%100
36	47	X	-0.001	-0.001	0	%100
37	50	X	-0.0009	-0.0009	0	%100
38	51	X	-0.0006	-0.0006	0	%100
39	52	X	-0.0006	-0.0006	0	%100
40	53	X	-0.0006	-0.0006	0	%100
41	54	X	-0.001	-0.001	0	%100
42	55	X	-0.001	-0.001	0	%100
43	56	X	-0.001	-0.001	0	%100
44	57	X	-0.001	-0.001	0	%100
45	58	X	-0.001	-0.001	0	%100
46	59	X	-0.001	-0.001	0	%100
47	61	X	-0.003	-0.003	0	%100
48	62	X	-0.003	-0.003	0	%100
49	63	X	-0.0006	-0.0006	0	%100
50	64	X	-0.001	-0.001	0	%100
51	65	X	-0.001	-0.001	0	%100
52	66	X	-0.0006	-0.0006	0	%100
53	67	X	-0.0006	-0.0006	0	%100
54	71	X	-0.001	-0.001	0	%100
55	72	X	-0.001	-0.001	0	%100
56	73	X	-0.001	-0.001	0	%100
57	75	X	-0.001	-0.001	0	%100
58	76	X	-0.001	-0.001	0	%100
59	77	X	-0.001	-0.001	0	%100
60	80	X	-0.0009	-0.0009	0	%100
61	81	X	-0.0006	-0.0006	0	%100
62	82	X	-0.0006	-0.0006	0	%100
63	83	X	-0.0006	-0.0006	0	%100
64	84	X	-0.001	-0.001	0	%100
65	85	X	-0.001	-0.001	0	%100
66	86	X	-0.001	-0.001	0	%100
67	87	X	-0.001	-0.001	0	%100
68	88	X	-0.001	-0.001	0	%100
69	89	X	-0.001	-0.001	0	%100
70	93	X	-0.0009	-0.0009	0	%100
71	94	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, %)]
72	95	X	-0.0009	-0.0009	0	%100
73	106	X	-0.0009	-0.0009	0	%100
74	109	X	-0.0009	-0.0009	0	%100
75	112	X	-0.0009	-0.0009	0	%100
76	115	X	-0.0009	-0.0009	0	%100
77	118	X	-0.0009	-0.0009	0	%100
78	121	X	-0.0009	-0.0009	0	%100
79	124	X	-0.0009	-0.0009	0	%100
80	126	X	-0.0009	-0.0009	0	%100
81	127	X	-0.0009	-0.0009	0	%100
82	128	X	-0.0009	-0.0009	0	%100
83	138	X	-0.0009	-0.0009	0	%100
84	139	X	-0.0009	-0.0009	0	%100
85	140	X	-0.0009	-0.0009	0	%100
86	150	X	-0.0009	-0.0009	0	%100

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	156	L	Y	-0.5
2	222	L	Y	-0.5
3	246	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	152	L	Y	-0.5
2	218	L	Y	-0.5
3	242	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	148	L	Y	-0.5
2	214	L	Y	-0.5
3	238	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	Dead	DL	-1		90	
2	0 Wind - No Ice	WLZ			90	86
3	90 Wind - No Ice	WLX			90	86
4	0 Wind - Ice	WLZ			90	86
5	90 Wind - Ice	WLX			90	86
6	0 Wind - Service	WLZ			90	86
7	90 Wind - Service	WLX			90	86
8	Ice	OL1			90	86
9	0 Seismic	ELZ			90	86
10	90 Seismic	ELX			90	86
11	Live Load a	LL		3		
12	Live Load b	LL		3		
13	Live Load c	LL		3		
14	Live Load d	LL				

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
15	Maint LL 1	LL			1	
16	Maint LL 2	LL			1	
17	Maint LL 3	LL			1	
18	Maint LL 4	LL			1	
19	Maint LL 5	LL			1	
20	Maint LL 6	LL			1	
21	Maint LL 7	LL			1	
22	Maint LL 8	LL			1	
23	Maint LL 9	LL			1	
24	Maint LL 10	LL			1	
25	Maint LL 11	LL			1	
26	Maint LL 12	LL			1	
27	Maint LL 13	LL			1	
28	Maint LL 14	LL			1	
29	Maint LL 15	LL			1	
30	Maint LL 16	LL			1	
31	Maint LL 17	LL			1	
32	Maint LL 18	LL			1	
33	Maint LL 19	LL				
34	Maint LL 20	LL				
35	Maint LL 21	LL				
36	Maint LL 22	LL				
37	Maint LL 23	LL				
38	Maint LL 24	LL				

Load Combinations

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

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
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

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5
104	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					33	1.5
105	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					34	1.5
106	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					35	1.5
107	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					36	1.5
108	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					37	1.5
109	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					38	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	13	max	1.453	41	1.309	22	1.273	13	-0.224	3	0	109	0.173	64
2		min	-1.078	11	0.545	4	-2.725	7	-0.566	21	0	1	-0.26	46
3	14	max	0.656	65	1.174	22	1.876	14	-0.215	4	0	109	0.157	64
4		min	-1.422	47	0.493	4	0.069	8	-0.511	22	0	1	-0.232	46
5	43	max	0.103	5	0.075	4	1.187	4	0	109	0	109	0	109
6		min	-0.103	11	-0.029	10	-1.189	10	0	1	0	1	0	1
7	44	max	1.448	4	1.29	14	1.568	2	0.363	69	0	109	0.498	14
8		min	-2.792	10	0.515	8	-0.959	8	-0.031	39	0	1	0.12	8
9	45	max	2.044	3	1.41	19	3.312	2	0.446	43	0	109	-0.157	7
10		min	-0.763	9	0.565	13	-2.284	8	-0.008	13	0	1	-0.528	25
11	58	max	1.926	41	1.221	15	0.537	38	0.324	68	0	109	0.476	14
12		min	0.063	11	0.49	9	-1.253	68	-0.038	38	0	1	0.134	9
13	87	max	1.487	8	0.102	8	1.006	2	0	109	0	109	0	109
14		min	-1.49	2	-0.057	2	-1.004	8	0	1	0	1	0	1
15	100	max	0.103	5	1.309	19	0.564	2	0.412	43	0	109	-0.157	6
16		min	-1.679	23	0.52	13	-2.04	44	-0.006	13	0	1	-0.482	25
17	129	max	1.543	7	0.1	13	0.739	7	0	109	0	109	0	109
18		min	-1.543	13	-0.054	7	-0.74	13	0	1	0	1	0	1
19	Totals:	max	5.982	5	7.822	15	8.995	2						
20		min	-5.982	11	3.406	9	-8.995	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	PL5/8X6	0.19	0.667	47	0.055	0.667	y	22	94.955	168.75	2.197	21.094	1.652	H1-1b
2	2	PL5/8X6	0.203	0.667	44	0.06	0.667	y	20	94.955	168.75	2.197	21.094	1.627	H1-1b
3	3	3/4"SR	0.116	4.673	46	0.004	4.673		9	1.116	19.88	0.249	0.249	1	H1-1b*
4	4	HSS2.375X0.218	0.193	10.427	86	0.078	10.427		86	7.649	62.55	3.6	3.6	1	H1-1b
5	5	HSS2.375X0.218	0.271	9.75	8	0.095	10.427		2	7.649	62.55	3.6	3.6	1	H1-1b
6	6	3/4"SR	0.278	3	46	0.01	0		4	2.707	19.88	0.249	0.249	1	H1-1a
7	7	3/4"SR	0.286	3	49	0.012	0		11	2.707	19.88	0.249	0.249	1	H1-1a
8	11	PL1/2X311/16	0.16	0.227	38	0.182	0.227	y	8	80.831	82.969	0.864	6.374	1.668	H1-1b
9	12	HSS2.375X0.218	0.086	3.75	7	0.053	3.75		42	48.725	62.55	3.6	3.6	1	H1-1b
10	13	PL1/2X311/16	0.202	0	48	0.082	0.276	y	16	79.835	82.969	0.864	6.374	1.186	H1-1b
11	15	PL1/2X311/16	0.178	0.227	45	0.113	0.005	y	53	80.831	82.969	0.864	6.374	1.671	H1-1b
12	16	HSS2.375X0.218	0.079	2.773	93	0.048	0.078		56	48.725	62.55	3.6	3.6	1	H1-1b
13	17	PL1/2X311/16	0.177	0	45	0.071	0.276	y	15	79.835	82.969	0.864	6.374	1.4	H1-1b
14	20	HSS2.375X0.154	0.149	11.1	4	0.004	11.1		11	7.984	45	2.674	2.674	1	H1-1b*
15	21	3/4"SR	0.094	4.673	64	0.005	0		3	1.116	19.88	0.249	0.249	1	H1-1b*
16	22	3/4"SR	0.199	3	64	0.011	0		9	2.707	19.88	0.249	0.249	1	H1-1b*
17	23	3/4"SR	0.353	0	87	0.013	3		10	2.707	19.88	0.249	0.249	1	H1-1a
18	24	PL1/2X311/16	0.199	0.227	87	0.215	0	y	8	80.831	82.969	0.864	6.374	1.667	H1-1b
19	25	HSS2.375X0.218	0.072	2.773	95	0.052	0.078		2	48.725	62.55	3.6	3.6	1	H1-1b
20	26	PL1/2X311/16	0.17	0	63	0.091	0.276	y	21	79.835	82.969	0.864	6.374	1.198	H1-1b
21	27	PL1/2X311/16	0.204	0.227	86	0.104	0	y	18	80.831	82.969	0.864	6.374	1.667	H1-1b
22	28	HSS2.375X0.218	0.086	2.773	16	0.049	0.078		67	48.725	62.55	3.6	3.6	1	H1-1b
23	29	PL1/2X311/16	0.15	0	63	0.082	0.276	y	21	79.835	82.969	0.864	6.374	1.085	H1-1b
24	31	PL5/8X6	0.199	0.667	39	0.056	0.667	y	15	94.955	168.75	2.197	21.094	1.634	H1-1b
25	32	PL5/8X6	0.205	0.667	47	0.058	0.667	y	23	94.955	168.75	2.197	21.094	1.619	H1-1b
26	33	3/4"SR	0.12	4.673	38	0.004	0		15	1.116	19.88	0.249	0.249	1	H1-1b*
27	34	HSS2.375X0.218	0.193	10.427	88	0.078	10.427		88	7.649	62.55	3.6	3.6	1	H1-1b
28	35	HSS2.375X0.218	0.213	2.167	13	0.112	2.438		3	7.649	62.55	3.6	3.6	1	H1-1b
29	36	3/4"SR	0.322	3	38	0.01	0		8	2.707	19.88	0.249	0.249	1	H1-1a
30	37	3/4"SR	0.3	3	41	0.017	0		2	2.707	19.88	0.249	0.249	1	H1-1a
31	41	PL1/2X311/16	0.161	0.227	42	0.111	0.002	y	60	80.831	82.969	0.864	6.374	1.663	H1-1b
32	42	HSS2.375X0.218	0.104	1.875	97	0.047	3.75		23	48.725	62.55	3.6	3.6	1	H1-1b
33	43	PL1/2X311/16	0.191	0	41	0.092	0.276	y	59	79.835	82.969	0.864	6.374	1.063	H1-1b
34	45	PL1/2X311/16	0.176	0.227	49	0.1	0.002	y	55	80.831	82.969	0.864	6.374	1.702	H1-1b
35	46	HSS2.375X0.218	0.105	1.875	96	0.046	3.75		18	48.725	62.55	3.6	3.6	1	H1-1b
36	47	PL1/2X311/16	0.185	0	38	0.082	0.276	y	56	79.835	82.969	0.864	6.374	1.103	H1-1b
37	50	HSS2.375X0.154	0.268	5.781	8	0.004	11.1		3	7.984	45	2.674	2.674	1	H1-1a
38	51	3/4"SR	0.094	4.673	68	0.005	0		8	1.116	19.88	0.249	0.249	1	H1-1b*
39	52	3/4"SR	0.198	3	68	0.01	3		8	2.707	19.88	0.249	0.249	1	H1-1b*
40	53	3/4"SR	0.353	0	89	0.017	3		2	2.707	19.88	0.249	0.249	1	H1-1a
41	54	PL1/2X311/16	0.199	0.227	89	0.152	0.227	y	13	80.831	82.969	0.864	6.374	1.667	H1-1b
42	55	HSS2.375X0.218	0.072	2.773	99	0.051	3.75		62	48.725	62.55	3.6	3.6	1	H1-1b
43	56	PL1/2X311/16	0.17	0	67	0.091	0.276	y	15	79.835	82.969	0.864	6.374	1.142	H1-1b
44	57	PL1/2X311/16	0.204	0.227	88	0.104	0	y	21	80.831	82.969	0.864	6.374	1.667	H1-1b
45	58	HSS2.375X0.218	0.086	2.773	20	0.049	0.078		70	48.725	62.55	3.6	3.6	1	H1-1b
46	59	PL1/2X311/16	0.15	0	67	0.08	0	y	14	79.835	82.969	0.864	6.374	1.103	H1-1b
47	61	PL5/8X6	0.208	0.667	44	0.062	0.667	y	20	94.955	168.75	2.197	21.094	1.626	H1-1b
48	62	PL5/8X6	0.213	0.667	39	0.067	0.667	y	2	94.955	168.75	2.197	21.094	1.617	H1-1b
49	63	3/4"SR	0.126	4.673	43	0.005	0		19	1.116	19.88	0.249	0.249	1	H1-1b*
50	64	HSS2.375X0.218	0.193	10.427	90	0.095	10.427		2	7.649	62.55	3.6	3.6	1	H1-1b
51	65	HSS2.375X0.218	0.328	2.573	2	0.136	2.438		8	7.649	62.55	3.6	3.6	1	H1-1a
52	66	3/4"SR	0.335	3	43	0.011	3		7	2.707	19.88	0.249	0.249	1	H1-1a
53	67	3/4"SR	0.328	3	20	0.018	0		7	2.707	19.88	0.249	0.249	1	H1-1a
54	71	PL1/2X311/16	0.17	0.227	44	0.109	0.007	y	51	80.831	82.969	0.864	6.374	1.667	H1-1b
55	72	HSS2.375X0.218	0.103	1.875	101	0.051	3.75		15	48.725	62.55	3.6	3.6	1	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
56	73	PL1/2X311/16	0.201	0	44	0.092	0.02	y	50	79.835	82.969	0.864	6.374	1.047	H1-1b
57	75	PL1/2X311/16	0.184	0.227	41	0.098	0.002	y	60	80.831	82.969	0.864	6.374	1.695	H1-1b
58	76	HSS2.375X0.218	0.105	1.875	100	0.049	3.75		20	48.725	62.55	3.6	3.6	1	H1-1b
59	77	PL1/2X311/16	0.193	0	42	0.081	0.276	y	60	79.835	82.969	0.864	6.374	1.102	H1-1b
60	80	HSS2.375X0.154	0.269	5.55	13	0.004	11.1		7	7.984	45	2.674	2.674	1	H1-1a
61	81	3/4"SR	0.097	4.673	73	0.005	0		11	1.116	19.88	0.249	0.249	1	H1-1b*
62	82	3/4"SR	0.236	3	73	0.009	0		6	2.707	19.88	0.249	0.249	1	H1-1a
63	83	3/4"SR	0.374	0	91	0.017	0		7	2.707	19.88	0.249	0.249	1	H1-1a
64	84	PL1/2X311/16	0.211	0.227	91	0.098	0.227	y	17	80.831	82.969	0.864	6.374	1.667	H1-1b
65	85	HSS2.375X0.218	0.072	2.773	103	0.054	3.75		19	48.725	62.55	3.6	3.6	1	H1-1b
66	86	PL1/2X311/16	0.176	0	14	0.098	0.276	y	19	79.835	82.969	0.864	6.374	1.121	H1-1b
67	87	PL1/2X311/16	0.212	0.227	90	0.118	0.227	y	22	80.831	82.969	0.864	6.374	1.667	H1-1b
68	88	HSS2.375X0.218	0.09	2.773	24	0.049	0.078		13	48.725	62.55	3.6	3.6	1	H1-1b
69	89	PL1/2X311/16	0.158	0	24	0.088	0	y	18	79.835	82.969	0.864	6.374	1.089	H1-1b
70	93	PIPE_2.0	0.579	3.719	8	0.11	3.828		7	8.922	32.13	1.872	1.872	1	H1-1b
71	94	PIPE_2.0	0.26	3.828	9	0.089	3.828		9	8.922	32.13	1.872	1.872	1	H1-1b
72	95	PIPE_2.0	0.284	3.719	8	0.098	3.828		8	8.922	32.13	1.872	1.872	1	H1-1b
73	106	PIPE_2.0	0.088	0.677	93	0.039	3.646		10	23.809	32.13	1.872	1.872	1	H1-1b
74	109	PIPE_2.0	0.036	2.042	13	0.045	2.042		10	17.855	32.13	1.872	1.872	1	H1-1b
75	112	PIPE_2.0	0.097	3.646	94	0.054	0.677		9	23.809	32.13	1.872	1.872	1	H1-1b
76	115	PIPE_2.0	0.032	4.958	2	0.058	2.042		2	17.855	32.13	1.872	1.872	1	H1-1b
77	118	PIPE_2.0	0.098	3.646	98	0.057	0.677		2	23.809	32.13	1.872	1.872	1	H1-1b
78	121	PIPE_2.0	0.032	4.958	5	0.055	2.042		7	17.855	32.13	1.872	1.872	1	H1-1b
79	124	PIPE_2.0	0.098	3.646	102	0.048	0.677		7	23.809	32.13	1.872	1.872	1	H1-1b
80	126	PIPE_2.0	0.579	3.719	8	0.077	3.828		9	8.922	32.13	1.872	1.872	1	H1-1b
81	127	PIPE_2.0	0.259	3.828	2	0.093	3.828		2	8.922	32.13	1.872	1.872	1	H1-1b
82	128	PIPE_2.0	0.284	3.719	2	0.082	3.828		2	8.922	32.13	1.872	1.872	1	H1-1b
83	138	PIPE_2.0	0.776	3.5	2	0.129	5.578		2	8.922	32.13	1.872	1.872	1	H1-1b
84	139	PIPE_2.0	0.259	3.828	7	0.068	3.828		6	8.922	32.13	1.872	1.872	1	H1-1b
85	140	PIPE_2.0	0.294	3.828	38	0.049	3.828		3	8.922	32.13	1.872	1.872	1	H1-1b
86	150	PIPE_2.0	0.275	0.26	13	0.083	0.26		2	29.81	32.13	1.872	1.872	1	H1-1b

APPENDIX D

ADDITIONAL CALCULATIONS

PROJECT	**104053.013.01.0001 - NHV 108 94313 KSC**				
SUBJECT	**Sector Mount Analysis**				
DATE	**09/22/22**	PAGE	1	OF	1

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
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[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	2.834	k
Vertical Shear	:	1.41	k
Horizontal Shear	:	1.505	k
Torsion	:	0.276	k.ft
Moment from Horizontal Forces	:	0	k.ft
Moment from Vertical Forces	:	0.609	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	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.06	k
Force from Horz. Moment	:	0.00	k
Force from Vert. Moment	:	1.10	k
Shear Load / Bolt	:	0.52	k
Tension Load / Bolt	:	0.71	k
Resultant from Moments / Bolt	:	0.55	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	:	**6.08%**		**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	:	**11.08%**		**OKAY**
Unity Check, Combined	:	**17.16%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**1.49%**		**OKAY**

Date: **September 30, 2022**

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

Subject: Structural Analysis Report

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Site Number:	CTL01060
	Site Name:	WOLCOTT-EAST ST
	FA Number:	10035040
Crown Castle Designation:	**BU Number:**	806362
	Site Name:	NHV 108 943133
	JDE Job Number:	730983
	Work Order Number:	2164397
	Order Number:	632627 Rev. 0
Engineering Firm Designation:	**TEP Project Number:**	217724.774434
Site Data:	**Intersection of RTE 322/Meridian Rd Wolcott Site, Wolcott, New Haven County, CT 06716 Latitude *41° 33' 34.41"*, Longitude *-72° 56' 49.10"* 185 Foot - Self-Supporting 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 - 77.1%**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Anwar Ibrahim / RAL

Respectfully submitted by:

Aaron T. Rucker, P.E.

09/30/2022

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 185-ft self supporting tower designed by Rohn. The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
Risk Category: II
Wind Speed: 120 mph
Exposure Category: C
Topographic Factor: 1.0
Ice Thickness: 1.0 in
Wind Speed with Ice: 50 mph
Service Wind Speed: 60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
158.0	162.0	3	Ericsson	AIR 6419 B77G_CCIV3 w/ Mount Pipe	6 6 3 1	1-1/4 3/4 3/8 7/8
	160.0	2	CCI Antennas	OPA65R-BU6D w/ Mount Pipe		
		1	CCI Antennas	DMP65R-BU8D w/ Mount Pipe		
		2	Quintel Technology	QD6616-7 w/ Mount Pipe		
		1	Quintel Technology	QD8616-7 w/ Mount Pipe		
		1	Raycap	DC9-48-60-24-8C-EV		
		1	Raycap	DC6-48-60-18-8F		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RRUS 32 B2		
		3	Ericsson	RRUS 4478 B14_CCIV2		
		3	Ericsson	RRUS 32 B66A		
		3	Ericsson	RRUS 4449 B5/B12		
		1	Raycap	DC6-48-60-18-8F_CCIV2		
	158.0	3	Ericsson	AIR 6449 B77D_CCIV3 w/ Mount Pipe		
		1	Raycap	DC6-48-60-18-8F		
		1	Tower Mounts	Sector Mount [SM 502-3]		

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)
186.0	186.0	3	Ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	2 10	1-3/8 1-5/8
		3	RFS Celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	Commscope	SDX1926Q-43		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B71 B85A_ T-MOBILE		
		3	Ericsson	RRUS 4415 B25		
		1	Tower Mounts	Sector Mount [SM 502-3]		
177.0	177.0	2	Andrew	DB846F65ZAXY w/ Mount Pipe	14	1-5/8
		2	Antel	LPA-80063/6CFx5 w/ Mount Pipe		
		2	Swedcom	SC-E 6014 rev2 w/ Mount Pipe		
		6	Commscope	JAHH-65B-R3B w/ Mount Pipe		
		3	VZW	Sub6 Antenna - VZS01 w/ Mount Pipe		
		3	Commscope	CBC78T-DS-43-2X		
		1	Raycap	RVZDC-6627-PF-48_CCIV2		
		3	Samsung Telecom.	RFV01U-D1A		
		3	Samsung Telecom.	RFV01U-D2A		
		1	Tower Mounts	Sector Mount [SM 504-3]		
168.0	168.0	1	Andrew	VHLP2-18	4 1	1-1/4 Elliptical
		1	Dragonwave	A-ANT-18G-2-C		
		3	Commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	Nokia	AAHC w/ Mount Pipe		
		6	Alcatel Lucent	RRH2X50-800		
		3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ		
		3	SitePro 1	VFA12-HD Sector Mount		
40.0	40.0	1	GPS	GPS_A	1	1/2
		1	Tower Mounts	Side Arm Mount [SO 306-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	2303630	CCISites
Tower Foundation Drawings	217670	CCISites
Tower Manufacturer Drawings	529684	CCISites
Tower Reinforcement Drawings	903539	CCISites
Tower Reinforcement Drawings	7904718	CCISites
Post Modification Inspection	8288884	CCISites

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
T1	185 - 180	Leg	ROHN 2.5 STD	2	-3.03	40.52	7.5	Pass
T2	180 - 160	Leg	ROHN 2.5 STD	15	-22.35	47.80	46.7	Pass
T3	160 - 140	Leg	ROHN 3 X-STR	54	-62.30	99.05	62.9	Pass
T4	140 - 120	Leg	ROHN 4 X-STR	93	-97.95	167.90	58.3	Pass
T5	120 - 100	Leg	ROHN 5 EH	132	-124.78	211.25	59.1	Pass
T6	100 - 80	Leg	ROHN 5 EH	159	-153.15	211.17	72.5	Pass
T7	80 - 60	Leg	ROHN 6 EHS	186	-178.97	256.16	69.9	Pass
T8	60 - 40	Leg	ROHN 6 X-STR	213	-204.59	318.80	64.2	Pass
T9	40 - 20	Leg	ROHN 6 X-STR	240	-229.01	318.76	71.8	Pass
T10	20 - 0	Leg	ROHN 8 EHS	267	-239.81	405.62	59.1	Pass
T1	185 - 180	Diagonal	L2x2x1/4	10	-1.45	13.74	10.6	Pass
T2	180 - 160	Diagonal	ROHN 2 STD	21	-8.29	18.52	44.8	Pass
T3	160 - 140	Diagonal	ROHN 2 STD	72	-9.68	16.79	57.7	Pass
T4	140 - 120	Diagonal	ROHN 2 STD	99	-8.96	13.72	65.3	Pass
T5	120 - 100	Diagonal	ROHN 2.5 STD	138	-10.81	17.20	62.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
T6	100 - 80	Diagonal	ROHN 2.5 STD	165	-9.75	15.01	64.9	Pass
T7	80 - 60	Diagonal	ROHN 2.5 STD	192	-10.24	13.29	77.1	Pass
T8	60 - 40	Diagonal	ROHN 2.5 X-STR	219	-10.57	14.66	72.1	Pass
T9	40 - 20	Diagonal	ROHN 3 STD	246	-10.42	20.09	51.9	Pass
T10	20 - 0	Diagonal	ROHN 3 STD	279	-16.32	33.58	48.6	Pass
T2	180 - 160	Horizontal	ROHN 1.5 STD	19	-4.41	23.69	18.6	Pass
T3	160 - 140	Horizontal	ROHN 1.5 STD	58	-5.66	20.10	28.2	Pass
T4	140 - 120	Horizontal	ROHN 2 STD	97	-6.10	28.55	21.4	Pass
T5	120 - 100	Horizontal	ROHN 2 STD	136	-6.38	23.76	26.8	Pass
T6	100 - 80	Horizontal	ROHN 2 STD	163	-6.29	17.60	35.7	Pass
T7	80 - 60	Horizontal	ROHN 2.5 STD	190	-7.04	30.29	23.3	Pass
T8	60 - 40	Horizontal	ROHN 2.5 STD	217	-7.59	23.43	32.4	Pass
T9	40 - 20	Horizontal	ROHN 2.5 STD	244	-7.76	18.55	41.8	Pass
T10	20 - 0	Horizontal	ROHN 3 STD	275	-8.62	33.23	25.9	Pass
T1	185 - 180	Top Girt	L2x2x1/4	4	-0.28	4.66	6.1	Pass
T10	20 - 0	Redund Horz 1 Bracing	ROHN 1.5 TUBE (11ga)	280	-4.16	5.84	71.3	Pass
T10	20 - 0	Redund Diag 1 Bracing	2L2x2x1/4x1/4	281	-3.80	12.80	29.7	Pass
T10	20 - 0	Redund Hip 1 Bracing	ROHN 1.5 TUBE (11ga)	282	-0.03	5.19	0.5	Pass
T10	20 - 0	Redund Hip Diagonal 1 Bracing	ROHN 2.5 STD	283	-0.07	11.09	0.6	Pass
T2	180 - 160	Inner Bracing	L2x2x1/8	27	-0.00	8.79	0.3	Pass
T3	160 - 140	Inner Bracing	L2x2x1/8	66	-0.01	6.48	0.3	Pass
T4	140 - 120	Inner Bracing	L2x2x1/8	105	-0.01	4.43	0.4	Pass
T5	120 - 100	Inner Bracing	L2x2x1/8	144	-0.01	3.34	0.4	Pass
T6	100 - 80	Inner Bracing	L2 1/2x2 1/2x3/16	171	-0.01	6.99	0.4	Pass
T7	80 - 60	Inner Bracing	L3x3x3/16	198	-0.01	9.15	0.4	Pass
T8	60 - 40	Inner Bracing	L3 1/2x3 1/2x1/4	225	-0.01	14.99	0.3	Pass
T9	40 - 20	Inner Bracing	L3 1/2x3 1/2x1/4	252	-0.01	11.94	0.3	Pass
T10	20 - 0	Inner Bracing	ROHN 3 STD	297	-0.01	31.36	0.3	Pass
							Summary	
						Leg (T6)	72.5	Pass
						Diagonal (T7)	77.1	Pass
						Horizontal (T9)	41.8	Pass
						Top Girt (T1)	6.1	Pass
						Redund Horz 1 Bracing (T10)	71.3	Pass
						Redund Diag 1 Bracing (T10)	29.7	Pass
						Redund Hip 1	0.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
						Bracing (T10)		
						Redund Hip Diagonal 1 Bracing (T10)	0.6	Pass
						Inner Bracing (T5)	0.4	Pass
						Bolt Checks	51.9	Pass
						RATING =	**77.1**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	49.5	Pass
1,2	Base Foundation Structural	-	50.2	Pass
1,2	Base Foundation Soil Interaction	-	29.5	Pass

Structure Rating (max from all components) =	**77.1%**

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

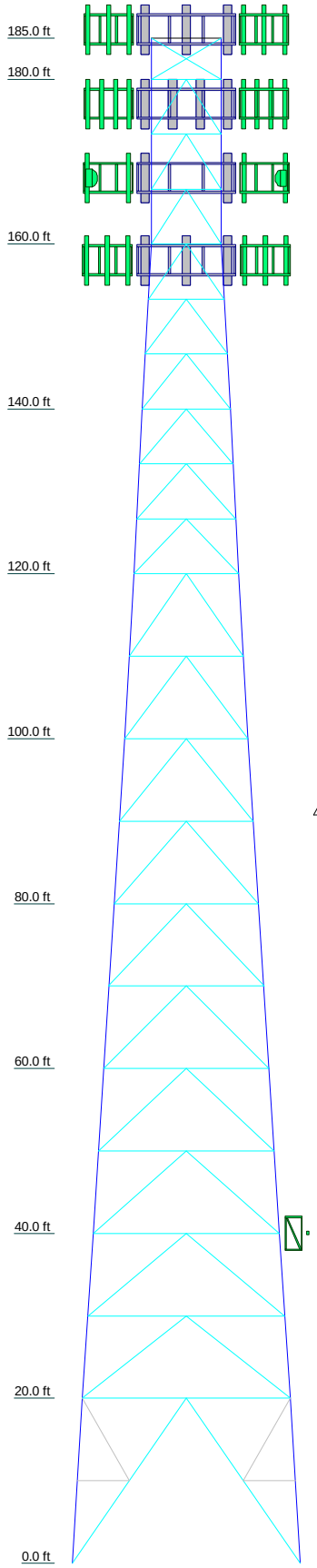
4.1) Recommendations

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	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1	
Legs	ROHN 8 EHS	ROHN 6 X-STR		ROHN 6 EHS	ROHN 5 EH		ROHN 4 X-STR	ROHN 3 X-STR	ROHN 2.5 STD		
Leg Grade					A572-50					A53-A	
Diagonals	ROHN 3 STD		ROHN 2.5 X-STR		ROHN 2.5 STD			ROHN 2 STD		A	
Diagonal Grade					A572-50					B	
Top Girts					N.A.					A	
Horizontals	ROHN 3 STD		ROHN 2.5 STD			ROHN 2 STD			ROHN 1.5 STD	N.A.	
Red. Horizontals	ROHN 1.5 TUBE (11ga)					N.A.					
Red. Diagonals	21.2x2x1/4x1/4					N.A.					
Red. Hips	ROHN 1.5 TUBE (11ga)					N.A.					
Inner Bracing	ROHN 3 STD	L3 1/2x3 1/2x1/4		L3x3x3/16	L2 1/2x2 1/2x3/16		L2x2x1/8			N.A.	
Face Width (ft)	27.6771	25.1771	22.5417	20.0417	17.5417	14.9583	12.7083	10.625	8.54167	8.5	
# Panels @ (ft)	1 @ 20			10 @ 10				9 @ 6.66667		1 @ 5	
Weight (K)	27.8	5.0	4.6	4.4	3.3	2.8	2.6	2.0	1.5	1.2	0.4



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2x2x1/4	B	A529-50

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-A	30 ksi	48 ksi	A572-50	50 ksi	65 ksi
A529-50	50 ksi	65 ksi			

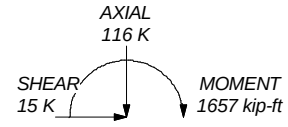
TOWER DESIGN NOTES

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 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0'
8. TOWER RATING: 77.1%

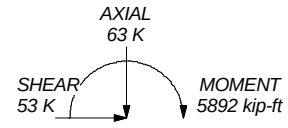
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 263 K
SHEAR: 32 K

UPLIFT: -227 K
SHEAR: 29 K



TORQUE 15 kip-ft
50 mph WIND - 1.00 in ICE



TORQUE 57 kip-ft
REACTIONS - 120 mph WIND

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

Job: **NHV 108 943133 (BU 806362)**
Project: **TEP No. 217724.774434**
Client: Crown Castle | Drawn by: aibrahim | App'd:
Code: TIA-222-H | Date: 09/30/22 | Scale: NTS
Path: | Dwg No. E-1

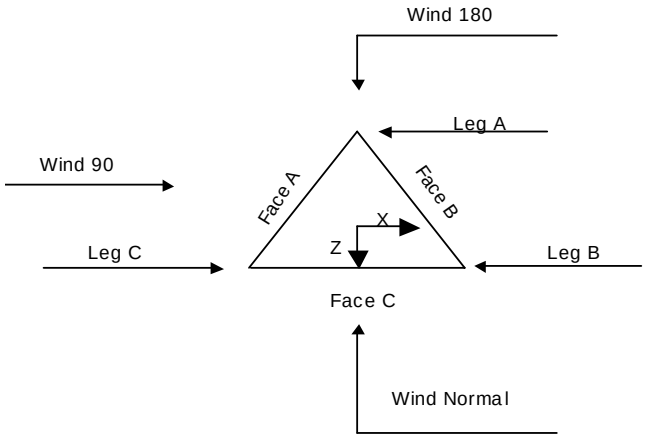
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 185' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 8'6" at the top and 27'8-1/8" at the base.
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: 745'.
Basic wind speed of 120 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0'.
Nominal ice thickness of 1.00 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member 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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	185'-180'			8'6"	1	5'
T2	180'-160'			8'6"	1	20'
T3	160'-140'			8'6-15/32"	1	20'
T4	140'-120'			10'7-9/16"	1	20'
T5	120'-100'			12'8-17/32"	1	20'
T6	100'-80'			14'11-17/32"	1	20'
T7	80'-60'			17'6-15/32"	1	20'
T8	60'-40'			20'15/32"	1	20'
T9	40'-20'			22'6-15/32"	1	20'
T10	20'-0'			25'2-5/32"	1	20'

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	185'-180'	5'	X Brace	No	Yes	0.00	0.00
T2	180'-160'	6'8-1/32"	K Brace Down	No	Yes	0.00	0.00
T3	160'-140'	6'8-1/32"	K Brace Down	No	Yes	0.00	0.00
T4	140'-120'	6'8-1/32"	K Brace Down	No	Yes	0.00	0.00
T5	120'-100'	10'	K Brace Down	No	Yes	0.00	0.00

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T6	100'-80'	10'	K Brace Down	No	Yes	0.00	0.00
T7	80'-60'	10'	K Brace Down	No	Yes	0.00	0.00
T8	60'-40'	10'	K Brace Down	No	Yes	0.00	0.00
T9	40'-20'	10'	K Brace Down	No	Yes	0.00	0.00
T10	20'-0'	20'	K1 Down	No	Yes	0.00	0.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 185'-180'	Pipe	ROHN 2.5 STD	A53-A (30 ksi)	Equal Angle	L2x2x1/4	A529-50 (50 ksi)
T2 180'-160'	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T3 160'-140'	Pipe	ROHN 3 X-STR	A572-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T4 140'-120'	Pipe	ROHN 4 X-STR	A572-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T5 120'-100'	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T6 100'-80'	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T7 80'-60'	Pipe	ROHN 6 EHS	A572-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T8 60'-40'	Pipe	ROHN 6 X-STR	A572-50 (50 ksi)	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)
T9 40'-20'	Pipe	ROHN 6 X-STR	A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T10 20'-0'	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 185'-180'	Equal Angle	L2x2x1/4	A529-50 (50 ksi)	Pipe		A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T2 180'-160'	None	Pipe		A618-50	Pipe	ROHN 1.5 STD	A572-50

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
				(50 ksi)			(50 ksi)
T3 160'-140'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 1.5 STD	A572-50 (50 ksi)
T4 140'-120'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T5 120'-100'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T6 100'-80'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T7 80'-60'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T8 60'-40'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T9 40'-20'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T10 20'-0'	None	Pipe		A618-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T2 180'-160'	Pipe		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T3 160'-140'	Pipe		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T4 140'-120'	Pipe		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T5 120'-100'	Pipe		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T6 100'-80'	Pipe		A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T7 80'-60'	Pipe		A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T8 60'-40'	Pipe		A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T9 40'-20'	Pipe		A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T10 20'-0'	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T10 20'-0'	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 TUBE (11ga)	1
		Diagonal (1)	Double Equal Angle	2L2x2x1/4x1/4	1

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
		Hip (1)	Pipe	ROHN 1.5 TUBE (11ga)	1
		Hip Diagonal (1)	Pipe	ROHN 2.5 STD	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	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
T1 185'-180'	0.00	0.25	A529-50 (50 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T2 180'-160'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T3 160'-140'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T4 140'-120'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 120'-100'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 100'-80'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 80'-60'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 60'-40'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 40'-20'	0.00	0.25	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T10 20'-0'	0.00	0.38	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 185'-180'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 180'-160'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 160'-140'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 140'-120'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 120'-100'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 100'-80'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 80'-60'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T8 60'-40'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T9 40'-20'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T10 20'-0'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 185'-180'	0.00	1	0.00	0.75	0.00	0.75	0.00	1	0.00	0.75	0.00	1	0.00	0.75
T2 180'-160'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	0.75	0.00	1	0.00	0.75
T3 160'-140'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T4 140'-120'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T5 120'-100'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T6 100'-80'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T7 80'-60'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T8 60'-40'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T9 40'-20'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T10 20'-0'	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 185'-180'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T2 180'-160'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T3 160'-140'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T4 140'-120'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T5 120'-100'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T6 100'-80'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T7 80'-60'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T8 60'-40'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T9 40'-20'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T10 20'-0'	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	1	0.00	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 185'-180'	Flange	0.75 A325X	4	0.50 A325X	1	0.50 A325X	1	0.00 A325N	0	0.63 A325N	0	0.00 A325N	0	0.63 A325N	0
T2 180'-160'	Flange	0.75 A325X	4	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0	0.63 A325X	2	0.63 A325N	0
T3 160'-140'	Flange	0.88 A325X	4	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325X	2	0.00 A325N	0
T4 140'-120'	Flange	1.00 A325X	4	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325X	2	0.00 A325N	0
T5 120'-100'	Flange	1.00 A325X	4	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325X	2	0.00 A325N	0
T6 100'-80'	Flange	1.00 A325X	6	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325X	2	0.00 A325N	0
T7 80'-60'	Flange	1.00 A325X	6	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0	0.63 A325X	2	0.63 A325N	0
T8 60'-40'	Flange	1.00 A325X	6	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0	0.63 A325X	2	0.63 A325N	0
T9 40'-20'	Flange	1.00 A325X	8	0.63 A325X	3	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0	0.63 A325X	2	0.63 A325N	0
T10 20'-0'	Flange	1.00 A449	0	0.75 A325X	3	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0	0.75 A325X	2	0.63 A325N	0

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 185'-180'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T2 180'-160'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T3 160'-140'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T4 140'-120'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T5 120'-100'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T6 100'-80'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T7 80'-60'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T8 60'-40'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T9 40'-20'	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T10 20'-0'	0.63 A325X	1	0.63 A325X	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325X	1	0.63 A325X	1

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
Safety Line 3/8	A	No	No	Ar (CaAa)	185' - 0'	0.00	0.5	1	1	0.38	0.38		0.00
Step Pegs (5/8" SR) 7-in. w/30" step	A	No	No	Ar (CaAa)	185' - 0'	0.00	0.5	1	1	0.35	0.35		0.00
Step Pegs (5/8" SR) 7-in. w/30" step	B	No	No	Ar (CaAa)	180' - 0'	0.00	0.5	1	1	0.35	0.35		0.00
Step Pegs (5/8" SR) 7-in. w/30" step **	C	No	No	Ar (CaAa)	180' - 0'	0.00	0.5	1	1	0.35	0.35		0.00
Feed Line Ladder	A	No	No	Af (CaAa)	177' - 0'	0.00	-0.35	1	1	3.00	3.00		0.00
Feed Line Ladder	A	No	No	Af (CaAa)	168' - 0'	0.00	0.35	1	1	3.00	3.00		0.00
Feed Line Ladder	C	No	No	Af (CaAa)	185' - 158'	-1.00	-0.35	1	1	3.00	3.00		0.00
Feed Line Ladder **	C	No	No	Af (CaAa)	158' - 0'	0.00	-0.35	2	1	3.00	3.00		0.00
561(1-5/8)	A	No	No	Ar (CaAa)	177' - 0'	0.00	-0.35	12	2	0.50	1.63		0.00
HB158-1-08U8-S8J18(1-5/8)	A	No	No	Ar (CaAa)	177' - 0'	0.00	-0.36	2	1	0.50	1.98		0.00
LDF4-50A(1/2) **	A	No	No	Ar (CaAa)	40' - 0'	0.00	-0.38	1	1	0.50	0.63		0.00
HB114-1-0813U4-M5J(1-1/4)	A	No	No	Ar (CaAa)	168' - 0'	0.00	0.35	4	4	0.50	1.54		0.00
7983A(ELLIPTICAL) **	A	No	No	Ar (CaAa)	168' - 0'	0.00	0.35	1	1	0.50	0.57		0.00
MLCH HYBRID 6X12(1-3/8)	C	No	No	Ar (CaAa)	185' - 0'	-4.20	-0.35	2	2	0.50	1.43		0.00
LCF158-50JA (1-5/8) *	C	No	No	Ar (CaAa)	185' - 0'	-2.00	-0.35	10	9	0.50	1.98		0.00
UCF114-50JA (1-1/4)	C	No	No	Ar (CaAa)	158' - 0'	0.00	-0.4	6	6	0.50	1.54		0.00
WR-VG86ST-BRD(3/4)	C	No	No	Ar (CaAa)	158' - 0'	0.00	-0.35	2	2	0.50	0.80		0.00
FB-L98B-034-XXX(3/8)	C	No	No	Ar (CaAa)	158' - 0'	0.00	-0.3	2	2	0.39	0.39		0.00
WR-VG86ST-BRD(3/4)	C	No	No	Ar (CaAa)	158' - 0'	0.00	-0.3	4	4	0.50	0.80		0.00
2" Flexible Conduit	C	No	No	Ar (CaAa)	158' - 0'	0.00	-0.3	2	2	0.50	2.00		0.00
FB-L98B-235-XXX(3/8)	C	No	No	Ar (CaAa)	158' - 0'	0.00	-0.35	1	1	0.39	0.39		0.00
PWRT-606-S(7/8") ***	C	No	No	Ar (CaAa)	158' - 0'	0.00	-0.35	1	1	0.50	0.92		0.00

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
***								

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
T1	185'-180'	A	0.000	0.000	0.362	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	13.830	0.000	0.08
T2	180'-160'	A	0.000	0.000	59.218	0.000	0.47
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	56.020	0.000	0.32
T3	160'-140'	A	0.000	0.000	81.836	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	101.213	0.000	0.54
T4	140'-120'	A	0.000	0.000	81.836	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	106.235	0.000	0.57
T5	120'-100'	A	0.000	0.000	81.836	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	106.235	0.000	0.57
T6	100'-80'	A	0.000	0.000	81.836	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	106.235	0.000	0.57
T7	80'-60'	A	0.000	0.000	81.836	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	106.235	0.000	0.57
T8	60'-40'	A	0.000	0.000	81.836	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	106.235	0.000	0.57
T9	40'-20'	A	0.000	0.000	83.086	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	106.235	0.000	0.57
T10	20'-0'	A	0.000	0.000	83.086	0.000	0.65
		B	0.000	0.000	0.700	0.000	0.01
		C	0.000	0.000	106.235	0.000	0.57

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
T1	185'-180'	A	1.009	0.000	0.000	2.380	0.000	0.02
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	22.939	0.000	0.27

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
T2	180'-160'	A	1.001	0.000	0.000	88.114	0.000	1.27
		B		0.000	0.000	4.706	0.000	0.04
		C		0.000	0.000	96.340	0.000	1.12
T3	160'-140'	A	0.989	0.000	0.000	125.262	0.000	1.74
		B		0.000	0.000	4.656	0.000	0.04
		C		0.000	0.000	203.277	0.000	2.07
T4	140'-120'	A	0.975	0.000	0.000	124.703	0.000	1.72
		B		0.000	0.000	4.600	0.000	0.04
		C		0.000	0.000	214.254	0.000	2.16
T5	120'-100'	A	0.959	0.000	0.000	124.060	0.000	1.71
		B		0.000	0.000	4.535	0.000	0.04
		C		0.000	0.000	213.181	0.000	2.13
T6	100'-80'	A	0.940	0.000	0.000	123.303	0.000	1.68
		B		0.000	0.000	4.459	0.000	0.04
		C		0.000	0.000	211.915	0.000	2.10
T7	80'-60'	A	0.916	0.000	0.000	122.376	0.000	1.66
		B		0.000	0.000	4.366	0.000	0.04
		C		0.000	0.000	210.367	0.000	2.06
T8	60'-40'	A	0.886	0.000	0.000	121.171	0.000	1.63
		B		0.000	0.000	4.244	0.000	0.04
		C		0.000	0.000	208.355	0.000	2.01
T9	40'-20'	A	0.842	0.000	0.000	124.037	0.000	1.61
		B		0.000	0.000	4.068	0.000	0.03
		C		0.000	0.000	205.430	0.000	1.94
T10	20'-0'	A	0.754	0.000	0.000	120.213	0.000	1.51
		B		0.000	0.000	3.717	0.000	0.03
		C		0.000	0.000	199.634	0.000	1.80

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	185'-180'	11.45	4.23	12.38	2.33
T2	180'-160'	1.19	4.32	2.44	2.64
T3	160'-140'	4.97	5.39	7.74	4.36
T4	140'-120'	6.42	6.57	9.73	5.55
T5	120'-100'	7.59	7.60	11.46	6.45
T6	100'-80'	8.80	8.64	13.24	7.35
T7	80'-60'	9.77	9.38	14.65	7.99
T8	60'-40'	10.82	10.25	16.30	8.78
T9	40'-20'	10.84	10.87	16.17	9.89
T10	20'-0'	11.79	11.84	17.48	10.40

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Safety Line 3/8	180.00 - 185.00	0.6000	0.6000
T1	2	Step Pegs (5/8" SR) 7-in.	180.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		w/30" step	185.00		
T1	8	Feed Line Ladder	180.00 - 185.00	0.6000	0.6000
T1	21	MLCH HYBRID 6X12(1-3/8)	180.00 - 185.00	0.6000	0.6000
T1	22	LCF158-50JA(1-5/8)	180.00 - 185.00	0.6000	0.6000
T2	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T2	2	Step Pegs (5/8" SR) 7-in. w/30" step	160.00 - 180.00	0.6000	0.6000
T2	3	Step Pegs (5/8" SR) 7-in. w/30" step	160.00 - 180.00	0.6000	0.6000
T2	4	Step Pegs (5/8" SR) 7-in. w/30" step	160.00 - 180.00	0.6000	0.6000
T2	6	Feed Line Ladder	160.00 - 177.00	0.6000	0.6000
T2	7	Feed Line Ladder	160.00 - 168.00	0.6000	0.6000
T2	8	Feed Line Ladder	160.00 - 180.00	0.6000	0.6000
T2	11	561(1-5/8)	160.00 - 177.00	0.6000	0.6000
T2	12	HB158-1-08U8-S8J18(1-5/8)	160.00 - 177.00	0.6000	0.6000
T2	17	HB114-1-0813U4-M5J(1-1/4)	160.00 - 168.00	0.6000	0.6000
T2	19	7983A(ELLIPTICAL)	160.00 - 168.00	0.6000	0.6000
T2	21	MLCH HYBRID 6X12(1-3/8)	160.00 - 180.00	0.6000	0.6000
T2	22	LCF158-50JA(1-5/8)	160.00 - 180.00	0.6000	0.6000
T3	1	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T3	2	Step Pegs (5/8" SR) 7-in. w/30" step	140.00 - 160.00	0.6000	0.6000
T3	3	Step Pegs (5/8" SR) 7-in. w/30" step	140.00 - 160.00	0.6000	0.6000
T3	4	Step Pegs (5/8" SR) 7-in. w/30" step	140.00 - 160.00	0.6000	0.6000
T3	6	Feed Line Ladder	140.00 - 160.00	0.6000	0.6000
T3	7	Feed Line Ladder	140.00 - 160.00	0.6000	0.6000
T3	8	Feed Line Ladder	158.00 - 160.00	0.6000	0.6000
T3	9	Feed Line Ladder	140.00 - 158.00	0.6000	0.6000
T3	11	561(1-5/8)	140.00 - 160.00	0.6000	0.6000
T3	12	HB158-1-08U8-S8J18(1-5/8)	140.00 - 160.00	0.6000	0.6000
T3	17	HB114-1-0813U4-M5J(1-1/4)	140.00 - 160.00	0.6000	0.6000
T3	19	7983A(ELLIPTICAL)	140.00 - 160.00	0.6000	0.6000
T3	21	MLCH HYBRID 6X12(1-3/8)	140.00 - 160.00	0.6000	0.6000
T3	22	LCF158-50JA(1-5/8)	140.00 - 160.00	0.6000	0.6000
T3	24	UCF114-50JA(1-1/4)	140.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	25	WR-VG86ST-BRD(3/4)	140.00 - 158.00	0.6000	0.6000
T3	26	FB-L98B-034-XXX(3/8)	140.00 - 158.00	0.0000	0.0000
T3	27	WR-VG86ST-BRD(3/4)	140.00 - 158.00	0.0000	0.0000
T3	28	2" Flexible Conduit	140.00 - 158.00	0.6000	0.6000
T3	29	FB-L98B-235-XXX(3/8)	140.00 - 158.00	0.6000	0.6000
T3	30	PWRT-606-S(7/8")	140.00 - 158.00	0.6000	0.6000
T4	1	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T4	2	Step Pegs (5/8" SR) 7-in. w/30" step	120.00 - 140.00	0.6000	0.6000
T4	3	Step Pegs (5/8" SR) 7-in. w/30" step	120.00 - 140.00	0.6000	0.6000
T4	4	Step Pegs (5/8" SR) 7-in. w/30" step	120.00 - 140.00	0.6000	0.6000
T4	6	Feed Line Ladder	120.00 - 140.00	0.6000	0.6000
T4	7	Feed Line Ladder	120.00 - 140.00	0.6000	0.6000
T4	9	Feed Line Ladder	120.00 - 140.00	0.6000	0.6000
T4	11	561(1-5/8)	120.00 - 140.00	0.6000	0.6000
T4	12	HB158-1-08U8-S8J18(1-5/8)	120.00 - 140.00	0.6000	0.6000
T4	17	HB114-1-0813U4-M5J(1-1/4)	120.00 - 140.00	0.6000	0.6000
T4	19	7983A(ELLIPTICAL)	120.00 - 140.00	0.6000	0.6000
T4	21	MLCH HYBRID 6X12(1-3/8)	120.00 - 140.00	0.6000	0.6000
T4	22	LCF158-50JA(1-5/8)	120.00 - 140.00	0.6000	0.6000
T4	24	UCF114-50JA(1-1/4)	120.00 - 140.00	0.6000	0.6000
T4	25	WR-VG86ST-BRD(3/4)	120.00 - 140.00	0.6000	0.6000
T4	26	FB-L98B-034-XXX(3/8)	120.00 - 140.00	0.0000	0.0000
T4	27	WR-VG86ST-BRD(3/4)	120.00 - 140.00	0.0000	0.0000
T4	28	2" Flexible Conduit	120.00 - 140.00	0.6000	0.6000
T4	29	FB-L98B-235-XXX(3/8)	120.00 - 140.00	0.6000	0.6000
T4	30	PWRT-606-S(7/8")	120.00 - 140.00	0.6000	0.6000
T5	1	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T5	2	Step Pegs (5/8" SR) 7-in. w/30" step	100.00 - 120.00	0.6000	0.6000
T5	3	Step Pegs (5/8" SR) 7-in. w/30" step	100.00 - 120.00	0.6000	0.6000
T5	4	Step Pegs (5/8" SR) 7-in. w/30" step	100.00 - 120.00	0.6000	0.6000
T5	6	Feed Line Ladder	100.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			120.00		
T5	7	Feed Line Ladder	100.00 - 120.00	0.6000	0.6000
T5	9	Feed Line Ladder	100.00 - 120.00	0.6000	0.6000
T5	11	561(1-5/8)	100.00 - 120.00	0.6000	0.6000
T5	12	HB158-1-08U8-S8J18(1-5/8)	100.00 - 120.00	0.6000	0.6000
T5	17	HB114-1-0813U4-M5J(1-1/4)	100.00 - 120.00	0.6000	0.6000
T5	19	7983A(ELLIPTICAL)	100.00 - 120.00	0.6000	0.6000
T5	21	MLCH HYBRID 6X12(1-3/8)	100.00 - 120.00	0.6000	0.6000
T5	22	LCF158-50JA(1-5/8)	100.00 - 120.00	0.6000	0.6000
T5	24	UCF114-50JA(1-1/4)	100.00 - 120.00	0.6000	0.6000
T5	25	WR-VG86ST-BRD(3/4)	100.00 - 120.00	0.6000	0.6000
T5	26	FB-L98B-034-XXX(3/8)	100.00 - 120.00	0.0000	0.0000
T5	27	WR-VG86ST-BRD(3/4)	100.00 - 120.00	0.0000	0.0000
T5	28	2" Flexible Conduit	100.00 - 120.00	0.6000	0.6000
T5	29	FB-L98B-235-XXX(3/8)	100.00 - 120.00	0.6000	0.6000
T5	30	PWRT-606-S(7/8")	100.00 - 120.00	0.6000	0.6000
T6	1	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T6	2	Step Pegs (5/8" SR) 7-in. w/30" step	80.00 - 100.00	0.6000	0.6000
T6	3	Step Pegs (5/8" SR) 7-in. w/30" step	80.00 - 100.00	0.6000	0.6000
T6	4	Step Pegs (5/8" SR) 7-in. w/30" step	80.00 - 100.00	0.6000	0.6000
T6	6	Feed Line Ladder	80.00 - 100.00	0.6000	0.6000
T6	7	Feed Line Ladder	80.00 - 100.00	0.6000	0.6000
T6	9	Feed Line Ladder	80.00 - 100.00	0.6000	0.6000
T6	11	561(1-5/8)	80.00 - 100.00	0.6000	0.6000
T6	12	HB158-1-08U8-S8J18(1-5/8)	80.00 - 100.00	0.6000	0.6000
T6	17	HB114-1-0813U4-M5J(1-1/4)	80.00 - 100.00	0.6000	0.6000
T6	19	7983A(ELLIPTICAL)	80.00 - 100.00	0.6000	0.6000
T6	21	MLCH HYBRID 6X12(1-3/8)	80.00 - 100.00	0.6000	0.6000
T6	22	LCF158-50JA(1-5/8)	80.00 - 100.00	0.6000	0.6000
T6	24	UCF114-50JA(1-1/4)	80.00 - 100.00	0.6000	0.6000
T6	25	WR-VG86ST-BRD(3/4)	80.00 - 100.00	0.6000	0.6000
T6	26	FB-L98B-034-XXX(3/8)	80.00 - 100.00	0.0000	0.0000
T6	27	WR-VG86ST-BRD(3/4)	80.00 - 100.00	0.0000	0.0000
T6	28	2" Flexible Conduit	80.00 - 100.00	0.6000	0.6000
T6	29	FB-L98B-235-XXX(3/8)	80.00 - 100.00	0.6000	0.6000
T6	30	PWRT-606-S(7/8")	80.00 - 100.00	0.6000	0.6000
T7	1	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T7	2	Step Pegs (5/8" SR) 7-in. w/30" step	60.00 - 80.00	0.6000	0.6000
T7	3	Step Pegs (5/8" SR) 7-in. w/30" step	60.00 - 80.00	0.6000	0.6000
T7	4	Step Pegs (5/8" SR) 7-in.	60.00 - 80.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		w/30" step			
T7	6	Feed Line Ladder	60.00 - 80.00	0.6000	0.6000
T7	7	Feed Line Ladder	60.00 - 80.00	0.6000	0.6000
T7	9	Feed Line Ladder	60.00 - 80.00	0.6000	0.6000
T7	11	561(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	12	HB158-1-08U8-S8J18(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	17	HB114-1-0813U4-M5J(1-1/4)	60.00 - 80.00	0.6000	0.6000
T7	19	7983A(ELLIPTICAL)	60.00 - 80.00	0.6000	0.6000
T7	21	MLCH HYBRID 6X12(1-3/8)	60.00 - 80.00	0.6000	0.6000
T7	22	LCF158-50JA(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	24	UCF114-50JA(1-1/4)	60.00 - 80.00	0.6000	0.6000
T7	25	WR-VG86ST-BRD(3/4)	60.00 - 80.00	0.6000	0.6000
T7	26	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.0000	0.0000
T7	27	WR-VG86ST-BRD(3/4)	60.00 - 80.00	0.0000	0.0000
T7	28	2" Flexible Conduit	60.00 - 80.00	0.6000	0.6000
T7	29	FB-L98B-235-XXX(3/8)	60.00 - 80.00	0.6000	0.6000
T7	30	PWRT-606-S(7/8")	60.00 - 80.00	0.6000	0.6000
T8	1	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T8	2	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 60.00	0.6000	0.6000
T8	3	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 60.00	0.6000	0.6000
T8	4	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 60.00	0.6000	0.6000
T8	6	Feed Line Ladder	40.00 - 60.00	0.6000	0.6000
T8	7	Feed Line Ladder	40.00 - 60.00	0.6000	0.6000
T8	9	Feed Line Ladder	40.00 - 60.00	0.6000	0.6000
T8	11	561(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	12	HB158-1-08U8-S8J18(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	17	HB114-1-0813U4-M5J(1-1/4)	40.00 - 60.00	0.6000	0.6000
T8	19	7983A(ELLIPTICAL)	40.00 - 60.00	0.6000	0.6000
T8	21	MLCH HYBRID 6X12(1-3/8)	40.00 - 60.00	0.6000	0.6000
T8	22	LCF158-50JA(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	24	UCF114-50JA(1-1/4)	40.00 - 60.00	0.6000	0.6000
T8	25	WR-VG86ST-BRD(3/4)	40.00 - 60.00	0.6000	0.6000
T8	26	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.0000	0.0000
T8	27	WR-VG86ST-BRD(3/4)	40.00 - 60.00	0.0000	0.0000
T8	28	2" Flexible Conduit	40.00 - 60.00	0.6000	0.6000
T8	29	FB-L98B-235-XXX(3/8)	40.00 - 60.00	0.6000	0.6000
T8	30	PWRT-606-S(7/8")	40.00 - 60.00	0.6000	0.6000
T9	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T9	2	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T9	3	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T9	4	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T9	6	Feed Line Ladder	20.00 - 40.00	0.6000	0.6000
T9	7	Feed Line Ladder	20.00 - 40.00	0.6000	0.6000
T9	9	Feed Line Ladder	20.00 - 40.00	0.6000	0.6000
T9	11	561(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	12	HB158-1-08U8-S8J18(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	14	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T9	17	HB114-1-0813U4-M5J(1-1/4)	20.00 - 40.00	0.6000	0.6000
T9	19	7983A(ELLIPTICAL)	20.00 - 40.00	0.6000	0.6000
T9	21	MLCH HYBRID 6X12(1-3/8)	20.00 - 40.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	22	LCF158-50JA(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	24	UCF114-50JA(1-1/4)	20.00 - 40.00	0.6000	0.6000
T9	25	WR-VG86ST-BRD(3/4)	20.00 - 40.00	0.6000	0.6000
T9	26	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.0000	0.0000
T9	27	WR-VG86ST-BRD(3/4)	20.00 - 40.00	0.0000	0.0000
T9	28	2" Flexible Conduit	20.00 - 40.00	0.6000	0.6000
T9	29	FB-L98B-235-XXX(3/8)	20.00 - 40.00	0.6000	0.6000
T9	30	PWRT-606-S(7/8")	20.00 - 40.00	0.6000	0.6000
T10	1	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000
T10	2	Step Pegs (5/8" SR) 7-in. w/30" step	0.00 - 20.00	0.6000	0.6000
T10	3	Step Pegs (5/8" SR) 7-in. w/30" step	0.00 - 20.00	0.6000	0.6000
T10	4	Step Pegs (5/8" SR) 7-in. w/30" step	0.00 - 20.00	0.6000	0.6000
T10	6	Feed Line Ladder	0.00 - 20.00	0.6000	0.6000
T10	7	Feed Line Ladder	0.00 - 20.00	0.6000	0.6000
T10	9	Feed Line Ladder	0.00 - 20.00	0.6000	0.6000
T10	11	561(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	12	HB158-1-08U8-S8J18(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	14	LDF4-50A(1/2)	0.00 - 20.00	0.6000	0.6000
T10	17	HB114-1-0813U4-M5J(1-1/4)	0.00 - 20.00	0.6000	0.6000
T10	19	7983A(ELLIPTICAL)	0.00 - 20.00	0.6000	0.6000
T10	21	MLCH HYBRID 6X12(1-3/8)	0.00 - 20.00	0.6000	0.6000
T10	22	LCF158-50JA(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	24	UCF114-50JA(1-1/4)	0.00 - 20.00	0.6000	0.6000
T10	25	WR-VG86ST-BRD(3/4)	0.00 - 20.00	0.6000	0.6000
T10	26	FB-L98B-034-XXX(3/8)	0.00 - 20.00	0.0000	0.0000
T10	27	WR-VG86ST-BRD(3/4)	0.00 - 20.00	0.0000	0.0000
T10	28	2" Flexible Conduit	0.00 - 20.00	0.6000	0.6000
T10	29	FB-L98B-235-XXX(3/8)	0.00 - 20.00	0.6000	0.6000
T10	30	PWRT-606-S(7/8")	0.00 - 20.00	0.6000	0.6000

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
*****									
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.00	186'	No Ice 1/2" Ice 1" Ice	3.76 4.12 4.48	3.15 3.49 3.84	0.19 0.25 0.32
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.00	186'	No Ice 1/2" Ice 1" Ice	3.76 4.12 4.48	3.15 3.49 3.84	0.19 0.25 0.32
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.00	186'	No Ice 1/2" Ice 1" Ice	3.76 4.12 4.48	3.15 3.49 3.84	0.19 0.25 0.32
APXVAARR24_43-U-NA20	A	From Leg	4.00	0.00	186'	No Ice	14.69	6.87	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
w/ Mount Pipe			0'			1/2" Ice	15.46	7.55	0.31
			0'			1" Ice	16.23	8.25	0.46
APXVAARR24_43-U-NA20	B	From Leg	4.00	0.00	186'	No Ice	14.69	6.87	0.19
w/ Mount Pipe			0'			1/2" Ice	15.46	7.55	0.31
			0'			1" Ice	16.23	8.25	0.46
APXVAARR24_43-U-NA20	C	From Leg	4.00	0.00	186'	No Ice	14.69	6.87	0.19
w/ Mount Pipe			0'			1/2" Ice	15.46	7.55	0.31
			0'			1" Ice	16.23	8.25	0.46
AIR6449 B41_T-MOBILE	A	From Leg	4.00	0.00	186'	No Ice	5.19	2.71	0.13
w/ Mount Pipe			0'			1/2" Ice	5.59	3.04	0.17
			0'			1" Ice	6.02	3.38	0.23
AIR6449 B41_T-MOBILE	B	From Leg	4.00	0.00	186'	No Ice	5.19	2.71	0.13
w/ Mount Pipe			0'			1/2" Ice	5.59	3.04	0.17
			0'			1" Ice	6.02	3.38	0.23
AIR6449 B41_T-MOBILE	C	From Leg	4.00	0.00	186'	No Ice	5.19	2.71	0.13
w/ Mount Pipe			0'			1/2" Ice	5.59	3.04	0.17
			0'			1" Ice	6.02	3.38	0.23
SDX1926Q-43	A	From Leg	4.00	0.00	186'	No Ice	0.24	0.10	0.01
			0'			1/2" Ice	0.31	0.14	0.01
			0'			1" Ice	0.38	0.19	0.01
SDX1926Q-43	B	From Leg	4.00	0.00	186'	No Ice	0.24	0.10	0.01
			0'			1/2" Ice	0.31	0.14	0.01
			0'			1" Ice	0.38	0.19	0.01
SDX1926Q-43	C	From Leg	4.00	0.00	186'	No Ice	0.24	0.10	0.01
			0'			1/2" Ice	0.31	0.14	0.01
			0'			1" Ice	0.38	0.19	0.01
KRY 112 144/1	A	From Leg	4.00	0.00	186'	No Ice	0.35	0.17	0.01
			0'			1/2" Ice	0.43	0.23	0.01
			0'			1" Ice	0.51	0.30	0.02
KRY 112 144/1	B	From Leg	4.00	0.00	186'	No Ice	0.35	0.17	0.01
			0'			1/2" Ice	0.43	0.23	0.01
			0'			1" Ice	0.51	0.30	0.02
KRY 112 144/1	C	From Leg	4.00	0.00	186'	No Ice	0.35	0.17	0.01
			0'			1/2" Ice	0.43	0.23	0.01
			0'			1" Ice	0.51	0.30	0.02
RADIO 4449 B71	A	From Leg	4.00	0.00	186'	No Ice	1.97	1.59	0.07
B85A_T-MOBILE			0'			1/2" Ice	2.15	1.75	0.09
			0'			1" Ice	2.33	1.92	0.12
RADIO 4449 B71	B	From Leg	4.00	0.00	186'	No Ice	1.97	1.59	0.07
B85A_T-MOBILE			0'			1/2" Ice	2.15	1.75	0.09
			0'			1" Ice	2.33	1.92	0.12
RADIO 4449 B71	C	From Leg	4.00	0.00	186'	No Ice	1.97	1.59	0.07
B85A_T-MOBILE			0'			1/2" Ice	2.15	1.75	0.09
			0'			1" Ice	2.33	1.92	0.12
RRUS 4415 B25	A	From Leg	4.00	0.00	186'	No Ice	1.64	0.68	0.04
			0'			1/2" Ice	1.80	0.79	0.06
			0'			1" Ice	1.97	0.91	0.07
RRUS 4415 B25	B	From Leg	4.00	0.00	186'	No Ice	1.64	0.68	0.04
			0'			1/2" Ice	1.80	0.79	0.06
			0'			1" Ice	1.97	0.91	0.07
RRUS 4415 B25	C	From Leg	4.00	0.00	186'	No Ice	1.64	0.68	0.04
			0'			1/2" Ice	1.80	0.79	0.06
			0'			1" Ice	1.97	0.91	0.07
Sector Mount [SM 502-3]	C	None		0.00	186'	No Ice	29.82	29.82	1.67
						1/2" Ice	42.21	42.21	2.27
						1" Ice	54.43	54.43	3.05

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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
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(2) DB846F65ZAXY w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	6.10 6.80 7.51	6.81 7.52 8.24	0.06 0.12 0.19
(2) LPA-80063/6CFx5 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	9.80 10.37 10.91	10.19 11.36 12.25	0.05 0.14 0.25
(2) SC-E 6014 rev2 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	3.56 3.91 4.26	4.22 4.78 5.35	0.03 0.07 0.12
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.10 0.17 0.25
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.10 0.17 0.25
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.10 0.17 0.25
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	4.92 5.26 5.62	2.69 3.15 3.63	0.10 0.14 0.19
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	4.92 5.26 5.62	2.69 3.15 3.63	0.10 0.14 0.19
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	4.92 5.26 5.62	2.69 3.15 3.63	0.10 0.14 0.19
CBC78T-DS-43-2X	A	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.60 0.70	0.02 0.03 0.04
CBC78T-DS-43-2X	B	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.60 0.70	0.02 0.03 0.04
CBC78T-DS-43-2X	C	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.60 0.70	0.02 0.03 0.04
RVZDC-6627-PF-48_CCIV2	A	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	4.06 4.32 4.58	3.10 3.34 3.58	0.03 0.07 0.11
RFV01U-D1A	A	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
RFV01U-D1A	B	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
RFV01U-D1A	C	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
RFV01U-D2A	A	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
RFV01U-D2A	B	From Leg	4.00 0' 0'	0.00	177'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
RFV01U-D2A	C	From Leg	4.00 0'	0.00	177'	No Ice 1/2" Ice	1.88 2.05	1.01 1.14	0.07 0.09

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
			0'			1" Ice	2.22	1.28	0.11
Sector Mount [SM 504-3]	C	None		0.00	177'	No Ice	31.05	31.05	1.71
						1/2" Ice	43.83	43.83	2.33
						1" Ice	56.44	56.44	3.14
**									
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	7.55 8.04	4.23 4.67	0.11 0.20
			0'			1" Ice	8.53	5.12	0.30
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	7.55 8.04	4.23 4.67	0.11 0.20
			0'			1" Ice	8.53	5.12	0.30
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	7.55 8.04	4.23 4.67	0.11 0.20
			0'			1" Ice	8.53	5.12	0.30
AAHC w/ Mount Pipe	A	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	4.12 4.48	2.44 2.75	0.12 0.15
			0'			1" Ice	4.87	3.06	0.20
AAHC w/ Mount Pipe	B	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	4.12 4.48	2.44 2.75	0.12 0.15
			0'			1" Ice	4.87	3.06	0.20
AAHC w/ Mount Pipe	C	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	4.12 4.48	2.44 2.75	0.12 0.15
			0'			1" Ice	4.87	3.06	0.20
(3) RRH2X50-800	A	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	2.13 2.32	1.77 1.95	0.05 0.07
			0'			1" Ice	2.51	2.13	0.10
(3) RRH2X50-800	B	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	2.13 2.32	1.77 1.95	0.05 0.07
			0'			1" Ice	2.51	2.13	0.10
(3) PCS 1900MHZ 4X45W-65MHZ	C	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	2.32 2.53	2.24 2.44	0.06 0.08
			0'			1" Ice	2.74	2.65	0.11
(2) 2.4" Dia x 6-ft Pipe	A	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	1.43 1.93	1.43 1.93	0.02 0.03
			0'			1" Ice	2.30	2.30	0.05
(2) 2.4" Dia x 6-ft Pipe	B	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	1.43 1.93	1.43 1.93	0.02 0.03
			0'			1" Ice	2.30	2.30	0.05
(2) 2.4" Dia x 6-ft Pipe	C	From Leg	4.00 0'	0.00	168'	No Ice 1/2" Ice	1.43 1.93	1.43 1.93	0.02 0.03
			0'			1" Ice	2.30	2.30	0.05
Sitepro VFA12-HD Sector Mount (3)	C	None		0.00	168'	No Ice 1/2" Ice	29.70 43.88	20.70 32.85	1.97 2.41
						1" Ice	58.05	43.88	3.04
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OPA65R-BU6D w/ Mount Pipe	A	From Leg	4.00 0'	0.00	158'	No Ice 1/2" Ice	12.25 13.00	6.05 6.71	0.09 0.18
			2'			1" Ice	13.76	7.39	0.27
OPA65R-BU6D w/ Mount Pipe	C	From Leg	4.00 0'	0.00	158'	No Ice 1/2" Ice	12.25 13.00	6.05 6.71	0.09 0.18
			2'			1" Ice	13.76	7.39	0.27
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.00 0'	0.00	158'	No Ice 1/2" Ice	15.89 16.81	7.89 8.74	0.14 0.25
			2'			1" Ice	17.76	9.60	0.38
QD6616-7 w/ Mount Pipe	A	From Leg	4.00 0'	0.00	158'	No Ice 1/2" Ice	12.56 13.30	6.93 7.60	0.16 0.25

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'			1" Ice	14.06	8.28	0.36
QD6616-7 w/ Mount Pipe	C	From Leg	4.00	0.00	158'	No Ice	12.56	6.93	0.16
			0'			1/2" Ice	13.30	7.60	0.25
			2'			1" Ice	14.06	8.28	0.36
AIR 6419 B77G_CCIV3 w/ Mount Pipe	A	From Leg	4.00	0.00	158'	No Ice	3.79	2.15	0.07
			0'			1/2" Ice	4.14	2.45	0.10
			4'			1" Ice	4.51	2.76	0.15
AIR 6419 B77G_CCIV3 w/ Mount Pipe	B	From Leg	4.00	0.00	158'	No Ice	3.79	2.15	0.07
			0'			1/2" Ice	4.14	2.45	0.10
			4'			1" Ice	4.51	2.76	0.15
AIR 6419 B77G_CCIV3 w/ Mount Pipe	C	From Leg	4.00	0.00	158'	No Ice	3.79	2.15	0.07
			0'			1/2" Ice	4.14	2.45	0.10
			4'			1" Ice	4.51	2.76	0.15
AIR 6449 B77D_CCIV3 w/ Mount Pipe	A	From Leg	4.00	0.00	158'	No Ice	3.65	2.72	0.11
			0'			1/2" Ice	3.99	3.03	0.15
			0'			1" Ice	4.35	3.36	0.20
AIR 6449 B77D_CCIV3 w/ Mount Pipe	B	From Leg	4.00	0.00	158'	No Ice	3.65	2.72	0.11
			0'			1/2" Ice	3.99	3.03	0.15
			0'			1" Ice	4.35	3.36	0.20
AIR 6449 B77D_CCIV3 w/ Mount Pipe	C	From Leg	4.00	0.00	158'	No Ice	3.65	2.72	0.11
			0'			1/2" Ice	3.99	3.03	0.15
			0'			1" Ice	4.35	3.36	0.20
QD8616-7 w/ Mount Pipe	B	From Leg	4.00	0.00	158'	No Ice	16.93	9.31	0.18
			0'			1/2" Ice	17.87	10.17	0.31
			2'			1" Ice	18.83	11.05	0.45
DC9-48-60-24-8C-EV	A	From Leg	4.00	0.00	158'	No Ice	1.14	1.14	0.03
			0'			1/2" Ice	1.79	1.79	0.05
			2'			1" Ice	2.00	2.00	0.07
DC6-48-60-18-8F	A	From Leg	4.00	0.00	158'	No Ice	1.21	1.21	0.03
			0'			1/2" Ice	1.89	1.89	0.05
			2'			1" Ice	2.11	2.11	0.08
DC6-48-60-18-8F	B	From Leg	4.00	0.00	158'	No Ice	1.21	1.21	0.03
			0'			1/2" Ice	1.89	1.89	0.05
			0'			1" Ice	2.11	2.11	0.08
RRUS 32 B30	A	From Leg	4.00	0.00	158'	No Ice	2.73	1.67	0.05
			0'			1/2" Ice	2.95	1.86	0.07
			2'			1" Ice	3.18	2.05	0.10
RRUS 32 B30	B	From Leg	4.00	0.00	158'	No Ice	2.73	1.67	0.05
			0'			1/2" Ice	2.95	1.86	0.07
			2'			1" Ice	3.18	2.05	0.10
RRUS 32 B30	C	From Leg	4.00	0.00	158'	No Ice	2.73	1.67	0.05
			0'			1/2" Ice	2.95	1.86	0.07
			2'			1" Ice	3.18	2.05	0.10
RRUS 32 B2	A	From Leg	4.00	0.00	158'	No Ice	2.73	1.67	0.05
			0'			1/2" Ice	2.95	1.86	0.07
			2'			1" Ice	3.18	2.05	0.10
RRUS 32 B2	B	From Leg	4.00	0.00	158'	No Ice	2.73	1.67	0.05
			0'			1/2" Ice	2.95	1.86	0.07
			2'			1" Ice	3.18	2.05	0.10
RRUS 32 B2	C	From Leg	4.00	0.00	158'	No Ice	2.73	1.67	0.05
			0'			1/2" Ice	2.95	1.86	0.07
			2'			1" Ice	3.18	2.05	0.10
RRUS 4478 B14_CCIV2	A	From Leg	4.00	0.00	158'	No Ice	2.02	1.25	0.06
			0'			1/2" Ice	2.20	1.40	0.08
			2'			1" Ice	2.39	1.55	0.10
RRUS 4478 B14_CCIV2	B	From Leg	4.00	0.00	158'	No Ice	2.02	1.25	0.06
			0'			1/2" Ice	2.20	1.40	0.08

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'			1" Ice	2.39	1.55	0.10
RRUS 4478 B14_CCIV2	C	From Leg	4.00	0.00	158'	No Ice	2.02	1.25	0.06
			0'			1/2" Ice	2.20	1.40	0.08
			2'			1" Ice	2.39	1.55	0.10
RRUS 32 B66A	A	From Leg	4.00	0.00	158'	No Ice	2.85	1.78	0.06
			0'			1/2" Ice	3.08	1.97	0.08
			2'			1" Ice	3.31	2.17	0.10
RRUS 32 B66A	B	From Leg	4.00	0.00	158'	No Ice	2.85	1.78	0.06
			0'			1/2" Ice	3.08	1.97	0.08
			2'			1" Ice	3.31	2.17	0.10
RRUS 32 B66A	C	From Leg	4.00	0.00	158'	No Ice	2.85	1.78	0.06
			0'			1/2" Ice	3.08	1.97	0.08
			2'			1" Ice	3.31	2.17	0.10
RRUS 4449 B5/B12	A	From Leg	4.00	0.00	158'	No Ice	1.97	1.41	0.07
			0'			1/2" Ice	2.14	1.56	0.09
			2'			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	B	From Leg	4.00	0.00	158'	No Ice	1.97	1.41	0.07
			0'			1/2" Ice	2.14	1.56	0.09
			2'			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	C	From Leg	4.00	0.00	158'	No Ice	1.97	1.41	0.07
			0'			1/2" Ice	2.14	1.56	0.09
			2'			1" Ice	2.33	1.73	0.11
DC6-48-60-18-8F_CCIV2	B	From Leg	4.00	0.00	158'	No Ice	2.90	2.90	0.02
			0'			1/2" Ice	3.13	3.13	0.05
			2'			1" Ice	3.37	3.37	0.08
2.4" Dia. x 4-ft	A	From Leg	4.00	0.00	158'	No Ice	0.87	0.87	0.01
			0'			1/2" Ice	1.12	1.12	0.02
			0'			1" Ice	1.37	1.37	0.03
2.4" Dia. x 4-ft	B	From Leg	4.00	0.00	158'	No Ice	0.87	0.87	0.01
			0'			1/2" Ice	1.12	1.12	0.02
			0'			1" Ice	1.37	1.37	0.03
2.4" Dia. x 4-ft	C	From Leg	4.00	0.00	158'	No Ice	0.87	0.87	0.01
			0'			1/2" Ice	1.12	1.12	0.02
			0'			1" Ice	1.37	1.37	0.03
2.4" Dia. x 2-ft	A	From Leg	4.00	0.00	158'	No Ice	0.35	0.35	0.01
			0'			1/2" Ice	0.48	0.48	0.01
			0'			1" Ice	0.62	0.62	0.02
2.4" Dia. x 2-ft	B	From Leg	4.00	0.00	158'	No Ice	0.35	0.35	0.01
			0'			1/2" Ice	0.48	0.48	0.01
			0'			1" Ice	0.62	0.62	0.02
2.4" Dia. x 2-ft	C	From Leg	4.00	0.00	158'	No Ice	0.35	0.35	0.01
			0'			1/2" Ice	0.48	0.48	0.01
			0'			1" Ice	0.62	0.62	0.02
Sector Mount [SM 502-3]	C	None		0.00	158'	No Ice	29.82	29.82	1.67
						1/2" Ice	42.21	42.21	2.27
						1" Ice	54.43	54.43	3.05
*****									
*****									
GPS_A	B	From Leg	4.00	0.00	40'	No Ice	0.12	0.12	0.00
			0'			1/2" Ice	0.21	0.21	0.00
			0'			1" Ice	0.28	0.28	0.01
Side Arm Mount [SO 306-1]	B	From Leg	2.00	0.00	40'	No Ice	0.41	2.26	0.04
			0'			1/2" Ice	0.81	3.83	0.06
			0'			1" Ice	1.23	5.48	0.09
***									
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***									

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
VHLP2-18	B	Paraboloid w/Shroud (HP)	From Leg	4.00 -6' 0'	6.00		168'	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.03 0.05 0.07
A-ANT-18G-2-C	C	Paraboloid w/Shroud (HP)	From Leg	4.00 6' 0'	73.00		168'	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.03 0.05 0.07
*****											

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
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice

Comb. No.	Description
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
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 °
T1	185 - 180	3.82	46	0.19	0.04
T2	180 - 160	3.62	46	0.19	0.04
T3	160 - 140	2.83	46	0.18	0.04
T4	140 - 120	2.11	46	0.15	0.03
T5	120 - 100	1.50	46	0.12	0.03
T6	100 - 80	1.02	46	0.10	0.02
T7	80 - 60	0.63	46	0.08	0.01
T8	60 - 40	0.35	46	0.05	0.01
T9	40 - 20	0.16	46	0.03	0.01
T10	20 - 0	0.04	40	0.02	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
186'	AIR 32 B2A/B66AA w/ Mount Pipe	46	3.82	0.19	0.04	197084
177'	(2) DB846F65ZAXY w/ Mount Pipe	46	3.50	0.19	0.04	297849
168'	VHLP2-18	46	3.14	0.18	0.04	121457
158'	OPA65R-BU6D w/ Mount Pipe	46	2.75	0.17	0.04	52811
40'	GPS_A	46	0.16	0.03	0.01	68300

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	185 - 180	14.32	16	0.71	0.17
T2	180 - 160	13.57	16	0.70	0.17
T3	160 - 140	10.59	16	0.66	0.15

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T4	140 - 120	7.89	16	0.57	0.12
T5	120 - 100	5.62	16	0.47	0.10
T6	100 - 80	3.80	16	0.38	0.07
T7	80 - 60	2.37	16	0.29	0.05
T8	60 - 40	1.31	16	0.20	0.04
T9	40 - 20	0.58	16	0.13	0.03
T10	20 - 0	0.14	4	0.06	0.01

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
186'	AIR 32 B2A/B66AA w/ Mount Pipe	16	14.32	0.71	0.17	52398
177'	(2) DB846F65ZAXY w/ Mount Pipe	16	13.12	0.70	0.17	79436
168'	VHLP2-18	16	11.77	0.68	0.16	32344
158'	OPA65R-BU6D w/ Mount Pipe	16	10.31	0.65	0.15	14001
40'	GPS_A	16	0.58	0.13	0.03	18274

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	185	Leg	A325X	0.75	4	0.25	30.10	0.008	1.05	Bolt Tension
		Diagonal	A325X	0.50	1	1.22	9.26	0.132	1.05	Gusset Bearing
		Top Girt	A325X	0.50	1	0.43	9.26	0.046	1.05	Gusset Bearing
T2	180	Leg	A325X	0.75	4	3.44	30.10	0.114	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	2.74	15.08	0.182	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	2.24	13.92	0.161	1.05	Gusset Bearing
T3	160	Leg	A325X	0.88	4	12.30	41.56	0.296	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	3.20	15.08	0.212	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	2.87	13.92	0.206	1.05	Gusset Bearing
T4	140	Leg	A325X	1.00	4	20.69	54.52	0.380	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	2.99	15.08	0.199	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	3.08	13.92	0.221	1.05	Gusset Bearing
T5	120	Leg	A325X	1.00	4	26.88	54.52	0.493	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	3.58	15.08	0.238	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	3.21	13.92	0.231	1.05	Gusset Bearing
T6	100	Leg	A325X	1.00	6	22.22	54.52	0.408	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	3.19	15.08	0.212	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	3.18	13.92	0.228	1.05	Gusset Bearing
T7	80	Leg	A325X	1.00	6	26.04	54.52	0.478	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	3.31	15.08	0.220	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	3.59	13.92	0.258	1.05	Gusset Bearing
T8	60	Leg	A325X	1.00	6	29.73	54.52	0.545	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	3.38	15.08	0.224	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	3.91	13.92	0.281	1.05	Gusset Bearing
T9	40	Leg	A325X	1.00	8	24.87	54.52	0.456	1.05	Bolt Tension
		Diagonal	A325X	0.63	3	3.30	15.08	0.219	1.05	Gusset Bearing
		Horizontal	A325X	0.63	2	4.04	13.92	0.290	1.05	Gusset Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T10	20	Diagonal	A325X	0.75	3	5.44	24.85	0.219	1.05	Bolt Shear
		Horizontal	A325X	0.75	2	4.39	24.85	0.177	1.05	Bolt Shear
		Redund Horz 1 Bracing	A325X	0.63	1	4.16	11.23	0.371	1.05	Member Bearing
		Redund Diag 1 Bracing	A325X	0.63	1	3.80	15.66	0.243	1.05	Gusset Bearing
		Redund Hip 1 Bracing	A325X	0.63	1	0.03	17.26	0.002	1.05	Bolt Shear
		Redund Hip Diagonal 1 Bracing	A325X	0.63	1	0.06	15.66	0.004	1.05	Gusset Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	ROHN 2.5 STD	5'	5'	63.3 K=1.00	1.70	-3.03	38.59	0.078 [1]
T2	180 - 160	ROHN 2.5 STD	20'	6'8-1/32"	84.4 K=1.00	1.70	-22.35	45.53	0.491 [1]
T3	160 - 140	ROHN 3 X-STR	20'15/32"	6'8-5/32"	70.5 K=1.00	3.02	-62.30	94.34	0.660 [1]
T4	140 - 120	ROHN 4 X-STR	20'15/32"	6'8-5/32"	54.3 K=1.00	4.41	-97.95	159.90	0.613 [1]
T5	120 - 100	ROHN 5 EH	20'15/32"	10'1/4"	65.4 K=1.00	6.11	-124.78	201.19	0.620 [1]
T6	100 - 80	ROHN 5 EH	20'23/32"	10'3/8"	65.4 K=1.00	6.11	-153.15	201.11	0.761 [1]
T7	80 - 60	ROHN 6 EHS	20'19/32"	10'3/8"	54.1 K=1.00	6.71	-178.97	243.97	0.734 [1]
T8	60 - 40	ROHN 6 X-STR	20'19/32"	10'3/8"	54.8 K=1.00	8.40	-204.59	303.62	0.674 [1]
T9	40 - 20	ROHN 6 X-STR	20'23/32"	10'3/8"	54.8 K=1.00	8.40	-229.01	303.58	0.754 [1]
T10	20 - 0	ROHN 8 EHS	20'19/32"	10'3/8"	41.2 K=1.00	9.72	-239.81	386.31	0.621 [1]

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L2x2x1/4	9'10-5/16"	4'8-1/32"	143.2 K=1.00	0.94	-1.45	13.09	0.111 [1]
T2	180 - 160	ROHN 2 STD	7'11-1/32"	7'8-13/32"	117.3 K=1.00	1.07	-8.29	17.64	0.470 [1]
T3	160 - 140	ROHN 2 STD	8'3-23/32"	8'31/32"	123.2 K=1.00	1.07	-9.68	15.99	0.605 [1]
T4	140 - 120	ROHN 2 STD	9'2-17/32"	8'11-9/32"	136.3 K=1.00	1.07	-8.96	13.07	0.686 [1]
T5	120 - 100	ROHN 2.5 STD	12'5-7/8"	12'1-3/16"	153.3 K=1.00	1.70	-10.81	16.38	0.660 [1]
T6	100 - 80	ROHN 2.5 STD	13'3-23/32"	12'11-17/32"	164.1 K=1.00	1.70	-9.75	14.30	0.682 [1]
T7	80 - 60	ROHN 2.5 STD	14'1-29/32"	13'9-1/4"	174.4 K=1.00	1.70	-10.24	12.65	0.810 [1]
T8	60 - 40	ROHN 2.5 X-STR	15'27/32"	14'8-13/32"	190.9 K=1.00	2.25	-10.57	13.96	0.757 [1]
T9	40 - 20	ROHN 3 STD	16'31/32"	15'8-3/4"	162.2 K=1.00	2.23	-10.42	19.13	0.545 [1]
T10	20 - 0	ROHN 3 STD	24'3-31/32"	12'2-1/32"	125.5 K=1.00	2.23	-16.32	31.98	0.510 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	ROHN 1.5 STD	8'6-3/8"	4'1-11/16"	79.9 K=1.00	0.80	-4.41	22.56	0.196 [1]
T3	160 - 140	ROHN 1.5 STD	9'11-5/32"	4'9-27/32"	92.9 K=1.00	0.80	-5.66	19.14	0.296 [1]
T4	140 - 120	ROHN 2 STD	12'1/8"	5'9-27/32"	88.7 K=1.00	1.07	-6.10	27.20	0.224 [1]
T5	120 - 100	ROHN 2 STD	13'9-31/32"	6'8-5/32"	101.9 K=1.00	1.07	-6.38	22.63	0.282 [1]
T6	100 - 80	ROHN 2 STD	16'3"	7'10-11/16"	120.3 K=1.00	1.07	-6.29	16.76	0.375 [1]
T7	80 - 60	ROHN 2.5 STD	18'9-15/32"	9'1-7/16"	115.5 K=1.00	1.70	-7.04	28.85	0.244 [1]
T8	60 - 40	ROHN 2.5 STD	21'3-15/32"	10'4-7/16"	131.3 K=1.00	1.70	-7.59	22.32	0.340 [1]
T9	40 - 20	ROHN 2.5 STD	23'10-5/16"	11'7-13/16"	147.6 K=1.00	1.70	-7.76	17.67	0.439 [1]
T10	20 - 0	ROHN 3 STD	25'2-5/32"	12'2-3/4"	126.1 K=1.00	2.23	-8.62	31.65	0.272 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L2x2x1/4	8'6"	8'1/8"	245.8 K=1.00	0.94	-0.28	4.44	0.064 [1]
		KL/R > 200 (C) - 4							

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	ROHN 1.5 TUBE (11ga)	6'3-15/32"	5'11-5/32"	145.4 K=1.00	0.52	-4.16	5.56	0.749 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	2L2x2x1/4x1/4	11'6"	10'5-3/4''	209.1 K=1.00	1.88	-3.80	12.19	0.312 [1]
		2L 'a' > 60.60 in - 281							

[1] P_u / ϕP_n controls

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	ROHN 1.5 TUBE (11ga)	6'3-15/32"	6'3-15/32"	154.2 K=1.00	0.52	-0.03	4.94	0.006 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	ROHN 2.5 STD	15'27/32"	15'27/32"	190.9 K=1.00	1.70	-0.07	10.56	0.006 [1]

[1] $P_u / \phi P_n$ controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x1/8	4'3-1/8"	4'3-1/8"	128.7 K=1.00	0.48	-0.01	8.37	0.001 [1]
T3	160 - 140	L2x2x1/8	4'7-7/16"	4'7-7/16"	139.4 K=1.00	0.48	-0.01	7.13	0.001 [1]
T4	140 - 120	L2x2x1/8	6'1/8"	6'1/8"	181.3 K=1.00	0.48	-0.01	4.22	0.002 [1]
T5	120 - 100	L2x2x1/8	6'11-1/32"	6'11-1/32"	208.8 K=1.00	0.48	-0.01	3.18	0.002 [1]
T6	100 - 80	L2 1/2x2 1/2x3/16	8'1-9/16"	8'1-9/16"	197.0 K=1.00	0.90	-0.01	6.65	0.001 [1]
T7	80 - 60	L3x3x3/16	9'4-13/16"	9'4-13/16"	189.2 K=1.00	1.09	-0.01	8.72	0.001 [1]
T8	60 - 40	L3 1/2x3 1/2x1/4	10'7-13/16"	10'7-13/16"	184.1 K=1.00	1.69	-0.01	14.28	0.001 [1]
T9	40 - 20	L3 1/2x3 1/2x1/4	11'11-5/32"	11'11-5/32"	206.3 K=1.00	1.69	-0.01	11.37	0.001 [1]
T10	20 - 0	ROHN 3 STD	12'7-3/32"	12'7-3/32"	129.8 K=1.00	2.23	-0.01	29.87	0.000 [1]

[1] $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	ROHN 2.5 STD	5'	5'	63.3	1.70	0.98	46.01	0.021 [1]
T2	180 - 160	ROHN 2.5 STD	20'	6'8-1/32"	84.4	1.70	13.74	76.68	0.179 [1]
T3	160 - 140	ROHN 3 X-STR	20'15/32"	6'8-5/32"	70.5	3.02	49.19	135.72	0.362 [1]
T4	140 - 120	ROHN 4 X-STR	20'15/32"	6'8-5/32"	54.3	4.41	82.77	198.34	0.417 [1]
T5	120 - 100	ROHN 5 EH	20'15/32"	10'1/4"	65.4	6.11	107.53	275.04	0.391 [1]
T6	100 - 80	ROHN 5 EH	20'23/32"	10'3/8"	65.4	6.11	133.30	275.04	0.485 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	80 - 60	ROHN 6 EHS	20'19/32"	10'3/8"	54.1	6.71	156.23	302.10	0.517 [1]
T8	60 - 40	ROHN 6 X-STR	20'19/32"	10'3/8"	54.8	8.40	178.38	378.22	0.472 [1]
T9	40 - 20	ROHN 6 X-STR	20'23/32"	10'3/8"	54.8	8.40	198.96	378.22	0.526 [1]
T10	20 - 0	ROHN 8 EHS	20'19/32"	10'3/8"	41.2	9.72	207.06	437.37	0.473 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L2x2x1/4	9'10-5/16"	4'8-1/32"	94.4	0.59	1.22	28.58	0.043 [1]
T2	180 - 160	ROHN 2 STD	7'11-1/32"	7'8-13/32"	117.3	1.07	8.22	48.35	0.170 [1]
T3	160 - 140	ROHN 2 STD	8'3-23/32"	8'31/32"	123.2	1.07	9.60	48.35	0.199 [1]
T4	140 - 120	ROHN 2 STD	8'9"	8'5-3/4"	129.2	1.07	8.98	48.35	0.186 [1]
T5	120 - 100	ROHN 2.5 STD	12'1-29/32"	11'9-3/8"	149.2	1.70	10.75	76.68	0.140 [1]
T6	100 - 80	ROHN 2.5 STD	12'10-11/16"	12'6-15/32"	158.8	1.70	9.58	76.68	0.125 [1]
T7	80 - 60	ROHN 2.5 STD	14'1-29/32"	13'9-1/4"	174.4	1.70	9.94	76.68	0.130 [1]
T8	60 - 40	ROHN 2.5 X-STR	15'27/32"	14'8-13/32"	190.9	2.25	10.13	101.41	0.100 [1]
T9	40 - 20	ROHN 3 STD	16'31/32"	15'8-3/4"	162.2	2.23	9.91	100.28	0.099 [1]
T10	20 - 0	ROHN 3 STD	24'3-31/32"	12'2-1/32"	125.5	2.23	15.51	100.28	0.155 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	ROHN 1.5 STD	8'6-3/8"	4'1-11/16"	79.9	0.80	4.48	35.98	0.124 [1]
T3	160 - 140	ROHN 1.5 STD	9'2-7/8"	4'5-5/8"	86.2	0.80	5.74	35.98	0.160 [1]
T4	140 - 120	ROHN 2 STD	12'1/8"	5'9-27/32"	88.7	1.07	6.15	48.35	0.127 [1]
T5	120 - 100	ROHN 2 STD	13'9-31/32"	6'8-5/32"	101.9	1.07	6.42	48.35	0.133 [1]
T6	100 - 80	ROHN 2 STD	16'3"	7'10-11/	120.3	1.07	6.36	48.35	0.132 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	80 - 60	ROHN 2.5 STD	18'9-15/32"	16" 9'1-7/16"	115.5	1.70	7.17	76.68	0.094 [1]
T8	60 - 40	ROHN 2.5 STD	21'3-15/32"	10'4-7/16"	131.3	1.70	7.81	76.68	0.102 [1]
T9	40 - 20	ROHN 2.5 STD	23'10-5/16"	11'7-13/16"	147.6	1.70	8.08	76.68	0.105 [1]
T10	20 - 0	ROHN 3 STD	25'2-5/32"	12'2-3/4"	126.1	2.23	8.78	100.28	0.088 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L2x2x1/4	8'6"	8'1/8"	162.8	0.59	0.43	28.58	0.015 [1]

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	ROHN 1.5 TUBE (11ga)	6'3-15/32"	5'11-5/32"	145.4	0.52	4.16	23.41	0.178 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	2L2x2x1/4x1/4 2L 'a' > 60.60 in - 287	11'6"	10'5-3/4"	212.3	1.13	3.80	54.84	0.069 [1]

[1] P_u / ϕP_n controls

Redundant Hip (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	ROHN 1.5 TUBE (11ga)	6'3-15/32"	6'3-15/32"	154.2	0.52	0.02	23.41	0.001 [1]

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	ROHN 2.5 STD	15'27/32"	15'27/32"	190.9	1.70	0.06	76.68	0.001 [1]

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x1/8	4'3-1/8"	4'3-1/8"	81.7	0.48	0.01	15.69	0.000 [1]
T3	160 - 140	L2x2x1/8	4'3-1/4"	4'3-1/4"	81.8	0.48	0.01	15.69	0.000 [1]
T4	140 - 120	L2x2x1/8	5'3-23/32"	5'3-23/32"	101.8	0.48	0.00	15.69	0.000 [1]
T5	120 - 100	L2x2x1/8	6'4-3/16"	6'4-3/16"	121.8	0.48	0.00	15.69	0.000 [1]
T6	100 - 80	L2 1/2x2 1/2x3/16	7'5-3/4"	7'5-3/4"	115.3	0.90	0.00	29.24	0.000 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

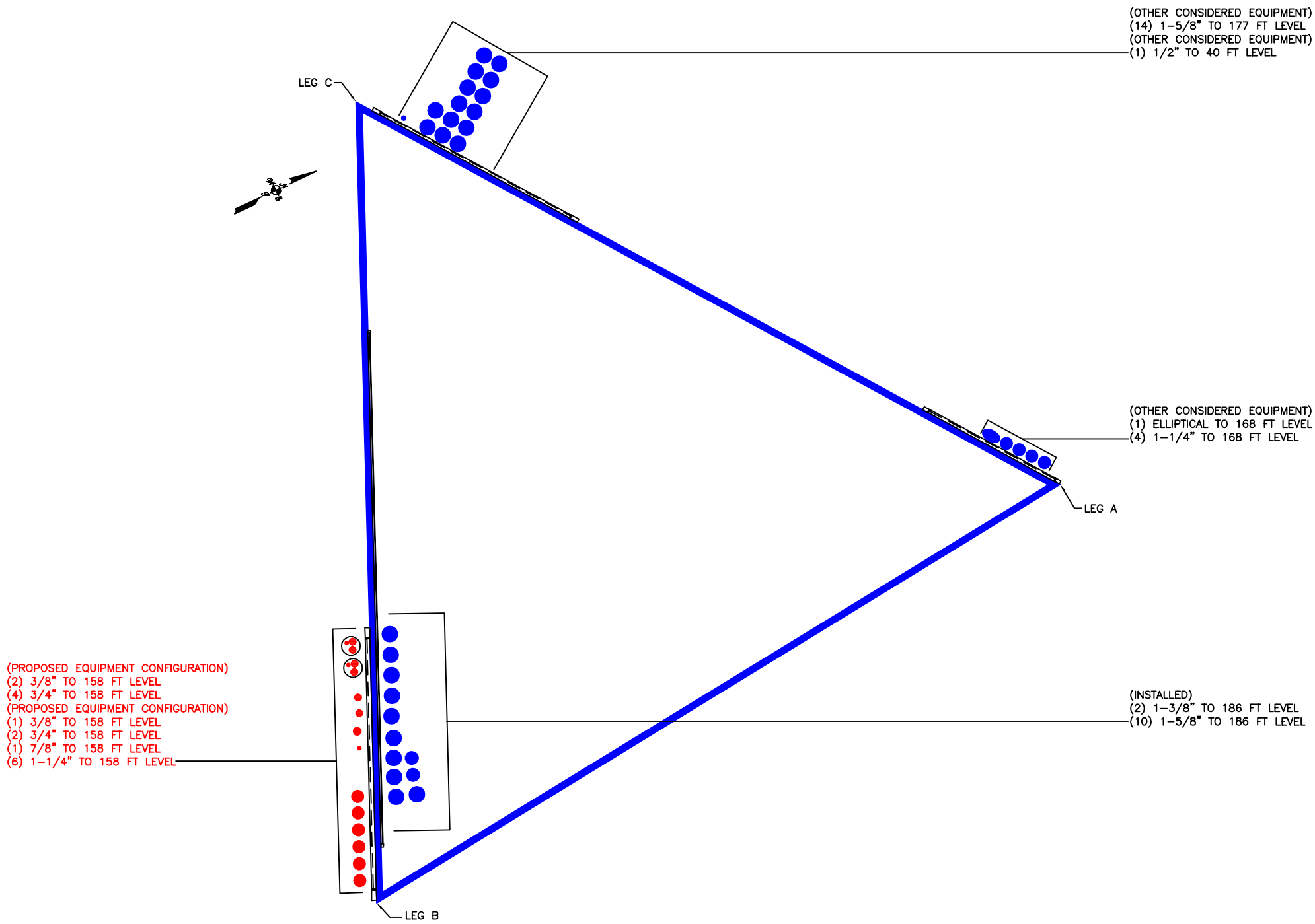
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	185 - 180	Leg	ROHN 2.5 STD	2	-3.03	40.52	7.5	Pass
T2	180 - 160	Leg	ROHN 2.5 STD	15	-22.35	47.80	46.7	Pass
T3	160 - 140	Leg	ROHN 3 X-STR	54	-62.30	99.05	62.9	Pass
T4	140 - 120	Leg	ROHN 4 X-STR	93	-97.95	167.90	58.3	Pass
T5	120 - 100	Leg	ROHN 5 EH	132	-124.78	211.25	59.1	Pass
T6	100 - 80	Leg	ROHN 5 EH	159	-153.15	211.17	72.5	Pass
T7	80 - 60	Leg	ROHN 6 EHS	186	-178.97	256.16	69.9	Pass
T8	60 - 40	Leg	ROHN 6 X-STR	213	-204.59	318.80	64.2	Pass
T9	40 - 20	Leg	ROHN 6 X-STR	240	-229.01	318.76	71.8	Pass
T10	20 - 0	Leg	ROHN 8 EHS	267	-239.81	405.62	59.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP$_{allow}$ K	% Capacity	Pass Fail
T1	185 - 180	Diagonal	L2x2x1/4	10	-1.45	13.74	10.6	Pass
T2	180 - 160	Diagonal	ROHN 2 STD	21	-8.29	18.52	44.8	Pass
T3	160 - 140	Diagonal	ROHN 2 STD	72	-9.68	16.79	57.7	Pass
T4	140 - 120	Diagonal	ROHN 2 STD	99	-8.96	13.72	65.3	Pass
T5	120 - 100	Diagonal	ROHN 2.5 STD	138	-10.81	17.20	62.9	Pass
T6	100 - 80	Diagonal	ROHN 2.5 STD	165	-9.75	15.01	64.9	Pass
T7	80 - 60	Diagonal	ROHN 2.5 STD	192	-10.24	13.29	77.1	Pass
T8	60 - 40	Diagonal	ROHN 2.5 X-STR	219	-10.57	14.66	72.1	Pass
T9	40 - 20	Diagonal	ROHN 3 STD	246	-10.42	20.09	51.9	Pass
T10	20 - 0	Diagonal	ROHN 3 STD	279	-16.32	33.58	48.6	Pass
T2	180 - 160	Horizontal	ROHN 1.5 STD	19	-4.41	23.69	18.6	Pass
T3	160 - 140	Horizontal	ROHN 1.5 STD	58	-5.66	20.10	28.2	Pass
T4	140 - 120	Horizontal	ROHN 2 STD	97	-6.10	28.55	21.4	Pass
T5	120 - 100	Horizontal	ROHN 2 STD	136	-6.38	23.76	26.8	Pass
T6	100 - 80	Horizontal	ROHN 2 STD	163	-6.29	17.60	35.7	Pass
T7	80 - 60	Horizontal	ROHN 2.5 STD	190	-7.04	30.29	23.3	Pass
T8	60 - 40	Horizontal	ROHN 2.5 STD	217	-7.59	23.43	32.4	Pass
T9	40 - 20	Horizontal	ROHN 2.5 STD	244	-7.76	18.55	41.8	Pass
T10	20 - 0	Horizontal	ROHN 3 STD	275	-8.62	33.23	25.9	Pass
T1	185 - 180	Top Girt	L2x2x1/4	4	-0.28	4.66	6.1	Pass
T10	20 - 0	Redund Horz 1 Bracing	ROHN 1.5 TUBE (11ga)	280	-4.16	5.84	71.3	Pass
T10	20 - 0	Redund Diag 1 Bracing	2L2x2x1/4x1/4	281	-3.80	12.80	29.7	Pass
T10	20 - 0	Redund Hip 1 Bracing	ROHN 1.5 TUBE (11ga)	282	-0.03	5.19	0.5	Pass
T10	20 - 0	Redund Hip Diagonal 1 Bracing	ROHN 2.5 STD	283	-0.07	11.09	0.6	Pass
T2	180 - 160	Inner Bracing	L2x2x1/8	27	-0.00	8.79	0.3	Pass
T3	160 - 140	Inner Bracing	L2x2x1/8	66	-0.01	6.48	0.3	Pass
T4	140 - 120	Inner Bracing	L2x2x1/8	105	-0.01	4.43	0.4	Pass
T5	120 - 100	Inner Bracing	L2x2x1/8	144	-0.01	3.34	0.4	Pass
T6	100 - 80	Inner Bracing	L2 1/2x2 1/2x3/16	171	-0.01	6.99	0.4	Pass
T7	80 - 60	Inner Bracing	L3x3x3/16	198	-0.01	9.15	0.4	Pass
T8	60 - 40	Inner Bracing	L3 1/2x3 1/2x1/4	225	-0.01	14.99	0.3	Pass
T9	40 - 20	Inner Bracing	L3 1/2x3 1/2x1/4	252	-0.01	11.94	0.3	Pass
T10	20 - 0	Inner Bracing	ROHN 3 STD	297	-0.01	31.36	0.3	Pass
							Summary	
						Leg (T6)	72.5	Pass
						Diagonal (T7)	77.1	Pass
						Horizontal (T9)	41.8	Pass
						Top Girt (T1)	6.1	Pass
						Redund Horz 1 Bracing (T10)	71.3	Pass
						Redund Diag 1 Bracing (T10)	29.7	Pass
						Redund Hip 1 Bracing (T10)	0.5	Pass
						Redund Hip Diagonal 1 Bracing (T10)	0.6	Pass
						Inner	0.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Bracing (T5)		
						Bolt Checks	51.9	Pass
						RATING =	**77.1**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(14) 1-5/8" TO 177 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 40 FT LEVEL
LEG C
(OTHER CONSIDERED EQUIPMENT)
(1) ELLIPTICAL TO 168 FT LEVEL
(4) 1-1/4" TO 168 FT LEVEL
LEG A
(PROPOSED EQUIPMENT CONFIGURATION)
(2) 3/8" TO 158 FT LEVEL
(4) 3/4" TO 158 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 3/8" TO 158 FT LEVEL
(2) 3/4" TO 158 FT LEVEL
(1) 7/8" TO 158 FT LEVEL
(6) 1-1/4" TO 158 FT LEVEL
(INSTALLED)
(2) 1-3/8" TO 186 FT LEVEL
(10) 1-5/8" TO 186 FT LEVEL
LEG B

APPENDIX C

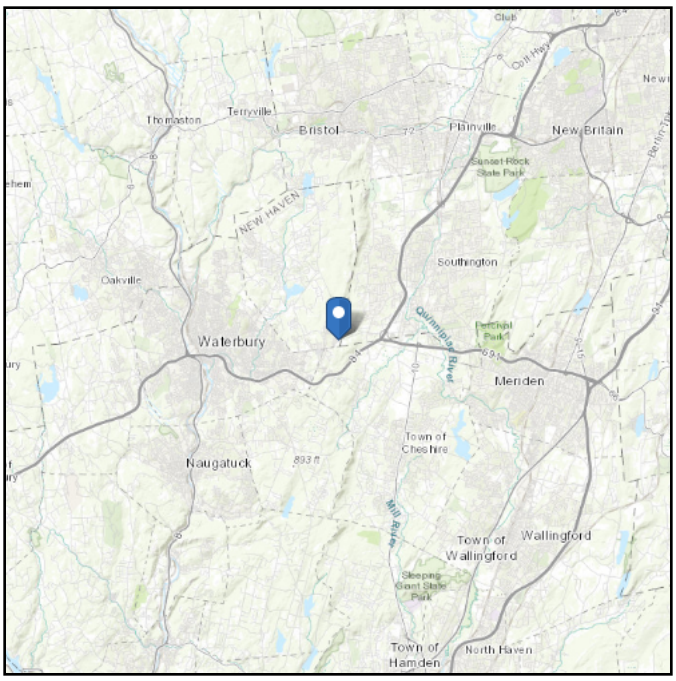
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 745.17 ft (NAVD 88)
Latitude: 41.559558
Longitude: -72.946972



Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Wind Speed updated per local jurisdiction requirements

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Feb 14 2022

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

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

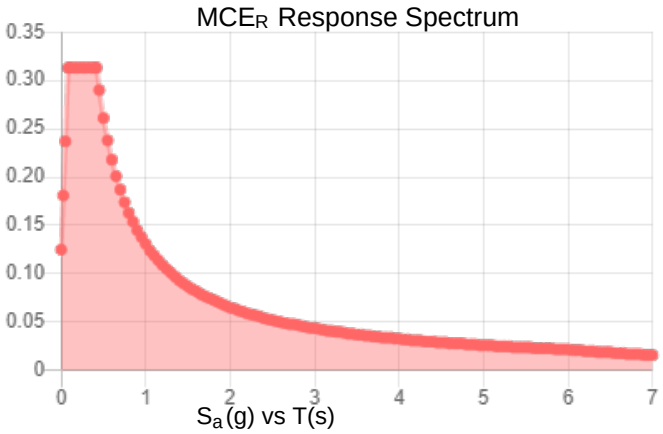
Seismic

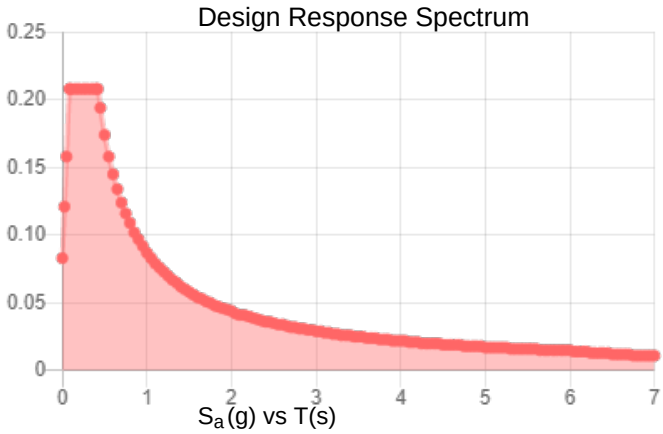
Site Soil Class: D - Default (see Section 11.4.3)

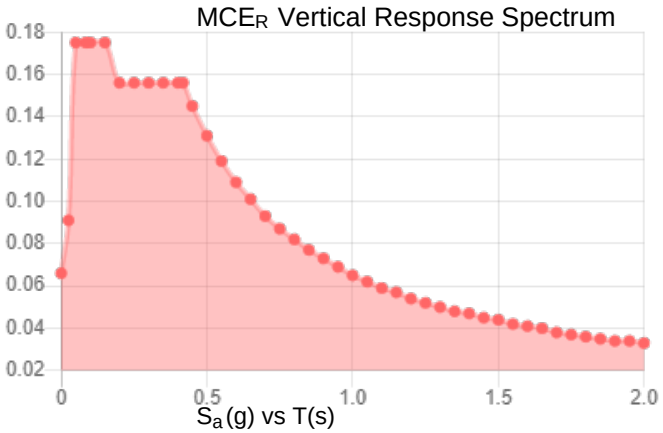
Results:

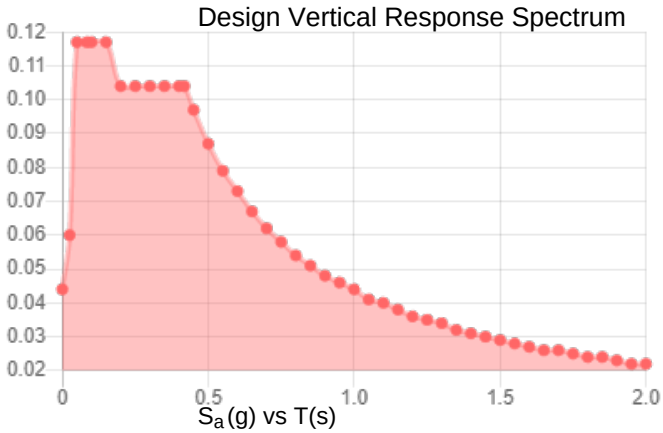
S_S :	0.195	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.108
F_v :	2.4	PGA_M :	0.171
S_{MS} :	0.313	F_{PGA} :	1.585
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.208	C_v :	0.7

Seismic Design Category B









Data Accessed: **Mon Feb 14 2022**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Feb 14 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Self Support Anchor Rod Capacity

Site Info	
BU #	806362
Site Name	NHV 108 943133
Order #	632627 Rev. 0

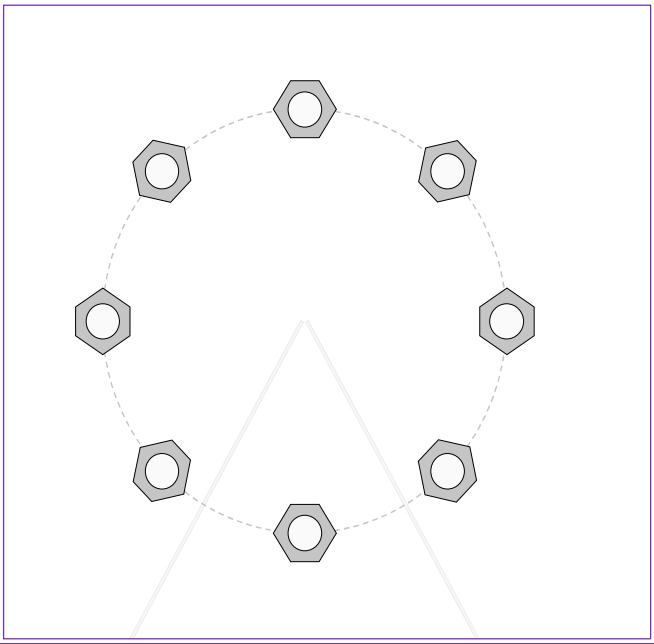
Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	1.5

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	263.00	227.00
Shear Force (kips)	32.00	29.00

*TIA-222-H Section 15.5 Applied

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.000
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	0.000

*Anchor Rod Eccentricity Applied



Connection Properties

Anchor Rod Data

(8) 1" ø bolts (A449 N; Fy=92 ksi, Fu=120 ksi)

l_{ar} *(in):* 1.5

Analysis Results

Anchor Rod Summary		(units of kips, kip-in)
Pu_t = 28.38	ϕPn_t = 54.54	Stress Rating
Vu = 3.63	ϕVn = 35.34	49.5%
Mu = n/a	ϕMn = n/a	Pass

Pier and Pad Foundation

BU # :	806362
Site Name:	NHV 108 943133
App. Number:	632627 Rev. 0

TIA-222 Revision:	H
Tower Type:	Self Support

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

Superstructure Analysis Reactions

Compression, P_{comp}:	263	kips
Compression Shear, Vu_comp:	32	kips
Uplift, P_{uplift}:	227	kips
Uplift Shear, V_{u_uplift}:	29	kips
Tower Height, **H**:	185	ft
Base Face Width, **BW**:	27.6770833	ft
BP Dist. Above Fdn, bp_{dist}:	2.5	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	3	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	10	
Pier Rebar Quantity, **mc**:	16	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	13	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	12.5	ft
Pad Width, W_1:	8.75	ft
Pad Thickness, **T**:	2	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	7	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	10	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	139	pcf
Ultimate Gross Bearing, Qult:	24.000	ksf
Cohesion, **Cu**:	7.000	ksf
Friction Angle, φ:		degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.4	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Uplift (kips)	947.08	227.00	**22.8%**	**Pass**
Lateral (Sliding) (kips)	446.17	29.00	**6.2%**	**Pass**
Bearing Pressure (ksf)	18.00	5.58	**29.5%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	1155.92	352.00	**29.0%**	**Pass**
*Pier Flexure (Tension) (kip*ft)*	914.52	319.00	**33.2%**	**Pass**
Pier Compression (kip)	2325.54	280.82	**11.5%**	**Pass**
*Pad Flexure (kip*ft)*	513.41	125.18	**23.2%**	**Pass**
Pad Shear - 1-way (kips)	169.84	37.39	**21.0%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.056	**32.5%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	1026.82	211.20	**19.6%**	**Pass**
Pad Shear - 2-way (Uplift) (ksi)	0.164	0.087	**50.2%**	**Pass**
*Flexural 2-way (Tension) (kip*ft)*	1026.82	191.40	**17.8%**	**Pass**

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

Structural Rating*:	**50.2%**
Soil Rating*:	**29.5%**

AT&T

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AT&T SITE NUMBER: CTL01060
AT&T SITE NAME: WOLCOTT-EAST ST
AT&T FA CODE: 10035040
AT&T PACE NUMBER: MRCTB056377, MRCTB053929, MRCTB053828, MRCTB056180
AT&T PROJECT: 5G NR RADIO || 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO || 5G NR ACTIVATION

BUSINESS UNIT #: 806362
SITE ADDRESS: 347 EAST ST. WOLCOTT, CT 06716
COUNTY: NEW HAVEN
STRUCTURE TYPE: SELF SUPPORT
TOWER HEIGHT: 185'-0"

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	NHV 108 943133
SITE ADDRESS:	347 EAST ST. WOLCOTT, CT 06716
COUNTY:	NEW HAVEN
PARCEL #:	131-1-19
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 33' 34.41" (41.559556)
LONGITUDE:	-72° 56' 49.10" (-72.946972)
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	671' (AMSL)
CURRENT ZONING:	R-30
JURISDICTION:	TOWN OF WOLCOTT
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	RODRIGUES AGOSTINHO V & JOANNE 347 EAST ST WOLCOTT, CT 06716
TOWER OWNER:	CROWN CASTLE USA INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T MOBILITY 700 BELL STREET AKRON, OHIO 44307
ELECTRIC PROVIDER:	EVERSOURCE ENERGY (800) 286-2000
TELCO PROVIDER:	LIGHTOWER (855) 933-4237

DRAWING INDEX

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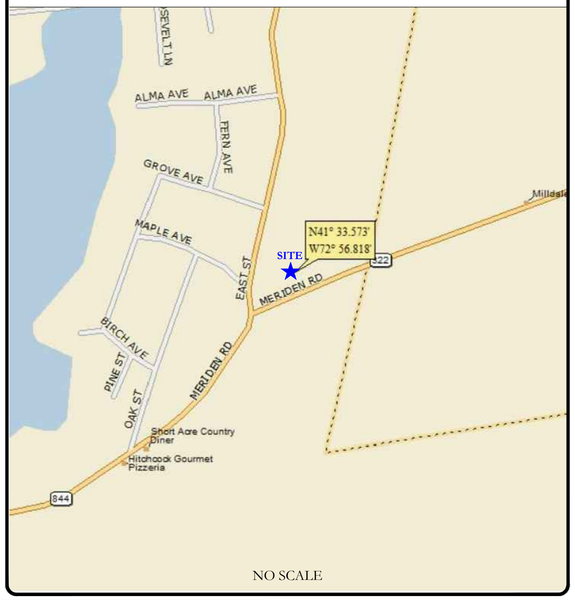
C-1.2	EQUIPMENT LAYOUT
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	EQUIPMENT DETAILS
C-4	EQUIPMENT DETAILS
C-5	COLOR CODE CHART
C-6	LTE RET NAMING CONVENTION
E-1	ELECTRICAL NOTES
E-2	EQUIPMENT ONE-LINE DIAGRAM
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAMS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22x34. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

LOCATION MAP



NO SCALE

SITE PHOTO

PROJECT TEAM

A&E FIRM:	TOWER ENGINEERING PROFESSIONALS 326 TRYON ROAD RALEIGH, NC 27603
	JOSEPH T. CRESS - PROJECT MANAGER (919) 661-6351
	SCOTT C. BRANTLEY - CIVIL ENGINEER (704) 975-3328
	SCOTT C. BRANTLEY - ELECTRICAL ENGINEER (704) 975-3328
CROWN CASTLE USA INC. DISTRICT CONTACTS:	12 GILL STREET, SUITE 5800 WOBURN, MA 01801
	PAUL PEDICONE - PROJECT MANAGER PAUL.PEDICONE@CROWNCASTLE.COM

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

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:
- REMOVE (3) 7770 ANTENNAS
- REMOVE (2) QS66512-2 ANTENNAS
- REMOVE (1) TPA-65R-LCUUUU-H8 ANTENNA
- REMOVE (2) OPA65R-BU6DA-K ANTENNAS
- REMOVE (1) OPA65R-BU8DA-K ANTENNA
- REMOVE (1) DC6-48-60-18-8F
- REMOVE (3) DTMABP7819VG12A TMAS
- REMOVE (6) CM1007-DBPXBC-003 DIPLEXERS
- REMOVE (6) DBC0061F1V51-2 DIPLEXERS
- REMOVE (6) LDF6-50A COAX CABLES
- INSTALL (3) AIR6449 B77D ANTENNAS
- INSTALL (3) AIR6419 B77G ANTENNAS
- INSTALL (2) QD6616-7 ANTENNAS
- INSTALL (1) QD8616-7 ANTENNAS
- INSTALL (6) APTDC-BDFDM-DB SURGE ARRESTORS TO PORTS OF EXISTING RRUS E2 B29S
- INSTALL (1) DC9-48-60-24-8C-EV
- INSTALL (1) PWRT-606-S (6AWG)
- INSTALL (1) FB-L98B-235 (24-PAIR)
- INSTALL (3) Y-CABLES TO EXISTING DUAL-BAND RRUS

GROUND SCOPE OF WORK:
- INSTALL (4) RECTIFIERS IN EMERSON SHELF
- INSTALL 6648(+XCEDE)
- INSTALL GPS SPLITTER FOR BBU CONFIGURATION

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CONNECTICUT BUILDING CODE/2015 IBC
MECHANICAL	2018 CONNECTICUT BUILDING CODE/2015 IMC
ELECTRICAL	2018 CONNECTICUT BUILDING CODE/2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	TOWER ENGINEERING PROFESSIONALS
DATED:	09/30/2022
MOUNT ANALYSIS:	B+T GROUP
DATED:	09/22/2022
RFDS REVISION:	3.00
DATED:	08/11/2022
ORDER ID:	632627
REVISION:	0

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

AT&T
700 BELL STREET
AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
35536
LICENSED
PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: T-1
REVISION: 1

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

GREENFIELD GROUNDING NOTES:

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

ELECTRICAL INSTALLATION NOTES:

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

CONDUCTOR COLOR CODE

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

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

APWA UNIFORM COLOR CODE:

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

ABBREVIATIONS:

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

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CROWN CASTLE
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WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT SCOTT C. BRANTLEY 35536 LICENSED PROFESSIONAL ENGINEER

10/14/22

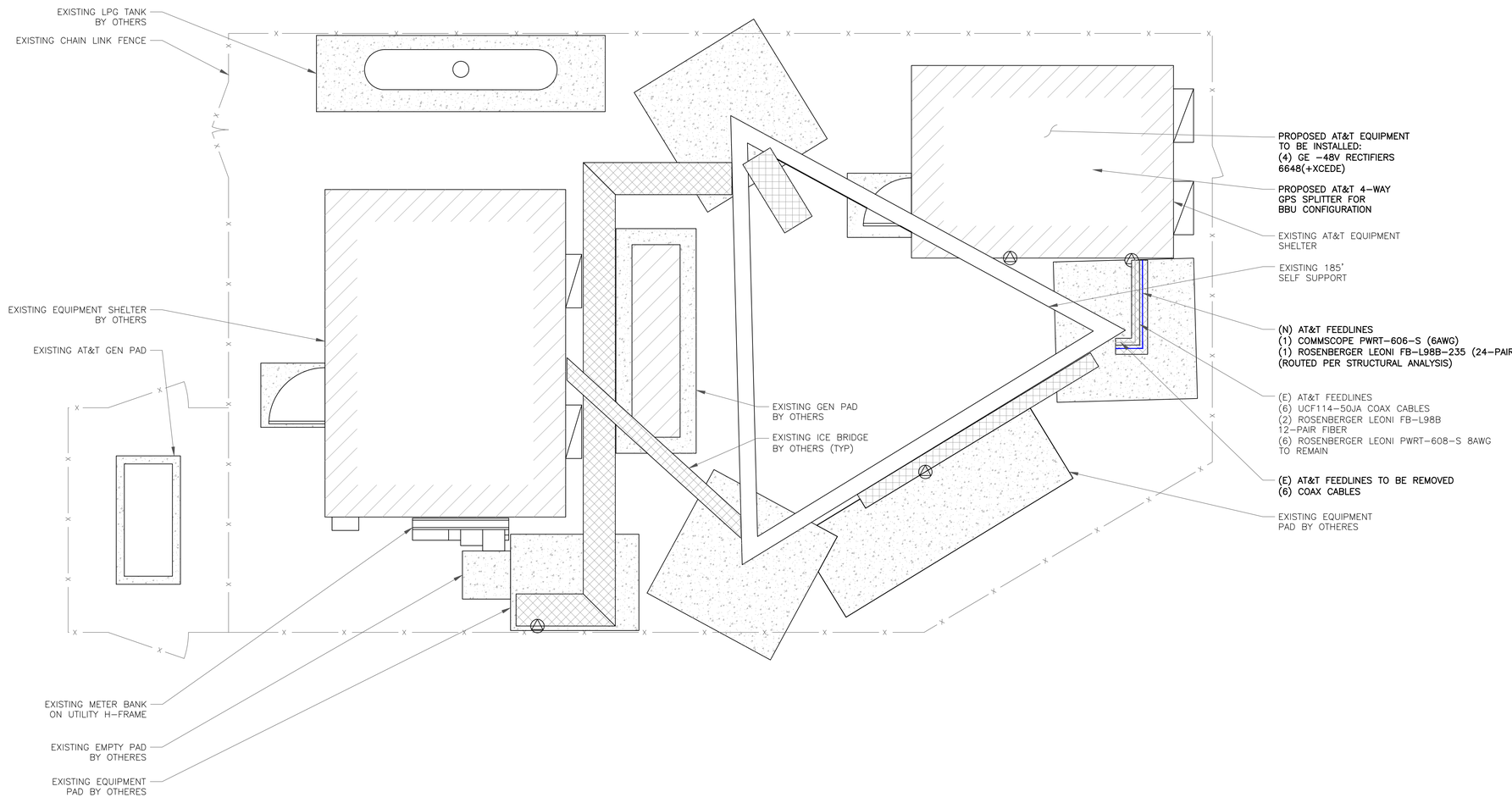
SHEET NUMBER: T-2
REVISION: 1

NOTE:

TEP DID NOT CONDUCT FIELD VISIT TO VERIFY LAYOUT. LAYOUT SHOWN BELOW GENERATED FROM INFORMATION PROVIDED BY CROWN CASTLE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

GROUND SCOPE OF WORK:

- INSTALL (4) RECTIFIERS IN EMERSON SHELF
- INSTALL 6648(+XCEDE)
- INSTALL GPS SPLITTER FOR BBU CONFIGURATION"



1 COMPOUND AREA

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

N

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STATE OF CONNECTICUT
SCOTT C. BRANT
35536
LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-1.1

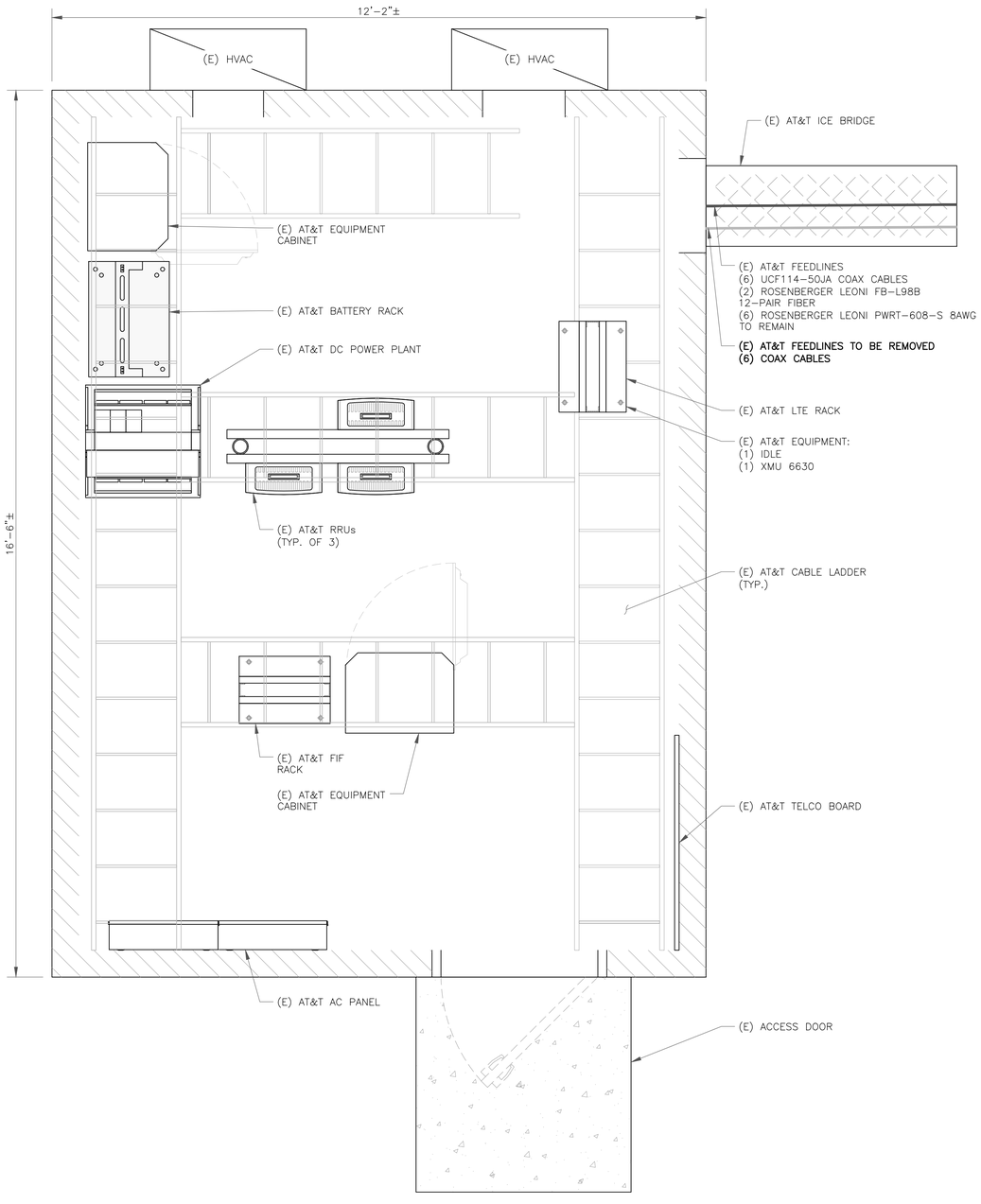
REVISION: 1

NOTE:

TEP DID NOT CONDUCT FIELD VISIT TO VERIFY LAYOUT. LAYOUT SHOWN BELOW GENERATED FROM INFORMATION PROVIDED BY CROWN CASTLE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

EXISTING BBU CONFIGURATION

- XMU/6630-6630(+IDLe)



1 EXISTING EQUIPMENT LAYOUT

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

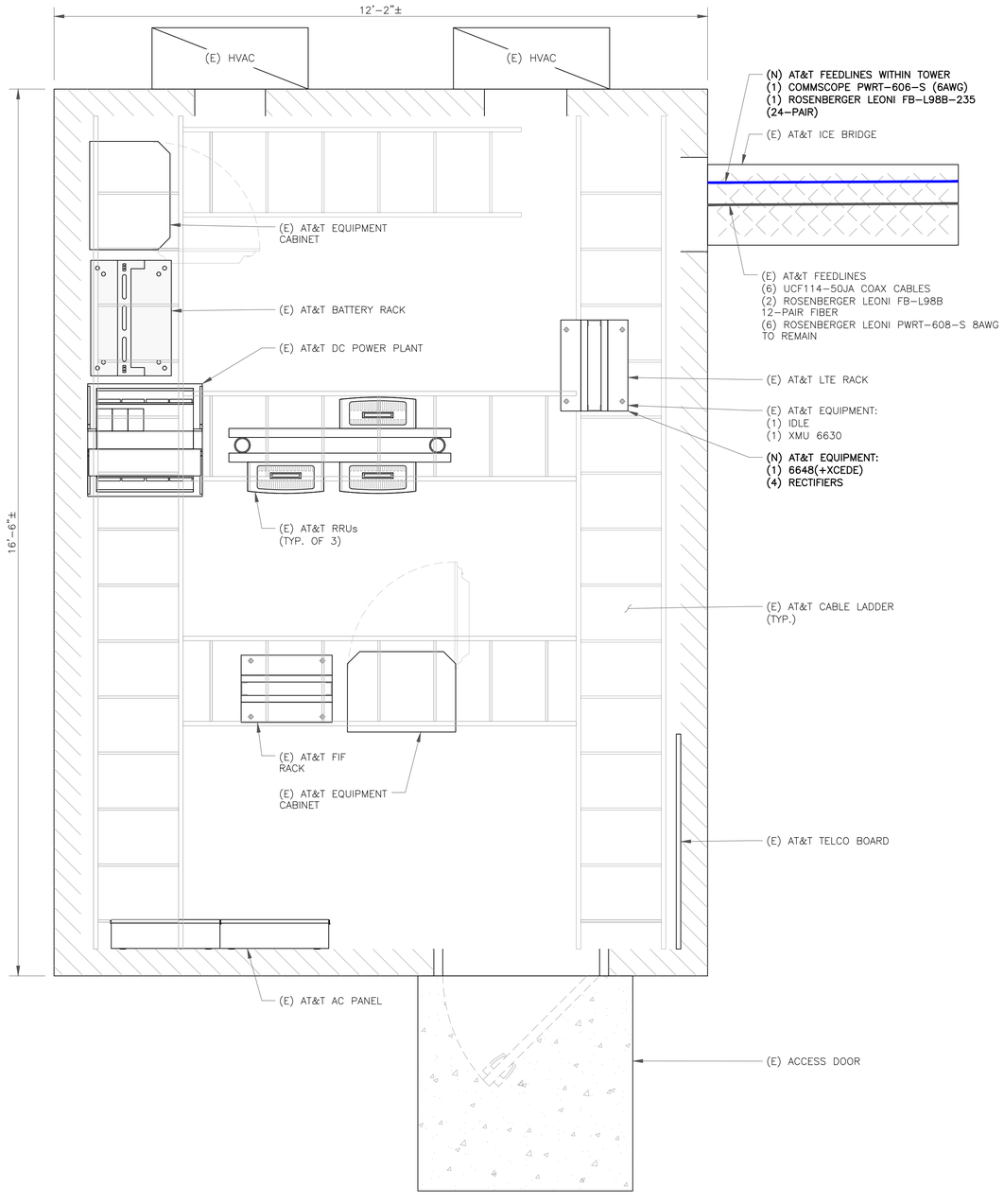
N

GROUND SCOPE OF WORK:

- REMOVE (12) 782 10250 DIPLEXERS
- INSTALL (4) RECTIFIERS IN EXISTING POWER PLANT
- INSTALL (1) 6648(+XCEDE)

FINAL BBU CONFIGURATION

- XMU/6630-6630(+IDLe)-6648(+Xcede)



2 FINAL EQUIPMENT LAYOUT

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N

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EXISTING 185' SELF SUPPORT

ISSUED FOR:

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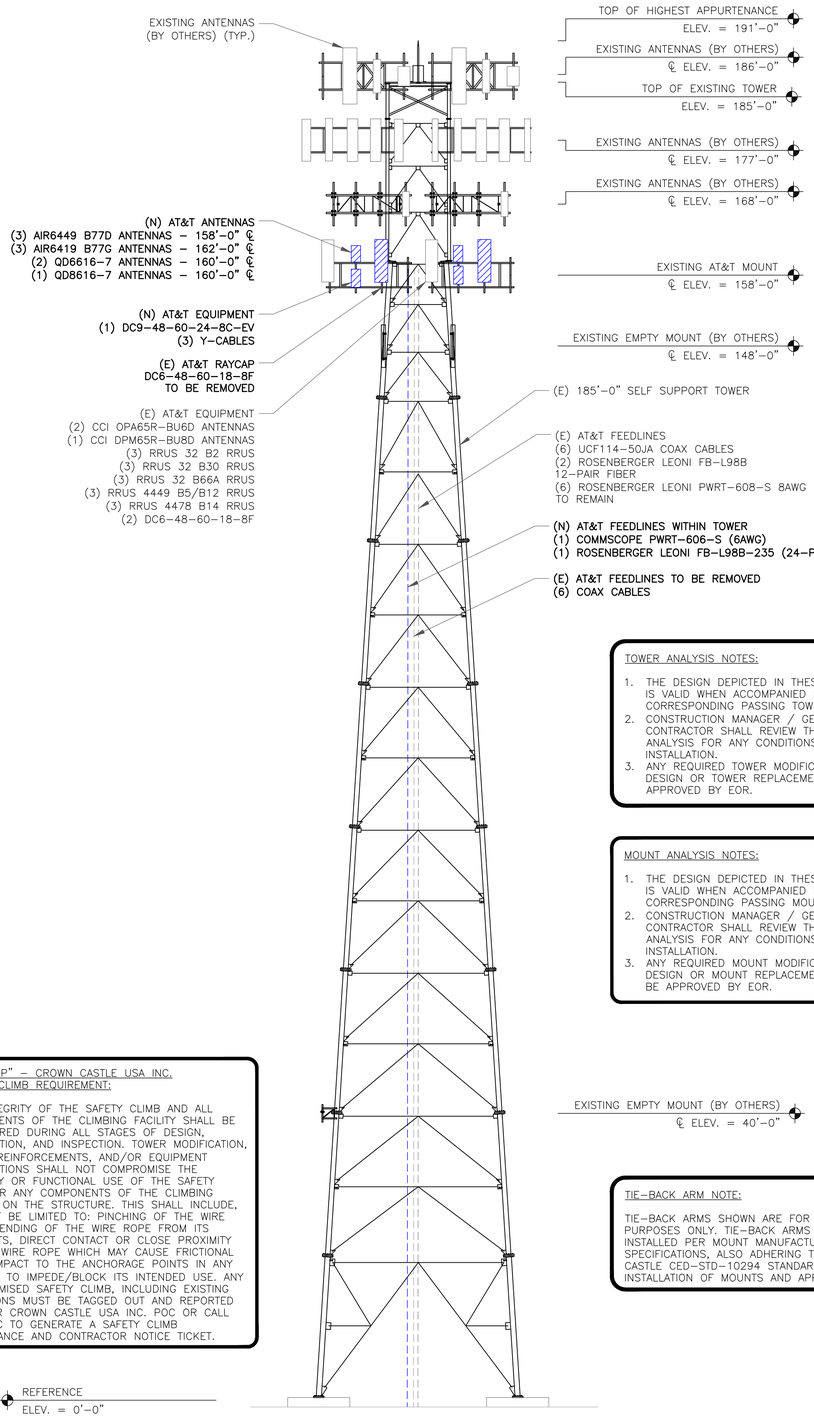
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT · SCOTT C. BRANT · 25536 · LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-1.2

REVISION: 1



1 FINAL ELEVATION
SCALE: 8' 4' 0 8' 3/32"=1'-0" (FULL SIZE) 3/64"=1'-0" (11x17)

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

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

TOWER ANALYSIS NOTES:

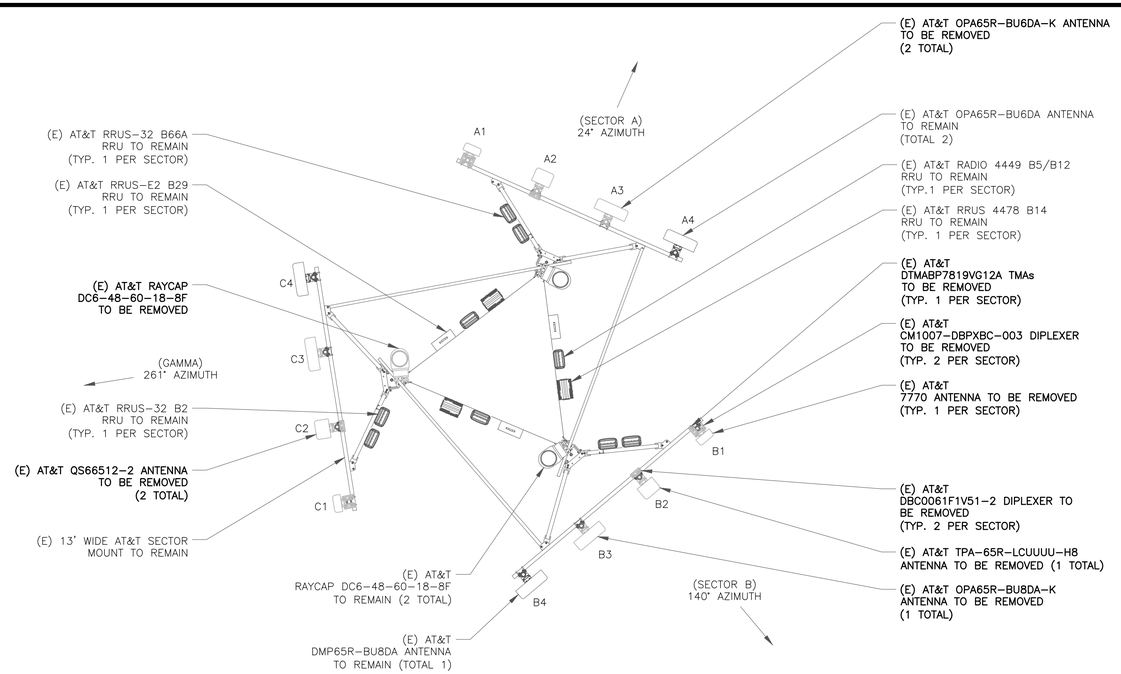
1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING TOWER ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE TOWER ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED TOWER MODIFICATION DESIGN OR TOWER REPLACEMENT SHALL BE APPROVED BY EOR.

MOUNT ANALYSIS NOTES:

1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING MOUNT ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE MOUNT ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED MOUNT MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.

TIE-BACK ARM NOTE:

TIE-BACK ARMS SHOWN ARE FOR REFERENCE PURPOSES ONLY. TIE-BACK ARMS TO BE INSTALLED PER MOUNT MANUFACTURERS SPECIFICATIONS, ALSO ADHERING TO CROWN CASTLE CED-STD-10294 STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES.

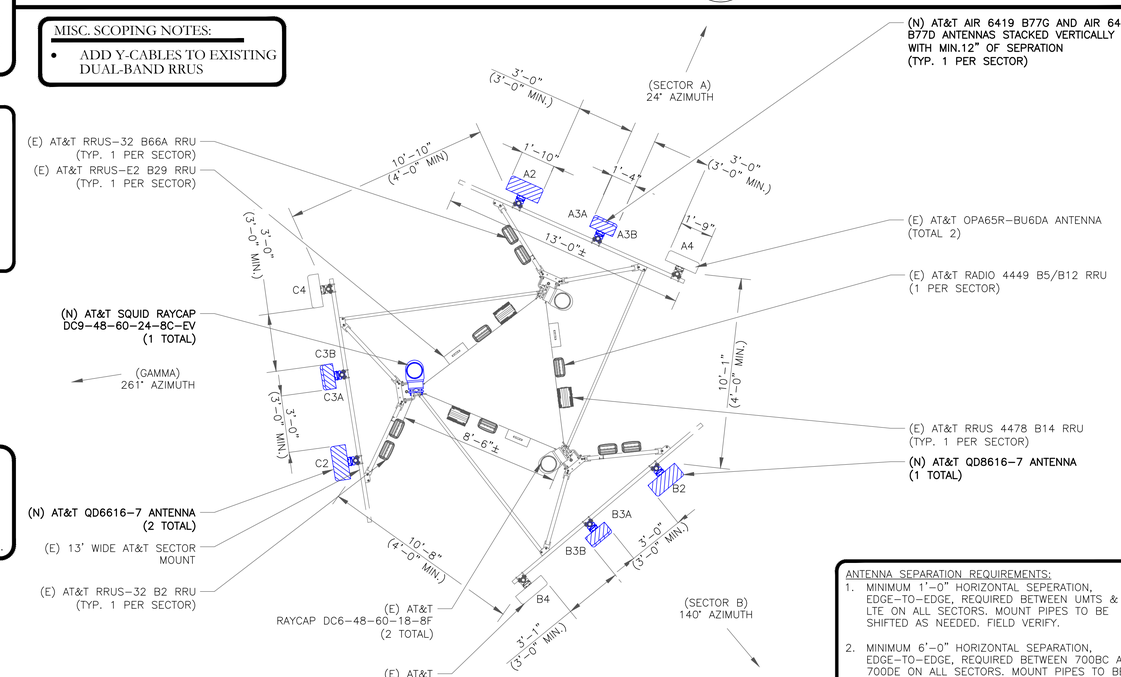


2 EXISTING ANTENNA PLAN
SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

N

MISC. SCOPING NOTES:

- ADD Y-CABLES TO EXISTING DUAL-BAND RRUS



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

N

ANTENNA SEPARATION REQUIREMENTS:

1. MINIMUM 1'-0" HORIZONTAL SEPERATION, EDGE-TO-EDGE, REQUIRED BETWEEN UMTS & LTE ON ALL SECTORS. MOUNT PIPES TO BE SHIFTED AS NEEDED. FIELD VERIFY.
2. MINIMUM 6'-0" HORIZONTAL SEPARATION, EDGE-TO-EDGE, REQUIRED BETWEEN 700BC AND 700DE ON ALL SECTORS. MOUNT PIPES TO BE SHIFTED AS NEEDED. FIELD VERIFY.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY FILTER LOCATION PRIOR TO INSTALLATION, WHEN APPLICABLE.

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CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT
SCOTT C. BRAINERD
LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-2

REVISION: 1

EXISTING ANTENNA SCHEDULE (RFDS 08/11/2022, VERSION 3.00)

SECTOR	ANTENNA					TMA	RRH	RAYCAP	DIPLEXER	TRANSMISSION LINE		
	POS.	TECHNOLOGY	AZIMUTH	MODEL NO.	RAD CL.	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.	DC POWER	FIBER	COAX
A	A1	UMTS 850	24°	*POWERWAVE 7770	160'-0"	*(1) DTMABP7819VG12A	–	–	*(2) CM1007-DBPXBC-003	(6) PWRT-608-S (8AWG)	(2) FB-L98B (12PAIR)	–
	A2	LTE 700 LTE 1900 LTE WCS	24°	*QUINTEL QS66512-2	160'-0"	–	(1) RRUS-E2 B29 (1) RRUS-32 B2 ***(1) RRUS-32 B30	–	*(2) DBC0061F1V51-2			*(2) UCF114-50JA (2) UCF114-50JA
	A3	LTE 700 LTE AWS	24°	*CCI OPA65R-BU6DA-K	160'-0"	–	***(1) RADIO 4478 B14 ***(1) RRUS-32 B66A	(1) RAYCAP DC6-48-60-18-8F	–			–
	A4	LTE 700 LTE 850, 5G 850	24°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12	–	–			–
B	B1	UMTS 850	140°	*POWERWAVE 7770	160'-0"	*(1) DTMABP7819VG12A	–	–	*(2) CM1007-DBPXBC-003			–
	B2	LTE 700 LTE 1900 LTE WCS	140°	*CCI TPA-65R-LCUUUU-H8	160'-0"	–	(1) RRUS-E2 B29 (1) RRUS-32 B2 ***(1) RRUS-32 B30	–	*(2) DBC0061F1V51-2			*(2) UCF114-50JA (2) UCF114-50JA
	B3	LTE 700 LTE AWS	140°	*CCI OPA65R-BU8DA-K	160'-0"	–	***(1) RADIO 4478 B14 ***(1) RRUS-32 B66A	*(1) RAYCAP DC6-48-60-18-8F	–			–
	B4	LTE 700 LTE 850, 5G 850	140°	CCI DMP65R-BU8DA	160'-0"	–	(1) RADIO 4449 B5/B12	–	–			–
C	C1	UMTS 850	261°	*POWERWAVE 7770	160'-0"	*(1) DTMABP7819VG12A	–	–	*(2) CM1007-DBPXBC-003			–
	C2	LTE 700 LTE 1900 LTE WCS	261°	*QUINTEL QS66512-2	160'-0"	–	(1) RRUS-E2 B29 (1) RRUS-32 B2 ***(1) RRUS-32 B30	–	*(2) DBC0061F1V51-2			*(2) UCF114-50JA (2) UCF114-50JA
	C3	LTE 700 LTE AWS	261°	*CCI OPA65R-BU6DA-K	160'-0"	–	***(1) RADIO 4478 B14 ***(1) RRUS-32 B66A	(1) RAYCAP DC6-48-60-18-8F	–			–
	C4	LTE 700 LTE 850, 5G 850	261°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12	–	–			–

*ANTENNA/TOWER MOUNTED EQUIPMENT TO BE REMOVED
**COAX TO BE REMOVED
***TO BE RELOCATED

1 EXISTING EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

FINAL ANTENNA SCHEDULE (RFDS 08/11/2022, VERSION 3.00)

SECTOR	ANTENNA					TMA	RRH	RAYCAP	DIPLEXER	TRANSMISSION LINE			
	POS.	TECHNOLOGY	AZIMUTH	MODEL NO.	RAD CL.	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.	DC POWER	FIBER	COAX	ADDITIONAL COMPONENT
A	A1	–	–	–	–	–	–	–	–	(6) PWRT-608-S (8AWG) (1) PWRT-606-S (6AWG)	(2) FB-L98B (12-PAIR) (1) FB-L98B-235 (24-PAIR)	–	–
	A2	**LTE 700, LTE AWS, LTE 1900, 5G 1900, 5G AWS**	**24°**	**QUINTEL QD6616-7**	**160'-0"**	–	(1) RADIO 4478 B14, (1) RRUS-32 B2, (1) RRUS-32 B66A, (1) RRUS-E2 B29	(1) RAYCAP DC6-48-60-18-8F	–			(2) UCF114-50JA	**(2) APTDC-BDFDM-DB SURGE ARRESTORS ON RRUS-E2 B29 RRUS**
	A3A	**5G DoD**	**24°**	**ERICSSON AIR6419 B77G**	**162'-0"**	–	–	–	–			–	–
	A3B	**5G CBAND**	**24°**	**ERICSSON AIR6449 B77D**	**158'-0"**	–	–	–	–			–	–
	A4	LTE 700, LTE WCS, 5G 850	24°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12 1) RRUS-32 B30	–	–			–	**(1) Y-CABLE ON RADIO 4449 B5/B12**
B	B1	–	–	–	–	–	–	–	–			–	–
	B2	**LTE 700, LTE AWS, LTE 1900, 5G 1900, 5G AWS**	**140°**	**QUINTEL QD6616-7**	**160'-0"**	–	(1) RADIO 4478 B14, (1) RRUS-32 B2, (1) RRUS-32 B66A, (1) RRUS-E2 B29	–	–			(2) UCF114-50JA	**(2) APTDC-BDFDM-DB SURGE ARRESTORS ON RRUS-E2 B29 RRUS**
	B3A	**5G DoD**	**140°**	**ERICSSON AIR6419 B77G**	**162'-0"**	–	–	(1) RAYCAP DC6-48-60-18-8F	–			–	–
	B3B	**5G CBAND**	**140°**	**ERICSSON AIR6449 B77D**	**158'-0"**	–	–	–	–			–	–
	B4	LTE 700, LTE WCS, 5G 850	140°	CCI DMP65R-BU8DA	160'-0"	–	(1) RADIO 4449 B5/B12 (1) RRUS-32 B30	–	–			–	**(1) Y-CABLE ON RADIO 4449 B5/B12**
C	C1	–	–	–	–	–	–	–	–			–	–
	C2	**LTE 700, LTE AWS, LTE 1900, 5G 1900, 5G AWS**	**261°**	**QUINTEL QD6616-7**	**160'-0"**	–	(1) RADIO 4478 B14, (1) RRUS-32 B2, (1) RRUS-32 B66A, (1) RRUS-E2 B29	–	–			(2) UCF114-50JA	**(2) APTDC-BDFDM-DB SURGE ARRESTORS ON RRUS-E2 B29 RRUS**
	C3A	**5G DoD**	**261°**	**ERICSSON AIR6419 B77G**	**162'-0"**	–	–	**(1) RAYCAP DC9-48-60-24-8C-EV**	–			–	–
	C3B	**5G CBAND**	**261°**	**ERICSSON AIR6449 B77D**	**158'-0"**	–	–	–	–			–	–
	C4	LTE 700, LTE WCS, 5G 850	261°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12 (1) RRUS-32 B30	–	–			–	**(1) Y-CABLE ON RADIO 4449 B5/B12**

NEW ANTENNA/TOWER MOUNTED EQUIPMENT IN BOLD.

2 FINAL EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

AT&T
700 BELL STREET
AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
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TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

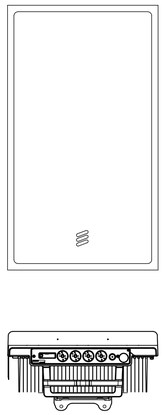
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
LICENSED
PROFESSIONAL ENGINEER

10/14/22

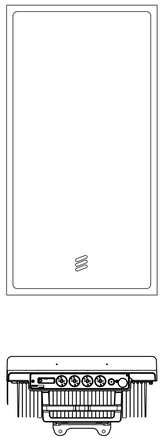
SHEET NUMBER: C-3

REVISION: 1



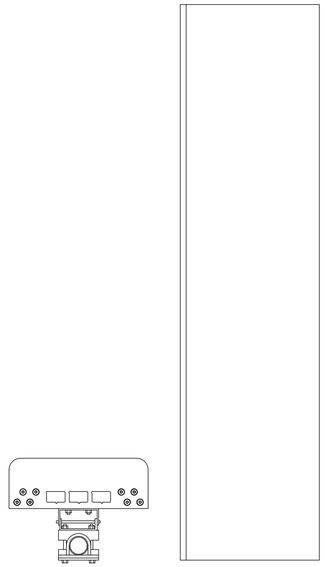
ERICSSON – AIR 6419 B77G
WEIGHT (WITHOUT MOUNTING HARDWARE): 66.20 LBS
SIZE (HxWxD): 27.95x15.75x6.68 IN.

1 ERICSSON – AIR 6419 B77G
SCALE: NOT TO SCALE



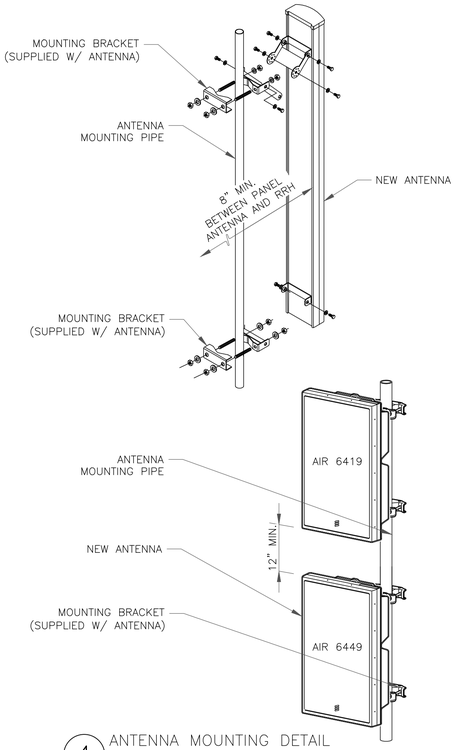
ERICSSON – AIR 6449 B77D
WEIGHT (WITHOUT MOUNTING HARDWARE): 81.60 LBS
SIZE (HxWxD): 30.39x15.87x8.07 IN.

2 ERICSSON – AIR 6449 B77D
SCALE: NOT TO SCALE

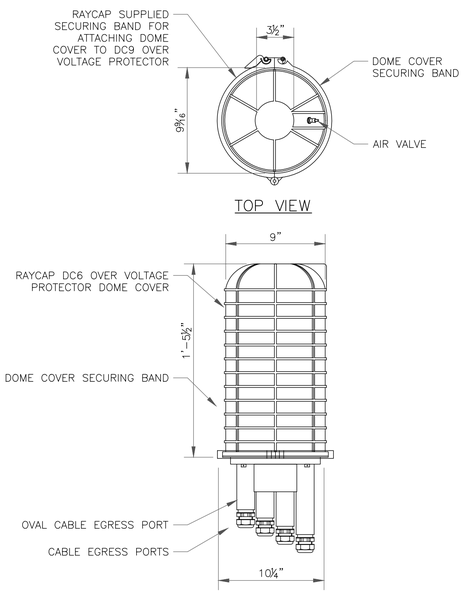


QUINTEL – QD6616-7
WEIGHT (WITHOUT MOUNTING HARDWARE): 81.60 LBS
SIZE (HxWxD): 72.0x22.0x9.60 IN.

3 QUINTEL – QD6616-7
SCALE: NOT TO SCALE

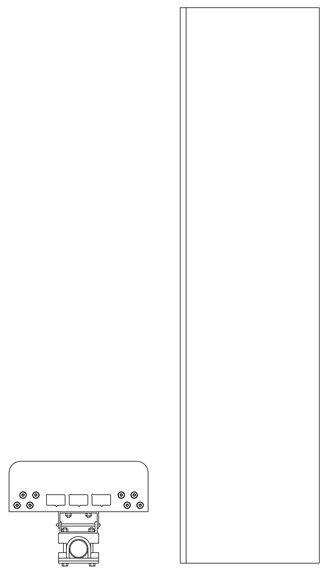


4 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE



5 RAYCAP–DC9–48–60–24–8C–EV
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE



QUINTEL – QD8616-7
WEIGHT (WITHOUT MOUNTING HARDWARE): 150.0 LBS
SIZE (HxWxD): 96.0x22.0x9.60 IN.

7 QUINTEL – QD8616-7
SCALE: NOT TO SCALE

8 NOT USED
SCALE: NOT TO SCALE

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BU #: **806362**
NHV 108 943133

347 EAST ST.
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(NEW HAVEN COUNTY)

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1	10/14/22	RST	CONSTRUCTION	NH

10/14/22

SHEET NUMBER: C-4

REVISION: 1

Table 1: E. PA/S. NJ/DE Coax Trunk/Jumper Color Code Definition		
Sector	Alpha	Green
	Beta	Blue
	Gamma	White
	Delta	Orange
	Epsilon	Brown
	Psi	Violet
Frequency Band	700 (B/C)	Violet
	850	Yellow
	850 - 2nd Block	Yellow
	1900	Red
	1900 - 2nd Block	Red
	2100 (AWS)	Orange
	2100 (AWS) - 2nd Block	Orange
	2300 (WCS)	Brown
	2300 (WCS) - 2nd Block	Brown
	700 (D/E)	Slate
	700 - FIRSTNET	Violet/ Blue

Table 2 E. PA/S. NJ/DE Coax Trunk/Jumper Color Code Standard

Sector	Technology	Frequency Band	Color Code - Additional Stripe for Sector Split	Color Code - Sector (Amount of Stripes based on Antenna Position)	BOTTOM- Code Code - Frequency Band (RRH JUMPERS ONLY)	45+ Coax	45- Coax	TOP- Low Port (ANTENNA JUMPERS ONLY)	TOP- High Port (ANTENNA JUMPERS ONLY)
A	LTE	700 B/C	Blank	GREEN	VIOLET	YELLOW	Blank	Blank	RED
A	LTE	850	Blank	GREEN	YELLOW	YELLOW	Blank	Blank	RED
A	LTE	850 - 2nd Block	Blank	GREEN	YELLOW	YELLOW	Blank	Blank	RED
A	LTE	1900	Blank	GREEN	RED	YELLOW	Blank	Blank	RED
A	LTE	1900 - 2nd Block	Blank	GREEN	RED	YELLOW	Blank	Blank	RED
A	LTE	2100	Blank	GREEN	ORANGE	YELLOW	Blank	Blank	RED
A	LTE	2100 - 2nd Block	Blank	GREEN	ORANGE	YELLOW	Blank	Blank	RED
A	LTE	700 D/E	Blank	GREEN	SLATE	YELLOW	Blank	Blank	RED
A	LTE	2300	Blank	GREEN	BROWN	YELLOW	Blank	Blank	RED
A	LTE	2300 - 2nd Block	Blank	GREEN	BROWN	YELLOW	Blank	Blank	RED
A	LTE FirstNet	700 - FirstNet	Blank	GREEN	VIOLET / BLUE	YELLOW	Blank	Blank	RED
A	UMTS	850	Blank	GREEN	YELLOW	YELLOW	Blank	Blank	RED
A	UMTS	1900	Blank	GREEN	RED	YELLOW	Blank	Blank	RED
B	LTE	700 B/C	Blank	BLUE	VIOLET	YELLOW	Blank	Blank	RED
B	LTE	850	Blank	BLUE	YELLOW	YELLOW	Blank	Blank	RED
B	LTE	850 - 2nd Block	Blank	BLUE	YELLOW	YELLOW	Blank	Blank	RED
B	LTE	1900	Blank	BLUE	RED	YELLOW	Blank	Blank	RED
B	LTE	1900 - 2nd Block	Blank	BLUE	RED	YELLOW	Blank	Blank	RED
B	LTE	2100	Blank	BLUE	ORANGE	YELLOW	Blank	Blank	RED
B	LTE	2100 - 2nd Block	Blank	BLUE	ORANGE	YELLOW	Blank	Blank	RED
B	LTE	700 D/E	Blank	BLUE	SLATE	YELLOW	Blank	Blank	RED
B	LTE	2300	Blank	BLUE	BROWN	YELLOW	Blank	Blank	RED
B	LTE	2300 - 2nd Block	Blank	BLUE	BROWN	YELLOW	Blank	Blank	RED
B	LTE FirstNet	700 - FirstNet	Blank	BLUE	VIOLET / BLUE	YELLOW	Blank	Blank	RED
B	UMTS	850	Blank	BLUE	YELLOW	YELLOW	Blank	Blank	RED
B	UMTS	1900	Blank	BLUE	RED	YELLOW	Blank	Blank	RED
C	LTE	700 B/C	Blank	WHITE	VIOLET	YELLOW	Blank	Blank	RED
C	LTE	850	Blank	WHITE	YELLOW	YELLOW	Blank	Blank	RED
C	LTE	850 - 2nd Block	Blank	WHITE	YELLOW	YELLOW	Blank	Blank	RED
C	LTE	1900	Blank	WHITE	RED	YELLOW	Blank	Blank	RED
C	LTE	1900 - 2nd Block	Blank	WHITE	RED	YELLOW	Blank	Blank	RED
C	LTE	2100	Blank	WHITE	ORANGE	YELLOW	Blank	Blank	RED
C	LTE	2100 - 2nd Block	Blank	WHITE	ORANGE	YELLOW	Blank	Blank	RED
C	LTE	700 D/E	Blank	WHITE	SLATE	YELLOW	Blank	Blank	RED
C	LTE	2300	Blank	WHITE	BROWN	YELLOW	Blank	Blank	RED
C	LTE	2300 - 2nd Block	Blank	WHITE	BROWN	YELLOW	Blank	Blank	RED
C	LTE FirstNet	700 - FirstNet	Blank	WHITE	VIOLET / BLUE	YELLOW	Blank	Blank	RED
C	UMTS	850	Blank	WHITE	YELLOW	YELLOW	Blank	Blank	RED
C	UMTS	1900	Blank	WHITE	RED	YELLOW	Blank	Blank	RED
D	LTE	700 B/C	Blank	ORANGE	VIOLET	YELLOW	Blank	Blank	RED
D	LTE	850	Blank	ORANGE	YELLOW	YELLOW	Blank	Blank	RED
D	LTE	850 - 2nd Block	Blank	ORANGE	YELLOW	YELLOW	Blank	Blank	RED
D	LTE	1900	Blank	ORANGE	RED	YELLOW	Blank	Blank	RED
D	LTE	1900 - 2nd Block	Blank	ORANGE	RED	YELLOW	Blank	Blank	RED
D	LTE	2100	Blank	ORANGE	ORANGE	YELLOW	Blank	Blank	RED
D	LTE	2100 - 2nd Block	Blank	ORANGE	ORANGE	YELLOW	Blank	Blank	RED
D	LTE	700 D/E	Blank	ORANGE	SLATE	YELLOW	Blank	Blank	RED
D	LTE	2300	Blank	ORANGE	BROWN	YELLOW	Blank	Blank	RED
D	LTE	2300 - 2nd Block	Blank	ORANGE	BROWN	YELLOW	Blank	Blank	RED
D	LTE FirstNet	700 - FirstNet	Blank	ORANGE	VIOLET / BLUE	YELLOW	Blank	Blank	RED
D	UMTS	850	Blank	ORANGE	YELLOW	YELLOW	Blank	Blank	RED
D	UMTS	1900	Blank	ORANGE	RED	YELLOW	Blank	Blank	RED

COAX COLOR CODE

1 COLOR CODE CHART
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT · SCOTT C. BRAILSFORD · 30536 · LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-5

REVISION: 1

3. ATT Naming Convention for "RET NAME"

ATT-002-290-125 (Issue 8, 02/03/14)
Antenna Remote Electrical Tilt (RET) Guidelines

Usage: [USID][CellId1][CellId2][CellId3][AntPos][FrequencyBand][Tech]

USID						CellId 1	CellId 2	CellId 3	AntPos	Freq	Tech
1	2	3	4	5	6	7	8	9	10	11	12

Field	Length	Description	
USID	6	Six characters that define the sites USID. USID's less than 6 characters in length are preceded with 0's (zeros) (example: 003831)	
CellId1	1	Allowed Value	Description
		A	Alpha
		B	Beta
CellId2	1	C	Gamma
		D	Delta
		E	Epsilon
CellId3	1	F	Zeta
		-	No Transmitter connected to this port
AntPos	1	Allowed Value	Description
		1	Antenna Position 1 on this face
		2	Antenna Position 2 on this face
		3	Antenna Position 3 on this face
		4	Antenna Position 4 on this face
		5	Antenna Position 5 on this face
FreqBand	1	Allowed Value	Description
		2	2100 MHz (AWS)
		7	700 MHz
		8	850 MHz
		9	1900 MHz
		Q	700 MHz D & E Band Only
		W	2300 MHz (WCS)

Field	Length	Description				
Tech	1	Allowed Value	GSM	UMTS	LTE	Split Sector
		G	GSM			
		J	GSM	UMTS		
		K	GSM		LTE	
		L			LTE	
		N				
		U		UMTS		
		V		UMTS	LTE	
		Y	GSM	UMTS	LTE	
		H	GSM			Split
		M	GSM	UMTS		Split
		P	GSM		LTE	Split
		Q			LTE	Split
		R				Split
		S		UMTS		Split
		T		UMTS	LTE	Split

1 LTE RET NAMING CONVENTION
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
SCOTT C. BRAINARD
35536
LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-6
REVISION: 1

SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
   A. THE NATIONAL ELECTRICAL SAFETY CODE
   B. THE NATIONAL ELECTRIC CODE – NFPA–70
   C. REGULATIONS OF THE SERVING UTILITY COMPANY
   D. LOCAL AND STATE AMENDMENTS
   E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

RACEWAYS / CONDUITS GENERAL:

1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE COMPLETE BEFORE INSTALLING CONDUCTORS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. THE CONDUIT SHALL BE RIGID STEEL AT GRADE TRANSITIONS OR WHERE EXPOSED TO DAMAGE.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT OR PVC.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

CONDUCTORS:

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
   A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
   B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
   C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
   D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP–ON SLEEVES WITH NYLON INSULATOR.
3. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON–CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 – "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A	–	AMPERE	PNLBD	–	PANELBOARD
AFG	–	ABOVE FINISHED GRADE	PVC	–	RIGID NON–METALLIC CONDUIT
ATS	–	AUTOMATIC TRANSFER SWITCH	RGS	–	RIGID GALVANIZED STEEL CONDUIT
AWG	–	AMERICAN WIRE GAUGE	SW	–	SWITCH
BCW	–	BARE COPPER WIRE	TGB	–	TOWER GROUND BAR
BFG	–	BELOW FINISHED GRADE	UL	–	UNDERWRITERS LABORATORIES
BKR	–	BREAKER	V	–	VOLTAGE
C	–	CONDUIT	W	–	WATTS
CKT	–	CIRCUIT	XFMR	–	TRANSFORMER
DISC	–	DISCONNECT	XMTR	–	TRANSMITTER
EGR	–	EXTERNAL GROUND RING			
EMT	–	ELECTRIC METALLIC TUBING			
FSC	–	FLEXIBLE STEEL CONDUIT			
GEN	–	GENERATOR			
GPS	–	GLOBAL POSITIONING SYSTEM			
GRD	–	GROUND			
IGB	–	ISOLATED GROUND BAR			
IGR	–	INTERIOR GROUND RING (HALO)			
KW	–	KILOWATTS			
NEC	–	NATIONAL ELECTRIC CODE			
PCS	–	PERSONAL COMMUNICATION SYSTEM			
PH	–	PHASE			
PNL	–	PANEL			

——E——	UNDERGROUND ELECTRICAL CONDUIT
——T——	UNDERGROUND TELEPHONE CONDUIT
	KILOWATT–HOUR METER
—— ——	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
⌀	GROUND ROD
●	CADWELD
⊠	GROUND ROD WITH INSPECTION WELL

1 ELECTRICAL NOTES
SCALE: NOT TO SCALE

AT&T
700 BELL STREET
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CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
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(919) 661-6351
TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

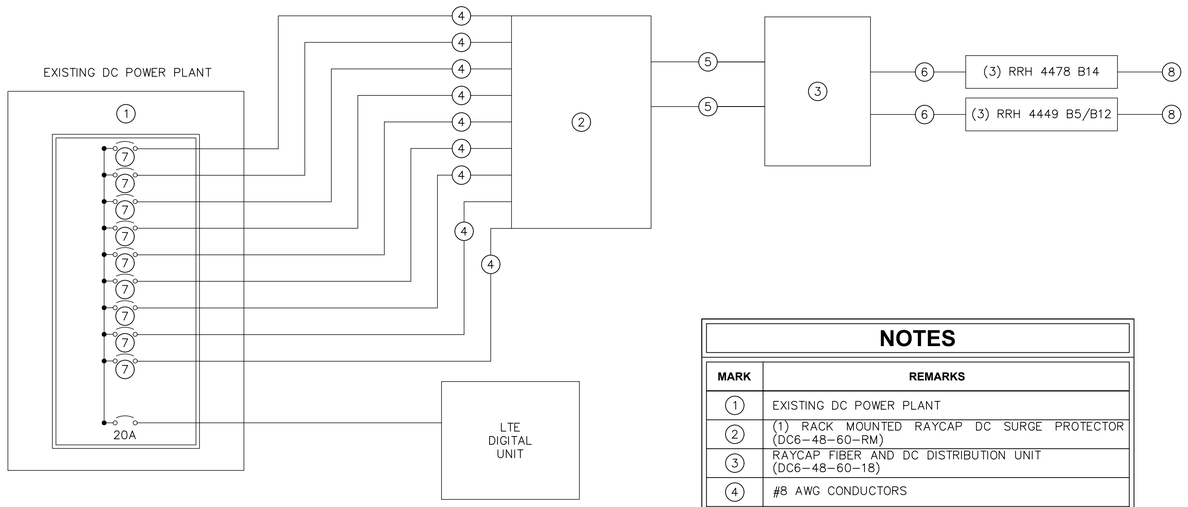
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT · SCOTT C. BRAINARD · 30196 · LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: E-1

REVISION: 1



NOTES

MARK	REMARKS
1	EXISTING DC POWER PLANT
2	(1) RACK MOUNTED RAYCAP DC SURGE PROTECTOR (DC6-48-60-RM)
3	RAYCAP FIBER AND DC DISTRIBUTION UNIT (DC6-48-60-18)
4	#8 AWG CONDUCTORS
5	PROVIDE (2) 6-CONDUCTOR #8 AWG BUNDLES FOR DC POWER FROM RACK MOUNTED RAYCAP SURGE PROTECTION UNIT TO THE RAYCAP FIBER AND DISTRIBUTION UNIT ON TOWER
6	EXISTING FIBER AND DC CABLE ROUTED TO EXISTING RRH UNITS
7	REFER TO BREAKER SCHEDULE FOR BREAKER SIZES
8	REFER TO LATEST RFDS FOR RRH TECHNOLOGIES AND QUANTITIES

RRUS BREAKER SCHEDULE

RRU MODEL	BREAKER SIZE	TECHNOLOGY
RRUS 32 B66	30A	AWS (2100)
RRUS 32 B30	20A	WCS (2300)
RRUS 32 B2	30A	PCS (1900)
RRUS 11	25A	VARIOUS BANDS (700 [B12], 850 [B5], 1900 [B2], 2100 [B4])
RRUS 12	25A	VARIOUS BANDS (850 [B5], 1900 [B2], 2100 [B4])
RRUS 4415 B25	25A	1900
RRUS 4426 B66	30A	2100
RRUS 4478 B14	25A	700
RRUS 4478 B5	25A	850
RRUS E2 B29	25A	700
RRUS 4449 B5/B12	(2) 25A	700/850
RRUS 8843 B2/B66	(2) 30A	1900/2100
RRUS 2203 B5	10A	850
RRUS 2205 B46	10A	5 GHz

1 EQUIPMENT ONE-LINE DIAGRAM
SCALE: NOT TO SCALE

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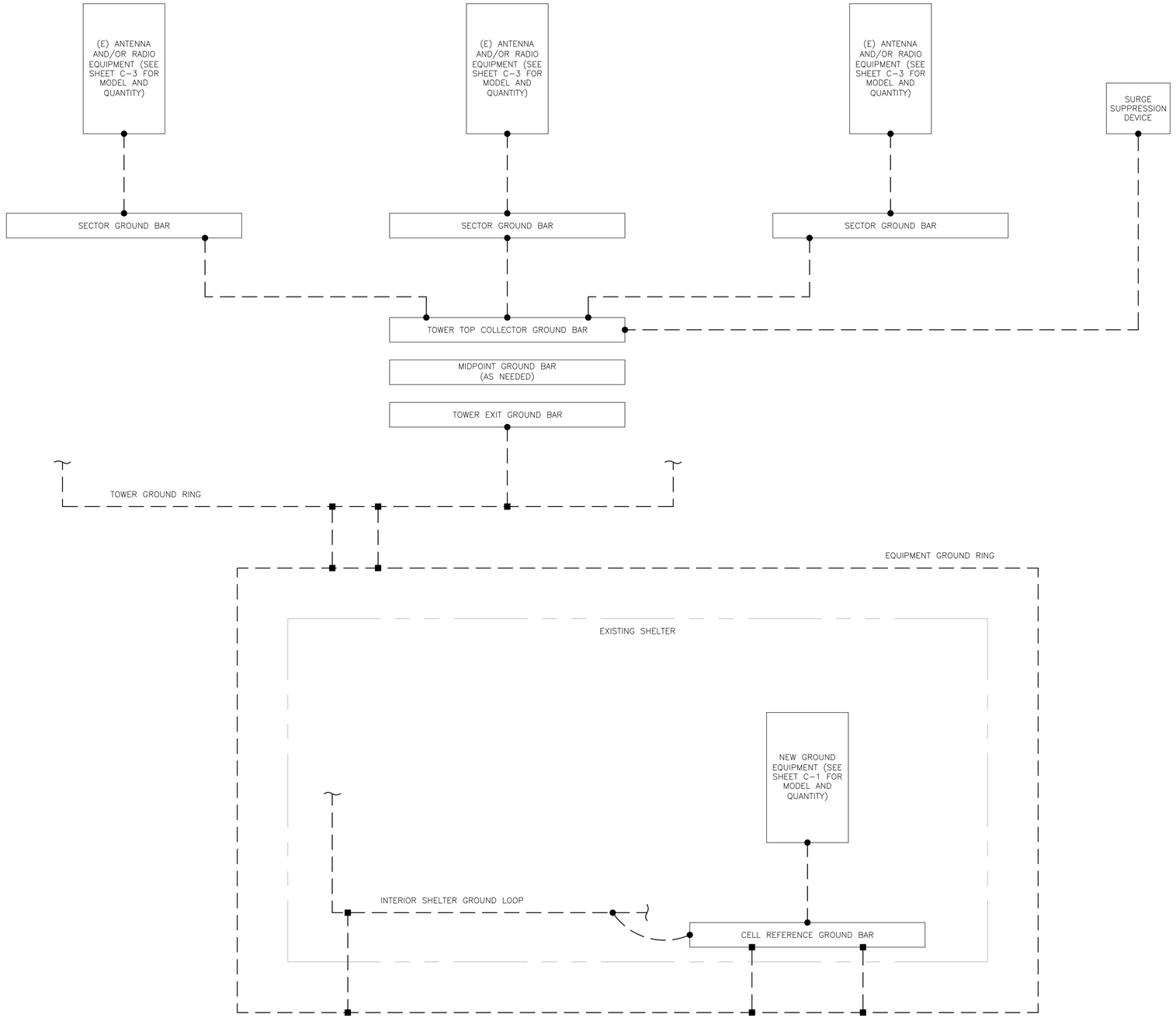
STATE OF CONNECTICUT
SCOTT C. GRANTZ
32236
LICENSED
PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: E-2

REVISION: 1



1 TYPICAL GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

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

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

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

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

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

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TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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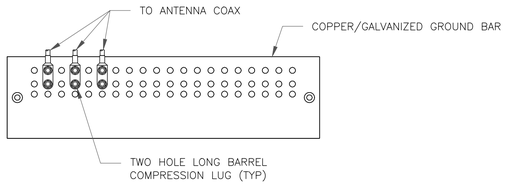
1	10/14/22	RST	CONSTRUCTION	NH

10/14/22

SHEET NUMBER: G-1

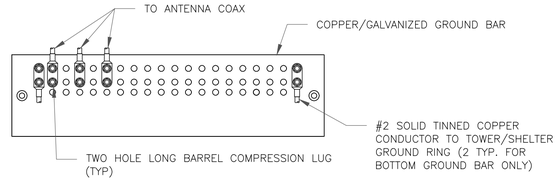
REVISION: 1



NOTES:

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

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

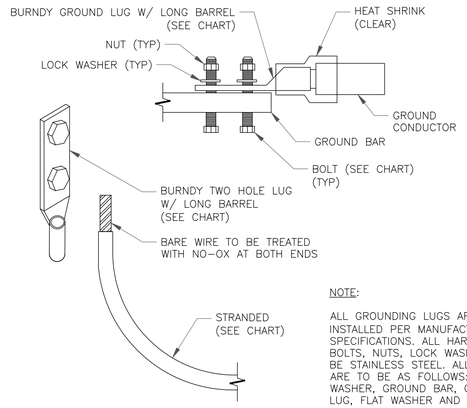


NOTES:

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

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

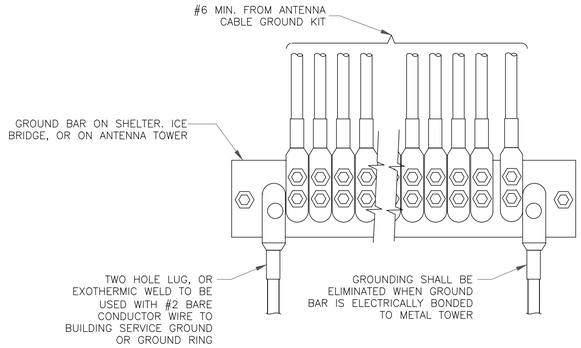
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" – 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" – 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" – 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" – 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" – 16 NC SS 2 BOLT



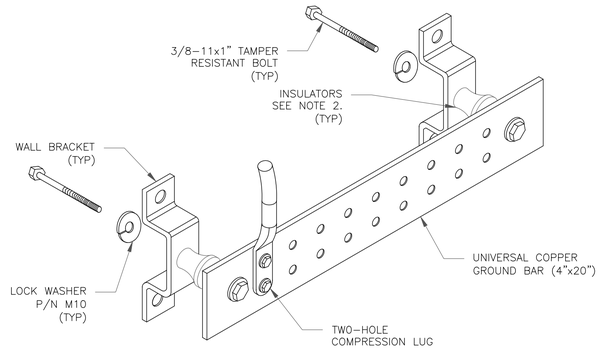
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

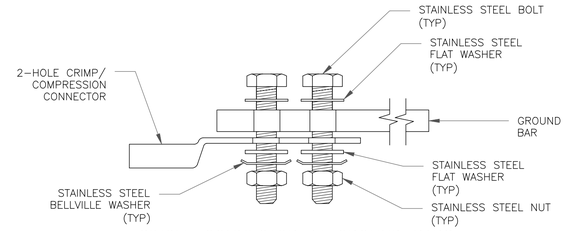


NOTES:

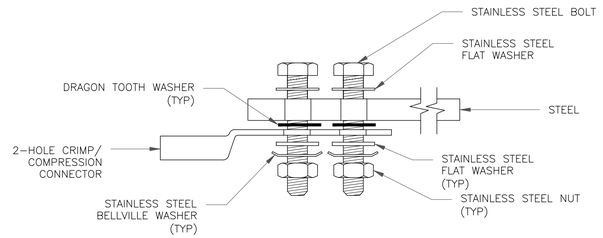
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

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

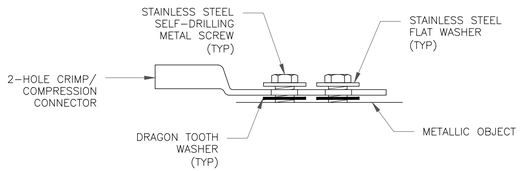
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

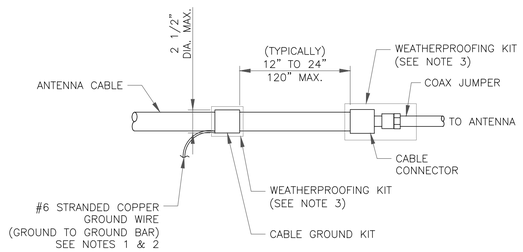


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

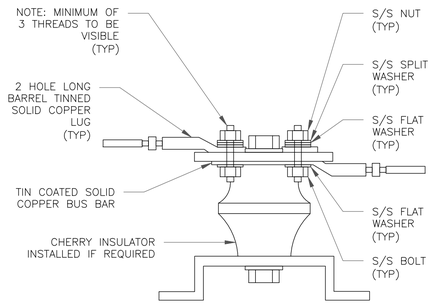
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

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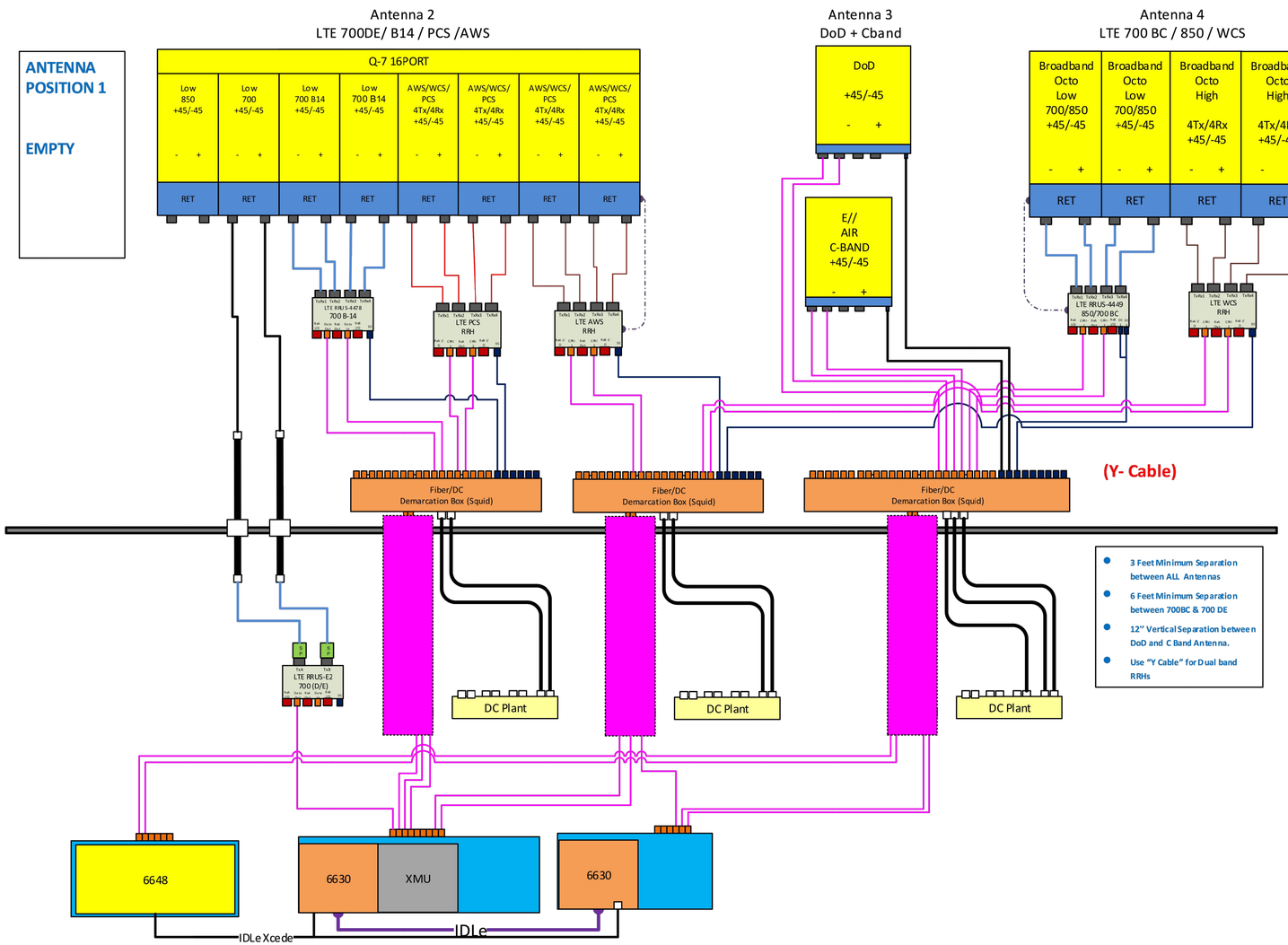
10/14/22

SHEET NUMBER: G-2

REVISION: 1

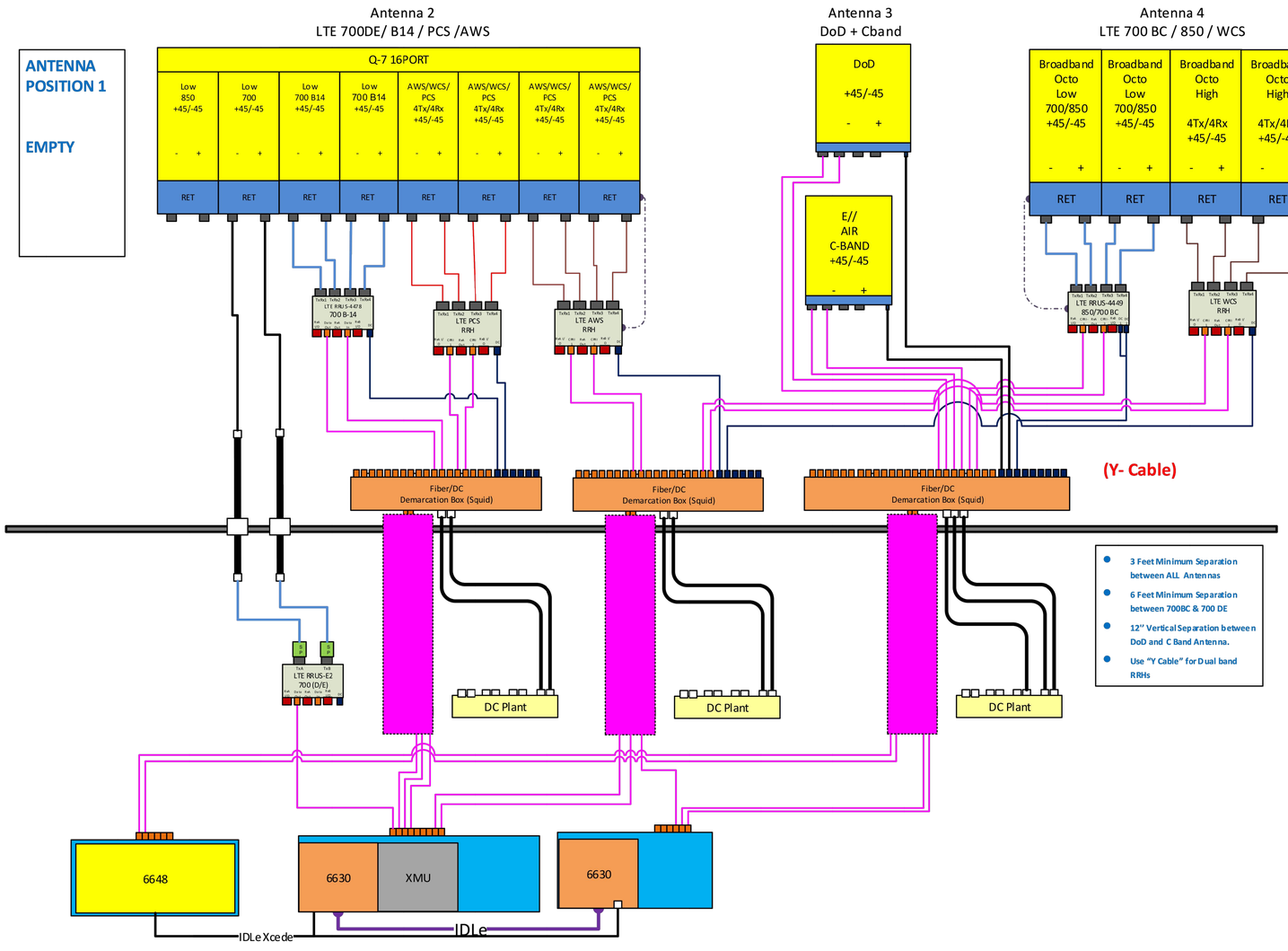
Diagram - Sector	A	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_BAOCTO__AWS_PCS_2DCFIB_1DC9_1x6630_1x6630_1xXMU_6648.vsd					
Atoll Site Name -	CTL01060	Location Name -	WOLCOTT-EAST ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"							



PLUMBING DIAGRAM

Diagram - Sector	B	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_BAOCTO__AWS_PCS_2DCFIB_1DC9_1x6630_1x6630_1xXMU_6648.vsd					
Atoll Site Name -	CTL01060	Location Name -	WOLCOTT-EAST ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

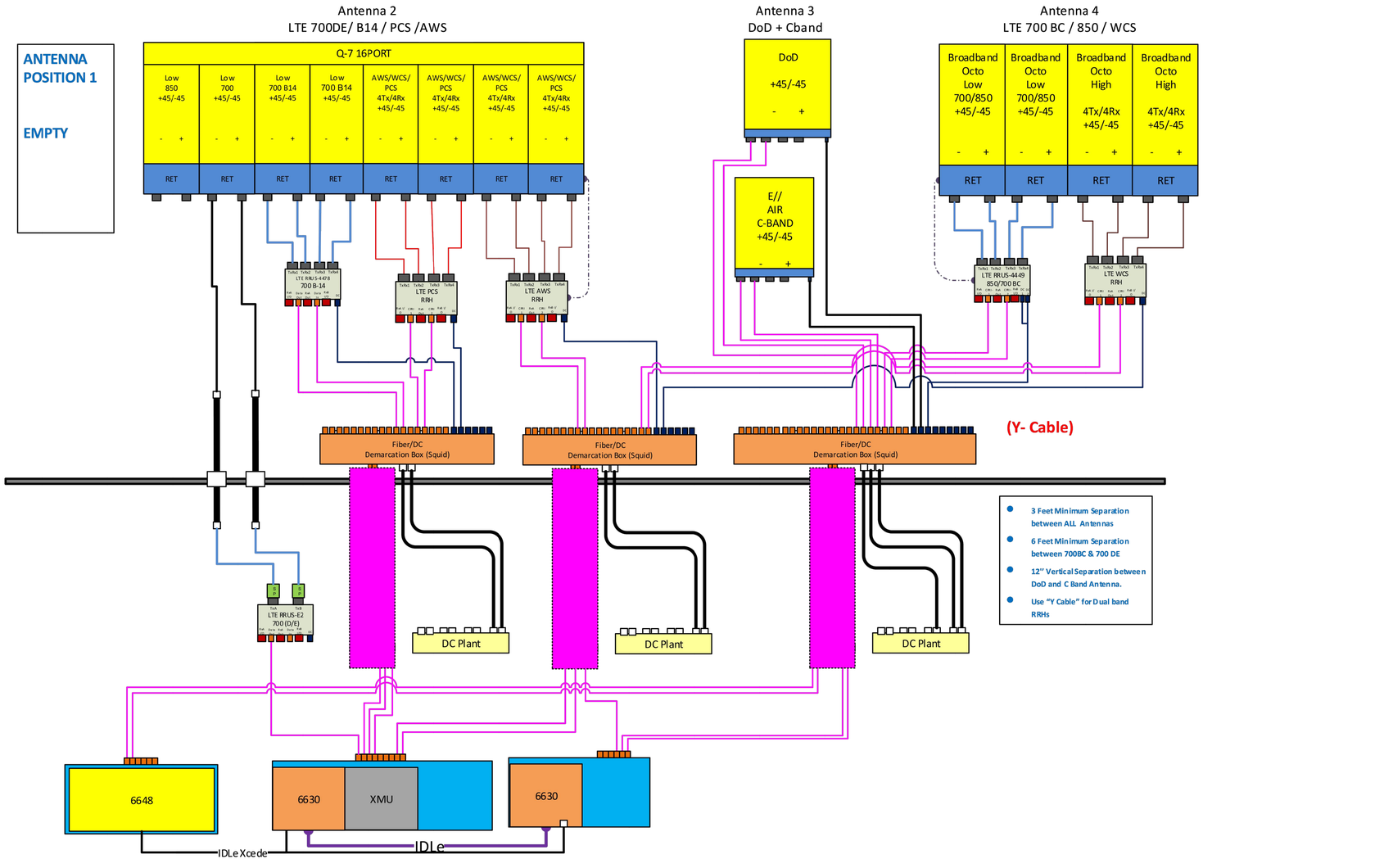
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"



PLUMBING DIAGRAM

Diagram - Sector	C	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_BAOCTO__AWS_PCS_2DCFIB_1DC9_1x6630_1x6630_1xXMU_6648.vsd					
Atoll Site Name -	CTL01060	Location Name -	WOLCOTT-EAST ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"



PLUMBING DIAGRAM